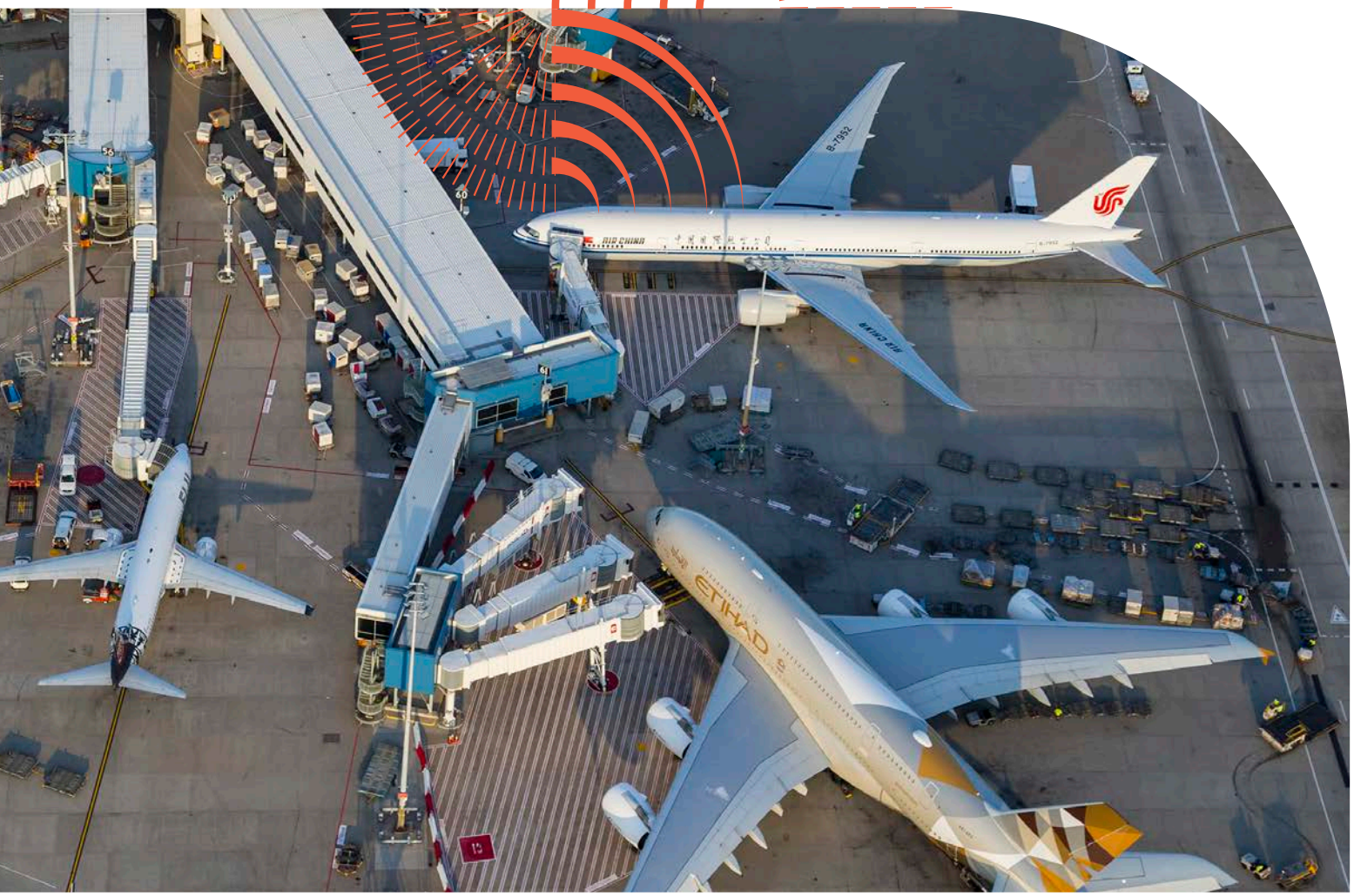
Section 1

Introduction, Vision and Context

1.0 Introduction



1.1 Purpose of the Master Plan

Sydney Airport is one of Australia's most important pieces of infrastructure. It is our international gateway and an essential part of our transportation network connecting Sydney to over 100 regional, national and international destinations.

The continued growth of Sydney Airport is vital to achieving local and NSW employment, tourism, trade and development objectives. The **Sydney Airport Master Plan 2039** (Master Plan 2039) has been prepared to ensure that this growth can be achieved in the next 20 years.

It outlines a clear strategic direction for Sydney Airport consistent with regional economic conditions and major infrastructure delivery strategies.

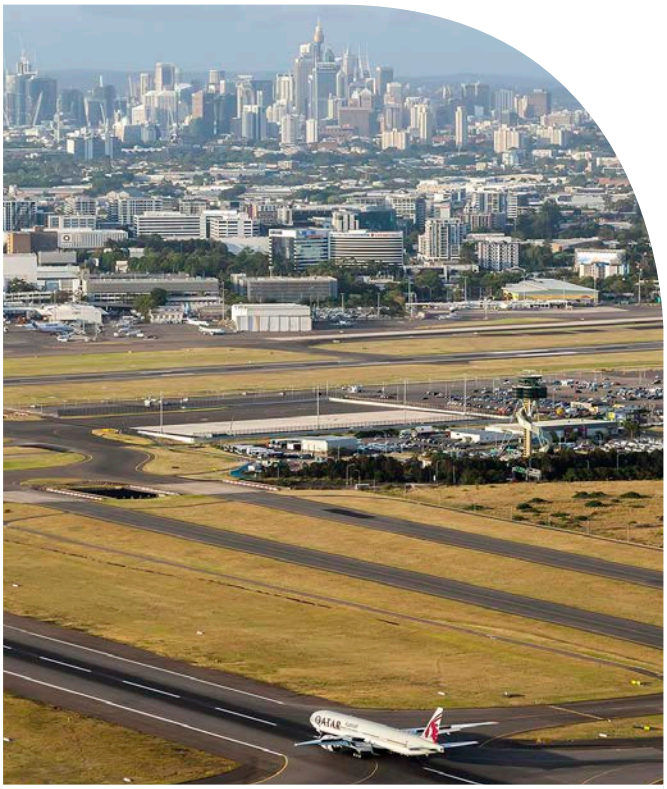


Image 1-1: Looking at the Sydney skyline from Sydney Airport

Master Plan 2039 delivers a flexible blueprint for Sydney Airport that is adaptable to changing conditions in the economy and aviation industry, and responds to differing scenarios for aircraft and passenger movements.

Master Plan 2039 outlines the development opportunities for Sydney Airport's growth and is a statutory document prepared in accordance with the requirements of the *Commonwealth Airports Act 1996* (Airports Act). It includes development plans that reflect changes in the past five years and new forecasts for aviation activity.

Included as an addendum to Master Plan 2039 is the **Environment Strategy 2019-2024**, which has been prepared in accordance with the specific legislative requirements for environmental matters at Sydney Airport.

The developments proposed in Master Plan 2039 are subject to an extensive public consultation process. Delivery of the developments will be further subject to macroeconomic conditions, technological advancements and collaboration and consultation with key stakeholders and the community.

This Master Plan 2039 has been prepared for public and stakeholder consultation, as detailed in **Chapter 5.0**.

Master Plan 2039 is intended to be a key source of information for the local community, Australian and NSW Governments, local governments and the business sector. It provides a clear direction of our development strategy over the next 20 years and acts as an important link to other planning strategies for Sydney and NSW.

1.2 Legislative Framework

Sydney Airport is governed and operated in accordance with Commonwealth legislation, relating to its airspace, development, aviation operations, and environmental management.

Master Plan 2039 has been prepared to be consistent with our obligations under this suite of airport related legislation, illustrated in **Figure 1-1**.

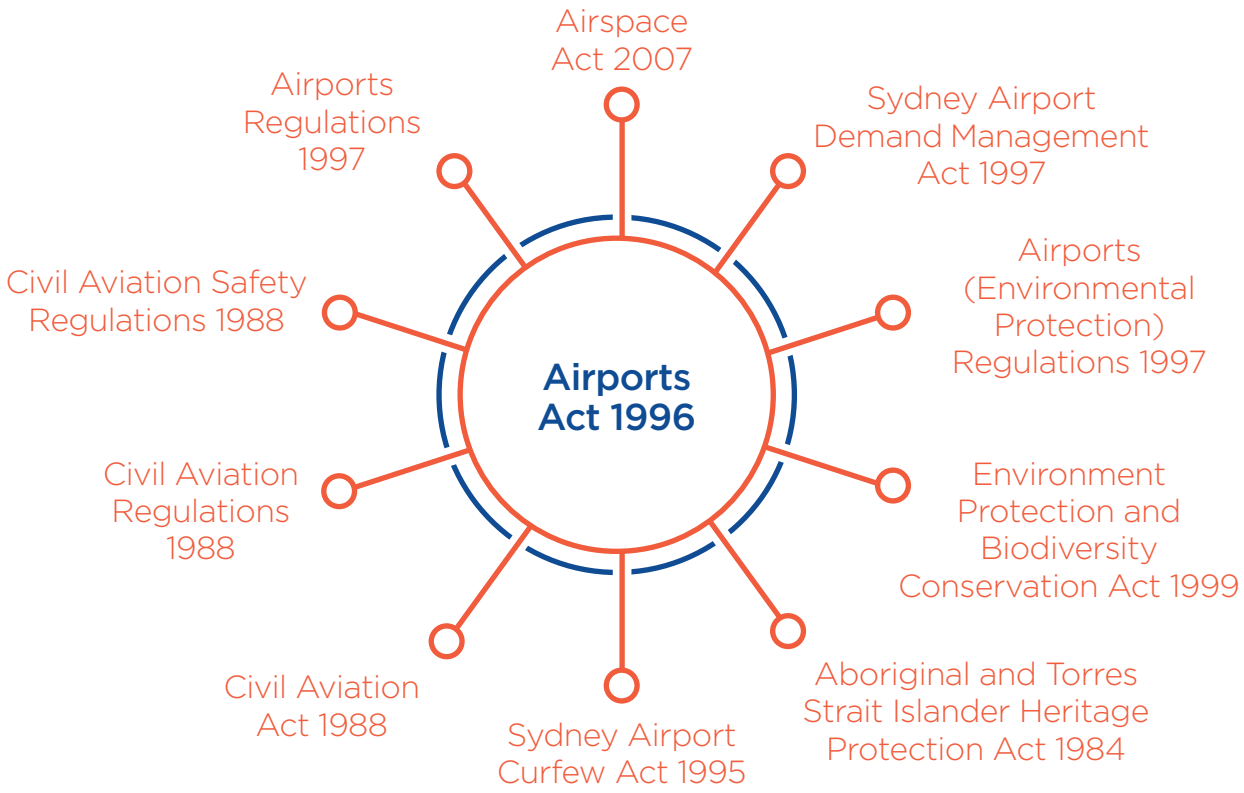


Figure 1-1: Commonwealth legislative framework

1.2.1 Requirements for an airport master plan

The Airports Act and associated Regulations are the statutory controls for ongoing regulation of development activities on Sydney Airport land (leased from the Australian Government), for both aeronautical and non-aeronautical purposes. The Department of Infrastructure, Regional Development and Cities (DIRDC) is responsible for administering the Airports Act and Regulations.

Section 70 of the Airports Act requires there to be a final master plan for the airport that has been approved by the Commonwealth Minister for Infrastructure and Transport (the Minister). A master plan is required to:

a. Establish the strategic direction for efficient and economic development at the airport over the planning period
See Chapter 2.0

b. Provide for the development of additional uses of the airport site
See Chapter 10.0

c. Indicate to the public the intended uses of the airport site
See Chapters 7.0, 12.0 and 13.0

d. 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
See Chapter 13.0

e. Ensure that operations at the airport are undertaken in accordance with relevant environmental legislation and standards
See Chapter 14.0 and Environment Strategy 2019-2024

f. Establish a framework for assessing compliance at the airport with relevant environmental legislation and standards
See Chapter 14.0 and Environment Strategy 2019-2024

g. Promote continual improvement of environmental management at the airport
See Chapter 14.0 and Environment Strategy 2019-2024

Master Plan 2039 has been prepared in accordance with these requirements, which are documented in detail in **Appendix D**.

1.3 Master Plan Process

The master planning process for airports is outlined in the Airports Act. This Master Plan 2039 has followed that process.

The Preliminary Draft Master Plan 2039 was on public exhibition for a period of 60 business days from Monday 27 August to Tuesday 20 November 2018. It was prepared following detailed technical and initial stakeholder engagement.

Following the public exhibition period, the Preliminary Draft Master Plan 2039 was amended, where appropriate, to produce the Draft Master Plan 2039. The Draft Master Plan 2039 was then submitted to the Minister for Infrastructure, Transport and Regional Development (the Minister) for approval.

The Minister approved the Draft Master Plan 2039 on 28 March 2019, at which point it became the final **Master Plan 2039**.

2.0 Vision for Sydney Airport

2.1 Vision

At Sydney Airport, our Vision is to deliver a world-class airport experience and foster the growth of aviation for the benefit of Sydney, NSW and Australia.

We are committed to responsible growth that delivers positive outcomes for our customers, investors and the community in which we operate. Master Plan 2039 outlines our 20-year plans to deliver our Vision.

Our development plans will enhance the passenger experience and efficiency of the airport, focus on safety and security, drive productivity, jobs and economic growth, and improve environmental outcomes, while being a good neighbour and making a positive contribution to our community.

Image 2-1: Sunset at Sydney Airport


B6 34L-16R

2.2 Objectives

Master Plan 2039 has been developed in accordance with the following objectives, to ensure that the Vision for Sydney Airport can be achieved over the 20-year planning period of Master Plan 2039. Planning for the airfield, airport infrastructure and the environment has been undertaken in accordance with these objectives.

Safety and Security

Enhance **safety** and **security** for users of the airport by:

- Safeguarding the airport's aviation operations
- Ensuring a safe and secure environment for passengers, employees and infrastructure

Community

Consider the interface with the **community** in planning, development and operations by:

- Engaging in an open and genuine manner
- Supporting the NSW and local economies in which the airport operates

Experience

Enhance the **experience** of all passengers and airport users:

- Arriving and departing landside at the airport, including at ground transport facilities, rail stations, terminal forecourts and commercial precincts
- Travelling through the terminals
- Through safety and security improvements

Ground Access

Improve **ground access** to, from and past the airport through:

- Innovative solutions to ground access
- Partnership with the Australian, NSW and local governments
- Supporting increased public and active transport use

Environmental Performance

Continue to improve **environmental performance** at the airport in order to:

- Reduce the carbon footprint of the airport
- Conserve items of natural, indigenous or heritage value
- Protect environmentally significant areas

Sustainability

Further embed **sustainability** into airport decision-making in order to:

- Minimise the impact on, and seek opportunities to enhance, the natural, constructed and social environments
- Reduce waste and promote sustainable use of energy, water and materials

Efficiency

Improve the **efficiency** of the airport through:

- Investments in terminal and airfield infrastructure
- Utilising new technology
- Optimal use of the airfield

Adaptability and Flexibility

Provide **adaptable** and **flexible** plans to accommodate aviation growth that:

- Meet forecast passenger growth
- Ensure responsible investments
- Are responsive to change

Capacity

Maximise the **capacity** of the airport to meet demand within existing operational restrictions including:

- 80 movements per hour
- Curfew from 11pm to 6am
- Access arrangements for regional airlines
- Long Term Operating Plan (LTOP)

Generate Benefit and Value for the Economy

Stimulate leisure and business travel to **generate benefit and value for the economy**

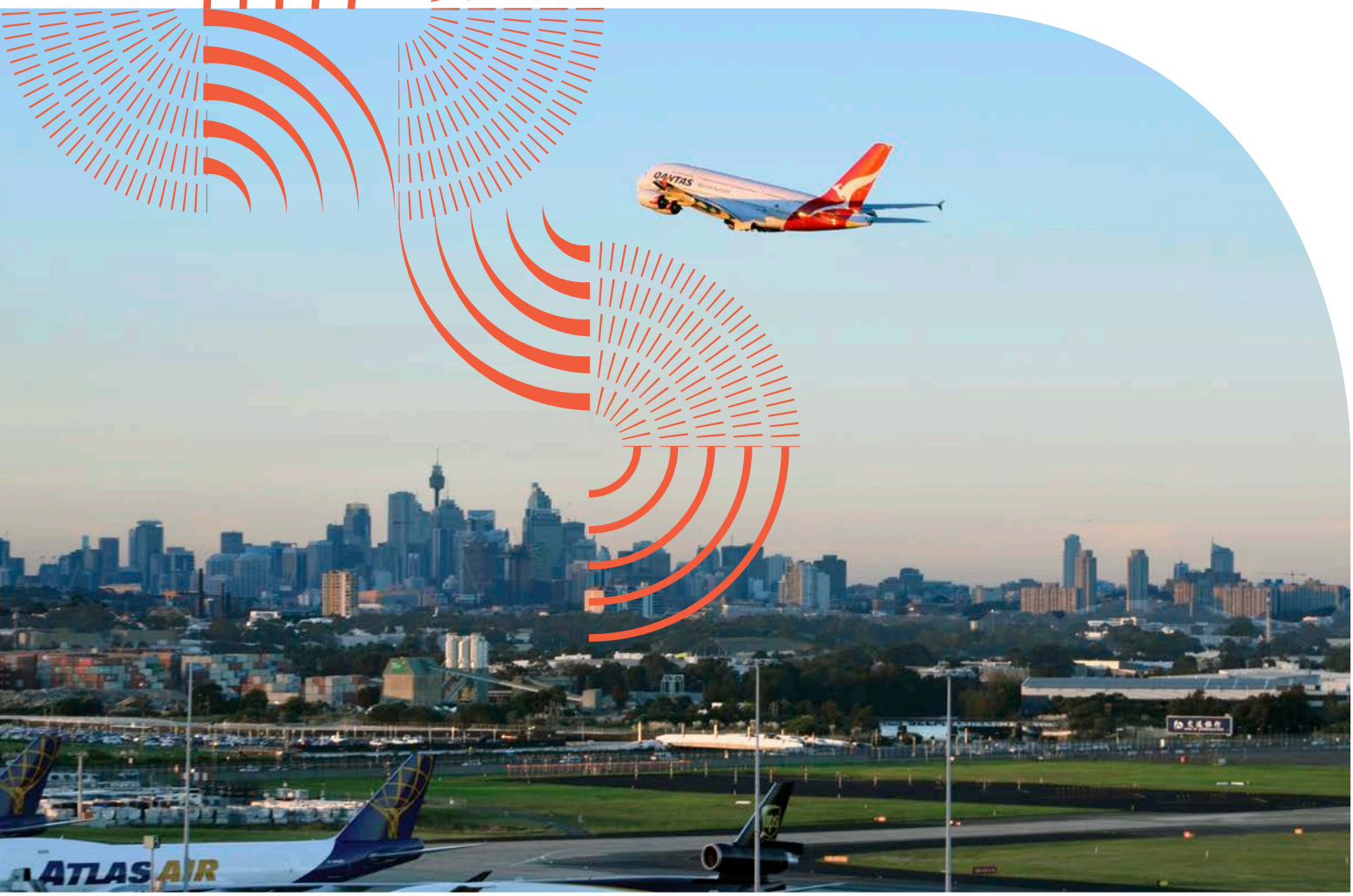
- Facilitate the activities of businesses operating at the airport
- Contribute to the growth of tourism, trade and jobs in the NSW and Australian economies

Compete Internationally

Create an airport that is able to **compete internationally** to capture aviation demand

- Deliver efficient infrastructure capacity and facilities to service new and existing international markets
- Continue to innovate and create a world class experience for our customers

3.0 Strategic Context and Economic Significance



3.1 Overview

Sydney Airport is one of Australia's most important infrastructure assets. It is our international gateway and an essential part of our transportation network connecting Sydney to over 100 regional, national and international destinations.

As the gateway to Australia, Sydney Airport connects people, places and communities every day. It is located eight kilometres south of the Sydney Central Business District (CBD), and less than 10 kilometres from Sydney Harbour and major tourist destinations.

Sydney Airport serves passengers travelling to or from Sydney and is Australia's largest transport and logistics hub. 43 international airlines and seven domestic and regional airlines operate from Sydney Airport to 54 international and 49 domestic destinations.

Surrounding the airport is a network of residential, light industrial and airport related businesses that rely on or support the airport, such as freight and logistics, catering, engineering, vehicle rental and accommodation.

The significant benefits of aviation to Sydney, NSW and Australia are well established, and are recognised by all levels of government. Direct and indirect activity at Sydney Airport contributes significantly to the NSW and Australian economy, and generates almost 340,000 jobs. Nearly 31,000 jobs are located at the airport itself, with many of these undertaken by people living in surrounding areas.

3.2 Key Points

43.3 million passengers

Passed through Sydney Airport's terminals in 2017

348,520

Total Aircraft movements in 2017

907 hectares adjacent to Botany Bay

Sydney Airport has been the site of aviation activities since the early 1900s

Sydney Airport generates and facilitates (directly and indirectly):

$38 billion in economic activity

6.8% of the NSW economy

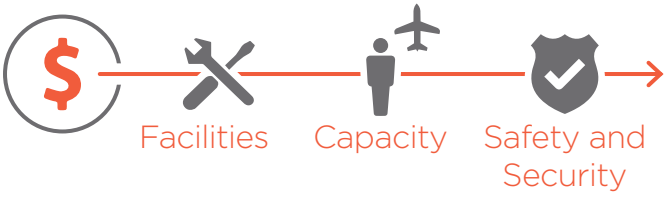
338,500 jobs

30,900 jobs on-airport

$17.6 billion

freight exports annually

More than $4.3 billion invested since 2002



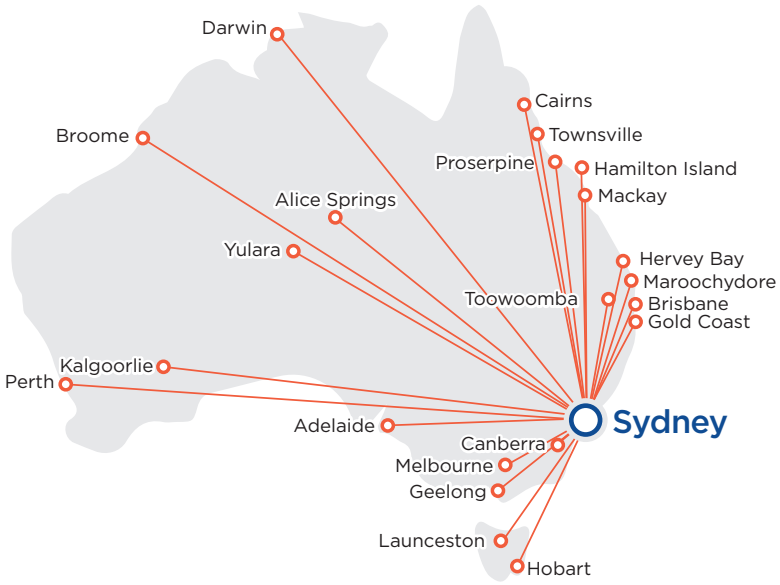
Destinations

Over 50 international, domestic and regional airlines serve 27 countries and over 100 destinations from Sydney Airport.

International

Figure 3-1: Destinations serviced by Sydney Airport

National



Regional

3.3 Sydney Airport Today

3.3.1 Airport context

The Sydney Airport site comprises 907 hectares of land in Mascot adjacent to Botany Bay. Seven hectares is owned by Sydney Airport and the remaining 900 hectares is leased from the Australian Government and subject to the Airports Act.

The location of the airport site, in the context of its locality and existing facilities, is shown on **Map 7**.

A legislated curfew is in place at Sydney Airport to manage night time noise impacts on surrounding urban areas. Aviation operations are restricted between the hours of 11pm and 6am. The LTOP for Sydney Airport also facilitates 'noise sharing' in areas surrounding the airport.

There are also restrictions on the number of aircraft movements per hour (capped at 80 movements). This artificially limits aviation activity at Sydney Airport.

Sydney Airport has undergone continual upgrades and expansions to both its aviation and non-aviation facilities to meet changing and growing demands. Previous master plans have provided a clear understanding of these demands and a framework for upgrades and expansions.

Master Plan 2033 provided a sound basis for the planning needs of Sydney Airport. Master Plan 2039 builds upon this framework and reflects changes to the operating environment for the airport, in particular:

- Changes in travel and tourism globally
- The Australian Government's commitment to build the Western Sydney Airport
- Changes to ground access arrangements for Sydney Airport through improvements to the external road network already undertaken or proposed by the NSW Government

Appendix C provides a detailed breakdown of existing facilities at Sydney Airport.


Map 7: Existing facilities at Sydney Airport
N
Illawarra Road
Marrickville Station
Sydenham Station
Unwins Bridge Road
SYDNEY
O'Riordan Street
Canal Road
INNER WEST
Gardeners Road
Mascot Station
CANTERBURY-BANKSTOWN
Tempe Station
Princes Highway
Qantas Drive
Airport Drive
Wolli Creek Interchange Station
Joyce Drive
T3
T2
T1
Wentworth Avenue
Marsh Street
Arncliffe Station
COOKS RIVER
Southern Cross Drive
07/25 RUNWAY
M5 East Freeway
BAYSIDE
Bestic Street
Foreshore Road
Botany Road
West Botany Street
General Holmes Drive
BAYSIDE
16R/34L RUNWAY
16L/34R RUNWAY
BOTANY BAY
Bay Street
President Avenue
Grand Parade
Legend
Sydney Airport Boundary
Sydney Airport Freehold Land
LGA Boundary
Existing Road
Sydney Rail Network
Train Station
Passenger Facility
Freight Facility
Terminal/ Precinct Buildings
Ground Transport Facility
Existing Runways
Existing Taxiways/Aprons
0
0.5
1 km

3.3.2 Airport locality

Sydney Airport, Port Botany and surrounding areas are significant trading gateways for Australia providing large freight, business and tourism services. This locality includes a substantial amount of industrial land that is critical to providing support services to all the operations at Sydney Airport, particularly:

- Commercial and logistics uses in Tempe, St Peters, Mascot and Alexandria to the north
- Heavy industrial and petrochemical uses in Botany, Port Botany and Banksmeadow to the south east

Port Botany is NSW's primary port for bulk containers, bulk liquids and gas. Container volumes through Port Botany are expected to grow from 2.3 million twenty-foot equivalent units (TEU) in 2015 to between 5.3 million and 6.6 million TEUs by 2035. Bulk liquid and gas volumes through Port Botany are expected to grow from 4.7 million kilolitres in 2015 to between 6.7 million and 7.7 million kilolitres in 2035.

The closest residential areas around the airport site include:

- Kyeemagh to the south west
- Wolli Creek and Tempe to the north west
- Mascot to the north east
- Botany to the south east

In recent years there has been significant mixed use and residential development in the areas around the Mascot and Wolli Creek town centres.

Sydney Airport is connected to the Sydney CBD by rail and the M1 Motorway. The M1 Motorway traverses the airport site in a tunnel underneath the main runway, connecting to the M5 East Motorway just to the east of the airport boundary.

The WestConnex Motorway will link the M4 and M5 East motorways with Sydney Airport and Port Botany. WestConnex is being built in stages with the final stage (M4-M5 Link) expected to be open to traffic in 2023.

WestConnex will provide a new surface interchange at St Peters, around two kilometres to the north of Sydney Airport. From St Peters, Sydney Gateway will pass through Sydney Airport land to the north of the airport and create direct motorway access to the T1 and T2/T3 precincts. In addition, the entrance to the T2/T3 precinct will be significantly enhanced by a new dedicated flyover from Qantas Drive to the front door of the terminals. The project will be delivered by NSW Roads and Maritime (Roads and Maritime) and Sydney Airport is working closely with Roads and Maritime and rail authorities on all aspects of the project planning.

The NSW Government recently increased the number of train services to Sydney Airport. Upgrades to the power supply and safety aspects of the rail line will allow for services to be increased to up to 16 services per hour and, with further changes (such as the opening of the new Sydney Metro City and South West project in 2025), a total of 20 services per hour through the Airport line will be possible.

The NSW Government has also announced new and expanded bus services to the airport subject to completion of the Ground Transport Interchange in the T2/T3 precinct.

In its *Future Transport Strategy 2056*, the NSW Government has also indicated further high capacity 'turn-up-and-go' services through Sydney Airport.

Sydney Airport is also connected to surrounding areas and beyond by a network of bike routes and public footpaths.

3.4 Greater Sydney Context

Sydney Airport serves the Greater Sydney Region as its primary airport and is a significant contributor to economic activity. The NSW Government has recognised the importance of the airport in its planning strategies for Greater Sydney.

3.4.1 Greater Sydney Region Plan

The *Greater Sydney Region Plan: A Metropolis of Three Cities,* was finalised by the Greater Sydney Commission (GSC) in March 2018. The Greater Sydney Region Plan provides:

- A vision for the Sydney's future over the next 40 years (to 2056)
- A plan for the next 20 years to manage growth and change

It is focussed around the key areas of infrastructure and collaboration, liveability, productivity and sustainability.

The Greater Sydney Region Plan is built on a vision of three cities where most residents of Greater Sydney live within 30 minutes of their jobs, education and health facilities, services and great places. The three cities are:

- Eastern Harbour City, focussed around the Sydney CBD (and includes Sydney Airport)
- Central River City, focussed around Parramatta
- Western Parkland City, focussed around the future Western Sydney Airport

The three cities approach seeks to deliver a more productive region by supporting opportunities for investment, business and jobs growth, increased economic diversity, more internationally competitive industry sectors, and rebalancing the region's eastern economic focus so that all three cities will benefit from planned growth.

Sydney Airport and Port Botany in particular are identified as international trade gateways for the region. Protection of the operations of these gateways, including minimising land use conflicts and protecting flight paths, are key issues identified in the Greater Sydney Region Plan.

The future growth of Sydney Airport aligns with the Greater Sydney Region Plan, which recognises the airport's significant contribution to Sydney and the nation's future economic growth and prosperity.

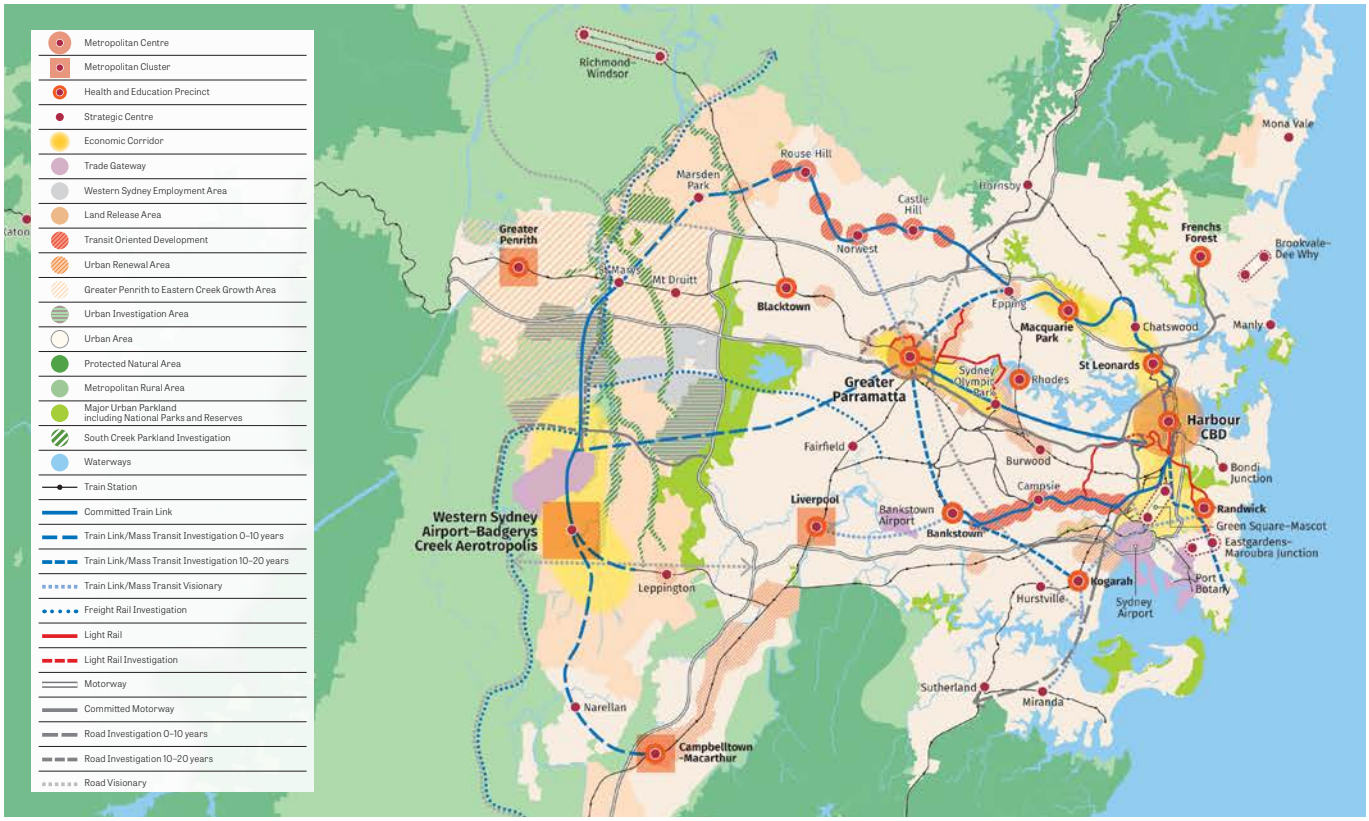


Figure 3-2: A Metropolis of Three Cities, Vision to 2056 – Connectivity
Source: Greater Sydney Regional Plan, 2018

3.4.2 Eastern City District Plan

To support the Greater Sydney Region Plan, five district plans have been finalised by the GSC. The district plans are guides for implementing the Greater Sydney Region Plan at a district level over the next 20 years, linking regional and local planning.

The Eastern City District Plan contains planning priorities and actions covering:

- Infrastructure and collaboration
- Liveability (including housing supply)
- Productivity (including jobs growth)
- Sustainability
- Implementation

The planning priorities in the Eastern City District Plan that relate to Sydney Airport include:

- Planning Priority E9: Growing international trade gateways – providing for a competitive and efficient freight and logistics network for both Sydney Airport and Port Botany
- Planning Priority E12: Retaining and managing industrial and urban services land – to ensure that industrial and urban services land is planned, retained and managed appropriately, which includes accommodating freight and logistics services
- Planning Priority E14: Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways – this includes Botany Bay and the Cooks River, to contribute to the provision of green infrastructure to cool and green the district, as well as supporting coastal, marine and groundwater dependent ecosystems

Sydney Airport is identified as a major freight, business and tourism gateway not just for the Greater Sydney Region but also nationally. The Eastern City District Plan seeks to support the long term future of Sydney Airport and Port Botany as international trade gateways.

Partly, this is proposed through support of nearby industrial precincts and their essential transport connections, and by providing for growth through appropriate land use zoning on these sites and adjoining lands. The Eastern City District Plan also provides direction to control land use outside of the airport to ensure its ongoing operation.

Within the next five years, local government authorities surrounding the airport will be reviewing and amending their local environmental plans to ensure consistency with the Eastern City District Plan.

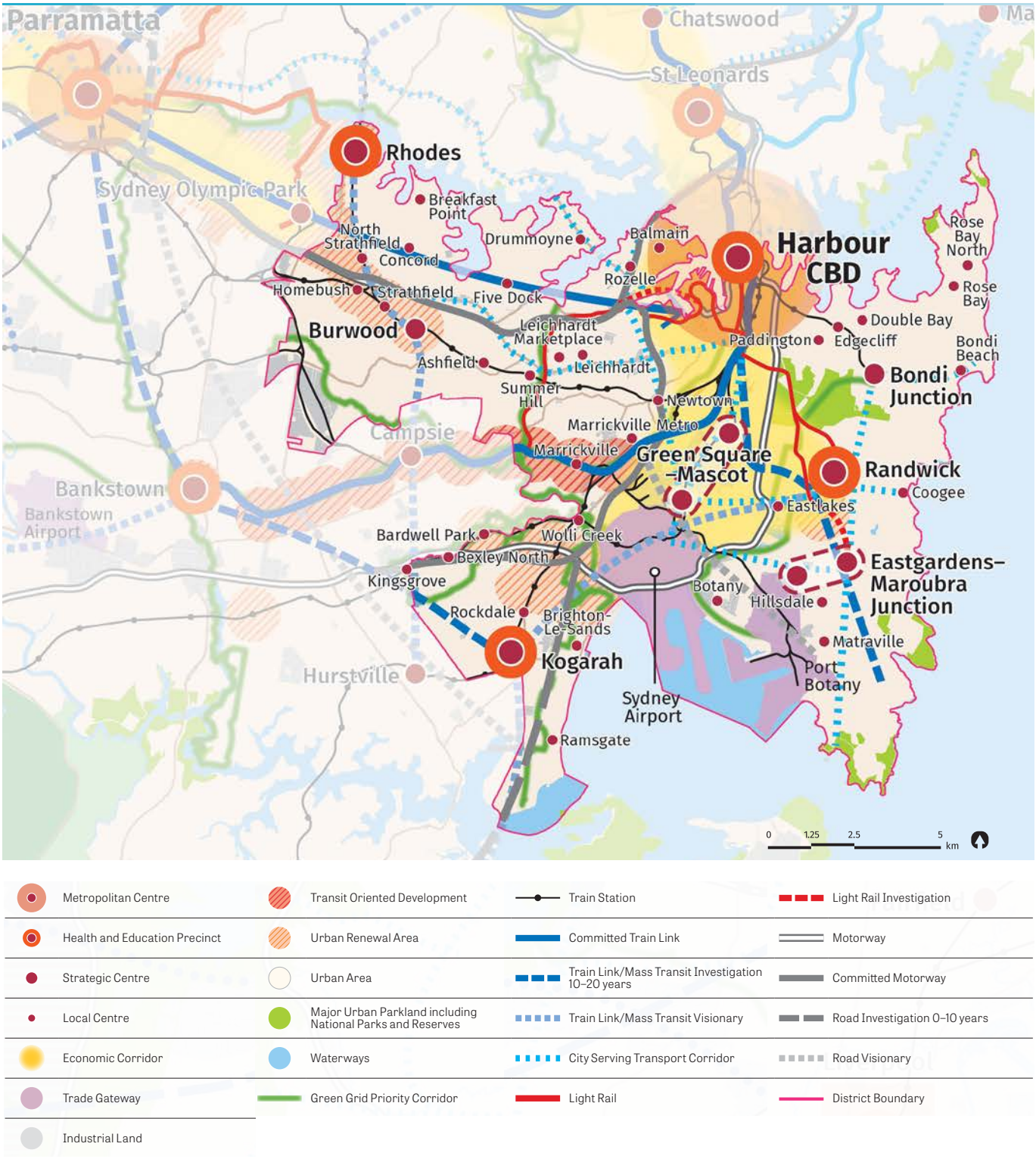


Figure 3-3: Structure Plan for the Eastern City District

Source: Eastern District Plan, 2018

3.4.3 Future Transport Strategy 2056

The NSW Government Future Transport Strategy 2056 (Future Transport 2056), released in March 2018, provides an update of 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 Paramatta, and Western Sydney Airport.

Future Transport 2056 also identifies a strategic freight network for Greater Sydney consisting of 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 Sydney Airport, Future Transport 2056 recognises:

- Key transport initiatives for investigation over the next 10 years, including Sydney Airport road upgrades and the More Trains, More Services program
- The importance of a world-class travel experience for visitors, and proposes improved public transport connections to arrival and departure points such as airports and cruise terminals
- 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

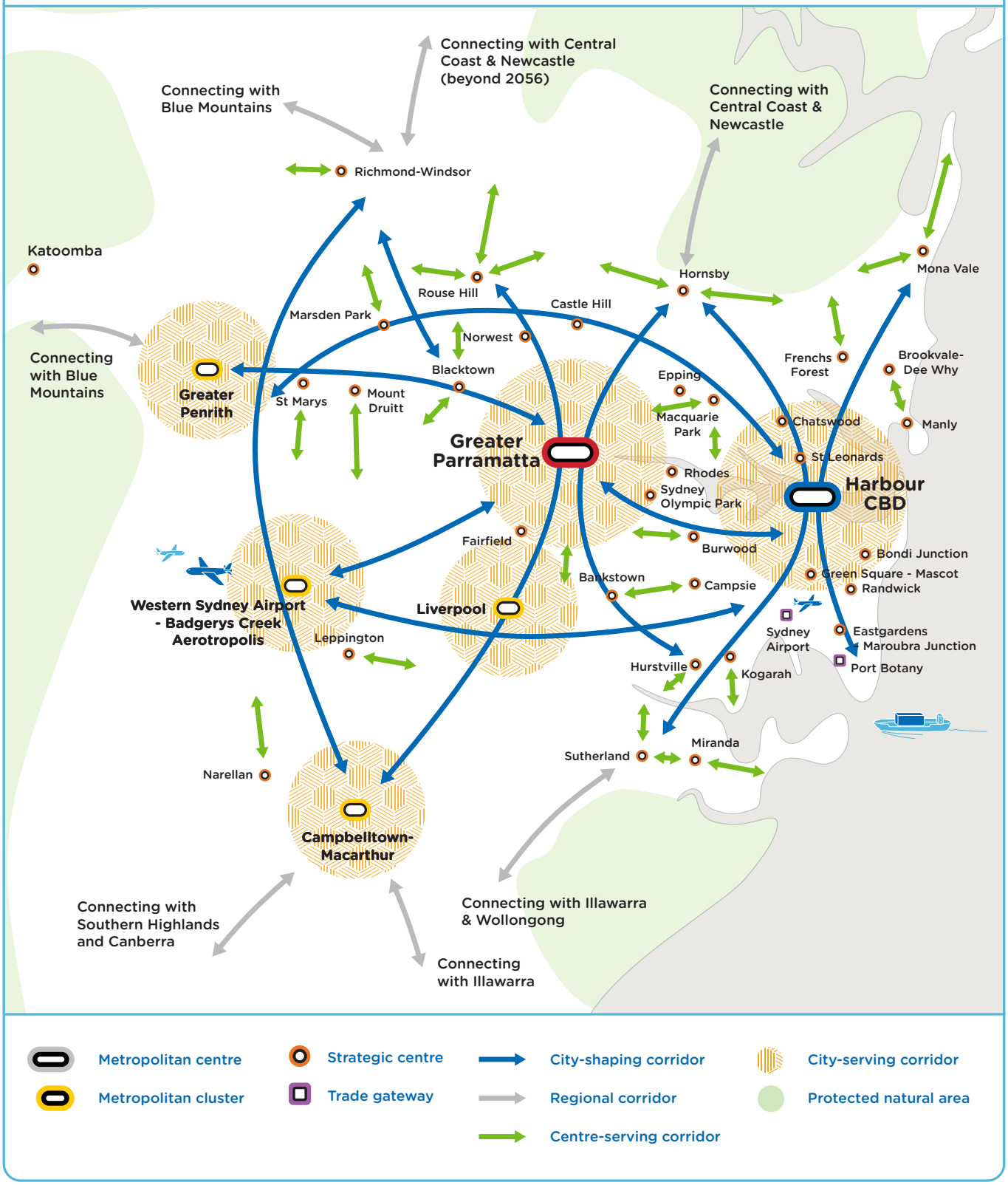


Figure 3-4: Greater Sydney Strategic Corridors

Source: Future Transport Strategy 2056, 2018

3.4.4 Visitor Economy Industry Action Plan 2030

The NSW Government, in August 2018, released the Visitor Economy Industry Action Plan 2030 (VEIAP 2030), which sets the direction for the NSW visitor economy for the next decade.

The VEIAP 2030 identifies that Sydney's reputation as a global city is key to growing the visitor economy in NSW.

To drive growth in the visitor economy, VEIAP 2030 recognises the need to closely track emerging markets to anticipate and respond to visitor needs. It recognises that the Indian market represents a significant growth opportunity for Sydney and regional NSW, along with continued growth in the China visitor market. To help deliver such growth, it recognises that the NSW Government will invest in new ways to support the visitor economy, including in:

- Innovation and emerging sectors
- A statewide Destination Management Plan
- Critical infrastructure
- Improved wayfinding and digital access to information

Focus 05 of VEIAP 2030 states that investing in critical infrastructure, future planning and better ways to do business will ensure the continued growth and future prosperity of the NSW visitor economy. Relevant to Sydney Airport, VEIAP 2030 has recommended that the NSW Government accelerate work with the Australian Government to:

- Address artificial capacity constraints at Sydney Airport, such as the movement cap and shoulder curfew
- Have regional slots not counted within the movement cap

3.4.5 NSW Freight and Ports Plan 2018-2023

The NSW Government has prepared the NSW Freight and Ports Plan 2018-2023 (Freight and Ports Plan) to facilitate collaboration between government and industry on clear initiatives and targets to plan for freight growth, improve efficiency and safety.

The Freight and Ports Plan is a supporting plan to Future Transport Plan 2056. It has been developed around four key objectives:

- Drive economic growth – by delivering more than $5 billion worth of infrastructure
- Increase efficiency, connectivity and access
- Deliver greater capacity by investing and enabling regional growth
- Improve safety and sustainability by doing more together

The Freight and Ports Plan recognises that the NSW freight network is made up of ports, shipping channels, airports, prescribed airspace, roads, rail lines, pipelines, intermodal terminals and freight-related precincts.

In relation to airports, the Freight and Ports Plan recognises that most air freight (about 80 per cent) is carried in the hold of passenger planes, with the remainder being transported by dedicated freight aircraft. To support the growth in air freight, it recognises that a number of constraints will need to be addressed, including:

- Congestion on the road network around Sydney Airport
- Curfew restrictions which currently limit the type of aircraft permitted to operate overnight freight services to older and smaller aircraft (when larger more modern aircraft may meet desired noise standards)

The Freight and Ports Plan identifies the benefits of creating a freight precinct at Western Sydney Airport and advocates for an "... outcomes-based approach to managing noise emissions from freight aircraft operating in the Sydney Airport curfew period."

It also identifies the need for road and rail freight infrastructure improvements, including road upgrades around Sydney Airport and the proposed Sydney Gateway, linking WestConnex at St Peters Interchange and the Sydney Airport and Port Botany precinct.

Additionally, the Freight and Ports Plan seeks to protect land needed for freight and logistics uses and infrastructure. It highlights that a key action of the NSW Government is to ensure that freight and logistics land and corridors are identified and protected from sensitive land uses, including land around important trade gateways such as Sydney Airport.

3.5 Economic Contribution of Sydney Airport

Sydney Airport is Australia's largest transport and logistics hub. Some 43 international, seven domestic and regional airlines operate from Sydney Airport to over 100 destinations, including 11 international and eight regional destinations not served by any other Australian airport. Large numbers of passengers and significant volumes of freight are transported through the airport every day.

Substantial investments by airlines and other businesses in the region surrounding the airport, and the presence of established route networks, provide invaluable strategic economic and commercial advantages to Sydney and NSW.

Sustainable growth of the airport is critical to achieving the NSW Government's targets for visitor growth and employment in local government areas close to the airport. For example, a typical daily international service contributes an estimated $122 million a year to the NSW economy and generates an estimated 1,300 direct and indirect jobs in the state. This is even greater for each daily A380 service from China, which is estimated to generate more than 5,200 direct and indirect jobs and contributes an average of $470 million a year to the Australian economy.

Airports need to plan and invest for the long term in the context of changing airline strategies and business needs, new operational and security requirements, and evolving technology.

Over $4.3 billion of investments and other initiatives at Sydney Airport since 2002 have helped to improve service levels, enhance safety and security, deliver environmental improvements and increase aviation capacity to meet demand.

The Airport Development Plan in Master Plan 2039 will ensure that Sydney Airport can be responsive and flexible in the development and use of its facilities to accommodate an ever-changing landscape of airlines and associated passenger services.

Image 3-1: Sydney Airport team during Airport Safety Week

3.5.1 Located at the heart of tourism and trade

International trade and international air routes are vital to Australia's continued economic prosperity. Airports are an essential part of the transport networks that all successful modern economies rely on.

Sydney Airport provides an extensive breadth of transport interconnectivity within the Sydney region.

In addition to providing NSW residents with the opportunity to travel, whether for business or leisure, the airport also:

- Delivers convenience for business visitors to Sydney, with the CBD just eight kilometres away
- Delivers convenience for tourists to Sydney, with major tourist destinations including Sydney Harbour and Bondi Beach within 10 kilometres of the airport
- Serves as a hub for travel between regional NSW, other Australian cities and the world
- Provides an interchange between air, sea and land freight, enabling high value and/or time critical exports and imports
- Serves as an air freight hub for NSW

The success of business and tourism for Sydney, NSW, Australia and Sydney Airport are interdependent. Sydney Airport's location is a significant strategic advantage for Sydney and NSW when competing with other Australian and overseas cities. The airport's substantial route network includes:

- 54 international destinations
- 49 domestic and regional destinations

Sydney's status as Australia's pre-eminent global city, in turn, supports the route network at Sydney Airport and the development of the airport and related businesses. The availability of direct flights to a wide network of destinations also significantly strengthens the competitiveness of the Sydney tourism industry.

The partnership between Sydney Airport and Destination NSW, the lead government agency for the NSW tourism and major events sectors, is actively working to boost tourism, attract new airlines and increase airline services to Sydney, in support of the NSW Government's target to double overnight visitor expenditure between 2012 and 2020.

Sydney Airport and Tourism Australia are also working together to promote tourism to Australia, in line with Australian Government targets.

Image 3-2: Vivid Sydney lights up Sydney Harbour

3.5.2 A key source of jobs and income

The most prominent on-airport operations are the domestic and international passenger airlines' activities, including catering, baggage handling and aircraft maintenance and refuelling. However, the majority of businesses generating economic activity at Sydney Airport are not directly involved in regular passenger transport aviation. These businesses include:

- Onsite retail, such as news agencies, fashion and duty-free stores
- Precinct hospitality, including accommodation and on-site food and beverage options
- Ground transport, including terminal shuttle buses, rail, taxi and rideshare services
- Security
- Australian Government services, including customs, Australian Federal Police and quarantine
- Dedicated freight and logistics businesses
- Other corporate/office-based businesses

A breakdown of the sectors where jobs currently exists at Sydney Airport is included in the table below:

Table 3-1: Employment breakdown at Sydney Airport by sector

Area	Employment Proportion
Transport and storage	63%
Construction	8%
Retail, cafes and accommodation	9%
Government services	7%
Property and business services	5%
Maintenance, cleaning and engineering services	2%

A 2017 study by Deloitte Access Economics into the economic contribution of Sydney Airport quantified the benefits of these activities. Key findings of the study included that Sydney Airport generates or facilitates (directly and indirectly):

- 338,500 jobs (equivalent to 10.1 percent of NSW employment), 30,900 of which are at the airport (an increase of more than 1,800 since 2014)
- $38.0 billion in economic activity, an increase of $7.2 billion since 2014. This is equivalent to 6.8 percent of the NSW economy and 2.2 percent of the Australian economy
- Household income of $19.9 billion, an increase of $5.2 billion since 2014. Additionally, at $85,400 a year, the average full-time equivalent wage of an employee working at Sydney Airport is 12 percent higher than the NSW average wage
- Taxes, including:
  - Substantial income tax and GST revenues to the Australian Government
  - Substantial payroll taxes to the NSW Government
  - Annual contributions, in lieu of rates, to Bayside and Inner West Councils

Modelling used in the study also indicated that Sydney Airport's economic contribution will increase significantly as the airport continues to develop. The forecast for economic activity generated or facilitated by Sydney Airport is an increase from $38.0 billion in 2017 to over $52.6 billion in 2039; total employment will increase from 338,500 jobs in 2017 to 414,600 by 2039.

This study highlights that a relatively small development at Sydney Airport can have a potentially large economic impact on both the NSW and Australian economies. In addition, the study highlights the significance of Sydney Airport within the local community. It is estimated that there are more than 800 businesses operating on Sydney Airport, employing significant numbers of people living close to the airport.

3.5.3 Connecting regional NSW

We recognise the importance of the regional network servicing 25 communities across NSW. This regional network also helps support the development of the international network at Sydney Airport.

Since 2002, when the airport was privatised, regional traffic has grown at Sydney Airport with a 54 percent increase in passenger numbers.

We are proud of the service we provide to regional communities. This includes an extensive route network during the peak hours, facilitating connectivity with international and domestic routes. Sydney Airport's 25 regional routes have an average of six movements each during the peak hours.

With the exception of two routes – Lord Howe Island and Cooma – all regional routes are well served in the morning and afternoon peak periods.

Continued access for regional services in these peak periods is mandated by Australian Government policy and supported by slot allocation rules. Master Plan 2039 assumes that the existing rules guaranteeing access to Sydney Airport by regional airlines will remain unchanged throughout the planning period.

We also offer lower airport charges than almost all other airports in the Sydney regional route network.

Sydney Airport has seen growth in regional demand matched by airlines up-gauging to larger aircraft. Regional aircraft have increased in size more quickly than any other market segment, and the increase in aircraft size has both responded to and promoted passenger growth.

With continued increases in regional aircraft size, Sydney Airport will be able to accommodate passenger demand for regional air travel in the future.

Image 3-3: Planes of one of Sydney Airport's regional carriers, Rex

3.6 Western Sydney Airport

Demand for aviation services in Sydney is forecast to double over the next 20 years and will continue to grow (see **Chapter 6.0 Air Traffic Forecasts**). The Australian Government has committed to building a new Western Sydney Airport approximately 50 kilometres from the Sydney CBD at Badgerys Creek.

Western Sydney Airport is proposed to be developed in stages in response to passenger demand. It is proposed to be a full-service airport, catering for all types of domestic and international passenger and freight services.

WSA Co, a new Government-owned company, has been established to build the airport, which is anticipated to open in late 2026. Western Sydney Airport will have a single runway around 3.7 kilometres in length and terminal capacity to cater for up to 10 million passengers a year. Stage 1 of the airport will include terminal and runway areas, as well as cargo facilities and dedicated maintenance areas.

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 has been prepared for consultation with the community and industry.

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.

4.0 Sustainability

4.1 Overview

At Sydney Airport, our ambition is to be an industry leader in sustainability, driving responsible growth that balances social and environmental needs with corporate objectives. Central to realising this aim is Master Plan 2039, which embeds the Sydney Airport Sustainability Policy and Sustainability Strategy commitments into planning and design for future Sydney Airport expansions.

Master Plan 2039 considers existing and anticipated environmental and sustainability performance, and Local, District and State plans and priorities, to adopt resilient options that meet the needs of current and future airport stakeholders.

We have embedded our approach to sustainability across our development plans. We have achieved a 4-Star Communities rating for Master Plan 2039 under the Green Building Council of Australia (GBCA) Green Star Communities rating. Rating criteria have been integrated into Master Plan 2039 to drive sustainability in airport planning.

Master Plan 2039 is the first step towards meeting our sustainability ambitions, and will inform future proposed designs, construction activities and operations.

Image 4-1: The Sydney Airport community taking part in Clean Up Australia Day at Lady Robinson's Beach

4.2 Key Points

- We are committed to taking a sustainable approach to managing future growth at Sydney Airport
- Our approach to sustainability is categorised into three broad themes:

Responsible business

Being ethical, responsible and transparent in how we do business

Planning for the future

Delivering operational excellence through innovative, technology based solutions and supporting our customers' needs now and into the future

Supporting our community

Working with our communities to protect the environment and create shared value

- We have made significant progress in the sustainability performance of Sydney Airport in the areas of:
  - Climate change and carbon neutrality
  - Resource use
  - Waste and resource recovery
  - Community and stakeholders
  - Safety and security
  - Resilience
- Proposed development initiatives have been prioritised based on their relevance to our sustainability principles contained in our Sustainability Strategy
- We have achieved a 4-Star Communities rating for Master Plan 2039 under the GBCA
- Green Star Communities requires recertification every five years, which aligns with the requirement to review airport master plans under the Airports Act

4.3 Sustainability at Sydney Airport

We are committed to responsible growth that delivers positive outcomes for our customers, investors and the community in which we operate.

As Sydney's population continues to grow towards eight million people by the middle of the century, the pressures on the airport will also increase. Recognising that a responsible approach can generate value and positive outcomes for all stakeholders, we are committed to taking a sustainable approach to managing the future growth of the airport.

4.3.1 Sustainability Policy

Sydney Airport issued its first Sustainability Policy in 2016. The policy is updated periodically and can be found at https://www.sydneyairport.com/corporate/sustainability/investor-sustainability/reporting-and-performance. The Policy provides the following commitments:

1. *At Sydney Airport, our vision is to deliver a world-class airport experience and foster the growth of aviation for the benefit of Sydney, NSW and Australia. In doing this we are committed to delivering responsible growth that balances social and environmental needs with corporate objectives. As an airport operator, we aim to be recognised as a leader in sustainability.*
2. *We recognise that a responsible approach can generate value for both our business and our stakeholders and is vital to our long-term success. As such, we are committed to making sustainability central to our business strategy and underpinning everything we do.*

Image 4-2: Sydney Airport supports Surf Life Saving Sydney across 15 beaches in Sydney

4.3.2 Sustainability Strategy

Sydney Airport formulates sustainability strategies to underpin our strategic vision and to ensure a continued positive impact on people, customers and neighbours. A set of sustainability principles was developed to address the issues that are most material to our organisation and our stakeholders.

Key to our Sustainability Strategy is the commitment to action and the measurement and demonstration of improvement against sustainability indicators.

These commitments are broad ranging and have impacts across both planning and operations.

Master Plan 2039 provides us with the opportunity to progress a number of these commitments into the next development phase. It has drawn from the commitments within the annual Sustainability Report and integrated appropriate actions relevant to the planning process.

Community

Making a positive contribution to the communities in which we operate

Innovation and technology

Fostering an innovation culture, approaching things differently and using technology to deliver better outcomes

Customer experience

Working with our employees, airport users, business partners and other stakeholders to deliver an enhanced customer experience

Governance and reporting

Establishing systems to ensure sustainability is embedded into the way we do business and how we report on our performance to our stakeholders

Environmental efficiency

Improving energy and water efficiency and reducing carbon intensity

Climate change

Building resilience and adapting to the physical impacts associated with climate change

Skills, training and employment

Attracting and retaining the right people and investing in their growth and development

Inclusion and diversity

Creating an inclusive and diverse airport work environment

Materials and supply chain

Sourcing responsible materials and managing the social and environmental impact of our procurement decisions

Health and wellbeing

Promoting a healthy workforce to support the physical and emotional wellbeing of our people and the airport community

Safety and security

Ensuring the safety and security of the airport community

Waste

Minimising waste going to landfill

4.3.3 Annual Sustainability Report

The *Sydney Airport Sustainability Report 2017* https://www.sydneyairport.com/corporate/sustainability/investor-sustainability/reporting-and-performance provides an update on our approach to sustainability at Sydney Airport. We recognise that in order to deliver a world class airport, Sydney Airport needs to be a sustainable business.

As part of our approach, we have given consideration to the United Nations' Sustainable Development Goals (SDGs), and the role we can play to address some of the significant challenges facing our world today. We identified nine SDGs as being relevant to our overall vision and strategy and in areas that we feel can make a positive impact. More information on how we have supported each of these SDGs can be found in our annual Sustainability Report.

Figure 4-1: United Nations' Sustainable Development Goals relevant to Sydney Airport

4.3.4 Governance

We have developed a Governance Framework for Sydney Airport to guide the direction of sustainability at the airport and to outline the roles and responsibilities for decision making and delivery. This Governance Framework, which is reviewed on a regular basis, will ensure the successful and sustainable delivery of future developments outlined in Master Plan 2039.

Further details on the Governance Framework can be found in our annual Sustainability Report.

4.3.5 Resilience

At Sydney Airport, we recognise the importance of building resilience into existing and future developments and operations. Master Plan 2039 uses current and forecast trends to anticipate and respond to shifting operational needs and predicted environmental and social impacts, including anticipated impacts of climate change.

Our Airport Development Plan incorporates the flexibility to adapt to changing circumstances, providing resilience for the airport and aviation operations. We have committed to considering and reporting on climate risk in accordance with the Task Force on Climate-related Financial Disclosures framework.

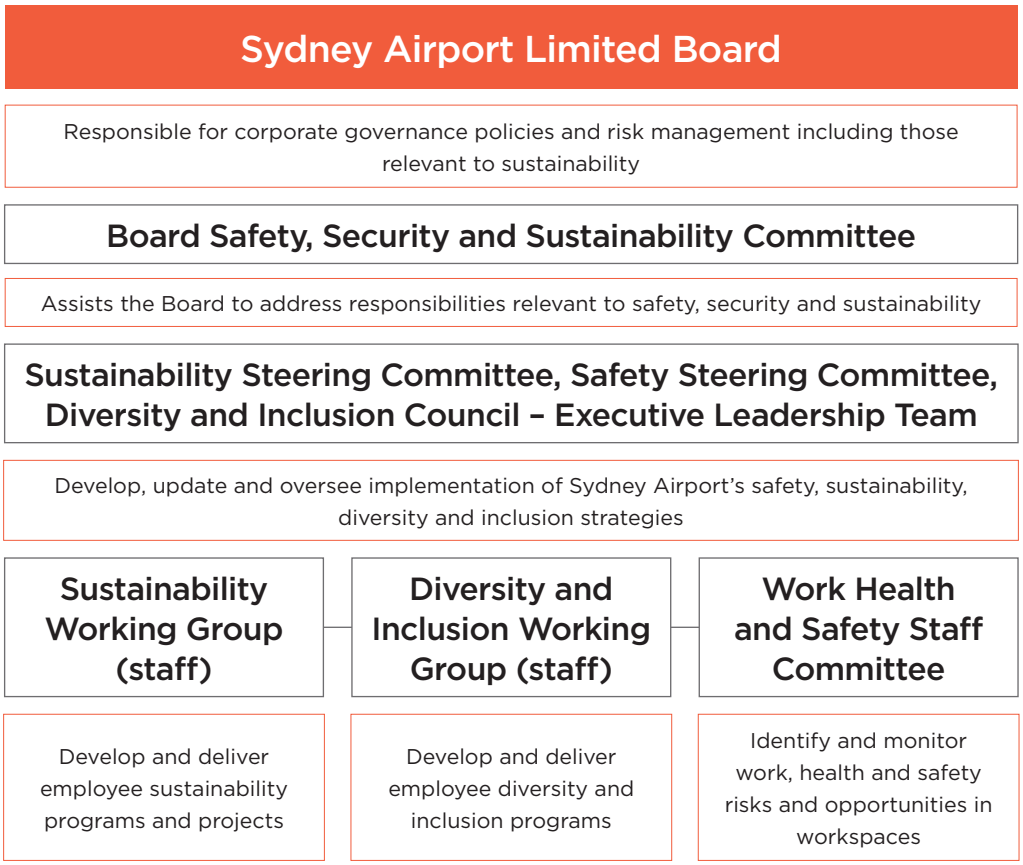


Figure 4-2: Sydney Airport Governance Framework

4.4 Recent Sustainability Achievements

Since the publication of Master Plan 2033, significant progress has been made in the sustainability performance of Sydney Airport.

Recent achievements are summarised in .

A full list of achievements and further details can be found in our annual Sustainability Report. Other measures specific to environmental management are outlined in **Chapter 14.0 Environment** and **Environment Strategy 2019-2024**.

Table 4-1: Summary of recent sustainability achievements

Sustainability Aspect	Achievement
Climate Change and Carbon Neutrality	Achieved Level 3 of the Airport Carbon Accreditation program, an international certification program designed to assess and acknowledge airports' efforts to manage and reduce carbon emissions. This includes calculation of Sydney Airport's Scope 3 emissions
	Reduced carbon intensity per passenger by 27.2 percent and absolute emissions by 5.5 percent since 2010
	Offset the emissions from our vehicles through Greenfleet, which plants 1,600 trees annually to recapture carbon from the environment and promote healthy air quality
Resource Use	Introduced a new lighting system in the P2 car park, reducing energy use in the car park by 30 percent
	Installed a new solar photovoltaic (PV) system on top of the P6 car park
	Introduced six electric buses operating between the Blu Emu car park and the T2/T3 precinct
	Continued use of the water recycling plant, which takes wastewater from T1, treats it and supplies it for toilet flushing and air conditioning cooling towers. Since 2012, this plant has delivered an average of more than 600 kilolitres a day of recycled water for use across the airport. This is equivalent to saving an Olympic-sized swimming pool worth of water every four days
Waste and Resource Recovery	Implemented a new waste contract in 2016, targeting a 30 percent recovery of recyclable and organic material from the non-quarantine general waste stream
	Conducted an audit of the airport's waste streams to identify future opportunities for resource recovery, particularly from construction and demolition activities
Community and Stakeholders	Introduced a new shared pedestrian/cycle bridge to provide direct access to T1 from Cooks River Drive
	Refreshed the Sydney Airport Community Investment Strategy and increased community investment spend by 69 percent between 2014 and 2017. Our community investment strategy includes a partnership with Surf Life Saving Sydney, where we deliver a corporate volunteering program and a 'swim smart' education campaign
	Became a foundation partner of the AFL Women's Greater Western Sydney (GWS) GIANTS team in the league's inaugural season. Supported GIANTS Care to help young people and families in Western Sydney access health and education services
	Commissioned a major public art project in a landmark partnership with the Museum of Contemporary Art Australia (MCA), creating opportunities for the public to engage with MCA exhibitions and programs. The commissioned indigenous artwork was unveiled at the T1 Marketplace in 2018
Safety and Security	Enhanced our Foreign Object Debris (FOD) Management Strategy including revised procedures, and purchased additional FOD management equipment, such as magnetic bars on our sweeper trucks to remove smaller metal items
	Delivery of an airport-wide safety and security awareness program, including training for our employees
	Development of an airside driving awareness course as part of an integrated Airside Driving Management System
Resilience	Enhanced our Airport Emergency Plan, including additional airside and landside emergency response procedures, plans and capabilities
	Undertook a climate change risk assessment and preparation of a Climate Risk and Adaptation Plan

4.5 Broader Sustainability Context

4.5.1 Regional and District Plans

As detailed in **Chapter 3.0 Strategic Context and Economic Significance**, GSC has released the Greater *Sydney Region Plan: A Metropolis of Three Cities* and the Eastern City District Plan, within which Sydney Airport is located.

The District Plan outlines a number of planning priorities for sustainability, which Master Plan 2039 has considered, including:

- *Planning Priority E14 – Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways*
- *Planning Priority E15 – Protecting and enhancing bushland and biodiversity*
- *Planning Priority E16 – Protecting and enhancing scenic and cultural landscapes*
- *Planning Priority E17 – Increasing urban tree canopy cover and delivering Green Grid connections*
- *Planning Priority E18 – Delivering high quality open space*
- *Planning Priority E19 – Reducing carbon emissions and managing energy, water and waste efficiently*
- *Planning Priority E20 – Adapting to the impacts of urban and natural hazards and climate change*

Master Plan 2039 is aligned with Planning Priorities E14, E15, E16, E19 and E20. However, Planning Priorities E17 and E18, are only partially aligned given the large non-publicly accessible airside zones and operational constraints of aviation.

4.5.2 Climate change

In 2015, the Australian Government committed to the Paris Agreement[1] and will implement national policies to reduce emissions and adapt to climate change impacts as part of the global coordinated action.

By 2030, Australia is targeting a reduction in emissions of 26 to 28 percent compared with 2005 levels, with the long term goal of net-zero carbon emissions by 2050 across the economy. To meet this goal, we will aim to reduce Sydney Airports' carbon footprint by adopting the sustainability initiatives in Master Plan 2039 and other operational initiatives that improve aviation efficiency.

Our Climate Risk Assessment and Adaptation Plan has identified key risks for Sydney Airport. These risks have been considered and incorporated into Master Plan 2039 to ensure future developments have embedded resilient design.

Further details of climate change and resilience risks and opportunities can be found in **Chapter 14.0 Environment** and **Environment Strategy 2019-2024**.

4.5.3 Market trends

Increased local and global market pressures including increased competition, the price of fuel and increased security risks make it more important than ever for an airport to function efficiently in order to support its sustained growth. In response to these pressures, measures to streamline operations at Sydney Airport have included:

- Enhancing the customer experience
- Incorporating upgrades to ground access
- Digitalisation of wayfinding
- Introduction of smart gates
- Digital mapping

Our focus is on improving operational efficiency at Sydney Airport. Efficiencies such as improved baggage handling, streamlined passenger processing and improved aircraft taxiways can lead to benefits including improved customer experience, reduced fuel consumption from shortened taxiing times, and increased airport passenger capacity. Ultimately, these benefits raise Sydney Airport's overall competitiveness on the global stage as a world-class airport.

[1] The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change dealing with greenhouse gas emissions mitigation, adaptation and finance starting in the year 2020. The Agreement aims to respond to the global climate change threat by keeping a global temperature rise this century well below two degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

4.6 Embedding Sustainability within Master Plan 2039

The preparation of Master Plan 2039 has aligned individual technical disciplines to our relevant sustainability policies, plans and ambitions, as illustrated in **Figure 4-3**. Information on current sustainability initiatives and their performance (historically and forecast) has been an important consideration when deciding which sustainability initiatives to adopt for 2039.

The master planning process has used existing information to identify and embed sustainability initiatives into the Airport Development Plan and Airport Planning Framework.

During the preparation of Master Plan 2039 we held an in-house design review workshop, which considered Master Plan 2039 in the context of its integration with existing development, urban form, design for mixed use, employment, and landscape and green infrastructure.

Proposed development initiatives in Master Plan 2039 have been prioritised based on their relevance to our sustainability principles. We have focused on innovation and technology, using an understanding of currently available technologies and airport operations, in conjunction with development workshops to provide solutions that will maximise sustainability for the airport.

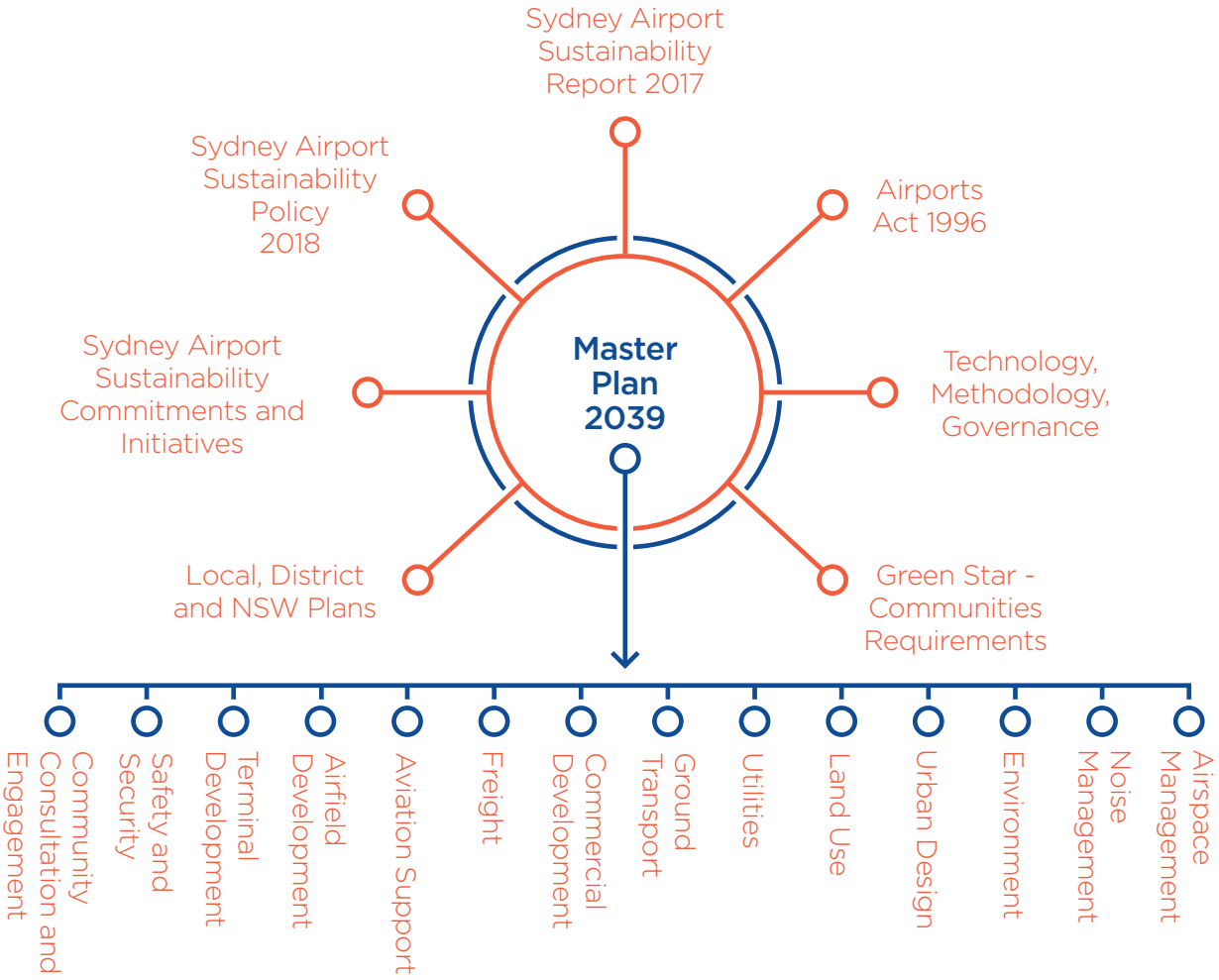


Figure 4-3: Inputs and implications of sustainability for Master Plan 2039

4.7 Green Star Communities

Green Star Communities is a nationally recognised sustainability design framework and rating tool developed by the GBCA to assess the planning, design and construction of large scale development projects at the precinct level. The framework acts as a mechanism for driving sustainable development and behaviours that benefit both the direct asset and surrounding neighbourhoods through application and assessment against the five categories outlined below.

In line with our ambition to become a recognised leader in sustainability, we have achieved a 4-Star Communities rating for Master Plan 2039. Achievement of the rating involved embedding under the GBCA each of the technical requirements into Master Plan 2039 and more broadly across all our operations and future development plans to provide social, environmental and economic benefits to airport users and community members.

Governance

Aims to encourage and recognise developers and projects that demonstrate leadership within the sector, by establishing and maintaining strong governance practices. The category promotes engagement and transparency, as well as community and industry capacity building. It also seeks to ensure that community projects are resilient to a changing climate.

Livability

Aims to encourage and recognise developments that deliver safe, accessible and culturally rich communities. The category encourages the development of healthy and active lifestyles, and rewards communities that have a high level of amenity, activity and inclusiveness.

Economic prosperity

Aims to encourage and recognise projects that promote prosperity and productivity. The category encourages affordable living and housing, investment in education and skills development, and community capacity building. This category also promotes greater productivity through emerging opportunities in the digital economy.

Environment

Aims to reduce the impact of urban development on ecosystems. It encourages resource management and efficiency by promoting infrastructure, transport and buildings with reduced ecological footprints. The Environment category seeks to reduce the impacts of projects on land, water and atmosphere.

Innovation

Aims to recognise the implementation of innovative practices, processes and strategies that promote sustainability in the built environment.

Figure 4-4: Green Star Communities Categories

Growth of Sydney Airport has the potential to increase demand and pressure on existing infrastructure networks including energy, water, waste and transport. The Green Star Communities rating focuses on alleviating pressures associated with growth to provide infrastructure solutions. Sydney Airport's large public precincts, and the large numbers of people using them, also provide a sizable opportunity for enhancing users' and surrounding community members' wellbeing and experience by applying the rating criteria.

A key feature of Green Star Communities is the requirement for recertification every five years, which aligns with the requirements of the Airports Act for airport master plans to be periodically reviewed. This will ensure that commitments made at planning and design stages are delivered and implemented. It will also provide us with an incentive to continually improve our processes through review, improvement and innovation.

Table 4-2 outlines how the Green Star Communities categories align with our sustainability principles, as highlighted in the Sustainability Strategy.

Table 4-2: Alignment of Green Star Communities categories and Sydney Airport sustainability principles

Green Star Communities Category	Sydney Airport Sustainability Principle
Governance	Governance and reporting
Livability	Community
	Customer experience
	Health and wellbeing
	Inclusion and diversity
	Safety and security
Economic prosperity	Skills, training and employment
Environment	Climate change
	Environmental efficiency
	Materials and supply chain
	Waste
Innovation	Innovation and technology

4.7.1 Adoption of Green Star Communities

The master planning process has identified the credit requirements for 4-Star Green Star Communities rating that are applicable to Sydney Airport. The flexibility provided by the Green Star Communities tool has allowed us to choose criteria that align with our initiatives and priorities.

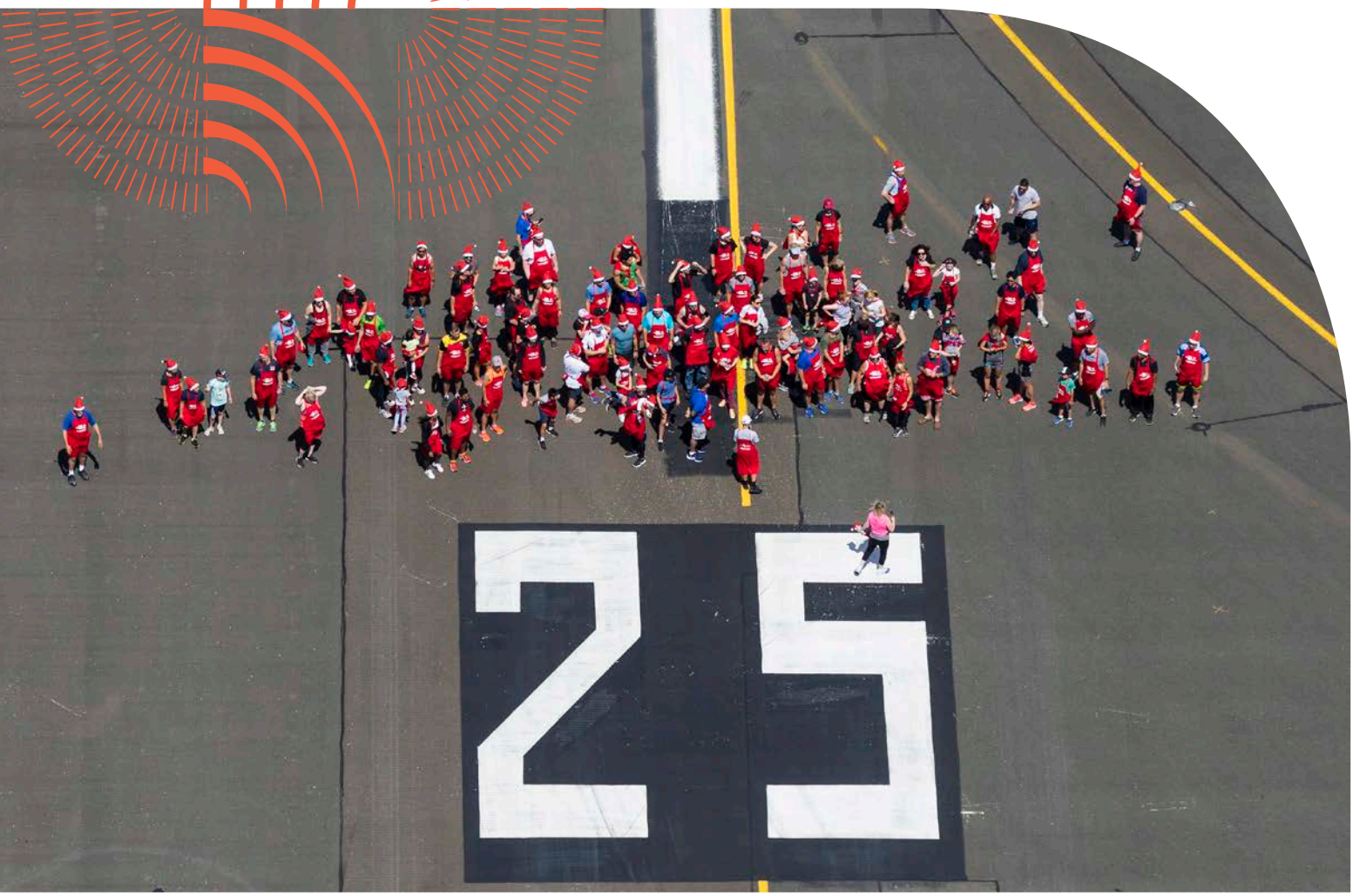
Our approach has been to embed these criteria in relevant chapters of Master Plan 2039. The Green Star Communities criteria for each category and their alignment with Master Plan 2039 are provided in Table 4-3.

Image 4-3: Sydney Airport and community volunteers supporting Conservation Volunteers Australia

Table 4-3: Green Star Communities criteria embedded in Master Plan 2039

Aspect	Criterion	Master Plan 2039 Chapter
Governance		
Engagement	Stakeholder Engagement Strategy	5.0 Stakeholder and Community Engagement
Adaptation and Resilience	Climate Adaptation	14.0 Environment Environment Strategy 2019-2024
	Community Resilience	14.0 Environment Environment Strategy 2019-2024
Environmental Management	Environmental Management System	14.0 Environment Environment Strategy 2019-2024
	Environmental Management Plan	14.0 Environment Environment Strategy 2019-2024
Liveability		
Healthy and Active Living	Minimum Requirement – Footpaths	11.0 Ground Transport Development Plan
	Active Lifestyle	11.0 Ground Transport Development Plan
Sustainable Buildings	Certified Non-residential Buildings	8.0 Terminal Development Plan 10.0 Commercial Development Plan
Culture, Heritage and Identity	Understanding Culture, Heritage, and Identity	14.0 Environment Environment Strategy 2019-2024
Safe Places	Design for Safety	16.0 Safeguarding Sydney Airport
Economic Prosperity		
Employment and Economic Resilience	Increase in Local Jobs	3.0 Strategic Context and Economic Significance
Environment		
Peak Electricity Demand Reduction	Reduce Peak Electricity Demand	12.0 Utilities Development Plan 14.0 Environment
Integrated Water Cycle	Water Management	12.0 Utilities Development Plan 14.0 Environment Environment Strategy 2019-2024
Greenhouse Gas Strategy	Greenhouse Gas Strategy	14.0 Environment Environment Strategy 2019-2024
Sustainable Transport and Movement	Sustainable Transport and Movement – Performance Pathway	11.0 Ground Transport Development Plan
Ecological Value	Biodiversity	14.0 Environment Environment Strategy 2019-2024
Waste Management	Construction, and Demolition Waste	14.0 Environment Environment Strategy 2019-2024
	Operational Waste	14.0 Environment Environment Strategy 2019-2024

5.0 Stakeholder and Community Engagement



5.1 Overview

We are committed to developing and maintaining strong links with the community, not just in the vicinity of the airport, but across Sydney and NSW. We actively engage with local communities and organisations about airport operations, proposed development and future planning. We actively participate in and support our local communities through our established grants programs. We also run numerous corporate initiatives to raise funds for charitable causes and we work to support the tourism industry through sponsorship and partnership programs across a range of levels.

With a large number of stakeholders who have a diverse range of interests, we ensure that our community and stakeholder engagement processes are inclusive, accessible and transparent. The prepartion of Master Plan 2039 has involved a significant and broad stakeholder and community engagement process.

Image 5-1: Sydney Airport has a 17 year relationship with Surf Life Saving Sydney

5.2 Key Points

- We are committed to consultation and engagement to balance the needs of stakeholders, passengers, customers and the community
- We recognise the integral role the community and key stakeholders play in Sydney Airport's success and ongoing operations
- We have undertaken a broad stakeholder and community engagement process to inform the development of Master Plan 2039
- Feedback from a wide range of community stakeholders in metropolitan Sydney and across NSW has been sought throughout the process, beyond the minimum requirements for public consultation specified by the Airports Act
- Our engagement process has taken into account the wide diversity in our local community and considers factors such as age, education, language, cultural background and mobility
- A variety of engagement and communication mechanisms were used to reach a wide range of people and groups

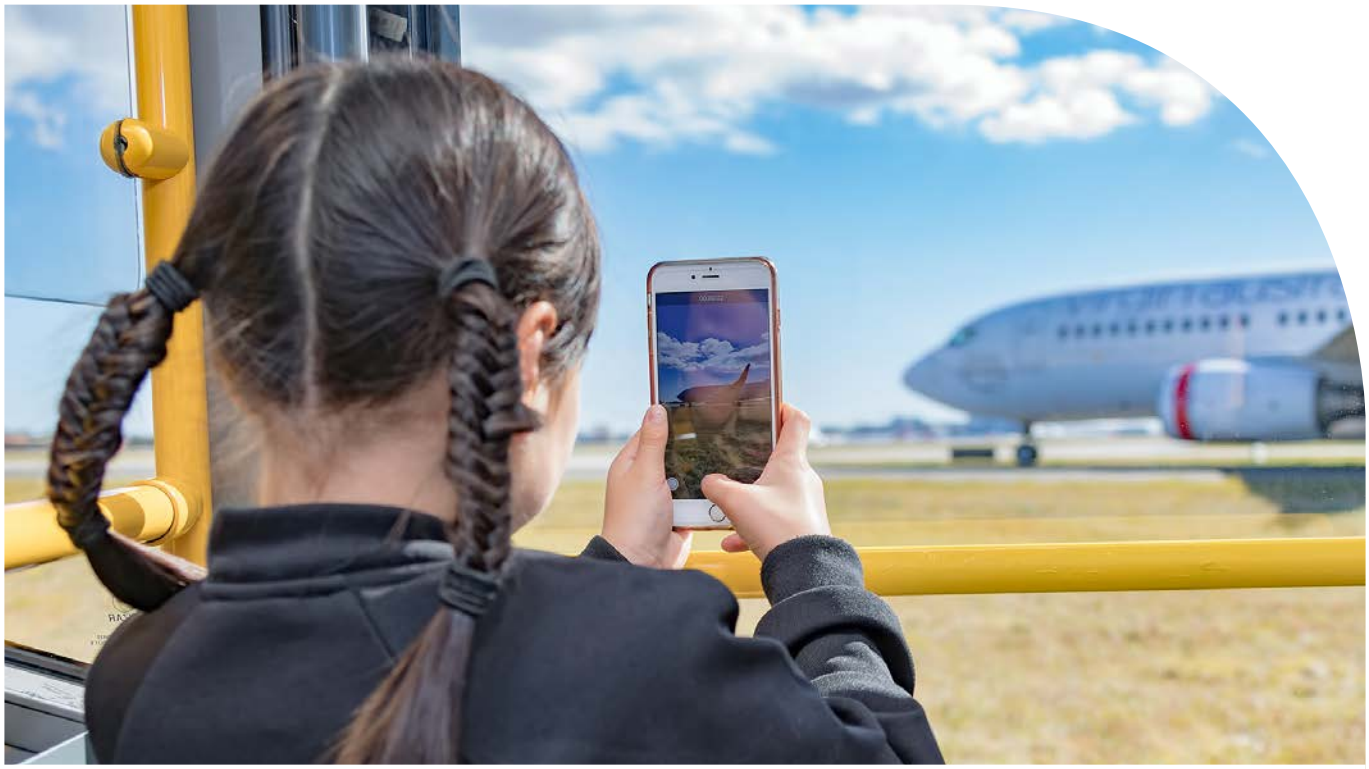


Image 5-2: An airside tour with primary school students as part of our Kids Teaching Kids partnership

5.3 Stakeholder Engagement in the Preparation of Master Plan 2039

5.3.1 Initial stakeholder consultation and briefings

As part of the initial consultation stage during the preparation of the Master Plan 2039, Sydney Airport actively engaged with a wide range of community, industry and government stakeholders.

These included:

- Airlines and their representatives
- Other aviation industry and related stakeholders, including tenants, ground transport operators and hotels
- Sydney Airport Community Forum (SACF)
- Australian Government agencies, including DIRDC, Airservices Australia, Civil Aviation Safety Authority (CASA), Australian Border Force, Department of Environment and Energy
- NSW Government agencies, including Department of Premier and Cabinet, Department of Planning and Environment, Transport for NSW, Roads and Maritime Services, Infrastructure NSW, Destination NSW, Office of Environment and Heritage and the Environment Protection Authority
- Local Government elected officials and senior planning staff
- Federal and NSW Government Ministers and Members of Parliament
- Business, tourism and industry groups

The feedback and comments received during this initial engagement process contributed to the development of Master Plan 2039 and all its parts, including the **Environment Strategy 2019-2024** and the Australian Noise Exposure Forecast.

In accordance with section 79(1A) of the Airports Act, Sydney Airport formally advised the NSW Minister for Planning; the NSW Department of Planning and Environment; and each Local Government surrounding the Airport of its intention to prepare this master plan.

Image 5-3: Consultation with our tenants about the Airport Environment Strategy

5.3.2 Public exhibition of Preliminary Draft Master Plan 2039

We have a strong commitment to consultation and engagement to balance the needs of stakeholders, passengers, customers and the community. We recognise the integral role the community and key stakeholders play in Sydney Airport's success and ongoing operations.

The engagement we undertook in 2012 to support the preparation of Master Plan 2033 was well-regarded. Master Plan 2039 is focused on consolidation, responsible growth and an enhanced customer experience; therefore the engagement approach was designed to be commensurate with this intent.

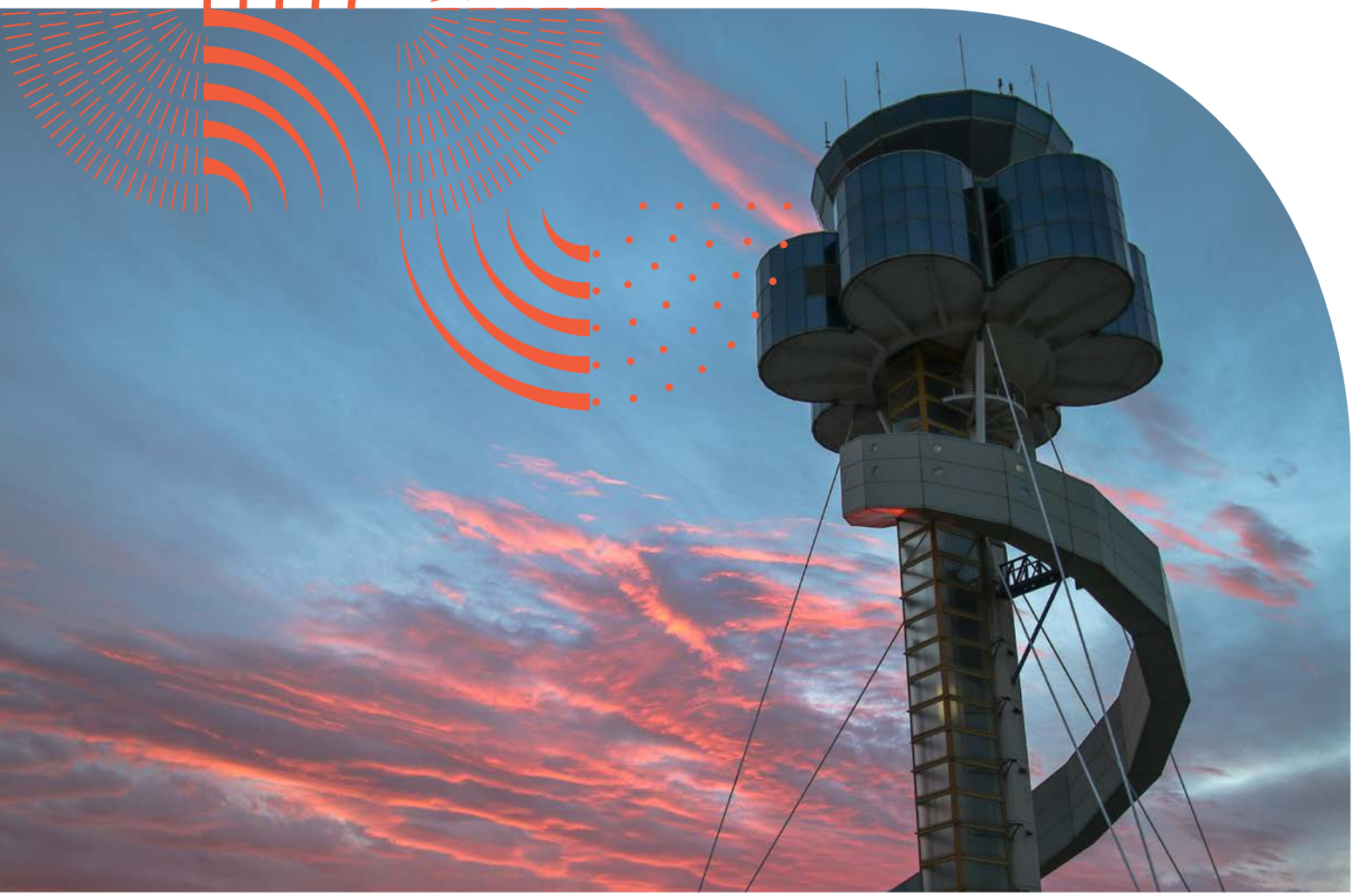
Our engagement approach for Master Plan 2039 is contemporary, exceeded statutory and regulatory requirements, and addressed the expectations of the Minister and DIRDC, as outlined in the *Airport Development Consultation Guidelines (2012)*.

As required by the Act, Master Plan 2039 was formally exhibited for public comment for 60 business days from 27 August 2018 to 20 November 2018. Throughout the public exhibition phase, a range of stakeholder and community engagement activities were undertaken, including:

- Public notification that Master Plan 2039 had been released for public comment
- Public display of Master Plan 2039
- A dedicated Master Plan 2039 website
- Digital engagement
- Notification to most affected stakeholders
- Community updates
- Community information sessions
- Informing communities living in the vicinity of Sydney Airport or underneath or near flight paths
- Master Plan 2039 community information line and email
- Briefings and presentations during the public exhibition period

A summary of the engagement approach for Master Plan 2039 and the issues raised during public exhibition is in **Appendix I**.

6.0 Air Traffic Forecasts



6.1 Overview

Forecasts of peak period passengers, aircraft movements and air freight volumes provide the fundamental basis for the planning of airport facilities at Sydney Airport.

Air traffic forecasts have been independently prepared in consultation with the major international, domestic and regional airlines and airline associations, to ensure that the planning context for Master Plan 2039 is robust and provides confidence for our organisation and our stakeholders.

Total air passenger numbers are forecast to increase by 51 percent over the planning period, from 43.3 million in 2017 to 65.6 million in 2039.

International passengers are forecast to be the main driver of growth at Sydney Airport, with international passenger numbers nearly doubling from 15.9 million in 2017 to 31.5 million in 2039. International passenger traffic contributes the most value to our State and National economies.

Our proximity to Asia and increases in global tourism and travel are expected to drive international travel. In particular, growth in major Asian markets including China, India, South Korea and Vietnam.

By 2039 we anticipate that domestic and international passengers travelling through the airport will be 52 percent and 48 percent, respectively.

Growth in total aircraft movements is expected to be significantly lower than passenger growth, an increase of 17 percent to 408,260 in 2039. This reflects airline feedback and expectations regarding continued up-gauging of aircraft and increases in seat density and load factors.

Total freight at Sydney Airport is forecast to grow by 58 percent to 1.0 million tonnes in 2039. Passenger aircraft carry about 80 percent of all air freight. Consequently, freight is an important income stream for passenger airlines, which Sydney Airport supports through land and facilities.

All forecasts assume that from late 2026, Sydney basin's aviation demand will be served by two international airports. Sydney Airport is expected to continue to benefit from its proximity to the Sydney CBD and local tourist attractions, and its breadth of network connectivity for passengers travelling internationally, domestically and regionally.

6.2 Key Points

In 2039, Sydney Airport is projected to handle approximately:

65.6 million passengers

- 31.5 million international
- 34.1 million domestic (including regional)

408,260
Total aircraft movements

1.0 million
Tonnes of freight

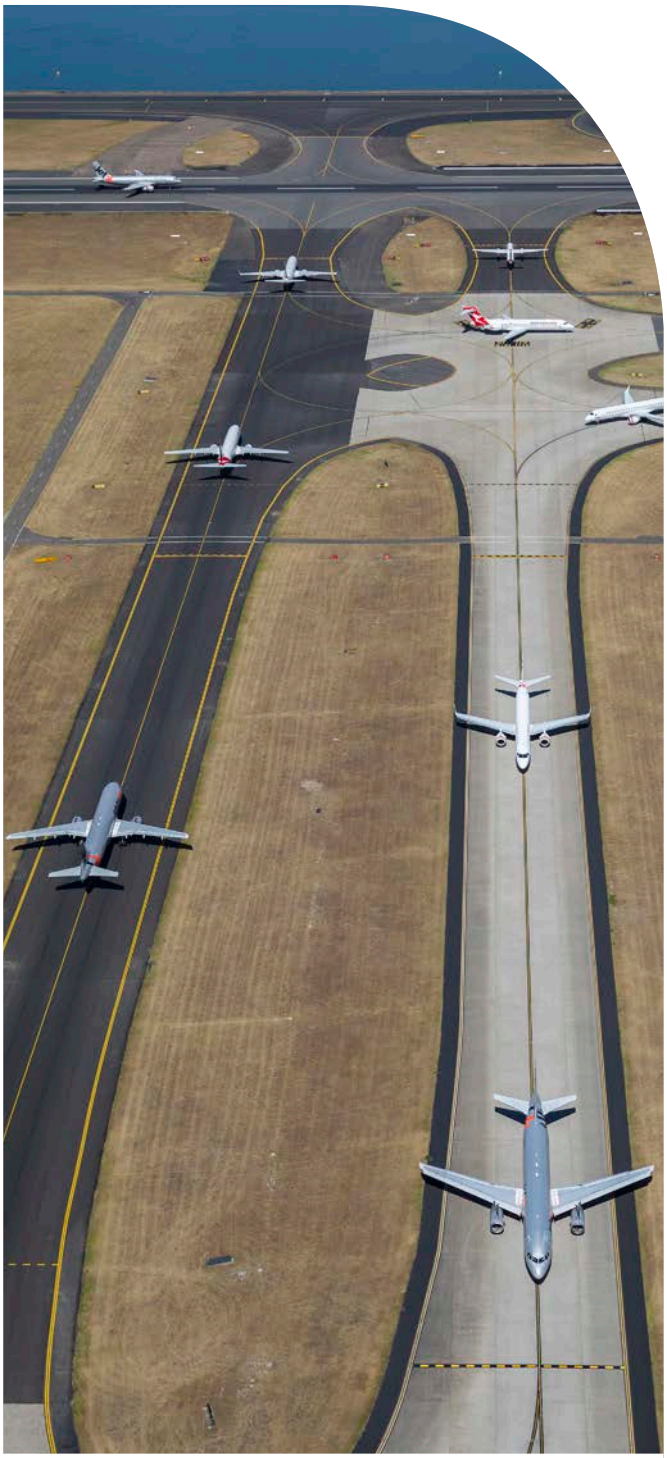


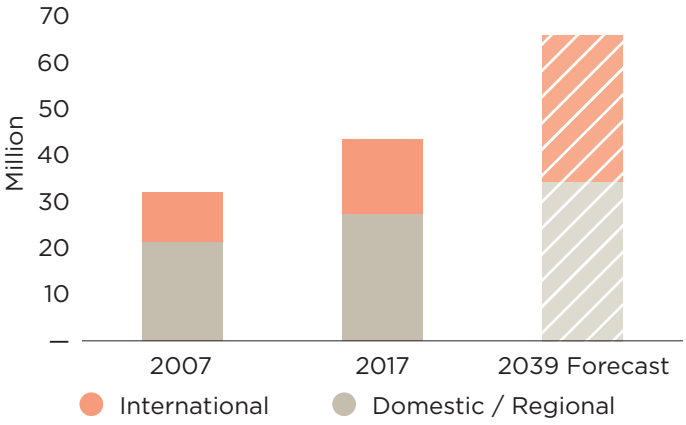
Image 6-1: Taxiways on the airfield at Sydney Airport

Sydney Airport Traffic

Passengers are forecast to grow at a much faster rate than aircraft movements, delivering positive economic outcomes and minimising impact on the community

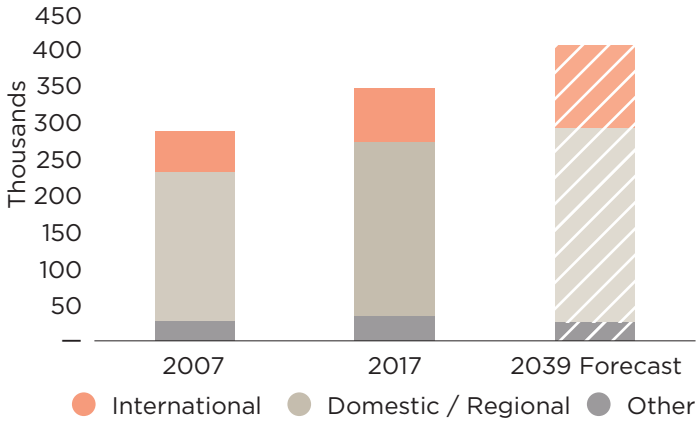
Passenger Growth

International passengers are forecast to increase from 15.9 million to 31.4 million in 2039, representing 48% of total passengers



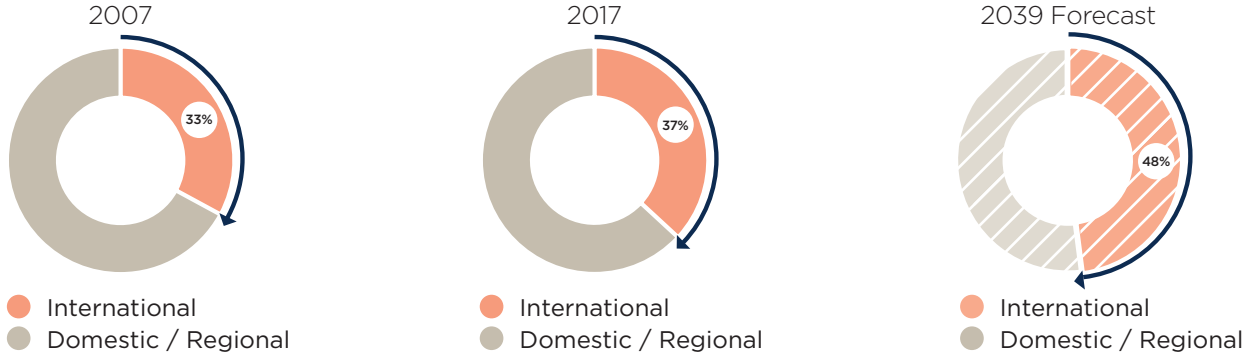
Aircraft Movements

Advances in aviation technology have ensured larger, quieter and more fuel efficient aircraft service Sydney Airport



International Passenger Growth

International passengers are the main driver of growth at Sydney Airport and contributes the most value to our State and National economies



6.3 Aviation Industry Trends

The forecasts prepared for Master Plan 2039 are a critical input into the long-term planning at Sydney Airport. They are used to inform the development plan for terminals, airfield and all supporting infrastructure.

We anticipate that the aviation industry's shift towards larger, quieter and more fuel efficient next generation aircraft will continue, and passenger numbers will continue to grow at a faster rate than aircraft movements. This has positive outcomes for noise and environmental impacts.

Since privatisation in 2002, Sydney Airport has experienced significant growth. Passengers have increased by 81 percent, from 23.9 million to 43.3 million in 2017.

As passengers have grown, so has the importance of aviation to the economy. In 2017, the value of tourism and freight facilitated by Sydney Airport, and from businesses operating at the airport, was estimated to be $38.0 billion. This represents approximately 2.2 percent of Australia's Gross Domestic Product (GDP). Accommodating further growth in aviation is a key priority for Sydney Airport.

The evolution of low cost carriers (LCCs) and technology advancement has led to reductions in real airfares, which in turn has stimulated air traffic growth. Further, liberalisation of air rights has encouraged growth in air travel and improved tourism and trade ties between nations.

These industry changes have been gradual, sustained over a long period of time, and are ongoing. They were taken into account in preparing passenger and aircraft movement forecasts and airport capacity requirements for Sydney Airport. Key trends include:

- Passenger demand has grown more quickly than the general economy
- Next generation aircraft have become larger, quieter, safer, more fuel efficient and more comfortable. Airline fleets have reflected this trend, including:
  - Replacement of older generation B737-300 and B737-400 aircraft with B737-800s (with 25-50 percent more seats)
  - Up-gauging of Dash8-200 aircraft to predominantly Dash8-Q400s (with 100 percent more seats)
  - Replacement of B747-400, A330 and B777-300 aircraft with A380s, B787s, A350s and B777Xs
- Airlines have increased the average number of passengers per aircraft through increased seating density and improved load factors
- Demand for air travel has been stimulated by lower air fares
- The gradual increase in the proportion of leisure passengers is both a cause and an effect of the growth of LCCs
- Changing airline partnerships and alliances have resulted in new products and offerings for passengers

Other changes are more unpredictable and frequently produce changes in the shorter term. At the most extreme are disruptions arising from terrorism, war, natural events and health scares. In most cases, traffic levels quickly return to the previous trend once the circumstances causing the disruption have abated.

Higher oil prices have in the past slowed the growth in aviation traffic by increasing input costs to airlines, and subsequently the price of airfares to passengers, causing demand to fall. However, increased fuel costs have led to aircraft manufacturers and airlines introducing more fuel efficient aircraft.

6.3.1 Ongoing evolution of aviation activity

Airports globally are competing for next generation aircraft that are being delivered to predominantly Asian and Middle Eastern airlines and global LCCs. These developments have dramatically increased the level of competition among airports for traffic in Australia, as elsewhere.

Over the past 10 years seats to Sydney Airport from the Middle East have grown significantly, serviced by Middle Eastern carriers, with the Europe/Africa market contracting, as demonstrated in **Figure 6-1**. Those markets continue to be served by code share agreements.

Individual airline strategies have also continued to evolve to adapt to changing market conditions:

- The number of mainland Chinese operators to Sydney Airport has now increased to eight following significant growth in the Sydney-China market
- Qantas has recently moved its stopping point for London flights back from Dubai to Singapore to enable better connections to fast growing Asian markets
- Virgin Australia has recently implemented a codeshare partnership with Chinese airlines in the HNA Group to increase its presence in the China market
- Virgin Australia increased its stake in Tigerair from 60 percent to 100 percent in 2014. Consequently, the two major domestic airline groups, Qantas Group (which includes Qantas and Jetstar) and Virgin Australia (which includes Virgin Australia and Tigerair) now both offer a full-service and LCC product

As airlines have evolved to compete for market share and to meet passenger demand, our development plans have been adapted to meet changing needs and priorities. The Airport Development Plan in Master Plan 2039 has been designed to be flexible so that we can continue to respond to changing conditions.

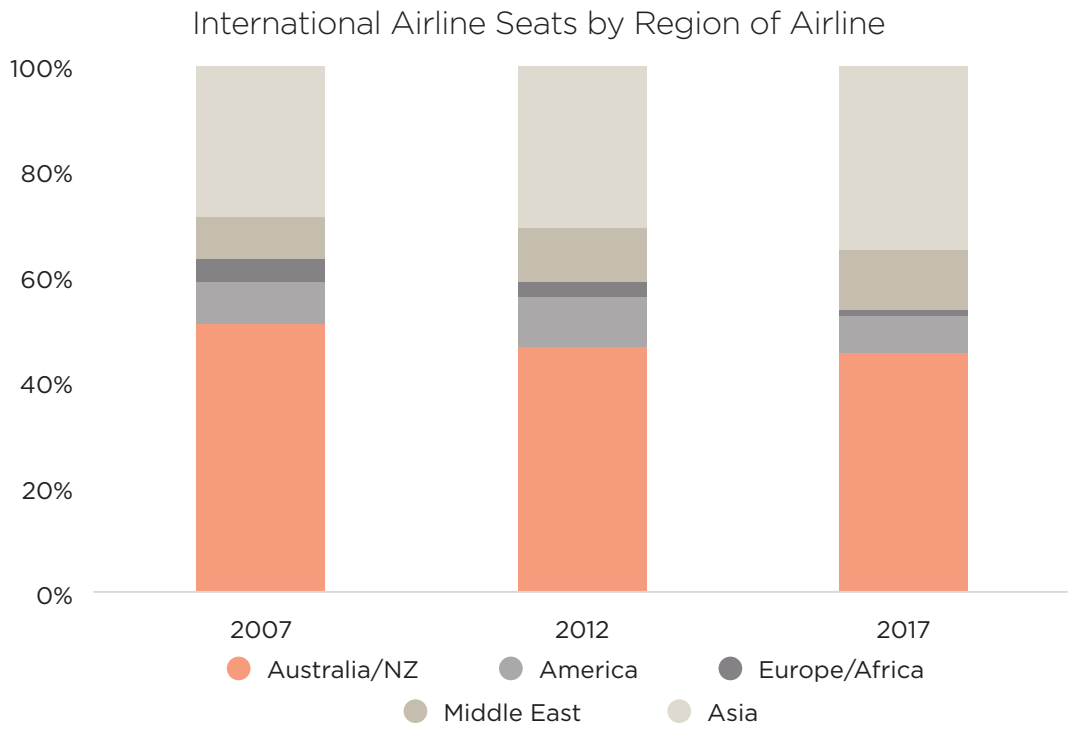


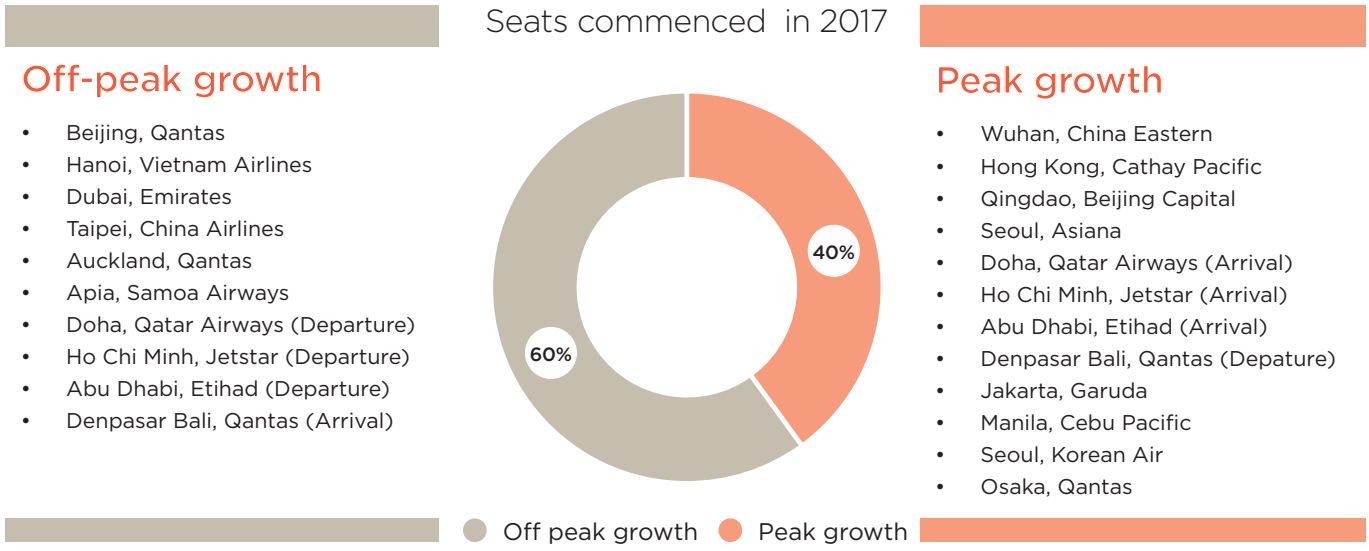
Figure 6-1: Proportion of international aircraft seats by region of airlines

6.3.2 Off-peak growth

The changes to the aviation industry, together with the maturation of specific routes, are also supporting the spreading of the existing morning and afternoon peaks at Sydney Airport. This is illustrated in **Figure 6-2**, which highlights that 60 percent of new seats commenced in 2017 were outside peak periods.

Peak spreading will continue to be driven by a number of factors, including:

- The focus of LCCs on maximising aircraft utilisation throughout the day, rather than serving predominantly business passengers and transfer connections for international and domestic operations
- Scheduling windows for origin and destination (O&D) services to Asia, which are different from the traditional Europe-bound services
- Differences in scheduling windows between Asian hubs and Middle Eastern and European hubs
- Creation of second and subsequent departure banks in Asia and within Australia as carriers grow. For example, Singapore Airline's 10 movements per day are scheduled for 10 different hours, with the majority well outside peak periods



*International peak is defined as 6am to 12pm

Figure 6-2: Timing of seats commenced in 2017

6.4 Forecast Approach

6.4.1 Specialist advisers

Forecasts of peak period passengers, aircraft movements and air freight volumes provide the fundamental basis for the planning of airport facilities at Sydney Airport. We recognise the need for and value of forecasts prepared by independent specialists recognised by the aviation industry. We engaged the following companies to assist us in preparing the forecasts for Master Plan 2039:

- **Tourism Futures International (TFI)**

  TFI is a research-oriented company specialising in the future of aviation, travel and tourism. TFI prepares in-depth passenger and aircraft movement forecasts and traffic trend analysis for airports and local and state authorities across Australia, New Zealand, Asia and the Middle East.

  TFI worked with us to prepare the passenger and aircraft movement forecasts for input into Master Plan 2039.

- **CAPA – Centre for Aviation**

  CAPA is the leading provider of independent market intelligence, research and data solutions that support strategic decision-making by the aviation industry.

  CAPA peer reviewed the forecasts prepared by TFI.

- **Airbiz**

  Airbiz is a specialist international consultancy, providing expert advice to airport owners, airline operators, investors, government agencies and other aviation stakeholders. They cover a wide range of aviation business disciplines including air transport forecasts.

  Representative day forecast schedules were prepared by Airbiz in consultation with TFI. Schedules were prepared for selected years, including 2019 and 2039.

- **Ryan Aviation Consulting**

  Ryan Aviation Consulting is a specialist aviation consulting firm, focused on leading and managing the development of forecasts for the freight and logistics industry, including forecasting trends in imports and exports of air freight.

  Forecasts of air freight volumes were prepared by Ryan Aviation Consulting.

6.4.2 Forecasting method and assumptions

TFI's forecasting method involved five steps:

1. **Top down econometric modelling**

   Economic factors considered by TFI included:

   - Gross domestic product (GDP) for the countries contributing visitors to Sydney and Australia
   - Australian GDP
   - NSW gross state product (GSP)
   - Australian trade weighted index
   - Global exchange rates

   TFI utilised forecasts for these variables from:

   - The International Monetary Fund (IMF)
   - The Organisation for Economic Cooperation and Development
   - National and state/provincial governments
   - Central banks
   - Private forecasters, such as Consensus Economics

   Demographic factors that might impose constraints on demand in the long term were considered, including population forecasts for overseas visitor markets, Australia and Australian states and territories.

2. **Development of segment-based forecast models for individual markets and/or routes**

   Trend assessments and segment models were developed by TFI at the route level for the domestic market, and at the country level for the international market.

3. **Review of the fleet orders of airlines and the forecasts of aircraft type by the aircraft manufacturers**

4. **Iterative consultation with the key airlines**

These consultations were extensive and provided TFI with detailed airline information to input into the forecasts. They included meetings with:

- The Board of Airline Representatives of Australia
- network development teams of:
  - Virgin Australia (including Tigerair)
  - Qantas Group (Qantas, QantasLink and Jetstar)
  - Regional Express Group
  - Air New Zealand

Meetings occurred with these stakeholders during the preparation of the draft forecasts to discuss TFI's forecasting methodology and clarify assumptions, including:

- Passenger demand
- Aircraft types
- Seating densities
- Load factors
- Frequencies
- Peak and off-peak operations
- Turnaround times
- Freight volumes

We held additional meetings following the preparation of the draft forecasts. The airlines that participated in the consultation generally accepted the approach, assumptions and forecasts.

5. Benchmarking of the outputs

The forecasts produced by TFI were benchmarked against other forecasts:

- For Sydney (Bureau of Infrastructure, Transport and Regional Economics [BITRE] and the *Joint Study on aviation capacity in the Sydney region* [Joint Study])
- For Australia (BITRE and Tourism Forecasting Committee)
- Worldwide, including by:
  - » Aircraft manufacturers
  - » The US Federal Aviation Administration
  - » Eurocontrol
  - » The UK Department of Transport

This five step method resulted in a Sydney Basin traffic forecast. Beyond 2026, an assessment was then made of Sydney Airport's 'natural share' reflecting its proximity to the Sydney CBD and network connectivity for passengers travelling internationally, domestically and regionally.

Aircraft movement forecasts were prepared using the passenger forecasts and the average numbers of passengers per movement, following consultation with the airlines. Passengers per movement depend on passenger load factors, seating density and aircraft types.

Broad assumptions underlying the forecasts used in Master Plan 2039 include:

- Continued strong economic growth during the medium and longer term for China, India and much of Asia
- Strong growth in the middle classes across Asia as average incomes grow and more of the population has the ability to travel internationally
- The delivery of new aircraft types that combine fuel efficiency, lower noise profiles and longer range (B787, A350, B777-X) to airlines serving Australia. Combined with the growth in the middle classes this should facilitate an increase in city pair connections across Asia and between Australia and Asia
- An increase in the average number of seats per aircraft movement for Sydney Airport across all traffic segments (i.e. international, domestic and regional)
- The ongoing development of new passenger markets by LCCs

Image 6-2: The China Airlines next generation A350 touching down in Sydney for the first time

6.5 Passenger Forecasts

Total air passenger numbers at Sydney Airport are forecast to increase by 51 percent over the planning period of Master Plan 2039, from 43.3 million in 2017 to 65.6 million in 2039. Forecast growth to 2039:

- International passengers 31.5 million (up 97 percent)
- Domestic passengers 31.4 million (up 25 percent)
- Regional passengers 2.7 million (up 22 percent)

This represents annual average growth rates of 3.1, 1.0 and 0.9 percent respectively for international, domestic and regional passengers.

International passengers are forecast to be the main driver of growth at Sydney Airport with international passenger numbers nearly doubling from 15.9 million in 2017 to 31.5 million in 2039. These passengers contribute the most value to the NSW and Australian economies. By 2039 we anticipate that international passengers travelling through the airport will be 48 percent of total traffic, up from 37 percent in 2017.

The passenger growth forecast is a critical input into our approach to long-term planning. It informs the development plans for the terminals, apron and supporting infrastructure. Delivery of projects in the Airport Development Plan is based on projections of demand and is undertaken with significant internal and external stakeholder consultation.

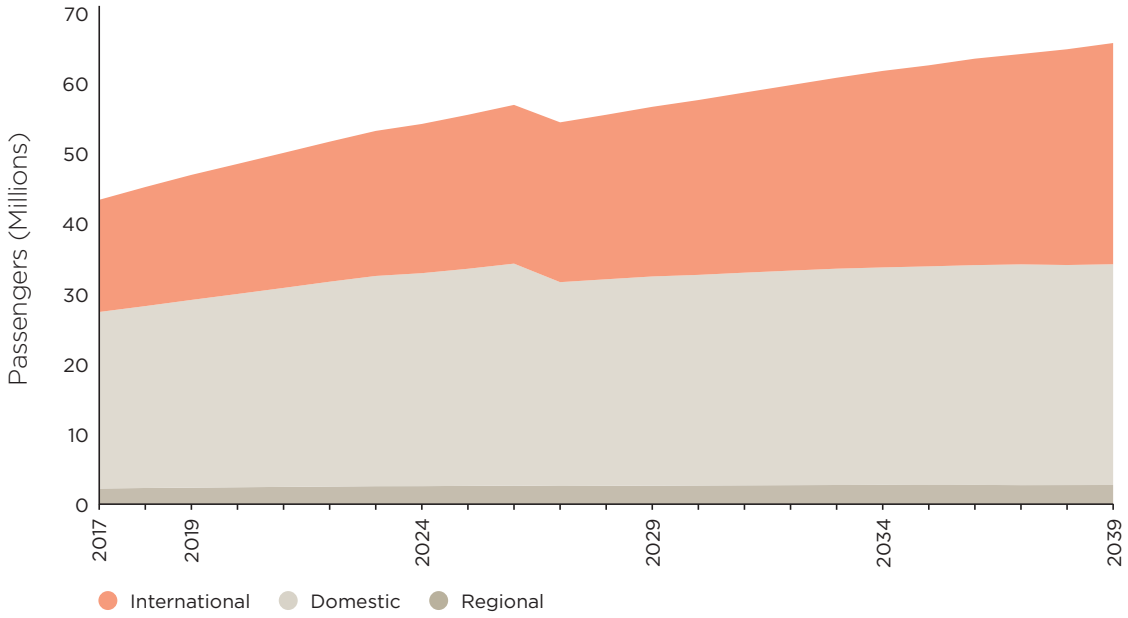


Figure 6-3: Forecast passenger growth, 2017 to 2039

Table 6-1: Passenger forecasts

	2017	% of total	2039	% of total	CAGR*
International	16.0	37%	31.5	48%	3.1%
Domestic	25.1	58%	31.4	48%	1.0%
Regional	2.3	5%	2.7	4%	0.9%
Total	**43.3**	**100%**	**65.6**	**100%**	**1.9%**

* Compound Annual Growth Rate

6.6 Aircraft Movement Forecasts

Total aircraft movements at Sydney Airport are forecast to increase to 408,260 in 2039. Of that, scheduled passenger movements are forecast to be 382,305 in 2039.

Significantly, growth in total aircraft movements is lower than passenger growth and reflects a 17 percent increase from current levels to 2039. This expectation is derived from airline feedback and expectations regarding continued up-gauging of aircraft and increases seat density and load factors.

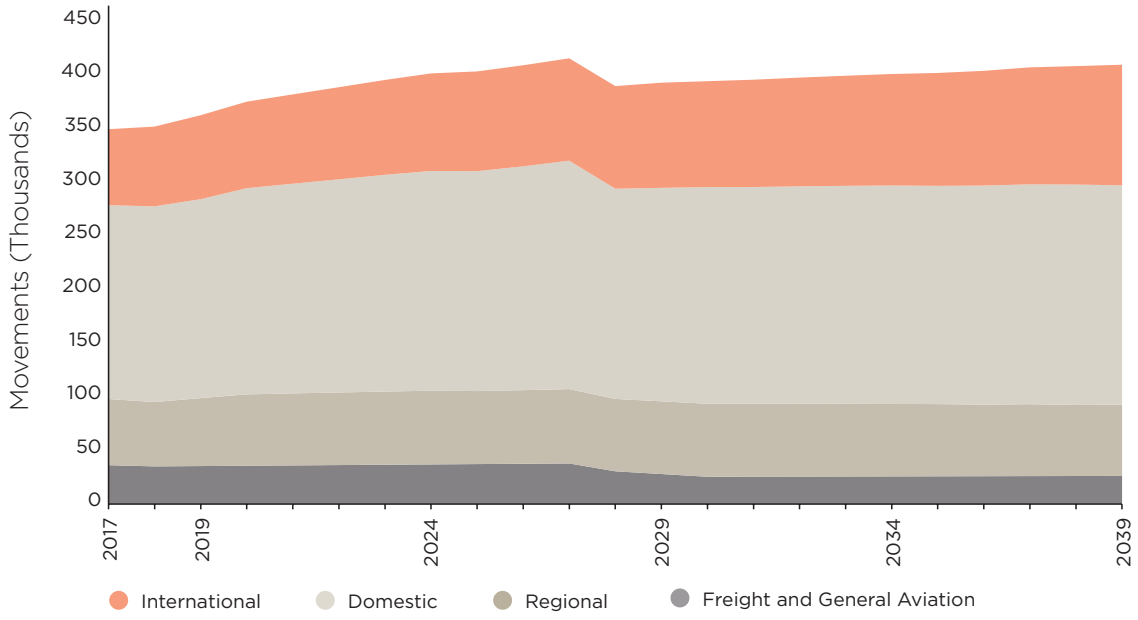


Figure 6-4: Forecast aircraft movement growth, 2017 to 2039

Table 6-2: Aircraft movement forecasts

	2017	%	2039	%	CAGR
International	73.6	21%	113.5	28%	2.0%
Domestic	180.8	52%	202.9	50%	0.5%
Regional	59.4	17%	65.9	16%	0.5%
Total RPT	**313.9**	**90%**	**382.3**	**94%**	**0.9%**
Freight & GA	34.7	10%	26.0	6%	-1.3%
Total	**348.5**	**100%**	**408.3**	**100%**	**0.7%**

6.6.1 Average number of passengers per flight forecast

Passenger numbers per aircraft approximately doubled in the 20 years between 1966 and 1986, and then approximately doubled again by 2006.

The number of passengers per aircraft increased by 13 percent between 2007 and 2017, driven by an increasing international share as well as growth in passengers per aircraft on the international sector. Passengers per aircraft are forecast to increase by approximately 24 percent over the next 22 years.

Figure 6-5 depicts the historical growth in the average number of passengers per aircraft movement over the past 10 years and the projected increase to 2039.

This increase in the average number of passengers per flight is expected to be achieved through:

- Increased use of larger capacity aircraft, such as:
  - The A380, A350, B777x and B787 (international)
  - The B737max, A321 and A320 neo family (domestic)
  - Continued up-gauging of regional aircraft
- Increased seat density, particularly as a result of the growth of LCCs, which frequently operate without premium cabins and provide less leg room for passengers
- Further increases in load factors, continuing the international and Australian trends of the past several decades, to levels consistent with today's best practice

For regional services, the average number of passengers per movement is forecast to grow from 38 in 2017 to around 42 in 2039. The forecast schedule anticipates that regional destinations will continue to be served predominantly by turbo-prop aircraft, although by 2039 seven percent of the movements to regional destinations are expected to be operated by jet services. This is likely to be predominantly to leisure destinations (e.g. Ballina). Aircraft technology improvements mean these jet aircraft are no longer materially louder than the much smaller turbo-prop aircraft they replace.

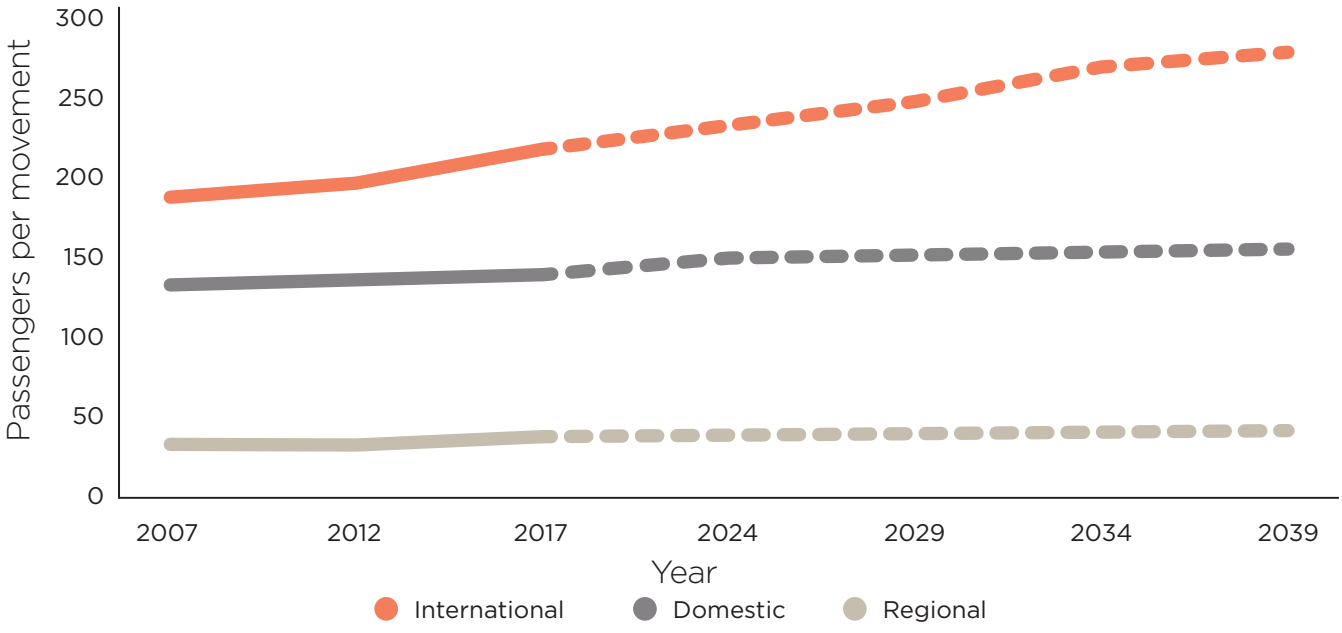


Figure 6-5: Historical and forecast average passengers per movement, 2007 to 2039

6.7 General and Business Aviation

Unusually for a major capital city airport, Sydney Airport is not just Australia's primary airport for passenger and core freight operations; it is also Sydney's primary airport for specialised freight, executive aviation and helicopters.

In 2017 general and business aviation (GA) movements were 26,100. This figure includes 14,615 helicopter movements.

While Sydney Airport can continue to accommodate GA, it could operate more efficiently with increased focus on core international, domestic and regional passenger operations (and related freight), with the associated economic benefits for NSW. In the long term, there will be increased demand for specialised freight, GA, executive aviation and helicopter activities at other airports and heliports.

We believe that it is important for a helicopter strategy to be developed for the Sydney market. Our understanding is that the demand for helicopters is tightly centred on the CBD and the Harbour, and that most helicopter operators have a strong desire to be able to operate from the CBD rather than from Sydney Airport. Sydney's competitiveness as a tourist and business destination would be enhanced if a suitable location could be found closer to the CBD.

RAAF Base Richmond could also be developed for non-core civilian use, including specialised freight, GA, helicopters and other aviation activities. Sydney Airport should not be expected to be the primary airport in Sydney for all aviation users, but should focus on international, domestic and regional passenger operations (and related freight).

Image 6-3: Corporate aviation at Sydney Airport

6.8 Air Freight Forecasts

Air freight is a vital economic activity at Sydney Airport, with about half of Australia's international air freight passing through the airport. It also provides an important income stream for passenger airlines, which transport about 80 percent of all air freight. The remaining 20 percent is flown by air freight companies in dedicated freight aircraft.

Total freight is forecast to grow from 643,000 tonnes in 2017 to 1,018,000 tonnes in 2039. This represents an average annual growth of 2.1 percent. There is a forecast decline in freight tonnage between 2026 and 2027, reflecting the potential move of dedicated freight traffic to Western Sydney Airport, but subsequent growth means the 2026 total is forecast to be exceeded again by 2034 (see **Figure 6-6**).

Dedicated freight aircraft movements are forecast to decline from 8,572 in 2017 to 6,522 in 2039, which represents an annual average decline of 1.2 percent.

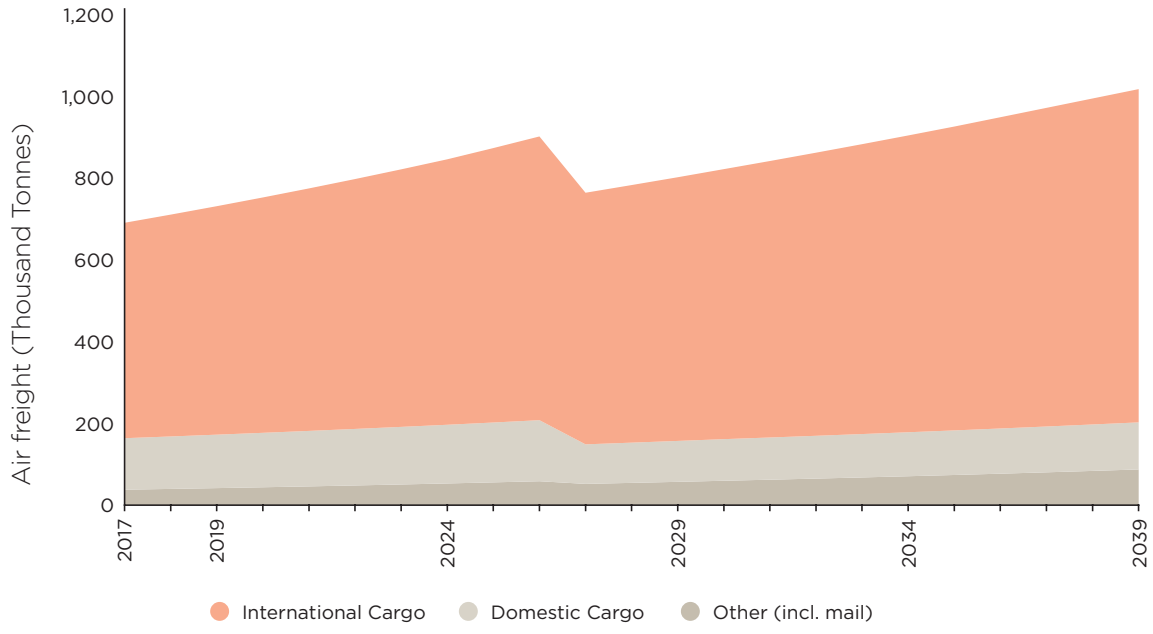


Figure 6-6: Air freight forecasts, 2017 to 2039

6.9 Benchmarking of the Traffic Forecasts

The annual traffic forecasts have been benchmarked against:

- Historic traffic development at Sydney Airport
- Projections from:
  - Master Plan 2033
  - The Joint Study
  - BITRE
  - International Air Transport Association (IATA)
- Existing large Asian routes at busy airports

6.9.1 Comparison with historical performance

Sydney Airport currently handles approximately 40 percent of all international and approximately 46 percent of all domestic and regional air passengers nationally.

In the period from 2007 to 2017, total annual passengers through Sydney Airport increased from 31.9 million to 43.3 million. This represents an average annual growth rate of 3.1 percent.

Between 2007 and 2017, aircraft movements increased from 288,750 to 348,520, an annual increase of 1.9 percent. This marginal increase in aircraft movements reflects a trend to larger capacity aircraft with higher average load factors using the airport

Figure 6-7 shows the growth of passenger and aircraft movements at Sydney Airport over the period from 2007 to 2017.

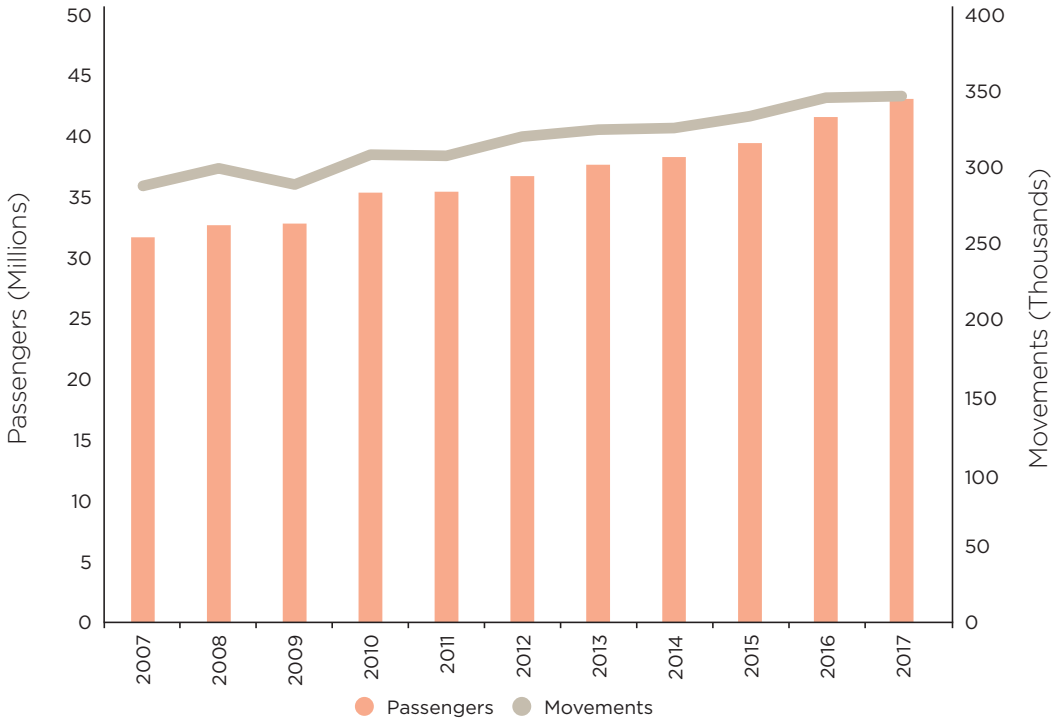


Figure 6-7: Growth of passenger and aircraft movements at Sydney Airport over the period from 2007 to 2017

Table 6-3 compares the historic and forecast growth rates for international and domestic (including regional) passengers, aircraft movements and passengers per aircraft. Passengers, passengers per aircraft and aircraft movements are all forecast to grow less quickly than historical averages.

Table 6-3: Historical and forecast CAGR

	Passengers	Passenger aircraft movements (RPT only)	Passengers per movement
International			
1996 to 2016	4.3%	2.9%	1.4%
2017 to 2039	3.1%	1.9%	1.1%
Domestic			
1996 to 2016	3.4%	1.0%	2.4%
2017 to 2039	1.0%	0.5%	0.5%
Total			
1996 to 2016	3.7%	1.4%	2.3%
2017 to 2039	1.9%	0.9%	1.0%

The forecast passenger growth for Sydney Airport reflects:

- Increasing competition from a growing number of Asian destinations
- The slowing economic growth in Australia given the declining proportion of the Australian population in the workforce
- Growing maturity of the Australian domestic passenger market
- Development of new markets and passenger segments by LCCs and airlines operating next generation aircraft

The IMF has increased slightly its global growth forecasts for 2018, with upward revisions for the European Union (EU), Japan, China and emerging Europe offsetting downward revisions for the US, UK and India[1]. Global output is now projected to grow by 3.6 percent in 2017 and 3.7 percent in 2018. However, medium-term risks to the outlook remain skewed to the downside.

The IMF and others point to:

- Policy uncertainties, namely around negotiation of the UK's relationship with the EU post-Brexit and around US regulatory and fiscal policies
- The risk of a sharp slowdown in China if authorities fail in their efforts to rein in the credit expansion
- Ongoing challenges in adjusting to weaker commodity prices
- Low inflation, weak productivity growth and rising old-age dependency ratios in some of the advanced economies
- Constrained scope for easing fiscal policy to support economic activity in many of the emerging and developing economies
- Pressures for increased protectionism
- Risk of intensified conflict and geopolitical tensions

1 World Economic Outlook, October 2017

6.9.2 Comparison with Master Plan 2033

Annual traffic forecasts in 2039 for Master Plan 2039 are lower than those used in Master Plan 2033 out to 2033. The decrease in overall forecasts is largely a result of traffic to date (particularly domestic) being behind the forecast in Master Plan 2033, and the inclusion of the assumption of a two-airport system serving Sydney from 2027 onwards.

Master Plan 2033 forecast a total of 74.3 million passengers and 388,466 passenger aircraft movements by 2033. The forecasts prepared for Master Plan 2039 indicate that in 2033 it is expected the airport will be handling 60.7 million passengers and 371,654 passenger aircraft movements.

This results in a different hourly profile in 2039 than was forecast for 2033 by Master Plan 2033, with fewer movements in the middle of the day when noise sharing is most likely. The forecast number of aircraft movements per hour in 2039 is higher in the late morning and mid-afternoon, as shown in Figure 6-8.

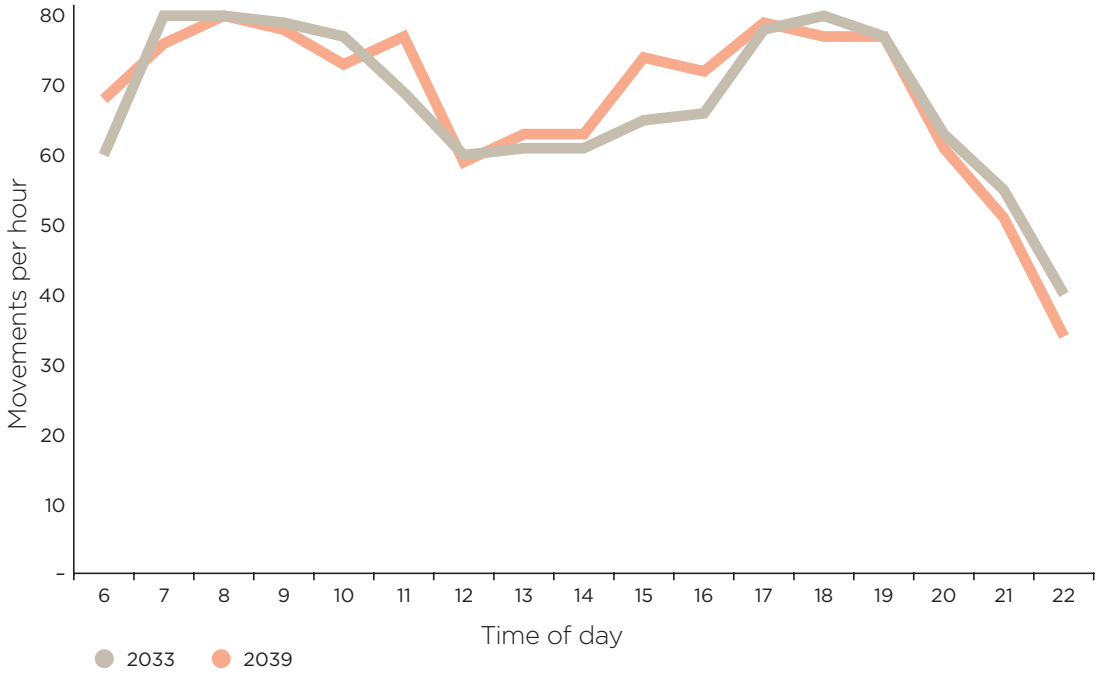


Figure 6-8: Comparison with Master Plan 2033 aircraft movement forecasts

6.9.3 Comparison to other passenger forecasts

The forecasts for Sydney used in Master Plan 2039 are broadly consistent with other forecasts prepared for the Sydney Basin. In addition, Master Plan 2039's international passenger growth rates are similar to other forecasts for total world growth. The inclusion of the assumption of a two-airport system serving the Sydney Basin from 2027 onwards results in lower growth rates for Sydney Airport.

The latest Airbus global market forecast indicates that LCCs will be the fastest growing airlines, increasing their share of world revenue per passenger kilometre traffic from 15 percent in 2011 to 20 percent by 2031.

Table 6-4 compares the traffic forecasts with a variety of other passenger forecasts for the Sydney basin, Asia Pacific and the world.

Table 6-4: Comparison of traffic forecasts

Source	Forecast Annual Growth
Master Plan 2039 (Sydney Airport)	
International	3.1%
Domestic	1.0%
Total	1.9%
Joint Study: Sydney 2010-2030 (Sydney Basin)	
International	4.1%
Domestic	2.8%
Total	3.2%
BITRE: Sydney 2010-2030 (Sydney Basin)	
International	4.5%
Domestic	3.1%
Total	3.6%
IATA: Sydney 2014-2021 (Sydney Basin)	
Total	3.0%
IATA: World 2016-2036	
Total	3.6%
ICAO: World 2010-2030	
Low	3.7%
Most Likely	4.7%
High	5.2%
ACI: World 2016-2031	
Total	4.9%
Airbus: world 2012-2031	
Total	4.7%

6.9.4 Comparison of Sydney to Melbourne in 2039 with large routes today

In the 'busy day' schedule used for planning, it is assumed that the average number of seats per aircraft movement on the Sydney to Melbourne route would grow from 183 in 2017 to 214 in 2039.

The result was then compared with the top 20 domestic routes worldwide in terms of total seat capacity in 2017. Comparing Figure 6-9 and Figure 6-10, it is noticeable that:

- Sydney to Melbourne ranks fourth in terms of total annual aircraft seats (Sydneyto Brisbane is 17th)
- Sydney to Melbourne ranks only 14th in terms of seats per aircraft (Sydney to Brisbane 19th)
- Growth to an average 214 seats per movement in 20 years for Sydney to Melbourne would still be outside the top 10 for today's worldwide routes

This indicates that there is significant scope for an increase in average aircraft size at Sydney Airport and that the forecast increase is supported by experience elsewhere in the world.

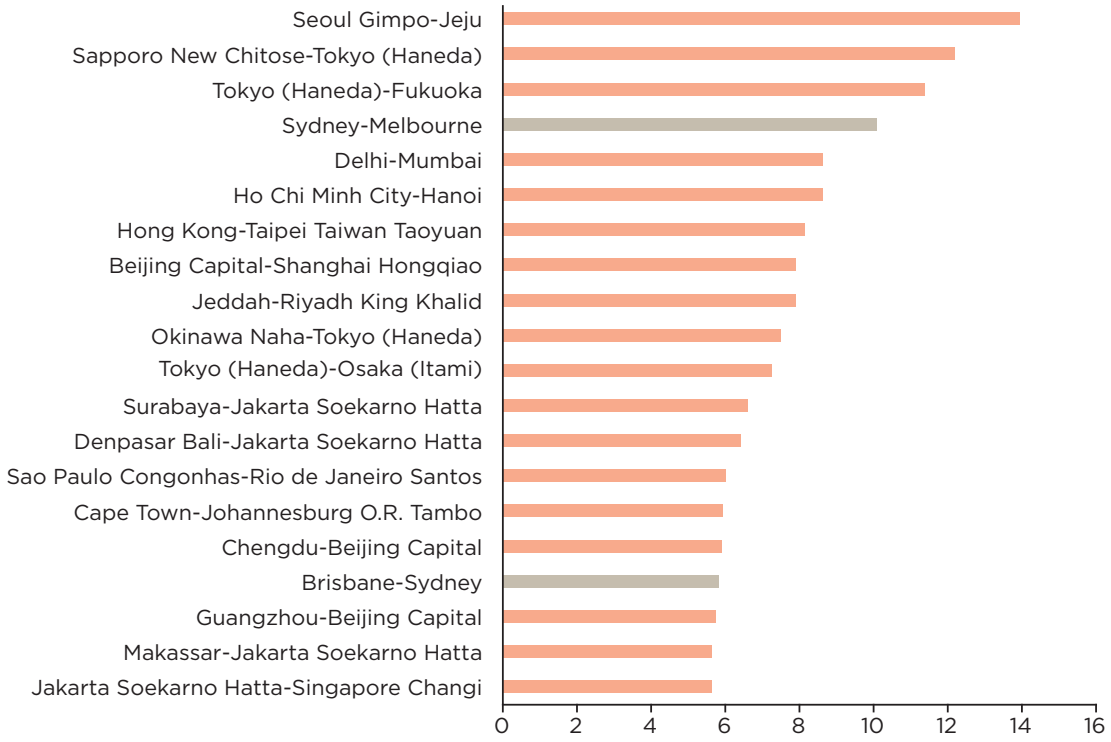


Figure 6-9: Top 20 worldwide routes based on annual aircraft seats in 2017

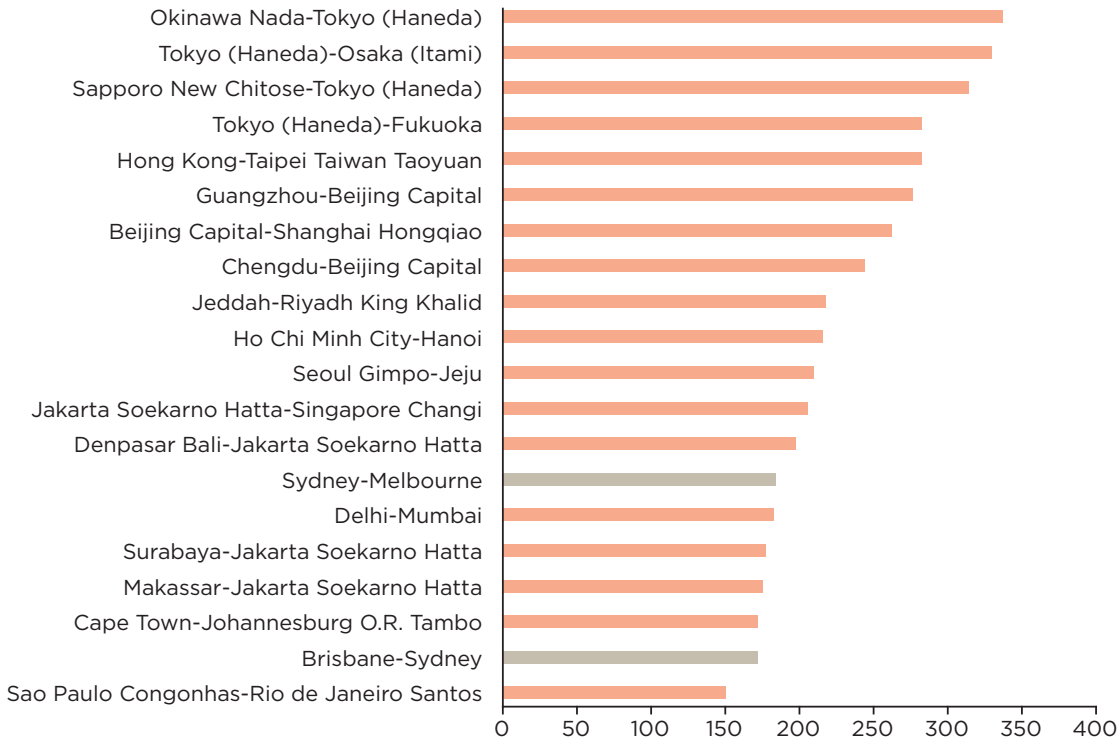


Figure 6-10: Top 20 worldwide routes based on annual aircraft seats in 2017- ranked by seats per aircraft

6.10 Representative Days and Noise Sharing

A representative busy day schedule was developed for 2039 to assess facility requirements, based on a busy Friday in August at Sydney Airport. This is consistent with previous master plans and with the practice of the slot coordinator for Sydney Airport.

The representative busy day analysis assessed:

- The operational suitability of an aircraft type for a given route network
- The aircraft rotations compatible with a high level of utilisation
- The use of commercially feasible arrival and departure timings throughout the network
- All regulatory requirements

In reality, there will be days in 2039 that are busier than the representative busy day however there will be more days that are less busy. The effect this will have on noise sharing under the Long-Term Operating Plan for Sydney Airport is discussed in section 15.6.3.

Figure 6-11 shows the forecast representative busy day hourly aircraft movement profile for 2039, broken down by flight category. This covers Sydney Airport's normal 17-hour operating day between 6am and 11pm. There are a small number of international passenger aircraft arrivals in the 5am-6am curfew shoulder period, which are not shown on the graph.

During the 11pm-6am curfew period, permitted freight and GA aircraft movements are projected to be four and 18 respectively. In 2017, a representative busy day (9 August) had 24 total movements by freight and GA aircraft during the curfew period.

It is expected that NSW regional air traffic at Sydney Airport will continue to account for a substantial proportion of slots in the peak hours in 2039.

Modernisation of the operating restrictions that govern Sydney Airport, as recommended by the Joint Study, could reduce the number of aircraft movements during the off-peak and increase the potential for noise sharing.

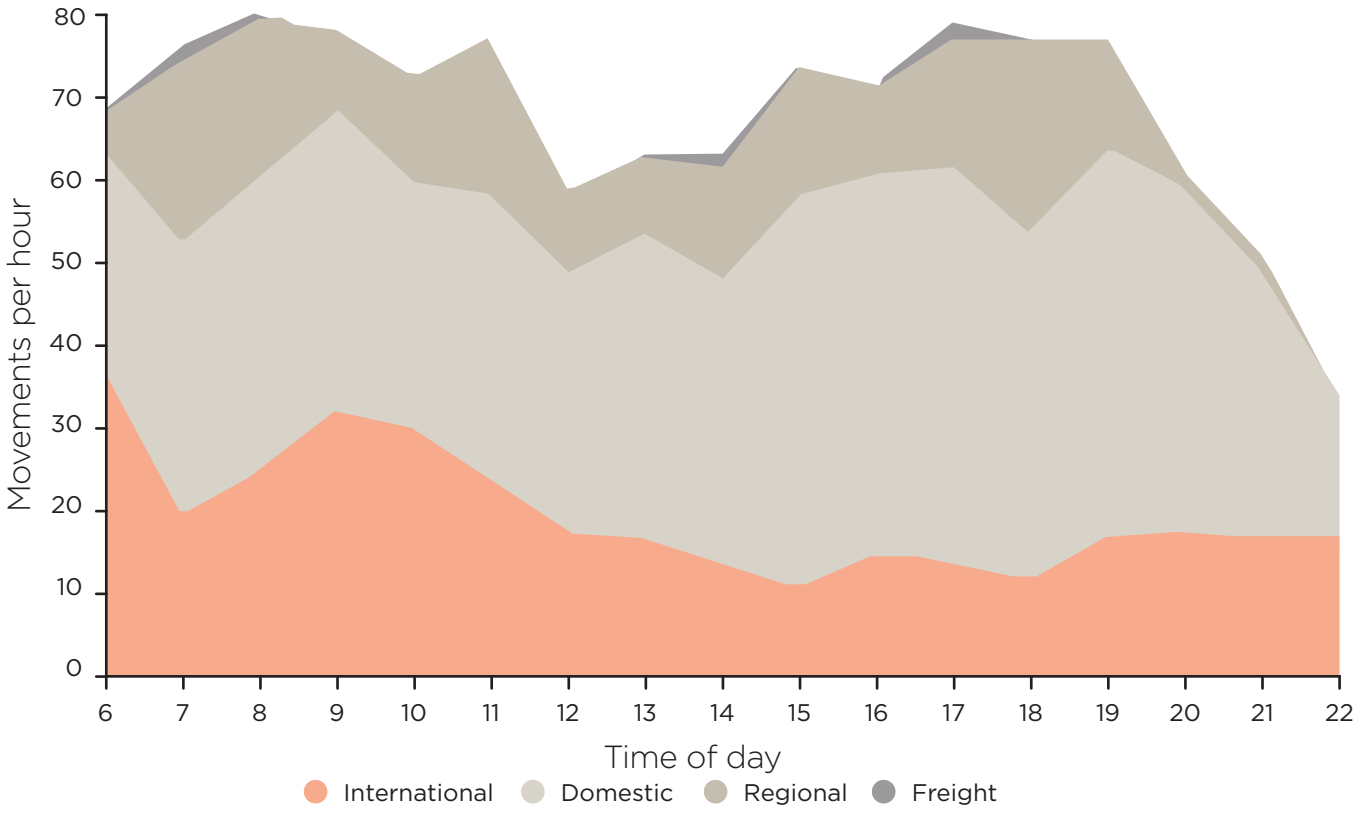


Figure 6-11: Forecast representative busy day hourly aircraft movements, 2039