MELBOURNE AIRPORT MASTER PLAN 2013

PEOPLE
PLACE
PROSPERITY

MELBOURNE AIRPORT

Please note

- Melbourne Airport is managed by Australia Pacific Airports (Melbourne) Pty Ltd (APAM), which is a subsidiary of Australia Pacific Airports Corporation Limited (APAC). In this document, the term 'Melbourne Airport' is used to refer to both the airport site and to APAM as manager of the site (as the case may be). 'Melbourne Airport' is a trademark of APAM.
- This Master Plan was prepared by APAM as part of its internal strategic planning processes and in accordance with the provisions of Part 5 of the *Airports Act 1996* (the Airports Act), and the Regulations made under that Act, and should be read in that context only.
- This Master Plan is a revision of the previous Master Plan that was approved by the Commonwealth Minister in December 2008. The fundamental philosophies of the previous Master Plan are maintained in this version.
- This Master Plan incorporates the 2013 Melbourne Airport Environment Strategy and the Melbourne Airport Ground Transport Plan in accordance with Part 5, Section 71 of the Airports Act.
- Development strategies and scenarios in this Master Plan are based on certain assumptions and forecasts that have been prepared by APAM to assist it in the strategic planning process, and to discharge its obligations under the Act. Therefore, the assumptions and forecasts should not be used or relied upon by any person for any other purpose.
- This Master Plan is APAM's statement of intent, based on current data and insights and is subject to change. Accordingly, the development strategies and scenarios detailed in it are indicative only, and their inclusion is not to be read as an assurance that any, or all of them, will occur.
- Significant changes to the Master Plan can only be approved by processing a replacement Master Plan or a minor variation. In addition, in accordance with Section 83A of the Airports Act, the airport-lessee company must take all reasonable steps to ensure that the Environment Strategy in the final Master Plan is complied with.

Melbourne Airport Master Plan 2013 approved by the Commonwealth Minsiter of Infrastructure and Regional Development on the 18 December 2013.

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ABBREVIATIONS

ABC	Airport Building Controller
AEC	Airport Environment Committee
AEO	Airport Environment Officer
AFP	Australian Federal Police
AH Act	*Aboriginal Heritage Act 2006*
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ANEI	Australian Noise Exposure Index
ANO	Aircraft Noise Ombudsman
APAC	Australia Pacific Airports Corporation Pty Ltd
APAM	Australia Pacific Airports (Melbourne) Pty Ltd
ATC	Air Traffic Control
BARA	Board of Airline Representatives of Australia
BHR	Busy Hour Rate
CACG	Community Aviation Consultation Group
CASA	Civil Aviation Safety Authority
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CEO	Chief Executive Officer
CHMP	Cultural Heritage Management Plan
DAFF	Department of Agriculture, Fisheries and Forestry
dBA	A weighted decibel scale
DIRD	Commonwealth Department of Infrastructure and Regional Development
DoTPALI	Victorian Department of Transport, Planning and Local Infrastructure
EIS	Environment Impact Statement
EMS	Environmental Management System
EPA	Environment Protection Authority (Victoria)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ESD	Ecologically Sustainable Design
FAA	Federal Aviation Administration
FFG Act	*Flora and Fauna Guarantee Act 1988 (Victoria)*
FOD	Foreign Object Debris

GBAS	Ground-Based Augmentation System
GDP	Gross Domestic Product
GIS	Geographic Information System
GPS	Global Positioning System
GRP	Gross Regional Product
GSE	Ground Services Equipment
GSP	Gross State Product
GTP	Ground Transport Plan 2009
GVA	Gross Value Added
HIAL	High Intensity Approach Lights
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
INM	Integrated Noise Model
ISO	International Standards Organisation
JUHI	Joint User Hydrant Installation
LCC	Low-Cost Carrier
LDA	Landing Distance Available
LTCP	Long-Term Car Park
MABP	Melbourne Airport Business Park
MACE	Melbourne Airport Cargo Estate
MAEO	Melbourne Airport Environs Overlay
MAL	Melbourne Airport Link
MALT	Melbourne Airport Landside Transport
MAPP	Melbourne Airport Project Process
MARS	Multiple Aircraft Ramp System
MAS	Melbourne Airport Strategy 1990
MATC	Melbourne Airport Transport Committee
MDP	Major Development Plan
Melbourne 2030	Melbourne 2030 – Planning for Sustainable Growth
Melbourne @ 5 million	Melbourne 2030: a Planning Update Melbourne @ 5 million
MRO	Maintenance, Repair and Overhaul
MSD	Melbourne Statistical Division

MSS	Municipal Strategic Statement
MTOW	Maximum Certified Take-Off Weight
NAC	Noise Abatement Committee
NAP	Noise Abatement Procedure
NASAG	National Airports Safeguarding Advisory Group
NASF	National Airports Safeguarding Framework
NGER Act	*National Greenhouse and Energy Reporting Act 2007 (Commonwealth)*
NPI	National Pollution Inventory
OLS	Obstacle Limitation Surfaces
OEMP	Operational Environmental Management Plan
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PCF	Planning Coordination Forum
PTV	Public Transport Victoria
RET	Rapid Exit Taxiway
RNP	Required Navigation Performance
RPAs	Rules and Practices for Aerodromes
SCOTI	Standing Council on Transport and Infrastructure
SMS	Safety Management System
SPP	Southern Precinct Program
SPPF	State Planning Policy Framework
SWMP	Stormwater Management Plan
T1	Terminal 1
T2	Terminal 2
T3	Terminal 3
T4	Terminal 4
T2E	Terminal 2 Expansion
The airport	Melbourne Airport
The Airports Act	*Airports Act 1996* (Commonwealth)
The Environment Strategy	The Melbourne Airport Environment Strategy 2013
The Master Plan	Melbourne Airport Master Plan 2013
The Native Vegetation Framework	Victoria's Native Vegetation Management – A Framework for Action
UGB	Urban Growth Boundary
WSUD	Water-Sensitive Urban Design

GLOSSARY

Aerobridge	An enclosed, movable connector that extends from an airport terminal gate to an aircraft.
Airport Master Plan	The principal planning document required under the *Airports Act 1996*, setting out a 20-year plan for each leased federal airport.
Aircraft noise contours	Contours that display the existing or forecast aircraft noise exposure patterns around an airport. These contours help land use planning authorities decide on acceptable development in close proximity to the airport.
Aircraft throughput	Equals aircraft demand.
Airservices	The Australian Government agency providing air traffic control management and related airside services to the aviation industry.
Airservices Noise Complaints and Information Service (NCIS)	A toll-free enquiry line operated by Airservices to provide the public with information on noise levels at major airports.
Airside	The aircraft movement area of an airport, adjacent land and buildings that is access-controlled.
Aircraft apron	The part of an airport where aircraft are parked and serviced, enabling passengers to board and disembark and cargo to be loaded and unloaded.
Australian Noise Exposure Concept (ANEC)	A set of contours based on hypothetical aircraft operations at an airport in the future. As ANEC maps are based on hypothetical assumptions and may not have been subject to review or endorsement, they have no official status and cannot be used for land use planning. However, an ANEC can be turned into an ANEF.
Australian Noise Exposure Forecast (ANEF)	A system developed as a land use planning tool aimed at controlling encroachment on airports by noise-sensitive buildings. The system underpins Australian Standard AS2021 'Acoustics – Aircraft noise intrusion – Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones. ANEFs are the official forecasts of future noise exposure patterns around an airport and they constitute the contours on which land use planning authorities base their controls.
Australian Noise Exposure Index (ANEI)	Contours developed under the ANEF framework showing historic noise exposure patterns used in environmental reporting and benchmarking.
Busy Hour Rate	The sliding 60-minute period during which the maximum total traffic load in a given 24-hour period occurs.
Civil Aviation Safety Authority (CASA)	An independent statutory body responsible for regulating aviation safety in Australia and the safety of Australian aircraft overseas.
Code C aircraft	An aircraft that has a wingspan of between 24 metres and up to but not including 36 metres. Examples are the Airbus A320 series and Boeing 737-700/800 series.
Code D aircraft	An aircraft that has a wingspan of between 36 metres and up to but not including 52 metres. An example is B767-300.
Code E aircraft	An aircraft that has a wingspan of between 52 metres and up to but not including 65 metres. Examples are the Airbus A330 or A340 and Boeing 747 or 777/787.
Code F aircraft	An aircraft that has a wingspan of between 65 metres and up to but not including 80 metres. An example is the Airbus A380.

Contact bay, contact gate, contact stand	Aircraft stand with direct access to and from the terminal building, typically via an aerobridge.
Controlled airspace	Airspace of defined dimensions within which air traffic control services are provided in accordance with airspace classifications.
Curfews	A restriction on certain flights taking off or landing from specified airports at designated times.
Foreign Object Debris	A substance, debris or article alien to a vehicle or system, which would potentially cause damage.
Green Wedge Zone	A land use zone to control use of the land and to recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.
Ground-Based Augmentation System (GBAS)	A satellite-based precision landing system, recognised by ICAO as a replacement for current instrument landing systems (ILS).
Ground Service Equipment (GSE)	Airport support equipment, for example, aircraft pushback tractors, baggage tugs, ground power units and engine air start units.
Host economy	Municipalities within a 15-kilometre radius of Melbourne Airports. These are the Cities of Brimbank, Hume, Maribyrnong, Moonee Valley, Moreland and Whittlesea.
Instrument Landing System (ILS)	Instruments capable of providing both directional and glide slope guidance.
International Air Transport Association (IATA)	An international organisation representing and serving the airline industry worldwide.
International Civil Aviation Organization (ICAO)	Brings together states and key industry organisations to determine areas of strategic priority; develops policies and standards; coordinates global monitoring, analysis and reporting initiatives, and delivers targeted assistance and capacity building
Joint User Hydrant Installation (JUHI)	Provides critical aviation support infrastructure in the form of a jet fuel storage facility and the Jet Fuel Hydrant Pipeline Network Facility.
Landside	The area of an airport and buildings to which the public normally has free access.
Leased federal airports	The 21 airports privatised under the *Airports Act 1996*, where the airport operators lease the airport land from the Australian Government.
Major Development Plan	A requirement under the *Airports Act 1996* for airport lessee-companies to provide information to the Australian Government and the public about significant planned development on leased federal airport sites.
Multiple Aircraft Ramp System (MARS)	This system allows two smaller aircraft to be parked on a single large aircraft stand.
Non-aeronautical development	Non-aviation commercial developments, such as retail outlets and office buildings, on airport sites.
Obstacle Limitation Surfaces (OLS)	A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles, in order to permit the intended aircraft operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles.

Precision Approach Path Indicator (PAPI)	A visual aid that provides guidance information to help a pilot acquire and maintain the correct approach (in the vertical plane) to an airport.
Procedures for Air Navigation Services – Aircraft Operations (PAN-OPS)	A set of ICAO rules for designing instrument approach and departure procedures at aerodromes.
Rapid Exit Taxiway	Taxiways linked to runways at an angle that permit aircraft to exit the runway at high speeds.
Required Navigation Performance	Part of the broader Performance-Based Navigation concept, a statement of the navigation performance necessary for operation within a defined airspace.
Southern Precinct Program	The proposed new domestic terminal incorporating the existing Terminal 4. The project also includes a new multi-level ground transport hub and airfield works.
Specialised Activity Centre	These are important economic precincts that provide a mix of economic activities and that generate high numbers of work and visitor trips.
Taxiway	A path on an airport connecting runways with ramps, hangars, terminals and other facilities.
TravelSmart	TravelSmart is a State Government initiative to reduce people's dependency on cars and encourage them to choose sustainable transport alternatives such as cycling, walking and public transport.
Trunk infrastructure	Key infrastructure such as water, electricity and sewerage.
Urban Growth Boundary	A regional boundary set to control urban sprawl by mandating that the area inside the boundary be used for higher density urban development, and the area outside be used for lower density development.
Walk-out pier	Aircraft stand without direct access to and from the terminal building, typically via a short apron walk or bus trip.
WebTrak	A web-based system established by Airservices to provide the community with information on where and how high aircraft fly around major airports, as well as the noise levels of these operations.

FOREWORD

We are pleased to deliver Melbourne Airport's 2013 Master Plan which was approved by the Commonwealth Minister for Infrastructure and Regional Development on 18 December 2013. The plan outlines our vision and strategic intent for Melbourne Airport's future for the next 20 years.

As Melbourne and Victoria grow, so will the demand for air travel. In years to come, Melbourne Airport will serve more passengers, new aircraft and more flights, supporting the growth of the local, state and national economies and keeping Victorians connected with the rest of Australia and the world for business, tourism, education and trade.

Since its privatisation in 1997, Melbourne Airport has achieved the highest compound annual passenger growth rate of any major Australian airport, despite significant global and domestic challenges. Forecasts indicate that the number of passengers coming through the airport each year will increase from the current 30 million passengers to 64.37 million by 2033. Effective on-airport planning by Melbourne Airport and off-airport development planning in collaboration with local and State governments will ensure Melbourne Airport can continue to meet the changing needs of airport users, local communities and businesses.

This Master Plan builds on Melbourne Airport's strategic strengths, including 24-hour operations, efficient and reliable transport links, stakeholder support and safeguarded capacity to grow. To support efficient operations and continuing sustainable growth, Melbourne Airport has nominated the preferred orientation of the third runway in the Master Plan. This important project will enhance future capacity, ensure Victoria remains competitive and attractive for airlines, and make a significant economic contribution to the state.

The Master Plan also addresses the key issues facing Melbourne Airport, including the need to successfully manage interactions between a major transport infrastructure hub and our residential neighbours. With the support of our stakeholders, we will operate and grow the airport responsibly. The airport develops a Master Plan every five years, clearly communicating our intentions to the community and our other key stakeholders.

Melbourne Airport's vision for the next 20 years is to strengthen its position as the gateway to Victoria, and as a major generator of employment and economic benefits for the local region and Victoria more broadly. This Master Plan sets out the steps we will take to achieve that vision.

Chris Woodruff
CEO & Managing Director

Bryan Thompson
General Manager, Strategy, Planning and Development

EXECUTIVE SUMMARY

Melbourne Airport is Australia's second busiest passenger airport and the main aviation hub for the southern part of the continent. In the last year more than 30 million passengers and around 250,000 tonnes of freight passed through the airport. The airport's operations support 14,300 jobs and indirectly support another 43,000 jobs.

The airport is also significant as it is home to one of Airservices' two major air traffic control centres. The Melbourne centre manages around six per cent of the world's air space. The Southern Flight Information Region extends from Indonesia to Antarctica and from halfway to New Zealand to halfway to Africa.

As the gateway to Victoria, Melbourne Airport is a significant contributor to the local and state economies. The economic activity undertaken across the airport precinct contributes approximately $1.47 billion a year to Victoria's Gross State Product.

Currently the airport's indirect and induced activity adds nearly $5.2 billion to the Victorian economy. The 7.9 million visitors (1.4 million foreign and 6.5 million interstate) that currently come through the airport spend approximately $8.3 billion in Victoria, nearly half the state's annual tourism expenditure.

Over the next five to 20 years, Melbourne Airport will contribute even more to Victoria. The number of passengers is forecast to grow to 38 million by 2018 and to 64.37 million by 2033. Approximately 30,000 international aircraft are expected to arrive at Melbourne Airport annually by 2033, bringing 3.2 million foreign visitors who are expected to spend up to $8.5 billion in the state. Total spending by foreign and interstate visitors is projected to reach $18.5 billion in 2033. Freight volumes will increase to 393,000 tonnes by 2033.

Melbourne Airport has begun preparations to ensure it can accommodate this projected growth. During the past five years, the airport has put in place the development plans outlined in the 2008 Master Plan. In that time, it has resurfaced the two existing runways; expanded the international terminal, including adding two more international baggage carousels; and planned and designed the Southern Precinct Program including a new domestic terminal (T4). The airport has also made significant airfield improvements, constructed the APAC Drive on-ramp and enhanced the road network, increased car parking capacity, and in cooperation with Airservices implemented an all-weather landing system that allows aircraft to land in fog.

2013 Melbourne Airport Master Plan

As Melbourne and Victoria continue to grow, so will the demand for air travel. To service this demand, Melbourne Airport must continue to efficiently and sustainably develop the precinct to overcome airfield and terminal capacity issues as well as road congestion. It must also ensure its day-to-day operations and proposed developments have minimal impact on the environment and local communities.

As part of the planning and development process, the *Airports Act 1996* (Airports Act) requires Melbourne Airport to produce a Master Plan outlining its strategic vision for the site for the next 20 years. This Master Plan presents concept plans for the short term (five years), medium term (five to 20 years) and ultimate term (20-plus years).

The Plan covers the subjects set out in Section 71 of the Airports Act, including development objectives, future use forecasts and environmental impacts. It includes plans for:

- land use and development
- airside development (runways, taxiways, aprons and air navigation facilities)
- terminal development
- non-aviation development
- infrastructure development (water, sewerage, stormwater drainage, electricity and other utilities)
- safeguarding strategies
- airport roads.

It also provides specific details about ground transport and proposed commercial developments for the first five years of the Plan, and is the first airport Master Plan to incorporate a five-year Environment Strategy.

Third Runway

Since 1990, Melbourne Airport has documented its vision for a four-runway configuration. During the period of this Master Plan, the airport proposes developing and constructing the third of these runways and nominates its preferred orientation: an additional east–west runway. This preference is based on extensive analysis, which indicates that the existing two-runway system would reach capacity between 2018 and 2022, even after comprehensive enhancements to the current infrastructure.

The planned new runway will lie approximately two kilometres south of the existing east–west runway enabling both runways to operate independently. The key advantage of this location over a north–south orientation is its proximity to the terminal precinct. This will facilitate easy and efficient aircraft movements to and from the runways without any 'live' runway crossings. On the ground, this means fewer ground delays. Fewer ground delays should also reduce noise and carbon emissions.

Melbourne Airport expects the three-runway system to facilitate at least 380,000 aircraft movements a year, compared to the 210,000 annual aircraft movements the existing two runways can support. The maximum hourly movement rate that can be achieved in the most favourable weather conditions will increase from 60 to 88 movements an hour. Based on current forecasts, it is anticipated the third runway can accommodate aircraft movements at Melbourne Airport until around 2040.

Managing Noise

While aviation offers a broad range of economic and social benefits, the nature of airport operations means a certain level of aircraft noise is unavoidable. While technology advances and improved airspace management will mitigate some of the noise, suburbs surrounding Melbourne Airport will continue to be affected.

This and previous Master Plans have used the Australian Noise Exposure Forecast (ANEF) system to determine the 'ultimate' noise exposure of a four-runway configuration. The ANEF in this Master Plan, which has been endorsed by Airservices for technical accuracy, is broadly similar to that published in the 2008 Master Plan. Overall, the total area of the noise contours has decreased by approximately 5 per cent compared to the previous ANEF. While in some areas the contours have decreased, particularly to the south, in other areas, particularly to the east, the contours have increased. These changes are due to the updated assumptions and more sophisticated modelling used in current forecasts.

Melbourne Airport continues to work with Airservices and airlines to limit noise impacts, where reasonably possible. This may include implementing noise abatement procedures for arriving and departing aircraft at certain times of the day. The airport also holds regular meetings with the Noise Abatement Committee and the Community Aviation Consultation Group to discuss noise concerns with a view to improving aircraft noise management.

Melbourne Airport has also developed an on-line noise tool that allows residents to locate their home and assess current and future noise levels. This tool is available at www.melbourneairport.com.au/noise-tool.

Ground Transport Infrastructure

Melbourne Airport proposes to significantly improve the ground transport infrastructure within and around the airport precinct. Increases in passenger movements, employee numbers, commercial developments and freight and logistics activities are expected to generate 225,000 daily vehicle trips to and from the precinct by 2033, based on existing mode shares.

Melbourne Airport recognises that congestion in and around the airport needs to be addressed so that traffic can flow efficiently now and in the future. The Master Plan includes plans for a single-direction elevated loop road to be built above the existing road network, which is expected to cater for more vehicles and reduce travel time. Melbourne Airport proposes constructing the elevated loop road in stages over several years, with the first stage expected to begin in 2014.

A new approach road to the airport from the M80 Ring Road through a 3.7-kilometre extension of Airport Drive from Sharps Road to Mercer Drive is also planned. The Airport Drive extension will provide a second entry point into the airport and relieve some of the congestion on the Tullamarine Freeway and local roads.

To further streamline traffic flow around the front of the terminals, Melbourne Airport plans to build ground transport hubs that separate different transport modes, to allow for passenger pick-up and drop-off and provide access to public transport and parking. The first ground transport hub is proposed as part of the new Southern Precinct Program.

In addition to these major projects, the airport intends to work with business operators to improve the bus, taxi and freight systems, and enhance walking and cycling networks.

Melbourne Airport is aware that its transport infrastructure has to be integrated into existing state and local transport networks and is working actively with all tiers of government to achieve this.

The airport recognises the significance of a multi-modal transport system, with good public transport links enabling access to the airport. The Master Plan and proposed developments retain a rail corridor which is consistent with the Albion-East alignment which was identified as the best route for a Melbourne Airport Rail Link by the State Government. However, the decision to build a rail link ultimately rests with the Victorian Government. Melbourne Airport continues to advocate for a dedicated rail link.

The development of an airport rail link depends on a range of factors, including funding and capacity levels in the wider rail network. Therefore it is likely that a rail link will be outside the five-year focus of this Master Plan. As an interim measure, the Master Plan identifies opportunities to prioritise and organise additional bus services and provide better links from metropolitan and regional rail services to Melbourne Airport. The airport will continue to work with Public Transport Victoria on these initiatives.

In conjunction with the Victorian Government, the other long-term issue that Melbourne Airport will continue to address is the congestion on the Tullamarine Freeway.

Environment Strategy

Melbourne Airport understands it has an environmental responsibility to the community to limit, as far as practicable, the impact of its operations on the surrounding environment. For the first time, the airport has incorporated an Environment Strategy in the Master Plan, as required under amendments to the Airports Act.

The Environment Strategy describes the key environmental issues faced by the airport and how it intends to address them. It provides an overview of the environmental management systems, processes and practices in place at the airport, as well as its environmental policies, monitoring and training procedures. The strategy also sets environmental targets for business operators, tenants and retailers.

Among the key topics covered are: air quality, biodiversity and conservation, climate change, cultural heritage, ecologically sustainable development, noise, water consumption, and waste and resource management.

Melbourne Airport recognises that with expected increases in passenger numbers and expansion over the coming years, commitment to sound environmental management principles is now more important than ever. The Environment Strategy will underpin the airport's activities and developments to ensure its future growth is not at the expense of the environment or the area's cultural heritage.

Safeguarding the Airport

As Melbourne and Victoria grow, so does the demand for residential land. New communities will continue to encroach on the airport and its surrounds. However, responsible planning by Melbourne Airport and both State and local governments will enable the airport to expand without compromising the needs of these new communities.

The Master Plan describes the objectives of the airport's safeguarding strategy, including suggested improvements to state and local planning policies and controls relating to land use and development around the airport, as well as managing aircraft noise and protecting airspace. These measures will help strengthen Melbourne Airport's role within Victoria's economic and transport infrastructure, secure its long-term operations and 24-hour curfew-free status, and facilitate future growth, while balancing the needs of the communities surrounding the airport.

Implementation Strategy

The final section in this Master Plan describes the systems, policies and procedures that Melbourne Airport will use to implement the proposed vision. An important part of the implementation strategy is engaging with stakeholders and the community.

Community and Stakeholder Engagement

Melbourne Airport will continue to demonstrate a strong commitment to community consultation and proactive communication about its plans for the future. The airport will continue to actively communicate with local, State and Commonwealth Governments, local businesses, industry partners and the broader community.

Melbourne Airport will continue to hold regular briefings, meetings and forums to update all levels of government, airlines, businesses, industry bodies, tourism agencies, residents and employees on its current operations and future projects. Existing bodies, including the independently chaired Community Aviation Consultation Group, the Planning Coordination Forum, the Melbourne Airport Transport Committee, the Noise Abatement Committee and the Environment Committee, are critical to the ongoing engagement process. The airport encourages open, transparent communication and welcomes feedback from all parties.

Conclusion

The developments and improvements proposed in this Master Plan are designed to ensure Melbourne Airport can meet the increasing demand on its facilities and services over the next five to 20 years. By acting now in a responsible and sustainable manner, the airport can continue to deliver significant, long-lasting economic and social benefits to Victoria.

1

INTRODUCTION

1. INTRODUCTION

1.1 Location

Melbourne Airport is the major gateway to Victoria and south-east Australia for airline passengers and air freight. The airport is located approximately 22 kilometres north-west of Melbourne's central business district (CBD), with fast and convenient access to and from the Tullamarine Freeway and the M80 Ring Road. Figure 1.1 shows the airport's location.

The airport is well located relative to the CBD, major commercial and retail centres and Melbourne's major industrial areas. In addition, Melbourne Airport has excellent transport links with regional areas and freeway connections to the Port of Melbourne and Port of Geelong.

Melbourne Airport is managed by Australia Pacific Airports Melbourne (APAM) Pty Ltd, which is a subsidiary of Australia Pacific Airports Corporation (APAC) Limited. In this document, the term Melbourne Airport is used to refer to both the airport site and to APAM as manager of the site. 'Melbourne Airport' is a trademark of APAM.

1.2 Existing Airport

Figure 1.2 shows an aerial view of the existing airport site. The airport's facilities are shown on the Existing Airport Plan in Figure 1.3.

The airport site includes a north–south runway (Runway 16/34) that is 3,657 metres long and 60 metres wide, and an east–west runway (Runway 09/27) that is 2,286 metres long and 45 metres wide. Both Runways 16 and 27 are supported by instrument landing system approaches, and non-precision approaches are available for all runways. The two runways are supported by full-length 23-metre wide taxiways, with high-speed runway exits to increase efficiency.

The terminal complex is located on the east side of the north–south runway, south of the east–west runway. The passenger terminal complex combines international facilities (T2) with three domestic terminals (T1, T3 and T4). This single terminal precinct enables Melbourne Airport to provide the shortest minimum connection time between domestic and international flights of all major Australian airports. Freight handling facilities are located to the south of the passenger terminal complex.

The terminal precinct is served by approximately 60 hectares of apron to accommodate aircraft for loading or unloading passengers, mail or cargo, fuelling, parking or maintenance. The passenger terminal aprons provide contact bay capacity (aerobridge gates) at T1, T2 and T3. Stand-off/walk-out bay capacity (non-aerobridge gates) is available adjacent to T4, as well as in a growing number of locations close to T1, T2 and T3 and the freight handling facilities. Aviation support infrastructure, including Joint User Hydrant Installation (JUHI) fuel infrastructure and Ground Services Equipment (GSE) areas, is provided at various locations in the airfield precinct.

Aircraft maintenance facilities are provided to the south of the terminal precinct, north of Operations Road (refer Figure 1.3). The four facilities are operated under lease arrangements and are master planned for incremental development.

The main access to the airport is via the Tullamarine Freeway at Mercer Drive and Terminal Drive. The main egress roads are Melbourne Drive and APAC Drive, which join the Tullamarine Freeway. Other direct access and/or egress roads are Sunbury Road, Melrose Drive (which, except for the section on the airport site, is not presumed to be a major access way now and is anticipated to be downgraded in the future) and South Centre Road.

The suburbs surrounding the airport are easily accessible via the Tullamarine Freeway and the M80 Ring Road with connections to the Hume, Calder, Western and Princes Freeways. Melbourne Airport is located on the Principal Public Transport Network.

Key internal roads are Centre Road, Melrose Drive, APAC Drive, Link Road, South Centre Road and Operations Road. Roads within the forecourt area include Arrival Drive and Departure Drive.

1.3 Land Availability

The current Melbourne Airport site is approximately 2,457 hectares, comprising 2,367 hectares of Commonwealth-leased land and 90 hectares of freehold land.

This Master Plan, as did previous plans, reinforces that the airport will ultimately have a four-runway system. Previous plans have also identified that additional land west of McNabs Road will be required to accommodate the two future runways and further development. The majority of the 26 properties identified in the 1990 Melbourne Airport Strategy for acquisition have been acquired by negotiation.

Future land acquisition to accommodate the airport's expansion will eventually increase the area of the site to approximately 2,663 hectares. Melbourne Airport expects this land can accommodate the operational areas, terminals, aviation support and commercial facilities needed to support the airport's growth for the foreseeable future.

LOCALITY MAP

This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Location Plan

Fig. 1.1

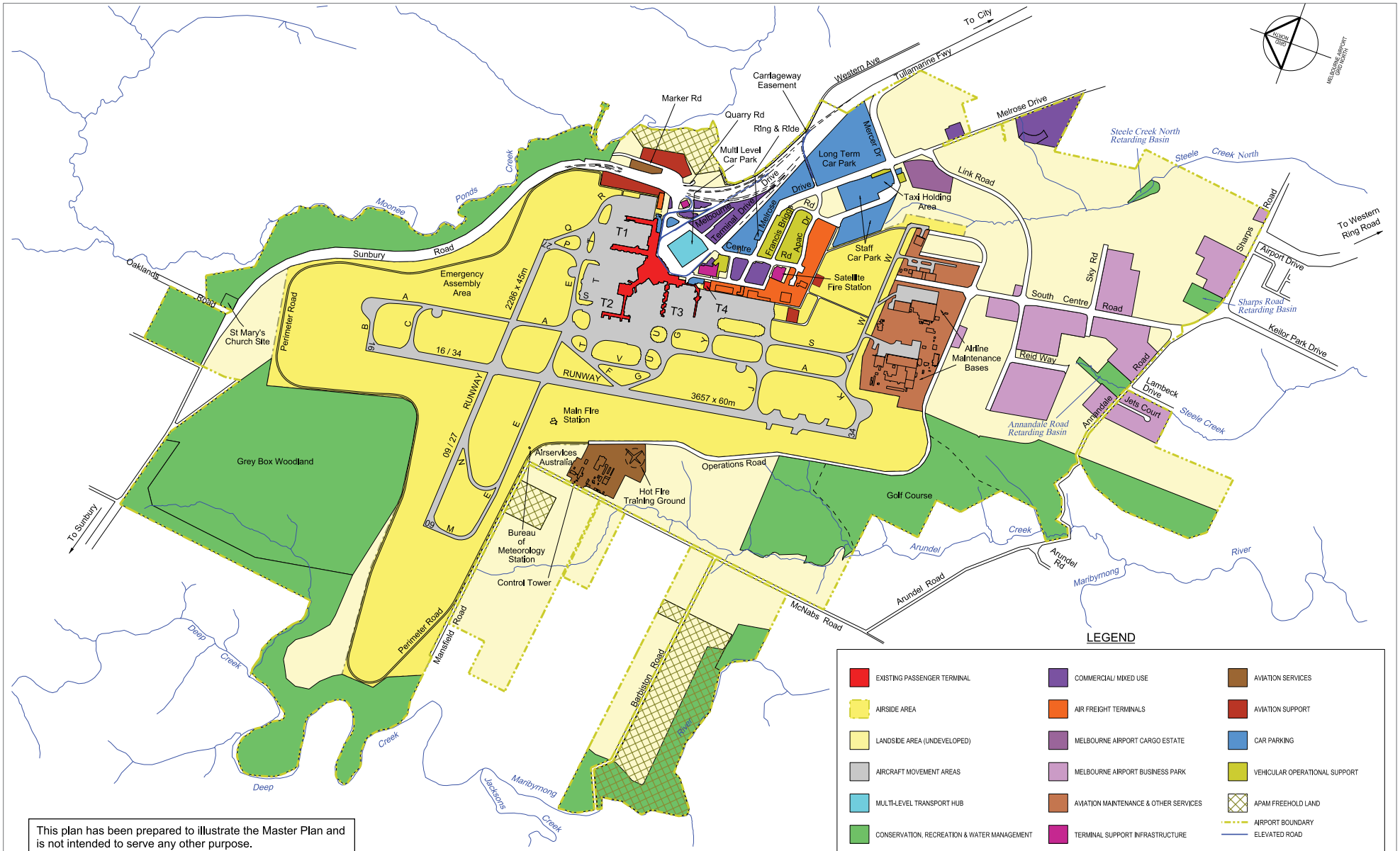
This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Existing Airport
Aerial Photograph

Fig. 1.2



This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Existing Airport Plan

Fig. 1.3

1.4 History

Melbourne Airport's planning and development is the result of some 50 years of initiatives by various levels of government and other parties, starting with the site's selection in 1959 and evolving through a series of studies, hearings, policies and strategies to the planning framework that regulates its present operation and future development.

As early as 1939, the Commonwealth Minister for Defence realised that a new airport site to replace Essendon Airport would be required at or near the township of Tullamarine and investigations commenced.

Melbourne Airport's Tullamarine site was chosen because it offered ample opportunity for long-term growth. The site was reasonably accessible to the city, but far enough away from established areas to be able to operate without constraint. At the time, it was considered to be "one of the best airport sites in the world".[1]

Much of the present core airport infrastructure, including the two existing runways and the main terminal complex, was constructed in the 1960s. The first scheduled international flights took place in 1970, followed a year later by the first domestic flights. Since the 1960s, it has been envisaged that the airport would ultimately have four runways.

For the first 27 years of operation, Melbourne Airport was operated by the Commonwealth Government, initially by the Department of Civil Aviation and from 1988 the Federal Airports Corporation, a government-owned enterprise. In 1997, when Commonwealth airports were privatised, Australia Pacific Airports Melbourne (APAM) Pty Ltd became the airport-lessee company for Melbourne Airport (refer Section 1.5.5 below).

1.5 Statutory Framework

1.5.1 *Airports Act 1996*

Melbourne Airport is situated on land largely owned by the Commonwealth Government and is subject to Commonwealth legislation to regulate both its own business operations and those of business operators, including airlines, tenants and retailers. The Airports Act 1996 (Airports Act) is the primary legislative instrument governing the airport's operation, planning and development. The Airports Act and associated regulations are the statutory controls for ongoing regulation of aeronautical and non-aeronautical activities on airport land.

As part of the planning framework, the Airports Act requires APAM, as lessee of the airport, to prepare a Master Plan setting out a 20-year strategic vision for the growth of airport activities and site development every five years. The Master Plan must include an Environment Strategy and Ground Transport Plan.

Section 70 (2) of the Airports Act states that the Master Plan's purpose is to:

a. establish the strategic direction for efficient and economic development at the airport over the planning period of the plan
b. provide for the development of additional uses of the airport site
c. indicate to the public the intended uses of the airport site
d. reduce potential conflicts between users of the airport site, and to ensure that use of the airport site is compatible with the areas surrounding the airport
e. ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards
f. establish a framework for assessing compliance with relevant environmental legislation and standards
g. promote the continual improvement of environmental management at the airport.

Section 71 of the Airports Act specifies the matters that must be set out in a Master Plan. Among other things, the Master Plan must provide details of future land use plans, proposed developments, noise impacts and environmental management.

This Master Plan has been prepared in accordance with the requirements of the Airports Act.

1.5.2 Changes to the Airports Act

Since the 2008 Master Plan was approved, there have been several changes to the Airports Act, including new requirements for airport Master Plans.

On 16 December 2009, the Commonwealth Government released the *National Aviation Policy White Paper*, which provided a policy framework for Australia's aviation industry and the development of its airports. The paper set out the Government's commitment to the ongoing development of the aviation industry through better planning and integrated development at airports.

1 Commonwealth *Parliamentary Debates*, House of Representatives, 8/11/1962, page 2,223, per Mr Jess (La Trobe).

In December 2010, the *Airports Act Amendment Act 2010* was enacted, giving effect to many of the previous Government's policies set out in the *National Aviation Policy White Paper*, including in relation to airport Master Plans and Major Development Plans.

The key changes made to the Airports Act in relation to airport Master Plans were to require:

- more detailed information on proposed developments for the next five-year cycle, particularly on proposed non-aeronautical developments
- an analysis of the Master Plan's consistency with planning schemes adjacent to the airport
- identification of any proposed 'sensitive development'
- incorporation of the Environment Strategy (previously a separate document)
- incorporation of a Ground Transport Plan (previously a separate document).

This Master Plan meets the above requirements.

1.5.3 *Environment Protection and Biodiversity Conservation Act 1999*

Melbourne Airport must comply with the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). This legislation is particularly relevant to airport Master Plans due to its requirements for managing significant flora and fauna species.

1.5.4 State Legislation

Melbourne Airport must also comply with state environmental legislation to the extent that its activities impact surrounding Victorian land and waterways. The principal legislation is the *Environment Protection Act 1970* (Victoria). This applies to receiving bodies of stormwater, waste, ground vehicle emissions and hazardous materials.

State planning laws do not apply to the airport site. However, regulations made under the Airports Act require the Master Plan, where possible, to describe proposals for land use planning and zoning in a format consistent with that used by the state or territory in which the airport is located. Where possible, this Master Plan has considered state planning requirements and has used zones, overlays and other planning provisions derived from the Victoria Planning Provisions.

1.5.5 Airport Lease

Under the provisions of the Airports Act, APAM is the 'airport-lessee company' for Melbourne Airport. APAM is responsible for managing the airport for 50 years to 2047, with an option to extend this lease by a further 49 years to 2096. It manages the entire airport site, including the airside, terminal and landside precincts, the road network and associated service infrastructure. APAM is also required to develop Melbourne Airport, taking into account anticipated traffic demand to the quality standards reasonably expected of a major international airport in Australia and good business practice.

To meet its obligations under the lease, APAM has been responsible for a number of major developments, including widening Runway 16/34, expanding the international passenger terminal, constructing the Mercer Drive off-ramp and APAC Drive on-ramp, and initiating various developments in the Melbourne Airport Business Park.

1.6 Previous Studies, Strategies and Plans

1.6.1 Early Plans

Early plans for Melbourne Airport were based on meeting the long-term needs of international and domestic airline traffic. Initially two runways were envisaged (and eventually constructed), with provision for a parallel runway system if necessary. The early plans also included extensive terminal and aircraft maintenance areas. In the 1960s and 1970s development plans showed two additional runways in the south-east area of the site, where the Melbourne Airport Business Park is now located.

1.6.2 Melbourne Airport Strategy 1990

During the 1980s Melbourne Airport expansion plans were assessed. Runway locations in earlier airport plans were no longer appropriate due to environmental considerations, and provided only limited landside development opportunities.

In response to long-range traffic forecasts (1990 to 2050), the Federal Airports Corporation and the State Government jointly developed a long-term strategy for the airport's development and management. Its objectives were to:

- maximise the use of Melbourne Airport to achieve the greatest economic benefit for the state, the aviation industry and the airport operator
- ensure that Melbourne Airport has the capability required of a major Australian international and domestic airport by planning adequately for aviation traffic, passenger flows and ground traffic, within agreed social and environmental constraints
- agree on an airport design that balances airside and landside operations
- enable progressive development of facilities when economically justified, in terms of passenger capacity and/or aircraft operations, passenger convenience and freight movements
- retain, as far as practicable, flexibility in the plan to meet changing demands or circumstances within agreed criteria.

The Melbourne Airport Strategy 1990 (MAS) was formally endorsed by the Commonwealth and State governments in 1990 following a comprehensive Environmental Impact Statement involving extensive community and industry consultation. The Environmental Impact Statement was prepared under the Commonwealth *Environment Protection (Impact of Proposals) Act 1974* and was subsequently approved by the Minister for the Arts, Sport, the Environment, Tourism and Territories on 12 November 1990.

The MAS provided a broad framework for orderly airport development, road and rail access and external land use control to protect the airport's 24-hour, curfew-free operation. A key feature was provision for the future development of wide-spaced parallel north–south and east–west runways to optimise hourly and annual capacities and operational flexibility.

The MAS's principal features are illustrated in Figure 1.4. These features have provided the basis of every Melbourne Airport Master Plan since 1990, including this Master Plan.

1.6.3 Melbourne Airport Land Use Study 1992

Following the endorsement of the MAS, the Melbourne Airport Land Use Study was prepared. The study made recommendations on:

- introducing planning controls to limit the development of noise-sensitive land uses in certain areas around the airport
- areas within which noise-attenuation features should be required in construction
- areas of land suitable for airport-related commercial and industrial development.

The study's recommendations led to the introduction of the first land use planning controls for areas around Melbourne Airport in 1992, and the introduction of a public acquisition overlay applying to areas identified in the Melbourne Airport Strategy Environmental Impact Statement for future runway development.

1.6.4 Melbourne Airport Master Plan 1998

Following privatisation in 1997 and as a requirement of the Airports Act, the 1998 Master Plan was developed. It was consistent with the findings of the Melbourne Airport Strategy 1990 and adopted the strategy's recommendations for a future four-runway airside system.

1.6.5 Melbourne Airport Environs Strategy Plan 2003

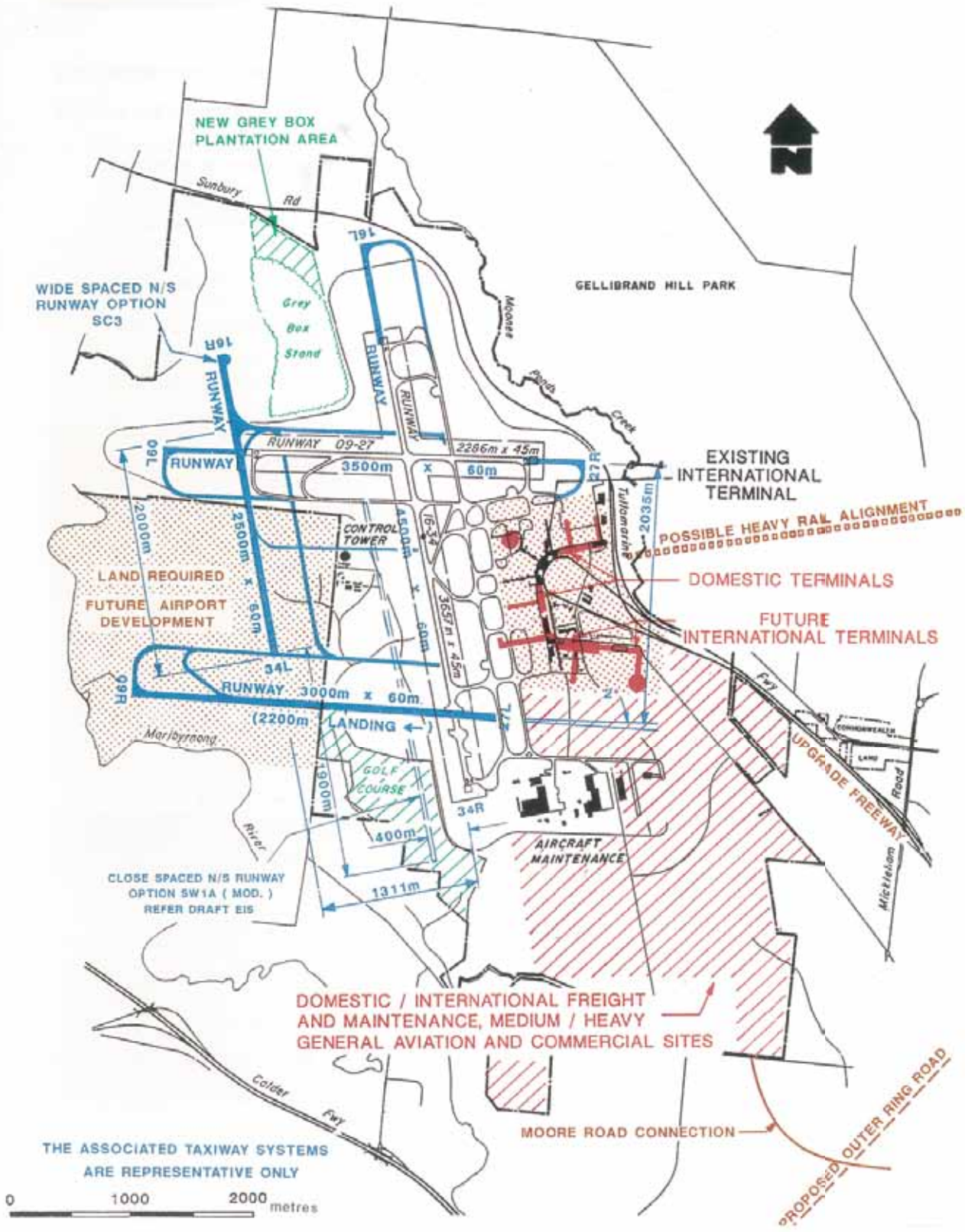
The State Government prepared the Melbourne Airport Environs Strategy Plan to address a number of issues and concerns with the then Airport Environs Overlay as it related to Melbourne Airport. A key driver of the plan was ensuring Victoria retains 24-hour, curfew-free airport operations while appropriately managing the impact of aircraft noise on residential areas.

The plan recommended a new separate planning provision for Melbourne Airport and proposed a number of other initiatives outside the planning system, such as promoting broader public awareness of aircraft noise exposure.

The Melbourne Airport Environs Strategy Plan is afforded special status under Part 3C of the State *Planning and Environment Act 1987*.

In May 2007, the State Government implemented the plan's recommendations and the new overlay control through Planning Scheme Amendment VC30, which introduced the new Melbourne Airport Environs Overlay (MAEO). The MAEO is discussed in more detail in Section 12.2.2.

The MAEO is set for review by the State Government taking into account the new ANEF forming part of this Master Plan and a review by Standards Australia of Australian Standard AS 2012–2000 Acoustics Noise Intrusion – Building Siting and Construction.



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MELBOURNE AIRPORT
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2013 MASTER PLAN

1990 Melbourne Airport Strategy Principal Features

Fig. 1.4

1.6.6 Melbourne 2030 – Planning for Sustainable Growth

Released in October 2002, Melbourne 2030 – Planning for Sustainable Growth is a 30-year plan to manage growth and change across metropolitan Melbourne and the surrounding region. The plan recognises Melbourne Airport as a key transport gateway and freight link, and the importance of protecting its curfew-free status. It also recognises Melbourne Airport as a Specialised Activity Centre that provides a mix of economic activities and generates high numbers of work and visitor trips.

The State Government has developed a new metropolitan planning strategy for Melbourne. Please refer to Section 4.3.3 for more detail.

1.6.7 Melbourne Airport Master Plan 2003

The 2003 Master Plan was a revision of the previous Master Plan approved in 1998. Most importantly, it continued to adopt the previous recommendations for a future four-runway airside system, as outlined in the Melbourne Airport Strategy 1990. This Master Plan anticipated a third runway being required within the 20-year Master Plan period (2003–2023).

1.6.8 Melbourne Airport Master Plan 2008

The 2008 Master Plan retained the fundamental concepts of the 1998 and 2003 Master Plans. The amendments largely reflected changes in aviation industry structure (for example, the emerging low-cost carrier market) and actual changes in use. Once again, this Master Plan adopted the previously planned four-runway layout. It also stated that a third runway would be required around 2026, and that it was unlikely to be required earlier than 2020.

1.6.9 Melbourne Airport Environment Strategy 2008

The Melbourne Airport Environment Strategy 2008 was the airport's third Environment Strategy and was developed in parallel with the 2008 Master Plan. In accordance with the legislative requirements at the time, the Environment Strategy 2008 and preceding strategies were published separately to the Master Plans.

Like previous Environment Strategies, the Environment Strategy 2008 set out the airport's environmental management framework and described its key environmental features and issues. It also set out specific objectives and strategies to manage those features and issues.

1.6.10 Economic Impact of Melbourne Airport 2008

The 2008 Economic Impact of Melbourne Airport study assessed Melbourne Airport's contribution towards the economy as an employer and facilitator of commerce. It also measured the likely impacts of challenges to the airport's position.

In 2008, Melbourne Airport was estimated to directly employ some 12,500 people in 11,000 full-time equivalent positions, and indirectly employ thousands more in off-site businesses affiliated with the airport, such as freight forwarders and airline back-office staff. The study also found that in 2007–2008, Melbourne Airport's curfew-free status was estimated to contribute $309 million per annum in Gross State Product and $77 million per annum to local production value.

The study concluded that in order for the significant economic benefits to be sustained, the airport and all levels of government must continue to protect and build on its strengths, including its favourable geographic and political environments and curfew-free status.

A new economic and social impact study has been prepared as part of this Master Plan (refer Section 2).

1.6.11 Melbourne 2030: a Planning Update Melbourne @ 5 million

Released in 2008, Melbourne @ 5 Million was an update of Melbourne 2030 – Planning for Sustainable Growth, based on updated population projections. The plan focused on expanding Melbourne's growth areas and facilitating more job opportunities outside of central Melbourne. One of the plan's key initiatives was the announcement of three employment corridors aimed at improving job distribution in and closer to growth areas. One of these corridors is from Avalon Airport to Werribee, Melton, Melbourne Airport and Donnybrook.

1.6.12 Melbourne Airport Ground Transport Plan 2009

The Ground Transport Plan 2009 is Melbourne Airport's current ground transport plan. It was developed with reference to key strategies such as Melbourne 2030 – Planning for Sustainable Growth and the Victorian Transport Plan, and was supported by detailed technical studies and stakeholder consultation.

The Plan describes the existing ground transport network, gaps in transport infrastructure and future transport needs. It includes strategies and actions for road, rail, bus, cycle, pedestrian and sustainable transport. The aim is to improve accessibility of all transport modes for passengers and staff, by providing improved transport infrastructure, alternative transport choices and integrated transport options.

A new Ground Transport Plan has been prepared as part of this Master Plan (refer Section 9).

1.7 Significant Developments since the 2008 Master Plan

There have been a number of significant developments at Melbourne Airport since the 2008 Master Plan. A list of these developments is provided at Appendix A.

1.8 Planning Approach

This Master Plan retains the fundamental concepts of the Melbourne Airport Strategy 1990, and further explores how these concepts were built upon through the consultation and approval process required for the 1998, 2003 and 2008 Melbourne Airport Master Plans. In preparing this Master Plan, Melbourne Airport has reviewed previous plans and reassessed the location and spatial requirements for land use and development needed to cater for the forecast growth in airport activity over the next 20 years. Long-term requirements beyond 20 years have also been reconsidered.

A key focus of these reviews was to ensure that future development planning adequately accommodates forecast growth projections, safeguards the implementation of infrastructure requirements, and manages environmental and off-site impacts. The safe and efficient integration of the various airside, terminal and landside access and commercial requirements, and maintaining the airport's 24-hour curfew-free status, remain key considerations.

The planning approach also considered all on-airport interests that existed at the date the lease was granted, including easements, licences and leases. It also considered off-airport land use issues such as local planning schemes.

These reviews were undertaken in consultation with Commonwealth and State Government departments and agencies, local government, industry partners and other external stakeholders.

1.9 Concept Plans

This Master Plan presents concepts for developing the airport site for the next five years (short term), five to 20 years (medium term) and 20-plus years (ultimate). Proposals for land use and development in response to forecast growth during these periods are summarised in the concept plans (refer Figures 1.5, 1.6 and 1.7), and are described in more detail below. Note that the future growth in traffic demand levels and the changing commercial needs of Melbourne Airport's customers will determine the exact extent and timing of particular projects.

1.9.1 Short-Term Master Plan Concept

The short-term Master Plan concept (refer Figure 1.5) indicates the proposed land use and development for the next five years to 2018, within the context of the ultimate vision for Melbourne Airport.

The terminal precinct development aims to enhance passenger handling and processing capacity by increasing the depth of the existing terminal building. The proposed development ensures walking distances remain within reasonable limits, implying that the primary terminal expansion will occur in the east–west direction rather than north–south. The east–west expansion will primarily be developed towards the current roads and/or landside boundary (east) rather than towards the current airside boundary (west). This will minimise any negative impact on apron capacity.

Self-service technology and dynamic signage and way-finding will be progressively rolled out inside terminals.

Airfield developments include expanding aprons to provide additional aircraft parking capacity, and new taxiways to support increasing aircraft traffic movement.

The short-term Master Plan concept is aligned with the preferred orientation of the third runway, noting that the approval process and possibly construction will commence in the next five years, but operation is not likely to commence until about 2018–2022. This matter is discussed further in Section 6 – Airside Development Plan.

The short-term concept also includes several major ground transport projects to improve access to and from the airport, including the Airport Drive extension, forecourt works and elevated loop road works. The elevated loop road is a long-term planning concept, and both short and medium-term concepts will be aligned with this strategic vision. See Section 9 – Ground Transport Plan for more details.

1.9.2 Medium-Term Master Plan Concept

The medium-term Master Plan concept (refer Figure 1.6) provides a snapshot of land use and development in 2033, again within the context of the ultimate vision for Melbourne Airport. The medium-term concept involves expanding the single terminal precinct, including the landside, roads, terminals and airfield infrastructure, to handle the expected 64 million passengers per annum. This will ensure airport users get maximum benefit from Melbourne Airport's 'under one roof' advantage.

Under this concept, existing T2, Pier F and Pier G will be expanded and a new Pier A will be developed. It also assumes the full completion of the elevated loop road and proposed rail link (although the latter is subject to decisions by the State Government).

In addition, the concept assumes the full completion of the third runway, and confirms the alignment of the planned fourth runway. At this stage, forecast demand will not require the fourth runway to be fully operational before 2040 but it has been included in the medium-term concept as planning for its construction is likely to commence within this timeframe. Extensions to both ends of the existing east–west runway (09L/27R) are also shown on this concept plan.

1.9.3 Ultimate Master Plan Concept

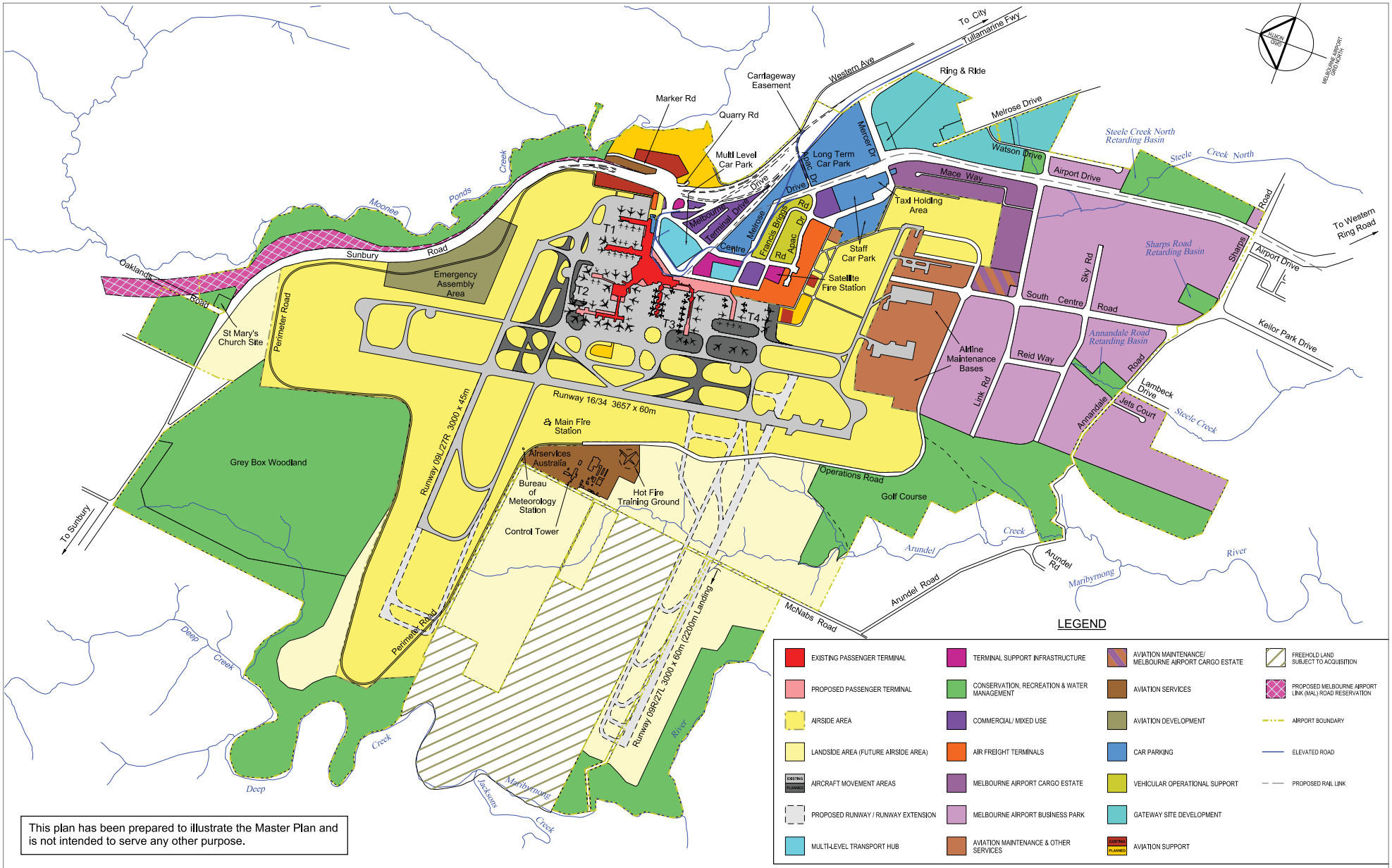
An important purpose of the Master Plan is to articulate a clear vision for the ultimate development for long-term planning and airport safeguarding purposes. Figure 1.7 provides this vision and is based on optimal development of the airport site to satisfy long-term aviation needs.

The ultimate development concept is based on the planning assumption that the existing terminal precinct will cater for up to 64 million passengers per annum. Melbourne Airport anticipates that once this threshold is reached, one or more additional terminal locations will be needed to support further growth and potential locations will be investigated as part of the next master planning process.

The basis of the ultimate Master Plan concept is the MAS (refer to Section 1.6.2) and subsequent findings of the master planning and facility planning studies. The concept is also fundamentally unchanged from the 2008 Master Plan. It includes the two additional parallel runways, with airside and landside areas available to support a four-runway system.

In this concept, the elevated loop road will provide adequate landside and road capacity to serve the expanded terminal precinct in the existing location. Any additional terminal location will be served by additional landside and road connectivity, concepts for which have not yet been developed in detail.

Melbourne Airport intends to ensure sufficient airport land is, or will be, available to progressively develop this concept and provide areas for associated commercial activities. The concept is not time-dependent and can flexibly respond to changes in aviation growth rates and development requirements.



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MELBOURNE AIRPORT
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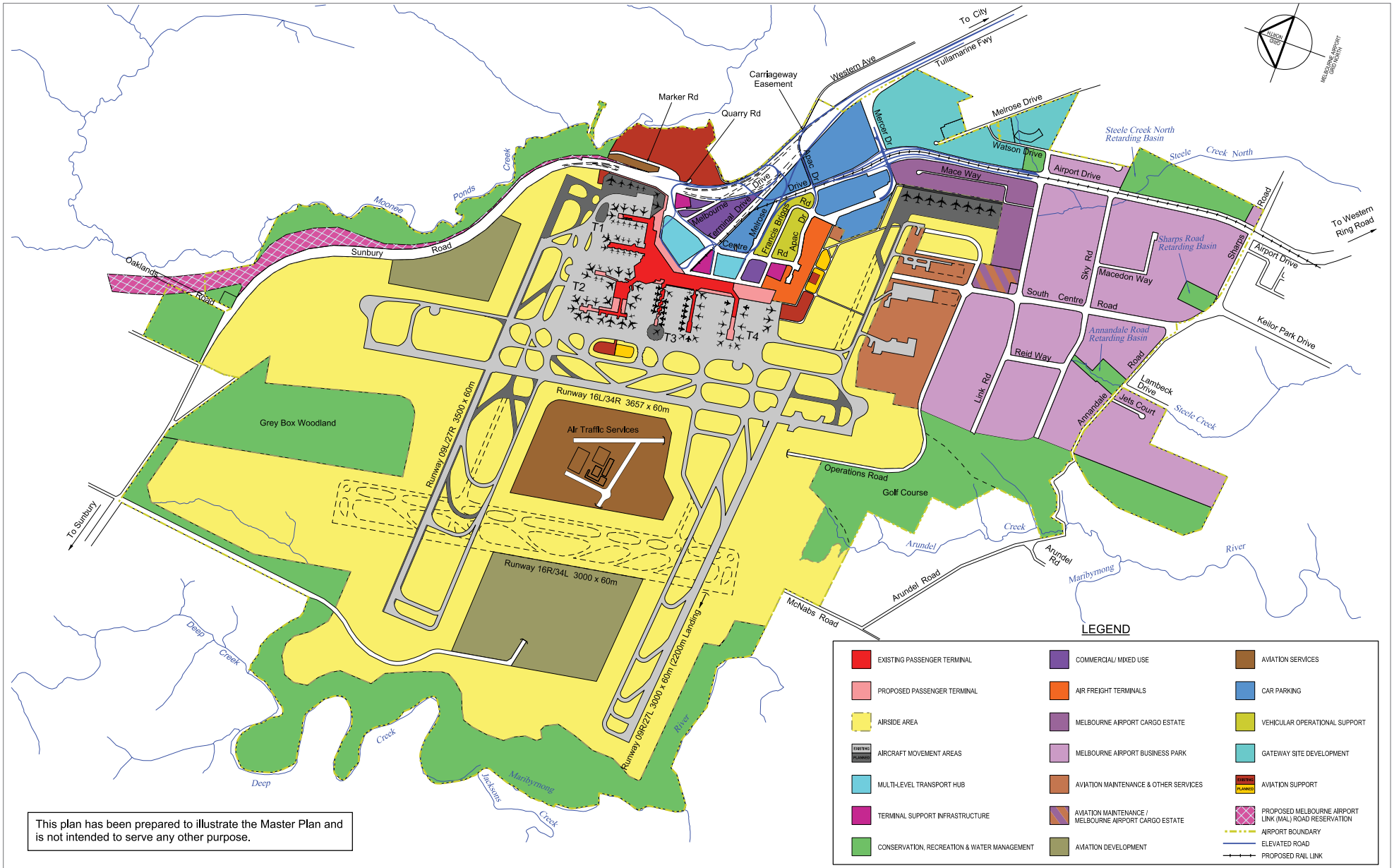
2013 MASTER PLAN

2018 Airport Development Concept Plan

Fig. 1.5



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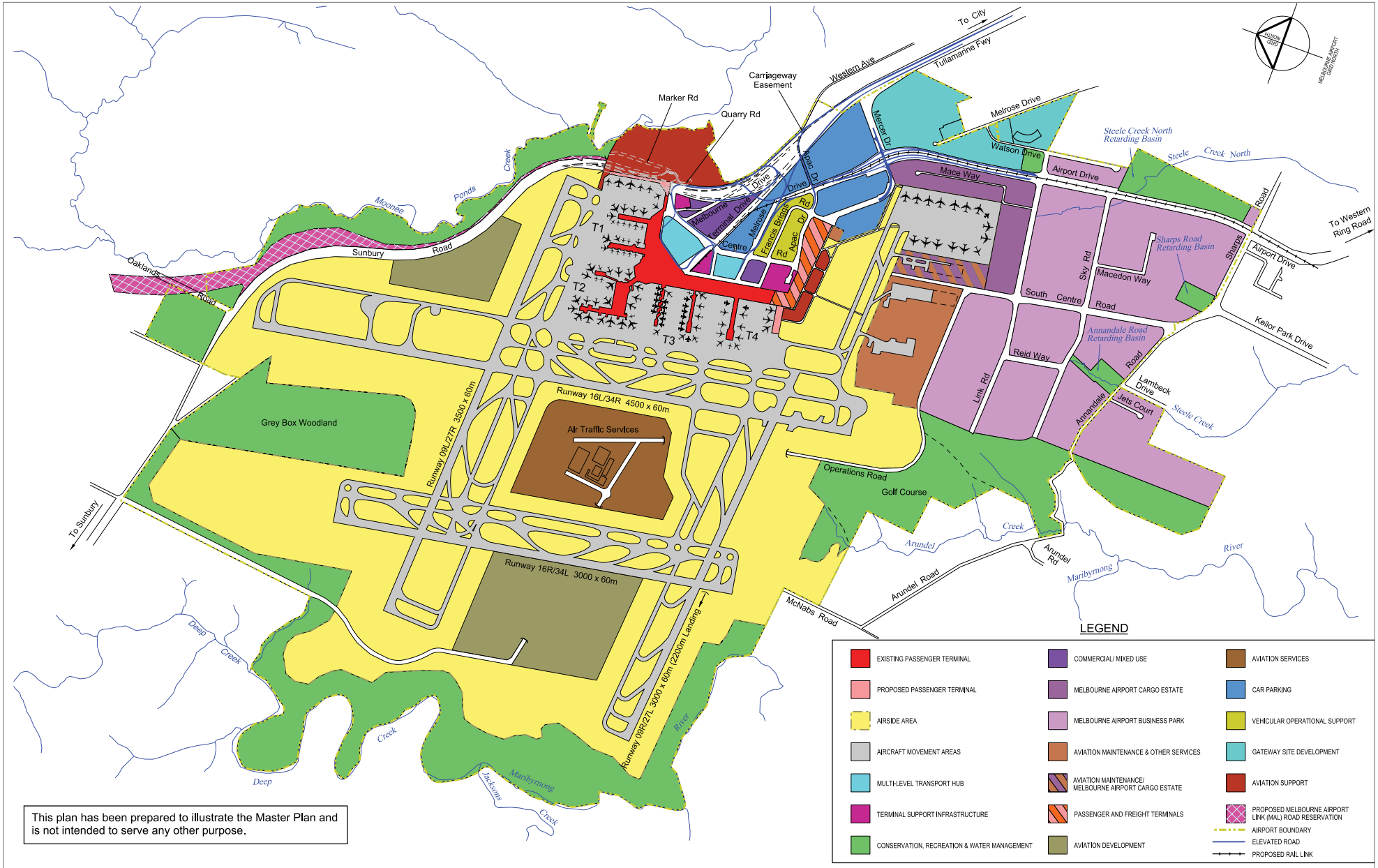
MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

2033 Airport Development Concept Plan

Fig. 1.6



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MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Ultimate Airport Development Concept Plan

Fig. 1.7

2

ECONOMIC AND SOCIAL IMPORTANCE OF THE AIRPORT

2. ECONOMIC AND SOCIAL IMPORTANCE OF THE AIRPORT

2.1 Overview

As the gateway to Victoria, Melbourne Airport makes a major contribution to the local, state and national economies as a critical transport infrastructure asset. The airport connects Victorians in both metropolitan and regional areas with the rest of Australia and the world, facilitates regional and tourism development, and supports significant economic activity. In turn, Melbourne Airport has become a major employment cluster.

Melbourne Airport commissioned an independent report to research its current economic and social impacts and those likely to result from its future expansion over the 20-year Master Plan period. The growth forecasts that were used to predict future economic impacts are detailed in Section 4.6.

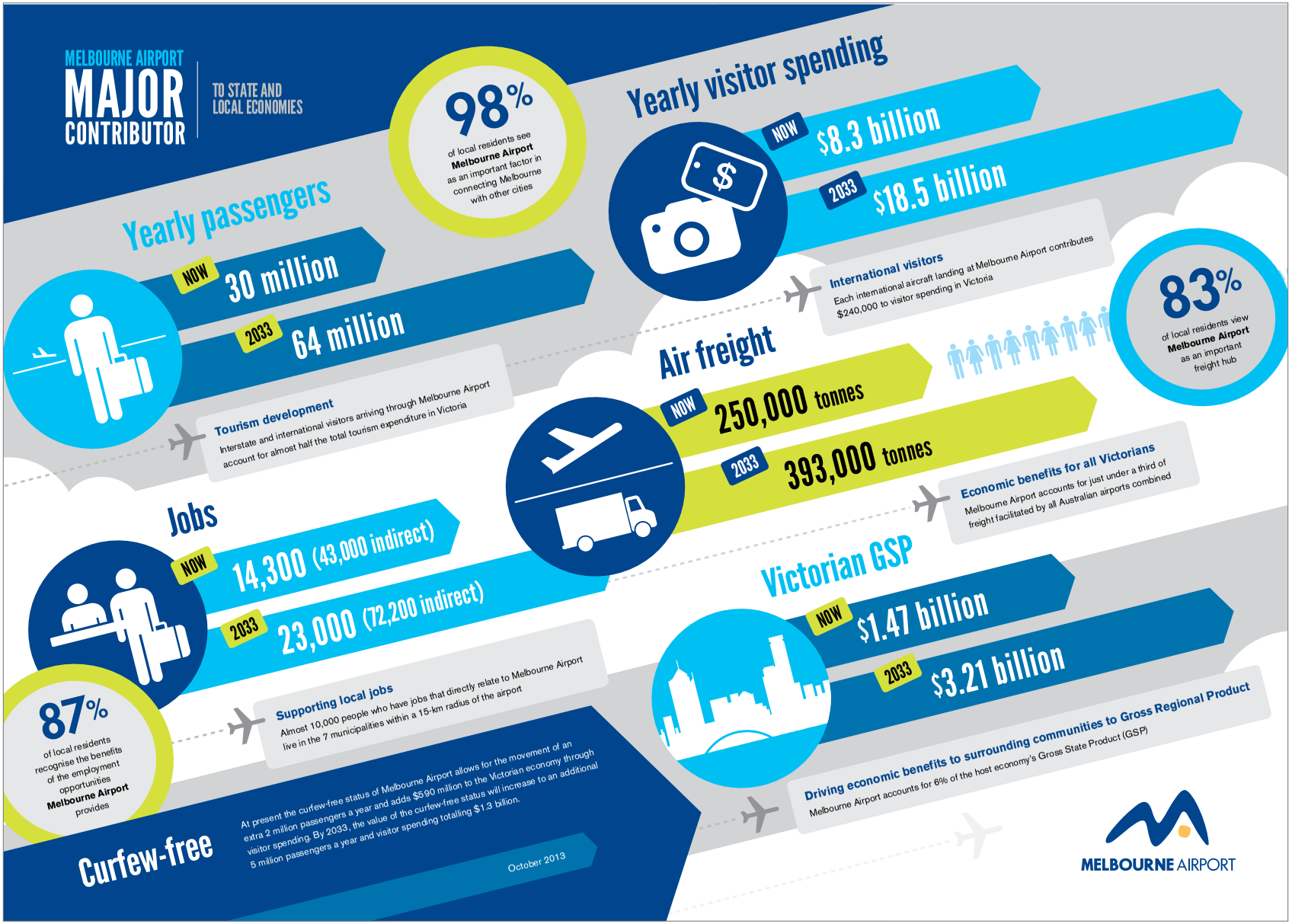
The report was based on:

- a comprehensive review of relevant information, including a literature review
- evidence from an airport business census, covering 300 airline and non-airline businesses located on site and off site
- results from a telephone survey of Victorian households. The statistically robust sample covered 430 households across Victoria, including 210 households in the host communities (defined below), and 220 households in the wider metropolis and country Victoria. Each subgroup within the population is proportionately represented
- extensive consultation with 20 stakeholders such as State and local governments and tourism organisations
- economic modelling conducted by SGS and Monash University based on published data sources from organisations such as the Australian Bureau of Statistics (ABS) and Tourism Victoria.

The report focused on state-wide and local impacts. It defines local as the host community; the seven municipalities within a 15-kilometre radius of the airport. These are Brimbank, Hume, Maribyrnong, Melton, Moonee Valley, Moreland and Whittlesea. While the airport's airspace covers a large proportion of metropolitan Melbourne, aircraft within a 15-kilometre radius of the airport fly at lower levels and noise impacts are generally greater. There are also strong economic and employment connections within these municipalities.

The image below provides an overview of how Melbourne Airport contributes to the state and local economies. The report findings are summarised on the following page.

Melbourne Airport's Current and Future Contribution to the State and Local Economies



2.2 Economic Impacts

Melbourne Airport is a significant economic driver, generating positive employment, tourism and business impacts for the region and the state. Table 2.1 summarises the current and forecast economic impacts.

Table 2.1 shows that Melbourne Airport currently facilitates 29.1 million passenger movements and 210,000 aircraft movements annually. This includes more than 7.9 million visitors (1.4 million international and 6.5 million interstate) who come to Victoria via Melbourne Airport each year. These visitors spend approximately $8.3 billion, nearly half of the state's total annual tourism expenditure. Each international aircraft landing at Melbourne Airport contributes approximately $240,000 to visitor tourism expenditure in Victoria.

With the expansion of the airport over the next 20 years, it is projected that Melbourne Airport will facilitate the movement of 64.37 million passengers and 348,000 aircraft annually in 2033. By then, approximately 14.5 million overseas and interstate visitors will visit Victoria via the airport, and will contribute approximately $18.5 billion to the state economy via tourism expenditure.

Melbourne Airport's contribution to the economy is evident in the following areas:

- employment levels
- international air freight
- contribution to the Victorian Gross State Product (GSP)
- visitor spending
- curfew-free status
- future initiatives promoting employment and economic development.

2.2.1 Employment

Today, Melbourne Airport generates more than 14,300 direct and 43,000 indirect jobs to move large numbers of passengers and freight 24 hours a day. The site and surrounding areas are an important employment cluster for the state, one of the largest outside Melbourne's CBD. The 2012 Metropolitan Strategy discussion paper *Melbourne, let's talk about the future,* acknowledges the role Melbourne Airport plays as a major employment cluster outside central Melbourne.

Employment in the airport precinct is predominantly in the transport, postal and warehousing sectors, with over 60 per cent of total jobs within these industries (approximately 8,800 jobs). Other major employment sectors include retail, accommodation, food services, service-based employment, manufacturing and wholesale trade.

Airport operations since 2007 have generated robust employment growth at 3.3 per cent per annum, during a period of significant financial strain. This is above the metropolitan and Victorian employment growth rates of 2.8 per cent and 2.6 per cent respectively over this period.

Of the 14,300 airport jobs, at least two-thirds of these employees (almost 10,000) are drawn from the host economy. Direct employment makes up a significant share of the workforce of the local municipality of

Table 2.1: Current and Forecast Economic Impacts

	Annual impacts of current operations	Forecast annual impacts of airport operations in 2018	Forecast annual impacts of airport operations in 2033
Passenger movements	29.1 mn	38.26 mn	64.37 mn
Aircraft movements	210,000	258,660	348,000
Direct employment (nos.)	14,300	16,000	23,000
Indirect employment (nos.)	43,000	54,000	72,200
Direct Victorian GSP (constant $2012)	$1.47 bn	$1.9 bn	$3.21 bn
Indirect Victorian GSP (constant $2012)	$5.20 bn	$9.9 bn	$20.90 bn
International air freight (tonnes)	250,000	303,000	393,000
Visitor spending (constant $2012)	$8.3 bn	$11 bn	$18.5 bn
Productivity impacts due to planned expansion ($2012)	–	–	**$390 mn**

Hume (16 per cent), and the host, metropolitan and state economies (4.38 per cent, 0.65 per cent and 0.5 per cent respectively).

The airport attracts businesses to locate around it, offering a range of employment opportunities in outer suburbs currently experiencing strong population growth and not typically serviced by diverse businesses and jobs.

This is particularly relevant, as the host economy has a 6.56 per cent unemployment rate. This is substantially higher than the state's unemployment rate of 5.4 per cent. In recognition of this important issue, Melbourne Airport has begun discussions with the local community to identify opportunities to work collaboratively on employment matters.

Proximity to Melbourne Airport also influences investment decisions by businesses that benefit from being close to the airport. The airport is an important facilitator of imports and exports for local businesses, and passenger growth stimulates demand for other services in the local economy, including hospitality.

Forecasts show that Melbourne Airport will increasingly be an employment centre for the state. By 2018, the airport's operations will support 16,000 direct and 54,000 indirect jobs. By 2033, the airport's operations will support 23,000 direct and 72,000 indirect jobs. It is estimated that transport and hospitality related industries will add the most employees between now and 2033.

Transport sector jobs are projected to increase from 8,800 currently to 13,000 in 2033, while hospitality jobs (retail, food and accommodation) will increase from approximately 1,700 currently to 3,600 in 2033.

Significantly, Melbourne Airport's role as an employment location was seen as a benefit by a greater percentage of residents surveyed for this report from surrounding municipalities (upwards of 80 per cent of residents surveyed) than in the rest of Melbourne or country Victoria (between 60 per cent and 70 per cent).

2.2.2 International Air Freight

Freight movement at Melbourne Airport is also significant, with more than 250,000 tonnes of international air freight moved annually (including mail). This is around a third of the freight moved at all Australian airports. By 2033, the airport is forecast to facilitate the movement of more than 390,000 tonnes of international freight annually. The previous government's National Aviation Policy White Paper acknowledged the value of air freight, stating, "While it is recognised that air freight represents less than one per cent of Australia's trade by volume, it makes up over 20 per cent of trade by value. This is because air services are utilised to facilitate the flow of high-value and time-sensitive exports and imports."[2]

2 National Aviation Policy White Paper, Flight Path to the Future, (Australian Government, December 2009), p32.

2.2.3 Contribution to Victorian Gross Product

The total value of all economic activity in the Melbourne Airport precinct across all industries is estimated to be approximately $1.47 billion. This significant economic activity represents 6 per cent of the host economy's total Gross Regional Product (GRP), and approximately 0.51 per cent of Victoria's GSP. The parameter used to measure the value of economic activity is industry Gross Value Added (GVA), and includes the sum of wages and Gross Operating Surplus. As Melbourne Airport is planning a number of capital projects, including the construction of a third runway, its contribution to the state is expected to grow. The airport's activities contribution to GSP is forecast to increase from $1.47 billion currently to $3.21 billion by 2033.

Activity at Melbourne Airport indirectly contributes nearly $5.2 billion to the Victorian economy annually. By 2033, this figure is projected to increase to $20.9 billion, supporting 72,000 indirect jobs in the airport's supply chain.

The value-added contributions of activity at Melbourne Airport is expected to continue increasing over time in line with significantly higher passenger and air traffic volumes. The delivery of proposed projects such as the third runway will involve a large capital outlay, which will further boost Victoria's GSP.

2.2.4 Visitor Spending

Table 2.2 shows the estimated total spending by foreign and interstate visitors over the next 20 years in current dollar value.

Table 2.3 shows the impact of additional international air services on tourist spending in Victoria.

Together, Tables 2.2 and 2.3 highlight:

- Total spending in Victoria by foreign visitors will increase to $4.0 billion annually in 2013 and to $8.5 billion annually in 2033. Over the 20-year timeframe of the 2013 Melbourne Airport Master Plan, approximately $129 billion will be spent by foreign visitors arriving in Victoria via Melbourne Airport, with average annual spending equating to $6.5 billion per year.
- Interstate visitors are expected to contribute more in spending than foreign visitors. They will spend approximately $4.7 billion in 2013, rising to $10 billion in 2033, and $153 billion over the 20 years between 2013 and 2033, with average annual spending of approximately $7.6 billion.
- Collectively, foreign and interstate visitors arriving via Melbourne Airport are expected to spend $282 billion in Victoria from 2013 to 2033, with annual average spending of approximately $14.1 billion.

Table 2.2: Annual Total Spending in Victoria by Visitors Entering via Melbourne Airport

	2013	2033	2013 to 2033 cumulative
Foreign visitors	$4.0 bn	$8.5 bn	$129 bn
Interstate visitors	$4.7 bn	$10.0 bn	$153 bn
Total visitors	$8.7 bn	$18.5 bn	$282 bn

Table 2.3: Impact of International Air Services on Tourist Spending in Victoria

	2013	2033
International aircraft arrivals	17,450	30,231
Foreign visitor arrivals	1.4 mn	3.2 mn
Foreign visitors per international aircraft	83	106
Estimated spend per foreign visitor in Victoria (constant 2012 dollars)	$2,643	$2,643
Total spend by all foreign visitors arriving via Melbourne Airport in Victoria	$3.8 bn	$8.5 bn
Contribution of each international aircraft to tourism expenditure in Victoria	$238,973	$280,301

- In 2033, approximately 30,000 international aircraft are expected to land at Melbourne Airport annually, bringing nearly 3.2 million foreign visitors. Each foreign aircraft is expected to contribute $280,000 annually to Victoria via tourist expenditures in 2033.
- Assuming that spending per visitor remains at currently observable levels (not accounting for inflation and visitor spending growth), total tourist spending (foreign and interstate) is expected to equate to $18.5 billion in 2033.

2.2.5 Curfew-Free Status

Melbourne Airport's ability to operate without any capacity constraints and its curfew-free status provide significant social and economic benefits to local, regional and state communities.

The airport's 24-hour curfew-free status generates a number of benefits. As an 'end of the line' airport, operating late in the evening and early morning allows flights to link into the Asian, Middle East and European networks without major passenger delays, and enables the airport to accommodate more international flights that may be subject to curfews at origin airports. Other benefits include fewer constraints on domestic and long-haul services; responding to traveller preferences for flight times; and preventing longer delays or cancellations due to non-flying hours. The absence of these constraints helps improve passenger satisfaction and tourists' initial perceptions of the city and country. It also improves the movement of freight arriving and departing from Melbourne Airport. This is particularly important for perishable goods and the local agricultural industry.

At present, the curfew-free status allows the movement of an additional 2 million passengers a year and adds $590 million to the Victorian economy through visitor spending. By 2033, the value of the curfew-free status will increase, as the airport is expected to move an additional 5 million passengers a year, with visitor spending totalling $1.3 billion.

The importance of the 24-hour curfew-free status has been recognised in the State Planning Policy Framework and other strategic documents and policies.

2.2.6 Future Development Promoting Employment and Economic Development

The 2013 Master Plan outlines many significant projects, including the construction of the third runway and the elevated loop road. These projects and ongoing development will provide direct and indirect jobs.

In 2033, with the planned expansion, airport operations will support the direct employment of nearly 23,000 people, and more than 72,200 people indirectly in the airport's supply chain. It is also important to note that the significant capital outlay of over $10 billion in the next 20 years has the potential to support up to 28,000 full-time equivalent (FTE) person years of employment in the airport's host economy, while also helping businesses in the host economy create $5 billion in value.

When adding contributions over the 20-year lifetime of the 2013 Melbourne Airport Master Plan (i.e. between 2013 and 2033), the additional value of the third runway over and above the existing two-runway system equates to 87 million passengers and 605,000 aircraft movements; nearly $25 billion in visitor spending; approximately 660,000 tonnes of international air freight movement; support for approximately 107 person years of employment; and nearly $24 billion in indirectly induced Victorian GSP.

Significantly, the airport's growth has the potential to further enhance its role as an employment cluster providing state-wide and local benefits. The airport will continue to provide substantial benefits to all stakeholders in terms of employment and income generation, international exports, household consumption, freight movement facilitation and productivity enhancements. Furthermore, there is opportunity to develop industrial land, with appropriate uses that do not impact on airport operations, within industries that the airport can support, such as agriculture.

The airport's planned expansion over time will induce further productivity improvement in the metropolitan Melbourne economy, via increased competition and easier movement of investment and human capital, and the consequent facilitation of ideas and knowledge across regional and national borders. These connectivity-induced productivity enhancements are expected to be in the order of $390 million in 2033 for the metropolitan economy.

2.3 Social Impacts

Air travel is a way of life. Affordable airfares and more frequent air services have increased connectivity for households and businesses. Airports provide access to education, work and leisure opportunities; enable labour mobility and migration; facilitate the multicultural nature and diversity of societies; encourage more social integration and interaction between people, businesses and firms; and allow residents to maintain religious and social commitments.[3]

Furthermore, Australia is a significant distance from its nearest export markets, leisure and business destinations and the countries of origin of many Australian residents. The access to Australian and international destinations that Melbourne Airport provides for Victorian residents is a key positive impact, as is access to Victoria for people from around the world and across Australia. This has numerous benefits, including supporting Melbourne's multicultural population, facilitating business and connecting people in regional areas with Melbourne.

While the airport provides a range of social and economic benefits, it is acknowledged that its operations give rise to some negative impacts. These include aircraft noise, traffic congestion and environmental impacts.

To help understand Melbourne Airport's social impacts, a survey of stakeholders and the community was undertaken. Respondents were asked about the airport's positive and negative impacts and to talk generally about its expansion without any reference to particular projects or anticipated growth in demand for air services.

Airports play a vital role in connecting communities, people and markets, and 98 per cent of Victorian households surveyed identified connecting Melbourne with other Australian and international cities as a key benefit of Melbourne Airport.

Stakeholders unanimously supported the consolidation of Melbourne Airport's strengths so it can continue to contribute to Victoria and Australia. They acknowledged the airport's unique advantage, given that other airports along the east coast of Australia face constraints: Sydney has a curfew, and Brisbane has recently had an inquiry into a curfew.

Stakeholders agreed that the airport's future growth would continue to increase local employment opportunities and attract business and investment. They said it was advisable to consider whether industrial uses, transit hubs and the like should grow at the airport, or whether they should be developed further away and connected to the airport via transport links.

As with most large pieces of transport infrastructure, Melbourne Airport's operations have some negative impacts. These impacts are mostly borne by residents in the immediate surrounds of the airport, and include traffic congestion and noise.

Traffic congestion on roads to and from Melbourne Airport was recognised as a negative impact by Victorian households and stakeholders surveyed and interviewed for this report. Some local communities also identified traffic congestion on local streets as an issue.

Noise from aircraft affects residents of the local area surrounding the airport. Melbourne Airport recognises that noise is a significant concern for the local community, and is committed to working together with Airservices to find ways to minimise the noise impact on those who live around the airport. The airport will continue to work with Airservices, government, and airlines to manage noise through noise abatement procedures; land use planning and aircraft technology. Melbourne Airport will also continue to run the Noise Abatement Committee and Community Aviation Consultation Group to ensure that noise issues are being appropriately monitored and managed. In addition, the airport has developed an online noise tool to help residents understand the noise impacts on their local areas.

Other identified negative impacts of Melbourne Airport operations include: pollution associated with car travel to and from the airport and from aircraft emissions; and planning restrictions on development which limit some municipalities' ability to use available land for employment.

The consultants found that to date the negative impacts appear to be well managed, with only about one in seven surveyed households identifying that the airport's past expansion had some degree of negative impact on them.

Despite the negative impacts, there is a high overall level of support for Melbourne Airport's expansion over time, echoed by most Victorian households. More than 80 per cent of surveyed households reported that they were either strongly or somewhat supportive of the airport's expansion over time. Interestingly, the strongest support for the airport's overall expansion of the airport was expressed by the residents of Hume, among all locations surveyed.

3 Shaw and Thomas, Social and cultural dimensions of Airtravel demand: Hyper-mobility in the UK, 2006.

2.4 Conclusion

To enable Melbourne Airport to optimise its operations in the future, the report found a collaborative approach from all stakeholders is required to:

- ensure it can continue to operate 24 hours a day and support business and tourism, without capacity constraints
- ensure it can meet its growth objectives by allowing a third runway to be constructed and begin operating between 2018–2022
- control development around the airport so that urban growth in the area remains compatible with long-term unconstrained operations
- ensure access to and from the airport is not compromised as demand from passengers and airport employees increases over time
- support tourism to Melbourne, by promoting Melbourne and other Victorian tourist destinations to regional and international markets.

Over many years there has been strong support from all levels of government and other stakeholders for Melbourne Airport's development and ongoing operation. Government and industry should continue to support the airport by encouraging more direct flights to Melbourne. It is also crucial to communicate to the community the benefits that Melbourne Airport provides, as well as the preventive measures and projects underway to help mitigate any negative impacts that are likely to arise from future expansion.

As Melbourne Airport continues to grow and positively contribute to the broader Victorian community, developments will be required to support this growth and the ancillary growth generated by Melbourne Airport activities in the tourism and freight industries.

3

MASTER PLAN PROCESS

3. MASTER PLAN PROCESS

3.1 Overview

This Master Plan establishes the short-, medium- and long-term planning concepts for Melbourne Airport to fully realise its potential as an international and domestic gateway and hub for passengers and freight, and to safeguard its future operations. One of APAM's overarching objectives is to efficiently and sustainably use and develop the airport site. This involves balancing the need to maintain and expand aviation facilities safely and effectively with achieving an acceptable commercial return to shareholders. It is also important that future plans continue to consider the interests of stakeholders and the community.

To achieve these aims, and comply with legislative requirements, Melbourne Airport undertook an extensive 18-month process when developing this Master Plan.

3.2 Previous Planning and Consultation

Since the 1980s, when it was recognised that a review of the early planning for the airport was required, extensive consultation has been undertaken at each stage of the planning process.

In 1984, a Public Information Program was initiated to address options for developing future runways. The release of the Melbourne Airport Strategy and the associated Draft Melbourne Airport Strategy Environmental Impact Statement (EIS) in 1989 and the Supplement to the Draft Melbourne Airport Strategy EIS (supplementary EIS) in 1990 were accompanied by extensive government, community and industry consultation. Consultation with the State and local governments and industry continued during the terminal precinct and airport land use planning studies that followed the approval of the final Melbourne Airport Strategy EIS by the Minister for the Arts, Sport, the Environment Tourism and Territories on 12 November 1990.

Extensive consultation was held with a wide range of stakeholders prior to the Minister's approval of previous Master Plans in 1998, 2003 and 2008. The consultation was conducted in accordance with the provisions of the Airports Act applicable at the time.

In subsequent years, Melbourne Airport has:

- liaised with Commonwealth Government departments and agencies, including the Department of Infrastructure and Regional Development, Airservices and the Civil Aviation Safety Authority
- liaised with State Government departments and agencies, including the Department of Transport, Planning and Local Infrastructure, Department of Business and Innovation, the Growth Areas Authority, VicRoads and Public Transport Victoria
- worked with Tourism Victoria on developing services to and from Melbourne
- held meetings with local municipalities
- liaised with a range of stakeholders on aircraft noise issues through the Noise Abatement Committee, chaired by Melbourne Airport management
- consulted with airlines on developing aviation infrastructure, especially in the context of new Melbourne Airport Aeronautical Services Agreements
- introduced the Community Aviation Consultation Group and Planning Coordination Forum in 2011.

3.3 Reviews and Studies

The first stage in the preparation of this Master Plan involved a number of planning reviews and studies to inform the development of the Master Plan concepts.

The Master Plan concepts were developed based on a number of drivers, including passenger, aircraft movement and freight forecasts, and specialist studies examining the airfield, terminals and landside capacity for ongoing growth and development. These studies also informed the timing of the developments and capacity enhancement activities.

The reviews and studies undertaken considered forecasts, capacity, community impacts, the environment and previous Melbourne Airport documents, including the 2008 Master Plan, the 2008 Environment Strategy and the 2009 Ground Transport Plan.

3.4 Development of Future Plans, Strategies and Concepts

A series of future land use and facility development plans and management strategies were developed based on the outcomes of the above reviews and studies. Details of these plans and strategies are provided in Sections 5 to 12 of this Master Plan.

When developing future plans and strategies, a key focus was to ensure that planning for the airport's future development adequately accommodated forecast growth projections and safeguards the future implementation of related infrastructure requirements, while ensuring that environmental and off-site impacts were minimised where possible.

The key concepts and requirements arising from the plans and strategies were then encapsulated in the three concept plans previously outlined in Section 1.

3.5 Community and Stakeholder Consultation

During the preparation of this Master Plan, Melbourne Airport established a formal consultation program with a wide range of government, industry and community representatives. This consultation was critical in developing the various Master Plan elements.

Melbourne Airport held meetings and discussions with the following:

- airlines
- Airport Building Controller
- Airport Environment Committee
- Airport Environment Officer
- Airservices
- Board of Airline Representatives of Australia
- Civil Aviation Safety Authority
- Commonwealth Government officers
- Commonwealth Members of Parliament
- Community and External Agencies Group
- Community Aviation Consultation Group
- general community
- government agencies
- industry groups
- local government councillors and administrators
- local government officers
- Melbourne Airport Transport Committee
- Melbourne Airport Business Partner Environment Forum
- Noise Abatement Committee
- Planning Coordination Forum
- State Members of Parliament
- State Government officers.

3.6 Public Exhibition

In accordance with Section 79 of the Airports Act, the Preliminary Draft Master Plan was publicly exhibited for 60 business days. Newspaper notices were published inviting members of the public to give written comments about the proposed Master Plan.

The Preliminary Draft Master Plan was available for viewing from Monday, 20 May to Wednesday 21 August 2013 at:

- on the Melbourne Airport website at www.melbourneairport.com.au/masterplan
- in person at Airport Management, Level 2, Terminal 2, Melbourne Airport
- Local libraries and municipal offices of Brimbank, Hume, Melton, Maribyrnong, Moonee Valley, Moreland and Whittlesea.

Melbourne Airport also wrote to the following persons informing them of the public exhibition period for the Preliminary Draft Master Plan:

- State Minister for Planning
- State Department of Transport, Planning and Local Infrastructure
- Local government bodies with responsibility for the area surrounding the airport.
- State Minister for Public Transport and Roads
- State Minister responsible for the Aviation Industry

3.7 Comments and Submissions

Under the Airports Act, Melbourne Airport must consider any comments received during the public exhibition period.

After the public exhibition period, Melbourne Airport reviewed and assessed all comments and, if appropriate, changes were made to the Master Plan to address those comments.

3.8 Submission to Minister

In accordance with the requirements of Section 79 of the Airports Act, the draft plan submitted to the Minister was accompanied by:

- a copy of the advice given in Section 3.6;
- a written certificate signed on behalf of the company listing the names of those to whom the advice was given; and
- copies of the written public comments about the preliminary version; and
- a written certificate signed on behalf of the company:
  - listing the names of those members of the public;
  - summarising those comments;
  - demonstrating that the company has had due regard to those comments in preparing the draft plan; and
  - setting out such other information (if any) about those comments as is specified in the regulations.

The Minister subsequently approved the Master Plan on 18 December 2013.

3.9 Publication of Final Master Plan

In accordance with Section 86 of the Airports Act, Melbourne Airport made the following notifications following approval of the Master Plan:

- Published newspaper notices advising that the Master Plan has been approved.
- Made copies of the plan available for inspection in person at Melbourne Airport.
- Made a copy of the approved Master Plan available on the Melbourne Airport website.

The final Master Plan has also be disseminated to sub-lessees, licensees, other airport users and local communities through a range of stakeholder engagement mechanisms, including the Melbourne Airport website, Planning Coordination Forum, Community Aviation Consultation Group and Noise Abatement Committee.

4

PLANNING CONTEXT

4. PLANNING CONTEXT

4.1 Overview

This section outlines the planning context for the Master Plan. The planning context comprises a number of aspects that influence and guide Melbourne Airport's future use and development, and forms the basis of the Master Plan's strategic directions and concepts. They are:

- the policy framework
- Melbourne Airport's development objectives
- global, national and local development drivers
- growth forecasts
- planning criteria and standards.

In implementing the Master Plan, relevant policies at Commonwealth, State and local levels will be taken into consideration.

4.2 National Policy Framework

4.2.1 National Aviation Policy White Paper

Released in December 2009, the previous Commonwealth Government's National Aviation Policy White Paper, *Flight Path to the Future* (the White Paper), detailed:

- the role of aviation in supporting broader economic, trade and social outcomes
- the regulatory framework the Australian Government maintains to keep the industry safe and secure
- the importance of continuous investment in and protection of aviation infrastructure and reforms to planning arrangements at Australia's major airports
- the importance of minimising aviation's negative impacts on the environment and communities.

The priorities presented in the White Paper reflected the Australian Government's desire to maintain a safe and secure aviation industry. The paper stated that the industry must share this priority to underpin its sustainable growth. It presented the industry's role in context, before describing the important initiatives the Government put in place to improve safety, regulatory and planning oversight for the industry.

This Master Plan was prepared having due regard to the White Paper.

4.2.2 National Airports Safeguarding Framework

A key initiative of the White Paper was to develop a national land use planning regime to be applied near airports and under flight paths. The NASAG, comprising high-level Commonwealth, State, Territory and local government transport and planning officials, was subsequently formed to develop a National Airports Safeguarding Framework (NASF).

In February–March 2012, industry, local government and other interested stakeholders were invited to comment on a draft version of the NASF, which comprised several guidelines relating to particular airport safeguarding topics (refer to Section 12.4.1 for details). Commonwealth, State and Territory ministers subsequently agreed to the NASF at the Standing Council on Transport and Infrastructure meeting on 18 May 2012, noting the Australian Government's intention to seek a review by Standards Australia of Australian Standard AS2021–2000: Acoustics Noise Intrusion – Building Siting and Construction.

The NASF, when fully implemented, will help ensure that existing and future airport operations and their economic viability are not constrained by incompatible development.

It is the responsibility of each jurisdiction to implement the NASF in their respective planning systems, but this is subject to Standards Australia's review of AS2021.

4.3 Victorian Policy Framework

4.3.1 State Planning Policy Framework

The State Planning Policy Framework (SPPF) covers strategic issues that are important to the State. Every planning scheme in Victoria contains this policy framework. Planning decision makers must consider the SPPF. There are a number of policies in the SPPF that relate to Melbourne Airport and are detailed below.

a. Clause 11: Settlement

This clause includes policies and strategies for planning in the metropolitan area, largely derived from the metropolitan planning strategy Melbourne 2030 – Planning for Sustainable Growth (Melbourne 2030) and/or the update of that strategy, Melbourne @ 5 Million. This includes policies relating to activity centres, employment corridors, Urban Growth Boundaries and green wedges which are relevant to areas around Melbourne Airport.

i. Specialised Activity Centre

Under Clause 11.04-2 of the SPPF, Melbourne Airport is identified as a Specialised Activity Centre. Specialised Activity Centres are important economic precincts that provide a mix of economic activities and facilitate high numbers of work and visitor trips.

The SPPF and Melbourne 2030 require structure plans to be developed for activity centres to give effect to the centres' key planning policies and objectives. This Master Plan is essentially Melbourne Airport's structure plan, and it considers the social, economic and environmental performance criteria for activity centres outlined in the SPPF and Melbourne 2030.

ii. Employment Corridors

Clause 11.04-3 of the SPPF identifies and promotes the development of an employment corridor from Avalon Airport to Werribee, Melton, Melbourne Airport and Donnybrook. This policy recognises the important role that Melbourne Airport plays in providing jobs for communities in the north-west of Melbourne.

iii. Urban Growth Boundary

Clause 11.04-5 relates to the Urban Growth Boundary, a planning tool used to define the extent of Melbourne's urban area, limit outward expansion and protect non-urban areas.

Most of the land adjoining the airport site (particularly to the north and west) is located outside the Boundary. This protects the airport's ongoing operation by retaining the land outside the Boundary for non-urban purposes, thus preventing the encroachment of sensitive land uses into areas affected by aircraft noise.

The Boundary's location relative to the Melbourne Airport site is shown in Figure 12.10.

In 2011/12 the State Government undertook a review of the Urban Growth Boundary, primarily to consider possible "logical inclusions" of land within the boundary. An independent advisory committee, known as the Logical Inclusions Advisory Committee, was established to consider submissions and make recommendations regarding possible inclusions.

The State Government's response in June 2012 to the Logical Inclusions Advisory Committee's final report generally reaffirmed the buffers that currently protect Melbourne Airport.

iv. Green Wedges

Clause 11.04-6 of the SPPF relates to Melbourne's green wedges, which generally comprise land outside the Urban Growth Boundary. Most of the land to the north and west of Melbourne Airport, and some to the east and south, is classified as green wedge land (refer Figure 12.10).

One of the objectives relating to the green wedges is:

> *Plan and protect major transport facilities that serve the wider Victorian community, such as airports and ports with their associated access corridors. [Melbourne Airport emphasis]*

This policy helps ensure the green wedge land around Melbourne Airport is not used or developed in a manner that is inconsistent with the airport's ongoing operation and protection of its flight path corridors.

b. Clause 18: Transport

This clause includes various transport policies derived from the Victorian Transport Plan (2008) and the Victorian Freight Network Strategy (2008), including a policy specifically related to Melbourne Airport.

Clause 18 states:

> *Planning should ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people and goods, and is safe.*

i. Land Use and Transport Planning

Clause 18.01-1 of the SPPF encourages the integration of Land Use and Transport Planning. This clause is particularly relevant to Melbourne Airport given its Specialised Activity Centre status and the high number of work and visitor trips the site facilitates.

The objective of this clause is:

> *To create a safe and sustainable transport system by integrating land use and transport.*

One of the strategies to achieve this objective is to:

> *Develop transport networks to support employment corridors that allow circumferential and radial movements.*

This policy supports the ongoing development of the transport network that provides access to Melbourne Airport.

ii. Melbourne Airport

Clause 18.04-1 of the SPPF relates specifically to Melbourne Airport. The objective of this clause is:

> *To strengthen the role of Melbourne Airport within the State's economic and transport infrastructure and protect its ongoing operation.*

This policy includes the following strategies:

- *Ensure Melbourne Airport's the effective and competitive operation at both national and international levels.*
- *Ensure any new use or development does not prejudice Melbourne Airport's optimum usage.*
- *Ensure any new use or development does not prejudice Melbourne Airport's curfew-free operation.*
- *Protect Melbourne Airport's curfew-free status.*

This policy provides a strategic basis to support land use decisions that protect the airport's ongoing operations and its future runway developments.

iii. Freight

The objective of Clause 18.05-1 is:

> *To further develop the key transport gateways and freight links and maintain Victoria's position as the nation's premier logistics centre.*

Given the significant role Melbourne Airport plays in Victoria's freight network, this policy supports the airport's further development as a freight hub and transport gateway.

4.3.2 Securing Victoria's Economy – Planning, Building, Delivering

On 21 December 2012 the Victorian Government released its economic action plan titled Securing Victoria's Economy – Planning, Building, Delivering.

The plan details the State Government's strategy to strengthen Victoria's economic future. It builds on the state's many competitive strengths, including a diverse and flexible economy, a highly skilled workforce, strong export performance, and liveability. It lays out a vision for Victoria's economic future, and sets out key actions the government will take to secure Victoria's position as not just a leading state, but as a regional economic centre, benefiting from and contributing to the Asian century.

Securing Victoria's Economy recognises the role Melbourne Airport plays in the state economy. In particular, it states that Victoria's freight advantages are strengthened by Melbourne Airport being the largest curfew-free major international airport in the nation.

Key projects identified in the strategy that relate to supporting Melbourne Airport include:

- the East West Link, which will provide a seamless freeway link from the Eastern Freeway to the Tullamarine Freeway, Melbourne Airport, the Hume Freeway, the port and the M80 Ring Road
- a feasibility study into the Melbourne Airport rail link.

4.3.3 New Metropolitan Planning Strategy – Plan Melbourne

The Victorian Government has started preparing a new Metropolitan Planning Strategy to manage Melbourne's growth and change as it moves beyond a city of 4 million people. The strategy will consider where new housing and business activities should be concentrated, as well as transport connections, health services, schools, sports grounds and parks.

It is anticipated that the new Metropolitan Planning Strategy will be finalised in 2014.

In October 2012, the Victorian Government released a Metropolitan Planning Strategy Discussion Paper, *Melbourne, let's talk about the future*. This paper recognises the importance of Melbourne Airport, its role as a "nationally significant" employment cluster and its curfew-free status, particularly in the context of 'Principle 2: A globally connected and competitive city', one of the nine principles adopted to inform the strategy.

The discussion paper also recognises that there "is adequate capacity to increase the number of aircraft flying into Melbourne Airport for some time" while acknowledging the need to address land-based access issues.

In October 2013, the Victorian Government released the new *Metropolitan Planning Strategy – Plan Melbourne* for public comment. Melbourne Airport is identified as Victoria's primary national and international gateway for air passengers and air freight. The plan discusses the growth of Melbourne Airport and outlines the plans for a third and fourth runway. The importance of the curfew-free status is discussed.

It is acknowledged that the State Planning Policy Framework needs to clarify the role and function of Victorian airports and to ensure there is consistencies with the National Aviation Safeguarding Framework.

Ground access to Melbourne Airport is discussed, with planning for a Melbourne Airport rail link identified as a short term initiative and implementation occurring over the medium term. Supporting the on-road operation of the SkyBus service to Melbourne Airport was also identified as an initiative in the plan.

4.3.4 Victorian Freight and Logistics Plan

In August 2013 the Victorian Government released the Victorian Freight and Logistics Plan which details a clear vision and a plan for ensuring that Victoria retains its status as Australia's freight and logistics capital, building for the future using the State's competitive strengths.

The Plan highlights that the State's international and national gateways – its ports, airports and interstate freight terminals – are key elements of Victoria's freight and logistics system. Through their efficient operation and linkage to external and internal transport and distribution networks, Victorian businesses are able to trade freely and efficiently in the global marketplace.

The Plan notes that Melbourne as a city has significant advantages in relation to freight and logistics including a curfew free international airport.

The Plan acknowledges the importance of Melbourne Airport and states:

> *Melbourne Airport handles more than 30 per cent of Australia's total air freight market and 36 per cent of the export market – this market share made Melbourne Airport Australia's largest export airport in 2012. In addition to capacity on passenger flights, there are currently 21 dedicated freight services each week. The airport has key strategic advantages as the air freight hub for south-eastern Australia including its 24-hour curfew-free operation; effective arterial road access to Melbourne's CBD and metropolitan industrial regions; extensive airline network/scheduling; and availability of land to accommodate future growth of air freight and handling.*

In relation to planning for airport capacity to meet growing demand, the Plan acknowledges Melbourne Airport's development plans. It states:

> *In late 2012, Melbourne Airport announced a preferred new third runway to be provided within ten years – an east-west runway. By 2050, it is expected that Melbourne Airport will be planning and developing its fourth and final runway. A major new freight terminal precinct will be developed to the east of the existing aircraft maintenance precinct, with good access to the M80 – Western Ring Road and the Tullamarine and Calder Freeways. It is considered that planning for Melbourne Airport includes significant capacity (airside and landside) to support a growing air freight role for many years.*

The Plan states that the Government will work cooperatively with the operator of Melbourne Airport and the Commonwealth Government to ensure that Victoria maintains its competitive advantage in air freight.

4.4 Development Objectives

Under Section 71(2)(a) of the Airports Act, APAM is required to outline its development objectives for Melbourne Airport, which are to:

- maintain Melbourne Airport as the aviation gateway to Victoria
- develop the airport, a critical piece of Commonwealth infrastructure, through effective, integrated strategic planning, incorporating environmental, community and sustainability considerations
- comply with relevant regulations and, where relevant, implement new technologies, approaches and processes
- deliver economic and social benefits to shareholders, the local community and Victoria as a whole through sustainable long-term growth and investment
- work with business operators, regulators, neighbours and the local community in its operations and planning, to optimise development both at the airport and in the surrounding region
- remain competitive, both domestically and internationally, and sustainably meet the demands of a growing national economy
- maintain the flexibility to respond to opportunities and risks in a rapidly changing environment
- maintain the 24-hour, curfew-free status for the benefit of the whole state by implementing effective on- and off-airport safeguarding measures
- provide timely and cost-efficient infrastructure including adequate ground transport access for passengers, businesses and staff members
- ensure developments provide and maintain a safe, secure and efficient environment and enhance the customer experience.

4.5 Development Drivers

Melbourne Airport's development is underpinned by the current and forecast number of passenger trips, aircraft movements and air freight volumes. These aviation traffic measures are driven by a range of global, national and local drivers.

The aviation traffic forecasts prepared for this Master Plan are based on econometric modelling techniques that analyse the relationship between multiple development drivers and aviation traffic measures. The key development drivers can be summarised into the following areas.

4.5.1 Global Economic Growth

The global economic growth analysis involved:

- a high-level macroeconomic analysis of the global economic environment
- a review of Gross Domestic Product (GDP) and other economic growth measures for key markets such as China, Southeast Asia, India, the Middle East and North America
- measuring the historic effect of external 'shocks' on long-term traffic trends.

4.5.2 Australian Economic Growth

The national economic growth drivers analysed included:

- population growth in major population centres
- the Australian trade-weighted index
- national and state GDP forecasts.

4.5.3 General Supply-Side Factors

The supply-side factors that drive aviation traffic growth include:

- aircraft manufacturing trends (aircraft size, range and fuel efficiency)
- airline fleet decisions
- projected aviation fuel prices.

4.6 Growth Forecasts

The planning for aviation-related facilities (runways, terminals and transport linkages) in the Master Plan is based on a range of factors, including forecast aviation traffic growth.

Aviation traffic forecasts were prepared by independent expert consultancies using economic modelling and trend analysis techniques. High, medium and low growth scenarios were prepared with the medium forecasts used in this Master Plan. The forecasts referred to historical traffic trends as well as the economic drivers described in Section 4.5.

Three main types of forecast have been prepared for this Master Plan:

- passenger trips
- aircraft movements
- ground transport movements (see Section 9).

4.6.1 Historical Air Traffic Performance

Since 1970, more than 505 million passenger trips have started or finished at Melbourne Airport. Passenger traffic has grown at an average rate of 5.7 per cent per year since 1972.

In the past 14 years, the number of passenger trips has more than doubled from 14.2 million to 29.1 million. In the 10 years from 2002 to 2012, passenger trips grew at an average rate of 5.4 per cent per year. In the same 10-year period, aircraft movements grew at an average rate of 1.1 per cent per year.

Freight movement facilitated by Melbourne Airport has increased significantly over time. In 2011 the airport facilitated the movement of approximately 7,200 dedicated freight aircraft. The majority of these were domestic freight carriers (87 per cent) with the remainder bound for or from international markets. In the 2011–2012 financial year, the airport facilitated the movement of approximately 250,000 tonnes of international freight including air mail (this includes freight carried on passenger aircraft). Significantly, air freight facilitated by Melbourne Airport represents 31 per cent of all Australian air freight by value. This is higher than Victoria's share of total Australian population in the year (24.8 per cent), and its share of total national employment (25 per cent), reflecting Victoria's importance in providing logistics services to Tasmania, South Australia and the Riverina region of NSW, as well as its own export oriented industrial base. It should be noted that domestic freight data is held by cargo terminal operators and is not available publicly or to Melbourne Airport.

4.6.2 Passenger Movement Forecast

Graph 4.1 illustrates the forecast passenger trips expected in each year of the Master Plan period. A total of 64.37 million passenger trips are expected at Melbourne Airport in 2033, which equates to an annual growth rate of 3.8 per cent per year.

It is noted that this forecast of passenger trips is very similar to the forecast published by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) in November 2012.

Graph 4.1: Total Annual Passenger Movements

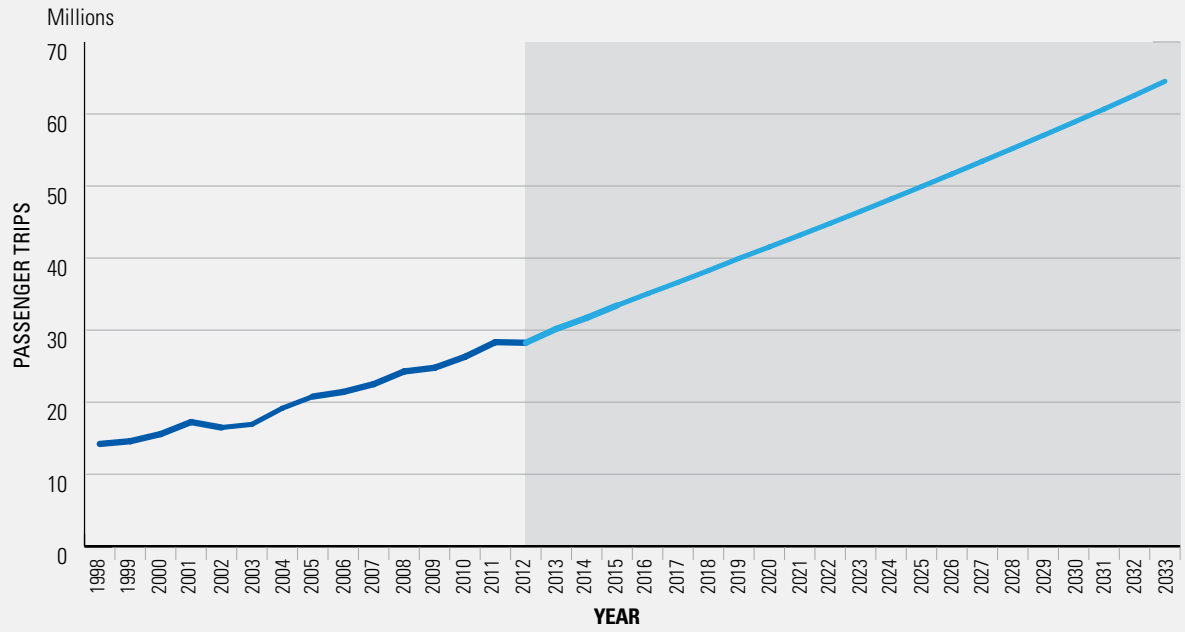


Table 4.1: Total Annual Passenger Movements

Year	Annual Passengers (millions)
2013	30.17
2018	38.26
2023	46.50
2028	55.22
2033	64.37

4.6.3 Aircraft Movement Forecast

Graph 4.2 illustrates the forecast aircraft movements for each year of the Master Plan period. A total of 347,750 movements are expected in 2033. This equates to an annual growth rate of 2.4 per cent per year.

Graph 4.2: Total Annual Aircraft Movements

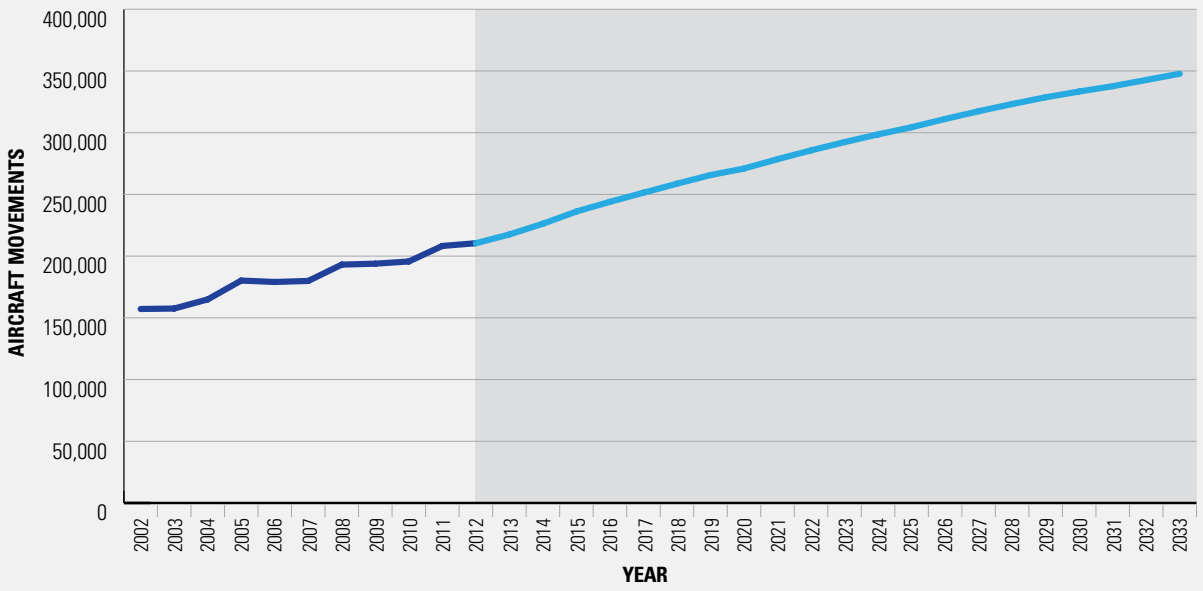


Table 4.2: Total Annual Aircraft Movements

Year	Annual Aircraft Movements
2013	217,550
2018	258,660
2023	292,370
2028	323,230
2033	347,750

4.6.4 Freight Forecast

Global air cargo traffic growth, measured in revenue tonnes-kilometres, is projected to average 5.2 per cent over the next 20 years.[5] The future growth of international air freight tonnage at Melbourne Airport is directly influenced by the number of international airlines operating at the airport and the destinations they service. This is because approximately 85% of air freight is transported on passenger aircraft. Over the next 20 years, international passenger aircraft movements at Melbourne Airport are forecast to double. It has been estimated that dedicated freight aircraft movements (domestic and international) will rise steadily from 7,200 per year in 2011 to 12,300 by 2033. Assuming the inward and outward freight movement per aircraft remains at present levels, modelling suggests that Melbourne Airport will facilitate the movement of approximately 393,000 tonnes of international freight by 2033. It should be noted that domestic freight data is held by cargo terminal operators and is not available publicly or to Melbourne Airport, and therefore forecasts have not been produced for domestic freight.

4.7 Planning Criteria

To define the Master Plan concepts for the airport's airside, terminal and landside areas, it was necessary to define and adopt a set of critical planning criteria.

4.7.1 Airside

The term 'airside', also referred to as 'airfield', covers the runway system, the taxiway/taxilane system, the apron infrastructure and the aircraft parking bays – all areas where operational aircraft movements or handling activities can take place. Airfield infrastructure planning typically incorporates the classification schemes adopted by the International Civil Aviation Organization (ICAO) and the Federal Aviation Administration (FAA). These schemes are based on a two-element reference code for each airport.

The first element of the ICAO code relates to the aircraft reference field length. This is the minimum field length required for a particular aircraft type to take off at its maximum certified take-off weight (MTOW) at sea level, in standard atmospheric conditions, in the absence of wind and using a level runway. The second element of the ICAO code is defined by the most demanding physical characteristics of that particular aircraft type (either its wingspan or the outer main gear wheel span). Noting that the FAA scheme uses different characteristics to define the airport reference code, under both schemes the reference code corresponds to the so-called 'critical aircraft' – the most demanding type of aircraft served by a particular airport. Both the ICAO and FAA apply six airframe design group codes. Melbourne Airport's critical aeroplane is in ICAO's Code F category, which includes the Airbus A380 and the Boeing 747-8.

5 Boeing, Current Market Outlook 2012–31.

While the type of critical aircraft will primarily inform the design of the runway and taxiway systems, the design of aprons and bays will often be informed by the predominant aircraft type. This term is used more loosely than the critical aircraft, but its significance lies in the fact that it ensures the airfield infrastructure is designed to a standard that caters for the tallest or heaviest airframes (critical aircraft), as well as the aircraft types that most frequently operate out of the airport (predominant aircraft). At present, Melbourne Airport has two predominant aircraft types: Code C airframes (Airbus A320 series, Boeing 737-700/800 series) for domestic and shorthaul operations and Code E airframes (Airbus A330, Boeing 777 series) for international operations.

Aside from international industry standards, Australia's CASA Manual of Standards (Part 139 –Aerodromes) informs the planning and design of airside infrastructure.

4.7.2 Terminal Facilities

Terminal facilities planning revolves around two basic principles: design and level of service.

The design of the terminal building aims to balance the often competing interests of different stakeholders, including but not limited to:

- passengers, who appreciate efficiency, reliability and convenience
- airlines, which expect the terminal to meet their requirements in terms of product differentiation and cost control
- authorities, which will verify that the facilities comply with all applicable legislative requirements and procedural standards, including building safety, security regulations and border control procedures
- airport operators, which will need to balance all of the above interests while running the airport business in a commercially viable manner.

In practice, a terminal's design largely depends on space requirements. The amount of space available for an activity inside the terminal is a good indicator of its level of service. The International Air Transport Association (IATA) has published generally accepted standards that help inform terminal design in two key areas. First, the standards help determine the spatial requirements for several types of passenger areas inside a terminal building. The standards are specified according to different levels of service. Second, the standards incorporate operational practices, which help define how fast passengers will progress through various areas inside the terminal.

It is worth noting that these standards are not prescriptive. They leave considerable room for subjective judgement and will change over time. Furthermore, the standards relate the building design to a theoretical and 'static' level of service. In practice, the actual level of service will be influenced by the building design and by another key planning parameter – the peak hour demand or busy hour rate (BHR).

BHR can be defined in several ways. The typical approach is to determine the peak hour of the average day of the busiest month. Another definition that is more appropriate for large airports that have several busy months is to determine the peak hour that occurs about 5 to 10 per cent of the days of the year.

BHR is typically derived using a combination of airline scheduling data, growth forecasts and econometric modelling. The BHR parameter is a more dynamic measure than the level of service, as it recognises that the number of passengers using the terminal at any particular point in time is not always the same, but ebbs and flows throughout the day, month and year. This better reflects the fact that airports face peak and off-peak times. If the terminal design only reflects a static level of service, there is a risk that the terminal will be overly spacious. This may serve the interests of passengers, but would generate serious concerns for the airport operator and airlines that ultimately have to pay for the terminal, parts of which would be underutilised for prolonged periods.

The inclusion of both the IATA level of service standards and other planning parameters, including BHR, help airport operators strike the best balance between various interests.

4.7.3 Landside Land Use and Development

Under the Airports Act, landside land use and development must (where possible) be consistent with the Victoria Planning Provisions and surrounding local planning schemes. This is discussed further in Section 5.

Landside development also takes place within a commercial setting, in which the intention is that supply and demand are matched. The commercial terms and conditions that Melbourne Airport negotiates will underpin the business case for any new land development. In this respect, landside land use and development is not dissimilar to commercial property development in a non-airport environment.

4.7.4 Airport Roads

The airport's internal road network is built on Commonwealth land. As the airport lessee, Melbourne Airport management is responsible for funding, developing and constructing the internal road network. The development of the airport road network must ensure safe, secure, efficient and convenient access to and from the terminals and landside development areas, and involve a thorough analysis of long-term traffic forecasts.

Road development plans must also meet the requirements of relevant codes, standards and accepted engineering practices. The relevant standards include the Austroads Guide to Traffic Engineering Practice series, which refers to relevant Australian standards, guidelines and codes of practice.

Roads and access planning will follow State road planning standards, which encompass the following principles:

- Transport modes are seen as complementary rather than competing.
- Transport plans are integrated with land planning strategies.
- Roads contribute to an integrated transport system that strengthens the economy, liveability, social inclusion and environmental outcomes.

The transport system objectives and decision-making principles set out in the Victorian *Transport Integration Act 2010* are also a relevant consideration.

5

AIRPORT LAND USE PLAN

5. AIRPORT LAND USE PLAN

5.1 Overview and Objectives

Planning requirements for the Melbourne Airport site are administered under the Airports Act. State planning laws do not apply to the site. However, regulations made under the Airports Act require the Master Plan to, where possible, describe proposals for land use planning and zoning (in relation to the landside part of the airport) in a manner consistent with that used by the state or territory in which the airport is located.

As required under Section 71 of the Airports Act, this section, together with Appendix B, demonstrates how the land use plan is consistent with planning schemes in force under Victorian law. It has considered the Victorian State Planning Policy Framework and has used zones, overlays and other planning provisions derived from the Victoria Planning Provisions.

The Melbourne Airport site currently comprises 2,367 hectares of leasehold land and 90 hectares of freehold land. Aside from the airfield and terminals, the land accommodates a range of industrial, business and commercial activities, all of which are projected to grow. Melbourne Airport's land use plan for the site is aligned with the Melbourne Airport Strategy 1990 (and associated EIS) and previous Master Plans, and facilitates the land use concepts outlined in Section 1.9 and the development objectives outlined in Section 4.4.

This section details the land use planning framework for the site's development and proposed future use. The framework designates precincts and identifies the land uses that are permitted or which require consent within each precinct. It also sets out planning requirements for development (buildings and works) on the site. The land use plan adopts an integrated planning approach and is flexible enough to respond to market opportunities and business expectations.

The objectives of the land use plan are to:

- facilitate land use and development in accordance with the Melbourne Airport Master Plan 2013
- advance Melbourne Airport as one of the state's key activity centres
- provide for the airport's long-term growth requirements
- support a range of uses, including complementary business and shopping activities, employment, travellers' accommodation, leisure, transport and community facilities
- support sustainable urban outcomes that optimise the use of infrastructure
- create an attractive, pleasant, safe, secure and stimulating environment through good urban design
- support good environmental practice to minimise the impact on the environment and protect environmentally sensitive heritage areas.

5.2 Regional Context

Melbourne Airport is one of Victoria's most strategically important sites and a critical piece of transport infrastructure.

The airport is located 22 kilometres from the central business district and is well situated to major transport links. The surrounding suburbs are easily accessible via the Tullamarine Freeway and the M80 Ring Road, providing direct access to the Hume, Calder, Western and Princes Freeways. These links also provide access to regional areas and the Port of Melbourne and the Port of Geelong. Melbourne Airport is also located on the Principal Public Transport Network.

Melbourne Airport is predominantly surrounded by non-urban or green wedge land, particularly to the north and west, which helps protect the community and safeguard the airport and its flight paths from the encroachment of incompatible activities. However, there is urban development located to the east and south of the airport, comprising a mix of industrial and residential development.

Under Melbourne 2030, Melbourne Airport is identified as a Specialised Activity Centre – a precinct that provides a mix of economic activities that facilitates high numbers of work and visitor trips.

Other activity centres (major or principal) located in the region are:

- Gladstone Park Major Activity Centre, approximately 1.2 kilometres east of the airport
- Airport West Principal Activity Centre, approximately 1.9 kilometres south-east of the airport
- Broadmeadows Activities Area, approximately 4 kilometres east of the airport
- Sydenham Principal Activity Centre, approximately 5 kilometres west of the airport
- Keilor Downs Major Activity Centre, approximately 5.1 kilometres south-west of the airport.

The designation of Melbourne Airport as an activity centre recognises its important role as a regional hub of economic activity and as a nationally significant employment cluster because:

- there is considerable industrial land around the airport precinct
- it plays a significant role in providing jobs for the nearby urban growth corridors in the north and west of Melbourne
- the growth in employment in the precinct will increase the need for improved access.

5.3 Land Use Strategy

The land use strategy for Melbourne Airport designates five land use precincts that each have a different focus or function. The details of the precincts are set out in Section 5.4. These precincts form the basis of the Activity Centre Zone, discussed in Section 5.5.1.

The 2008 Master Plan did not include the land use precincts set out in this Master Plan. They are included in this Master Plan because the precincts reflect the airport's main functional areas, and because they have been adopted by airport management for administrative purposes. For these reasons, adopting the precincts in this Master Plan is seen as an appropriate land use strategy for the airport.

The land use precincts are the primary land use planning tool. The five-year, 20-year and ultimate airport concept plans discussed in Section 1.9 indicate proposed land uses within the precincts. However, proposed land uses that are not in strict accordance with the concept plans may still be considered provided they align with the objectives of the precincts. This approach provides an appropriate level of certainty and the flexibility to respond to market opportunities and business expectations.

There have been no major changes to the overall land use direction compared to the 2008 Master Plan, but some amendments have been made in relation to land use designations and the zoning plan has been rationalised (refer Section 5.5). However, the overall allocation of land for airside, terminal and landside (including non-aviation) purposes is essentially the same as the 2008 Master Plan.

5.4 Land Use Precincts

Figure 5.1 shows the five land use precincts, which are:

- Airside Operations Precinct
- Airport Expansion Precinct
- Terminals Precinct
- Landside Main Precinct
- Landside Business Precinct.

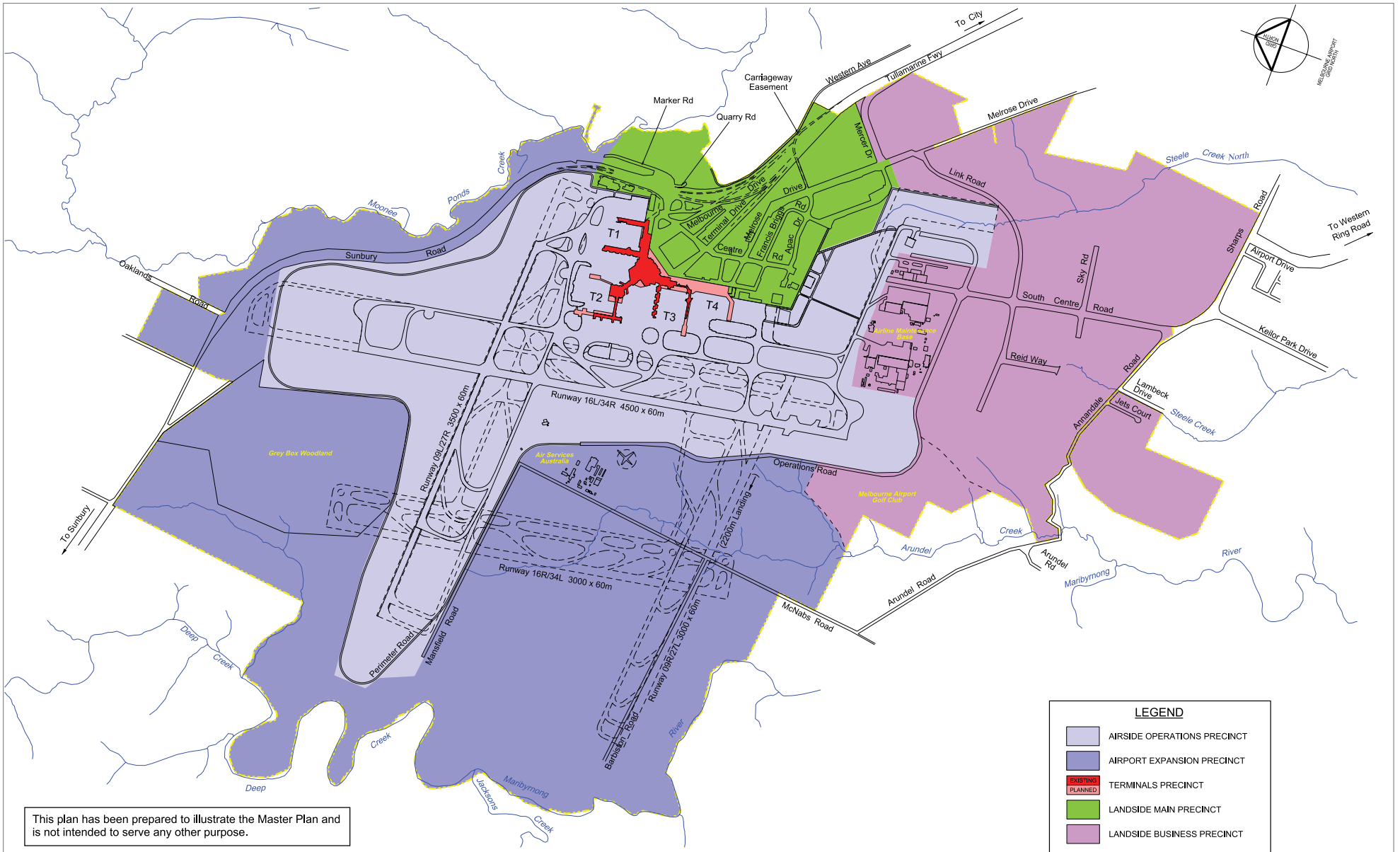
5.4.1 Airside Operations Precinct

Situated to the north, west and south of the airport terminals, this is the most critical precinct and is not accessible to the general public. It accommodates airfield facilities, including the runways, taxiways, aprons and associated navigation aids, and the airport's fire station.

The role of the Airside Operations Precinct is to:

- provide for safe, secure and efficient airfield activities, including aircraft landing, take-off, taxiing, handling and parking
- accommodate the provision of aircraft navigation aids, aviation rescue and fire fighting services, and other facilities essential for safe and efficient aircraft operations
- provide for 24 hours a day, seven days a week aircraft operations.

This precinct will continue to be used and developed for the aircraft services and facilities described above. It will not be used or developed for any purpose that may interfere or conflict with safe and secure airport and aircraft operations.



This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

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2013 MASTER PLAN

Existing Land Use Precincts Plan

Fig. 5.1

5.4.2 Airport Expansion Precinct

This precinct adjoins the Airside Operations Precinct and largely comprises vacant land that is likely to be required for future airport operations. This precinct includes land that will be required in the future for the airport's third and fourth runways. It also includes sections of the Tullamarine Freeway and Sunbury Road, as well as environmental areas that extend around the precinct perimeter including land adjacent to Deep Creek and the Maribyrnong River, which forms the western boundary of the precinct, and Moonee Ponds Creek, which forms the north-east boundary.

Included in this precinct is the Grey Box Woodland and Arundel Creek, which runs through the precinct from north to south. The Airservices facilities in Operations Road are also located here, including the control tower. Some parcels of land in this precinct, on the west side of McNabs Road, are still privately owned and are subject to future acquisition. Melbourne Airport will ensure sufficient land is available for it to achieve its expansion requirements as outlined in the Melbourne Airport Strategy 1990, previously approved Master Plans and this Master Plan.

The role of the Airport Expansion Precinct is to:

- provide for the airport's future expansion, including additional future runways and taxiways and possible future terminal or aviation support facilities
- support the ongoing operation and growth of aviation-related organisations, including Airservices services and facilities (the control tower, air traffic control and Hot Fire Training Ground)
- conserve environmentally significant land where such land is not required for future airport operations.

The precinct has been identified for future expansion, which will include additional runways, taxiways and associated aviation support infrastructure. The precinct will not be used or developed for any purpose that may prejudice or conflict with its objectives, or that may interfere or conflict with safe and secure airport and aircraft operations in the Airside Operations Precinct or Airport Expansion Precinct.

The existing Tullamarine Freeway and Sunbury Road road reserve will be maintained to allow for the safe, secure and long-term functionality of this corridor and the potential future connection between Melbourne Airport and the Outer Metropolitan Ring Transport Corridor.

5.4.3 Terminals Precinct

This precinct is the site of the T1, T2, T3 and T4 passenger terminals and contains land required to expand the passenger terminals in the future. With the exception of T4, the existing terminals are integrated under one roof in a multi-level building combining domestic and international terminal facilities and commercial activities such as restaurants and shops.

This precinct excludes the related landside facilities, such as car parks, which are included in the Landside Main Precinct. The main terminal forecourt is also in the Landside Main Precinct.

The role of the Terminals Precinct is to:

- provide for the operation, use and development of land for passenger and baggage processing, enabling the terminal facilities to operate safely, securely, efficiently and cost-effectively
- provide world-class facilities for airlines and passengers, including efficient terminal facilities with adequately located and sized commercial areas
- provide an integrated terminals facility with ample commercial and retail uses
- provide for the flexible expansion of passenger terminal facilities to meet forecast demand.

The precinct's future use and development will focus on enhancing and expanding the terminal complexes, so it can continue to provide essential passenger services.

The Terminals Precinct will not be used or developed for any purpose that may interfere or conflict with safe and secure airport and aircraft operations in the Airside Operations Precinct or Airport Expansion Precinct.

5.4.4 Landside Main Precinct

This precinct adjoins the eastern boundary of the Airside and Terminals Precincts. Its primary purpose is to provide services and facilities relating to these adjoining precincts, including freight, ground transport and car rental facilities, hotels and offices. The precinct accommodates the existing Joint User Hydrant Installation (JUHI) facility and has excellent connections to the terminals and aircraft-related areas. The airport's main entry and exit roads run through this precinct, including the Tullamarine Freeway, Terminal Drive and Melrose Drive.

The role of the Landside Main Precinct is to:

- provide a range of airport support activities, services and facilities for use by airlines, passengers, government agencies, freight businesses and transport providers
- provide integrated car parking, hotel accommodation, commercial and retail uses that support the airport
- provide an attractive and functional gateway to the airport
- provide ground transport facilities and services for efficient access to the airport
- provide for future expansion of passenger terminal facilities to meet forecast demand.

The precinct's future use and development will focus on making the most of its prime location, including enhancing passenger drop-off/pick-up facilities, freight transport, car parking, hotel accommodation, offices, commercial uses and retail premises.

The precinct must provide for safe, secure and efficient ground transport access and a high level of visual amenity.

It will not be used or developed for any purpose that may interfere or conflict with safe and secure airport and aircraft operations.

The existing Tullamarine Freeway and Sunbury Road road reserve will be maintained to allow for the safe, secure and long-term functionality of this corridor and the potential future connection between Melbourne Airport and the Outer Metropolitan Ring Transport Corridor.

5.4.5 Landside Business Precinct

This precinct is situated to the south of the Airside and Landside Main Precincts. It extends from the Tullamarine Freeway and Mercer Drive in the north to Annandale Road and Sharps Road in the south. Given its location, this precinct lends itself to a mix of uses, including the majority of non-aviation activities. The Melbourne Airport Business Park and Melbourne Airport Cargo Estate are situated here.

The role of the Landside Business Precinct is to:

- provide land for a range of aviation and non-aviation uses
- provide a range of aviation-related services, including aircraft maintenance and servicing and freight and cargo terminals
- provide for a range of non-aviation uses, including industrial, commercial, retail, office, recreational, manufacturing, warehousing and associated activities.

The Landside Business Precinct's future use and development will remain focused on mixed-use purposes, and will provide for safe and efficient ground transport access and a high level of visual amenity. Its proximity to residential areas requires careful consideration, particularly in regard to the provisions of the Airports Act about community impact. This precinct will not be used or developed for any purpose that may interfere or conflict with safe and secure airport and aircraft operations in the Airside Precinct or Airport Expansion Precinct.

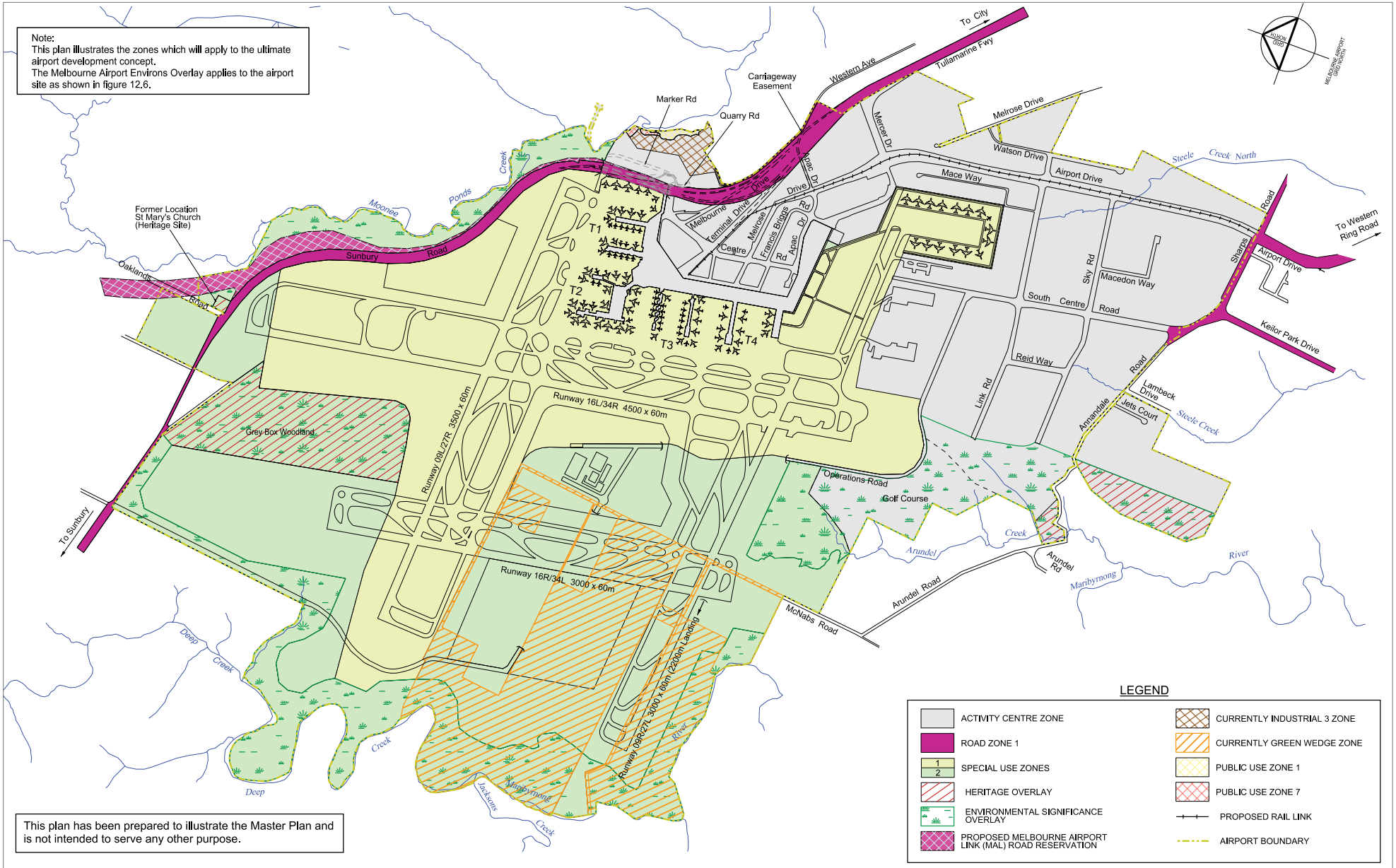
5.5 Planning Zones

Regulation 5.02(2) of the Airports Regulations 1997 states:

> *For Section 71 of the Act, an airport Master Plan must, in relation to the landside part of the airport, where possible, describe proposals for land use and related planning, zoning or development in an amount of detail equivalent to that required by, and using terminology (including definitions) consistent with that applying in, land use planning, zoning and development legislation in force in the State or Territory in which the airport is located.*

In the 2008 Master Plan, several different planning zones were used based on the Victoria Planning Provisions, including the Business 2 Zone and Business 3 Zone. At the time this Master Plan was prepared, the Victorian Government was reforming Victoria's planning zones, including defining a new suite of business zones. Furthermore, since the release of the last Master Plan, the State Government has introduced a new zone specifically for activity centres (including Specialised Activity Centres) called the Activity Centre Zone. Given these facts, and after considering a number of zoning options, Melbourne Airport has chosen a variation of the Activity Centre Zone as the zone to apply to the terminals and landside precincts and a Special Use Zone to apply to the Airside Operations and Airport Expansion Precincts. The provisions of these zones are discussed below.

The planning zones are depicted in Figure 5.2. This plan identifies land within the Commonwealth-leased boundaries of Melbourne Airport, freehold land holdings owned by the airport and privately owned land that will be required for airport development in the future. However, as was the case in the 2008 Master Plan, the zoning plan in this Master Plan reflects the ultimate plan, and assumes that all of the subject land will eventually be administered under the Commonwealth lease. In the interim, the planning provisions applying to land holdings beyond the current Commonwealth-leased boundaries are those specified by the Hume Planning Scheme.



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Zoning and Overlay Plan

Fig. 5.2

Some land required for the airport's future development located west of McNabs Road (north of Barbiston Road) is currently privately owned. Until it has been acquired for airport use, it is subject to planning controls under the Hume Planning Scheme, including the Green Wedge Zone. The Secretary of the Victorian Department of Transport, Planning and Local Infrastructure is also a referral authority for applications made within this zone. In addition, Melbourne Airport must be notified of planning permit applications for this area as the land is subject to the Melbourne Airport Environs Overlay. The land is shown on the Melbourne Airport – Future Runway Development Plan (May 2007), which is incorporated in the Hume Planning Scheme. Melbourne Airport is continuing to work with Commonwealth, State and local governments to ensure appropriate planning mechanisms are in place for this land, to provide for the airport's future expansion.

5.5.1 Activity Centre Zone

The Activity Centre Zone was introduced into the Victoria Planning Provisions (VPPs) in 2009, and was not available for consideration when the 2008 Master Plan was prepared. It was designed to apply to Central Activity Districts (such as Melbourne city centre), Principal Activity Centres (such as Broadmeadows), Major Activity Centres (such as Craigieburn Town Centre) and Specialised Activity Centres (such as Melbourne Airport). The State Government introduced the zone to facilitate and simplify development in activity centres. The zone is intended to act as a 'one-stop shop', and can regulate matters such as heritage and parking.

The Activity Centre Zone requires a structure plan to be in place. As noted in the 2008 Master Plan, the Master Plan is essentially a structure plan for the Melbourne Airport Specialised Activity Centre, having considered the social, economic and environmental criteria for activity centres outlined in the Melbourne 2030 strategy.

The generic purposes of the Activity Centre Zone as presented in the VPPs are to:

- encourage a mixture of uses and the intensive development of the activity centre:
  - as a focus for business, shopping, working, housing, leisure, transport and community facilities
  - to support sustainable urban outcomes that maximise the infrastructure and public transport use
- deliver a diversity of housing at higher densities to make optimum use of the facilities and services. (This purpose is not appropriate for Melbourne Airport as no housing would be permissible within its boundaries)
- create through good urban design an attractive, pleasant, walkable, safe and stimulating environment
- facilitate land use and development in accordance with the Development Framework for the activity centre.

Relevant directions from the Department of Transport, Planning and Local Infrastructure's Activity Centre Zone practice note are as follows:

- The Activity Centre Zone implements the strategic directions of a structure plan and dispenses with the need to apply multiple zones.
- The Activity Centre Zone should be applied to all land within an activity centre, although public zones such as Road Zones should be retained.
- To assist in implementing a structure plan, the activity centre is usually divided into precincts.
- The inclusion of a statement of the activity centre land use and development objectives is required. The zone can contain centre-wide provisions and specific precinct provisions.
- The Activity Centre Zone outlines standard information that must be provided as part of an application.
- Parking studies can be used to justify alternative rates of parking for the activity centre, although Clause 52.06 (Car Parking) of the Planning Scheme should continue to be used to address parking.

Given the above, the Activity Centre Zone was selected as the most applicable zone to apply to the terminals and landside precincts because:

- it is a standard zone in the Victoria Planning Provisions specifically designed for activity centres, including Specialised Activity Centres
- it is designed to simplify activity centre planning, to be facilitative and flexible, and to provide a one-stop shop encompassing almost all planning approval aspects and its use provides clear and consolidated planning controls
- it provides for centre-wide and precinct provisions to be included, which allows distinctions to be made between airside and landside precincts (consistent with the precincts' descriptions outlined in Section 5.4), while also including objectives and controls that apply to the entire airport site
- this Master Plan contains the details needed to be considered as a Structure Plan/Framework Plan, and as such can form the basis of the zone.

While the Activity Centre Zone has been adopted, some changes to the zone's standard provisions were required, mainly to ensure consistency with the provisions of the Airports Act. For example, the generic purpose statement relating to housing has been removed.

The Activity Centre Zone provisions are included in Appendix B. The precinct requirements contained in the zone provisions are based on the land use precincts outlined in Section 5.4.

5.5.2 Special Use Zone

The Special Use Zone has been applied to the Airside Operations and Airport Expansion precincts to reflect the special nature of these areas and their critical role in the operation of the airport. This zoning is consistent with the 2008 Master Plan and the approach taken at other Victorian airports, sea ports and freight terminals.

There are two schedules to the Special Use Zone:

- Schedule 1 – Airside Operations Precinct
- Schedule 2 – Airport Expansion Precinct

The Special Use Zone provisions are included in Appendix B. The provisions contained in the schedules are based on the land use precinct guidelines outlined in Section 5.4.

5.5.3 Road Zone

Apart from the Activity Centre Zone and Special Use Zone, the only other zone shown on the Zoning Plan is Road Zone 1. This zone applies to the section of Sunbury Road and the Tullamarine Freeway that traverses the airport boundary. Applying the Road Zone to this land is consistent with the Department of Transport, Planning and Local Infrastructure's Activity Centre Zone practice note. The section of Road Zone to the north of the terminal precinct is currently being planned for the future connection to the Outer Metropolitan Ring Corridor. That road will provide access to the Airport through the widening and extension of that reservation to cater for an upgraded road that will be called the Melbourne Airport Link (MAL).

5.6 Overlays

In accordance with the Victoria Planning Provisions, Melbourne Airport has applied overlays to target a single issue or related set of issues. The overlays used are:

- Environmental Significance Overlay
- Heritage Overlay
- Melbourne Airport Environs Overlay.

The Environmental Significance Overlay and Heritage Overlays are shown in Figure 5.2. The Melbourne Airport Environs Overlay is shown in Figure 12.6.

Each of the overlays has a strategic justification and is linked to the policies and development objectives described in this Master Plan. The requirements and restrictions of each overlay are similar to those in the Victoria Planning Provisions.

The Environmental Significance Overlay applies to land along Deep Creek, the Maribyrnong River, Moonee Ponds Creek, the Golf Course and the Grey Box Woodland. It ensures that development in these areas considers the natural environment and flora and fauna habitats. This overlay reflects the Victoria Planning Provisions, identifying areas where land development may be affected by environmental constraints. It does not reflect the definition of environmental significance under the Airports Act.

The Heritage Overlay applies to areas recognised as having heritage significance as identified in the Victorian Heritage Register. These sites include the former St Mary's Church, the Grey Box Woodland and the Keilor Archaeological Site.

The Melbourne Airport Environs Overlay is discussed in Section 12.2.2.

5.7 Particular Provisions

Where applicable, the Particular Provisions contained in the Victoria Planning Provisions are considered in all airport development proposals. These provisions, which contain requirements for matters such as car parking, signage, and vehicle loading and unloading, have also been considered when developing the Melbourne Airport Planning and Design Guidelines referred to in the provisions of the Activity Centre Zone.

5.8 Sensitive Developments

Section 71A of the Airports Act requires a Master Plan to identify any proposed 'sensitive developments', defined as development or redevelopment that increases the capacity of the following:

- residential dwelling
- community care facility
- pre-school
- primary, secondary, tertiary or other educational institution
- hospital.

A sensitive development does not include the following:

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

Sensitive developments are prohibited on Commonwealth leased airports except in exceptional circumstances, and require an airport to apply to the Minister for approval to prepare a draft Major Development Plan (MDP) for the proposed development. The Minister may approve the preparation of the draft MDP only if he or she is satisfied that there are exceptional circumstances that support its preparation.

There are no specific proposals for sensitive development in this Master Plan. However, the provisions of the Activity Centre Zone and Special Use Zone enable a sensitive development to be considered subject to the Minister's approval to prepare a draft MDP.

5.9 Consistency with Planning Schemes under State Law

The Airports Act requires a Master Plan to describe the extent to which the proposals contained in the Plan are consistent with planning schemes in force under state law. This includes how the proposed developments fit within the planning schemes for commercial and retail development in the area adjacent to the airport.

Within Specialised Activity Centres such as Melbourne Airport, complementary mixed uses are encouraged, provided they do not compete with nearby Central Activities Districts or Principal or Major Activity Centres, or inhibit the centre's specialised role.

Like many airports around the world, non-aviation development occurs on the Melbourne Airport site. Non-aviation property development is complementary to the airport's operations and consistent with general urban planning arrangements in the north-west of Melbourne, including Melbourne 2030 and the Hume Planning Scheme. The Specialised Activity Centre status provides employment and other economic benefits for the local area, and acts as a physical buffer between the 24-hour airport operations and residential areas. This pattern of development is complementary to other activity centres near the airport and makes good use of available infrastructure. Section 8 of this Master Plan provides further information regarding Melbourne Airport's non-aviation development plan.

Given the airport's designation as an activity centre under the metropolitan strategy for Melbourne, applying the Activity Centre Zone to the terminals and landside precincts is consistent with the State Planning Policy Framework and Victoria Planning Provisions. Applying the Special Use Zone to the operational areas of the airport is also consistent.

While the Master Plan and Activity Centre Zone provide for complementary retail and commercial development to occur on land not required for aviation uses, there are no specific developments proposed in this Master Plan that are likely to conflict with surrounding planning schemes, particularly having regard to the State Government's current planning zone reforms.

5.10 Pre-Existing Interests

In developing this Master Plan, all interests existing at the time the airport lease was created were considered, including easements, licences, leases and sub-leases. There are no conflicts or inconsistencies existing between these interests and any proposals in the Master Plan. Melbourne Airport will continue to ensure that any airport development contemplated will not interfere with the rights granted under any pre-existing interest.

Figure 1.3 shows the existing aerodrome and the location of all interests that existed as of 2 July 1997 and which still remain.

5.11 Development Approval Process

If a use or development is proposed on Commonwealth land within Melbourne Airport, a three-step approval process must be followed:

- The proponent must obtain from Melbourne Airport a Planning and Design Approval in accordance with the provisions of this Master Plan; or
- If required, MDP approval from the Minister must be obtained under the provisions of the Airports Act.
- Building Activity Consent must be obtained from Melbourne Airport under the provisions of the *Airports (Building Control) Regulations 1996*.
- A Building Permit must be obtained from the Airport Building Controller (ABC) under the provisions of the *Airports (Building Control) Regulations 1996*. The ABC is advised by the Airport Environment Officer (AEO). Both the ABC and AEO are independent officers employed by the Commonwealth Government.

Melbourne Airport has a set of Planning and Design Guidelines for on-airport developments that must be considered and addressed to obtain Planning and Design Approval. The Planning and Design Guidelines apply to most new developments on airport land, and require compliance with the Master Plan. The guidelines require proponents to consider matters such as building heights, acoustic treatments, safety and security, use of non-reflective materials, illumination levels, landscaping, signage and environment. The potential impacts of on-airport commercial and industrial developments on neighbouring properties must also be considered, including issues such as privacy, noise levels and building setbacks.

Melbourne Airport also has a Development Manual that must be considered and addressed as part of the Building Activity Consent process.

For any major airport development or sensitive development, as defined in the Airports Act, an MDP must be prepared, placed on public exhibition and submitted to the Minister for approval, prior to obtaining Building Activity Consent. Part 5, Division 4 of the Airports Act sets out the MDP requirements.

Planning and Design approval or MDP approval (if required) are prerequisites for obtaining Building Activity Consent. A Building Permit cannot be obtained until Building Activity Consent has been granted.

6

AIRSIDE DEVELOPMENT PLAN

6. AIRSIDE DEVELOPMENT PLAN

6.1 Overview and Objectives

Melbourne Airport's airside infrastructure, particularly the runway system, accommodates all aircraft movements and, for the most part, defines its capacity. It creates boundaries for the development of adjacent precincts such as terminals, roads and commercial property.

In response to continuing strong growth in passenger, freight and aircraft movements, Melbourne Airport has been developing plans to enhance critical apron, taxiway and runway infrastructure.

The Airside Development Plan aims to maximise the potential uses and operational advantage of Melbourne Airport's existing single terminal precinct. The planned infrastructure is vital to support future passenger and aircraft movements through the airport.

The principal objectives of the Airside Development Plan are to develop:

- appropriate airfield infrastructure that will optimise the use of the existing terminal precinct throughout the 20-year Master Plan period
- apron areas that will provide additional aircraft parking capacity
- infrastructure for dual apron perimeter taxiways to maintain efficient aircraft movement
- Rapid Exit Taxiways and other infrastructure enhancements to optimise the existing runways' capacity
- a new parallel runway and associated taxiway infrastructure in the east–west orientation within the next 10 years.

All major developments will be planned and developed in consultation with relevant stakeholders and in accordance with appropriate design standards, safety, security, environment and statutory requirements.

6.2 Existing Airside Configuration

6.2.1 Runways

The existing airfield configuration comprises two almost perpendicular runways, supported by a network of taxiways and aprons. The runway surfaces are predominantly grooved asphalt, supplemented with concrete ends.

The existing airfield configuration is shown in Figure 1.3.

a. North–South Runway (Runway 16/34)

The north–south runway (Runway 16/34) is currently 3,657 metres long and 60 metres wide. This runway can accommodate all commercial aircraft types up to and including Code F aircraft such as the A380. The runway's length allows direct, ultra–long haul operations to destinations throughout Asia and as far as Dubai and Los Angeles, which has supported strong growth in international services to these and other similar markets.

Runway 16/34 has been substantially upgraded in recent years, including a pavement overlay completed in 2012 that will deliver another 15 years of life for the surface.

The Master Plan provides for a possible 843-metre extension at the northern end to increase the runway's ultimate length to 4,500 metres. This would be implemented when required to meet future demand and is currently shown on the Ultimate Airport Development Concept Plan (refer Figure 1.7).

Runway 16 is supported by a High Intensity Lighting Category II/III system and an Instrument Landing System Category IIIb, which facilitate aircraft landings in poor weather conditions with visibility between 50 metres and 175 metres and a cloud base below 50 feet. Approaches from both directions, Runway 16 and Runway 34, are also supported by a Precision Approach Path Indicator system.

b. East–West Runway (Runway 09/27)

The east–west runway is currently 2,286 metres long and 45 metres wide. The runway is heavily utilised, particularly in Melbourne Airport's morning and evening peak periods. The Runway 27 end is immediately adjacent to the T1 and T2 aprons and facilitates excellent access for departures because it is closer than other runway ends.

The runway comfortably accommodates Code C (e.g. A320, B737) and Code D (e.g. B767) aircraft, and provides Code E (e.g. A330, B747) and Code F (e.g. A380) arrival and departure capability for short- to medium-haul destinations.

An ultimate runway length of 3,500 metres can be provided by extending the west end by 714 metres and the east end by 500 metres. These extensions are currently planned within the 20-year Master Plan horizon and will deliver operational capability for long-haul international flights.

Runway 27 is supported by a High Intensity Lighting Category II system and an Instrument Landing System Category I, which facilitate aircraft landings in weather conditions with visibility between 550 metres and 2,000 metres and a cloud base below 600 feet but not below 200 feet. Approaches from both directions, Runway 09 and Runway 27, are supported by a Precision Approach Path Indicator system.

6.2.2 Taxiways

The taxiway system facilitates aircraft movement around the airfield. Taxiways at Melbourne Airport are predominantly concrete due to traffic loadings, although some areas are grooved asphalt, particularly for runway exits.

The taxiway infrastructure also provides dual apron perimeter taxiways, which ensure quick and efficient aircraft flow between the runways and terminal aprons. The system is set up so that aircraft traffic generally moves in different directions simultaneously (facilitated by parallel taxiways). In this regard, the taxi routes are designed to provide the shortest distance between aircraft parking aprons and the runways.

Exit and entrance taxiways facilitate aircraft movement to and from the runways. Entrance taxiways are generally located at the ends of the runway. There are also some intermediate taxiways for intersection departure operations (aircraft starting take-off partway along the runway). These taxiways provide runway exit points for arrivals, and in the case of Taxiway Echo and Taxiway Alpha, serve as runway crossing points for access to and from the ends of Runway 09/27 and Runway 16/34 respectively.

Rapid Exit Taxiways allow arriving aircraft to quickly and consistently exit the runway, yielding consistent aircraft separations (gaps between aircraft) and optimising the number of aircraft that can use the runway. Melbourne Airport currently has three Rapid Exit Taxiways (Taxiways Foxtrot, Golf and November), each of which serves an individual runway in all major operating directions.

6.2.3 Aprons

The existing terminal aprons provide aircraft parking stands and access via taxiways, taxilanes and lead-in lines for aircraft accessing domestic terminals T1, T3 and T4, and international terminal T2.

The remote North Apron area provides additional tow-off and layover capacity that is shared between domestic and international operations.

A specific apron area at the southern end of the current terminal precinct provides dedicated freight aircraft parking adjacent to cargo handling and logistics terminals.

In total, Melbourne Airport's main terminal apron precinct has 65 aircraft parking bays for commercial passenger and freight operations, with 41 aerobridges.

In addition to these contact stands, there are several remote and stand-off aircraft parking positions on taxiways outside the terminal precinct, where long-stay aircraft can be towed if required.

Aprons also provide staging and storage areas for Ground Service Equipment (GSE) and airside roads for vehicles servicing aircraft parked on the apron. Additional dedicated GSE areas are planned to support existing and growing aircraft parking demand.

6.2.4 Air Navigation Facilities

Airservices provides air traffic control, aeronautical information services, airport rescue and fire fighting and navigation services for Melbourne Airport.

The Airservices site at Melbourne Airport (refer Figure 1.3) incorporates an air traffic services centre adjacent to the control tower. This important facility, one of two in Australia, is responsible for controlling 6 per cent of the world's airspace (known as a Flight Information Region) and is part of the largest area controlled by any air traffic management organisation in the world.

Airservices recently constructed a new air traffic control tower and a new state-of-the-art fire training facility which both began operations in 2013.

Melbourne Airport will continue to support the vital services that Airservices provides and will protect appropriate land area within the Master Plan to accommodate the facilities it may need in the future.

6.2.5 Existing Airside Capacity

The existing airside configuration is expected to begin reaching capacity in the peak periods by 2017 (when the number of annual passengers reaches approximately 38 million). Major infrastructure will be required to support projected demand and keep airside delays to tolerable levels.

Currently, the two intersecting runways are operated in different modes, mainly in response to wind direction on the day, as aircraft must land and take off into the wind. Single runway operating modes are sometimes necessary during strong wind conditions, and at these times the hourly runway throughput is 48 aircraft movements. However, where possible Airservices operates the two runways simultaneously (but dependent on each other) in either north–west or south–west direction combinations. These operating modes enable up to 60 aircraft movements per hour, allowing the existing two-runway airfield configuration to be used as long as possible.

Airside capacity is typically defined as the level of demand at which delays begin to exceed acceptable levels. While there is no standard for acceptable delays, Melbourne Airport has adopted an average six-minute delay to aircraft, as a trigger for new capacity enhancement measures, to maintain its reputation and objective of providing a high level of customer service.

The existing airfield's capacity was assessed using a computer simulation. The two-runway operating configurations were modelled and the results indicate that the existing airside layout, without enhancements, is expected to accommodate approximately 250,000 annual aircraft movements, based on the six-minute delay threshold.

Based on current forecasts, the existing airfield configuration will reach capacity by 2017-2018. Infrastructure enhancements (such as new runway exit taxiways) are required to accommodate further growth, to provide a good level of service and keep delays due to airside congestion within acceptable levels. Enhancements will allow the existing two runways to serve demand to somewhere between 2018 and 2022, depending on the growth profile and extent of peak delays.

The following section describes mitigating measures that will alleviate congestion during peak hours and defer the investment required to construct the third runway by a number of years.

6.3 Proposed Future Airside Developments

6.3.1 Introduction

A key principle of the Airside Development Plan is to maximise the existing assets' capacity within reasonable delay tolerances, while maintaining operational safety at all times. However, the investment in a third runway will be based on demand and delay triggers in order to deliver it between 2018 and 2022. This can be achieved by enhancing the infrastructure, such as providing dual apron perimeter taxiways and additional taxiway connections to the runways.

Infrastructure upgrades to the existing airfield are described below and illustrated on the 2018 Airport Development Concept Plan (refer Figure 1.5) and 2033 Airport Development Concept Plan (refer Figure 1.6). Extracts of these drawings focusing on the main terminal apron area and associated taxiways are shown in Figure 6.1 and 6.2 respectively. Many of the enhancements are planned for implementation within the next 10 years, to support continuing growth and optimise the existing terminal precinct over the 20-year Master Plan period.

6.3.2 Existing Runway and Taxiway Capacity Enhancements

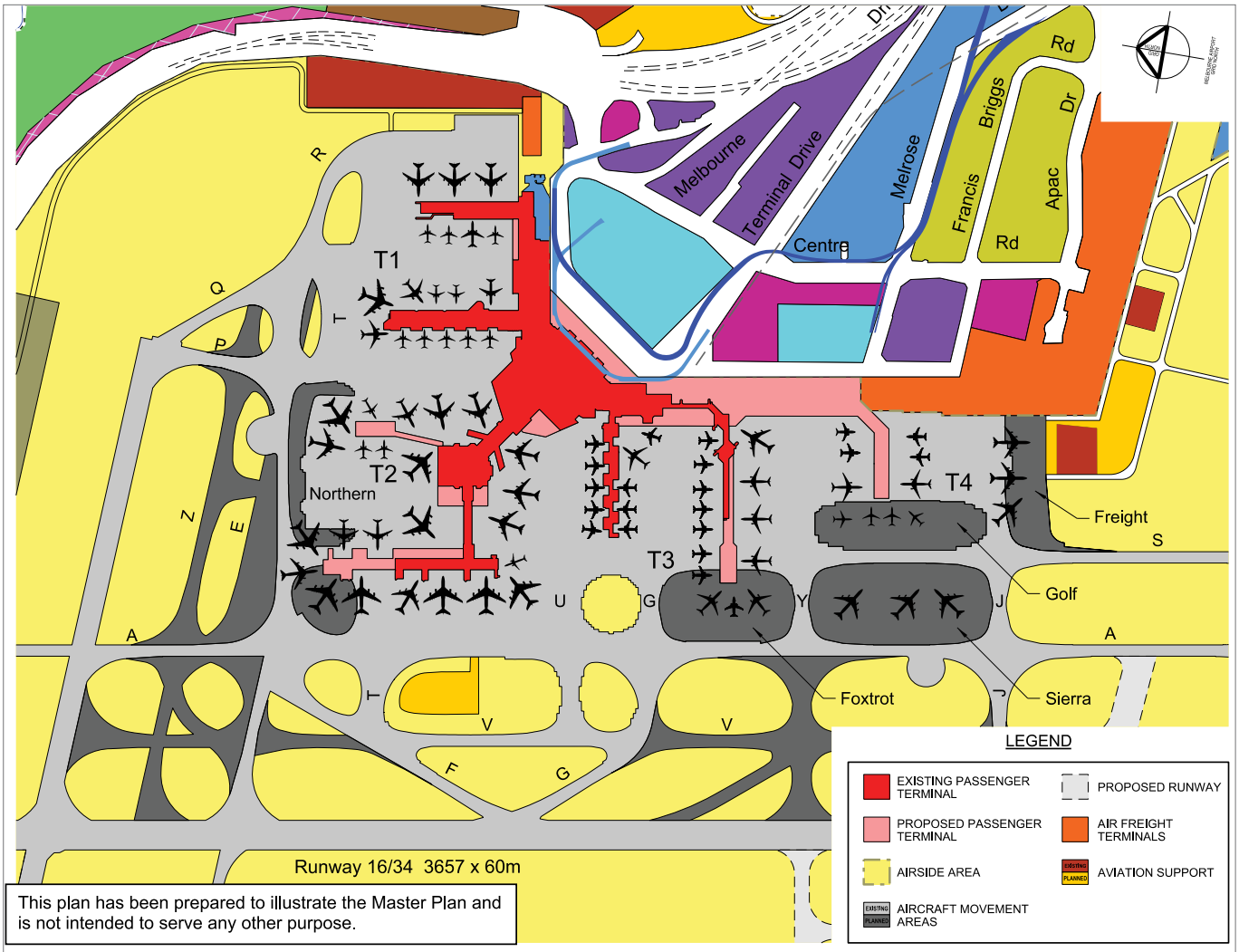
Aircraft throughput and runway use can be optimised by decreasing runway occupancy time. This is the time between when an aircraft passes over the threshold (beginning of runway) and when it exits the runway. Runway exit taxiways should be strategically located to optimise exit points for each type of aircraft and reduce runway occupancy time below the ideal target average of 50 seconds per aircraft. This increases aircraft throughput and facilitates quicker departures, which will enhance overall runway capacity and reduce delays.

6.3.3 Runway 16/34

Following the runway widening in 2005 (for A380 operations) and asphalt pavement overlay works in recent years, there are plans to further rehabilitate the concrete slabs at each end of the runway in the next five to 10 years.

The following new high-speed Rapid Exit Taxiways are planned for Runway 16/34:

- Runway 16 – Rapid Exit Taxiway Hotel: Located approximately 2,055 metres down the runway, this new exit will be ideally located to capture any Code C or Code E aircraft that miss exiting Taxiway Golf. Currently, any aircraft that passes Taxiway Golf needs to roll on to Taxiway Juliet, occupying the runway for an additional 40 to 60 seconds. Providing Rapid



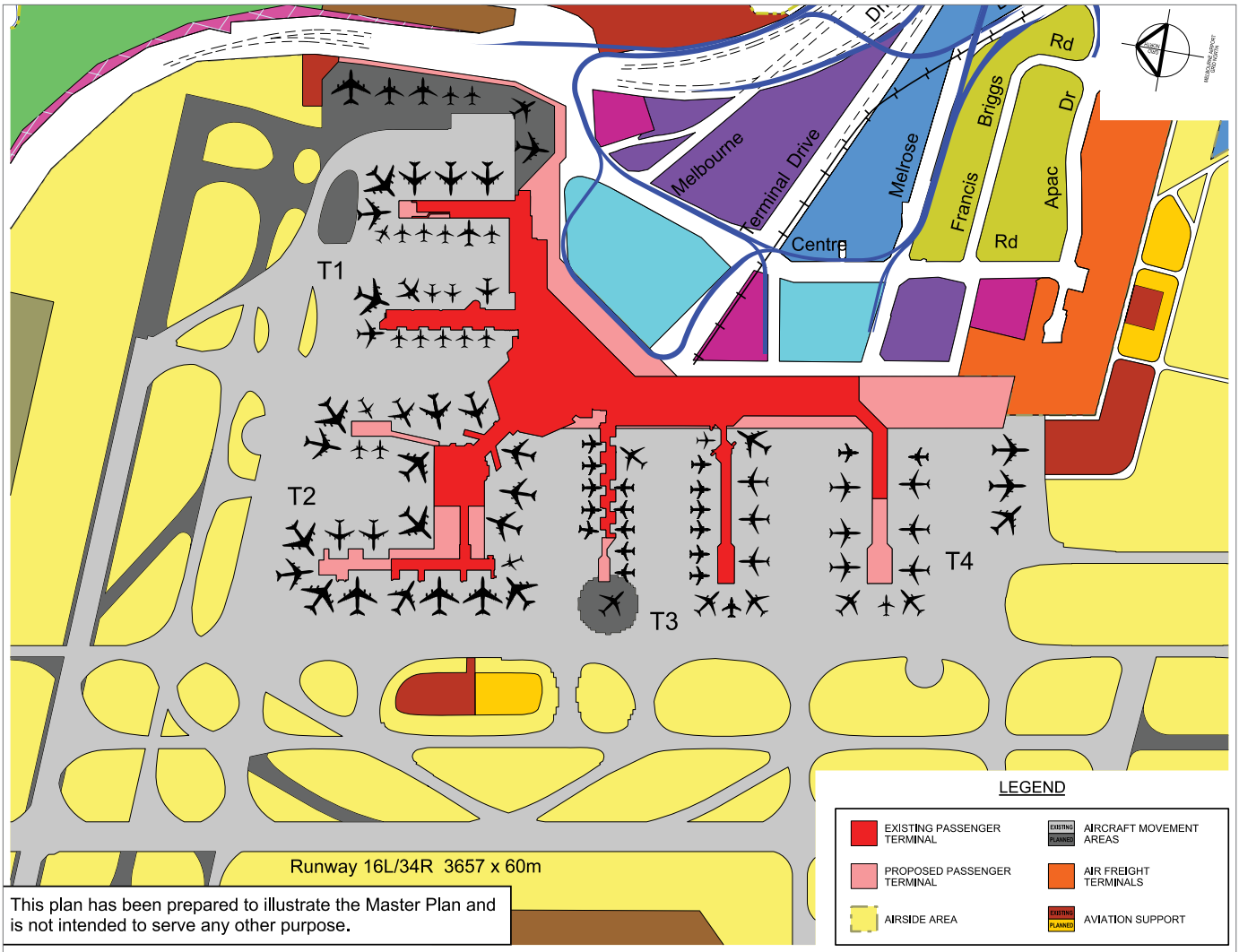
This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Five Year Airside Development Plan

Fig. 6.1



This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

20 Year Airside Development Plan

Fig. 6.2

Exit Taxiway Hotel will ensure that the vast majority of arriving aircraft will exit the runway within the ideal average 50-second target that allows the optimal separation of incoming aircraft.

- Runway 34 – Rapid Exit Taxiway Lima: Much like the Rapid Exit Taxiway Hotel, this new exit will be ideally located approximately 1,890 metres down the runway to capture any Code C and Code E aircraft that miss exiting Taxiway Foxtrot. This will facilitate the average runway occupancy time of 50 seconds, yielding optimal separation of incoming aircraft for Runway 34. It will particularly benefit the current Land and Hold Short Operations, the airport's highest capacity arrival mode, with simultaneous arrivals on Runway 34 and Runway 27.

In addition, Taxiway Yankee will be extended to provide an additional arrival exit for Runway 16 movements that will capture any large aircraft that miss the Rapid Exit Taxiways. Located before Taxiway Juliet, this will reduce runway occupancy time for large aircraft, further assisting runway throughput. Taxiway Yankee can also serve as a potential intersection departure point for Runway 34 during north and north-west flow operations. Finally, Taxiway Yankee will be an important access point for aircraft movements to and from the proposed new third runway (Runway 09R/27L).

Rapid Exit Taxiway Hotel and Taxiway Yankee will be developed by 2018 (refer Figure 1.5). The timing for Taxiway Lima will be assessed and monitored based on demand triggers between five and 20 years (refer Figure 1.6).

The Master Plan protects a possible ultimate extension at the northern end of Runway 16/34. This long-term expansion of 843 metres would result in an operational length of 4,500 metres.

6.3.4 Runway 09/27

The Master Plan proposes two extensions to the western and eastern ends of the existing Runway 09/27.

A proposed 714-metre western extension will result in a 3,000-metre runway. The implementation is planned for between 2018 and 2022. This will accommodate the vast majority of aircraft departures, in particular Code E and on occasion Code F operations within a 5,000 nautical mile radius. This encompasses virtually all destinations in Asia, the primary source of Melbourne Airport's existing and potential international growth markets including the Middle East.

A new Rapid Exit Taxiway Echo 1 will be concurrently developed to reduce runway occupancy time and improve aircraft throughput efficiency.

A 3,000-metre runway will also support landings by all aircraft types. The efficiency of these arrival operations will be enhanced by providing new Rapid Exit Taxiways in both directions to reduce runway occupancy time.

An additional 500-metre extension to the eastern end of Runway 27 is a potential future enhancement and is projected in the 20-year Master Plan. This would take the total runway length to 3,500 metres, which will support ultra–long haul flight departures. If the eastern extension is required, any potential impact on Sunbury Road and the Tullamarine Freeway would be subject to separate studies at that time to determine if remedial measures for the road (e.g. realignment or lowering) may be necessary to accommodate expansion requirements. Melbourne Airport would work with appropriate authorities to ensure the long-term functionality of the road corridor and any potential link to the Outer Metropolitan Ring Transport Corridor.

6.3.5 Taxiways

Additional parallel apron perimeter taxiways will be developed to provide a dual taxiway system in each direction around the terminal precinct. The development of Taxiway Zulu (east–west) and the completion of Taxiway Victor (north–south) by 2018 will facilitate efficient aircraft movement around the existing terminal apron precinct. These developments will allow aircraft parking aprons and terminal concourses to be expanded, as illustrated in the 2018 Airport Development Concept Plan (refer Figure 1.5).

6.3.6 Operational Enhancements

Melbourne Airport is working closely with Airservices and airline operators as part of the Airport Capacity Enhancement working group. This taskforce is pursuing operational improvements by optimising:

- runway occupancy time by collaborating with airlines on protocols for runway exit and departure procedures
- aircraft separations
- arrival and departure rates for runway operating modes.

By optimising arrival and departure rates, the taskforce is aiming for increases of between 6 per cent and 9 per cent in the hourly runway throughput capability (three to four movements per hour) depending on the operating mode. To achieve this target, all stakeholders will continue to work together and implement a number of activities.

Other potential technology enhancements such as introducing a Ground-Based Augmentation System (GBAS) are discussed in Section 6.6.

6.3.7 Enhanced Capacity

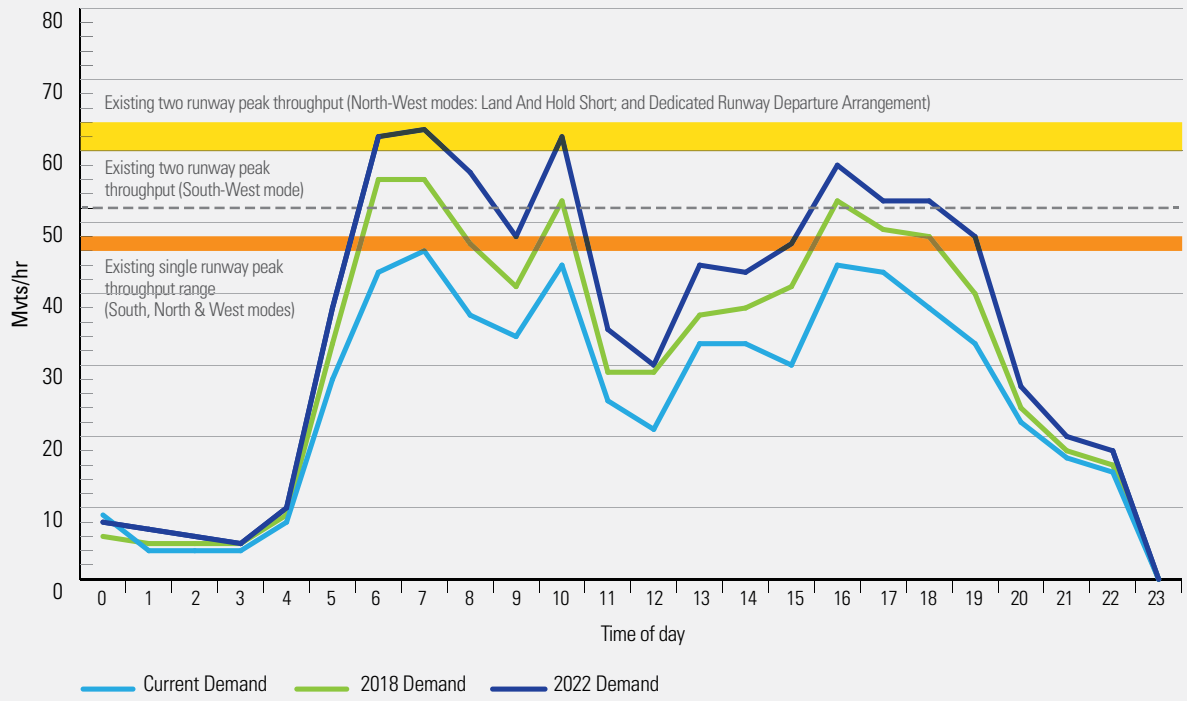
The collective effect of these taxiway and runway enhancements will extend the life of the existing two-runway airfield by between two and four years. The airfield's capacity will increase to approximately 265,000 annual movements based on a six-minute acceptable delay threshold. Based on current forecasts, the existing two-runway airfield will reach capacity between 2018 and 2022 (approximately 40 to 45 million annual passengers). It is important to consider peak capacity as there are several busy periods during the day, which will strain runway capacity and associated taxiway systems.

This can be seen by looking at forecast growth versus the busy hour movement capability (in good weather conditions) of the runway operating modes. In times of high wind when Melbourne Airport has to operate with only one runway, the capacity is 48 movements per hour. In south–west flow, with operations on Runway 16 and Runway 27, the capacity is 49 movements per hour, which is targeted to increase to 54 movements per hour as a result of the operational changes described above.

In north–west flow (operations on Runway 34 and Runway 27), there is a high departure rate mode known as the Dedicated Runway Departure Arrangement, and a high arrival rate mode based on Land and Hold Short Operations. The latter mode allows certain domestic registered aircraft to land on Runway 34 and hold short of (exit before) Runway 27. This enables concurrent arrival and departure operations on Runway 27. In this highest-capacity mode, Melbourne Airport can currently handle 60 movements per hour (38 of which are arrivals). Depending on the implementation of operational enhancements, the airport can potentially accommodate 60 to 64 movements per hour using the existing two runways.

Graph 6.1 shows an indicative forecast aircraft schedule in five-yearly increments (an existing typical busy day extrapolated forward), compared to the hourly capacities of Melbourne Airport's runways. This clearly shows that by 2018, forecast peak period activity will exceed the hourly throughput capability of most of the airport's operating modes. By 2022, this will be the case for all of Melbourne Airport's runway modes and will occur for several hours each day, resulting in escalating delays for aircraft operations in line with international standards.

Graph 6.1: Forecast Aircraft Schedule Profile Versus Two-Runway Hourly Capacity



As Melbourne Airport's two-runway system will be at capacity in peak times between 2018–2022, a third runway will be required to accommodate growth and reduce delays for aircraft operations at the airport and throughout the nation's air traffic system.

6.3.8 Apron Capacity Enhancements

A strategic principal underpinning the Airside Development Plan is to progressively provide additional aircraft parking capacity to support airline growth and associated terminal development plans. This apron infrastructure will be supported by additional taxiways to accommodate increasing aircraft movements as efficiently as possible and without significant congestion points.

This will be achieved by grouping taxiway and apron projects into Southern and Northern precincts. This approach was developed in conjunction with the terminal development plan and aims to consolidate projects by undertaking development work in one area (precinct) of the airfield at a time. The apron developments within the five and 20-year periods are discussed below and illustrated in Figure 6.1 and 6.2, as well as the 2018 (refer Figure 1.5) and 2033 (refer Figure 1.6) Airport Development Concept Plans. This strategic approach will:

- optimise the efficiency of construction activity by consolidating works
- minimise operational impacts by taking advantage of taxiway closures to undertake concurrent works
- support terminal expansion in accordance with demand triggers
- develop the Southern Precinct first to support terminal development, including southward expansion for aprons and aircraft parking
- consolidate development within the Southern Precinct (where T3 and T4 are located) and complete apron and taxiway works within this area; this allows the next phase of works to be concentrated in the Northern Precinct
- establish parallel taxiway infrastructure in the Northern Precinct by developing Taxiway Zulu and re-aligning Taxiway Echo. This will facilitate the expansion of the T2 and T1 aprons and terminals by providing clear aircraft movement paths around the development area.

6.3.9 Southern Precinct

The Southern Precinct area is bordered by Taxiways Uniform to Juliet, and includes domestic terminals and aprons used by Virgin Australia, Regional Express and Tiger Airways. Apron development in the Southern Precinct will be centred on supporting T4 and T3 terminal development, including southward expansion for aprons and aircraft parking. These developments comprise the Southern Apron Expansion strategy and are shown in Figure 1.5 and Figure 6.1.

6.3.10 Foxtrot Apron Infill

Construction has commenced on this project, which will deliver approximately 32,000 square metres of apron opposite the end of the T3 Foxtrot Concourse. This apron will provide aircraft parking for four Code C or two Code E aircraft. Conveniently located adjacent to the T2 and T3 precincts, these bays will provide additional remote and stand-off capacity to serve international and/or domestic operations. These stands will deliver additional capacity from 2013 and can become contact gates in future years with the planned expansion of Foxtrot Pier.

6.3.11 Golf Apron Redevelopment

A key component of the Southern Apron Expansion Strategy, the Golf apron redevelopment, this project will deliver substantial apron capacity in response to forecast demand for domestic and freight operations. The Golf apron works will deliver 12 Code C aircraft bays, with flexibility for four free-moving aircraft positions. Apron planning also preserves the flexibility for up to four Code E and four Code C aircraft in an alternative configuration. The apron will be accessed by a new taxilane configuration. All aircraft bays will be fully serviced with floodlighting, fuel hydrants and, in the case of Golf apron bays, fixed electrical ground power. A dedicated GSE apron with additional storage and staging areas will also be developed adjacent to the aircraft parking aprons to support the increased aircraft parking capacity.

This apron expansion will be an integral part of the new SPP development that is planned to become operational in 2015 and has the potential to service more than 20 million passengers per annum.

6.3.12 Sierra Apron Infill

This apron development project will deliver six Code C aircraft bays, or three Code E bays in an alternative configuration. The serviced apron will comprise approximately 54,000 square metres of apron to the south of the Foxtrot Apron Infill. As part of the Southern Apron Expansion development it will complement the adjacent Golf apron by providing additional remote and stand-off capacity to serve forecast growth in domestic and/or international operations. This capacity will be delivered within the next five years. The aircraft parking configuration is compatible with the future expansion of the proposed domestic terminal Golf concourse.

6.3.13 Freight Apron

The existing freight apron area has capacity for two Code E and one Code F, or five Code C aircraft parking bays. These are used for dedicated international and domestic freight operations in front of the existing freight handler and logistics facilities. Domestic freight aircraft can also use some aircraft bays at Foxtrot concourse during overnight operations.

Due to the Golf apron redevelopment as part of the Southern Apron Expansion, the current freight aircraft bays will be redeveloped in a new orientation at the southern end of the current apron. The Hotel freight apron redevelopment will deliver various aircraft parking options, including space for five Code C, three Code E, two Code F and one Code E aircraft. The fully serviced aircraft bays on the new apron will be adjacent to existing freight handling and logistics facilities. The redevelopment will be undertaken concurrently with the proposed SPP works to commence in 2013.

Within the 20-year Master Plan period, a new freight apron will be developed in the south-eastern corner of the airfield (refer Figure 1.6). This is in accordance with the 2008 Master Plan. This significant precinct will ultimately provide up to 15 Code F aircraft parking positions, supporting Melbourne Airport's ability to handle more than 30 per cent of the nation's air freight.

Landside and commercial development has already commenced in this area, with the Melbourne Airport Cargo Estate being established adjacent to the future apron area. Part of this development will provide an airside access road link with the existing terminal precinct and to the new Gate 27 landside–airside interface point. The planned first stage of the new freight apron will provide up to six Code F aircraft stands and will be developed in accordance with demand triggers.

6.3.14 Northern Precinct

The Northern Precinct area is bordered by Taxiway Romeo in the east and Runway 16/34 to the west. It comprises T1 and T2 terminals and aprons. The focus of the Northern Precinct apron development is to facilitate expansion of T2 to support international traffic growth through the 20-year Master Plan horizon (refer Figure 6.1 and Figure 6.2). Additionally, the expansion of the existing B Pier and/or the development of a new A Pier have been master planned to support long-term growth in the domestic passenger market. These apron expansion works will require developing Taxiway Zulu and realigning Taxiway Echo within the next five years.

6.3.15 T2 Apron Expansion

The expansion of T2 will retain the concept of direct pier(s) extending from the existing Delta Concourse envisaged in the 2008 Master Plan. The expansion will provide up to 25 aircraft stands in a dual pier arrangement based on maximising space for wide-bodied aircraft such as A380s (Code F). There is also flexibility to add more Code C Multiple-Aircraft Ramp System (MARS) parking arrangements, which will allow capacity for wide-bodied and single-aisle aircraft to be delivered in a flexible and cost-effective manner.

The proposed 'western pier' concept (refer Figure 6.1) will be an extension of the existing T2 pier that was constructed in 2008–2009. This will provide a net increase of five wide-bodied aircraft gates over the next five to 10 years, with three of these capable of accommodating A380s.

The 'eastern pier' will extend northward from the north-east corner of the existing T2 satellite node (refer Figure 6.2). This will provide a net increase of five to six aircraft gates, several of which will be dedicated to the Code C aircraft that serve short-haul international markets in the Asia-Pacific region.

As part of the T2 development, apron expansion to the north will require realigning Taxiway Echo between Taxiway Alpha and Taxiway Romeo. This work will require regrading existing taxiways and intersections in the area. To facilitate this northern expansion, Taxiway Zulu will be developed within the next five years as a new parallel taxiway around the apron precinct.

This expansion is a critical development over the next five to 10 years as it will enable Melbourne Airport to accommodate strong international growth within the existing precinct, while maintaining its 'single roof' terminal.

6.3.16 T1 Apron Expansion

As part of Qantas' T1 redevelopment over the next five years, several existing aircraft gates will be progressively upgraded to cater for wide-bodied Code E aircraft.

Additional developments within the 20 year Master Plan period will include expanding the T1 apron area to the east of Pier B. Access to the apron will be enhanced by developing Taxiway Zulu through to Taxiway Romeo. The apron development will add more parking capacity for several Code C aircraft and wide-bodied aircraft (refer Figure 6.2). This could be supported by a walk-out pier or the full development of Pier A, providing aerobridge contact gates. Planning for this development will be undertaken at an appropriate point in time, subject to monitoring and assessment of demand triggers.

6.3.17 GSE Storage Areas

The Airfield Development Plan includes provision for additional GSE storage areas. In the south, the existing GSE area near Taxiway Juliet will be more than doubled to support increased aircraft parking associated with the Golf, Foxtrot and Sierra apron developments. A dedicated GSE storage area will also be provided in the northern precinct to support the expansion of the T2 aprons.

6.4 Third Runway

6.4.1 Introduction

After detailed capacity analysis and consultation with stakeholders, Melbourne Airport has determined that, even with enhancements, the existing two-runway system will reach capacity between 2018 and 2022.

Since 1990, Melbourne Airport's plans and strategies have consistently documented its vision for a four-runway system in the alignment shown in Figure 1.7. To accommodate continuing growth in passenger demand and prevent severe delays for aircraft operations, Melbourne Airport now needs to decide which of the two proposed runways will be built first.

Following extensive studies and research, Melbourne Airport's preference is to develop the third runway in the east–west orientation. This will enable the airport to continue operating a highly efficient parallel runway system and will accommodate forecast growth beyond the next 20 years, contributing significant economic benefits to Melbourne, Victoria and the nation.

The fourth runway (as indicated in Master Plans since 1990) will not be required until around 2040 based on current forecasts and capacity assessments.

6.4.2 Runway Orientation

The new runway, approximately 3,000 metres long and 60 metres wide and designated 09R/27L, will lie approximately 2,035 metres south of the existing east–west runway. This separation allows the runways to operate separately. Not only does this maximise capacity, but also reduces capacity loss in bad weather. The runway's arrangement and potential supporting taxiway infrastructure are shown on the 2018 Airport Development Concept Plan (refer Figure 1.5) as it will have been designed and site preparation will potentially have started by that time. The fully implemented arrangement is shown on the 2033 Airport Development Concept Plan (refer Figure 1.6). It is noted that aside from a crossing interface with existing Runway 16/34 that will require operational management during construction, the vast majority of the new runway can be constructed in a landside environment with minimal implications for airport operations.

The runway's orientation and general configuration have been shown in Master Plans since 1990, along with the fourth runway in the north–south orientation. Several runway lengths and locations have been investigated but the proposed runway configurations have been confirmed as the optimum arrangements.

Melbourne Airport considered a number of factors when selecting the preferred orientation including:

- capacity, including safety, aircraft movements and minimising aircraft delays on the ground and in the air
- community, including the impacts on the surrounding residents, sustainability and economic effects
- environment, including the impact on land, noise, emissions and water
- financial, which includes the cost and length of time for construction, as well as aircraft operating costs
- growth, including providing capacity for the future growth in demand.

The key capacity and operational issues are discussed in subsequent sections.

The principal advantages of the east–west parallel runway orientation, compared to the north–south option, include the following:

- There is significantly greater compatibility with the existing terminal precinct, supporting Melbourne Airport's growth over the next 20 years.
- Less supporting taxiway infrastructure will be required to facilitate aircraft traffic movement from opening day.
- The runway will be easier to construct due to the flatter terrain.
- The east–west configuration will require less capital to build than the north–south option.
- The runway resolves existing airfield bottlenecks.
- The configuration will minimise ground delays and therefore aircraft noise and carbon emissions associated with aircraft spending time on the ground.
- There is reduced risk of runway incursion.
- The configuration is aligned with the ultimate terminal precinct plan.

The key advantage of the east–west parallel runway layout is that the existing terminal precinct will be located between the runways and immediately adjacent to the eastern ends. This facilitates easy and efficient aircraft movement to and from the runways without the 'live' runway crossings that would be necessary with parallel north–south runways. On the ground, this means fewer ground delays with the efficient movement of aircraft, and fewer taxiways required to access the terminal precinct and runways. The east–west parallel runway therefore delivers environmental and community benefits as a result of minimal ground delays and shorter flown track miles, reducing ground noise, aircraft emissions and pollution. While the runway will cross Arundel Creek in one location, it does not run longitudinally along the creek as the north–south runway would.

An important selection criterion is the amount of time that each runway can be used due to favourable wind conditions. Melbourne Airport's current runway configuration dictates certain usage patterns (operating modes) based on the location of the runway intersection. While parallel runways are much more efficient because aircraft do not typically cross paths in the air or on the ground, their use is largely determined by wind strength and direction.

Melbourne Airport and Airservices independently analysed historic wind records to assess the potential usability of each runway orientation with maximum allowable cross-winds of 20 knots. Through this analysis, Melbourne Airport identified the potential availability of each runway configuration. While the north–south orientation has slightly higher runway availability due to wind conditions, the configuration has a number of other issues that would result in more aircraft delays and less operating capacity. This is primarily due to runway crossings resulting from the north–south configuration and the terminal precinct being on the opposite side of the existing runway. These issues are described in more detail in the following sections.

The impact on the community of this runway availability and the use of potential flight paths associated with each parallel runway configuration (existing flight paths would need to be extended to accommodate parallel runway requirements) were considered in selecting the preferred orientation. The nature of the airport operations means that there are associated noise impacts. The noise contours that have been prepared in association with this Master Plan and which have been endorsed for technical accuracy by Airservices (see Section 12.2) are broadly similar to those published in the 2008 Master Plan. These noise contours were developed taking into consideration the ultimate four-runway configuration. However, as the third runway is new, there will be additional planes flying overhead in some places when it is operational. In this regard, when comparing the two runway options, the north–south parallel runway would introduce additional flight track miles over residential areas more often than the east–west configuration.

It is important to note that most of the existing flight paths will remain and continue to be used from all runways. Airservices has identified indicative flight paths for the new runway and these will be progressively developed during detailed design processes over the next few years prior to runway operation. There will be times when high wind and certain aircraft operations – for example, heavy aircraft to ultra–long haul destinations and/or heavy freight operations – will require the existing north–south Runway 16/34 to be used.

The new east–west runway will require new approach and departure flight paths to be established to the east and west of the airport. It is anticipated that most of the existing flight paths will remain and will be accessible from all runways. Airservices, which manages the flight paths, will be heavily involved in this process. East-bound departures from the new runway will be required to turn right once airborne and join the existing south-bound departure path from Runway 16. Recognising that aircraft create noise, Melbourne Airport will continue to work with Airservices and airlines to limit these noise impacts where possible. Refer to Section 12 for further information.

6.4.3 Capacity Assessment

Forecast busy hour aircraft movement will begin to exceed the throughput capability of most of Melbourne Airport's current operating modes between 2018 and 2022. This throughput capacity is dictated by operational safety standards governing the spacing of aircraft, and how these apply to the airport's existing runway configuration. By 2022, the airport's highest-capacity operating mode will no longer be able to accommodate forecast aircraft movements in peak periods without significant delays. To prevent delays in aircraft operations, current forecasts indicate that additional runway capacity is needed by no later than 2022.

Through advanced computer simulation modelling, Melbourne Airport tested several different airfield layouts and assessed operational efficiency, delays and aircraft movement capacity. For both parallel runway arrangements, it was concluded that mixed-mode operations (arrivals and departures on each runway) were the most beneficial in terms of runway capacity and operations.

As noted above, the east–west parallel runway configuration has slightly less availability than the north–south alignment. However, the simulation work shows that holistically, the proposed east–west configuration will function much more efficiently and with at least half the average delay to aircraft operations compared to the north–south option.

This will facilitate higher peak hour aircraft movements – up to 88 per hour. Based on current operating procedures and technology, forecast aircraft schedule profiles and assuming average daily aircraft delays of six minutes, the east–west configuration will facilitate at least 380,000 annual aircraft (fixed wing) movements. Based on current forecasts, this will support long-term aircraft movement growth at Melbourne Airport beyond 2040.

The optimum use of runways will depend on the operating conditions on the day, including weather conditions and the mix of aircraft volumes via flight paths from origins and to destinations. The use of runways will be developed over the coming years through detailed design and preparation of operational procedures that will be refined and put in place by Airservices.

In both peak hour and annual capacity, the parallel east–west runway configuration will deliver at least 10 per cent higher capacity than a parallel north–south runway configuration. Table 6.1 summarises the key capacity outcomes for each parallel runway configuration.

Table 6.1: Capacity Outcomes for Parallel Runway Options

	East–West (RWY 09R/27L)	North–South (RWY 16R/34L)
Runway length and width (metres)	3,000m x 60m*	3,000m x 60m*
Peak hour throughput (movements)	Approx. 88	Approx. 80
Annual capacity (movements)	380,000	353,000
Forecast horizon (year)	Approx. 2040	Approx. 2034

*To be confirmed through the detailed planning and design process.

6.4.4 Operational Benefits

Melbourne Airport and industry stakeholders have assessed numerous factors, benefits and disadvantages associated with a third runway in the north–south orientation or the east–west orientation.

Compared to the north–south runway option, the major operational benefit of the east–west parallel runway orientation is that there are no live runway crossings required for aircraft moving to and from the terminal precinct, which will be located between the parallel runways. This means there are no additional delays for aircraft waiting to cross the runways, or interruptions to runway throughput capacity to facilitate crossings. Importantly, without runway crossings the east–west runway arrangement provides a safer environment for aircraft operations.

Other key operational factors in favour of the east–west parallel runway orientation include:

- more efficient operations for Melbourne Airport, airlines and Airservices
- optimal compatibility with the existing terminal precinct
- no runway crossings to reduce runway throughput, which will deliver more efficient aircraft movement operations on the airfield and a safer operating environment
- greater peak hour throughput and annual capacity
- efficient aircraft ground traffic movement on taxiways
- significantly fewer operational delays (peak hour and average) per aircraft on the airfield
- fewer track miles or shorter flight path distance for aircraft arrivals and departures
- shorter aircraft taxi distance and time
- lower emissions and airline operational costs due to the above factors.

6.4.5 Implementation Plan

Melbourne Airport's preference for the third runway's orientation detailed in this Master Plan is the first step in a series of processes and approval requirements.

Over the next five years, Melbourne Airport management will engage with key stakeholders including the community, local, State and Commonwealth Government agencies, including Airservices, and airlines to collectively work on:

- detailed planning and design processes, commencing in 2014 due to the critical delivery timeframe to meet demand
- Major Development Plan (MDP) submissions and environmental studies, which will be prepared over the following two to three years. These will consider the land and the surrounding communities impacted by the third runway. The studies will assess issues including noise, safety, air quality, social impacts, topography, stormwater flows, flora and fauna, cultural heritage and construction impacts
- confirming requirements for Airservices support infrastructure including but not limited to additional A-SMGCS Remote Units, protection for GBAS landing system antenna array, other navaids and establishing a location for a new Fire Station. Through the MDP process Airservices will also develop new approach, departure and control tower procedures for the introduction of the proposed new parallel runway, including assessment of interrelationship between Melbourne and Essendon airports
- construction, which will commence following receipt of MDP and other required approvals, with the exact timing subject to demand-based triggers identified in the detailed studies. Operational impacts during construction will be also assessed. It is recognised that operations on the existing runways will have to be reviewed throughout the construction period and this information will be incorporated into the MDP
- operational trials and testing.

During the detailed planning and design processes, access to the area north of the proposed east-west runway, and west of the existing north-south runway, will be addressed, with a view to maintaining access for the airport, tenants and any private landowners in that area.

Melbourne Airport expects to begin operating the third runway sometime between 2018 and 2022.

6.5 Ultimate Four-Runway Airside Configuration

The ultimate airfield layout includes a fourth runway in the north–south orientation. The proposed fourth runway (approximately 3,000 metres long and 60 metres wide), designated 16R/34L, would lie approximately 1,311 metres west of the existing north–south runway (refer Figure 1.7). When the fourth runway is developed, it will incorporate the existing full-length runway for ultra–long haul departures in parallel runway operations.

In addition, the Master Plan protects a possible 843-metre extension of the northern end of the existing north–south runway, to provide an ultimate runway length of 4,500 metres.

The four-runway configuration will deliver greater annual capacity than a three-runway configuration. This is based on an analysis of the current operating methods, long-term forecasts and assumed daily average delay of six to eight minutes per aircraft.

When excessive cross-winds occur that preclude parallel east-west runway operations (during the three-runway configuration), the airport will be forced to operate on a single runway. The real benefit of the four-runway configuration is that parallel runway operations will be possible at all times, maximising operational flexibility for Airservices Air Traffic Control. This will be critical to avoid significant delays in future years.

This four-runway configuration, with parallel east–west and parallel north–south runways (refer Figure 1.7), will be implemented around 2040 (based on current forecasts) and will deliver ultimate capacity for Melbourne Airport in the long term.

It is important to note that in coming decades, operating procedures, navigational technology and aircraft will continue to change and improve. This could result in better operational throughput on the runways and ultimately higher capacity than currently envisaged. Future Master Plans will continue to reassess and report on runway capacity, and the ultimate capacity of the runway configuration in place at the time.

6.6 Future Air Navigation Facilities and Services

Airservices is responsible for Melbourne Airport's air traffic control services, aeronautical information services, airport rescue, noise impacts, fire fighting and navigation services. The Melbourne Centre is responsible for en-route services throughout the Melbourne Flight Information Region.

To support these services, the following operational facilities have been incorporated into the Master Plan.

6.6.1 New Control Tower

The new control tower at Melbourne Airport became operational in late 2013. The new tower was originally proposed in 2008 and has undergone assessments and extensive consultations with local governments, the Civil Aviation Safety Authority and the Commonwealth Department of Infrastructure and Regional Development.

The 75-metre control tower is equipped with the latest navigation systems to make take-offs and landings safer in marginal conditions. Its flexible design will enable future technology enhancements and replacements without substantial modification to facilities.

6.6.2 Smart Tracking

Smart Tracking, also known as Required Navigation Performance (RNP), is a specialised system in modern aircraft that use GPS information to guide the aircraft's descent and approach path. Aircraft equipped with Smart Tracking technology are capable of flying more accurately and in curved paths, reducing emissions and fuel burn and minimising missed approaches. Other benefits include improving the certainty of arrival separations and reducing operational complexity.

Smart Tracking commenced at Melbourne Airport in 2013. The roll-out of Smart Tracking technology is a key component of the aviation infrastructure Australia's major cities need as they continue to grow. Airservices is currently reviewing trial flight paths at Melbourne Airport and there will only be minor changes as aircraft will remain within current flight corridors. The intent is to make trial procedures a permanent part of the suite of instrument procedures available at Melbourne Airport. Over time, more aircraft and operators will be capable of using these paths instead of legacy procedures. This technology will deliver safety, environmental and efficiency benefits for aircraft operations.

6.6.3 Future GBAS installation

Melbourne Airport and Airservices have partnered to implement a Ground-Based Augmentation System (GBAS) at the airport within the 20-year Master Plan period. The GBAS is a satellite-based precision landing system and is recognised by the International Civil Aviation Organization as a replacement for current Instrument Landing Systems (ILS). GBAS is a critical component of Australia's next-generation air traffic management infrastructure and supports all phases of approach, landing, departure and surface operations within its area of coverage.

The system uses GPS signals to provide aircraft with precise positioning guidance during the final stages of an approach, both horizontal and vertical, which is especially critical during landing. This allows for a safer, more efficient descent and landing. Just one GBAS station can guide up to 26 approach flight paths simultaneously. Melbourne Airport will continue to work with Airservices to optimise the use of the airfield infrastructure and facilitate the implementation of Australia's next-generation air traffic management infrastructure.

A site will be identified for the development of a GBAS landing system within the next five years.

6.6.4 Runway 16 ILS enhancement

It is proposed to upgrade the Localizer antenna on Runway 16 to reduce the size of the current ILS signal protection area. The upgrade will remove the current restriction of A380 operations on Taxiway Victor during Category III operations. This work is planned to occur in 2014.

6.6.5 Airservices Learning Academy – Hot Fire Training Ground

Training facilities for aviation rescue and fire fighting services are currently located regionally throughout Australia. These facilities are now being centralised at Melbourne Airport.

The Learning Academy Hot Fire Training Ground began operating in March 2013. The site is adjacent to the Learning Academy at the Airservices compound. The Learning Academy will deliver simulations for A380 and B767 aircraft and a multitude of fire fighting training scenarios using both gas and liquid fires.

The training ground has the capacity to conduct up to two CAT 10 incident scenarios a day or dozens of smaller-scale training scenarios, including some concurrently. Exercises will include access to upper decks of large aircraft (e.g. A380), cargo fires and fire vehicle manoeuvring. A major feature of the facility will be its capacity to treat and reuse up to 145,000 litres of water and foam a day, with a holding capacity of 420,000 litres to support environmentally sustainable training.

6.6.6 Runway 34 High Intensity Approach Lighting System Upgrade

The High Intensity Approach Lights are designed to smooth the transition from instrument to visual flight on a precision instrument approach in conditions of low cloud or reduced visibility. Currently, the system is used on Runway 16 and Runway 27 and there will be a system upgrade on Runway 34 within the next five years. Appropriate provision of High Intensity Approach Lighting systems will support the parallel east–west runways.

6.6.7 Other Infrastructure

Over the coming years Melbourne Airport will continue to work with Airservices regarding infrastructure upgrades and requirements for development of new infrastructure need to support proposed airfield developments. This will include but is not limited to Airservices installation of new airside fibre optic ring in 2014, as well as investigation of infrastructure requirements for additional A-SMGCS remote units, other navaids and consideration of a satellite Fire Station to support critical infrastructure.

7

TERMINALS AND AVIATION SUPPORT FACILITIES DEVELOPMENT PLAN

7. TERMINALS AND AVIATION SUPPORT FACILITIES DEVELOPMENT PLAN

7.1 Overview and Objectives

In the past three years, Melbourne Airport has experienced double-digit percentage growth in annual international passenger numbers, almost twice the average growth compared to other Australian airports.

The airport expects to welcome even more passengers over the next three years. According to the International Air Transport Association (IATA), global passenger numbers will increase by about 5.3 per cent per annum until 2016. The Asia-Pacific region – a major source of international passenger traffic for Melbourne Airport – is expected to achieve a compound annual growth rate of 6.7 per cent. As a key business market, the airport is also ideally positioned to benefit from forecast growth in the domestic aviation market in both the full-service and low-cost segments.

To prepare for this expected increase in passenger numbers, during the next five years the airport plans to invest more than $1 billion in infrastructure development, much of which will be directed towards upgrading and expanding the terminals precinct. This includes refurbishing and expanding T2, upgrading T3 and developing the Southern Precinct, which involves major works to T4.

This section outlines how Melbourne Airport intends to ensure long-term sustainable growth through its planned development of the terminal infrastructure.

7.2 Passenger Terminals

Unlike other major airports in Australia, Melbourne Airport was designed as an integrated terminal complex, with international and domestic terminal facilities located under a single roof.

7.2.1 International Terminal (T2)

T2 has one concourse with 19 primary gate positions, of which 15 are currently equipped with aerobridges. Of these aerobridges, five serve aircraft up to the size of an A380 (Code F); seven serve aircraft up to the size of a B747 (Code E); two serve aircraft up to the size of a B772 (Code E); and the remaining bridge serves one aircraft up to the size of a B737 (Code C). Two remote parking positions can be used by aircraft up to Code C and another two serve aircraft up to Code F.

It should be noted that under the Multiple Aircraft Ramp System (MARS) configuration, a Code F gate can accommodate two Code C aircraft, if required.

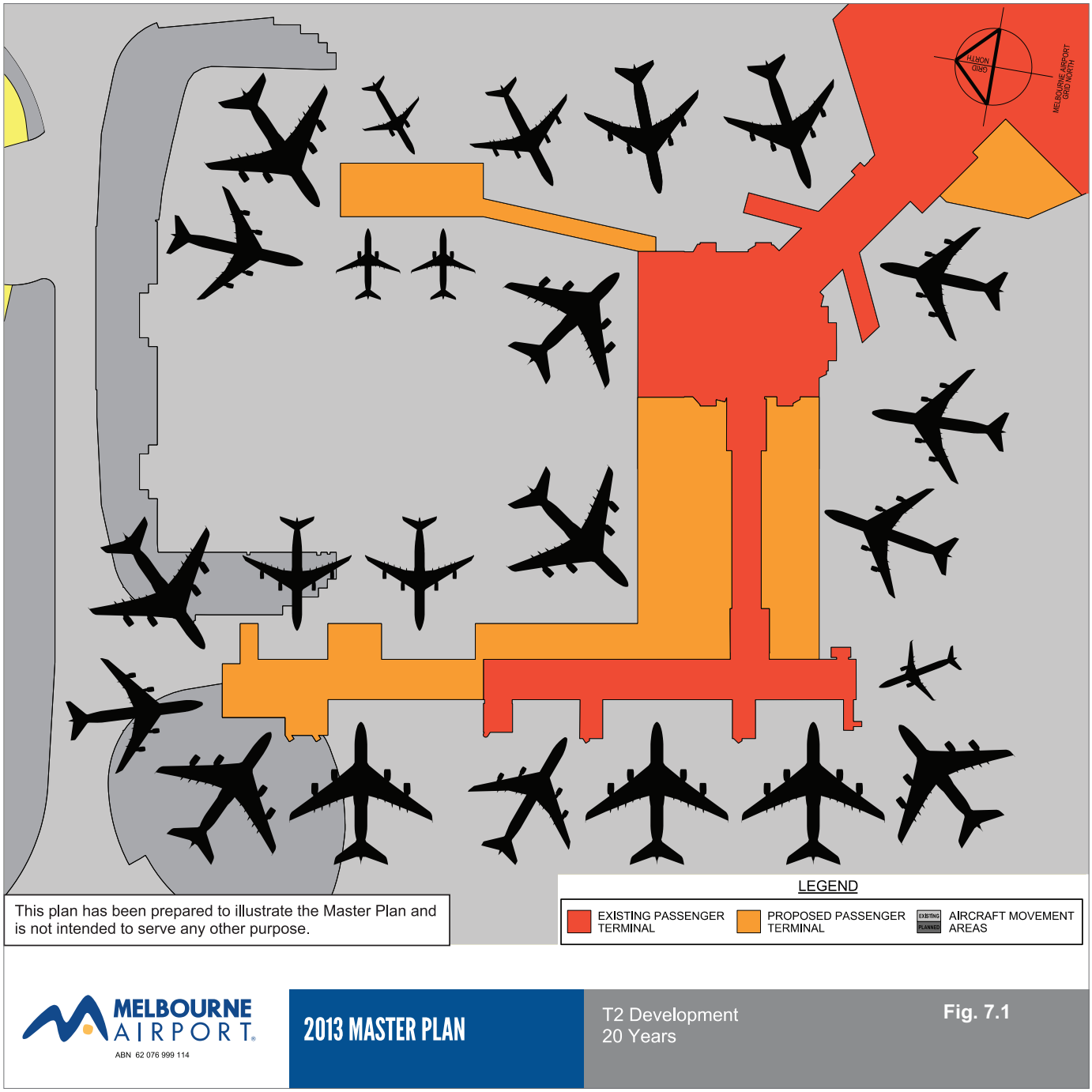
Melbourne Airport has planned a number of strategic developments to further increase the existing terminal's capacity, convenience and efficiency. Aviation security requirements will remain a significant factor in the precinct planning and development. These developments include:

- phased expansion of the building façades toward the east (landside) and west (airside), which will significantly increase the depth of the building
- installing self-service terminal equipment, including automated bag-drop facilities, in the departures hall
- installing automated equipment, including immigration smart gates and dynamic wayfinding, in the arrivals hall
- creating opportunities to consolidate domestic and international departures areas
- expanding security screening areas, supporting the operation of full-body scanners
- upgrading the capacity, as well as the look and feel of the secondary examination areas
- phasing in additional baggage reclaim carousels
- adding more aircraft parking positions, including remote stands supporting Code E operations
- improving the aesthetics of the terminals complex.

Planning studies are currently underway to identify the optimal long-term International Concourse design. Options include expanding the existing concourses. The design will reflect the best possible balance between capacity requirements, passenger convenience and efficient terminal operations.

In accordance with forecasts, it is feasible to provide T2 with up to 25 aircraft gates (up to nine Code F gates) and supporting passenger processing and retail areas. Refer Figure 7.1.

Beyond 2033, it is envisaged that international operations can be further expanded by redeveloping existing concourses in T1 and/or T3 for shared international use.



MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

T2 Development
20 Years

Fig. 7.1

7.2.2 Domestic Terminals

Melbourne Airport currently has three domestic terminals: T1, T3 and T4.

T1 is operated under a long-term lease arrangement with Qantas Airways. Qantas uses the terminal for domestic flights, as well as Qantas Group airlines Qantas Link and Jetstar Airways. This lease extends to 2018, allowing Qantas Airways to undertake terminal developments over the lease period to cater for growth in its domestic passenger traffic. Current planning is based on Jetstar Airways moving into SPP (refer below) prior to 2018, allowing Qantas (domestic) and Qantas Link to grow within the existing terminal.

T1 has two concourses with 20 gate positions, of which 15 are equipped with aerobridges. There are expansion options available to accommodate larger fleet types.

Phased extension of the building towards the current forecourt area will increase the depth of the terminal facility, expanding the floor space of the processing areas to meet forecast demand. The ultimate design for the construction of T1 allows for a new pier attached to the far end of the existing terminal facility (Pier A). The aspiration to align the future development of long-term terminal infrastructure with the development of appropriate ground transport network capacity underpins both current and future precinct planning.

T3 is used by Virgin Australia and Regional Express. It has two concourses with 20 parking positions, including 11 aerobridge gates. Of these 11 aerobridge gates, two serve aircraft up to Code E and the remainder serve aircraft up to Code C. The non-aerobridge gates can be used by a variety of fleet types ranging from small turboprop aircraft to larger Code C airframes.

Growth in T3 will be accommodated by enhancing the capacity, convenience and efficiency of the existing terminal facility. Planned developments include:

- refurbishing all public areas to refresh the look of the ageing facility
- rolling out self-service terminal equipment in the departures areas
- creating opportunities to consolidate domestic and international operations
- expanding the terminal toward the south, allowing for full integration with the new SPP infrastructure
- consolidating security screening areas by replacing the existing separate screening areas located at the base of Echo and Foxtrot Piers
- building a landside walkway between the departures area and the new consolidated screening point, so airside retail and premium lounge facilities can be offered to customers
- upgrading the retail area
- replacing ageing aerobridges
- extending the existing Echo and Foxtrot Piers, including constructing additional aerobridge gates for Code E aircraft.

T4 is a small stand-alone building currently used by a single low-cost carrier. It has one apron area that is adjacent to the walk out Code C aircraft parking positions.

To support long-term general domestic growth and general low-cost carrier growth in particular, Melbourne Airport has initiated the Southern Precinct Program (SPP). This project involves the phased development of landside, terminal and airfield infrastructure and involves a major upgrade and expansion of T4.

In Phase 1, T4 will be expanded, refurbished and reconfigured as an outbound processor with self-service passenger check-in and bag-drop facilities. SPP will provide access to a centralised seating and retail area, located at the base of the existing Foxtrot Pier, as well as a new Golf Pier, located close to the existing Qantas Freight building and accessible from the centralised dwelling area via a new elevated walkway. Passengers can make their way to aircraft by walking from new and existing piers or taking airside buses.

Phase 2 will revolve around marrying the existing T3 to the new T4, effectively integrating T4 into the existing ‘single roof’ terminal precinct. The integrated terminal will be complemented by a consolidated screening point and attractive passenger dwell areas. These consolidated public areas will be accessible to all domestic passengers. Premium and low-cost carrier customers will pass through tailored check-in/bag-drop areas and dedicated parts of the piers.

The ultimate design of the integrated T3 and T4 facilities involves increasing the building’s depth, integrating with T2 and further extending the piers. This design will be supported by up-to-date infrastructure management models and the use of relevant airport technology, including common-use self-service units, dynamic wayfinding and information signage and integrated back-of-house data management systems.

Domestic Terminal expansions are depicted in Figure 1.5, 1.6 and 1.7.

7.3 Freight Terminals

In the 2011 calendar year, Melbourne Airport facilitated more than 250,000 tonnes of international freight. The majority of the airport's international freight handling was related to Asian and Middle Eastern countries and this is likely to continue. IATA forecasts that air freight movements within the Asia-Pacific region will account for around 30 per cent of the expected total increase in freight tonnage over the next three years.

While the majority of Melbourne Airport's air freight tonnage is carried on passenger flights, a number of full-freight operators also use the airport. Recognising the significance of sustainable growth in the freight market, in 2012 Melbourne Airport welcomed the Boeing 747-8 Freighter, a new high-capacity full-freighter aircraft.

The existing freight terminals area occupies 12 hectares of land along the airside boundary at the southern end of the Landside Main Precinct. The area hosts six freight facilities occupied by Qantas, Menzies, DHL, Australian Air Express, Australia Post, and Toll Dnata. There is no vacant land available in this area for additional freight facilities.

The location of the airport's freight handling facilities and Business Park allows easy roadside access (landside) and efficient freight transfer between the warehouse facilities and the aircraft parking positions (airside). An effective property development strategy is one that allows Melbourne Airport to present tailored offers to freight operators, from first-line warehousing space with direct airside access to office space in the Business Park.

Similar to passenger movements, we consider airfreight a core activity. Although there is no immediate demand from additional air freight operators or urgent pressure from other aviation-related land uses, expectations regarding future demand are being managed. The safeguarding principle underpinning the planning activities ensures future capacity can be made available relatively easily and rapidly as soon as anticipated demand materialises. The airport has started developing the Melbourne Airport Cargo Estate (MACE) along Link Road, to provide facilities with both airside and landside access for air freight operators. MACE is described in greater detail in Section 8.2.2. One of the main drivers for its development is to support additional freight operators if required.

Master planned freight handling facilities and relevant policy frameworks (e.g. Victorian Freight and Logistics Plan) will continue to underpin the airport's commitment to serve as the freight gateway in both the short and long term. We will work with industry and Government stakeholders to ensure airfreight tonnages at Melbourne Airport can continue to grow in a safe, secure, sustainable and efficient manner.

To ensure the airport can accommodate freight growth, the aeronautical infrastructure must be continually developed and expanded. For example, the apron, taxiway and runway systems must allow sizeable and heavy freighter aircraft to safely manoeuvre on the ground and take to the skies. It is also important to develop commercial property and supporting infrastructure. For instance, the airport must be serviced by a safe and efficient landside roads system.

In addition, the air freight business typically requires overnight operations, which underlines the significance of protecting the airport's curfew-free status.

The future growth of air freight tonnage at Melbourne Airport will be influenced by a number of factors, including the airport's network capacity in terms of geographic positioning, the number of airlines it serves and the destinations they fly to, flight frequencies and road accessibility. The airport's freight vision revolves around Melbourne Airport being a key component of Victoria's intermodal transport network, with integrated and efficient connectivity to the roads network and the Port of Melbourne.

7.4 Aircraft Maintenance Facilities

Existing aircraft maintenance, repair and overhaul (MRO) facilities are provided to the south of the airport, north of Operations Road (refer Figure 1.3). The four facilities are operated under lease arrangements and allow for incremental development.

Aircraft maintenance facilities form a critical part of the aviation support infrastructure at Melbourne Airport. As a major hub within the domestic (short haul) airline network, a significant number of aircraft terminate their daily flight roster at the airport. Routine inspections and scheduled MRO of domestic aircraft typically take place overnight. Depending on the aircraft's maintenance schedule, these activities can take place at the overnight parking bay close to the terminals, or in the aircraft maintenance (hangar) areas.

It is anticipated that demand for aircraft maintenance facilities will increase in line with forecast growth in domestic and international traffic. The MRO of medium- and long-haul aircraft typically takes place in Southeast Asia, although these aircraft undergo routine maintenance inspections prior to departing Melbourne Airport.

Melbourne Airport accommodates aircraft maintenance service providers that offer a comprehensive engineering and maintenance service to airline operators. These providers can provide line, base and heavy maintenance services as part of the fleet management maintenance services program for next-generation 737 and 787 Dreamliner aircraft.

The Victorian Government recently published a discussion paper outlining the vision for the National Aviation Services Precinct initiative, which aims to develop a fully integrated aviation precinct in Victoria that offers:

- an opportunity for every member of the aviation industry to work in a collaborative space, supporting innovation and growth across the sector
- a more streamlined and targeted aircraft training experience, including the ability for students to gain both on-the-job and classroom experience
- a strong pipeline of suitable, qualified and trained professionals who can effectively and efficiently transition into the aviation sector.

An integrated aviation precinct can include:

- aviation training facilities
- MRO and workshop facilities
- on-site office space for aviation business solution providers
- shared facilities such as a hard stand, additional hangar and conference space
- other complementary aviation facilities.

Melbourne Airport welcomes this initiative and will safeguard future land so it can continue to expand aviation maintenance facilities and develop an integrated aviation services precinct.

7.5 General Aviation Facilities

This Master Plan assumes Essendon Airport will continue to operate as a general aviation airport. Melbourne Airport's role is to primarily service scheduled passenger and freight air transport demand, not general aviation. General aviation operations can be facilitated through existing facilities.

7.6 Other Aviation Support Facilities

The Master Plan makes adequate provision for space to service a range of airline support and ancillary aviation activities that need to be located appropriately, according to their specific service function.

This category includes:

- the Airservices precinct
- Joint User Hydrant Installation (JUHI) requirements and aviation fuel storage and handling areas
- areas to store ground support equipment
- areas for terminal support services (such as airline catering and mechanical equipment maintenance facilities) and airport maintenance facilities
- logistics support infrastructure (goods and waste management)
- road access requirements related to these particular activities.

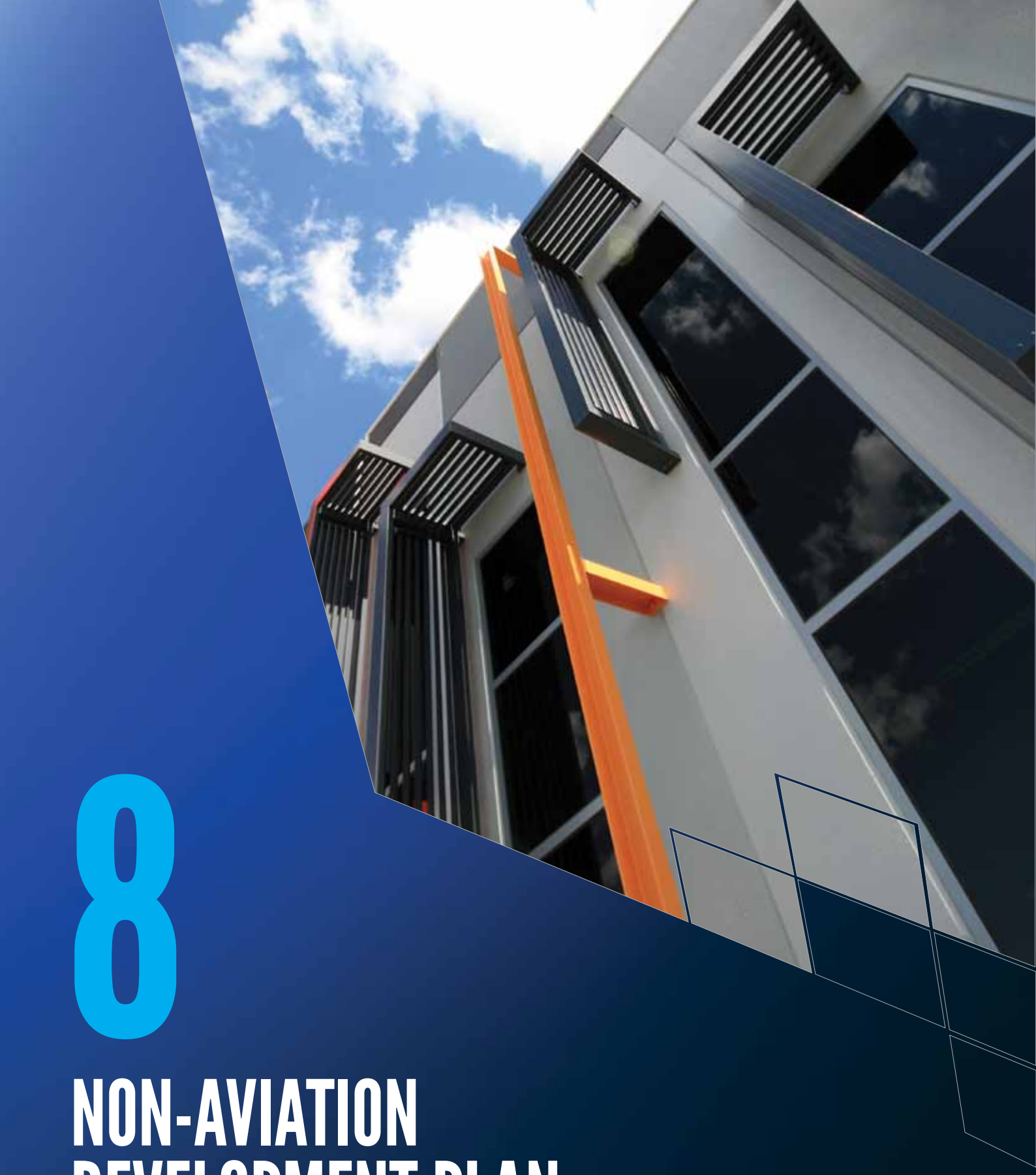
From its control tower, Airservices manages all aircraft movements at Melbourne Airport, both in the air and on the ground. Airservices is directly responsible for providing en-route services throughout the Melbourne Flight Information Region.

These critical support services are provided from the Airservices campus. The airport will continue to safeguard the air traffic services precinct and associated access roads, which are located west of the existing Runway 16L/34R and south of the existing Runway 09L/27R.

The JUHI facility provides critical aviation support infrastructure in the form of the Jet Fuel Storage Facility (including facilities for refuelling trucks) and the Jet Fuel Hydrant Pipeline Network Facility. The airport's forecast long-term growth will result in the phased expansion of the apron infrastructure from the existing 60 hectares to approximately 90 hectares. This expansion will require adequate safeguarding for future JUHI capacity.

7.7 Future Aviation Development Areas

In the long term, there is scope for further aviation development adjacent to Sunbury Road, on the western side of the airport and along the southern edge of the terminal precinct. These areas could include passenger or freight terminals, aircraft maintenance, business jet facilities and other associated aviation services.



8

NON-AVIATION DEVELOPMENT PLAN

8. NON-AVIATION DEVELOPMENT PLAN

8.1 Overview and Objectives

Non-aviation development plays a vital role in Melbourne Airport's economic vitality and complements its key functions. It supports the airport's growth and diversifies business risk, enhancing the contribution it makes to the broader community and underlining its importance as an activity centre.

At Melbourne Airport, non-aviation development has existed in harmony with aviation operations since before the airport was privatised in 1997. Melbourne Airport occupies 2,457 hectares, which offers ample opportunity for commercial developments that complement current aeronautical activities and support aviation-related growth.

Currently, more than 77 hectares have been developed for non-aviation use in the landside business precinct at the southern end of the airport. To date, non-aviation development has focused on industrial warehousing, reflecting the airport's location in the north-west of Melbourne, its strong freeway connections and the land parcels available for development.

The airport has approximately 311 hectares of vacant land available for commercial development which will not be required for aviation purposes in the future. There is an additional six hectares of vacant land, which may be needed for aviation activity at some point in the future, but is available for at least the next 10 years for non-aviation use.

Non-aviation development will be undertaken in accordance with the airport's Planning and Design Guidelines and Development Manual.

The objectives of non-aviation development are to:

- protect the airport's long-term viability
- plan and make provisions for constructing world-class facilities that will benefit all airport stakeholders
- encourage developments that achieve the highest standards in sustainable environmental development, safety and security
- encourage developments that complement the airport's key functions and can support aeronautical activities.

The rest of this section will describe current non-aviation developments and explain the airport's vision for non-aviation development. The airport has defined a number of areas within the two landside precincts where non-aviation development will be undertaken. Refer Figure 8.1.

8.2 Landside Business Precinct

The landside business precinct occupies the southern part of the airport and adjoins the southern part of the airfield area (refer Figure 5.1). This precinct houses the aviation maintenance areas, as well as other non-aviation related activities.

8.2.1 Melbourne Airport Business Park

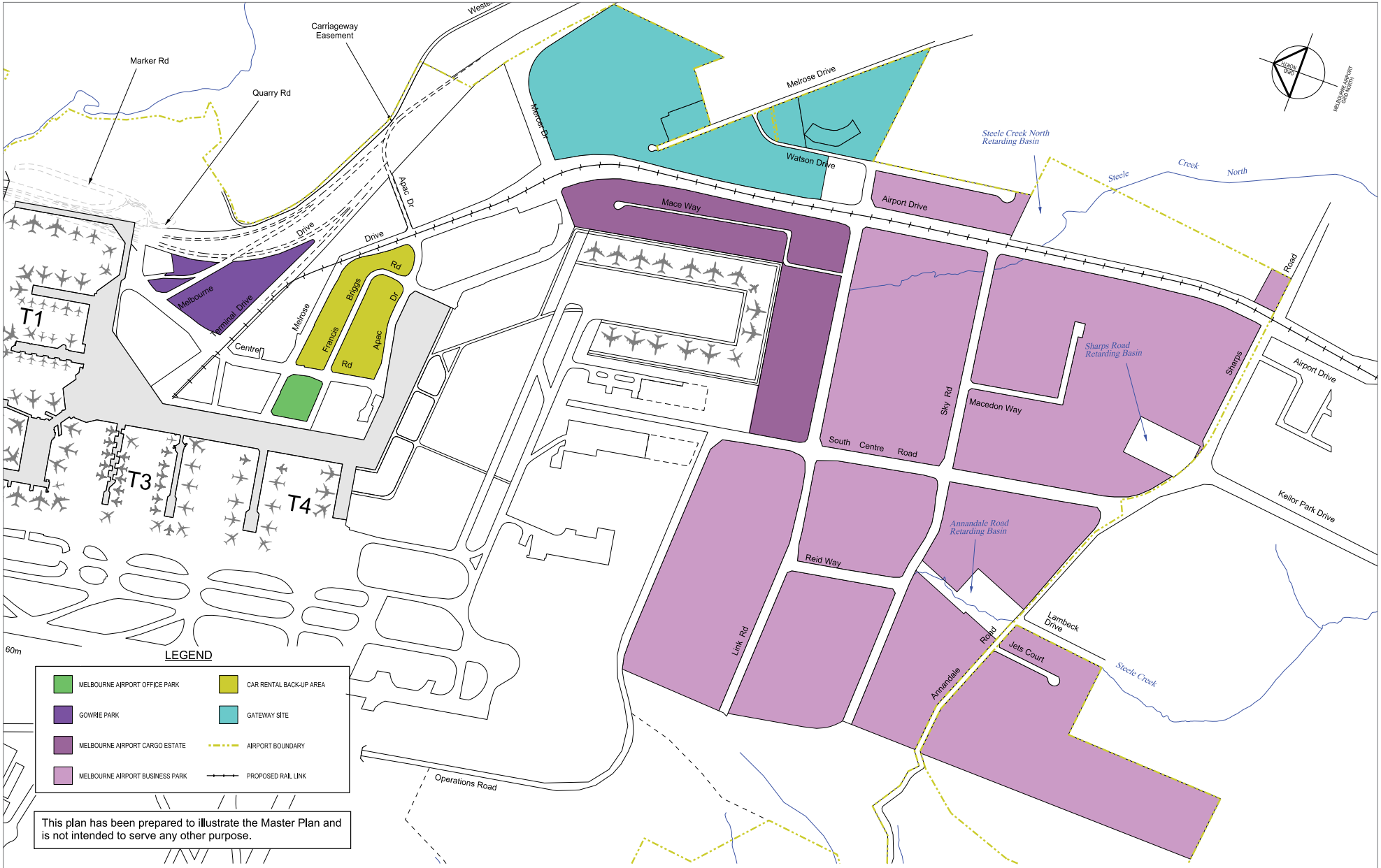
The Business Park is located in the southern area of the airport. It is an established Park of around 285 hectares, with more than 77 hectares of land (already developed) providing some 23 facilities for 27 tenants. The majority of the facilities are large distribution warehouses supporting logistical operations. Other facilities in the Park include a manufacturer, a self-storage facility and a storage compound. Ancillary uses also exist (two cafés), supporting the Park's businesses and employees.

Since the 2008 Master Plan, some 23 hectares of the Park have been developed, adding another nine facilities. More land areas have also been added. The two areas in the Park are located south of Operations Road and south of Annandale Road, and have been included in the non-aviation development portfolio as their previously defined uses (as areas for aviation maintenance and conservation and recreation) are no longer appropriate (today and under the Ultimate Airport Development Concept).

The Business Park still has 146 hectares of vacant land available for development. The airport intends to continue developing the Park, focusing on large industrial warehouses (of 10,000 to 100,000 square metres), ultimately providing approximately 222 hectares of developed land with some 1,000,000 square metres of facilities.

Trunk infrastructure (water, sewerage, electricity) will continue to be added to support the Park's growth. In the next five years, it is expected that Sky Road West will be built to its fullest extent. With the construction of Airport Drive (as noted in Section 9.5), Link Road will be realigned, straightening its eastern section, and potentially adding more lanes between South Centre Road and Airport Drive.

The airport is targeting additional development of 20,000 square metres per annum, but this will depend on the state of the property market at the time. In addition to industrial warehousing, the airport expects to add supporting and complementing developments such as small-scale retail amenities (e.g. cafés), offices, hotels, petrol stations and car parks.



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Non-Aviation Development Areas

Fig. 8.1

8.2.2 Melbourne Airport Cargo Estate (MACE)

MACE is a new development along Melrose Drive at the south-east corner of the airfield. The ultimate planned area of the estate is around 46 hectares, and when fully developed will provide freight, cargo and industrial warehouse facilities totalling some 184,000 square metres (including supporting developments and small-scale retail amenities).

In the 2008 Master Plan, the area now occupied by the MACE was designated (in the Ultimate Airport Development Concept) for air freight terminals. At that time, the airport believed passenger terminals and aviation maintenance would grow to such a point that the existing air freight terminals would need to be moved (from APAC Drive and Service Road), and the existing aviation maintenance areas expanded.

Since that time, changes to terminal and airfield expansion plans, along with developments in the aviation maintenance industry, have led Melbourne Airport to reassess the ultimate space requirements and location for air freight terminals and aviation maintenance facilities. As a consequence, the area has been re-designated for use as a freight, cargo and industrial warehouse estate, providing industrial and office facilities for aviation and non-aviation related uses. The MACE's location and design is such that aviation-related operators can be provided with facilities that have an airside and landside boundary, similar to the existing air freight terminals on APAC Drive. This allows the airport to provide occupiers with airside access, and enables the future relocation of existing air freight terminal operators if necessary (to accommodate aviation-related growth).

The first phase of MACE has been completed, with 9,400 square metres of warehousing developed to provide three industrial units, one with airside access. A second, 2,290 square metre multi-unit building was also completed, providing new warehouse and office space of 80–250 square metres.

Over the next five years, MACE's development will be limited until Airport Drive is built and the existing Link Road realigned. The airport is targeting around 14 hectares of development over the next five years, providing some 66,000 square metres of new industrial warehouse and office accommodation. The extent of the development will be driven by economic conditions and the local property market.

8.2.3 Gateway Site

The 63-hectare Gateway Site occupies a visible position along the Tullamarine Freeway and Melrose Drive. Due to its high exposure (which will be further enhanced when Airport Drive is completed), the airport has planned the site for high-value commercial developments such as premium office, retail, car parking and high-tech warehousing.

At the time of the 2008 Master Plan, only two developments had occurred on this site: the Airport Club and the Qantas Joey Club Childcare Centre, both along Melrose Drive. An MDP had also been approved for 48,000 square metres of mixed-use development, followed shortly thereafter with two more proposed MDPs, one for 48,000 square metres of additional mixed-use development and the second for 29,100 square metres of office space and high-tech warehousing. As a result of the global financial crisis and other issues, these proposals did not progress to the delivery stage and the MDPs are no longer required by APAM.

In the past five years, two significant developments have occurred on this site. The first is a 1,700–square metre warehouse housing a state-of-the-art pet-care facility. The second is the leasing of 10 hectares of land to the Essendon Football Club for its new training and community facility. This facility has recently been completed, providing two full-sized football ovals, 10,000 square metres of administration and indoor training areas, and approximately five hectares of landscaped environment.

It is anticipated that the Gateway Site will evolve over time, initially (over the next five years) with small-scale office, retail and commercial developments around the Essendon Football Club site, and eventually with larger-scale commercial developments adjoining the Tullamarine Freeway.

The airport expects this site will ultimately comprise a number of high-value, high-density commercial developments such as offices and retail outlets, reflecting the site's high visibility and excellent road access.

8.3 Landside Main Precinct

The landside main precinct is the gateway to the airport for most people. It provides access to the terminal facilities via the freeway and road networks. Although the activities (and thus developments) that occur in this precinct generally support the airport's aviation activities, a number of them would be considered non-aviation developments.

8.3.1 Gowrie Park

This area of the airport is currently the most visible, as it is bounded by the main entry and exit points to the Tullamarine Freeway. The 15-hectare park has a number of commercial developments, including the Mercedes Benz car showroom and maintenance facility, Possum Magic childcare centre, Holiday Inn, BP petrol station, McDonalds and the Ibis Hotel.

Given the high exposure of this area and its road access, the airport proposes a number of high-value and high-density commercial uses for the site, such as offices, hotels, retail showrooms, petrol stations and car parking. It is expected that the majority of new development will be for mixed use, with buildings of between three and nine levels, and various uses occurring across those levels.

Over the next five years, limited development will occur in the Park while the design of the elevated road network is completed. This is to ensure new developments do not restrict the development or operating efficiency of the airport's road network.

8.3.2 Melbourne Airport Office Park

The Office Park is located along the western side of Centre Road in the southern half of the main landside precinct. The 2.3-hectare site houses 9,890 square metres of office accommodation in various buildings and formats. This site can support approximately 22,700 square metres of office and supporting development, mainly for aviation-related occupiers (given its location).

The Office Park currently houses organisations such as the Australian Federal Police, Australian Customs and Border Protection Services, Department of Agriculture, Forestry and Fisheries (DAFF) and Tiger Airways, all of which need office facilities to support their operations at Melbourne Airport. Over the next five years, the airport plans to build an additional 10,000 square metres of office accommodation (including supporting facilities such as cafés, medical centres and car parks). These developments will depend on tenant demand, which the airport expects to increase as passenger traffic grows. Car parking to support the office space will be provided both onsite and across the various facilities at the airport.

8.3.3 Car Rental Back-up Area

The car rental back-up area totals some 11 hectares and is located north and south of Francis Briggs Road in the southern area of the main precinct. The area currently provides 10 hectares of at-grade parking facilities, shared by car rental, valet and bussing operators.

Since the 2008 Master Plan was completed, approximately 2.6 hectares of facilities have been added, the majority of the space having already been developed by that point.

At the time of this Master Plan, facilities for Thrifty, Red Spot and Europcar are being completed. After this is done, there will only be one hectare of vacant land available for development in this area.

Given the need to provide back-up facilities for car rental, valet and bussing operators, the airport anticipates the need for this area to grow. However, these facilities may need to be expanded through higher-density usage (such as multi-deck parking) and supported by ancillary facilities such as petrol and car wash facilities, fast food restaurants and limited retailing operations. Over the next five years, the airport expects the remaining one hectare to be developed and a number of existing facilities to be reorganised to create higher occupational operations.

8.4 Impacts of Non-Aviation Developments

As previously stated, Melbourne Airport is designated a Specialised Activity Centre under the State Planning Policy Framework. Within Specialised Activity Centres, complementary mixed uses are encouraged, provided they do not compete with nearby Central Activities Districts or Principal or Major Activity Centres, or inhibit the centre's specialised role.

Non-aviation development on the Melbourne Airport site is complementary to the airport's operations and consistent with general urban planning arrangements in the north-west of Melbourne, including Melbourne 2030 and the Hume Planning Scheme. The Hume Municipal Strategic Statement (Clause 21.03) recognises "the significant industrial and employment areas located at Melbourne Airport as an opportunity for employment" and "the importance that Melbourne Airport has as an employment generator and hub for associated business investment".

Significantly, the Hume MSS also states (at Clause 21.03-5):

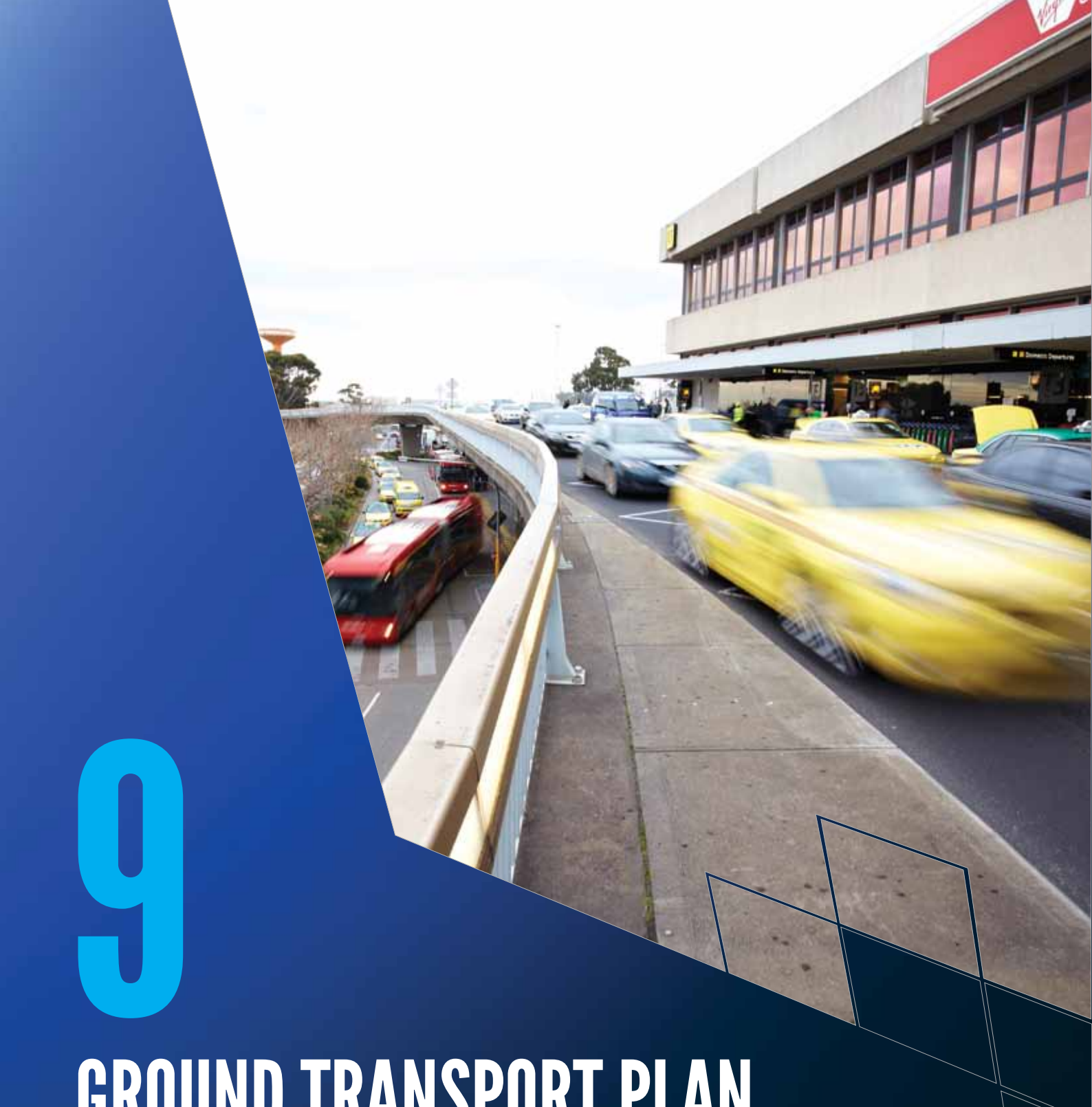
> *Limited potential exists for new industrial and transport-related development beyond land that has already been zoned in Gladstone Park/Tullamarine for this purpose. However, a large supply of undeveloped land suitable for industrial and business use is available within Melbourne Airport.*

Non-aviation development within the airport precinct contributes to the significant employment and other economic benefits generated by the airport for the local area (as outlined in Section 2). It is estimated that of the 14,300 jobs directly generated by the airport precinct, approximately one-quarter (3,575) are associated with non-aviation activities. Likewise, of the 8,700 new jobs that are projected to be generated at the airport over the next 20 years, it is estimated that approximately one-quarter (2,175) will be related to non-aviation developments.

Non-aviation development on the airport site (landside precincts) also acts as a physical buffer between the 24-hour airport operations and residential areas. This pattern of development is complementary to other activity centres near the airport and makes good use of available infrastructure.

Given the airport's designation as an activity centre under the metropolitan strategy for Melbourne, applying the Activity Centre Zone to the terminals and landside precincts is consistent with the State Planning Policy Framework and Victoria Planning Provisions.

The Master Plan and Activity Centre Zone provide for complementary retail and commercial development to occur on land not required for aviation uses. There are however no specific developments proposed in this Master Plan that are likely to adversely impact on the local or regional economy or conflict with surrounding planning schemes, particularly in regard to the State Government's current planning zone reforms and the fact that the Hume Planning Scheme recognises that Melbourne Airport has a large supply of undeveloped land suitable for "industrial and business use".



9

GROUND TRANSPORT PLAN

9. GROUND TRANSPORT PLAN

As Melbourne Airport grows, getting passengers, staff and visitors to and from the airport precinct in a timely and efficient way will become increasingly important. With continued growth in aircraft movements and passenger numbers, it's critical that Melbourne Airport has a vision and systems to manage the growth of infrastructure and services to overcome transport network congestion now and into the future.

The Melbourne Airport Ground Transport Plan 2013 replaces the Melbourne Airport Ground Transport Plan 2009 and is the first to be incorporated into the Master Plan, in compliance with amendments to the *Airports Act 1996* (Airports Act), and sets out Melbourne Airport's areas of transport focus over the next five-year period (2013–2018).

9.1 Overview and Objectives

Melbourne Airport's vision is for an interconnected ground transport system that supports safe, efficient and reliable journeys for all modes of transport. The Ground Transport Plan outlines how this will be achieved.

Access to the airport is currently limited to road-based public and private transport. Demand levels at peak times result in congestion and queues on some roads leading to the Terminal Precinct. The road network is well structured, as the original airport development includes excellent connectivity to state arterial roads and a sound internal road network. The airport's growth now calls for the internal transport network to be reinforced to meet the increased demand, as well as a renewed emphasis on making greater use of high-occupancy vehicles, preferably not just road-based. These initiatives must be supported by reliable and efficient transport links between the airport, the Melbourne CBD, the local region and the wider metropolitan area.

Travel demand modelling shows that passenger numbers will increase to approximately 64.37 million per year by 2033. To support this growth, the airport requires a multi-modal ground transport system that can meet the requirements of a 21st century capital city airport, underpinned by 24 hours a day, seven days a week access, efficiency, safety, sustainability, customer choice and value for money.

It's not just passengers who have to get to and from the airport more efficiently. More than 14,300 people work in airport-related jobs and that number is expected to grow to 23,000 by 2033, making the airport a major centre of employment and economic activity.

Exporters across Victoria also depend on reliable access to the airport so they can transport their products to interstate and overseas markets. Better transport connections to the aviation gateway will contribute to economic productivity.

The Ground Transport Plan provides an integrated framework to improve transport access to the airport. It is also linked with land use planning outlined in this Master Plan.

Melbourne Airport is committed to working with governments and the relevant authorities to implement the Ground Transport Plan and jointly develop better road and transport connections.

For the first time, this plan also outlines a long-term solution to the ongoing congestion experienced in peak periods. This includes developing the elevated loop road and ground transport hubs.

The objectives of the Ground Transport Plan are to:

- improve ground transport access for all modes of travel, including a rail link
- provide a transport network capable of meeting projected demand over a 20-year period
- separate different transport modes to improve safety and reduce congestion, which will involve separating passengers and vehicles
- integrate the airport's ground transport network into the wider local and state-wide networks
- encourage a range of travel modes to provide equitable travel for the airport's users
- support safe, secure and sustainable transport solutions.

Reducing congestion in and around the airport will be critical to the success of the Ground Transport Plan.

9.2 Existing Ground Transport System

9.2.1 External Road Network

Melbourne Airport relies on both internal and external road systems. These networks are fundamental to the airport's operation and provide access for public transport, shuttles, taxis, freight, aviation support vehicles, emergency services and private vehicles. Table 9.1 describes the prominent arterial/access roads to Melbourne Airport.

Due to its proximity to Melbourne's freeway network, the airport is well serviced in terms of road access. High-capacity links within the airport support these systems; however, given high travel demands, congestion is a regular problem on both the internal and external road network during peak periods. Figure 9.1 summarises the Melbourne metropolitan transport system in the context of Melbourne Airport, including a broad understanding of the road and rail networks and bus systems.

Access to Melbourne Airport is provided from the Tullamarine Freeway, Melrose Drive and Sunbury Road. The main access to the airport is from the Tullamarine Freeway. Figure 9.2 provides details of the arterial road network close to the airport, giving a visual understanding of the route options from the greater Melbourne freeway network.

It is noted that the Tullamarine Freeway, from the M80 Ring Road to Melbourne Airport, is part of the National Land Transport Network pursuant to the *Nation Building Program (National Land Transport Network) Act 2009*.

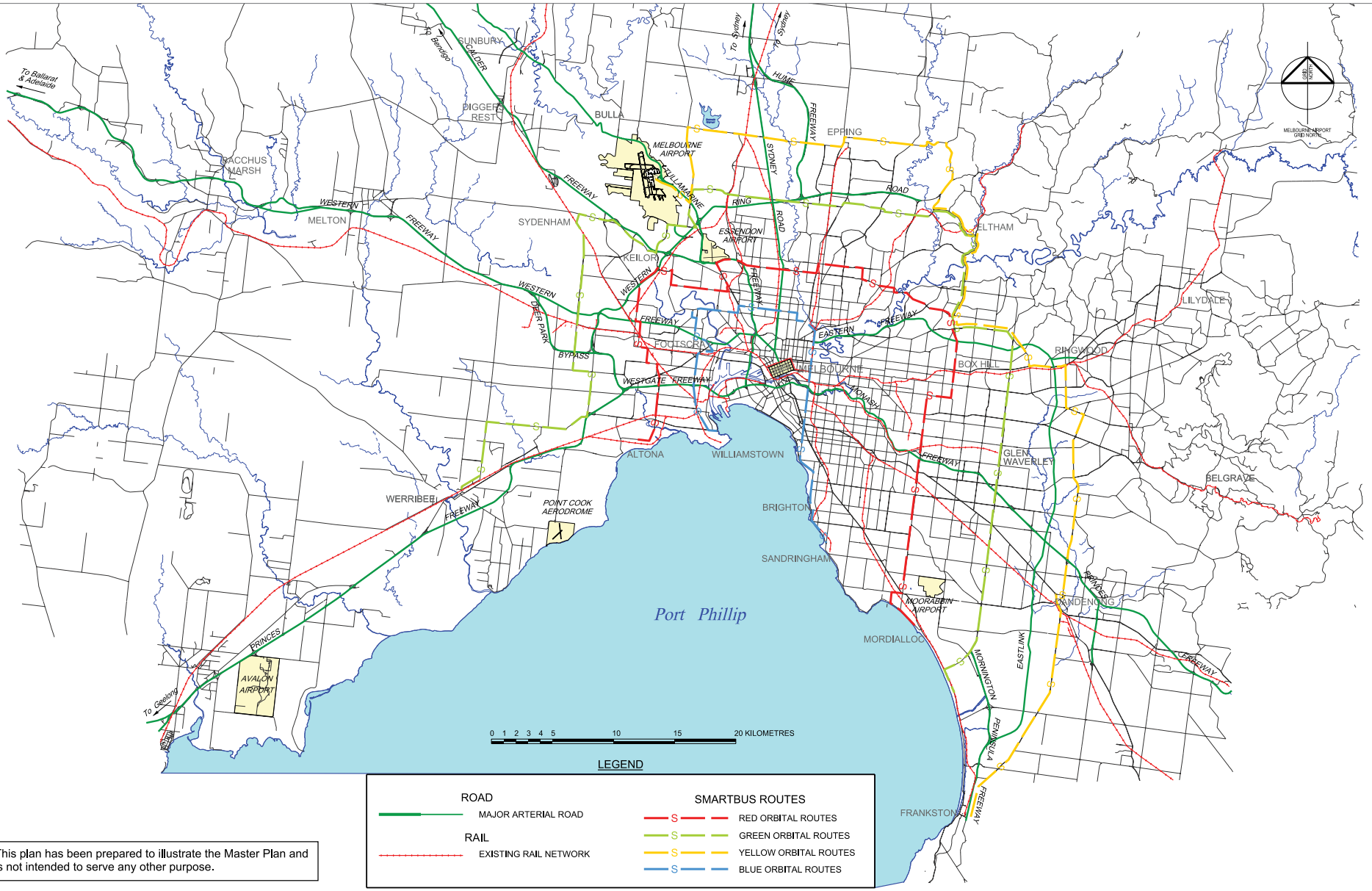
Over the last 10 years, Melbourne Airport has developed a management system based on a digital model of the road network. This system is called the Melbourne Airport Landside Traffic Model and is used to test the existing road capacity and planned improvements. The Landside Traffic Model is a valuable tool for predicting and managing route congestion, and can identify locations or features that are causing traffic flow problems on the internal road network.

A review of the internal road network using this model, along with stakeholder consultations, identified the following pressures:

- Connections with the Tullamarine Freeway are approaching capacity. Traffic queues on Terminal Drive can affect the Tullamarine Freeway during daily peak periods.
- Growth in residential areas will increase traffic volumes from the outer northern and western suburbs of metropolitan Melbourne. New road infrastructure, including connections to Melbourne Airport, will be required to cater for these trips.

Table 9.1: Existing External Road Network

Road name	Orientation	Access	Capacity	Direct access to Melbourne Airport
Calder Freeway	East–West	CBD, CityLink Tollway, North and West, regional Victoria	6 lanes, two-way	✗
M80 Ring Road	Orbital	CBD, Metropolitan Ring Road, West, regional Victoria	4–6 lanes, two-way	✗
Tullamarine Freeway/ CityLink	Northwest–Southeast	CBD, East	4–8 lanes, two-way	✓
Melrose Drive	North–South	Terminal Precinct from Tullamarine Freeway	2–6 lanes, two-way	✓
Keilor Park Drive	North–South	Sharps Road from M80 Ring Road	4 lanes, two-way	✗
Airport Drive	Northwest–Southeast	Sharps Road from M80 Ring Road	4 lanes, two-way	✓
Sharps Road	East–West	Links South Centre Road with Keilor Park Drive and Tullamarine Freeway	4 lanes, two-way	✗
Sunbury Road	North–South	North to Terminal Precinct, Tullamarine Freeway	2 lanes, two-way	✓



This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

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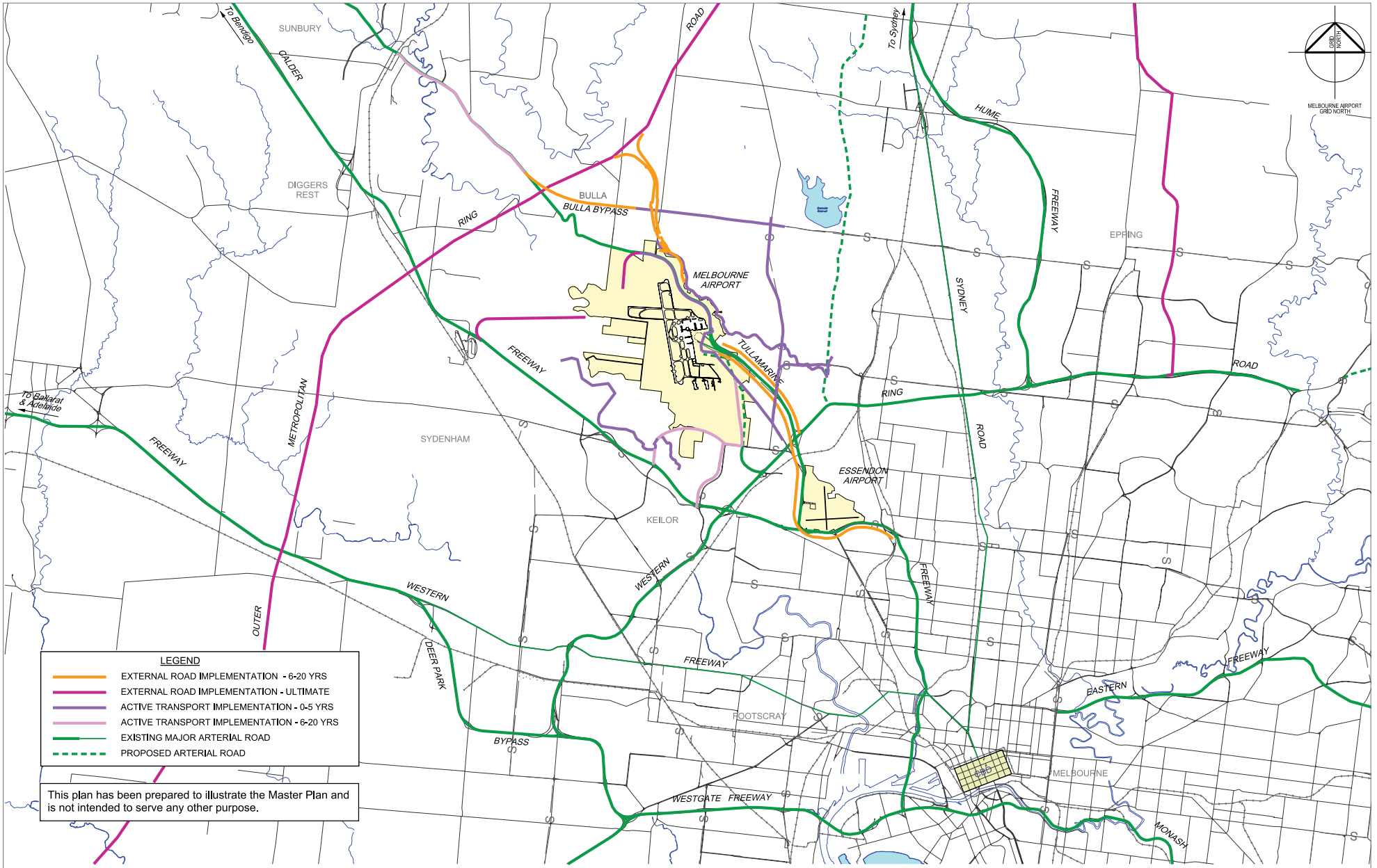
Existing Ground Transport System

Fig. 9.1



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Local Freeway & Active Transport Access to Airport

Fig. 9.2

9.2.2 Internal Road Network

Melbourne Airport manages and funds the internal road network. Within the airport boundary, there are a number of roads that provide access for passengers, employees, visitors, freight and local traffic. The key internal airport roads are detailed in Table 9.2, including function and current operational capacity characteristics.

Table 9.2: Existing Internal Road Network

Road name	Orientation	Access	Current capacity
Terminal Drive	East–West road linking Tullamarine Freeway to the terminal forecourt	Access to the terminal forecourt for passengers, staff, meeters and greeters from the Tullamarine Freeway	2–4 lanes, one-way
Centre Road	North–South road linking Sunbury Road and APAC Drive, intersecting Terminal Drive and Melbourne Drive	Access to the long-term and ground-level car parks. Key access route for passenger vehicle and taxi re-circulation	2–6 lanes, two-way
Departure Drive	Raised one-way loop road between multi-level car park and terminal buildings, intersecting Centre Road	Facilitates passenger drop-off for private vehicles, shuttles and taxis	3 lanes, one-way: 2 circulation lanes and one drop-off lane
Arrival Drive	Ground–level one-way loop road between multi-level car park and terminal buildings, intersecting Centre Road	Facilitates passenger pick-up for private vehicles, shuttles, taxis and buses	3 lanes, one-way: One marked bus lane, one circulation lane and one drop-off lane
Service Road	North–South road on landside boundary of terminal precinct. Parallel to Centre Road	Connects business and terminal precincts. Provides connection between forecourt and taxi feeder area	4–6 lanes, two-way, two lane for drop-off/ pick-up, two taxi feeder lanes
Depot Drive	East–West road intersecting Service Road and Centre Road	Access to business and commercial precinct	4 lanes, two-way
Grants Road	East–West road intersecting Service Road and Centre Road	Access to business and commercial precinct	2 lanes, two-way
Melrose Drive	North–South road linking the Tullamarine Freeway and Centre Road	Access to the airport, linking the terminal precinct, Business Park, long-term car park and taxi-holding area	2–4 lanes, two-way
Mercer Drive	East–West road linking the Tullamarine Freeway and Melrose Drive	Access to the taxi-holding area and business and industrial precinct	2 lanes, one-way
APAC Drive	East–West road linking the Tullamarine Freeway and Melrose Drive Road	On-ramp for Tullamarine Freeway and taxi re-circulation route. Primary access for freight	2–4 lanes, two-way
Francis Briggs Road	East–West road intersecting Centre Road and APAC Drive	Access to rental car parks and SkyBus holding area	2 lanes, two-way
South Centre Road	North–South road between Sharps Road and Operations Road	Access to business and industrial precincts	2–4 lanes, two-way

Road name	Orientation	Access	Current capacity
Link Road	Northeast–Southwest road intersecting South Centre Road and Melrose Drive	Connects business and industrial precincts with Melrose Drive	2 lanes, two-way
Operations Road	North–South road running parallel with major north–south runway	Access to the business and industrial precincts, the fire station and air traffic control tower	2 lanes, two-way
Annandale Road	East–West road intersecting Arundel Road and South Centre Road	Access to Qantas staff car park, business and industrial precincts, and the Melbourne-bound lanes of the Calder Freeway	2 lanes, two-way

The internal road system provides access to a range of land uses that generate passenger, employee and commercial trips. Passenger trips are generally concentrated in the terminal precinct and car parking areas, and there is congestion in these areas during peak and shoulder periods. Employee and commercial trips are usually concentrated in the business and industrial precincts.

The Melbourne Airport Landside Traffic Model has identified the following areas where the airport's internal roads could be improved:

- Key passenger routes such as Terminal Drive, Arrival Drive, Departure Drive and Centre Road are currently approaching or exceeding capacity. Congestion on these roads usually occurs during the peak periods (7am–10am and 3pm–11pm) and is predominantly associated with queuing from the terminal forecourt or the Centre Road intersection.
- Key intersections with Centre Road, including Terminal Drive, Departure Drive, Arrival Drive and Melrose Drive, often operate above capacity during peak periods, although not effectively. Taxi re-circulation and private vehicles contribute to congestion.
- Some congestion on major internal roads affects timetabled services including SkyBus, metropolitan buses, long-term car park courtesy bus, and the staff car park courtesy bus. Longer travel times and unreliable services affect the patronage and operation of these services.

Recent improvements undertaken to ease traffic movement and reduce congestion across the airport have been successful. They include constructing an additional Melbourne-bound entry onto the Tullamarine Freeway at APAC Drive. This has relieved traffic at the Centre Road–Melbourne Drive intersection, which has had positive impacts across the internal road network. The other critical improvement has been the additional lanes within the main terminal forecourt, providing greater drop-off capacity that has allowed better traffic movement in and out of the area.

9.2.3 Parking

There are approximately 25,500 car parking spaces at Melbourne Airport for employees and passengers. There are also a number of off-airport car parking operators, most within five kilometres of the terminal precinct. Melbourne Airport provides a wide range of on-airport parking options at a range of price points. Parking utilisation is carefully monitored so that additional bays are regularly provided in a timely manner to meet growing demand with service levels and price points to meet customer needs. Melbourne Airport has also provided support to Victoria's trial of electric vehicles offering complimentary recharge bays in the multi-level carpark.

9.2.4 Rail

Melbourne Airport is currently not served by rail. SkyBus is the predominant form of public transport (other than taxis) connecting Melbourne Airport to the CBD. While very successful, this service is entirely reliant on the State arterial road network that is approaching capacity. The nearest rail station is at Broadmeadows on the Craigieburn Rail Line and is located some six kilometres to the east of the terminal. Bus connections are available from Broadmeadows Station every 15 minutes between 6.30am and 9.00pm on weekdays. That service reduces to every 30 minutes in the early morning and late evening. While this service is an option for passengers, it is not adequate as a sustainable long-term solution.

Melbourne Airport supports a direct rail link to the airport as a critical transport option to enable the airport's future growth, and to further reduce the reliance on the road network. This Master Plan, like previous Master Plans, makes provisions for developing a rail link, including reserving land to be used for rail. These provisions are consistent with an 'Albion East' alignment which the Melbourne Airport Rail Link Study determined was the best route for a Melbourne Airport rail link. It is also consistent with PTV's Network Development Plan – Metropolitan Rail. Melbourne Airport encourages Victorian and Federal Governments to commit funding for these important rail projects to support the future growth of Victoria's aviation connections with the world. Figure 9.3 shows public transport networks that provide access to the airport.

9.2.5 Bus Services

Melbourne Airport is served by numerous bus services that link the airport to the local area, the Melbourne city centre, metropolitan Melbourne and regional Victoria.

i. Metropolitan Bus

Metropolitan public bus services include Route 478 (Moonee Ponds–Melbourne Airport), Route 479 (Sunbury–Moonee Ponds via Melbourne Airport) and Route 500 (Broadmeadows–Sunbury). These services generally have limited hours of operation and low frequency, running every one to two hours.

Route 901 (Frankston–Melbourne Airport) is a SmartBus service, which provides more frequent services (every 15 minutes) and operates from approximately 6.30am to 9pm on weekdays. The service runs every 30 minutes in the early morning and late evening.

The SkyBus airport service runs between Southern Cross Station in the CBD and Melbourne Airport. SkyBus provides a 24/7 direct shuttle service, with buses every 10 minutes during peak times. It currently operates 125 in-bound services every weekday.

In addition to SkyBus, there are other privately operated airport-route buses that link the airport with metropolitan Melbourne. These include the Dandenong, Frankston and Peninsula airport shuttles and the Eastside Airport Bus.

Melbourne Airport continues to work with Public Transport Victoria to improve the hours of operation and frequency of these services, to better respond to the travel demands of all patrons, but specifically for employees from higher concentration locations, including Moonee Ponds, Sunbury and Broadmeadows.

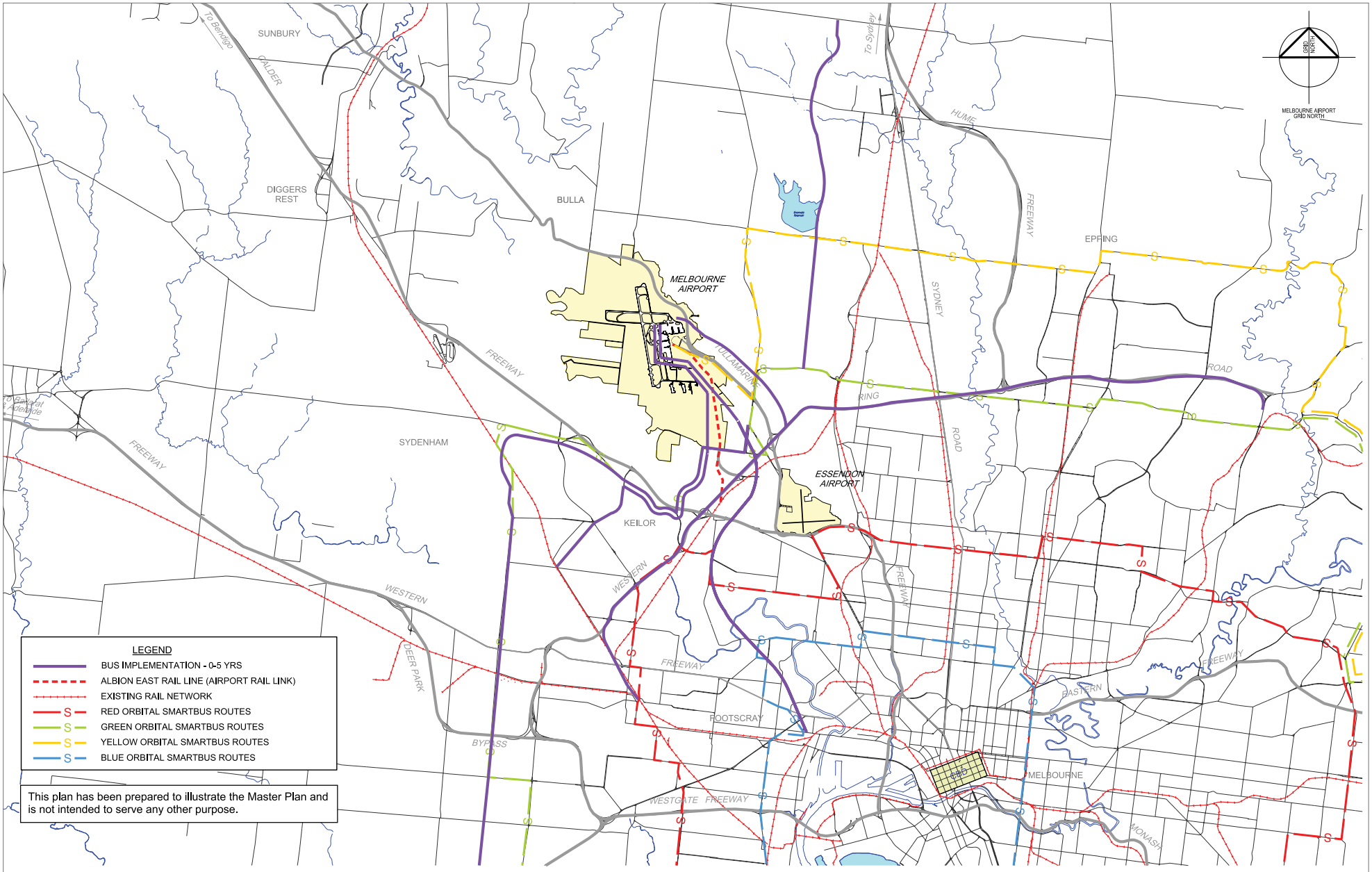
ii. Regional Bus

V-Line operates two bus services from Southern Cross Station to Barham and Deniliquin via Melbourne Airport. These services provide access to regional communities including Barham, Rochester, Cohuna, Bendigo, Heathcote, Deniliquin, Echuca and Wallan, among others. There are several privately operated buses that service regional centres. Buses link Ballarat, Bendigo, Geelong, Warragul and Shepparton with Melbourne Airport. These regional buses operate two to 15 in-bound services per weekday.

9.2.6 Taxi/Hire Car (VHA)

Taxis are an attractive mode of transport for travel to and from Melbourne Airport due to their convenience and the airport's proximity to Melbourne's city centre. Journeys to Melbourne Airport make up approximately 13 per cent of all taxi movements in Melbourne and approximately 30 per cent of taxi revenue. Taxis and hire cars will continue to be important for Melbourne Airport. These services are flexible, convenient and provide transport options for those areas not well serviced by buses or rail.

Currently, taxi drop-offs predominantly use Departure Drive, and the supply of pick-up services at the Arrival Drive forecourt is managed by a series of holding areas. Licensed hire cars, operated by VHA, are also based at Melbourne Airport. A dedicated area within the existing multi-level car park caters for their specific parking and circulation requirements.



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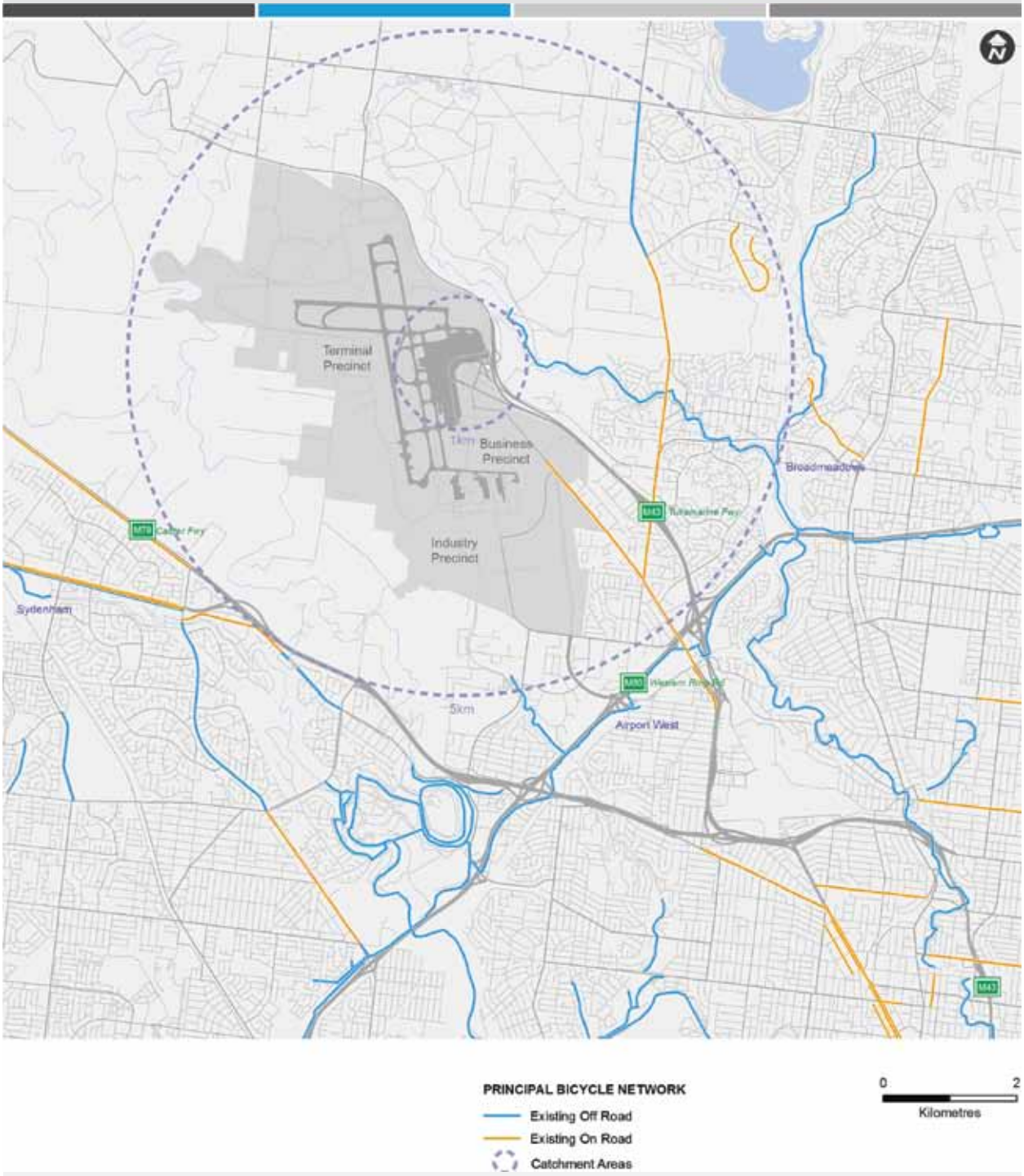
Public Transport Access to Airport

Fig. 9.3

9.2.7 Active Transport

Active transport is an access mode that involves physical activity and typically focuses on walking and cycling networks. Melbourne Airport's active transport network includes existing bicycle links to the airport, and the pedestrian environment within the airport boundary. Existing walking and cycling networks within a five-kilometre radius of the airport are shown in map 9.1.

Map 9.1: Existing Walking and Cycling Networks Within a Five km Radius of Melbourne Airport



i. Cycling

In March 2009, the Victorian Government released the Victorian Cycle Strategy 'Cycling into the Future 2013–2023', an initiative that focused on five strategic directions:

- build networks to connect communities
- promote and encourage a culture of cycling
- reduce conflicts and risks for cyclists
- better integrate cycling with public transport
- integrate cycling into land use planning.

In 2012, the Victorian Government reinforced the same messages with the Victorian Cycling Action Plan 2013–2014, which also articulated guidelines for growing and supporting cycling in Victoria.

Cycling access depends primarily on the provision of safe and convenient bicycle routes and access to quality end-of-trip facilities (including showers, changing rooms and secure bicycle parking). It is an important initiative for thriving metropolitan areas that is sustainable, carries health benefits and reduces congestion on roads, all of which are supported by Melbourne Airport.

However, the aviation industry's primary focus is not readily compatible with cycling as a strong transport alternative. Airline passengers typically carry baggage and generally travel a considerable distance, which makes cycling an unrealistic option. Freight and logistics also derive little benefit.

Melbourne Airport's main focus in promoting active transport is to enable its large workforce to travel to and from work, particularly those who live close to the airport and work during daylight hours. This will improve workforce health and reduce traffic.

In 2002, the Victorian Department of Transport released an updated Principal Bicycle Network (PBN), which describes existing and proposed on-street and off-street bicycle networks (refer Map 9.1). The PBN identified proposed Bicycle Priority Routes that aim to provide clear bicycle links. Priority Routes to the airport include Melrose Drive, Centre Road and Marker Road connecting with the Moonee Ponds Creek Trail (which runs from Mickleham Road to the airport).

There are currently no continuous bicycle routes from surrounding suburbs that directly connect with the airport boundary. On-road bicycle lanes exist along Melrose Drive in the vicinity of Link Road but do not connect directly with the airport. While there is an informal route along the Moonee Ponds Creek Trail that provides access to the airport, the connections and signage could be improved to encourage cyclists.

Melbourne Airport is adjacent to bicycle paths that are part of Melbourne's PBN, heading to Sunbury, Broadmeadows and Keilor, where a substantial number of airport staff members live. The Airport Drive extension will provide paths that will enable a future airport link to the Maribyrnong path, subject to VicRoads approval.

ii. Walking

The pedestrian environment at Melbourne Airport is a critical interchange component between travel modes. It is important to consider the pedestrian journey as both employees and passengers must travel from their homes to terminals and airline gates.

Due to the size and location of the airport precinct and the presence of major roads and airside operations, walking to the airport from surrounding suburbs is considered difficult. As a result, the major pedestrian concern is facilitating appropriate internal movements.

The airport's existing walking network consists of internal footpaths that are provided within the road reserve. Links between different land uses, such as the multi-level car park and terminal areas, are provided by elevated pedestrian bridges where possible to reduce vehicle and pedestrian conflict.

The major area of pedestrian circulation occurs at the terminal frontage. This area is a major source of vehicle activity on Arrival Drive and Departure Drive. Pedestrian crossing movements that intersect with high vehicle volumes present safety risks and a potential traffic congestion concern. In addition, the presence of uncollected luggage trolleys reduces the available space for pedestrians waiting on Arrival Drive. The separation of pedestrians and vehicles continues to be a strong focus, particularly in the program of improvement/development of forecourt precincts.

Away from the terminal precincts, the pedestrian network provides a degree of access to key businesses and dedicated staff and other car parks. The continued development of the internal footpath network has been a recent focus, including improved links along APAC Drive reinforced by high commercial growth and large numbers of employees.

9.2.8 Freight and Logistics

Melbourne Airport is an important freight hub in Victoria and Australia, and internationally. It operates 24 hours a day, seven days a week and currently processes over 250,000 tonnes of international air freight per annum.

Melbourne Airport welcomes the focus on the curfew free status identified within the Victorian Freight and Logistics Plan as a competitive strength that allows the state of Victoria to continue to sustainably accommodate growth.

Freight transport accesses the airfield through the various freight terminals at the end of the Southern Precinct. Freight terminals in this area are designed to interface goods from landside for transfer to and from the aircraft. Security and regulatory requirements are administered within that location.

The road network must retain capacity to cater for freight growth. This poses challenges that go beyond the volume of vehicles. Road transport operators are being encouraged to use larger vehicles that are increasingly designed to minimise road damage and in some cases, work with existing road geometry. The new roads being planned by Melbourne Airport to service the freight area and Business Park (including Airport Drive and Link Road) are being designed to cater for larger vehicles such as B-Doubles and where appropriate B-Triples.

The additional roads and the access by Higher Productivity Freight Vehicles will promote greater efficiency as identified within the better use of the Freight Network Initiative in the Victorian Freight and Logistics Plan.

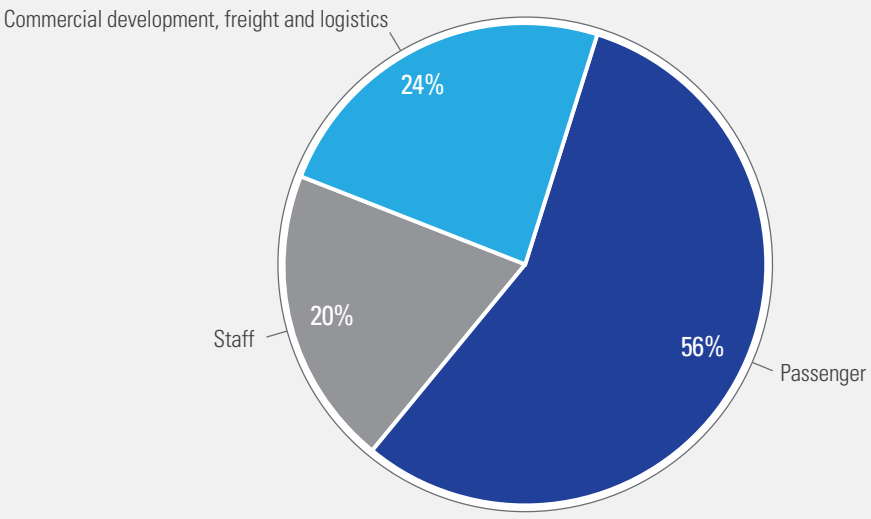
Logistics is also an important element in the movement of goods within the airport road network. A number of businesses operate within the airside (secured) area on the airfield, and goods are delivered to and waste removed from these businesses. The airside area is also used by other traffic, including aviation support vehicles such as refuelling, catering, maintenance and security services. Access to this area has traditionally been provided through Gate 35 at the northern end of Services Road. However, this caused congestion at the Southern Terminal Precinct and was recently relocated to Gate 27, which provides access from the newly constructed section of Francis Briggs Road. A dedicated goods and waste management (logistics centre) facility is being planned.

9.3 Ground Transport Demand

Melbourne Airport has developed detailed future traffic projections using a modelling and forecasting process. The airport has considered air patronage growth, land use development and projected employment when developing transport demand projections for the next 20 years.

This section discusses existing and future passenger, employment, commercial, and freight and logistics demand. Graph 9.1 shows percentage comparisons of air passenger vehicle trips which comprise the majority of traffic demand at Melbourne Airport.

Graph 9.1: Traffic Demand by User Type

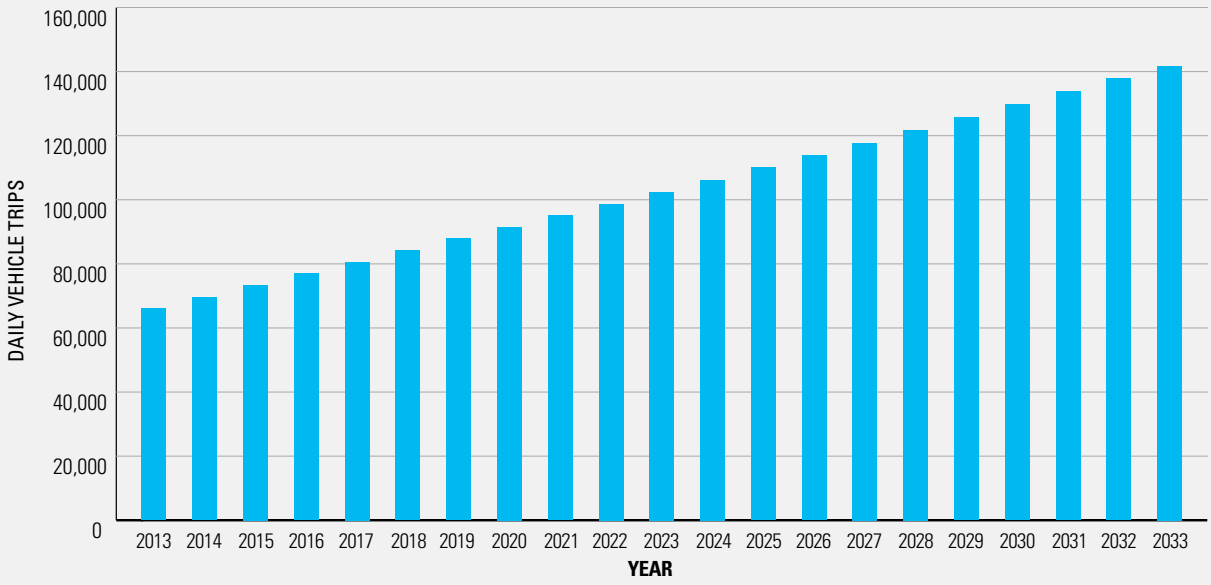


9.3.1 Passengers

Passenger movement and amenity is a fundamental consideration for the Ground Transport Plan. Melbourne Airport currently has approximately 29.1 million passengers per year, generating the equivalent of around 62,000 vehicle trips per day.

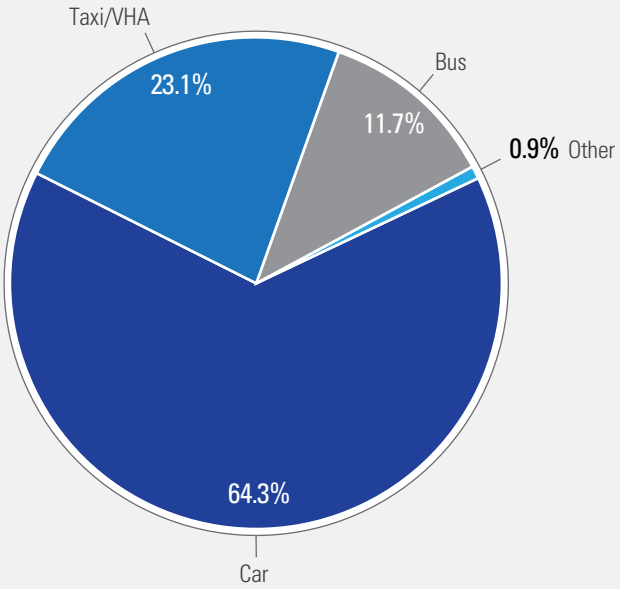
With passenger numbers forecast to reach 64.37 million by 2033, the airport could generate up to 140,000 passenger vehicle trips per day if current mode splits prevail. This will lead to increased demand for parking and circulation space. The data is only forecasts and will be reviewed on a regular basis, including benchmarking, to reflect any modal shifts. Graph 9.2 shows the projected increases in daily vehicle volumes if current mode splits prevail. This data highlights the importance of increasing the use of high-occupancy vehicles.

Graph 9.2: Projected Growth in Daily Passenger Vehicle Trips for 2013–2033



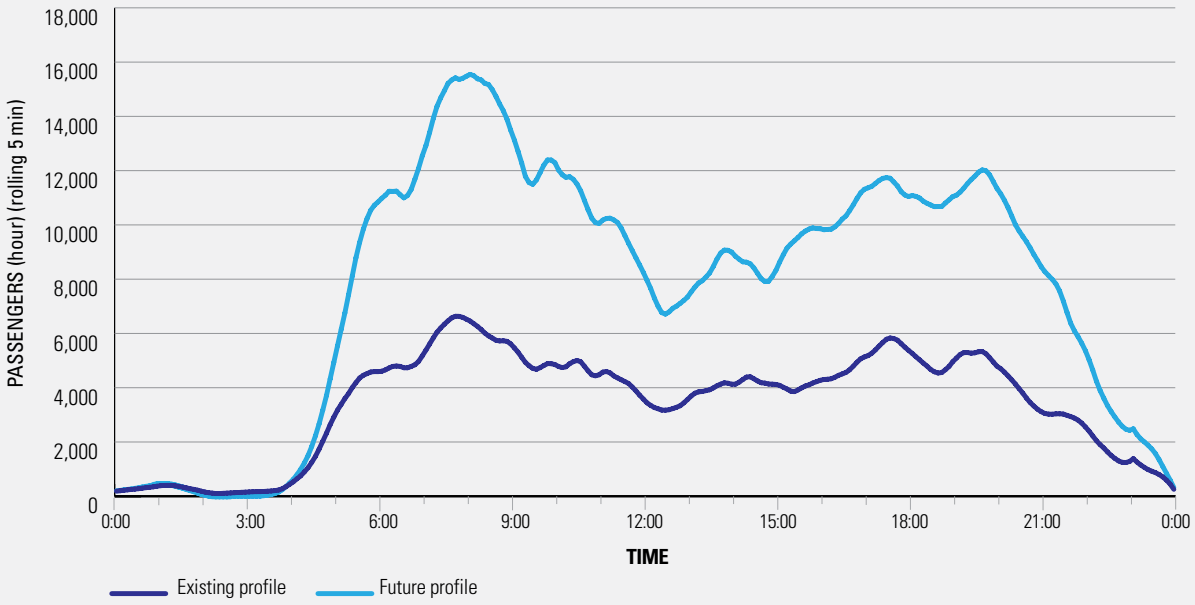
A breakdown of existing passenger transport is shown in Graph 9.3. This allocation has been projected to stay consistent between now and 2033. However, these proportions could be furthered altered through future infrastructure and service changes.

Graph 9.3: Existing Passenger Travel



It is also important to understand the profile of passenger demand across the day. The peak period for passenger movements reflects air travel patterns, with peaks in the morning and evening. Graph 9.4 shows the existing and future passenger movement profiles (based on projected Melbourne Airport timetables).

Graph 9.4: Existing (2013) and Future (2033) Passenger Movement Profiles



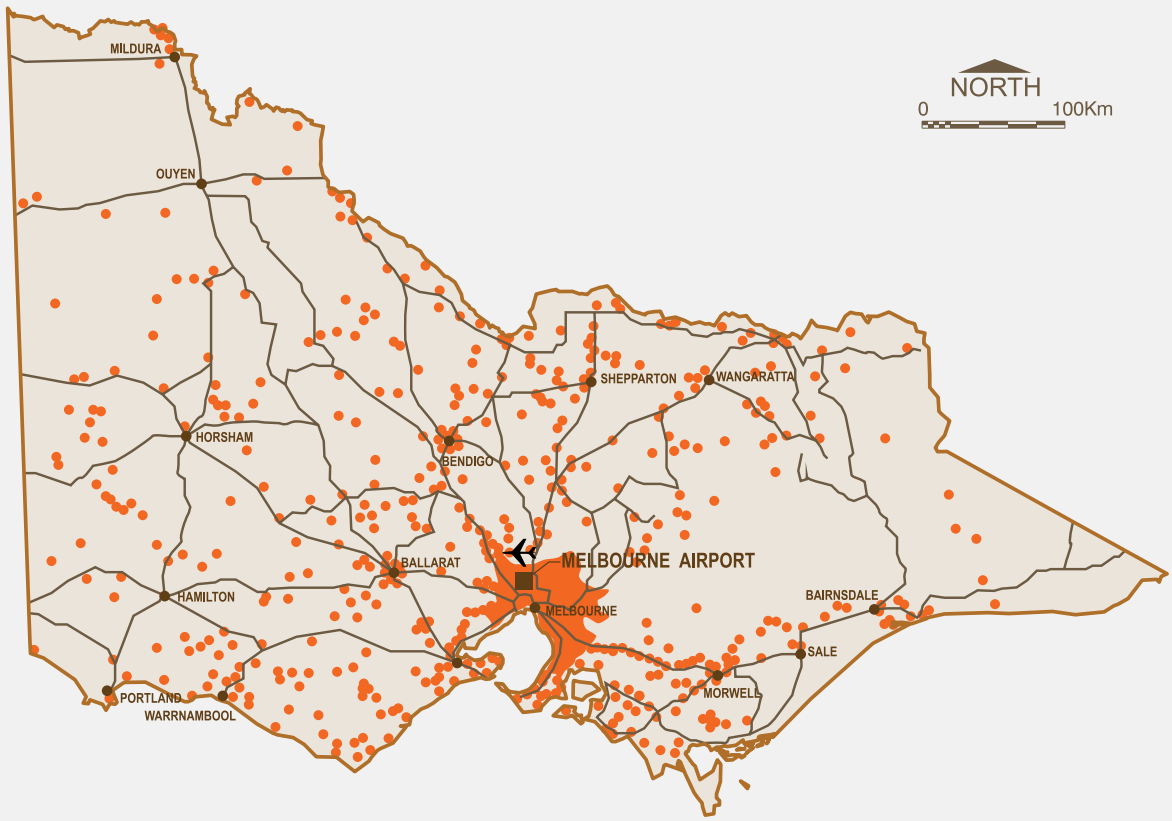
Passenger demand for trips between the airport and the Melbourne CBD is expected to remain high. Growth in the western and northern suburbs of metropolitan Melbourne will also increase passenger trips.

Map 9.2: Passenger Demand for Trips to Melbourne Airport

Map 9.2 shows the distribution of existing and future passenger trips from greater metropolitan Melbourne to the airport. This is a broad overview of how passenger trips from each area of Melbourne are expected to evolve over the next 20 years. The figure shows the percentage of total trips coming from each area of Melbourne now and in the future.

While passenger participation from rural and regional Victoria is lower in line with the state population distribution, it remains important and significant. Map 9.3 gives a graphic indication of passenger distribution. This data was collected during the latter years of the last decade as part of the Melbourne Airport Ground Travel Study and confirms the distribution aligns with population density.

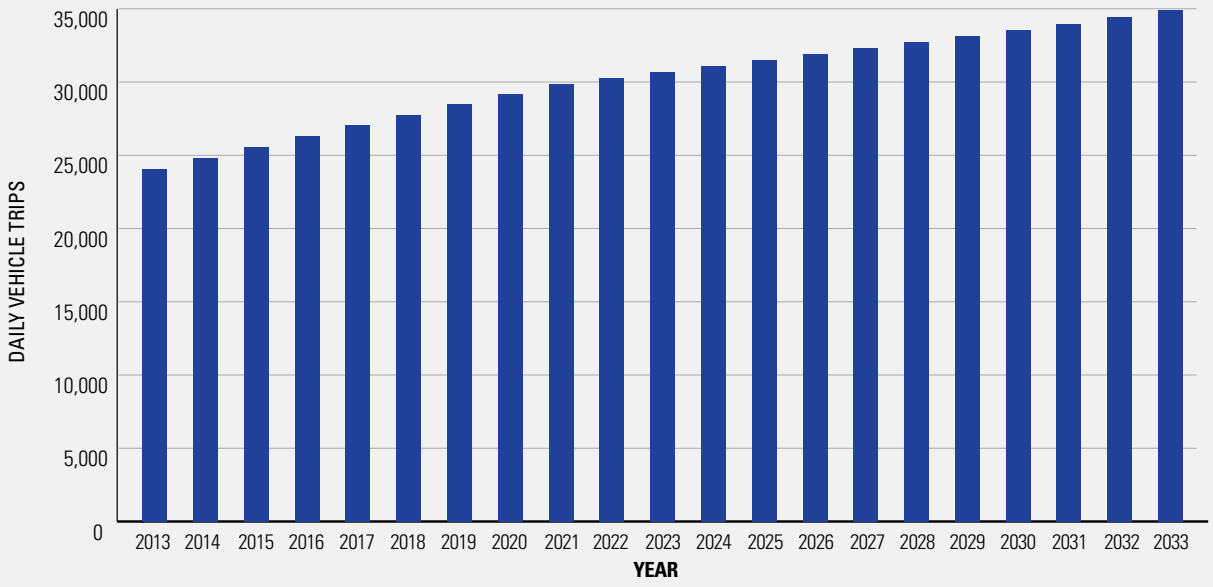
Map 9.3: Distribution of Origin and Destination Passenger Trips using Melbourne Airport



9.3.2 Employment

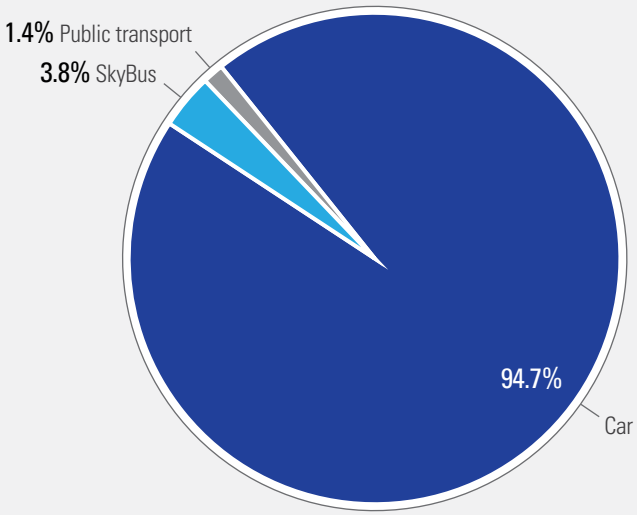
Melbourne Airport employees form a substantial component of the total transport demand. In 2013, around 14,300 employees generated approximately 23,000 vehicle trips per day. The number of employees supporting Melbourne Airport's growth is expected to increase to approximately 23,000 by 2033, with modelling suggesting this would equate to 35,000 daily vehicle trips. Graph 9.5 shows the projected increases in employee traffic volumes between 2013 and 2033.

Graph 9.5: Projected Employee Vehicle Trips for 2013–2033



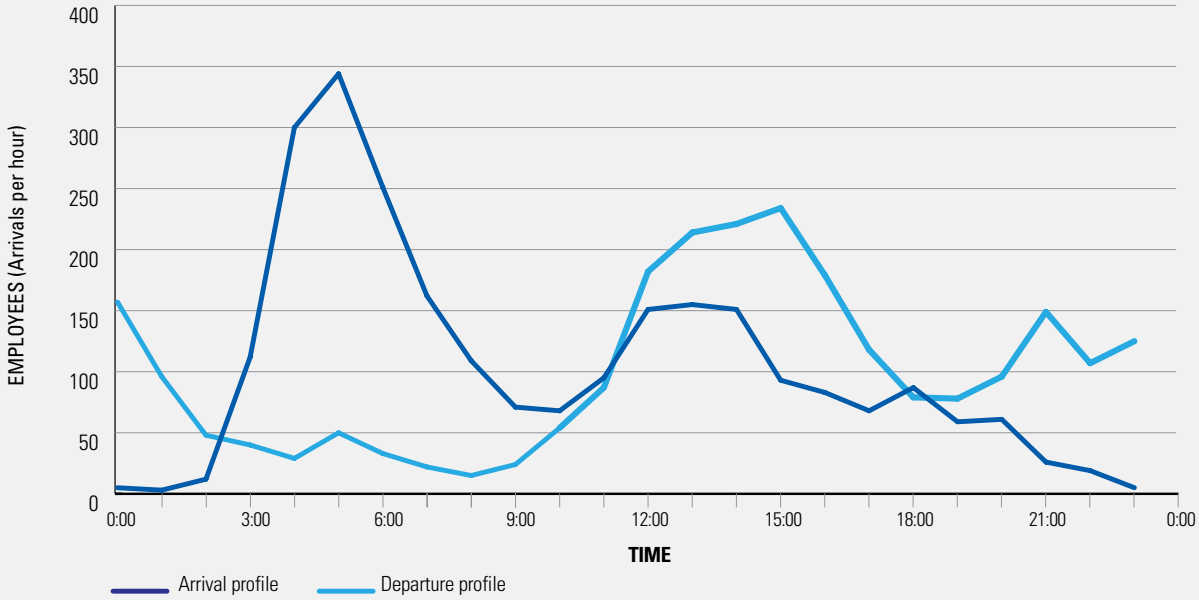
Based on Melbourne Airport staff surveys, current employees overwhelmingly rely on car travel, with approximately 95 per cent of employees driving to and parking at the airport. The existing and future projected mode share is shown in Graph 9.6, based on the current scenario of modal splits prevailing. While service planning needs to acknowledge this conservative position, it does not distract from the objective of enabling rail services to the airport. The rail link, along with enhanced bus services, will achieve a stronger mode shift.

Graph 9.6: Existing Employees' Travel Mode Share



Peak employee transport demand periods place the greatest stress on the ground transport network, particularly if they align with passenger demand peaks. Peak periods for employee movements were estimated based on arrivals and departures at the Melbourne Airport staff car park (refer Graph 9.7). Employee trips are predominantly made between 5am and 6am, and between 2pm and 3pm, and present an additional peak to passenger demand.

Graph 9.7: Existing Employee Arrival and Departure Profile

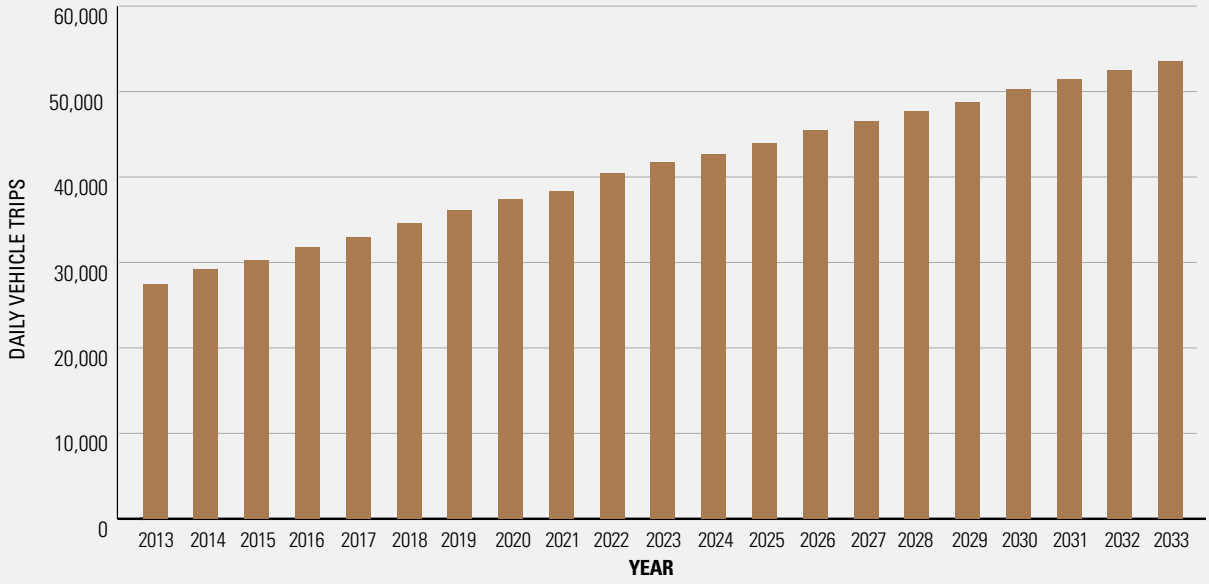


9.3.3 Commercial Development, Freight and Logistics

The wider airport boundary houses a significant number of airport-related and non–airport related businesses. Trips associated with commercial development and freight and logistics make significant demands on the ground transport network.

Based on current land use estimates and accepted traffic-generation rates, there were approximately 25,000 vehicle trips associated with commercial development and freight and logistics per day in 2011. This number is projected to increase to approximately 54,000 daily vehicle trips in 2033. Graph 9.8 shows the projected increases in commercial vehicle volumes.

Graph 9.8: Projected Growth in Daily Commercial Development, Freight and Logistics Trips, 2013–2033

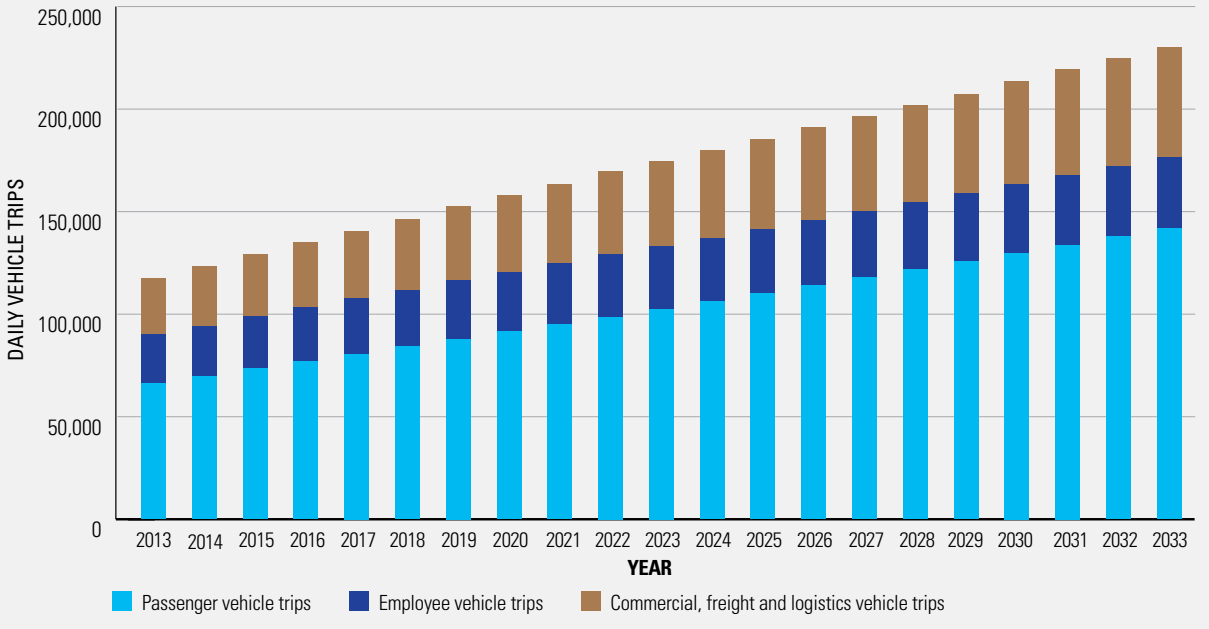


9.3.4 Total Vehicle Demand

All vehicles in the Melbourne Airport precinct will generate approximately 120,000 vehicle trips per day in 2013. Increases in passenger, employee, commercial development, and freight and logistics trips are projected to generate an upper-limit estimate of 225,000 vehicle trips per day in 2033.

Graph 9.9 shows the projected upper-limit increases in total vehicle volumes, based on the need to plan for the worst case possibility while pursuing mode change.

Graph 9.9: Projected Upper Limit Increases in Total Vehicle Volumes



9.4 Delivering Ground Transport into the Future

The existing road infrastructure has served the airport well over the last 40 years. As highlighted above, demand for air travel is increasing, and so will the need for improved ground transport capacity. To support the aviation and business developments outlined in this Master Plan, Melbourne Airport recognises that major investment into the ground transport network is required. This Ground Transport Plan articulates the vision to improve the ground transport network over the next 20 years, with a focus on the first five years. The Plan identifies changes that are required within the airport's transport network and, where appropriate, how the wider state and local transport networks will also need to grow.

There are four areas of focus that will provide significant and sustainable improvement to transport access to the airport. These will commence in the next five years and continue beyond 2018.

1. **Additional internal airport road capacity.** The development of a new, primarily elevated high-capacity road system will supplement existing roads and provide extensive additional capacity. This program includes a number of high-efficiency roads to be built within the airport that will alleviate current congestion. Figure 9.4 shows the detail of these road improvements including:

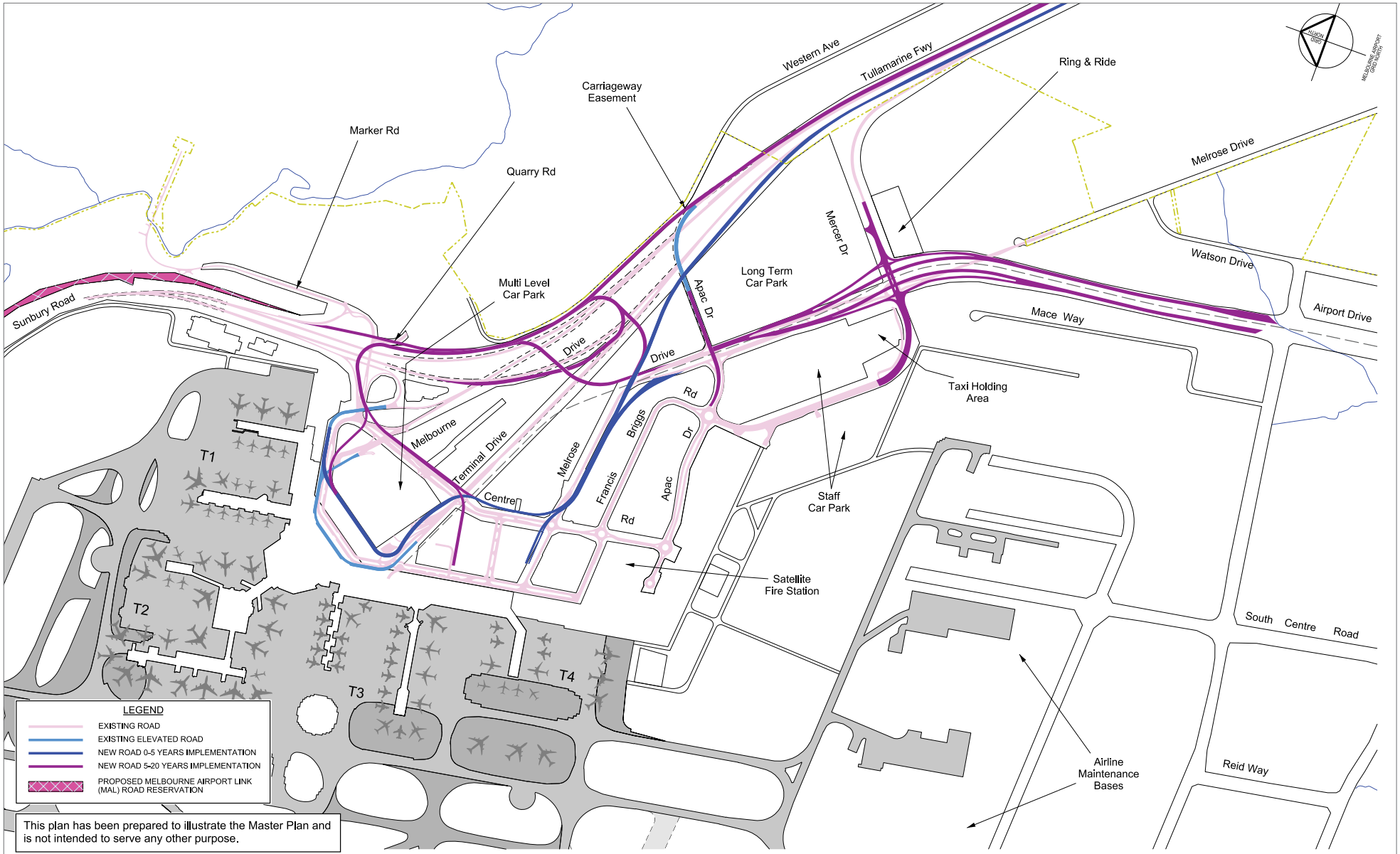
    a. The construction of a single-direction elevated loop road, which will be built above existing roads and allow intersection-free access to the terminal precincts. This network will provide considerably better access in and out of the airport via the Tullamarine Freeway and the M80 Ring Road, and from the north via Sunbury Road in the short term and the Outer Metropolitan Ring Transport Corridor once constructed. This loop road will also remove traffic from the current road network, improving access for the general day-to-day operations at the airport. An artist's impression of the elevated road network is provided over page. It is proposed to build the loop road in stages over several years. The first stage is expected to begin in 2015.

    b. The completion of the Airport Drive route connecting the M80 Ring Road to the airport. The construction of this major arterial road, also within airport land, will allow more direct and congestion-free access to the airport for passengers who use the M80 Ring Road from the north-east and the west. This link also diversifies the high-capacity access in the event of an incident on the Tullamarine Freeway. This project is programmed to commence in 2014, subject to planning and board approval. This project will also see the construction of a bicycle path along this alignment, connecting two existing Principal Bicycle Network routes on Sharps Road and Melrose Drive.

2. **Ground transport hubs.** To further streamline traffic flow around the front of the terminal, the Master Plan includes ground transport hubs that separate different transport modes. The hubs will be built to allow passenger pick-up and drop-off access to public transport and parking. The first transport hub is proposed as part of the Southern Precinct Program.

3. **Multi-mode access.** Providing multi-mode access, with good public transport links, into the airport will be critical. The Master Plan and proposed developments make provisions for the development of a rail link, including reserving land to be used for rail. This is consistent with the Albion-East alignment identified as the best route for a Melbourne Airport Rail link by the State Government. The decision to build a rail link ultimately rests with the Victorian Government. Melbourne Airport will continue to work with the Victorian Government to progress this project.

    The additional capacity within the road network will also provide greater opportunity for dedicated bus lanes within the current road system, improving high-occupancy vehicle transport. Given rail capacity constraints closer to the Melbourne CBD that are the subject of separate state-funded projects, it is likely that a rail link will be outside the five-year focus of this Master Plan. As an interim measure, the Master Plan has identified opportunities to prioritise and provide additional bus services to the airport, and provide better links from metropolitan and regional rail services to the airport. Melbourne Airport will continue to work with PTV on these initiatives.



MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Road Network Improvements

Fig. 9.4

4. **Additional road capacity and access points into the airport.** Currently, Melbourne Airport is primarily accessed via the Tullamarine Freeway. The Tullamarine Freeway is just two lanes wide at critical locations heading north past Essendon Airport, and north of the M80 Ring Road, and is often congested. Residential development in the outer northern and western suburbs of metropolitan Melbourne will put further demands on this freeway.

Additional road capacity and access points will be required. This will include finalising the M80 Ring Road works that will reinforce the benefits of the Airport Drive extension. Funding of upgraded capacity on the Tullamarine Freeway is a priority for Melbourne Airport.

In addition, Melbourne Airport also intends to improve the bus, taxi and freight system and enhance walking and cycling networks. The sections below outline the implementation of this overarching strategy.

Artist's Impression of the Elevated Loop Road

9.5 Melbourne Airport Ground Transport Plan (0-5 years)

The next five years of Melbourne Airport's development will involve significant transport improvements, including a focus on implementing the foundations of the four strategies outlined above. There will also be a number of key projects for each mode of transport, which will improve access into the airport and address specific congestion issues.

Tables 9.3 and 9.4 outline the detailed list of Ground Transport Plan implementation actions for the next five years. Table 9.3 discusses the actions that the airport is to deliver, largely within airport land. Table 9.4 lists the initiatives that impact airport growth and which require attention in the life of the Master Plan but are the responsibility of external agencies. Melbourne Airport will continue to support the relevant agencies in their achievement of these outcomes.

Table 9.3: Melbourne Airport Five-Year Ground Transport Action Plan

Recommendation	Responsible authority
Internal roads	
Implement the upgrades associated with the Southern Precinct Program	APAM
Complete the forecourt redevelopment	APAM
Duplicate Melrose Drive	APAM
Extend Airport Drive and realign Link Road	APAM
Commence the implementation of the elevated loop road	APAM
Commence the realignment of relevant sections of Melrose Drive in conjunction with the development of Airport Drive	APAM
Complete Watson Drive in conjunction with the Melrose Drive realignment	APAM
Construct Melbourne Airport Business Park additional roads, including Link Road West and Sky Road	APAM
Transport infrastructure	
Plan for transport hubs	APAM
Build first transport hub as part of new Southern Precinct Program	APAM
Vehicle parking	
Implement the transport hub within the Southern Precinct	APAM
Increase long-term ground-level car parking	APAM
Minimise shuttling of rental vehicles	APAM/Rental
Develop additional staff car parking capacity	APAM
Relocate Ring and Ride to a more convenient location with access to the major arterials	APAM
Bus	
Consolidate bus routes on Melbourne Airport roads	APAM/PTV
Implement bus kerbside operation improvements on airport roads	APAM/PTV
Investigate combining bus and airline ticketing at the point of sale	Airlines/APAM
Provide an improved bus interchange facility in the Main Terminal Precinct	APAM/PTV
Rail	
Assist the state to plan for the Melbourne Airport rail link	APAM

Recommendation	Responsible authority
Taxi/VHA	
Relocate existing taxi-holding infrastructure	APAM
Consider a taxi-sharing program at Melbourne Airport	APAM
Improve management of VHA operations within the airport	APAM/VTD
Active transport	
Provide end-of-trip facilities at places of employment at Melbourne Airport	APAM
Improve the condition of existing on-road and off-road paths within airport land	APAM
Improve footpath and shared path network at Melbourne Airport	APAM
Provide pedestrian separation through the Southern Precinct	APAM
Complete Airport Drive share path, linking M80 Ring Road paths to Moonee Ponds Creek path system	APAM
Demand management	
Develop an Operational Traffic Management System for Melbourne Airport on the Elevated Loop Road	APAM
Create a green travel plan for Melbourne Airport staff	APAM
Continue provisions for electric vehicle parking	APAM

Table 9.4 identifies important projects that will enable airport growth and ground transport capability where the responsibility for delivery lies with external agencies. Melbourne Airport will continue to work with these agencies to achieve the necessary outcomes.

Table 9.4: External Agency Five-Year Ground Transport Initiatives

Recommendation	Responsible authority
External road	
Investigate feasibility of widening the Tullamarine Freeway	VicRoads
Investigate opportunities that will maintain timely public transport to airport in peak periods	VicRoads
Bus	
Improve the frequency and hours of operation for existing public bus services	PTV
Provide new public bus routes	PTV
Investigate new express bus routes	PTV
Investigate junction priority for buses	PTV/VicRoads
Integrate SkyBus ticketing into Myki	PTV
Rail	
Plan for the Melbourne Airport rail link	PTV/APAM

9.5.1 Internal Roads

The elevated loop road and the accompanying connections to the existing roads and transport hubs is the critical piece of infrastructure that will shape the internal road network. As a matter of priority, work will commence on designing and implementing the elevated loop road. Given the scale of the project, valued at over $300 million, the new road will be built in stages. The first stage (subject to approval) is programmed to start in 2014–2015 and will target the existing intersections that cause the congestion to and from the airport and the Tullamarine Freeway.

Francis Briggs Road is being extended south from APAC Drive to connect to Melrose Drive at the Mercer Drive intersection. This will provide dedicated access for taxis from the primary taxi-holding area. It will enable the airport to maintain response time for passengers and surety for the necessary taxi response times in the terminal precincts. The road will also provide access to the new Airside Gate (27) to service the logistics supply to the commercial sites in the Airside Precinct. Francis Briggs Road will also allow access to the taxi-holding area and relocated staff car park, providing additional capacity on Melrose Drive by removing congestion arising out of the previous vehicle entries and exits.

Melrose Drive will enjoy the benefit of the duplication of the final section just east of Centre Road. This will reinforce access into the Southern Precinct Terminal area and to the freight precinct.

Terminal Drive will also benefit from an additional lane and improvements to the intersection with Centre Road, which will help with capacity until the elevated loop road is built.

The Airport Drive extension will complete the approach to the airport from the M80 Ring Road. The Airport Drive extension will provide a secondary entry point into the airport precinct and relieve some of the congestion on the Tullamarine Freeway and the amount of airport traffic using Melrose Drive. The Airport Drive extension will consist of a four-lane divided road (two lanes in each direction), with the provision to expand to six lanes at a later time.

The existing section of Airport Drive between the M80 Ring Road and Sharps Road is currently a four-lane divided road managed by VicRoads. It is understood there are no current plans for that section to be widened, noting that there are physical constraints that may impact that possibility.

9.5.2 Melbourne Airport Forecourt Development

The growth of the internal road network will improve capacity within the airport. However, there is an equally important need to maintain a corresponding capability for passenger drop-off and pick-up within terminal precincts. The main forecourt precinct underwent major renovation during 2011, 2012 and 2013 that has involved creating additional traffic lanes for drop-off and pick-up in front of the T1, T2 and T3 terminals, and streamlining the use of the area for the various modes of transport including taxis, bus services and general private vehicles. Work continues to improve the precinct's amenity, safety and security.

Equally important is the Southern Precinct Program. Planning is underway to separate pedestrians and vehicles and provide high capacity access to and from the road network by developing a ground transport hub. This facility will work in harmony with the elevated loop road to minimise, if not eliminate, congestion for the life of this Master Plan.

9.5.3 External Roads

Reliable and efficient transport links between Melbourne Airport, the CBD and the metropolitan area are critical to ensure there are appropriate levels of access to the state's major airport. Currently 80 per cent of all vehicles accessing the airport use Tullamarine Freeway. Given the reliance on this arterial road, and the current congestion levels that occur, Melbourne Airport believes the State Government must consider widening the Tullamarine Freeway as a matter of priority, particularly the section that continues to impact airport-bound traffic.

9.5.4 Transport Hubs

Separating different modes of transport is a key implementation principle of the Ground Transport Plan. Melbourne Airport will commence planning for these transport hubs to allow passenger pick-up and drop-off, access to public transport and parking.

Safety and security is a priority for Melbourne Airport. As such, the planning and design of the transport hubs will consider this. The first transport hub, as part of the Southern Precinct Program, will be completed within the next five years on the lower level of a proposed transport hub. This facility will embrace safety and security principles with a clear separation from the front of the terminal and with appropriate management of parked vehicles.

The Ring and Ride Zone provides drivers with a safe waiting area to collect arriving passengers. It provides free parking for up to 20 minutes. This zone will be relocated to a more convenient location with access to the major arterials.

9.5.5 Vehicle Parking

The majority of additional vehicle parking will be associated with the Southern Precinct Program. The transport hub associated with the new terminal will provide an additional 2,800 spaces for parking, passenger drop-off and pick-up as well as bus and shuttle interchange.

Melbourne Airport also proposes expanding ground-level parking in line with monitored growth in demand. This is expected to provide additional long-term parking spaces and more staff car parking spaces within the next five years.

9.5.6 Rail

Melbourne Airport believes a rail link is critical for future airport development. The airport continues to make provisions for the development of a rail link, including reserving land to be used for rail, and earmarking an appropriate location for the station in conjunction with PTV.

Given the feasibility, planning and funding required for a new rail line, it is unlikely that a rail link to the airport will be operational within the next five years. As such, interim measures will have to be considered and these are outlined below.

There may be opportunities to further improve links from metropolitan and regional rail services to Melbourne Airport, using existing or proposed connecting bus routes from Broadmeadows, Watergardens, Deer Park, St Albans, Sunshine and Footscray stations.

9.5.7 Bus

A renewed focus on building capacity and encouraging the use of multi-passenger vehicles, including all forms of public transport, will be a high priority. Bus access will be particularly important, given transport to the airport at this stage is dependent on road capacity. The introduction of the proposed elevated road network and the Airport Drive extension will benefit more than just the vehicles using these roads.

Public transport high-occupancy vehicles will benefit from half the traffic shifting from the existing roads to the new network. This will provide opportunities for more reliable routes into the terminal precincts for the remaining vehicles, including public transport. There may be the possibility of dedicated lanes, all of which is currently being investigated with the development of the elevated road network planning project. Specific details are not yet available; however, capacity improvements are expected.

A new bus facility will be located in the transport hub associated with the Southern Precinct Program.

9.5.8 Taxi/Hire Cars (VHA)

Just under a quarter of passengers use taxi or hire cars (VHA) to access the airport. Recent improvements to the VHA waiting area have been achieved through the forecourt development. The reliability and timeliness of the taxi feed system is being reinforced through the construction of Francis Briggs Road. This will alleviate the intersection constraints that exist at the Mercer Drive roundabout and provide a dedicated road to the taxi feeder area close to the terminals.

The most significant initiative to provide long-term traffic efficiency for taxi services and road-based public transport will be the construction of the proposed elevated loop road. The road will remove half the traffic from the current road network. That reduction in traffic will enable more effective vehicle movement and an opportunity to introduce dedicated lanes in critical locations. These opportunities are currently being planned.

The efficiency and effectiveness, in terms of average vehicle occupancy, of taxi movement within the airport could be significantly improved. Melbourne Airport is committed to working with the Victorian Taxi Directorate, Taxis Services Commission or relevant authority on improving taxi movements. Over the next five years, the airport proposes to encourage and trial new taxi-sharing initiatives and make improvements to VHA services.

Melbourne Airport could also benefit from changes identified in the State Government's Taxi Industry Inquiry. The airport will work with the Victorian Government on implementation of the Inquiry's recommendations.

9.5.9 Active Transport

Active transport, where possible, will continue to promote walking and cycling. This is primarily aimed at providing active transport opportunities for employees.

The proposed improvements include enhancing the existing bicycle path network and the quality of existing network infrastructure, and providing additional end-of-trip facilities such as safe, accessible storage for bicycles and change facilities for cyclists. This active transport network will be significantly improved by constructing a shared pedestrian and bike path adjacent to the Airport Drive extension, which will link two roads that are currently part of the Principal Bicycle Network in Sharps Road and Melrose Drive. The same path will also enable the airport to be connected to the M80 Ring Road bike network in the future.

The cycle networks will also benefit from half the traffic shifting from existing roads to the new elevated loop road when it is completed. This will provide safer routes into employment areas and greater separation of pedestrians and cyclists from vehicles. The details of any opportunities are currently being investigated as part of the elevated road network planning project. Specific details are not yet available as the upper road network routes are being finalised, which in turn will influence the traffic uses, capacities and opportunities on the existing roads. However, active transport improvements are expected.

9.5.10 Freight

As demand increases, freight access to and within Melbourne Airport will be improved with the development of the elevated road network, which will separate freight vehicles from passenger vehicles. The first steps have been realised with the recently completed APAC Drive on-ramp to the Tullamarine Freeway. Over the next five years, the Airport Drive route will be established to provide access from the Melbourne Airport Business Park, rather than direct traffic through the terminal precinct. These initiatives are supported by actions identified in the Victorian Freight and Logistics Plan.

9.6 Future Ground Transport Implementation System (six–20 years)

Within the six to 20-year period, Melbourne Airport will commit to implementing the Ground Transport Plan. This will achieve Melbourne Airport's vision for an interconnected ground transport system that supports safe, efficient and reliable journeys for all modes of transport and airport users.

In addition to increasing passenger demand and employment expected at Melbourne Airport, a number of external factors will contribute to or affect transport access. These include an ageing population; the increasing role of technology; the move towards high-productivity vehicles for moving goods; limitations on the supply of non-renewable energy sources; a continued focus on equity, security and safety; and the potentially increasing role of the private sector in infrastructure investment. These external factors will be considered when implementing the plan.

9.7 Melbourne Airport Six to 20-Year Ground Transport Action Plan

Table 9.5 lists the Ground Transport Plan implementation actions over the next six to 20 years.

Table 9.5: Six to 20-Year Action Plan

Recommendation	Responsible authority
Internal road	
Complete the elevated loop road	APAM
Widen Airport Drive to six lanes	APAM
Duplicate South Centre Road	APAM
Extend Sky Road (east and west)	APAM
Rail	
Plan with PTV for an underground rail station and rail alignment	PTV/APAM
Bus	
Address bus road space priority on Melbourne Airport roads	PTV/VicRoads
Investigate dynamic bus bay allocation	APAM/PTV
Work with PTV to trial off-airport check-in at external sites e.g. Southern Cross Station	APAM/PTV/ Skybus/ Airlines
Provide a transport interchange facility	APAM/PTV
Active transport	
Construct new on-road and off-road links that provide internal access and, where possible link, with paths external to the airport	APAM
Private vehicle parking	
Increase long-term ground-level car parking	APAM
Develop additional at-grade car parking capacity	APAM
Develop additional multi-level car parking capacity	APAM
Develop additional staff car parking capacity	APAM

9.8 Six to 20-Year Ground Transport Initiatives (External Agencies)

Table 9.6 identifies important projects that will enable airport growth and ground transport capability where the responsibility for delivery lies with external agencies. Melbourne Airport will continue to work with these agencies to achieve the necessary outcomes.

Table 9.6: Six to 20-Year External Agency Initiatives

Recommendation	Responsible authority
External road	
Investigate opportunities to maintain timely public transport on the Tullamarine Freeway to Melbourne Airport	VicRoads
Construct the Bulla Bypass	VicRoads
Bus	
Work with airlines to trial off-airport check-in at external sites e.g. Southern Cross Station	APAM/ Skybus/PTV/ Airlines
Demand management	
Roll out TravelSmart for Melbourne Airport. TravelSmart is a Victorian Government initiative to reduce people's dependency on cars and encouraged them to choose sustainable transport alternatives such as cycling, walking and public transport.	PTV
Rail	
Airport rail link implementation	PTV

9.8.1 Internal Roads

Completing the elevated loop road will be a priority. This critical piece of road infrastructure will substantially increase capacity and reduce travel times. The elevated loop road will be substantially completed during the life of this Master Plan; however, there will be ongoing refinement of the connections to the existing underlying roads, ground transport hubs, forecourts and car parks over subsequent years.

Further development of the underlying road network will continue, providing local access to airport commercial development as it occurs.

9.8.2 External Roads

The most immediate need within the external road network is to increase capacity on the Tullamarine Freeway, and the State Government is considering funding to further that initiative. Victoria's Infrastructure Australia submission sought Commonwealth funding to develop 'managed motorways' that, if successful, will benefit the Tullamarine Freeway.

The VicRoads 'managed motorway' is the term used to describe a motorway that brings together complementary technologies to maximise the road infrastructure's performance. A suite of communication systems and coordinated traffic management tools create a fully managed road environment that combines intelligence, control and information.

The proposed road transport system will need to connect with new road links, most notably the Outer Metropolitan Ring Transport Corridor in the long term and the Bulla Bypass in the medium term. Planning for these initiatives is currently underway, particularly for the Bulla Bypass project. However, construction is unlikely to occur within five years for either project. These initiatives will ultimately provide additional capacity for traffic from the growth corridors to the north, north west and west. It will also safeguard the existing roads' effectiveness as they are affected by rapid population growth in these areas.

Much of the improvement on the Tullamarine Freeway will not occur in the next five years but will be critically needed, and expected, within the 20-year timeframe of this Master Plan.

9.8.3 Transport Hubs

The further development of the purpose-built transport hubs will streamline vehicle access into the airport. These hubs will also move private vehicles away from the front of terminals to allow expansion and improvement of pedestrian spaces. In addition, the hubs will allow travellers to remain under cover. The hubs provide the opportunity to integrate potential new check-in technologies into the transport journey. As these systems are developed and refined, they will be incorporated into strategic locations including transport hubs.

9.8.4 Vehicle Parking

In the long term, further parking facilities will be required to provide the parking bays proposed for development in the next 20 years. Depending on the type of parking, these facilities would ideally be located close to the existing or proposed terminal areas and visible from main roads. Melbourne Airport remains committed to offering users a wide range of value-for-money parking options. These will range from remote economy car parks to premium undercover locations close to terminal precincts. The multi-level structure with parking and a ground transport hub that is currently being designed as part of the Southern Precinct Program is a good example.

The new elevated road network within the airport will allow greater access and therefore a greater variety of car parking options that, in general, will result in improved proximity to terminals and reduce travel time for airport users.

9.8.5 Bus

In the long term, the bus system will be expanded and improved to provide more reliable, comfortable, safe, affordable and frequent services, with comparable or better travel times than for private vehicles. The new bus network will connect key activity centres and provide a viable and equitable transport choice for all airport trips.

The new elevated road network will provide buses at ground level with priority access to new transport interchanges with high-quality facilities, retail areas, and dynamic information on arrival and departure times.

A renewed focus on building capacity and multi-passenger vehicles, including all forms of public transport, will be a high priority for Melbourne Airport and all levels of government. This includes developing traffic management systems as congestion grows.

Increasing bus usage and the need for additional services will be important, particularly if a rail link continues to be unavailable. In that event, bus services will need to fill the void so that the imperative of increasing the use of high-occupancy vehicles continues to be met. The increase in bus services would cater for regional and metropolitan passengers.

9.8.6 Rail

In 10 years, Melbourne Airport will be serving more than 40 million passengers a year. A rail link is expected to carry more than six million passengers a year, or the equivalent of more than 11,000 private vehicle trips a day, delivering major productivity improvements and environmental benefits.

A new heavy rail link is proposed to provide access to the terminals precinct. The services will be frequent and reliable, with high-quality interchange facilities closely connected with the terminals. Melbourne Airport is aiming to increase all trips to the airport by public transport by 2022 to 15–25 per cent, making the rail link vital. In the long term, Melbourne Airport seeks public transport usage of no less than 30 per cent.

The Victorian Government identified a corridor for a rail link to the airport in the Environmental Impact Study undertaken as part of the Melbourne Airport Strategy 1990, and reserved land for the rail link in May 2005. Over the past five years, the former Department of Transport (now the Department of Transport, Planning and Local Infrastructure), Public Transport Victoria and Melbourne Airport have worked together to refine the proposed rail corridor. These efforts have reduced the length of the proposed underground rail from previous proposals. This refined corridor was considered as part of the new elevated road network development. The corridor is consistent with the Albion-East alignment which was identified as the best route for a Melbourne Airport Rail Link by the State Government.

The rail link corridor will be accommodated within the central reserve of the new road link along Airport Drive, continuing from Mercer Drive to a station in the main terminal precinct. According to the proposal, the corridor will continue to be refined with Public Transport Victoria to ensure its viability. The goal is to preserve the options of above-ground, ground-level and below-ground systems wherever possible. Under the ultimate plan for airport expansion, new rail links would be considered to link any new terminals where travel distances become onerous.

9.8.7 Taxi/VHA

Many of the road improvements outlined in this Master Plan will increase the capability of the taxi system to move large numbers of passengers. Within the life of this plan and beyond, specific influences will impact on current operating systems, particularly in relation to security requirements.

9.8.8 Freight

The local road network, particularly within airport land, will have local access roads created as the business park develops, including the freight terminal area. These will be constructed to standards that maximise efficiency, particularly freight movement. Airport Drive and the elevated loop road will reduce intersection conflict and congestion and have roads that accommodate freight transport. Within the next 20 years but following this Master Plan, there will be refinements to the elevated loop road and Airport Drive will be upgraded to six lanes.

On the external road network, the additional lane on the Tullamarine Freeway and the Bulla Bypass Road will provide valuable capacity to move freight into and from the airport.

9.8.9 Demand Management

As the airport grows, the need to roll out initiatives to encourage people to use high-occupancy vehicles or walk or cycle becomes increasingly important. Each will be embraced as detailed in the relevant section of the Master Plan. Technology and communications will also be developed to improve existing network capability.

A partnership between Melbourne Airport and Commonwealth, State and local governments and private sector operators is expected to support infrastructure planning and delivery.

9.8.10 Active Transport

Following on from the completion of the Airport Drive shared path within the life of this Master Plan, the Outer Metropolitan Ring Transport Corridor and the Bulla Bypass projects will be planned, with the latter likely to commence construction within the life of this plan. The Bulla Bypass project will see an extension of the off-road bicycle paths that will enable greater safety on Sunbury Road, a component of the Principal Bicycle Network.

In addition, during this period the lower road network will be significantly refined as a result of shifting traffic from existing roads to the elevated loop road. ‘On road’ paths will become viable and will be developed. This will reinforce the connection to other existing active transport facilities and establish more flexible to internal movements.

9.9 Ultimate Ground Transport Implementation System (Beyond 20 years)

The ultimate implementation plan for improvements to the ground transport system is outlined in Table 9.7 and 9.8 which will be addressed outside the next 20 years.

Beyond the 20-year period, Melbourne Airport will continue to implement ground transport capability. This will also improve its vision for an interconnected ground transport system that supports safe, efficient and reliable journeys for all modes of transport and airport users.

The specific details of the longer term initiatives are clearly less refined. While all aspects of ground transport will continue to grow, there are two specific elements that can be acknowledged in this plan.

Table 9.7: Ultimate Action Plan

Recommendation	Responsible authority
External road	
Plan for road access to future terminals	APAM/ VicRoads
Rail	
Plan for shuttle connections to future terminals	PTV/APAM

Table 9.8 identifies important projects that will enable airport growth and ground transport capability where the responsibility for delivery lies with external agencies. Melbourne Airport will continue to work with these agencies to achieve the necessary outcomes.

Table 9.8: Ultimate External Agency Initiatives

Recommendation	Responsible authority
Provide alternative access to the M80 Ring Road	VicRoads
Construct the Outer Metropolitan Ring Transport Corridor	VicRoads
Plan for road access to future terminals	APAM/ VicRoads

9.9.1 Internal Road Network

The new elevated road network was designed to supplement existing roads and provide additional capacity well beyond this Master Plan. Modelling using the Melbourne Airport Landside Traffic Model confirms that the current queues onto the Tullamarine Freeway as a consequence of the Terminal Drive/Centre Road intersection should not occur under the new network well beyond the 20-year horizon. This road network provides a new high-efficiency system above the current network, allowing for considerable additional capacity.

The airport's key challenge beyond 20 years will be increasing the capacity within the forecourt area or ground transport hubs to match the high level of road capacity.

9.9.2 External Road Network

Beyond the next 20 years, the airport's internal road network is expected to be able to manage all growth in ground transport. The need for external roads to deliver the same capacity will become increasingly important. Pressure will fall on the Tullamarine Freeway in particular, even though improvements within the airport aim to diversify access into the airport.

The proposed Outer Metropolitan Ring Transport Corridor is one initiative that will provide additional capacity to the external network beyond the 20-year horizon. This road may also introduce additional traffic and reinforce the northern entrance to the airport as a viable option for northern and western suburbs. It may also introduce additional traffic onto the Tullamarine Freeway. The airport will continue to work with VicRoads and the State Government on planning this road and the consideration of impacts on access to terminals.

Table 9.8 lists the initiatives that impact airport growth and which require attention in the life of the Master Plan but are the responsibility of external agencies. Melbourne Airport will continue to support the relevant agencies to achieve these outcomes.

9.10 Arrangements for Working with State and Local Authorities

Melbourne Airport recognises the success of ground transportation to and within the site requires a collaborative approach between the airport and key state and local authorities, and is committed to working with these parties.

To this end, the initiatives described in this section will be progressed through existing forums such as the Melbourne Airport Planning Coordination Forum, the Melbourne Airport Transport Committee and meetings with relevant government agencies.

Section 13.8 further discusses implementation of this Master Plan.

10

INFRASTRUCTURE DEVELOPMENT PLAN

10. INFRASTRUCTURE DEVELOPMENT PLAN

10.1 Overview and Objectives

The development of existing airport infrastructure is paramount to Melbourne Airport's planned long-term growth. Melbourne Airport is committed to ensuring the water, sewerage, stormwater drainage and electrical supply infrastructure can support this future growth. Strategic planning for risk management, maintenance, extensions and renewing this infrastructure has been a key focus during this master planning process.

The objectives of the Infrastructure Development Plan are to provide an overview of:

- information on existing supplies
- system management and maintenance
- risk mitigation measures
- proposed extensions and works.

10.2 Water Supply

10.2.1 Existing Infrastructure

Melbourne Airport owns, operates and maintains the reticulated water infrastructure within the airport site. City West Water supplies the reticulated water for domestic and fire supply services. All water supplies originate from Melbourne Water managed reservoirs.

There are connections to the City West Water supply at four locations:

- A City West Water main within Melrose Drive services the main terminal precinct and the airline maintenance areas. This water originates from the Greenvale Reservoir.
- A water main in Sharps Road supplies water for the Terminal Precinct. This water originates from the Greenvale Reservoir and the Sugarloaf Reservoir.
- A water main in Jets Court supplies water for the Melbourne Airport Business Park. This water originates from the Greenvale Reservoir.
- A supply at South Centre Road that feeds from Greenvale Reservoir also services the Melbourne Airport Business Park.

10.2.2 System Management and Maintenance

Melbourne Airport has an asset management system in place to maintain the water supply for the airport. This system monitors water meters for changes in water use, tests pipes for water losses, schedules valve and water hydrant inspections every three months, and cleans pipes. All practices are in accordance with Australian and City West Water standards.

10.2.3 Risk Mitigation

Melbourne Airport has measures in place to limit the risk of pipe failures, including a program to install additional valves to build redundancy into the system, so pipes can be routinely shut down and inspected with limited impact on users. Melbourne Airport also relies on records of the age and general condition of the pipes and associated infrastructure.

A water quality monitoring program is also in place. There are currently 50 sampling points around the network. For eight weeks each year, five samples from the sampling points are taken to monitor water coming into and going out of the airport. These practices are in accordance with Australian and City West Water standards.

The existing elevated water tower on Service Road provides a secondary pressure head and supply for emergency fire water.

10.2.4 Accommodating Growth

The Southern Precinct Program means more development area will be needed. The elevated water tower on Service Road and its associated infrastructure will be removed to create this space. A new Northern Boundary Water Supply, Storage and Pumping Facility is planned to replace the emergency fire service and pressure head provided by the existing elevated water tower. This new connection and infrastructure will provide greater water supply security, capacity and flexibility across the entire airport.

Melbourne Airport's intention is to install new water mains alongside buildings, so new footings planned for future terminal extensions don't interfere with operating mains. This will allow for easier maintenance and better visibility of future conditions.

The airport developed electronic modelling of the water mains network in March 2012 to determine its current capacity and evaluate future development requirements. As further developments are planned, extensions to the water supply infrastructure will be assessed in more detail.

10.2.5 Water Conservation Measures

Melbourne Airport is committed to reducing potable water consumption. One objective and two target areas for water conservation have been defined and are described in Section 11.6 of the Environment Strategy.

10.3 Sewerage

10.3.1 Existing Infrastructure

Melbourne Airport owns, operates and maintains the sewerage infrastructure within the airport site. City West Water treats the sewerage at its plant.

Melbourne Airport's system is connected to City West Water's outfall to the south of the airport at Sharps Road and Annandale Road.

Small pump stations serve the long-term car park, fuel facility, Customs' dog kennels and Qantas Catering complex. Airservices' operations and maintenance area, along with the fire station, located on the western side of the airport, are serviced by another pump station and rising main connected to the main sewer outfall to the south of these facilities.

10.3.2 System Management and Maintenance

Melbourne Airport has an asset management system to maintain the sewerage system. Every five years, a CCTV program assesses the condition of the infrastructure. Where below-standard conditions are identified, an infrastructure renewal program is implemented. City West Water has its own management and maintenance system for its outfall assets.

10.3.3 Risk Mitigation

To mitigate the risk of exceeding pipe capacities, pipe bursts and overflows, sewer pits are inspected every six months. The condition of the pit lid is evaluated and the speed at which the sewage passes through the pipes (visible from the pit) is also assessed. This enables any potential blockages in the system to be identified before they become major issues.

10.3.4 Accommodating Growth

Melbourne Airport has developed a hydraulic model of the sewer system. This model assesses potential capacity constraints for new developments so that new infrastructure can be adequately planned. The model is also updated as new infrastructure is installed.

10.4 Stormwater Drainage

10.4.1 Drainage Catchment and Existing Infrastructure

The Melbourne Airport stormwater system enables the safe and efficient drainage of surface water runoff. The airport owns, operates and maintains the drainage infrastructure on the airport site.

The airport's stormwater system is made up of seven catchment areas, with flows discharging to Melbourne Water–managed waterways, over which the Environment Protection Authority of Victoria is the statutory regulator. The Moonee Ponds catchment discharges to Moonee Ponds Creek, with the remaining Melbourne Airport catchments discharging directly to the Maribyrnong River and indirectly via Steele Creek and Arundel Creek.

10.4.2 System Management and Maintenance

Melbourne Airport manages the stormwater network, undertaking regular maintenance, cleaning and asset condition assessments to ensure the system operates effectively and efficiently.

The airport has implemented a CCTV survey regime to identify debris to be removed from stormwater culverts and pits. These works maintain network capacity and reduce the volume of debris discharged to the receiving waterways.

The stormwater assets are maintained to mitigate the risk of flooding and ensure water quality does not deteriorate.

10.4.3 Risk Mitigation

As the impermeable areas of the airport increase, Melbourne Airport will manage flooding by designing and constructing attenuation structures and upsizing the piped network. Areas at risk of flooding will be identified and mitigation measures developed to ensure the airport's operations are not adversely affected.

10.4.4 Accommodating Growth – Steele Creek North Stormwater Enhancement Project

Melbourne Airport has identified the Steele Creek North Stormwater Enhancement Project as an initiative in the Melbourne Airport Master Drainage Plan. Broadly, the project will involve constructing infrastructure including pipes, swale drains and retarding basins to ensure stormwater runoff from the airport does not exceed discharge limits set by Melbourne Water, the regulating authority.

The retarding basins will delay water flow to decrease sedimentation, moderate flood peaks and help treat stormwater to remove solids and litter.

The project also involves constructing water gardens and possibly installing a rainwater harvesting system.

10.4.5 Clean Waterways

Melbourne Airport uses a certified (ISO 14001:2004) Environmental Management System (EMS) and Stormwater Management Plan (2008) to manage water quality. The EMS requires all construction projects to have approved Construction Environmental Management Plans and to report and track all environmental incidents through the Coordination Centre. The effectiveness of the environmental controls is measured against the indicators specified in the *Airports (Environmental Protection) Regulations 1997* and State legislation.

Further information on stormwater management can be found in Section 11.7 of the Environment Strategy.

10.4.6 Drainage Master Plan

Modifications to the existing stormwater network will be required for the airport development identified in the Master Plan. An increase in flows will be fundamental to these modifications.

To address these issues, Melbourne Airport commissioned a new network model and Drainage Master Plan that:

- identified current discharge rates at stormwater drainage outlets
- assessed the performance of existing water quality control measures
- provided accurate data to benchmark the system's performance and measure the effects of future developments
- confirmed the capacity of the stormwater drainage network required for the ultimate development
- identified areas at risk of flooding.

The Drainage Master Plan will form the basis for consultation with affected stakeholders to mitigate any adverse effects and assess the effectiveness of mitigation measures.

10.5 Electricity

10.5.1 Existing Infrastructure

Electricity supply in Victoria starts with generation from various local sources supported by interstate connectors. This power is then transmitted via five distribution networks, including Jemena, that use a transmission system owned and managed by SP AusNet to reach customers.

Melbourne Airport purchases bulk power from Jemena and distributes the power to customers via its own high- and low-voltage networks. This network includes the boundary 66/22-kV Melbourne Airport Terminal, (MAT) which feeds from the Keilor Terminal Station via two 66kV loops. This is then further distributed to more than 500 metered sites through 21 ring main units, 84 smaller substations and more than 40 kilometres of below-ground cable. A small length of overhead power cable is gradually being replaced to increase safety.

10.5.2 System Management and Maintenance

The electricity network is managed to ensure safety and consistent supply. This is coordinated through a High-Voltage Infrastructure Strategy that includes a regular diagnostic and system check to assess the network's condition. This information is used to prioritise maintenance and asset renewal.

The testing also predicts essential load versus capacity to ensure that critical services such as runway lighting are guaranteed during emergencies.

Melbourne Airport has undertaken substantial works to improve the reliability and flexibility of the power infrastructure over the last 15 years including:

- replacing overhead lines to critical internal services with underground cable
- providing looped (dual) feeds to all critical services
- replacing aged switch gear
- upgrading protection monitoring and system control.

10.5.3 Accommodating Growth

The High-Voltage Infrastructure Strategy also advises on growth as it matches capacity. The Terminal Precinct is growing with the development of low-cost carrier terminal facilities at the southern end. The Melbourne Airport Business Park also continues to expand, along with new parking facilities and additional infrastructure required to match airfield growth. The network is carefully monitored so that additional capacity is delivered in a timely manner.

A number of significant capacity-building projects will deliver electricity where it is needed. A new boundary terminal is being planned that will also accept 60kV power from the grid and then distribute it internally at 22kV. This is a major item of infrastructure that requires years of internal planning and liaison, particularly around its effects on the external distribution network.

10.5.4 Environmentally Friendly Power

In addition to the state 'grid-based' capacity currently being planned, a green energy option that will provide efficient and cost-effective energy in the future is being investigated. This will be a tri-generation plant that uses natural gas to produce electricity. Natural gas is a much cleaner fuel source that produces 17 per cent less emissions than traditional brown coal.

In addition to maximising the plant's efficiency, this system can capture the excess heat it generates and re-direct it into the airport heating, cooling and hot water systems.

The planned tri-generation system could provide 8MW of power during peak times. During off-peak periods, the system could run in a variable mode, depending on the overall level of heating or cooling required. Melbourne Airport would be able to vary the megawatts per hour output in 2MW steps. The planned system is modular, so it could expand to support growth and increased demand.

11 ENVIRONMENT STRATEGY

11. ENVIRONMENT STRATEGY

11.1 Overview and Scope

With predicted increases in aircraft movements and passenger numbers, it's important that Melbourne Airport has policies and procedures to limit its environmental impact and promote sustainability.

The Melbourne Airport Environment Strategy 2013 (the Environment Strategy) replaces the Melbourne Airport Environment Strategy 2008. It is the first Environment Strategy to be incorporated into the Master Plan, in compliance with amendments to the *Airports Act 1996* (Airports Act), and sets out Melbourne Airport's areas of environmental focus over the next five-year period (2013–2018).

Since 2004, a key aspect of the Environment Strategy is for APAM to be certified to the International Standard for Environmental Management Systems ISO14001:2004. This means its Environmental Management Systems have been acknowledged to effectively manage the environmental impacts of its operations and comply with environmental laws and regulations. APAM is continually evolving to improve environmental processes and minimise impacts.

The Environment Strategy outlines the key environmental issues[6] and management strategies to which APAM is committed, to mitigate its impact on the environment in which it operates.

The environmental themes addressed in the Environment Strategy are:

- **environmental management:** initiatives to ensure the airport maintains its leading environmental management standards
- **ecologically sustainable development (ESD):** initiatives to develop and promote ecologically sustainable development standards in airport planning
- **energy and climate change:** initiatives to make a material reduction in energy consumption and progressively move towards carbon neutrality
- **waste and resource management:** initiatives to reduce the airport's impact on landfill, and promote responsible recycling and re-use measures onsite
- **water consumption:** initiatives to reduce the airport's reliance on potable water, and instigate water efficiency across the site
- **surface and groundwater quality:** initiatives to limit the impact on the waterways and land surrounding the airport
- **biodiversity and conservation management:** initiatives to actively manage and conserve biodiversity values at the airport
- **cultural heritage:** initiatives that are proactive in safeguarding local Aboriginal and European heritage sites
- **air quality:** initiatives to minimise and effectively manage air emissions from ground-based airport operations
- **ground-based noise:** initiatives to reduce the impact of noise in and around the airport due to operations
- **land management:** initiatives to responsibly manage land use
- **hazardous materials:** initiatives to ensure the responsible storage, handling and disposal of potentially hazardous materials used in airport operations.

6 These issues have been identified through an environmental risk assessment process.

The Environment Strategy incorporates the three main features of the State Environment Protection Policy (SEPP), namely beneficial uses (the values of the environment Melbourne Airport wants to protect, referred to in this document as 'themes'); environmental quality objectives (setting targets to determine levels of compliance and inform corrective actions to address non-compliance); and the implementation of an attainment program (i.e. the Environment Strategy, which describes the actions undertaken to protect the beneficial uses). The objectives (long-term goals) and targets (interim milestones) in the Environment Strategy aim to build on existing environmental management and drive continuous improvement in future endeavours. The strategic measures in the Environment Strategy support, integrate and build on the existing environmental management at the airport.

In accordance with the requirements of the Airports Act, the Environment Strategy will be reviewed and updated every five years. This means the environmental themes, quality objectives and attainment program will be regularly updated to reflect current environmental standing and future direction.

11.1.1 Out of Scope

Some aspects of environmental management are outside the scope of the Environment Strategy. These aspects listed below are controlled by other legislation and managed by other organisations.

- Management of air quality impacts (including greenhouse gas emissions) from aircraft and commuter travel.
- Management of noise related to aircraft in-flight, at take-off or taxiing, although information on current management practices has been provided.

APAM will continue to work with airlines and third parties to reduce the environmental impact of operations at the airport.

11.2 Environment Management

11.2.1 Overview and Objectives

Objective: To maintain and continue to improve environmental management, monitoring, reporting and certifications

APAM maintains a comprehensive Environmental Management System (EMS) to manage its environmental aspects, impacts and risks. The EMS ensures that APAM complies with all legislative requirements. Since 2004, APAM has been certified to and audited against the International Standard for Environmental Management Systems (ISO14001:2004).

The EMS is internally reviewed annually to confirm that all details and requirements are adequate and up to date, and to ensure appropriate implementation and compliance with the international standard. An external surveillance audit is required every nine months and recertification every three years. The last recertification was undertaken in May 2010, and APAM gained recertification.

11.2.2 Melbourne Airport Environment Policy

The Melbourne Airport CEO and the Airport Environment Committee, made up of internal executive and environment staff, are responsible for periodically reviewing the Environment Policy, with the most recent review undertaken in 2012. Details of how the Environment Policy's objectives will be achieved and implemented are provided in the EMS.

Melbourne Airport Environment Policy

APAM and Melbourne Airport will work proactively with business partners and other stakeholders to implement the following environmental management principles:

- Be morally and financially responsible for the environment directly and indirectly impacted on by Melbourne Airport's operations, and continually improve the space in which we work and live;
- Continually improve our Environmental Management System (certified to the international standard AS/NZS ISO14001:2004) to ensure our policies, objectives and targets for environmental performance are established, met and reviewed;
- Comply with all applicable environmental laws, policies and procedures and, where possible, exceed these requirements;
- Ensure our business partners develop Environmental Management Plans to control their impacts and to ensure consistency across the Airport;
- Continue year on year to develop new strategies in order to provide on-going improvement and prevention of pollution in all areas of our operations;
- Continue to work with business partners and other stakeholders to conserve natural resources;
- Integrate social and environmental considerations into decision making and business activities for the benefit of local and regional communities; and
- Work in consultation with our employees, business partners, regulators and local and regional communities.

Chris Woodruff
CEO and Managing Director
APAM (Operating as Melbourne Airport)
April 2012

11.2.3 Key Environmental Legislation

Melbourne Airport is on Commonwealth land and as such is subject to Commonwealth environment legislation, which regulates Melbourne Airport's business and the activities of business operators such as airlines and retailers. The relevant Commonwealth legislation includes:

- *Airports Act 1996* (Commonwealth) (Airports Act)
- Airports (Environment Protection) Regulations 1997 (Commonwealth)
- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act).

In addition to Commonwealth legislation, Melbourne Airport is required to comply with Victorian State legislation where airport activities interact with the surrounding environment, which includes effects on air quality, noise, land, groundwater and waterways. Melbourne Airport will consider state legislation to achieve best practice environmental standards.

The *Environment Protection Act 1970* (Victoria) is the principal State legislation applicable to all environmental themes covered by the Environment Strategy. Refer Appendix C for a list of key Commonwealth and state environmental legislation and policies that are relevant to Melbourne Airport's specific environmental themes.

11.2.4 Environmental Monitoring

Melbourne Airport has an ongoing environmental monitoring program that is undertaken by suitably qualified professionals where required (refer Table 11.1). Corrective actions are implemented in the event of non-compliance.

Monitoring and assessment provide the data against which APAM's environmental performance can be measured and constantly improved. Monitoring also enables the airport to assess legislative compliance, identify management requirements, and expand its awareness and understanding of the airport environment.

In addition to monitoring environmental effects within the Melbourne Airport site (local effects), Melbourne Airport also monitors external effects, i.e. mobile pollution sources such as water, groundwater, noise and air quality.

Table 11.1: Ongoing Environmental Monitoring Program

Monitoring type	Frequency
Water including usage, stormwater and groundwater	Quarterly
Waste generation and recycling	Monthly
Triple interceptor traps	Twice weekly
Water quality in surrounding creeks	Twice weekly
Fuel usage (ground vehicles)	Weekly
Ground noise	Two to four times per year, and as required
Soil testing	Prior to all major construction activities
Soil erosion	Monthly
Flora and fauna monitoring	Prior to all major construction activities
Airside wildlife monitoring	Daily
Archaeological site monitoring	As required
Water use	Monthly
Gas use	Monthly
Fuel use	Monthly
Electricity use	Monthly
Hydroflurocarbons (HFC)	Monthly

11.2.5 Environmental Reporting

APAM is required to report annually on its environmental performance to the following Commonwealth and State Government bodies:

- Commonwealth Department of Infrastructure and Regional Development.
- Commonwealth Department of the Environment – *National Greenhouse and Energy Report Act 2007* – National Greenhouse and Energy Reporting (NGER).
- Victorian Environment Protection Authority – National Pollution Inventory (NPI).

The NGER and NPI reports detail Melbourne Airport's emissions resulting from its ground operations. Both reports provide valuable information on emission trends and inform future emissions reduction and management programs.

APAM participates in other environmental programs on a voluntary basis, including City West Water's Water Management Action Plan, managed on behalf of the Victorian Government.

11.2.6 Environmental Awareness and Training

The Melbourne Airport Environment Committee (AEC) manages and helps implement the Environment Strategy and the EMS. Melbourne Airport's Environment Manager supports the goals of the Environment Strategy and, where necessary, ensures environmental assessment and management is undertaken by appropriately qualified professionals.

Melbourne Airport management and staff members whose work may affect the environment take part in compulsory environmental awareness training, which addresses the local and global impact of airport operations and ensures staff are compliant with the airport's standards.

11.2.7 Environment Site Registers

As part of its monitoring process, Melbourne Airport maintains up-to-date environmental site registers for airside and landside areas, as required by the Airports (Environment Protection) Regulations 1997. The registers record environmental assessment results and the details of remedial plans, monitoring and environmentally significant occurrences.

Melbourne Airport maintains the following environmental site registers:

- water quality monitoring
- air quality monitoring
- noise monitoring
- septic tank inspections
- fuel tank locations
- Indigenous and European cultural heritage site locations
- flora and fauna assessments
- groundwater monitoring
- contaminated land assessments.

11.2.8 Environmentally Significant Areas

Having regard to the approved final Melbourne Airport Strategy EIS and in accordance with the Airports Act, Melbourne Airport has identified areas of environmental significance, displayed in Figure 11.1 for existing areas and Figure 11.2 for ultimate areas, which include:

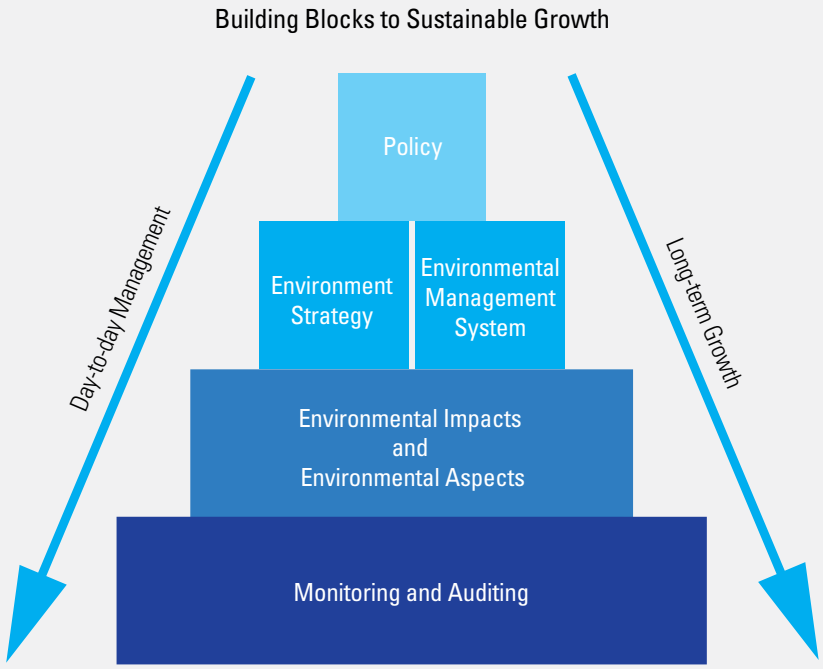
- Annandale Road Grassland for cultural heritage
- the Grey Box Woodland
- the areas surrounding Deep Creek and Moonee Ponds Creek.

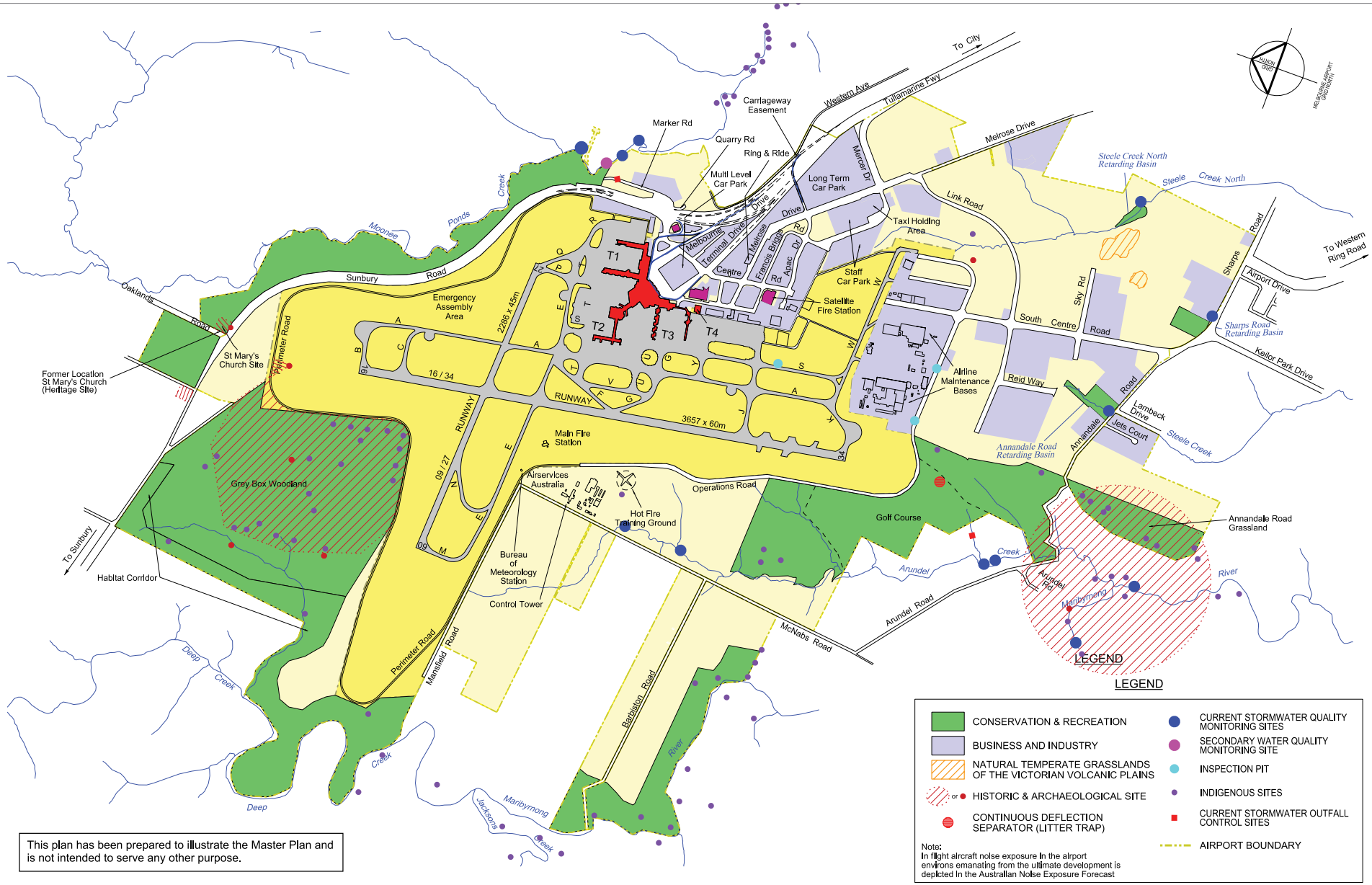
11.2.9 The Melbourne Airport Environment Management Framework

The diagram below provides an outline of APAM's environmental management framework and corporate governance structure, along with details and responsibilities.

Environmental management is the responsibility of all staff, business operators and contractors.

Environmental Management Framework





This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

MELBOURNE AIRPORT

ABN 62 076 999 114

2013 MASTER PLAN

Existing Airport Environment Plan

Fig. 11.1

11.2.10 Plans, Programs and Procedures

Works undertaken by Melbourne Airport or any other operator or contractor are subject to the requirements of the Environment Policy, relevant Commonwealth and state legislation and the commitments of the Environment Strategy. In accordance with APAM's EMS requirements, a number of environmental programs and procedures have been developed to manage operations and their potential impact.

Environmental risk assessments of all operators identify the likelihood and severity of potential operational impacts on the environment. Through this risk assessment, operators at Melbourne Airport are categorised A–D. Operators are assessed against a number of requirements including:

- water use
- energy consumption
- waste generation
- biodiversity impact
- stormwater impact
- hazardous materials handling and storage.

Operators rated as Category A or B have a higher potential to cause environmental harm and are required to submit an annual Operational Environmental Management Plan (OEMP). These plans are reviewed by the Environment team and audited annually by representatives of the Melbourne Airport Management Property and Environment teams to ensure compliance.

Category C and D operators pose a minor potential risk to the environment and are required to follow the Melbourne Airport Code of Environmental Practice. These sites are visited annually by representatives of the Melbourne Airport Management Property team and as required by the Environment team.

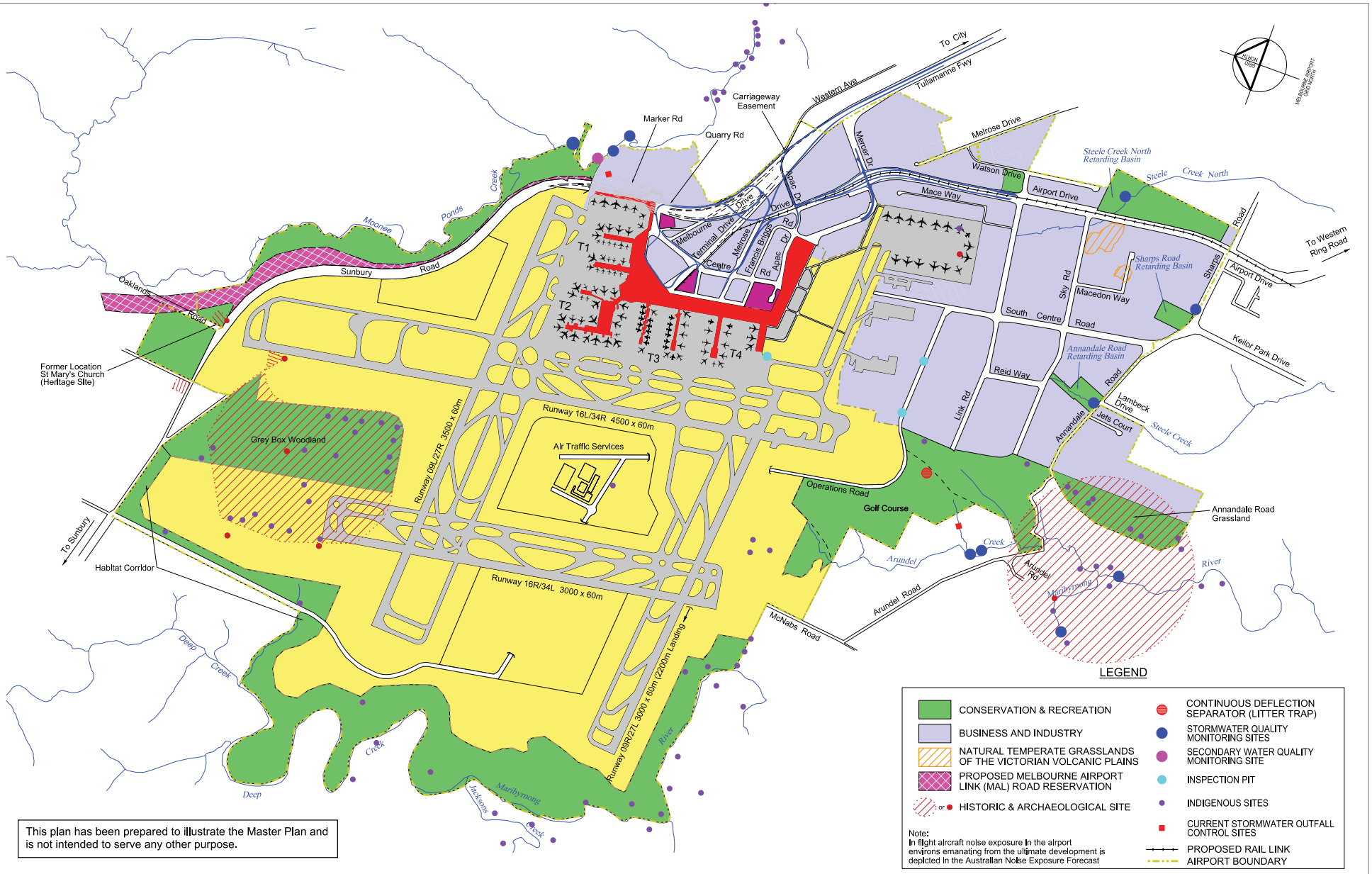
For construction projects with the potential for a significant environmental impact, the contractor is required to submit a Construction Environmental Management Plan (CEMP) that satisfies the requirements set by Melbourne Airport. All plans are reviewed and endorsed by the Melbourne Airport Management Environment team before work begins. The CEMP is the overarching document to manage environmental risk during the life of the project and covers all areas of the Environment Strategy.

Contractors must comply with Melbourne Airport Development Manual requirements on all works that do not need a CEMP to be developed.

Table 11.2 shows APAM's notable environmental achievements, and Table 11.3 lists the proposed targets to meet its environmental objectives.

Table 11.2: Notable Environmental Management Achievements

Achievement from 2008–2013	Overview
EMS recertification	Conducted a recertification audit against the ISO14001:2004 standard in 2010. APAM met the requirements of the standard during the audit with no non-conformances. The EMS also undergoes nine monthly external surveillance audits that have been successfully passed each time.
Operational Environmental Management Plans	Each year, all category A and B operators submit an OEMP and all of these are audited.
Development Manual	Undertook an internal review in 2012 of the Development Manual, which details the assessment processes and requirements for all works carried out on airport land.
Design and Construction Environment Guidelines	Developed guidelines for all works undertaken on airport land. Contractor requirements will be tailored to ensure environmental issues are properly managed.
Construction Environmental Management Plan Guidelines	Developed guidelines to improve environmental awareness in construction and development projects, and to ensure a consistent approach to environmental management.



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MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Ultimate Airport Environment Plan

Fig. 11.2

Table 11.3: Proposed Targets to Meet APAM's Environmental Objectives

Objective: To maintain and continue to improve environmental management, monitoring, reporting and certifications	
Target	**Timeframe**
Maintain APAM's certified Environmental Management System to ISO 14001:2004 and implement auditor comments and suggestions.	Ongoing
Ensure APAM continues to apply leading environmental management practices and procedures, by developing key performance indicators/targets that benchmark against other airports and corporations.	2014
Maintain the environmental monitoring program as outlined in Table 11.1.	Ongoing
Continue to ensure all contractors and operators are provided and compliant with the Environmental Guidelines and the Development Manual before undertaking any works at Melbourne Airport.	Ongoing
Develop whole-of-site environmental plans and a mapping interface to improve environmental management performance, understanding and protection of environmental values.	2015
Continue to conduct annual environmental awareness and training for Melbourne Airport staff, including 100 per cent inductions for new staff and targeted training for staff with key environmental roles.	Ongoing
Collaborate with airport planning projects to ensure environmental requirements are considered in the planning and development phase.	Ongoing
Continue to ensure all operators and projects that have the potential to cause environmental harm produce and follow an OEMP and CEMP.	Ongoing
Continue to meet all Commonwealth and State Government reporting requirements.	Ongoing

11.3 Ecologically Sustainable Development

11.3.1 Overview and Objectives

Objective: Increase the adoption of ecologically sustainable development principles in developments

In recent years, ecologically sustainable development (ESD) has become a significant driver in airport planning, design and operation around the world.

The 2008 Environment Strategy set requirements for 5-star Green Star certification for major new developments and 4 stars for major building refurbishments at Melbourne Airport. The airport achieved Green Star ratings for the new Australian Federal Police building and other developments were aligned with the 5-star Green Star buildings rating.

11.3.2 Existing ESD Management

Retailers at Melbourne Airport are provided with the Concessionaire Fitout Guide. The guide provides practical recommendations on implementing ESD principles into the design, fit-out and operation of retail outlets, including advice on energy, water efficiency and materials selection.

11.3.3 Potential Issues and Impacts

While Melbourne Airport and operators have made progress in adopting ESD principles, there are still opportunities to further incorporate sustainable technologies, particularly in the design phase of projects.

The design phase will also benefit from the development of generic rating tool criteria and an ESD guide that details requirements for building design, construction and operation.

11.3.4 Measures to Facilitate the Adoption of ESD Principles

Melbourne Airport is currently developing an ESD guide that will embed sustainability principles and technologies in airport developments. The guide will help project design and delivery teams incorporate appropriate sustainability measures and effective building operations into their plans, and establish the requirements for engaging suitably qualified sustainability consultants as design team members.

The guide will also set baseline building attributes or performance currently considered to be good practice or 'business as usual'. In addition, it will inform appropriate levels of funding and return on investment for ESD measures beyond good practice.

APAM's ESD achievements to date are detailed in Table 11.4.

Table 11.4: ESD Achievements

Achievements	Overview
Southern Precinct Program	The new terminal building adopted the Leadership in Energy and Environmental Design (LEED) New Construction rating tool.
T3 Domestic Refurbishment Project	Retrofitted 800 LED fittings, improving energy efficiency by 35 per cent and reducing maintenance costs.
T2 International Arrivals Upgrade Project	Improved the efficiency of lighting and controls, variable speed drives, perimeter blinds and slab heating.
Australian Federal Police building	The new AFP building has been designed to achieve 5-star Green Star rating and a 4.5 NABERS rating.
Refurbishment of Melbourne Airport management offices	Initiatives include rainwater harvesting for toilet flushing, perimeter blinds to reduce solar heat loads and fully programmable lighting controls, including light sensors. The majority of new furniture items and materials have come from sustainable sources with Good Environment Choice Australia (GECA) certification.
KyotoCooling Wheel – secondary data centre	Installed the first KyotoCooling Wheel in the southern hemisphere, achieving a current energy usage rate of between 65 per cent and 75 per cent more efficient than a typical computer room.
Centralised energy centres	Upgraded centralised chiller installations in Terminal Services Buildings. Developing a central tri-generation system.

11.3.5 Targets

Table 11.5 lists APAM's proposed targets to increase the adoption of ESD principles in developments.

Table 11.5: Proposed ESD Targets

Objective: Increase the adoption of ESD principles in developments	
Target	**Timeframe**
Develop and implement an ESD guide for Melbourne Airport development projects, including new build and refurbishment projects.	2014
Undertake periodic ESD training and awareness sessions for key Melbourne Airport stakeholders.	Ongoing

11.4 Energy and Climate Change

11.4.1 Overview and Objectives

Objective: To make a material reduction in energy consumption and operational greenhouse gas emissions to enable APAM to progressively move towards carbon neutrality

Aviation accounts for around two per cent of total global carbon dioxide emissions, and is expected to increase to three per cent by 2050. In 2008, aviation leaders signed the Global Aviation Industry Commitment to Action on Climate Change, demonstrating the industry's commitment to reducing its impact on the environment.

Melbourne Airport's strong commitment to environmental sustainability is evident in its implementation of a range of corporate initiatives. While energy consumption is expected to significantly increase with the airport's impending expansion and growth in passenger numbers, the airport will continue to implement and evolve existing measures to prevent, control and reduce energy use.

11.4.2 Existing Assessments and Management

The Environment Strategy requires Melbourne Airport to specify the measures it plans to prevent, control or reduce energy use. The airport has developed and implemented an Energy Management Plan as a key commitment under the 2003 Environment Strategy.

Having met the reporting threshold, APAM is currently registered as a corporation under the *National Greenhouse and Energy Report Act 2007* (NGER Act) and is required to measure and submit an annual report detailing:

- greenhouse gas emissions
- energy production
- energy consumption
- the storage and disposal of ozone-depleting substances within our operational control.

11.4.3 Potential Issues and Impacts

Melbourne Airport operates 24 hours a day and currently consumes 0.34 petajoules (PJ) of energy annually. With 64.37 million passengers projected to pass through the airport annually by 2033, without careful environmental strategies and proactive planning, it is expected to exceed the 0.5 PJ threshold set by the Commonwealth Government's Energy Efficiency Opportunities program. As such, Melbourne Airport will continue to address and improve its energy efficiencies, to ensure it remains compliant with mandated thresholds.

Despite a strong commitment to managing energy consumption and the associated cost and carbon-related effects, Melbourne Airport recognises that it will most likely be subject to potential climate change impacts in the short to medium term, which may affect operations and assets. This could include an increased risk of bushfires, intense storm events and temperature changes, all with the potential to influence business continuity.

11.4.4 Measures to Prevent, Control or Reduce Environmental Impacts

Melbourne Airport has introduced various measures to prevent, control and reduce the production of greenhouse gas emissions and the consumption of non-renewable resources. These energy efficiency measures include:

- educating staff to improve their knowledge of energy efficient behaviour
- implementing measures, such as Skycool paint, to minimise the need for air-conditioning
- using energy efficient electrical equipment within energy-intensive areas such as information technology, which introduced the KyotoCooling wheel system and combined printing, scanning and fax machines.

Melbourne Airport is also developing a tri-generation (power, heating and cooling) 6–8 MW energy facility, which is anticipated to reduce current energy consumption by one-third. The facility is expected to be completed in the next five years. For more information on tri-generation, refer to Section 10.5.4.

To help manage carbon-related impacts, Melbourne Airport will develop an understanding of its current and future climate change risks and vulnerabilities to support operational and asset management practices.

Table 11.6 details APAM's recent achievements in energy and resource conservation.

Table 11.6: Energy and Climate Change Achievements

Achievements from 2008–2013	Overview
Reduction in CO_2 emissions	In 2011–2012, APAM decreased CO_2 emissions by two per cent and since 2008–2009 has achieved a seven per cent reduction in CO_2 emissions per passenger.
Purchase of energy-efficient electrical appliances	The IT department developed a Lifecycle Costings Policy, including a Sustainable Procurement Strategy for purchasing electrical equipment, which is assessed for the manufacturer's commitment to sustainability, minimal resource consumption and end-of-life policy.
Hand driers	Energy and paper towel savings were achieved by installing Dyson airblade hand driers, resulting in an 80 per cent reduction in energy consumption.
LED lighting	APAM has refurbished Terminal 3, installing LED lighting and a reflective tiled floor to reduce the lighting required. APAM is also installing LED lighting in its new staff car park, completed in early 2013.
Investigations	Melbourne Airport investigated the following possibilities, and is reviewing the recommendations, including: • economically viable opportunities for energy efficiency • economically viable opportunities for renewable energy sources • offsetting all airport transport, ground vehicles and travel • alternative means of staff transport, including trialling electric cars around Melbourne Airport.

11.4.5 Targets

Table 11.7 lists APAM's proposed targets to reduce energy consumption and greenhouse gas emissions.

Table 11.7: Proposed Energy and Climate Change Targets to meet the Objectives

Objective: To make a material reduction in energy consumption and operational carbon emissions, to enable APAM to progressively move towards carbon neutrality

Target	Timeframe
Aim for 15 per cent of operational energy consumption to be generated or purchased through on-site renewables or accredited green power schemes.	2018
Continue to reduce the amount of energy consumed per passenger in all Melbourne Airport managed and controlled areas, including lighting and tri-generation.	Ongoing
Retrofit the multi-level car park with low-energy lighting globes, constituting an energy saving of approximately 40 per cent.	2013
Offset all APAM transport, ground vehicles and travel.	2013
Develop options for onsite renewable energy generation.	2015
Understand APAM's current and future climate change risks, vulnerabilities and likely impacts, to inform APAM's need and capacity to adapt operational and asset management practices in the short to medium term.	2013

11.5 Waste and Resource Management

11.5.1 Overview and Objectives

Objective: Reduce waste disposed to landfill by APAM managed facilities

Waste is generated by both Melbourne Airport and operators (including tenants, airlines, retailers, ground handlers, maintenance, engineering, catering companies, construction and development). Melbourne Airport's waste management principles are guided by the waste hierarchy framework, which aims to reduce, reuse, recycle and treat waste rather than dispose of it, particularly to landfill.

Melbourne Airport can improve environmental outcomes by reducing the use of natural resources through better purchasing policies, ensuring appropriate systems for containment and disposal of Foreign Object Debris (FOD)[7] are in place, recovering recyclable material, and treating and disposing waste responsibly. Due to the variety of contributors, waste streams are wide ranging and include quarantine waste, prescribed industrial wastes (solid and liquid), FOD, organic waste (food and vegetation), paper, cardboard, and food and beverage containers. Ad hoc waste types include scrap metal, construction and demolition waste, concrete and asphalt, electronics and computers, furniture, office fittings and unclaimed baggage.

11.5.2 Existing Assessments and Management

APAM, airlines and on-site operators generate at least 13,000 tonnes of solid waste every year.

Approximately 20 per cent of the total waste stream is under APAM's direct control. Business operators are required to manage their own waste and recycling needs under the airport's set guidelines and policies. Melbourne Airport encourages good waste management practices with its staff and business operators and acknowledges that a site-wide waste management program is required. Melbourne Airport has developed an Airport Logistics (Goods and Waste) Strategy to guide this undertaking.

Waste disposed of to landfill, in particular organic wastes such as food, vegetation and paper, generate methane and carbon dioxide as they decompose. Such waste can be recovered and treated as resources if it is diverted from landfill, enabling organic material to be reused and greenhouse gas emissions to be reduced.

Melbourne Airport reduces waste disposed to landfill by:

- examining purchasing policies and looking to 'green procurement' guidelines
- developing and implementing effective policies and guidelines based on the waste hierarchy framework for operators and contractors
- providing appropriate waste management infrastructure and services
- regularly monitoring and measuring generated waste
- reviewing and auditing operators' compliance with the airport's guidelines and policies
- regularly communicating with project teams to explore the potential of reusing construction and demolition waste on-site rather than disposing it offsite.

11.5.3 Potential Issues and Impacts

Due to the nature of operations required at an airport, there are a number of potential waste-related issues. Inappropriate waste management, containment, transport and incorrect disposal of hazardous and non-hazardous wastes can negatively impact waterways, ambient air quality and climate change. The airport recognises that these processes need to be stringently managed to reduce negative impacts.

Quarantine waste, defined as material from overseas that poses a potential biohazard threat to Australia, must be securely contained not only on-site at Melbourne Airport, but also during transport to approved disposal facilities.

7 Foreign object debris includes a range of material such as loose hardware, pavement fragments, catering supplies, building materials, pieces of luggage, rocks and sand. It is found at various locations including taxiways, runways, cargo gates and terminal gates.

11.5.4 Measures to Prevent, Control or Reduce Environmental Impacts

Melbourne Airport has a range of policies and regulatory controls in place to reduce the impact of its waste management practices on the environment, based on the waste hierarchy framework.

Quarantine waste disposal must strictly adhere to DAFF Guidelines, which encompass specialist treatment, containment, handling, transport and disposal requirements. Melbourne Airport will continue to work with DAFF to identify opportunities to minimise waste to landfill within these guidelines.

FOD continues to be managed strictly under the Airside Waste Management Policy. A large number of FOD bins are located airside for use by all staff, airlines and business operators and are emptied regularly. Ensuring FOD is controlled and managed is embedded in airside operations.

Melbourne Airport and its business operators must ensure compliance with State Government legislation around the handling, storage and disposal of prescribed industrial waste. The airport continues to assess and encourage its business operators to implement resource recovery and reuse solutions as an alternative to landfill disposal where viable.

Table 11.8 lists water and resource achievements over the previous Environment Strategy period.

Table 11.8: Waste and Resource Achievements

Achievements from 2008–2013	Overview
Waste reduction measures	Reduced waste to landfill from 0.17 to 0.14 kilograms per passenger, constituting a 17.9 per cent reduction.
Packaging Stewardship Program	Retrofitted 60 recycling and waste bins in Terminals 2, 3 and 4 and all bins in the long-term car park with Australian Standard colours and new instructional stickers, achieving a 171 per cent increase in the tonnes of recyclables collected from the terminals and a 71 per cent increase from the long-term car park bins.
Waste management activities	Completed a strategic review of retailers' waste management activities in Terminals 2, 3 and 4 to set the direction for future sustainable waste management.
Monitoring and assessments	Conducted a waste assessment covering APAM managed areas and those of its business operators. Melbourne Airport also mapped and continued to assess all waste bins located airside and undertook monthly monitoring of waste data in line with the Environment Strategy and reporting requirements.

11.5.5 Targets

Table 11.9 lists APAM's proposed targets to reduce waste disposed to landfill.

Table 11.9: Proposed Waste and Resource Targets

Objective: Continually strive to reduce waste disposed to landfill from APAM managed facilities	
Target	**Timeframe**
Aim to reduce the amount of waste disposed to landfill per passenger by 30 per cent in APAM managed terminals and associated facilities (baseline year 2010–2011).	2018
Continue to investigate viable, innovative waste handling and processing technologies that divert waste from landfill.	Ongoing
Continue to work with business operators and contractors to introduce programs that reduce waste to landfill (including recycling and resource recovery) where viable and implement responsible, sustainable waste management practices.	Ongoing
Develop an Airport Logistics (Goods and Waste) Strategy to sustainably manage future growth at the airport and the waste generated.	2013

11.6 Water Consumption Management

11.6.1 Overview and Objectives

Objective: To reduce potable water consumption across APAM managed areas

Although passenger numbers have increased over the past five years, Melbourne Airport's total water consumption has remained relatively constant. The airport aimed to reduce water use within its terminals through the implementation of the 2007 Water Management Action Plan. In 2008, the airport management agreed on a potable water consumption reduction target of 15 per cent per passenger for terminals by 2012–2013. By 2011–2012, a 12 per cent reduction had been realised, indicating that the target is likely to be achieved. Reducing potable water consumption reduction at Melbourne Airport during the 2008 Environment Strategy period focused on water efficiency measures, water harvesting and reusing rainwater in terminal buildings. Site-wide potable water consumption is shown in Graph 11.1.

Melbourne Airport's 2012 Water Management Strategy sets further targets to reduce potable water use and provides the foundation of the revised Water Management Action Plan.

11.6.2 Existing Assessments and Management

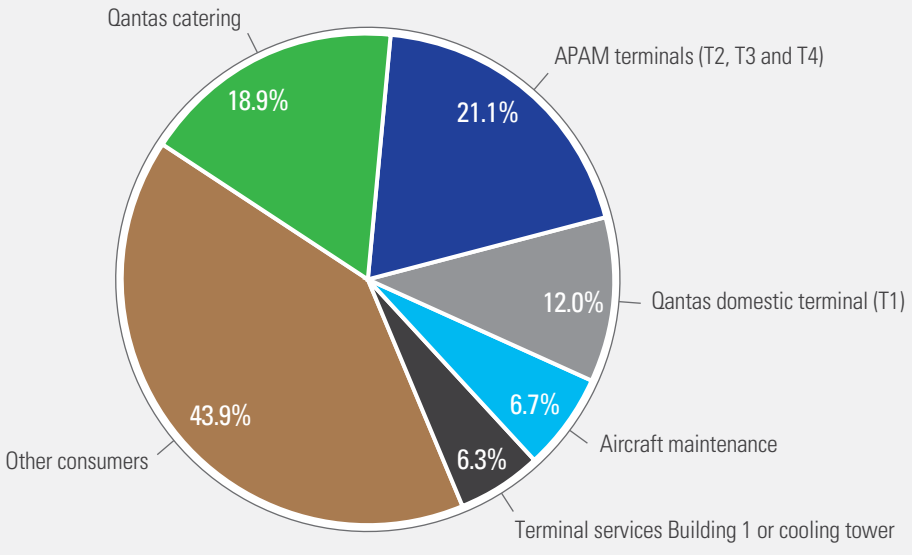
A Water Management Action Plan was developed in 2007 in response to Melbourne Airport's status as one of Melbourne's top 200 water users. The 2008 Environment Strategy identified key water consumption objectives and proposed measures to achieve them. The updated Water Management Strategy 2012 provides a more detailed understanding of water consumption across Melbourne Airport and identifies opportunities and strategies to reduce water use.

11.6.3 Potential Issues and Impacts

One of Melbourne Airport's key water impacts is the volume of potable water consumed. Water demand is expected to increase as the airport grows, and this will have implications for existing water and wastewater infrastructure. Future projects planned across Melbourne Airport, detailed in this Master Plan, will also influence water demand and the volume of water available for consumption.

Each development presents an opportunity to incorporate water-efficient practices and alternative water supply infrastructure to reduce water consumption. Future development within the Terminals, Business Park and Aircraft Maintenance precincts are likely to result in increased roof area, providing the potential to capture large amounts of rain water.

Graph 11.1: Melbourne Airport Potable Water Consumption



11.6.4 Measures to Prevent, Control or Reduce Environmental Impacts

Rainwater and stormwater harvesting will help Melbourne Airport reduce water consumption, as will a proposed water-sensitive urban design (WSUD) strategy. The WSUD Strategy will detail requirements for stormwater and rainwater harvesting for new projects and project upgrades. The resulting water supply will be used for activities such as landscape management and to support bushfires and wildfire control. Bushfire and wildfire management is also discussed in the Melbourne Airport Emergency Plan.

Sourcing alternative water supplies, like rainwater and stormwater, will reduce potable water demands and future water costs and allow upgrades or renewals of existing water and wastewater infrastructure to be postponed.

Previous changes identified to reduce potable water consumption were implemented during the previous Environment Strategy period and are listed in Table 11.10 below.

Table 11.10: Water Consumption Achievements

Achievements from 2008–2013	Overview
Water usage reduction per passenger	In 2011–2012, APAM achieved a 34 per cent reduction in water usage per passenger and since 2008–2009 has achieved a 43 per cent reduction in water (ML) per passenger.
Terminal 2 Extension (T2E) developments	Installed rainwater harvesting systems in office buildings and in T2E, to improve water efficiency by reducing potable water use.
Stormwater design requirements	Mandatory inclusion of stormwater collection and reuse facilities in all building designs over 400 square metres.
Investigation of water-saving initiatives	Investigated rainwater and stormwater harvesting and reuse options as part of the Melbourne Airport Water Reuse Strategy in Terminals 2, 3 and the Terminal Services Building, to supply toilets and cooling tower water demands (Rainwater Harvesting and Cooling Tower Master Plan Report 2011).
Business Park developments	Installed rainwater tanks in new developments to improve water efficiency by reducing potable water use.
Timed flush installation	Installed timed flushes to urinals and dual-flush options to cisterns in viable amenities.
Awareness campaigns	Conducted awareness campaigns including hosting City West Water in 2009 for World Environment Day and placing Save Water signage along travelators in 2009–2010.
Water Management Strategy	Developed the 2012 Water Management Strategy.

11.6.5 Targets

Table 11.11 lists APAM's proposed targets to reduce potable water consumption.

Table 11.11: Proposed Water Consumption Targets

Objective: To reduce potable water consumption across APAM managed areas	
Target	**Timeframe**
Reduce water usage with an aspiration target of five per cent per passenger, based on the 2012–2013 baseline.	2018
Agree to and adopt the principles and recommendations of the 2012 Water Management Strategy.	2013 onwards

11.7 Water Quality – Stormwater

11.7.1 Overview and Objectives

Objective: Improve stormwater quality to achieve leading-edge standards

Surface water is an integral part of the natural environment. Maintaining surface water health and ensuring that new and existing developments do not negatively affect surface water systems, such as nearby creeks and rivers, is of high importance. The Melbourne Airport Stormwater Management Plan aims to integrate stormwater at the site and protect receiving waters threatened by stormwater runoff.

Melbourne Airport sits within a number of catchments managed by Melbourne Water and the Port Phillip and Westernport Catchment Management Authority, and drains into six waterways: Moonee Ponds Creek, Steele Creek, Steele Creek North, Arundel Creek, Deep Creek and the Maribyrnong River (refer Figure 11.1). The majority of stormwater at Melbourne Airport is collected in an extensive network of open and closed drains, pits, pipes and open grassed swales before being discharged to local waterways or the municipal drainage network (refer to Section 11.7.2 for stormwater treatment).

Stormwater management involves a number of internal and external stakeholders such as the EPA Victoria, Melbourne Water, Hume City Council, Brimbank City Council, Department of Environment and Primary Industries, VicRoads, Port Phillip Catchment and Westernport Catchment Management Authority, Moonee Ponds Creek Coordination Committee, Friends of Maribyrnong Valley, Friends of Steele Creek North and the Keilor Historical Society.

11.7.2 Existing Assessments and Management

As stipulated in the Stormwater Management Plan, Melbourne Airport currently undertakes a range of actions to manage stormwater quality, including:

- monitoring and maintaining stormwater outfall structures, flame traps and triple interceptor traps
- conducting regular street sweeping landside and airside waste control
- reducing pollutants entering stormwater drains using litter traps
- implementing sediment and erosion control measures
- implementing stormwater retention and/or infiltration measures
- monitoring stormwater quality on a quarterly basis.

Melbourne Airport management also meets twice a year with the Community and External Agencies Group, which is made up of representatives from the community, local councils, EPA Victoria, Melbourne Water and the Airport Environment Officer. This group supports monitoring and stormwater management practices at Melbourne Airport.

11.7.3 Potential Issues and Impacts

Water quality monitoring undertaken at stormwater discharge locations (Moonee Ponds Creek, Steele Creek, Steele Creek North and Arundel Creek) indicates that the concentrations of some parameters exceed Commonwealth and/or state objectives. However, the results are generally similar to those from other urban areas and moreover have remained consistent with previous years, and have not increased despite the airport's major growth. Melbourne Airport will continue to work closely with all relevant government bodies and stakeholders to further reduce its impacts on waterways.

Environmental impacts associated with existing and future airport operations and developments include:

- contamination caused by long-term build-up of pollutants on runways, roads and other hardstand areas (such as oils) as a result of spills or pollutants
- inappropriate stormwater treatment and/or retention systems that do not meet best practice standards
- increased peak flows and flow velocities due to an increase in impervious areas, leading to greater risk of erosion in downstream surface water systems and changes to existing flow regimes
- unintended spills or leaks on impervious surfaces or directly into stormwater infrastructure.

11.7.4 Measures to Prevent, Control or Reduce Environmental Impacts

Melbourne Airport has identified three key areas to address current and future stormwater management issues, and to promote leading-edge standards:

- Stormwater quality – improve water treatments such as filtration and retention, and upgrade existing outfall infrastructure to improve the quality of stormwater runoff and reduce the impact on downstream surface water.
- Stormwater quantity – reduce peak flows and flow velocities from developed areas to minimise impact on flows in downstream surface water and potential erosion.
- Stormwater conservation – identify opportunities for stormwater or rainwater harvesting as an alternative water supply.

Table 11.12 lists the achievements from previously implemented measures to improve stormwater management.

Table 11.12: Water Quality – Stormwater Achievements

Achievements from 2008–2013	Overview
Surface water monitoring	Monitored surface water on a quarterly basis at various Melbourne Airport stormwater outlets. The water quality monitoring sites include three sites at Moonee Ponds Creek, one site at Steele Creek North, two sites at Steele Creek and six sites at Arundel Creek.
Installation of rain gardens	Installed rain gardens (bioretention systems) to treat stormwater runoff by filtering stormwater through vegetation and drainage materials such as sand or organic mulch.
Installation of retarding basins	Installed retarding basins to reduce peak flows discharging from Melbourne Airport, with the aim of achieving pre-development flows. Basins have been installed at Annandale Road and Sharps Road, with one also designed for the Steele Creek North catchment.
Outfall improvement project	Commenced design on major capital works to improve outfalls and installed an additional chamber to improve the removal of contaminants.

11.7.5 Targets

Table 11.13 lists APAM's proposed tasks to improve stormwater quality.

Table 11.13: Proposed Water Quality – Stormwater Targets

Objective: Improve stormwater quality to achieve leading-edge standards	
Target	**Timeframe**
Identify target areas for implementing water management measures to improve water quality, including stormwater retention systems, infiltration measures, stormwater and rainwater harvesting systems.	2017
Ensure the Stormwater Management Plan meets legislative requirements, achieves leading-edge standards and is updated on an annual basis by a qualified environmental specialist and, where appropriate, ensure recommended actions to improve water quality are implemented.	Annually
Consult with the community and external agencies on significant local and regional stormwater matters on a half-yearly basis.	Half-yearly
Provide ongoing education and training on stormwater issues for key Melbourne Airport staff, operators and business operators.	Ongoing
Undertake the Steele Creek North Drainage Project, which aims to harvest non-potable water from Melbourne Airport land within the Steele Creek North catchment area to meet both airport and community water requirements, including the Essendon Football Club's training ground. Importantly, this project also improves water quality leaving the catchment.	2015

11.8 Water Quality – Groundwater

11.8.1 Overview and Objectives

Objective: To protect groundwater quality at Melbourne Airport

Melbourne Airport is located above a regional aquifer. The average depth to groundwater is approximately 20 metres below ground level. However, groundwater monitoring assessments indicated that the water table was locally found shallower at 7.5 metres below ground level and in some parts of the site is much deeper (over 40 metres below ground level).

11.8.2 Existing Assessments and Management

Melbourne Airport and its business operators are required to monitor groundwater when contamination has or is likely to have occurred. There are approximately 70 groundwater bores at the airport to monitor groundwater quality. There are no known areas of significant groundwater contamination on the Melbourne Airport site. In the event of a spill or leak that could affect groundwater, the following steps are taken:

- Groundwater bores are installed and sampled to investigate the extent of any contamination.
- The results are assessed by a suitably qualified and experienced person.
- Remediation of the contamination is conducted as required.

11.8.3 Potential Issues and Impacts

The potential contamination sources from commercial, maintenance and land management activities can be related to:

- vehicle and aircraft maintenance and refuelling activities, including those undertaken at hangars and ancillary workshops, fuel storage, and wheel, tyre and brake workshops
- fire control operations, including the use of foam concentrates, powders and halon gases
- construction, refurbishment and related works
- existing solid waste disposal areas
- contamination that may enter the site from adjoining land.

11.8.4 Measures to Prevent, Control or Reduce Environmental Impacts

To mitigate potential impacts to groundwater, Melbourne Airport undertakes the following measures:

- conducting regular inspections and audits of operational areas to identify potential risks
- providing compulsory spill response training and provision of spill kits
- maintaining existing infrastructure to minimise spills and uncontrolled discharges to sources which could be linked to groundwater
- continual monitoring of known groundwater contamination in accordance with the requirements of the Environment Strategy
- implementing Construction Environmental Management Plan requirements to prevent groundwater contamination during construction
- communicating existing groundwater information and identified sources of contamination to operators and future developers.

Table 11.14 lists the achievements from measures implemented in the 2008 Environment Strategy to improve groundwater management.

Table 11.14: Water Quality – Groundwater Achievements

Achievements from 2008–2013	Overview
Groundwater quality monitoring and reporting	Site businesses and operators monitored groundwater quality where potential incidents of contamination have occurred and reported the findings. Operators undertook various sampling activities in 2009, 2010, 2011 and 2012.
JUHI monitoring system upgrade	Implemented a computerised leak detector system that constantly monitors the Joint User Hydrant Installation (JUHI) facility and all fuel lines.

11.8.5 Targets

Table 11.15 lists APAM's proposed targets to improve groundwater quality.

Table 11.15: Proposed Water Quality – Groundwater Targets

Objective: To protect groundwater quality at Melbourne Airport	
Target	**Timeframe**
Review existing bore locations and install additional bores where required to provide a comprehensive site-wide monitoring system.	2015
Conduct a site-wide baseline monitoring event of selected bores within and outside of Melbourne Airport, to check groundwater quality. Subsequent monitoring activities can then be completed.	2015
Ensure that Melbourne Airport business operators and site contractors appropriately monitor, where required, groundwater quality where contamination is likely to occur or has been reported in the past.	As required
Continue the existing groundwater quality monitoring program and relevant reporting. Ensure existing groundwater contamination is within the accepted limits and complies with the relevant Commonwealth and State Government legislation.	Ongoing

11.9 Biodiversity and Conservation Management

11.9.1 Overview and Objectives

Objective: Conserve and actively manage biodiversity values at Melbourne Airport to improve the quality and condition of native vegetation and fauna habitats

Melbourne Airport and its surrounding landscape provide known and potential habitat for threatened and listed species protected under Commonwealth and State Government legislation. These habitats are largely within the Grey Box Woodland, which is recognised as one of the largest remaining stands of this vegetation type in Victoria and is listed on the Australian Heritage Council; Department of the Environment; Australian Heritage Database; the Register of the National Estate; and the Commonwealth Heritage List.

As detailed in previous Master Plans and environment strategies, the construction and operation of a second north–south runway would potentially require removing some of the woodlands. If and when required, an offset strategy will be formulated to deal with any proposed removal, which will be the subject of a Major Development Plan under the Airports Act and may also trigger a referral under the EPBC Act, as it is a matter of national environmental significance.

The Grey Box Woodland – Vegetation and Fauna

The woodlands is representative of a nationally threatened ecological community. The woodlands provide suitable foraging habitat for the Swift Parrot which is listed as endangered under Commonwealth legislation. The woodlands is also a known habitat for a threatened species of bull ant.

Melbourne Airport Precinct – Vegetation and Fauna

Small areas across the site are designated as National Temperate Grasslands of the Victorian Volcanic Plains. Although degraded, the ecological community is nationally critically endangered, one classification from extinction.

Targeted surveys for the Golden Sun Moth and Striped Legless Lizard have not detected either species and determined that Melbourne Airport is not considered an ideal habitat.

A range of endangered vegetation types have been mapped in waterways adjoining the airport. The Growling Grass Frog, a threatened species, is known to inhabit Moonee Ponds Creek and surrounding waterways. The waterways are shown in Figure 11.1.

Additional targeted surveys are required to determine the presence of the above and other threatened species at Melbourne Airport, including the Grey-Headed Flying Fox and aquatic species such as the freshwater *Galaxias sp.*

11.9.2 Existing Assessments and Management

A number of future processes, particularly development, could affect biodiversity in and around Melbourne Airport. As such, APAM is undertaking appropriate measures to minimise impacts to fauna habitats and threatened species, and to develop outside biodiversity areas wherever possible.

Any proposed development at Melbourne Airport duly considers biodiversity values. Building on existing information, detailed assessments are undertaken prior to any development with the potential to impact on biodiversity values. This will include assessing the type, condition and extent of vegetation to be impacted (Habitat Hectare assessment), assessing fauna habitat values, analysing the potential impact on threatened species, and conducting targeted surveys for threatened species if required. All proposed developments will consider options to minimise impacts to fauna habitats and threatened species.

The Melbourne Airport Tree Removal Procedure details the offset requirements for any vegetation removal required to accommodate approved developments. Other mitigation measures during construction include vegetation clearing protocols, translocation of threatened species, protecting retained vegetation (for example, through protective fencing) and offering environmental inductions for construction workers.

11.9.3 Potential Issues and Impacts

Melbourne Airport is subject to a range of existing and potential environmental threats. These include:

- development
- weed and pest animal invasion
- grazing (rabbits, kangaroos and cattle)
- stormwater and drainage runoff and water quality impacts
- insufficient information to manage biodiversity values appropriately
- lack of proscribed fire (to aid germination and biodiversity health)
- climate change
- bushfire and wildfire
- changes to surrounding land use.

11.9.4 Measures to Prevent, Control or Reduce Environmental Impacts

Appropriate management actions to minimise effects to biodiversity include weed control, pest animal control, protection from development and ecological burning, which is undertaken in the Grey Box Woodland and Annandale Grassland.

Where appropriate, vegetation mapping, assessments and targeted species surveys will ensure development and conservation management activities are undertaken based on adequate information and data.

Bushfire and wildfire control is discussed in the Melbourne Airport Emergency Plan.

Table 11.16 lists the achievements attained during the previous Melbourne Airport Environment Strategy.

Table 11.16: Biodiversity and Conservation Achievements

Achievements from 2008–2013	Overview
Grey Box Woodland	Active management of the Grey Box Woodland since 1991 has substantially improved the quality of the vegetation. A greater diversity of native species is now found due to Melbourne Airport's re-vegetation and remediation programs. Weed control spraying and herbicides have reduced pests, and baiting has helped control the rabbit population.
Targeted surveys of threatened species	A number of threatened species targeted surveys have been carried out to provide critical data on the presence of species and habitats. Surveyed species include the Growling Grass Frog, Striped Legless Lizard and Golden Sun Moth.

11.9.5 Targets

Table 11.17 lists APAM's proposed targets to conserve and actively manage biodiversity values.

Table 11.17: Proposed Biodiversity and Conservation Targets

Objective: Conserve and actively manage biodiversity values at Melbourne Airport to improve the quality and condition of native vegetation and fauna habitats

Target	Timeframe
Investigate the feasibility for community participation in managing and monitoring biodiversity.	2015
Identify assessments required to complete Melbourne Airport's understanding of biodiversity, including additional targeted surveys to determine the presence of threatened species.	2015
Produce a Biodiversity and Conservation Management Plan that will draw together all available information and provide detailed guidance for ongoing management activities across Melbourne Airport.	2016
Continue managing the Grey Box Woodland programs, including pest animal and plant removal.	Ongoing

11.10 Cultural Heritage

11.10.1 Overview and Objectives

Objective: To ensure Indigenous and non-Indigenous (historical) cultural heritage sites are protected at Melbourne Airport, in accordance with Commonwealth and State legislative requirements

Indigenous cultural heritage sites at Melbourne Airport occur along waterways or on land adjacent to waterways. However, sites have also been identified on Melbourne Airport land where there is no water source, including on the volcanic plains, along the edge of the escarpment of the Deep Creek and Maribyrnong River valleys and in the Grey Box Woodland area. While stone artefact scatters are the most common site identified at Melbourne Airport, other Indigenous cultural heritage sites include scarred trees within the Grey Box Woodland.

Indigenous silcrete quarries, a material used to make stone tools, can be found in most of the major waterways and river valleys in the western region of Melbourne, including the Maribyrnong River Valley and Moonee Ponds Creek. Silcrete bedrock was important to the Indigenous community from the Pleistocene period (approximately 11,000 years ago). In addition to silcrete, other locally available raw materials such as quartz and quartzite were used to manufacture stone tools.

There are five historical heritage sites on airport land listed on the Victorian Heritage Inventory under Section 121 of the Heritage Act 1995. These are:

- Oakland Junction Township Site
- Glencairne Homestead Site
- Glenara Sheep Dam
- Steele Creek Tributary Bridge Ruin
- St Mary's Church.

The following three sites have been delisted following a survey commissioned by Heritage Victoria the Glen Alice Homestead, Radar Hill Track, and Coghills Dam.

There may be further features of early European settlement at Melbourne Airport, but they are as yet unidentified. Sites adjacent to Melbourne Airport listed on the Victorian Heritage Register include the Overnewton Homestead, stone buildings and gatehouses, Gellibrand Hill Park and the Presbyterian Church.

11.10.2 Existing Assessments and Management

Melbourne Airport recognises the value of cultural heritage and aims to protect that heritage where possible through measures such as the Cultural Heritage Environmental Site Register. This register includes the location of Indigenous and non-Indigenous sites within and adjacent to the airport.

Prior to beginning works in the vicinity of a recorded site or in areas of cultural heritage sensitivity, Melbourne Airport liaises with the following specialists and stakeholders to manage any potential disturbance:

- cultural heritage advisors
- Heritage Council of Victoria and local historic heritage interest groups
- Aboriginal Affairs Victoria
- Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc., which is the Registered Aboriginal Party for Melbourne Airport land.

Current Victorian State legislation (*Aboriginal Heritage Act 2006* (AH Act)) and Aboriginal Heritage Regulations 2007) require a Cultural Heritage Management Plan (CHMP) to be prepared for high-impact activities in areas of cultural heritage sensitivity (refer to Division 2 of the AH Act). While this legislation does not apply to Commonwealth land, Melbourne Airport undertakes voluntary CHMPs to manage perceived risks to cultural heritage values. For other works which are deemed to be of lower risk, works are managed under a Cultural Heritage Permit.

11.10.3 Potential Issues and Impacts

There are various risks that may lead to potential damage to sites with cultural heritage significance. The most common cause of damage is inadequate identification and consideration of cultural heritage throughout the life of a project.

11.10.4 Measures to Prevent, Control or Reduce Environmental Impacts

To protect highly valued Indigenous heritage sites from future development, an area in the south-west of the Melbourne Airport precinct has been designated the Annandale Grasslands for cultural heritage (identified in Figure 11.1).

All historical heritage sites in Victoria are protected by the *Heritage Act 1995*. Melbourne Airport will seek advice through Heritage Victoria and/or from a qualified heritage specialist or archaeologist prior to any work that may harm European historical sites.

Table 11.18 lists the measures which have been undertaken to improve cultural heritage conservation at Melbourne Airport during the previous Melbourne Airport Environment Strategy period.

Table 11.18: Cultural Heritage Achievements

Achievements from 2008–2013	Overview
Heritage sites survey	In 2009, Heritage Victoria commissioned a study to re-survey Victorian Heritage Inventory sites as part of its 'Outer Western Site Reassessment Project'. This included some archaeological sites that fell within airport land. The Cultural Heritage Environment Site Register and the cultural heritage map were updated as a result.
New developments	A number of cultural heritage surveys were completed from 2008–2012, to identify the need for CHMPs at proposed new development sites. In many cases, the results of the cultural heritage assessment determined that a CHMP was not required under the *Aboriginal Heritage Act 2006*.

11.10.5 Targets

Table 11.19 lists APAM's proposed targets to ensure Indigenous and non-Indigenous cultural heritage sites are protected.

Table 11.19: Proposed Cultural Heritage Targets

Objective: To ensure Indigenous and non-Indigenous historical cultural heritage sites are protected at Melbourne Airport, in accordance with Commonwealth and State legislative requirements

Target	Timeframe
Complete cultural heritage surveys to identify or confirm Indigenous and non-Indigenous sites at Melbourne Airport.	2015
To comply with relevant legislation, APAM will require contractors and business operators to complete cultural heritage surveys and assessments and, where appropriate, to prepare a CHMP for developments known to be on or near areas of cultural heritage significance.	As required
Continue to involve and consult with cultural heritage stakeholders, in particular the Registered Aboriginal Party, the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.	As required
Provide annual training and awareness for relevant Melbourne Airport employees and contractors on cultural heritage issues.	Annually

11.11 Air Quality

11.11.1 Overview and Objectives

Objective: Minimise and manage air emissions from ground-based airport operations and activities to comply with Commonwealth and State legislation

Melbourne Airport is responsible for ground-based air emissions from sources such as aircraft movement and maintenance, vehicles, and stationary and mobile plants. Air emissions within the Melbourne Airport boundary are regulated by the Airports Act and the Airports (Environment Protection) Regulations 1997. Due to the mobile nature of air pollutants, impacts can be trans-boundary. Air quality outside the airport boundary (on state land) is subject to the provisions of the State Environment Protection Policy. Air emissions in all circumstances from aircraft are regulated under separate legislation.

11.11.2 Environmental Assessment and Management

Melbourne Airport maintained a continuous air monitoring station from July 1997 to June 2001, which demonstrated compliance with both Commonwealth and State air quality limits for all pollutants monitored. Based on these results and in consultation with EPA Victoria and the Commonwealth Department of Infrastructure and Regional Development, it was agreed the ambient air quality monitoring station could be decommissioned in 2001.

In 2007, Melbourne Airport engaged air quality specialists to conduct an air quality modelling assessment of emissions from airport operations. The study included emissions from aircraft (ground-based and in flight) and ground-based activities including fire training. The model predicted ground-based and aircraft emissions would potentially exceed regulatory levels at on site and off site locations (the model did not predict ground-based emissions only).

To build on earlier studies and enable Melbourne Airport to further understand the impact of its operations on air quality, the 2008 Environment Strategy committed to 'a one-year review of ambient air quality'. The duration of this study has been increased to five years to provide information on long-term air quality trends in the vicinity of Melbourne Airport. The monitoring study is due to start in late 2013 and will provide a better understanding of ambient air quality at Melbourne Airport. The monitoring study will be supported by an assessment of the impact of ground-based activities on the surrounding environment and compliance with relevant legislation.

Existing measures to help manage air quality include the following:

- Where applicable, air quality (dust, odour and criteria pollutants) management procedures are included in Construction Environmental Management Plans, Operational Environmental Management Plans and Permits to Commence Work conditions (for example, the requirement to use non potable water for dust suppression where possible).
- Melbourne Airport purchases low-emission vehicles and has trialled electric vehicles for moving staff around the airport.
- Melbourne Airport educates staff members, tenants and contractors on the potential impact of construction and other works on the environment and the correct operation and maintenance of plant and equipment.
- Onsite machinery and vehicles, including taxiing aircraft, are regularly serviced.
- Storage and handling management procedures mandate appropriate management for all hazardous and flammable materials, such as fuel, solvents and paints.
- The Airport Emergency Plan details standard operating procedures to minimise volatile organic and odorous emissions in the event of chemical spills.

11.11.3 Potential Issues and Impacts

The following sources at Melbourne Airport have the potential to affect air quality:

- Emissions generated by portable ground power units and auxiliary power units. Ground power units are fixed points on the gate that connect to the aircraft and provide power when stationary. They produce fewer emissions than portable units or auxiliary units.
- Emissions related to Melbourne Airport operations and maintenance, other than those specifically for flying aircraft. These include emissions from boilers, emergency generators, space heaters, air conditioners, refrigerators using ozone-depleting substances, spray painting and paint stripping activities, workshop activities (such as degreasing, sanding, welding and maintenance), and cleaning operations that use organic solvents.
- General vehicle emissions from Melbourne Airport operators, workers, passengers and visitors.
- Emissions related to fire training operations, including dark smoke emissions during fire training exercises and the use of fire suppressants and fire extinguishers.
- Emissions relating to vehicle fuel operations, including volatile organic compounds and odorous emissions from fuel storage tanks, vehicle refuelling and de-fuelling, and volatile organic compound emissions from spills.
- Emissions produced as a result of construction works, including building demolition, removal or damage to asbestos-containing material, stockpiling and earth moving.

The potential impacts from ground-based emissions include degraded local and regional air quality, impacts on human health (through population exposure to airport pollution) and impacts on the environment (some species are sensitive to air pollution).

11.11.4 Measures to Prevent, Control or Reduce Environmental Impacts

Measures outlined in Section 11.11.2, in conjunction with the five-year monitoring program, will enable Melbourne Airport to develop and prioritise future air quality management and mitigation measures.

Table 11.20 lists the air quality management achievements during the previous Melbourne Airport Environment Strategy period.

Table 11.20: Air Quality Achievements

Achievements from 2008–2013	Overview
Air emissions reduction	Achieved a 13 per cent reduction in emissions of sulphur dioxide and volatile organic compounds from 2008–2012.[8]
CEMPs, OEMPs and Environmental Code of Practice	Required all significant projects to produce CEMPs and high-risk tenants to produce OEMPs. All tenants must comply with the Environmental Code of Practice. These documents require air quality impacts to be monitored and managed.
Construction and demolition	Required contractors on construction projects to use dust suppression where appropriate.
Alternative fuel facility	Developed an alternative fuel facility (liquid petroleum gas/propane fuel station) that is mainly used by taxi operations.
Vehicle purchasing and usage	Purchased low-emission vehicles where practical and regularly maintained them.
Ozone-depleting substances	Maintained an inventory of ozone-depleting substances and continued to phase out substances with high ozone-depletion and global warming potential. In 2009, one chiller was replaced, resulting in a 71 per cent reduction in carbon dioxide equivalent (CO_2e) emissions.

11.11.5 Targets

Table 11.21 lists APAM's proposed targets to minimise and manage air emissions from ground-based airport operations.

Table 11.21: Proposed Air Quality Targets

Objective: Minimise and manage air emissions from ground-based airport operations and activities and comply with Commonwealth and State legislation

Target	Timeframe
Prepare an Air Quality Strategy, which will include a five-year review of ambient air quality and an inventory of all existing on-site operational air emission sources.	Commence 2013
Prepare a Dust Management Plan to manage and control dust emissions for all construction projects.	2016
Continue appropriate servicing and maintenance standards for all APAM plant and equipment.	Ongoing
Continue to maintain a register of ozone-depleting substances including maintenance and, where applicable, disposal.	Ongoing

8 Based on National Pollutant Inventory figures for APAM, 2008–2012.

11.12 Ground-Based Noise

11.12.1 Overview and Objectives

Objective: Manage and minimise noise levels associated with ground-based airport operations and ground-running aircraft to achieve compliance with Commonwealth and State legislation

Different noise issues are managed separately by Airservices and Melbourne Airport. The airport is responsible for noise generated from aircraft ground running and other ground-based noise emissions. Noise generated from an aircraft during flight, landing, take off or taxiing is regulated by Airservices and is discussed in more detail in Section 12.2.

Airservices receives noise complaints and reports them to Melbourne Airport. According to records, Melbourne Airport receives low numbers of ground-based noise complaints and has not received any adverse reaction from the surrounding community or experienced a serious incident related to noise emissions generated by ground-based operations.

11.12.2 Environmental Assessment and Management

Melbourne Airport requires all significant construction contractors to demonstrate in their CEMP how they will mitigate construction noise. Construction and maintenance noise is assessed and impacts on surrounding communities must be minimised.

To guide the management of ground-based noise, in 2012 Melbourne Airport updated the Melbourne Airport Operational Safety Policy: Ground Running of Aircraft July 2000, which is used by airlines and maintenance staff.

11.12.3 Potential Issues and Impacts

The following ground-based operations produce noise at Melbourne Airport:

- aircraft ground movement around Melbourne Airport
- aircraft maintenance and testing activities
- road traffic – both operational and public vehicle associated noises
- fixed or mobile plant and equipment operations
- construction and demolition
- infrastructure maintenance.

11.12.4 Measures to Prevent, Control or Reduce Environmental Impacts

Noise management and mitigation measures implemented at Melbourne Airport include the following:

- All significant construction sites must develop a CEMP to mitigate the risk of noise associated with the works. The CEMP details noise management strategies and procedures.
- Major construction sites are regularly inspected (monthly or more frequently if necessary) to ensure they meet the CEMP's requirements.
- Melbourne Airport staff, tenants and contractors are educated on operational noise impacts and how to correctly operate and maintain plant and equipment.
- Melbourne Airport holds quarterly meetings with the Noise Abatement Committee, which includes airlines, Airservices, EPA Victoria, the Commonwealth Department of Infrastructure and Regional Development, the Victorian Department of Transport, Planning and Local Infrastructure and representatives from local councils.
- All ground-based noise complaints are monitored monthly to determine whether there are any particular trends or issues.

Table 11.22 lists the achievements in monitoring and managing ground-based noise during the previous Melbourne Airport Environment Strategy period.

Table 11.22: Ground-Based Noise Achievements

Achievements from 2008–2013	Overview
Noise Abatement Committee	The Committee holds quarterly meetings to review aircraft noise exposure impacts and make recommendations to minimise the effects of aircraft noise.
Audits of aircraft ground-running activities	Aircraft ground-running activities audited on a six-monthly basis. The audits ensure that all testing is undertaken at the designated location and time of day, minimising the potential noise impact on the surrounding community. Melbourne Airport achieved a high level of compliance in audits of the Ground Running of Aircraft Policy.
Development of CEMPs	All significant construction projects must develop CEMPs, which require noise to be managed in accordance with airport guidelines.
Development of OEMPs	Melbourne Airport business operators are required to develop OEMPs where adverse impacts on the environment might occur, including noise.

11.12.5 Targets

Table 11.23 lists APAM's proposed targets to manage and minimise noise levels associated with ground-based airport operations and ground-running aircraft.

Table 11.23: Proposed Ground-Based Noise Targets

Objective: Manage and minimise noise levels associated with ground-based airport operations and ground-running aircraft to comply with Commonwealth and State legislation

Target	Timeframe
Continue to investigate noise management measures and, where feasible, implement and embed improvement measures into general operating procedures and construction activities.	Ongoing
Continue to monitor ground-based noise complaints monthly to determine trends and key issues.	Monthly
Continue to implement ground-based noise education and awareness program for key Melbourne Airport staff.	Ongoing
Continue to conduct noise audits to ensure CEMPs and OEMPs are implemented appropriately.	Ongoing

11.13 Land Management

11.13.1 Overview and Objectives

Objective: To undertake all reasonable and practical measures to ensure land is managed appropriately and contamination is avoided at Melbourne Airport

Melbourne Airport has a responsibility to ensure its land is not polluted and that contaminants do not impact surface water or groundwater features in or around the site.

For the purpose of this Environment Strategy, 'land management' is considered to be soil management and the protection of significant geological and hydrogeological features within and adjacent to Melbourne Airport. The soil at Melbourne Airport overlies relatively shallow newer volcanic basalt, which is a hard and compact rock. Hazardous liquids such as fuels, oils and solvent-based chemicals, which are used frequently at Melbourne Airport, have a high potential to contaminate land, as discussed further in Section 11.14. Land management controls and incident management can reduce the potential for soil pollution and transport of contaminants to water courses.

11.13.2 Environmental Assessment and Management

Melbourne Airport assesses all construction and demolition projects for their potential impact on soil, groundwater and surrounding waterways. In accordance with the requirements of the Airports (Environment Protection) Regulations 1997, Melbourne Airport has developed several control measures to minimise impacts on soil and groundwater.

11.13.3 Potential Issues and Impacts

Activities which could have the potential to impact on Melbourne Airport and the surrounding environment include:

- water run-off from vehicle-related activities including aircraft maintenance and car park facilities
- chemical and waste storage, handling, use and disposal
- demolition and construction works such as asbestos removal, excavation and earth moving
- importation and storage of contaminated fill
- fuel farm and JUHI storage
- grounds maintenance including landscaping, vegetation removal and pesticide spraying
- potential for leaks from underground storage tanks.

11.13.4 Measures to Prevent, Control or Reduce Environmental Impacts

Considering the broad range of activities which could affect the environment, and keeping the requirements of the Airports (Environment Protection) Regulations 1997 in mind, Melbourne Airport has developed several control measures to minimise and manage soil contamination. These measures include:

- spill response management procedures
- annual auditing of tenants based on their likelihood to affect the environment
- storage and handling procedures
- stormwater management requirements and procedures
- reducing waste by reusing fill where appropriate
- sediment erosion and runoff reduction for both Melbourne Airport land and construction sites in general
- soil assessments prior to construction on new developments to identify any contamination issues.

Table 11.24 lists the land management achievements during the previous Melbourne Airport Environment Strategy period.

Table 11.24: Land Management Achievements

Achievements from 2008–2013	Overview
Soil erosion program	Ensured creek banks were maintained and intact.
Underground petroleum storage system integrity testing program	Required all business operators with underground petroleum storage systems to test the integrity of tanks every two years. Removed or decommissioned non-essential underground storage tanks.
Retarding basin remediation works	Prepared remediation designs and undertook works to further de-silt the retarding basin, grade swale drain batters, and stabilise with rocks and plants.

11.13.5 Targets

Table 11.25 lists APAM's proposed targets to appropriately manage land and avoid contamination.

Table 11.25: Proposed Land Management Targets

Objective: To undertake all reasonable and practical measures to ensure land is managed appropriately and contamination is avoided at Melbourne Airport

Target	Timeframe
Assess soil pre and post lease for potential contamination.	As required
Continue to ensure all material brought to the airport site is classified as clean fill and certified by EPA Victoria. All material stored on-site must meet the requirements of the Airport (Environment Protection) Regulations 1997. Melbourne Airport will consult with the stakeholders through this process.	As required
Continue to respond appropriately and investigate all cases of potential land contamination.	As required
Engage qualified environmental professionals to develop Contamination Management Plans for all contaminated sites at Melbourne Airport and, if required, undertake remediation and disposal.	As required
Continue to identify and clearly communicate the location of contaminated land to those undertaking earth excavation or drilling works.	Ongoing

11.14 Hazardous Materials

11.14.1 Overview and Objectives

Objective: To ensure all hazardous products are stored, handled, used and disposed of in compliance with Commonwealth and State requirements

A number of hazardous liquids are used in Melbourne Airport operations, such as fuels, oils and solvent-based chemicals. Without appropriate management and procedures in place, hazardous liquids have the potential to affect the environment, including soil, groundwater, surface water and air quality.

11.14.2 Environmental Assessment and Management

Operational and some construction activities can affect soil quality, and the Airports (Environment Protection) Regulations 1997 require expert examination of contaminated sites if there is a possibility they could affect the surrounding area. Melbourne Airport has several control measures in place to ensure all activities involving hazardous materials are appropriately managed. For example, the Melbourne Airport Emergency Plan details standard operating procedures to minimise volatile organic and odorous emissions in the event of chemical spills.

11.14.3 Potential Issues and Impacts

Liquid hydrocarbons have the largest bulk use at Melbourne Airport, and include unleaded fuel, diesel, aviation fuel and oils. The following is a list of activities in which hazardous materials could affect the environment:

- bulk aviation and automotive fuel storage and handling
- fire training, and the storage and use of fire-fighting foam
- airside aircraft refuelling activities
- tenant-operated maintenance facilities for vehicles and aircraft
- general airport operation, construction, maintenance and landscaping. This could include the use and disposal of pesticides and herbicides, solvents and paints, batteries, asbestos-containing materials within existing buildings, fuels and cleaning chemicals
- asbestos contained in old buildings and infrastructure such as pipe networks, including asbestos impacted soil.

11.14.4 Measures to Prevent, Control or Reduce Environmental Impacts

Considering the broad range of activities which involve hazardous materials, Melbourne Airport has developed several procedures and control measures to ensure hazardous material is appropriately managed in all situations. The following measures reduce the potential environmental impacts of hazardous materials at Melbourne Airport:

- underground storage tank monitoring procedures, which inform the monitoring, storage and use of hazardous materials
- the Melbourne Airport Emergency Plan, which details standard operating procedures for cleaning up hazardous materials and spills
- Melbourne Airport's EMS procedures, which cover hazardous material maintenance around routine works, records and compliance, and fuel storage and handling procedures
- OEMPs, which require all Melbourne Airport's business operators that use hazardous materials to detail their management and conduct annual reviews of hazardous material use, with the goal of reducing reliance on hazardous products
- the A–D categorisation of all business operators, based on potential environmental risk and environmental management history.

Table 11.26 lists the achievements related to managing hazardous materials during the previous Melbourne Airport Environment Strategy period.

Table 11.26: Hazardous Material Achievements

Achievements from 2008–2013	Overview
Tenant inspections	Undertook yearly inspections of operators.
Hazardous material removal	Removed substances such as asbestos during facility maintenance and upgrading.
Environmental Site Register and Asbestos Register	Updated the Environmental Site Register and Asbestos Register to include sites where hazardous substances have been monitored, assessed and removed.
No underground storage tank installation	No further underground storage tanks were installed on Melbourne Airport land (except for commercially operated public refuelling stations).

11.14.5 Targets

Table 11.27 lists APAM's proposed targets to ensure all hazardous materials are correctly stored, handled, used and disposed of.

Table 11.27: Proposed Hazardous Material Targets

Objective: To ensure all hazardous products are stored, handled, used and disposed of in compliance with Commonwealth and State requirements

Target	Timeframe
Melbourne Airport will assess business operators, tenants, hazardous material management practices and procedures to ensure they are up to date and in accordance with Commonwealth and State requirements.	Annually
Where suitable alternatives exist, reduce or eliminate hazardous products.	Ongoing
Make sure inspections, testing and monitoring of fuel tanks are conducted every two years and, where required, fuel tanks are removed or left in-situ and filled.	Every two years
Continue to maintain an Asbestos Register, including inspecting sites annually and, if required, removing or disposing asbestos in accordance with State regulations.	Annually
Train business operators and key Melbourne Airport staff in spill response, hazardous management practices, and the use and handling of hazardous materials.	Ongoing

11.15 Implementing the Environment Strategy

Environmental management at Melbourne Airport is the responsibility of all Melbourne Airport staff, business operators and contractors. Implementing the Environment Strategy will require a diverse range of actions and commitment among all relevant stakeholders to ensure the airport continues to demonstrate a strong commitment to environmental sustainability.

Melbourne Airport's existing organisational structure consists of a number of established systems and processes into which the Environment Strategy must be embedded, including:

- the EMS, which details the airport's management of environmental processes in a comprehensive and systematic document
- the development of an Airport Sustainability Environmental Management Plan, which will encompass all environment processes, policies and systems applicable to airside and landside operations aimed at protecting and enhancing the environment, easily applied using a comprehensive Geographic Information System (GIS)
- CEMPs, which identify measures to protect the environment and comply with legislation and regulations for construction activities
- OEMPs and the Environmental Code of Practice, which identify measures to protect the environment and comply with legislation and regulations for ongoing activities
- environmental studies for all projects requiring a Major Development Plan to minimise environmental impacts where practical
- regular training and awareness seminars for airport staff to ensure their environmental awareness and knowledge is up to date
- integrating environmental risks and issues at the project planning and development stage so appropriate management and mitigation strategies can be implemented.

Melbourne Airport's business operators will contribute significantly to ensuring the Environment Strategy is adopted on a day-to-day basis. The processes that apply to these stakeholders include:

- the risk categorisation process for projects and ongoing operations, which identifies the likelihood and severity of the environmental impacts their works and operations are expected to have
- the Development Manual, which details the airport's requirements for any proposed works
- auditing processes and communication, which will ensure that targets are being implemented and carried out to the required standards
- maintaining APAM's EMS certification to ISO/14001.

To ensure Melbourne Airport maintains its strong commitment to environmental sustainability, it is critical to develop policies in collaboration with immediate stakeholders and the broader community. As such, Melbourne Airport undertakes bi-annual community engagement sessions, which are attended by Melbourne Airport staff members, the Airport Environment Officer, representatives from EPA Victoria, Melbourne Water, local councils and the community, to communicate its strategies and receive input from the local community – and will continue to do so as it plans for the next stage in Melbourne Airport's history. With predicted increases in passenger numbers, commitment to environmental sustainability is now more important than ever for Melbourne Airport.

12

AIRPORT SAFEGUARDING STRATEGY

12. AIRPORT SAFEGUARDING STRATEGY

12.1 Overview and Objectives

As the main gateway to Victoria and a focal point of Victoria's economy, the long-term and effective safeguarding of Melbourne Airport is critical to maintain the social and economic benefits it contributes to local communities, Melbourne and Victoria, and to protect surrounding communities.

Throughout a long history of collaboration between the airport operator and all levels of government, Melbourne Airport's ongoing operation is supported by a range of legislation, planning controls, studies, strategies and other measures. These include but are not limited to:

- legislation and associated regulations, including the *Airports Act 1996* (Airports Act), *Civil Aviation Act 1988*, the Victorian *Planning and Environment Act 1987* (particularly Part 3C) and local planning schemes
- national policies including the National Airports Safeguarding Framework
- State Government policies including the State Planning Policy Framework and the metropolitan planning strategy Melbourne 2030 – Planning for Sustainable Growth
- land use strategies and plans such as the Melbourne Airport Strategy 1990, the Melbourne Airport Land Use Study 1992 and the Melbourne Airport Environs Strategy Plan 2003
- planning controls embedded in the Victoria Planning Provisions and local planning schemes, including the Urban Growth Boundary, Green Wedge Zones and Melbourne Airport Environs Overlay
- aircraft noise management measures such as the Australian Noise Exposure Forecast, Australian Standard AS2021-2000, the Melbourne Airport Environs Overlay and noise monitoring systems
- airspace protection measures, particularly the *Airports (Protection of Airspace) Regulations 1996* and *Civil Aviation (Building Control) Regulations 1988*
- measures to deal with hazards to aircraft operations such as birdstrikes, dangerous lighting and interference with air navigation aids
- environmental protection measures including the Melbourne Airport Environment Policy, Environment Strategy and Environmental Management System (EMS)
- economic and social impact assessments that highlight the significant contribution the airport makes at the local, state and national levels in creating economic value, generating employment and connecting communities
- education and communication measures designed to inform and consult with interested parties about the airport and issues associated with it, including the Melbourne Airport Planning Coordination Forum, Community Aviation Consultation Group and Noise Abatement Committee.

These measures form a safeguarding framework that helps maintain, protect and support Melbourne Airport's ongoing operations, as well as balance the needs of communities surrounding the airport. The two most important components of this framework are the aircraft noise and airspace protection measures, which are discussed in more detail below.

Safeguarding the airport is an ongoing and shared responsibility between all levels of government and the airport. There is strong support from government for airport safeguarding, but it has become clear that improvements can be made to Melbourne Airport's safeguarding framework. The National Airports Safeguarding Advisory Group has highlighted the need to improve airport safeguarding measures around Australia. This issue is discussed further in Section 12.4.

The objectives of the airport safeguarding strategy are to:

- strengthen Melbourne Airport's role within the state's economic and transport infrastructure and protect its ongoing 24-hour operation
- enable the airport to effectively and competitively operate at national and international levels
- ensure any new land use or development around the airport does not prejudice its safe and long-term operations, and avoids or minimises incompatible land uses
- protect the airport's curfew-free status
- manage and, where possible, minimise the impact of airport and aircraft operations on surrounding areas and communities
- ensure that strategic planning for metropolitan Melbourne recognises and protects Melbourne Airport, and that land use decisions are integrated, appropriate land use buffers are in place and provision is made for future growth and development
- continue to respect the safeguarding role of the Green Wedges and restrict incompatible land uses in these areas.

12.2 Aircraft Noise Management

Aircraft noise is perhaps the most important issue for all airports in terms of land use protection. The site for the airport was originally selected, in part, to minimise the impact of aircraft noise on surrounding areas, which at the time was largely rural. Since then urban development has encroached closer to the airport and under its flight paths.

Aircraft noise is an unavoidable by-product of an airport's operation, and while modern aircraft are relatively quiet compared to their predecessors, it is still an issue that requires considerable attention. Accordingly, there are a number of systems and procedures designed to deal with aircraft noise as outlined in the following sub-sections.

Melbourne Airport will continue to work with Airservices, governments, aircraft manufacturers and airline carriers to manage aircraft noise. Melbourne Airport will also continue to run the Noise Abatement Committee and the Community Aviation Consultation Group to ensure that noise issues are being appropriately monitored and managed.

12.2.1 Australian Noise Exposure Forecast

The Airports Act requires a Master Plan to include an Australian Noise Exposure Forecast (ANEF) to determine likely noise exposure around the airport. A description of the ANEF system and the associated land use compatibility advice for areas in the vicinity of airports is contained in Australian Standard AS2021-2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction.

There are three types of aircraft noise charts produced using the ANEF system:

- Australian Noise Exposure Index (ANEI)
- Australian Noise Exposure Concept (ANEC)
- Australian Noise Exposure Forecast (ANEF).

These charts are described in the Glossary.

The ANEI is a contour map that shows actual historical aircraft noise levels over a given time period. The most recent ANEI for Melbourne Airport covers the period from 1 July 2009 to 30 June 2010 and is shown in Figure 12.1.

The ANEF chart shows the cumulative noise effect of a full year of operations so that seasonal changes in weather patterns and airline schedules are taken into account. The resulting contours are therefore a measure of the total noise exposure over a 12-month period divided by 365 to show an average annual day. They do not represent the maximum exposure on any day or the maximum exposure caused by a single aircraft. The ANEF must be endorsed for technical accuracy by Airservices.

The first Melbourne Airport ANEF was issued in 1993 and updates were published in 1996, 1998, 2003 and 2008. A new ANEF chart was produced in conjunction with the preparation of this Master Plan (refer Figure 12.2).

As with previous ANEFs, the 2013 ANEF contours represent the airport's forecast ultimate noise impact, based on current information, after taking into account the development stages of the four-runway system and a long-term maximum of 410,000 fixed wing and rotary wing flights. This ultimate capacity ANEF is a compilation of the latest ANEI and three ANECs prepared for the major operational stages of the airport's development:

- ANEC 1: Two existing runways at maximum capacity
- ANEC 2: Three runways at maximum capacity (parallel east–west runway as the third runway)
- ANEC 4: Four runways at maximum capacity (parallel north–south runway as the fourth runway).

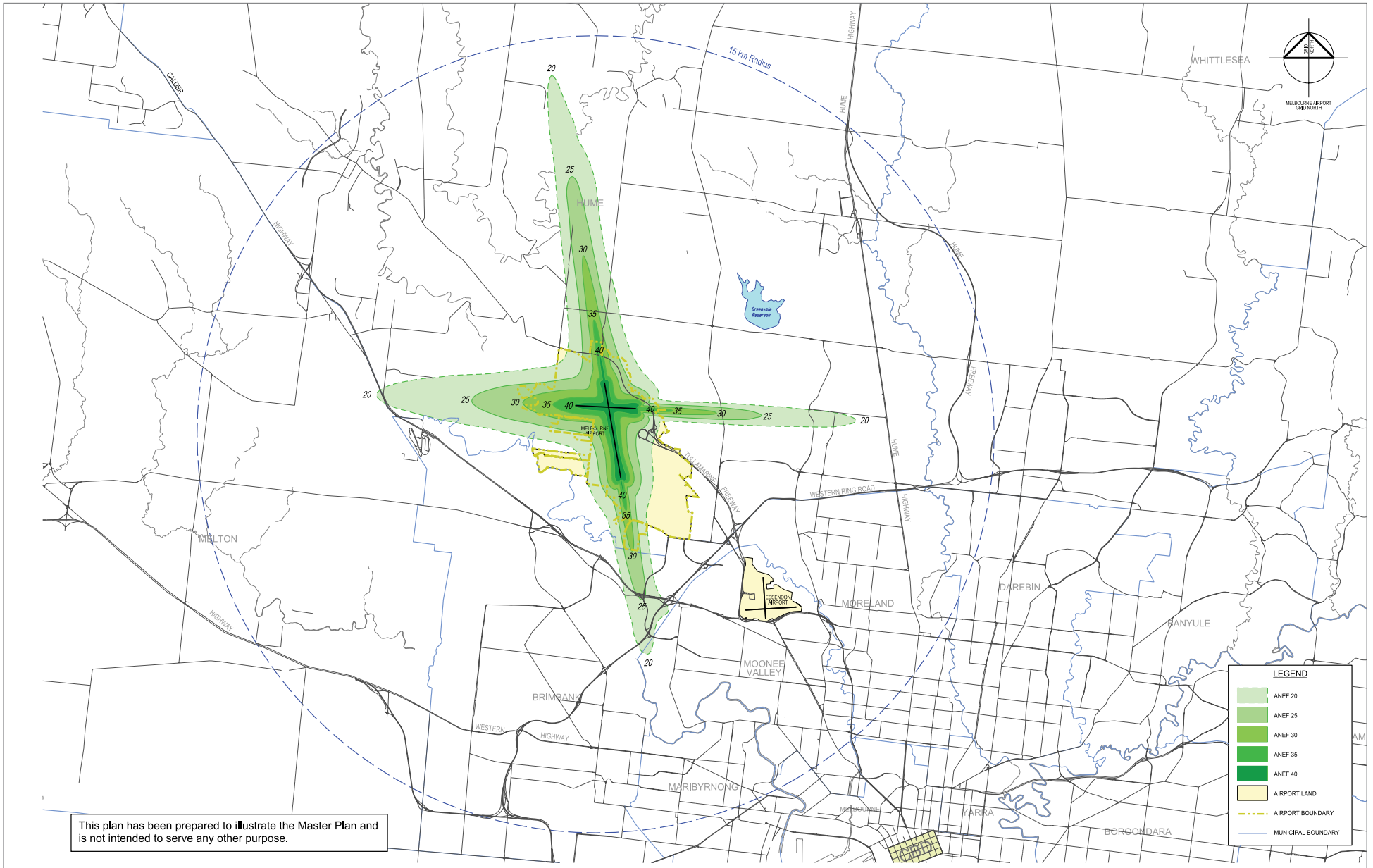
Table 12.1 shows the annual aircraft movements for each ANEC scenario.

The basis of these aircraft movement forecast levels was discussed in Section 6.

Since 1990, the airport's Master Plans have shown two additional runways; one north–south and one east–west. In this Master Plan Melbourne Airport has nominated the east–west runway as its preferred orientation for the airport's third runway. As a result, ANEC 3, which was included in the previous ANEFs, has not been included in this latest ANEF. ANEC 3 related to the scenario whereby the selected third runway was the parallel north–south runway, but as the east–west runway has now been selected, the ANEC relating to this scenario is no longer relevant.

Table 12.1: ANEC Scenarios

Concept	Annual aircraft movements		
	Fixed wing	Rotary wing	Total operations
ANEC1 (two runways)	265,000	7,300	272,300
ANEC2 (three runways)	380,000	10,000	390,000
ANEC4 (four runways)	400,000	10,000	410,000



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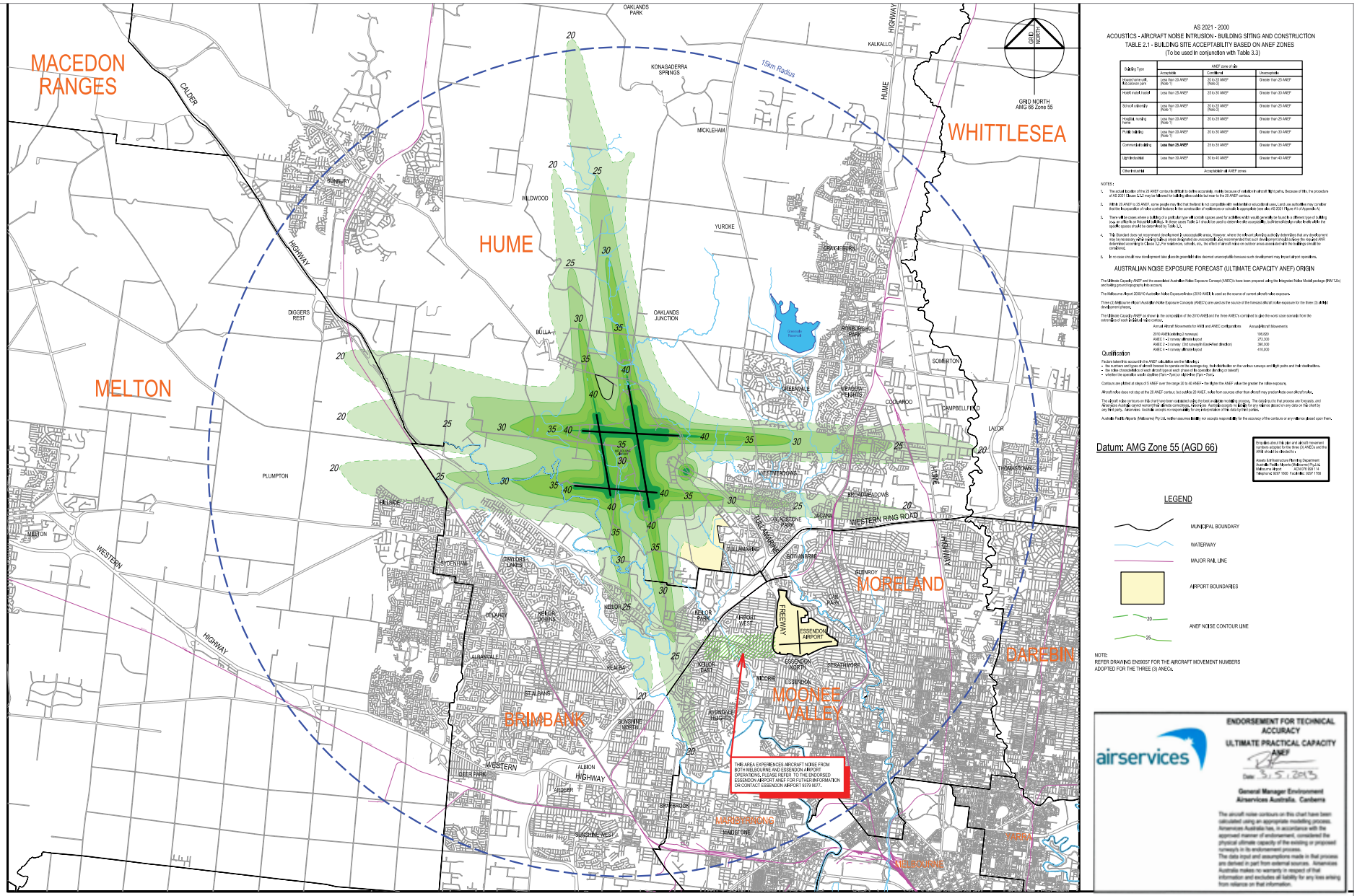
MELBOURNE AIRPORT

ABN 62 076 999 114

2013 MASTER PLAN

Australian Noise Exposure Index (2009/10)

Fig. 12.1



AS 2021 - 2000
ACOUSTICS - AIRCRAFT NOISE INTRUSION - BUILDING SITING AND CONSTRUCTION
TABLE 2.1 - BUILDING SITE ACCEPTABILITY BASED ON ANEF ZONES
(To be used in conjunction with Table 3.3)

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

NOTES:

1. The actual location of the 25 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of AS 2021 Clause 3.3.2 may be followed for building sites outside but near to the 25 ANEF contour.
2. Within 25 ANEF to 25 ANEF, some people may find that the land not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also AS 2021 Figure A1 of Appendix A).
3. There will be cases where a density of people higher than 3 people per hectare will normally be found in different types of building (e.g. an office in an industrial building). In these cases the Table 3.3 may be used to determine the acceptability of internal noise levels, which is the specific purpose should be determined by Table 3.3.
4. This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing ANEF areas designated as unacceptable, it is recommended that such development should not exceed the existing ANEF development density according to Clause 3.7. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.
5. In no case should new development take place in areas designated as unacceptable because such development may impact airport operations.

AUSTRALIAN NOISE EXPOSURE FORECAST (ULTIMATE CAPACITY ANEF) ORIGIN

The Ultimate Capacity ANEF and the associated Australian Noise Exposure Concept (ANEC)s have been prepared using the Integrated Noise Model package (INM 7.0c) and taking ground topography into account.

The Melbourne Airport 2009/10 Australian Noise Exposure Index (2010 ANEI) is used as the source of current aircraft noise exposure.

Three (3) Melbourne Airport Australian Noise Exposure Concepts (ANEC)s are used as the source of the forecast aircraft noise exposure for the three (3) **AHMG** development phases.

The Ultimate Capacity ANEF as shown is the composition of the 2010 ANEI and the three ANEC's combined to give the worst case scenario from the contours of each of these aircraft noise contour.

	Annual Aircraft Movements for ANEI and ANEC configurations	Annual Aircraft Movements
	2010 ANEI (utilising 2 runways)	196,000
	ANEC 1 –2 runway alternate layout	272,000
	ANEC 2 –2 runway (3rd runway in East-West direction)	380,000
	ANEC 3 –4 runway alternate layout	410,000

Qualification

Factors taken into account in the ANEF calculations are the following:
- the numbers and types of aircraft forecast to operate on the average day, their distribution on the various runways and flight paths and their destinations,
- the noise characteristics of each aircraft type at each stage of its operation (landing or takeoff)
- whether the operation used Daytime (7am – 7pm) or Night-time (7pm – 7am).

Contours are plotted at steps of 5 ANEF over the range 20 to 40 ANEF – the higher the ANEF value the greater the noise exposure.

Aircraft noise does not stop at the 20 ANEF contour, but outside 20 ANEF, noise from sources other than aircraft may predominate over aircraft noise.

The aircraft noise contours on this chart have been calculated using the best available modelling process. The data input to that process are forecasts, and Airservices Australia cannot warrant that ultimate correctness. Airservices Australia accepts no liability for any reliance placed on any data on this chart by any third party. Airservices Australia accepts no responsibility for any interpretation of the data by third parties.

Australia Pacific Airports (Melbourne) Pty Ltd, neither assumes liability nor accepts responsibility for the accuracy of the contours or any reliance placed upon them.

Datum: AMG Zone 55 (AGD 66)

Enquiries about flight plan and aircraft movement numbers adopted for the three (3) ANECs and the ANEI should be directed to:

Aviation & Infrastructure Planning Department
Airservices Australia, 25 Thomas Mitchell Road, Building 4 Fourth Floor, Telephone 6217 1600 Facsimile 6217 1708

LEGEND

- MUNICIPAL BOUNDARY
- WATERWAY
- MAJOR RAIL LINE
- AIRPORT BOUNDARIES
- ANEF NOISE CONTOUR LINE

NOTE:
REFER DRAWING EN89927 FOR THE AIRCRAFT MOVEMENT NUMBERS ADOPTED FOR THE THREE (3) ANECs.

airservices

ENDORSEMENT FOR TECHNICAL ACCURACY
ULTIMATE PRACTICAL CAPACITY ANEF
Date: 31.5.2013
General Manager Environment
Airservices Australia, Canberra

The aircraft noise contours on this chart have been calculated using an appropriate modelling process. Airservices Australia has, in accordance with the approved manner of endorsement, considered the physical ultimate capacity of the existing or proposed runways in its endorsement process.
The data input and assumptions made in that process are derived in part from external sources. Airservices Australia makes no warranty in respect of that information and excludes all liability for any loss arising from reliance on that information.

MELBOURNE AIRPORT
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Ultimate Capacity
Australian Noise Exposure Forecast (2013)

Fig. 12.2

The latest version of the Integrated Noise Model (INM) was used to produce the ANEIs and ANECs in accordance with Commonwealth Government requirements. The INM is aircraft noise modelling software produced by the United States Federal Aviation Administration. The model uses a much wider range of aircraft types than was available for the previous noise modelling. The operational levels for the various runway layouts were broken down by aircraft type, arrival or departure, day or night, sector origin or destination, and INM stage length. When feasible under the prevailing weather and traffic demand conditions, runway operating modes used in the modelling have considered noise abatement procedures aimed at directing noise away from heavily populated areas.

All aircraft flight paths, operating procedures and aircraft allocation to runways used in preparing the ANEF have been supplied or endorsed by Airservices, the organisation that manages the airspace and air traffic control. The ANEF itself has been endorsed for technical accuracy by Airservices.

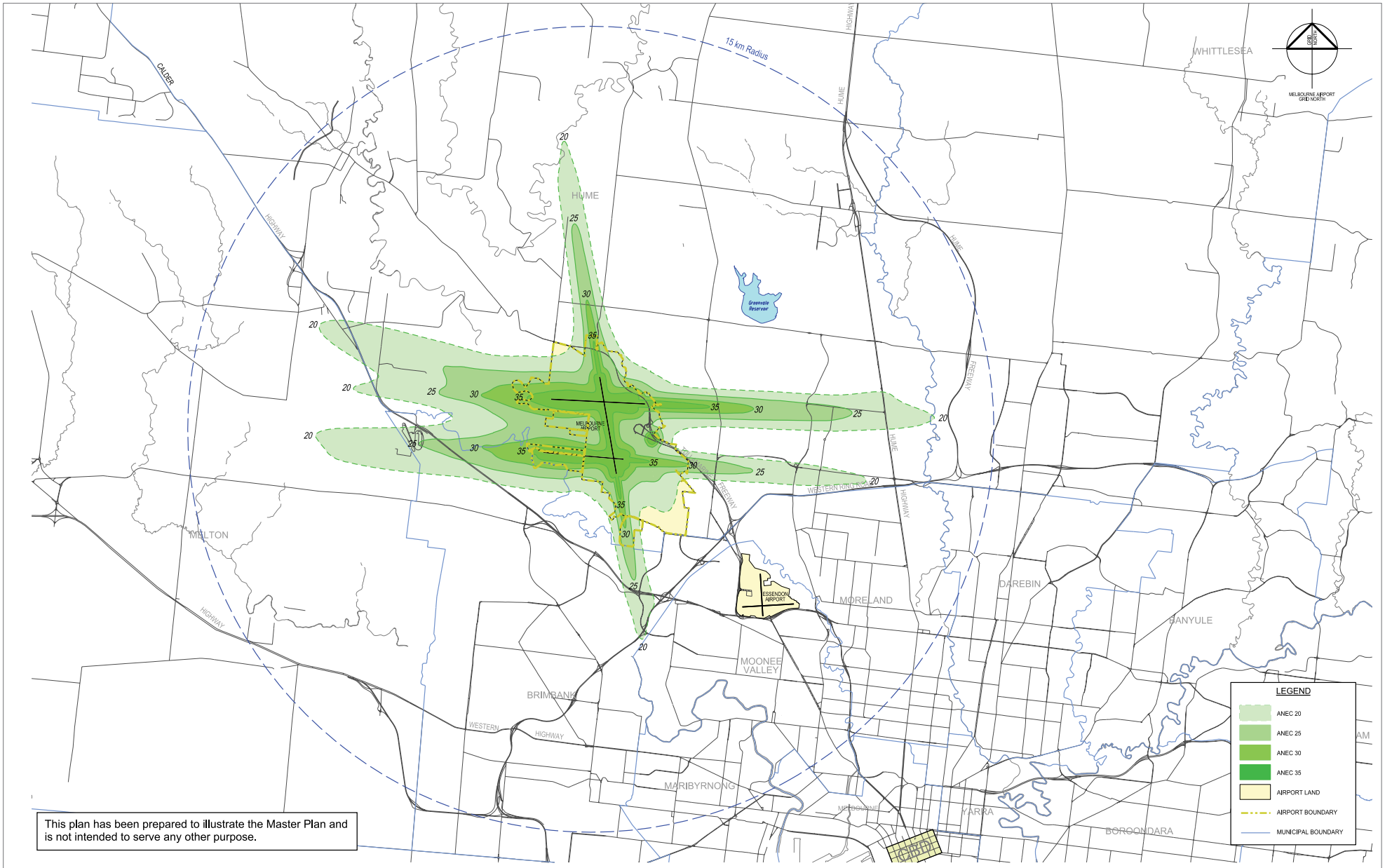
The ANEC 2 noise contours are shown in Figure 12.3. This chart shows the contours for the airport operating with three runways at maximum capacity (parallel east–west runway as the third runway). This chart is included to show the ultimate forecasted effect of the third runway in terms of noise contours, compared to the current situation shown in the ANEI chart.

Figures 12.4 and 12.5 illustrate the indicative aircraft arrival and departure tracks adopted for the four-runway ANEC. In practice, aircraft tracks can vary either side of the theoretical flight paths due to factors such as weather, aircraft type and payload. The computer modelling process has allowed for track dispersal to accommodate such variations.

The flight paths shown on Figures 12.4 and 12.5 are generally the same as those shown in the previous Master Plan, except for the following new flight paths which are now proposed (for noise modelling purposes):

- new arrivals paths from the west for the parallel east–west runway (Runway 09R)
- new departures path to the east/south for the parallel east–west runway (Runway 09R).

The new departures flight path for Runway 09R is a right-hand turn to join the existing Runway 16 departure path, and it is planned that this turn will largely be within the airport site, which will help reduce the impact on new areas. As was the case with the flight paths shown in the previous Master Plan, Figure 12.5 does not show a Runway 09R straight-out departure path to the east. As such, according to the airport's current modelling and Airservices advice, there will only be a requirement for arrivals over the areas to the east of the third (parallel east–west) runway. The noise model also envisages that there will be minimal arrivals at night from the east on the third runway. All operations will be subject to compliance with the associated noise abatement procedures to minimise the impact on surrounding communities.



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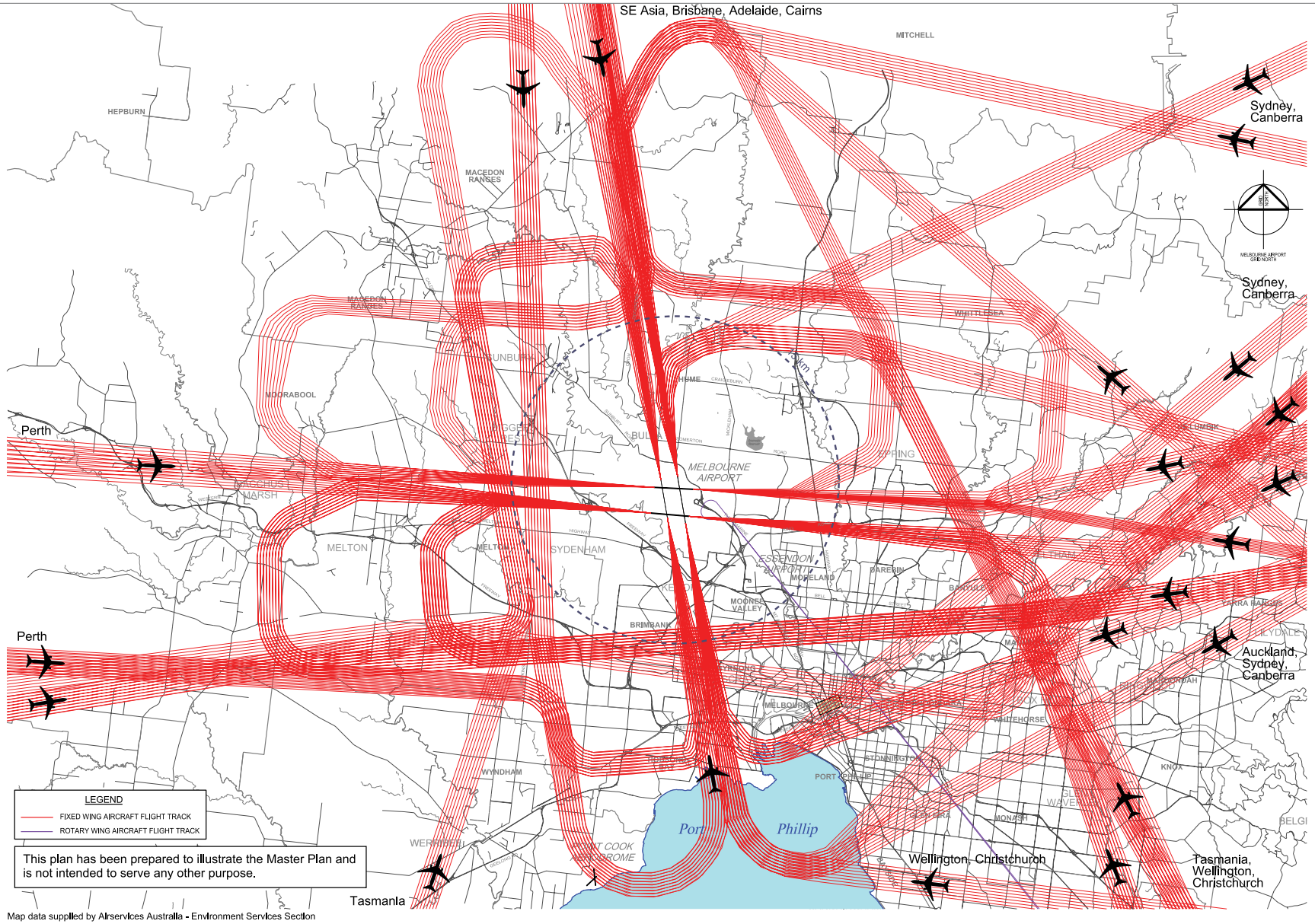
2013 MASTER PLAN

Australian Noise Exposure Concept No. 2 (ANEC 2)

Fig. 12.3



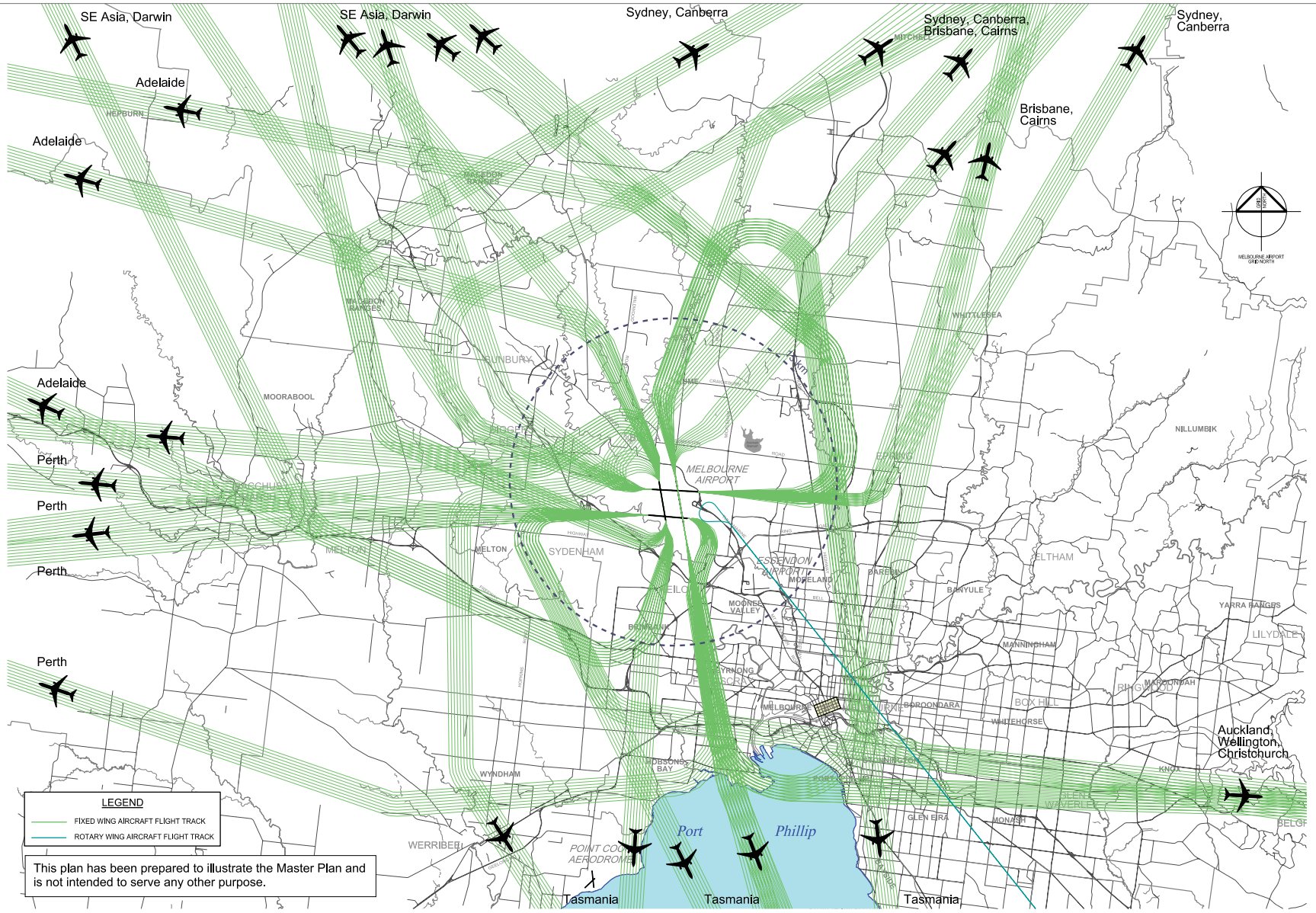
Map data supplied by Airservices Australia - Environment Services Section

MELBOURNE AIRPORT
ABN 62 076 999 114

2013 MASTER PLAN

Arrivals Flight Paths Four Runways

Fig. 12.4



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Departures Flight Paths - Four Runways

Fig. 12.5

It should be noted that further studies and processes would need to be carried out before introducing flight paths for the third and fourth runways. Likewise, construction of the third runway will be subject to an MDP process under the Airports Act and detailed environmental impact assessments. All aircraft flight paths, operating procedures and aircraft allocation to runways used to prepare this ANEF are subject to these separate processes.

The area of land affected by the new ultimate capacity ANEF contours (shown in Figure 12.2) has overall decreased by approximately five per cent (7 square kilometres) when compared to the previous 2008 ANEF. While in some areas the contours have decreased, particularly to the south of the airport, in other areas, particularly to the east, the contours have increased.

Overall, the net difference between the 2008 and 2013 ANEFs is an increase of approximately 300 residential properties. However the impact varies depending on the location. The increase of the ANEF contours affects approximately 3,025 additional residential properties to the east of the airport and approximately 140 additional residential properties to the west, when compared to the 2008 contour. It is estimated that the decrease of the contour to the south of the airport will be approximately 2,880 residential properties. It is important to keep in mind that there will also be residents within the existing noise contours who will experience noise for the first time when the new east-west runway becomes operational.

These changes are attributed, in the main, to the following factors:

- advice from Airservices regarding the operation of parallel runways and a revised Airfield Capacity Study, which resulted in changes to runway usage
- increases in the planned use of parallel east–west runways compared to the 2008 ANEF (ANEC 2 previously comprised 272,000 movements, and now comprises 380,000 movements)
- changes to the aircraft fleet mix forecasts to incorporate quieter new-generation aircraft, which have a reduced departures noise footprint
- decrease in the forecast general aviation (light aircraft) activity levels
- the INM noise modelling software, which is now more comprehensive and can more realistically model a greater range of aircraft types.

There are no properties zoned for residential purposes within the 30 ANEF contour.

12.2.2 Melbourne Airport Environs Overlay

Land use controls for the areas around Melbourne Airport have been in place since 1992. These controls ensure that inappropriate land use and development in the noise-affected areas surrounding the airport do not affect its efficient operation.

The Victoria Planning Provisions in 1996 introduced the Airport Environs Overlay (AEO), which was based on the 1992 Melbourne Airport Environs Area controls. The AEO is a standard provision in the Victoria Planning Provisions that can be used by any airport in Victoria. In May 2007 a new overlay, the Melbourne Airport Environs Overlay (MAEO), based on the 2003 ANEF contours, was introduced into the Victoria Planning Provisions. This overlay incorporates improved and enhanced provisions specifically for Melbourne Airport in accordance with the outcomes of the Melbourne Airport Environs Strategy Plan 2003.

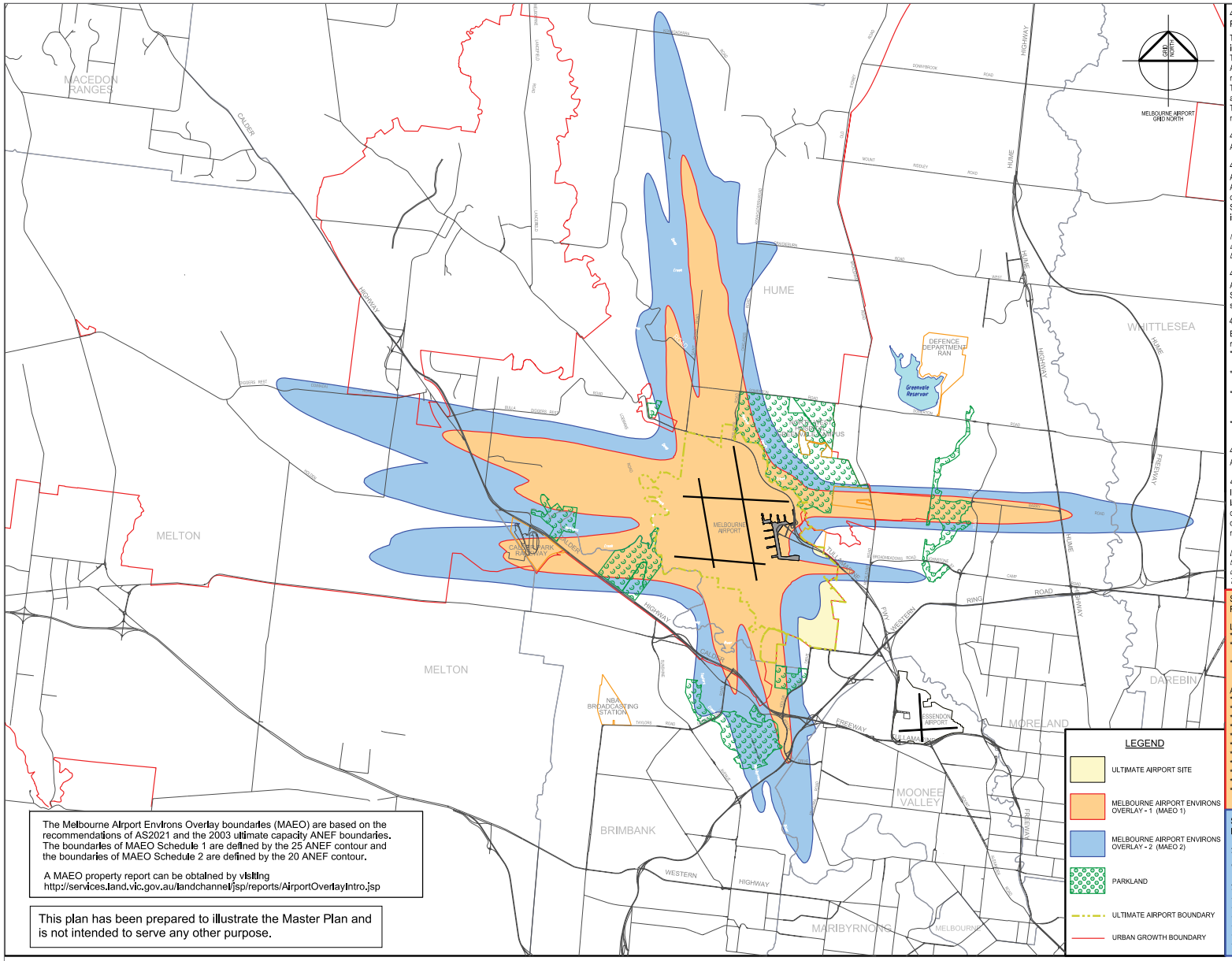
The State Government has indicated that the MAEO boundaries will be reviewed after the 2013 Master Plan and associated ANEF have been approved and the review of AS2021 has been completed.

The purposes of the MAEO controls are to:

- implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies
- ensure that land use and development are compatible with Melbourne Airport's operation in accordance with the relevant airport strategy or Master Plan, and with safe air navigation for aircraft approaching and departing the airfield
- assist in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise-sensitive buildings
- provide for appropriate levels of noise attenuation depending on the level of forecasted noise exposure.

The MAEO controls generally apply to land on the approaches to the airport's existing and proposed runways. The total area covered by the MAEO controls is shown in Figure 12.6[9], which also shows the two levels of controls – the MAEO Schedule 1 (orange) and MAEO Schedule 2 (blue). The MAEO boundaries are based on the recommendations of AS2021 and the 2003 Ultimate Capacity ANEF boundaries. The MAEO1 boundaries are defined by the 25 ANEF contour and the MAEO2 boundaries are defined by the 20 ANEF contour.

9 Figure 12.6 also shows the location of the Urban Growth Boundary (UGB) relative to the Melbourne Airport site and MAEO1 and MAEO2. The UGB helps protect the airport from encroachment by noise-sensitive urban development.



The Melbourne Airport Environs Overlay boundaries (MAEO) are based on the recommendations of AS2021 and the 2003 ultimate capacity ANEF boundaries. The boundaries of MAEO Schedule 1 are defined by the 25 ANEF contour and the boundaries of MAEO Schedule 2 are defined by the 20 ANEF contour.

A MAEO property report can be obtained by visiting http://services.land.vic.gov.au/landchannel/jsp/reports/AirportOverlayIntro.jsp

This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

LEGEND

- ULTIMATE AIRPORT SITE
- MELBOURNE AIRPORT ENVIRONS OVERLAY - 1 (MAEO 1)
- MELBOURNE AIRPORT ENVIRONS OVERLAY - 2 (MAEO 2)
- PARKLAND
- ULTIMATE AIRPORT BOUNDARY
- URBAN GROWTH BOUNDARY

45.08 MELBOURNE AIRPORT ENVIRONS OVERLAY

Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
To ensure that land use and development are compatible with the operation of Melbourne Airport in accordance with the relevant airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield.
To assist in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise sensitive buildings.
To provide for appropriate levels of noise attenuation depending on the level of forecasted noise exposure.

45.08-1 Use of land

Any requirement in a schedule to this overlay must be met.

45.08-2 Buildings and works

Any requirement in a schedule to this overlay must be met.
Any building for which a permit is required under this overlay must be constructed so as to comply with any noise attenuation measures required by Section 3 of the Australian Standard AS 2021-2000, Acoustics - Aircraft Noise Intrusion - Building Siting and Construction, issued by Standards Australia International Ltd.

Note: In Section 3 of Australian Standard AS 2021-2000, Table 3.3 refers to both building types and activities within those buildings. Each building type listed has its ordinary meaning and should not be interpreted as defined in this scheme.

45.08-3 Subdivision

A permit is required to subdivide land.
Subdivision must occur in accordance with any lot size or other requirement specified in a schedule to this overlay.

45.08-4 Decision guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:
* The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
* Whether the proposal will result in an increase in the number of dwellings and people affected by aircraft noise.
* Whether the proposal is compatible with the present and future operation of the airport in accordance with the current Melbourne Airport Master Plan approved in accordance with the Airports Act 1996.
* Location of the development in relation to the criteria set out in table 2.1 Building Site Acceptability based on ANEF Zones in Australian Standard AS 2021-2000.

45.08-5 Exemption from notice

An application is exempt from the notice requirements of Section 52(1)(a), (b) and (d) of the Act.

45.08-6 Notification requirements

In accordance with Section 52(1)(c) of the Act, notice of an application to use land, subdivide land or to construct a building or construct or carry out works must be given to the airport lessee company of Melbourne Airport in accordance with the Commonwealth Airports Act 1996, unless otherwise agreed in writing between the responsible authority and the airport lessee. The notice must be accompanied by a copy of the application, existing condition and development plans.

Notes: Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land. Check the requirements of the zone which applies to the land. Other requirements may also apply. These can be found at Particular Provisions.

SCHEDULE 1 TO THE MELBOURNE AIRPORT ENVIRONS OVERLAY (MAEO1)

Requirements

Land must not be used for :
* More than one dwelling on a lot.
* More than one dependent person's unit on a lot.
* Accommodation (other than Backpackers lodge, dwelling, dependent person's unit, host farm and residential hotel).
* Child care centre.
* Drive-in theatre.
* Education Centre.
* Hospital.

A permit is required to use land for a :
* Art and craft centre.
* Backpackers lodge.
* Brothel.
* Cinema based entertainment facility.
* Crematorium.
* Display home.
* Dependent person's unit.
* Dwelling
* Funeral parlour.
* Host farm.
* Hotel.
* Home occupation.
* Indoor recreation facility.
* Office.
* Place of assembly (other than Drive-in theatre).
* Research and development centre.
* Research centre.
* Residential hotel.
* Restricted recreation facility.
* Retail premises.
* Tavern.
* Veterinary centre.

SCHEDULE 2 TO THE MELBOURNE AIRPORT ENVIRONS OVERLAY (MAEO2)

Requirements

A permit is required to use land for a Dwelling :
The development of a single lot for two or more dwellings must not exceed a density of one dwelling per 300 square metres.

A permit is required to use the land for :
* Accommodation.
* Art and craft centre.
* Child care centre.
* Display home.
* Education centre.
* Hospital.
* Hotel.
* Office.
* Place of assembly.
* Research and development centre.
* Research centre.
* Restricted recreation facility.
* Tavern.

MELBOURNE AIRPORT
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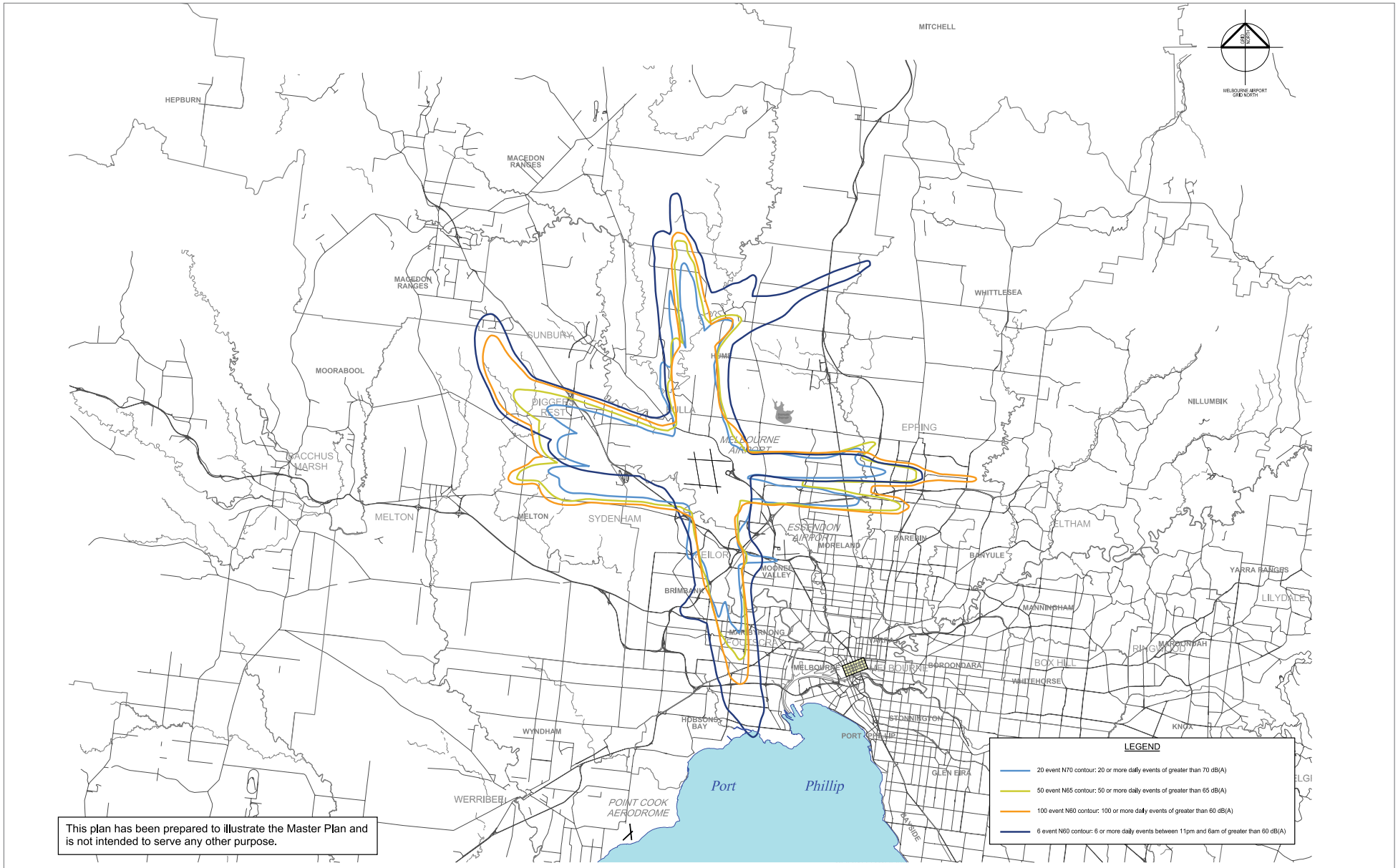
2013 MASTER PLAN

Melbourne Airport Environs Overlay

Fig. 12.6



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MELBOURNE AIRPORT
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2013 MASTER PLAN

N60, N65 and N70
Noise Contours

Fig. 12.7

The details and requirements of MAEO1 and MAEO2 are in the local planning schemes of the five councils covered by these controls: Brimbank, Hume, Melton, Moonee Valley, and Whittlesea. In accordance with AS2021, the MAEO1 controls are more restrictive than those of MAEO2. For example, under MAEO1 certain noise-sensitive uses such as schools, hospitals and certain types of accommodation are prohibited, whereas MAEO2 requires a permit for these uses. All new noise-sensitive uses in both areas must be assessed for AS2021 acoustic requirements.

12.2.3 Limitations of the ANEF System

The ANEF system forms the basis for the airport's current published noise contours and associated planning controls (the MAEO schedules). However, experience has shown that aircraft noise is not confined to areas inside the ANEF noise contours, nor does the noise stop at a line on a map. In fact, most complaints relating to aircraft noise at Australian airports, including Melbourne Airport, come from people who live outside the published ANEF noise contours (that is, outside the 20 ANEF contour).[10]

It is now generally recognised that basing land use planning decisions solely on ANEF noise contours, without reference to other information, is likely to lead to a less than optimal outcome for airports and the community.[11] At best, the ANEF and AS2021 system sets minimums and, in the end, the system is only intended to mitigate noise effects within buildings. Additional or supplementary noise planning tools are required to better support the airport's ongoing operation and protect surrounding communities.

12.2.4 N60, N65 and N70 Noise Contours

Having regard to the recognised limitations of the ANEF system, the National Airports Safeguarding Framework (NASF) Guideline A: Measures for Managing Impacts of Aircraft Noise recommends using the N60/N65/N70 noise contour system to supplement the ANEF contours.

The N60/N65/N70 system is a complementary aircraft noise contour system which produces contours showing the potential number of aircraft noise events above 60dB(A), 65dB(A) or 70dB(A). These contours, sometimes called 'number above' or just 'N' contours, have several advantages over the ANEF system:[11]

- N contours report noise by the number of single events, which is how individuals generally experience and perceive aircraft noise.
- The information can be relatively easily verified – for example, by cross-comparing with a measured N70 chart.
- N contours are useful for showing noise exposure in a meaningful way for short time periods, for example, evenings, as it takes information beyond the 'average day'.

The N70 system reports aircraft noise in the way that a person perceives it – as a number of noise events per day above a certain decibel level.

This system is not a new concept, but contours derived from it have never been published for Melbourne Airport. As recommended in NASF Guideline A, N contours have been produced in parallel with this Master Plan to provide an additional level of noise information. The N contours are shown in Figure 12.7. Like the ANEF, the N contours reflect modelling of ultimate runway capacity and are not intended to represent actual runway utilisation at a specific point in time. These contours also form part of Melbourne Airport's online noise tool, which can be found on the airport's website at www.melbourneairport.com.au/noise-tool. This tool is discussed further in Section 12.2.9.

It should be noted that the N contours are based on the NASF Guideline A, which was agreed to at the Standing Council on Transport and Infrastructure meeting on 18 May 2012, acknowledging the Commonwealth Government's intention to seek a review of AS2021 by Standards Australia. In accordance with NASF Guideline A, the N contours are provided for information purposes to assist and inform strategic land use decision making around the airport.

12.2.5 Noise Monitoring Systems

Airservices has set up permanent noise monitoring equipment in a number of suburbs around Melbourne Airport to measure aircraft noise. When any of these terminals detect a noise event, the computerised Noise and Flight Path Monitoring System can identify the flight path and altitude of every aircraft operating in the vicinity of the monitor at that time, as well as the general level of background noise. This system can be used to determine

10 *Safeguards for airports and the communities around them – Discussion Paper*, Department of Infrastructure, Transport, Regional Development and Local Government, June 2009.

11 *Guidance Material for Selecting and Providing Aircraft Noise Information*, Department of Environment and Heritage and Department of Transport and Regional Services, 2003.

whether a noise complaint is due to a particular aircraft and whether an aircraft was operating in accordance with approved flight procedures.

Airservices also has a 24-hour noise enquiry unit called the Noise Complaints and Information Service that receives, logs and investigates noise enquiries and complaints. These are monitored on a monthly basis to determine whether there are any particular trends or issues, or whether any aircraft has operated outside its approved flight procedures, so that appropriate investigations can be initiated and corrective action taken if required.

The Aircraft Noise Ombudsman conducts independent administrative reviews of Airservices' management of aircraft noise-related activities, including:

- handling of complaints or enquiries made to Airservices about aircraft noise
- community consultation processes related to aircraft noise
- presenting and distributing aircraft noise-related information.

12.2.6 Noise Abatement Procedures

Melbourne Airport's noise abatement procedures (NAPs) are designed and implemented by Airservices to reduce the impact of aircraft noise on the community. They include procedures for runway use and flight paths to reduce flights over residential areas. Air traffic control implements these procedures but they are not mandatory, and their use depends on weather conditions and aircraft requirements.

When possible, flights are directed over the green wedge areas to the north and west of the airport and over non-residential areas. For example, aircraft are generally routed to avoid flying over Bulla, Craigieburn, Greenvale, Keilor, Meadow Heights, St Albans, Sunbury, Sydenham and other areas notified by local instruction. If flying over these suburbs cannot be avoided, a minimum height over these areas is applied:

- jet aircraft – not below 5,000 feet above ground level
- propeller aircraft – not below 3,000 feet above ground level.

Airservices' NAPs comprise preferred runways and preferred flight paths:

- Preferred runways only operate in light winds. Between 6.00am and 11.00pm, when there is no heavy traffic, the preferred runways for landing are Runways 16 and 27, and the preferred runways for departure are Runways 27 and 34. During busy periods between 6.00am and 11.00pm, the preferred runways for landing are Runways 27 and 34, and the preferred runways for departure are Runways 27 and 34. Between 11.00pm and 6.00am, the preferred runways for landing are Runways 16 and 27, and the preferred runways for departure are Runways 27 and 34.
- Preferred flight paths are designed to maximise overflight of non-residential areas.

Further details of these NAPs are available on the Airservices website.

Airservices conducts regular reviews to check the effectiveness of noise abatement procedures and to seek improvements. At major airports, it consults with community forums on the terms of reference for reviewing the procedures and publishes reports on its website.

12.2.7 Smart Tracking

In recent years, satellite assistance has proved to be a quantum leap in aircraft navigation capability and new aircraft are increasingly being designed to be more capable in this regard. Satellite-assisted navigation is recognised internationally for its safety benefits, which are achieved by navigating with high precision. This technology is referred to as 'Smart Tracking'.

To achieve the best aircraft safety, noise and emissions outcomes for Melbourne Airport, Airservices is working towards making Smart Tracking technology permanently available for all suitably equipped aircraft landing at the airport. Smart Tracking aircraft have been successfully trialled at Melbourne Airport since 2009 and at 16 other Australian airports.

12.2.8 Noise Abatement Committee

The Noise Abatement Committee is chaired by Melbourne Airport and comprises representatives from Airservices, the major airlines, the Environment Protection Authority (EPA) Victoria, Victoria Department of Transport, Planning and Local Infrastructure, the Commonwealth Department of Infrastructure and Regional Development, and local councils. The Committee reviews the impact of aircraft noise exposure on the surrounding community and makes recommendations to minimise it. The Committee meets on a quarterly basis and works closely with the Melbourne Airport Community Aviation Consultation Group.

12.2.9 Online Flight Path and Noise Tools

Airservices has an online tool called WebTrak that allows anyone to get information about where and how high aircraft fly over metropolitan areas near Melbourne Airport and other major airports. It displays a map of suburbs within 55 kilometres of the airport, on which anyone can view information about past arriving and departing aircraft, up to the past three months.

Melbourne Airport has also developed a noise tool that allows residents to locate their home and assess current and future noise levels. It is available at www.melbourneairport.com.au/noise-tool.

12.3 Airspace Protection

After aircraft noise management, the other most significant form of protection necessary for the immediate and long-term operation of an airport is the protection of its surrounding airspace from physical intrusions such as tall buildings or towers and non-physical intrusions, such as industrial chimney discharges and bright lights, it is important to secure immediate and long-term operations. These matters are controlled by the Airports (Protection of Airspace) Regulations 1996 and other airspace regulations.

12.3.1 Prescribed Airspace Regulations

Under the Part 12 of the Airports Act (Protection of airspace around airports) and the Airports (Protection of Airspace) Regulations 1996, the airspace around specific airports may be declared as Prescribed Airspace to protect the airspace for the safe arrival and departure of aircraft. Prescribed Airspace is the airspace above either an Obstacle Limitation Surface (OLS) or Procedures for Air Navigational Services (PANS-OPS) surface, which are defined as follows:

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

Under section 182 of the Airports Act, activities that result in intrusions into an airport's Prescribed Airspace are called 'controlled activities', and cannot be carried out without approval. The airport operator or the Commonwealth Department of Infrastructure and Regional Development must assess applications to carry out controlled activities, and may impose conditions on approval.

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

It is an offence to carry out a controlled activity without approval, or to breach a condition of a controlled activity approval.

12.3.2 Melbourne Airport's Prescribed Airspace

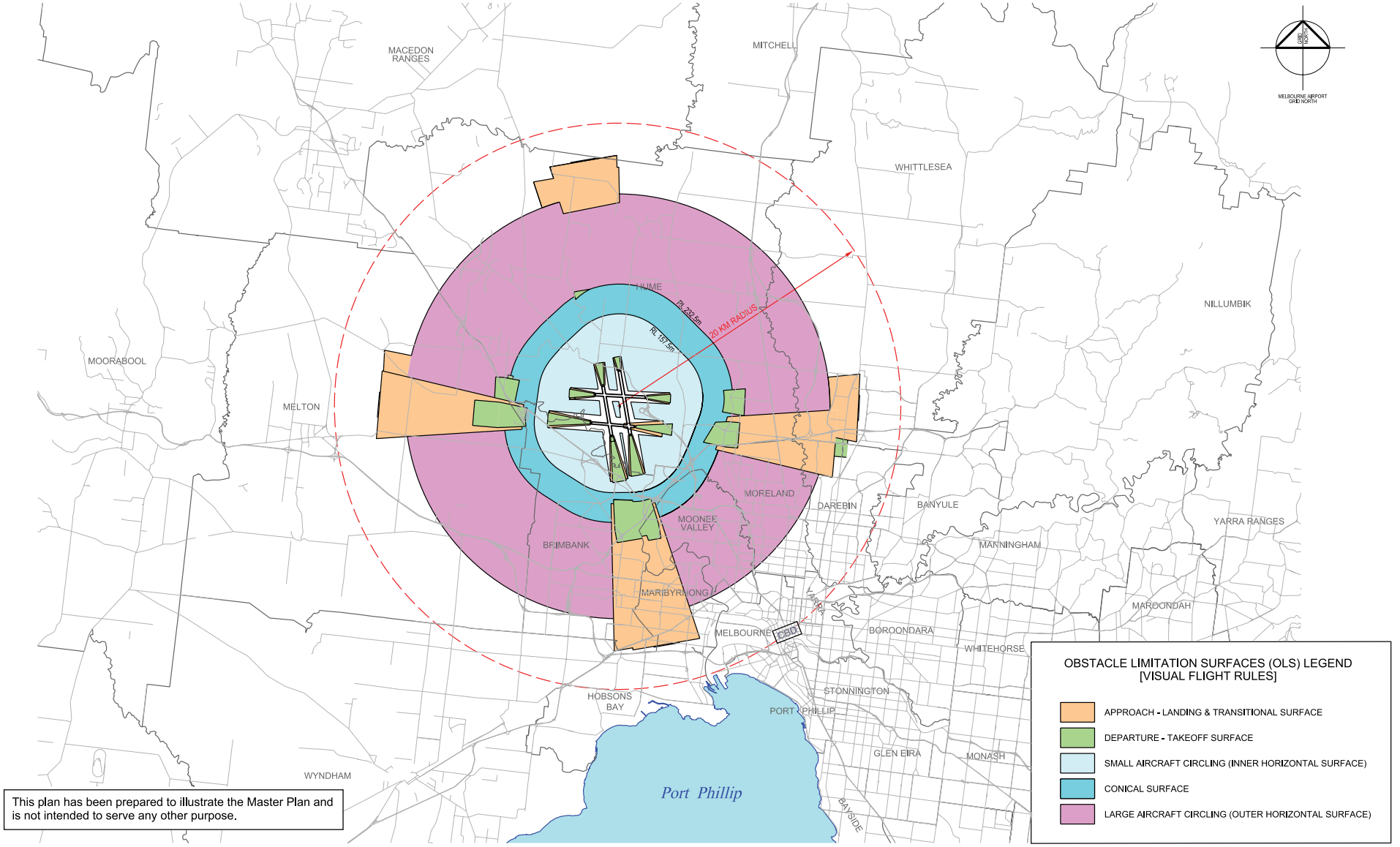
Airport operators are required to prepare plans of the Prescribed Airspace surfaces relating to their airport and have those surfaces declared under the airspace regulations. Melbourne Airport's airspace has been declared as Prescribed Airspace under the regulations by the Commonwealth Department of Infrastructure and Regional Development.

Melbourne Airport's Prescribed Airspace is shown in Figures 12.8 and 12.9. Figure 12.8 shows the Obstacle Limitation Surfaces based on the ultimate four-runway layout. Figure 12.9 shows Procedures for Air Navigational Services – Aircraft Operations surfaces based on the ultimate four-runway layout.

It is important to note the distances covered by the Prescribed Airspace. In some areas the Prescribed Airspace extends beyond 25 kilometres from the airport. At least 16 municipalities are either wholly or partly affected by the airport's Prescribed Airspace. It is also noted that Melbourne Airport's Prescribed Airspace overlaps Essendon Airport's Prescribed Airspace.

12.3.3 Other Airspace Protection Regulations

In addition to the Airports (Protection of Airspace) Regulations 1996, the Civil Aviation (Building Control) Regulations 1988 and the Civil Aviation Safety Regulations 1998 are also relevant to controlling obstacles and hazards around airports.



This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.

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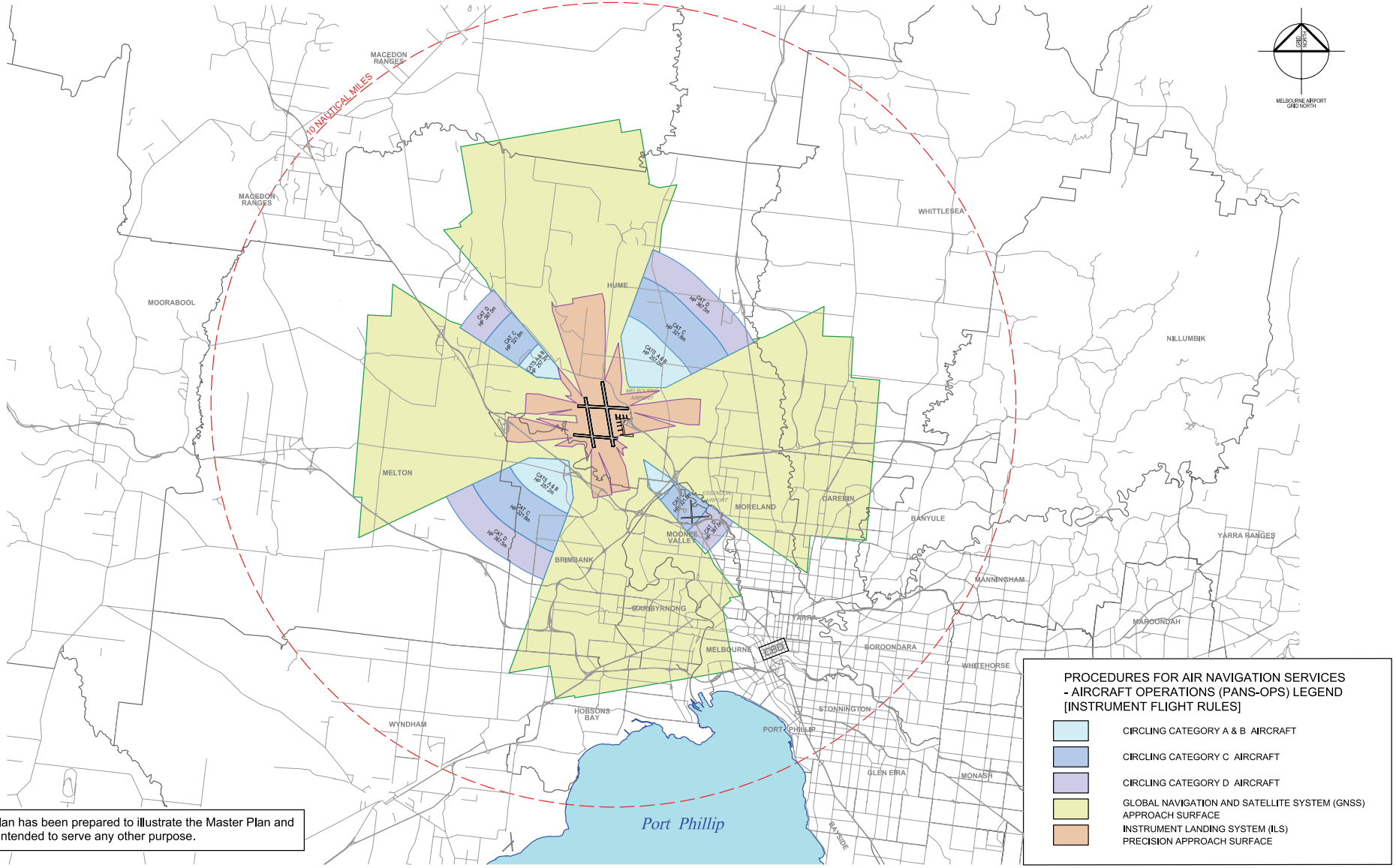
2013 MASTER PLAN

Prescribed Airspace Ultimate Four Runways
OLS Surfaces

Fig. 12.8



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ABN 62 076 999 114

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Prescribed Airspace Ultimate Four Runways
PANS-OPS Surfaces

Fig. 12.9

There are some inconsistencies between these regulations, in terms of height control requirements, which need to be carefully managed.

Under the Civil Aviation Safety Regulations 1998, a person who proposes to construct a building or structure of 110 metres or more above ground level must inform the Civil Aviation Safety Authority.

12.3.4 Airspace Protection Planning Controls

Prescribed Airspace should not be confused with the MAEO. The MAEO relates specifically to aircraft noise and limiting noise-sensitive uses (e.g. houses) where aircraft noise is a potential problem. The MAEO does this by implementing the airport's ANEF and the Australian Standard AS2021-2000: Acoustics – Aircraft Noise Intrusion – Building Siting and Construction. The MAEO does not relate to Prescribed Airspace and does not control the height of structures.

While Melbourne Airport's Prescribed Airspace is protected by the Airports Act and Airports (Protection of Airspace) Regulations 1996, there is evidence that this is not widely known or understood by developers, local government officers and councillors, or the general public. In Victoria, unlike in some other states, the Prescribed Airspace requirements are not incorporated or linked into local planning schemes. While the MAEO controls land use in relation to noise, there is no equivalent mechanism in the Victoria Planning Provisions that controls the height of structures or other land use proposals that may impact on Prescribed Airspace.

Melbourne Airport considers that improvements to the Victorian planning system need to be made to provide greater certainty and rigour in protecting its Prescribed Airspace. It is noted that the State Government has recently commenced some work in this area which Melbourne Airport will continue to support.

12.4 Improving Airport Safeguarding

Given Melbourne Airport's social and economic importance to the local region and the state, planners and the planning system should adopt a precautionary approach to protecting this nationally significant asset. This is essential when looking back at the development of Australia's cities and their airports over the last 80 years, which has seen many airports' operations restricted by encroaching urban development.

On this basis, certain improvements need to be made to Melbourne Airport's current safeguarding regime. Improvements to state and local planning policies and controls relating to land use and development around the airport are required to avoid the restrictions other airports have faced, but it is also important that there is a balance between the need for growth on and off the airport.

Such an approach would be consistent with the policy direction in the Commonwealth Government's National Aviation Policy, which recognises the need to complement existing safeguarding measures with other tools.

The State Government's response to the Urban Growth Boundary Logical Inclusions Review (June 2012) generally reaffirmed the buffers that currently protect Melbourne Airport. The government noted in its response that the Logical Inclusions Advisory Committee stated in its final report:

> *"Melbourne Airport is critical State and National infrastructure, and planning near the airport needs to be carefully managed. The current suite of planning tools including the SPPF, Urban Growth Boundary and Green Wedge Zone and MAEO provide a sound basis for protecting and ensuring the long term operation of the airport, including its curfew free status."*

However, the Advisory Committee also identified a number of issues, including:

> *"While the SPPF identifies the airport as a key determination in planning decisions, there is a vacuum between the policy objective of not prejudicing the operations of the airport, and what this means in terms of restrictions on development."*
>
> *"Given that the ANEF that underpins the MAEO is subject to review, it does not seem a secure basis for determining the extent of urban development near the airport".*
>
> *"The Committee agrees with APAM that aligning the UGB to noise contours is not appropriate."*

While a precautionary approach to airport safeguarding should be adopted, not all urban growth will affect the airport. It is important that airport safeguarding measures do not unreasonably or unfairly curtail urban growth. There needs to be a balance between growth of the airport and growth off the airport.

12.4.1 National Airports Safeguarding Framework

The National Airports Safeguarding Framework (NASF) comprises of:

- Principles for National Airports Safeguarding Framework
- Guideline A: Measures for Managing Impacts of Aircraft Noise
- Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports
- Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports
- Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
- Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
- Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports.

Commonwealth, State and Territory Ministers considered the Framework at the Standing Council on Transport and Infrastructure meeting on 18 May 2012. The Framework was agreed at that meeting, but was subject to the Commonwealth Government's intention to seek a review of AS2021 by Standards Australia.

Melbourne Airport supports the NASF guidelines and has already started using them to guide the consideration of on-airport developments and as the basis of responses to off-airport development proposals. For these guidelines to be fully effective, Melbourne Airport believes they should be incorporated into the Victorian planning system, specifically the Victoria Planning Provisions. It is the responsibility of each jurisdiction to implement the Framework into their respective planning systems. However, it is acknowledged that statutory implementation of Guideline A should not proceed until the review of AS2021 is completed.

12.4.2 Supplementary Aircraft Noise Information

The ANEF contours, as a source of aircraft noise information, should be supplemented by information from other sources, such as flight path charts and 'number above' contours, to provide a more detailed and accurate reflection of the potential aircraft noise effects around Melbourne Airport. This information, combined with the ANEF contours, should be used to better inform planning and land use decisions around Melbourne Airport.

Melbourne Airport believes that the N60/N65/N70 contours should be incorporated into the planning regime, at least as an additional consideration over and above the ANEF contours and MAEO, particularly when Urban Growth Boundary and zoning changes are proposed near the airport and its flight corridors. These contours also give the community a better tool to understand the impact of aircraft noise.

12.4.3 New Metropolitan Planning Strategy – Plan Melbourne

As discussed in Section 4.3.3 of this Master Plan, the State Government is currently developing a new metropolitan planning strategy for Melbourne to replace Melbourne 2030 – Planning for Sustainable Growth. This strategy is expected to be completed in 2014.

While the strategy released for public comment in October 2013 recognises the importance of Melbourne Airport, it is critical that appropriate planning measures are put in place to support and protect the airport and its 24-hour curfew-free status. This should include strategies to prevent further urban encroachment and reverse sensitivity issues affecting the airport's operations.

Melbourne Airport will work with the State Government to achieve these aims.

12.4.4 Role of Urban Growth Boundary and Green Wedges

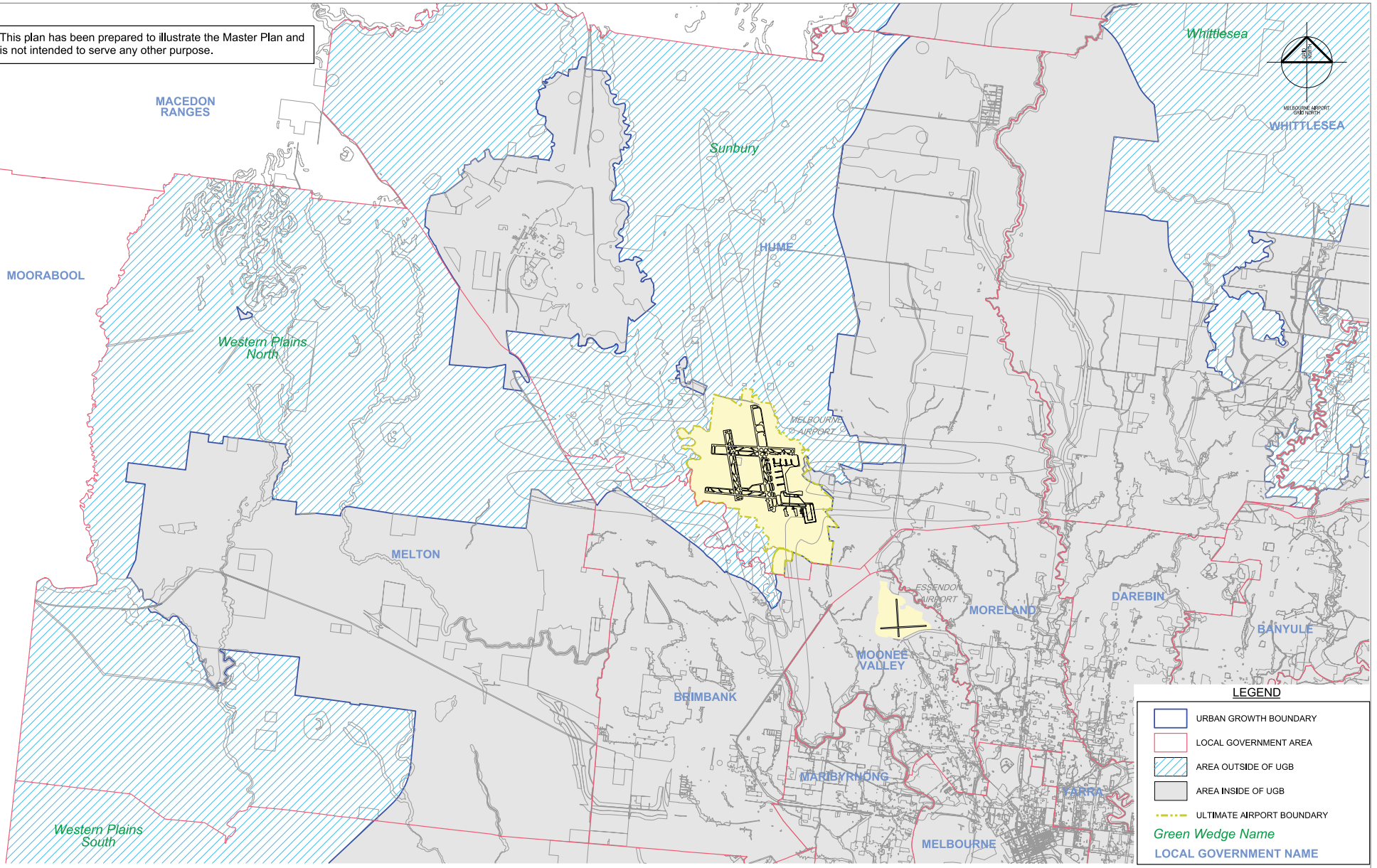
The Urban Growth Boundary and associated Green Wedge Zones play an important role in protecting Melbourne Airport. Figure 12.10 shows the Urban Growth Boundary and green wedge areas around Melbourne Airport.

The Urban Growth Boundary is a planning tool that the State Government implemented to manage Melbourne's growth. It sets a clear boundary for the outward development of metropolitan Melbourne, and directs growth to areas where it can be best serviced by existing and planned infrastructure and services. The Boundary also protects valuable land from urban development, including the green wedges and safeguards land on the city's fringe needed for environment, farming and tourism and infrastructure assets such as Melbourne Airport.

Under Clause 11.04-6 of the State Planning Policy Framework, one aim of the Green Wedges is to "protect major transport facilities that serve the wider Victorian community, such as airports and ports with their associated access corridors".

By limiting development in the green wedges around the airport, the Urban Growth Boundary and Green Wedge Zones help protect flight path corridors from encroaching development, which may conflict with current or future aircraft operations.

This plan has been prepared to illustrate the Master Plan and is not intended to serve any other purpose.



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Urban Growth Boundary and Green Wedges

Fig. 12.10

Melbourne Airport believes that the role the Urban Growth Boundary and Green Wedge Zones play in safeguarding the airport needs to be formally recognised in State and local planning policy (including the new metropolitan planning strategy for Melbourne). Moreover, future reviews of or changes to these tools should only occur once the long-term safeguarding of the airport has been fully considered.

From the airport's perspective, moving the present Urban Growth Boundary should be discouraged to prevent 'urban creep' towards or into green wedge areas which accommodate flight paths and aircraft noise contours. The present boundary broadly accords with what the airport has always regarded as its 'sphere of influence', in a land use planning sense. This principle was supported by the Urban Growth Boundary Logical Inclusions Advisory Committee when it stated in its report that "any further encroachment of residential development towards the airport should be avoided".

12.4.5 Review of Melbourne Airport Environs Overlay

The primary statutory planning tool currently protecting Melbourne Airport is the MAEO, which is based on the airport's ANEF noise contours. The MAEO only relates to land within the 2003 20 ANEF contour and has a number of limitations. As discussed in Section 12.2.3, basing land use planning decisions solely on ANEF noise contours is likely to lead to less than optimal outcomes in safeguarding the airport.

Melbourne Airport believes there is a clear need to review the MAEO provisions to address these issues, given the large amount of land (approximately 131 square kilometres) inside the 20 ANEF contour and the potential for further development near to its boundary.

The State Government has indicated that the MAEO will be reviewed after the 2013 Master Plan has been approved and the review of AS2021 has been completed.

12.4.6 Prescribed Airspace and Aircraft Hazard Controls

As discussed in Section 12.3.4, at present there are no planning controls incorporated into local planning schemes to protect Melbourne Airport's Prescribed Airspace or control hazards to aircraft.

The MAEO does not control intrusions into Prescribed Airspace or other potential hazards to aircraft operations such as dangerous lighting, air emissions or wildlife hazards.

Melbourne Airport believes that improvements to these provisions can be made to better protect Melbourne Airport's Prescribed Airspace and control potential hazards to aircraft operations. This could take the form of a new overlay control or Particular Provision in the Victoria Planning Provisions. Melbourne Airport is working with the State Government on this and other safeguarding matters.

12.4.7 Review of Melbourne Airport Environs Strategy Plan

Melbourne Airport is recognised under Part 3C of the *Planning and Environment Act 1987* (Vic) through the Melbourne Airport Environs Strategy Plan, approved by the Minister for Planning in 2003. Amendments to planning schemes in the Melbourne Airport Environs Area must be consistent with the approved Strategy Plan. Its primary intent is to ensure Melbourne Airport retains its 24-hour curfew-free operations and to appropriately manage the impact of aircraft noise on adjacent residential areas. However, the Strategy Plan primarily relates to land inside the 20 ANEF contour and has little effect outside it.

Melbourne Airport believes that a review of the Strategy Plan is required. The Department of Transport, Planning and Local Infrastructure is likely to be the lead agency for this review.

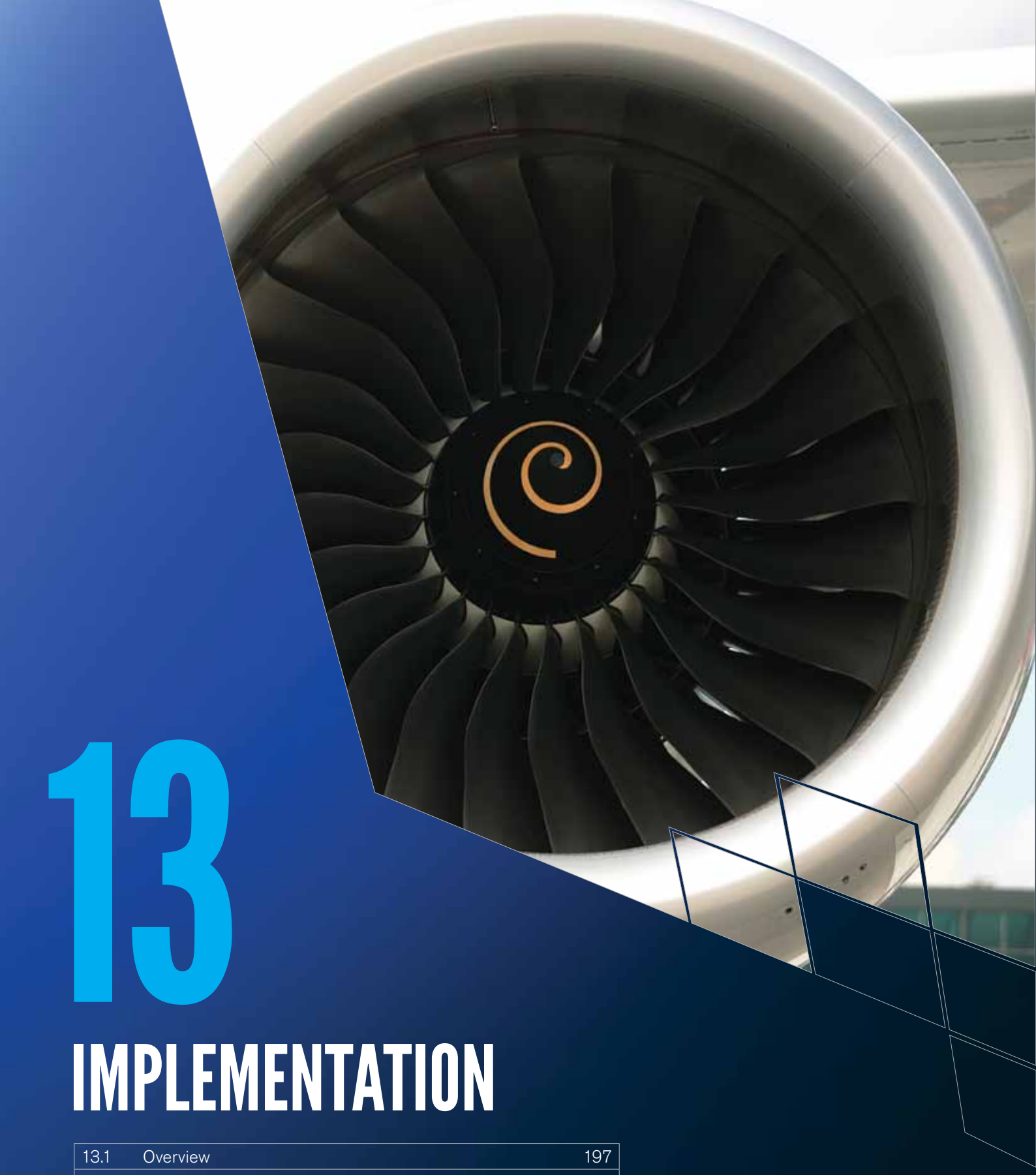
The State Government has indicated that the Strategy Plan will be reviewed after the 2013 Master Plan has been approved and the review of AS2012 has been completed.

12.4.8 Safeguarding Working Group

Developing an improved safeguarding framework for Melbourne Airport will require a range of stakeholders to be involved, including the State Government, local councils, local communities and the business sector. While Melbourne Airport will play a key role in developing the improved planning regime, the State Government will need to lead the process.

Melbourne Airport is working with the Commonwealth Government, the State Government, local governments and industry to ensure that the airport's long-term operation is protected for the benefit of Melbourne and Victoria. The Melbourne Airport Planning Coordination Forum is playing a critical role in this regard.

These matters have been discussed at Planning Coordination Forum meetings in 2012 and it has been agreed that a Safeguarding Working Group will be established to discuss improvements to the current framework. Melbourne Airport supports this initiative and is looking forward to working with relevant stakeholders on developing improved airport safeguarding measures.



13

IMPLEMENTATION

13. IMPLEMENTATION

13.1 Overview

This Master Plan represents the current view of airport development expected to be realised over the next 20 years, largely as a result of increased passenger and aircraft demand.

The implementation of the Master Plan and future projects will be in logical stages to match demand, with continuous monitoring using a range of processes and analysis to ensure the timely delivery of required infrastructure and facilities. The review of the Master Plan every five years further enables Melbourne Airport to reassess the project timeframes, validate the accuracy of the forecasts and planning assumptions, incorporate progressive insights and learnings from the past, and refine concept scenarios.

The implementation of the Master Plan is also supported by a range of other systems and procedures that ensure project implementation is undertaken in an efficient, safe, secure and sustainable manner, and the airport's development is properly managed. The delivery of the Master Plan will be dependent on commercial agreements, as well as board and government approval.

Relevant policies at Commonwealth, State and local level will be taken into consideration when implementing the Master Plan.

13.2 Capital Program

Largely underwritten by commercial agreements with airline customers, tenants and other business operators, the capital program underpins the capital works planned across the airport's five precincts. The capital program is aligned with Melbourne Airport's precinct strategies (20-plus years), capital plans (10 years) and the five-year aeronautical services agreement cycle.

13.3 Program Management Office

The Program Management Office within the Capital Program Department ensures effective and appropriate project management and project delivery practices. To achieve consistent business outcomes, it adopts relevant standards, policies and procedures.

The Program Management Office:

- helps Melbourne Airport deliver on its capital projects
- tracks and communicates progress on current projects
- enables Melbourne Airport to build its capability to run successful projects and programs
- continuously improves the way Melbourne Airport runs projects and programs.

13.4 Project Delivery

The Melbourne Airport Project Process (MAPP) guides projects from inception through to operational handover. The framework defines and adds structure to the process for all projects by focusing on the clarity of project scope, cost, time and risks. Under the MAPP, projects progress through different phases, during which certain actions must be taken. The Major Project MAPP Framework consists of eight phases, and the Minor Project MAPP Framework consists of five. At the end of a phase, the project team must demonstrate that the objectives of each phase have been met by signing off a checklist and presenting it to the appropriate Capital Planning Committee at the relevant stage. The MAPP framework aims to:

- manage the expectations of all project and business stakeholders
- provide a transparent process to those affected by the project
- establish a governance process so that those delivering the project understand what is required, by whom and by when
- increase clarity to ensure the project provides the best outcome for the business
- increase consistency and quality of information for efficient and effective communication
- increase stakeholder buy-in and align project objectives to strategic goals
- ensure projects progress seamlessly through the funding and design approval stages
- increase the business' ability to plan and evaluate workload
- increase the business' ability to prioritise projects.

13.5 Development Approval Process

Development approval requirements for the Melbourne Airport site are administered under the Airports Act. The details of the approval process for on-airport developments were discussed in Section 5.11. Before they reach the delivery stage, all projects progress through this consent process. This includes Major Development Plan (MDP) approval (if required) and approval by the Airport Building Controller.

13.6 Safety Management System

The Safety Management System (SMS) aims to ensure compliance with current work health and safety legislation and safety system accreditation requirements. It outlines safety management at airports owned by Australia Pacific Airports Corporation Limited (APAC) and is a reference point for workers to clarify the safety processes and systems and best practice safety standards and principles.

Melbourne Airport's SMS is an accredited AS/NZS 4801:2001 Occupational Health and Safety Management System. It is audited by an accredited external body bi-annually, and is recertified every three years.

The safety systems and processes outlined in the SMS are designed to achieve business safety objectives and support Melbourne Airport's Work Health & Safety Policy. Twelve safety elements divide the system into points of reference to make navigation and reference easier and simpler for the end user. No one element is more important than another and all safety elements align to support 'big picture' safety requirements and obligations.

Contractors, tenants, property occupiers, temporary workers, retailers and other airport business operators are required to cooperate with and, where applicable, demonstrate an approach to safety management equivalent to the SMS.

13.7 Environmental Management System

Melbourne Airport's Environmental Management System (EMS) is discussed in Section 11.

This system provides a structured approach to planning and implementing environmental protection measures. The EMS monitors environmental performance and integrates environmental management into the airport's operations, planning and other quality management systems. It records the findings of various environmental audits and assessments to ensure action items arising from audits are followed up.

13.8 Community and Stakeholder Engagement

Melbourne Airport has a strong commitment to community and stakeholder engagement and will continue to take a proactive approach to communicating with the community, including governments at all levels, businesses, industry, employees and other key stakeholders. This approach will be fundamental when implementing the Master Plan.

The airport's communications and engagement activities involve four main streams, outlined below. To monitor the progress of these activities, Melbourne Airport measures its stakeholder and communications performance through an annual stakeholder audit. The results are reported at its annual stakeholder event and published in the annual report.

13.8.1 Communications and Information

Melbourne Airport will continue to use a range of communication channels, including its website, media releases, community meetings and social media, to provide timely and accurate information about airport operations, projects and future plans. In developing these channels, the needs of the community and stakeholders will be taken into consideration.

13.8.2 Stakeholder Engagement

Melbourne Airport holds regular briefings, meetings and updates to keep stakeholders informed and engaged on airport-related issues. These stakeholders include local, State and Commonwealth Governments and relevant government departments; agencies and statutory authorities; the local community; airlines; industry; business and tourism bodies; and employees.

13.8.3 Forums

Melbourne Airport has established a number of formal bodies to facilitate the exchange of information between the airport and stakeholders. These forums meet on a regular basis, and include those listed below:

- **The Planning Coordination Forum** focuses on the strategic partnerships between the airport operator, Commonwealth, State and local authorities, and industry to shape the airport's current and future operations. The Forum works to integrate the airport's long-term planning approach with other relevant urban and regional planning policies, to protect its long-term growth and curfew-free status.
- **The Melbourne Airport Transport Committee** focuses on integrating Melbourne Airport with the wider Victorian transport network. The Committee covers operational issues, as well as longer-term strategic issues. Members include Victorian Government transport authorities and Melbourne Airport.
- **The Community Aviation Consultation Group** focuses on community-related airport issues. The group provides an opportunity for the community to discuss and express opinions regarding Melbourne Airport, particularly with regard to planning, development and operations, and disseminates information regarding the airport. Members include community, government and industry. The group is independent of the airport and has an independent Chair.
- T**he Noise Abatement Committee** examines the impact of aircraft noise exposure on surrounding communities, and reviews aircraft noise issues, systems and mitigation measures. Members include Airservices, local government representatives, airlines and Melbourne Airport.
- **The Melbourne Airport Business Partners Environment Forum** is made up of Melbourne Airport operators such as airlines, business operators, airlines and suppliers and discusses airport related environment issues.
- **The Community and External Agencies Group** comprises representatives from the community, local government, EPA Victoria, Melbourne Water and the Airport Environment Officer. This group supports monitoring and stormwater management practices at Melbourne Airport.

13.8.4 Community Investment

Melbourne Airport supports a variety of community and industry development programs to enhance Melbourne's economic prosperity and social and cultural life.

13.9 Periodic Reviews

The Airports Act provides for a final Master Plan to remain in force for five years. In addition, there is provision for the Minister, by written notice, to direct the airport-lessee company to replace the original plan.

The Airports Act makes similar provisions for reviewing and replacing the Environment Strategy which has been incorporated into this Master Plan.

In addition to the statutory review requirements, Melbourne Airport management processes provide for annual review of the development proposals that are included in this Master Plan based on updated annual forecasts.

The Australian Noise Exposure Index (ANEI) noise contours are calculated using Australian Noise Exposure Forecasts (ANEF) techniques but with actual aircraft movements from the past year. The ANEI enables the actual noise impacts to be monitored regularly against the forecast noise impacts included in the ANEF. The ANEI is generally prepared every two to three years.

Airspace surfaces are reviewed periodically following significant flight track changes, and declaration of the new surfaces is then sought from the Commonwealth Department of Infrastructure and Regional Development under the Airports (Protection of Airspace) Regulations 1996.

14

CONCLUSION

14. CONCLUSION

This Master Plan provides the community, business operators, government and other key stakeholders with an understanding of Melbourne Airport, what it does, and the values and aspirations by which it defines itself. It articulates the growth requirements it must meet to achieve these aspirations, and assesses where the airport stands today.

This document expresses the airport's continued commitment to develop as a world-class airport, implementing the highest industry standards and reflecting global best practices in airport management, both now and in the future.

The Master Plan will not be successful unless Melbourne Airport continues to widely communicate these strategic goals and incorporate them into its day-to-day business and planning activities, with direct links to its capital works program and stakeholder engagement plans. The airport will also continue to monitor its performance throughout the year and make adjustments as needed to achieve the desired results. Engaging with the community and other key stakeholders will be a critical component to the successful implementation of the Master Plan.

This Master Plan will guide Melbourne Airport as it works on promoting sustainable long-term growth and delivering excellence in customer service. The airport will update the Master Plan every five years to cover a new planning period.

Despite its comprehensive nature, this Master Plan does not intend to outline a fixed set of directives; in Melbourne Airport's view, the planning process should be dynamic and adaptable to adequately respond to evolving stakeholder requirements and external circumstances beyond the airport's reasonable control. It will, however, serve as Melbourne Airport's strategic planning framework, against which the airport will make infrastructure-related decisions and focus its resources, thus accommodating future growth and consolidating its position as the gateway to Victoria.

15 REFERENCES

15. REFERENCES

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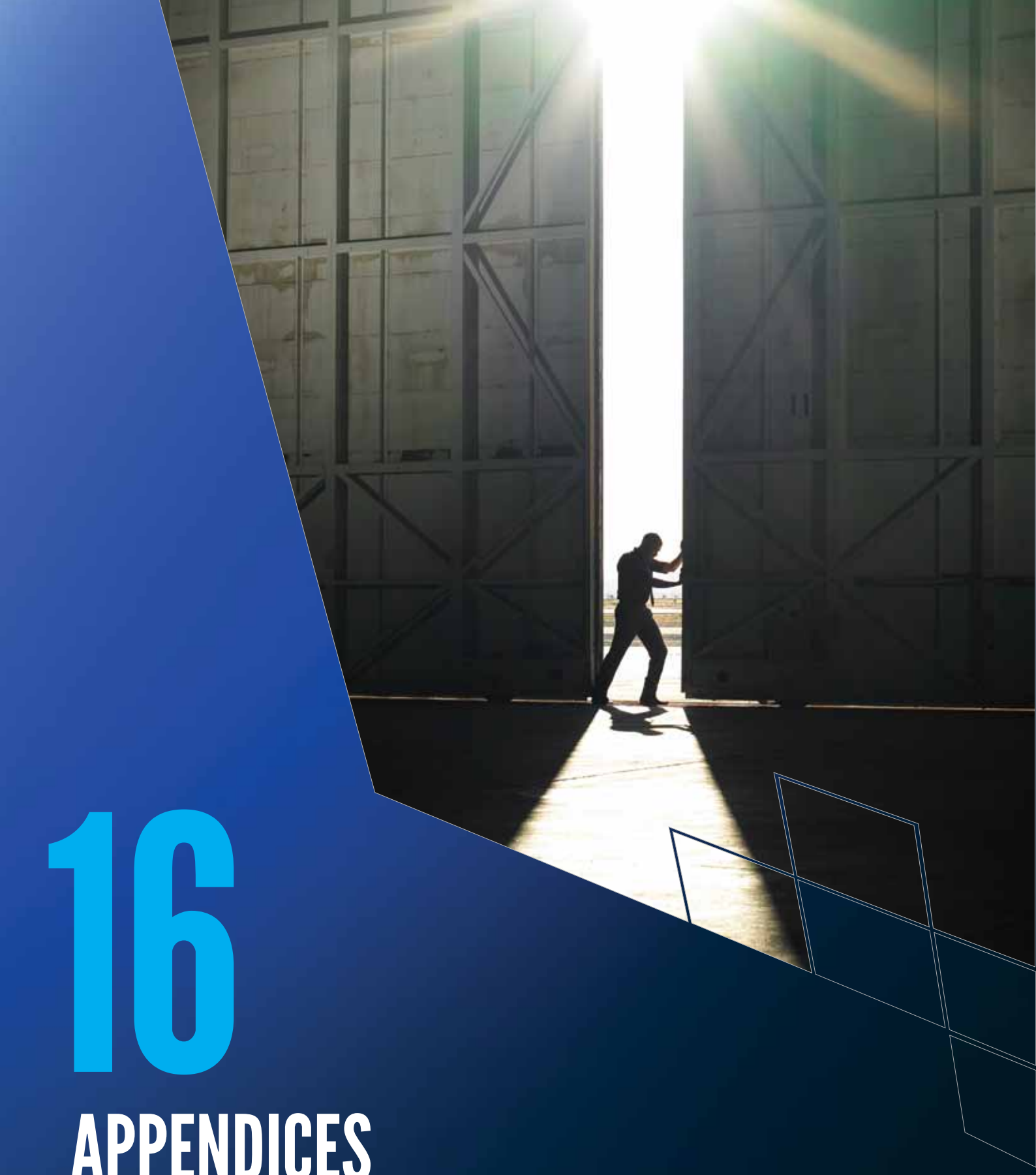
Victoria Planning Provisions

Victoria The Freight State – the Victorian Freight and Logistics Plan August 2013



16 APPENDICES

APPENDIX A

Significant Developments Since the 2008 Master Plan

Runway and Taxiway Works

- Runway 16/34 and Runway 09/27 pavement overlay
- Runway end slab replacement
- T2 expansion project, including new bays D12, D14 and D16
- Additional bays D18 and D20
- Northern apron additional Code C aircraft parking positions
- Taxiway echo rehabilitation
- Taxiway Victor
- Taxiway uniform extension
- HV Cable installation to air services for additional redundancy
- D8 aerobridge and link
- D4 apron-drive aerobridge
- Runway 09/27 lighting and primary cable
- Runway 16/34 centre-line lighting
- Airfield staff accommodation building
- CAT III taxiway lighting and backup generators
- Runway stop bars
- Taxiway Juliet GSE area
- Runway visual range equipment
- Nose in guidance system upgrades
- Equipment staging hardstand adjacent to AAE freight facility
- Taxiway Whiskey 1 fillet widening
- South-east apron expansion
- Northern GSE relocation and aircraft parking

Terminals

- T2 (international) new baggage system
- T2 expansion of government agency areas (Customs and AQIS)
- T2 retail upgrades
- T2 check-in counter enhancements
- T2 installation of sixth and seventh reclaim carousel
- T2 Pier expansion (five new MARS gates created)
- T2 SmartGate expansion
- T3 refurbishment
- T3 additional Code E (A330) bay capacity
- Inbound bag room relocation
- Planning and design for the Southern Precinct Program (new T4) commenced
- T2 DAFF capacity enhancements

Ground Transport and Car Parks

- APAC Drive on-ramp
- Staff car park expansion
- New long-term car park entry off Mercer Drive
- Extension of Francis Briggs Road
- Forecourt lane expansion
- Ring and Ride (safe car waiting) facility
- Widening of Melrose Drive
- Relocated main airside gate to Francis Briggs Road

Commercial Developments

- Essendon Football Club Sporting and Community Facility
- Border Express facility
- DHL facility
- Schenker facility
- Melbourne Airport Cargo Estate Stage 1
- Hanrob Pet Hotel
- New Australian Federal Police office building
- New Europcar facility and car wash
- Fellowes facility
- Primus facility

Freight Developments

- Menzies freight terminal expansion
- New Toll Dnata freight terminal
- Australian Air Express freight terminal expansion

APPENDIX B

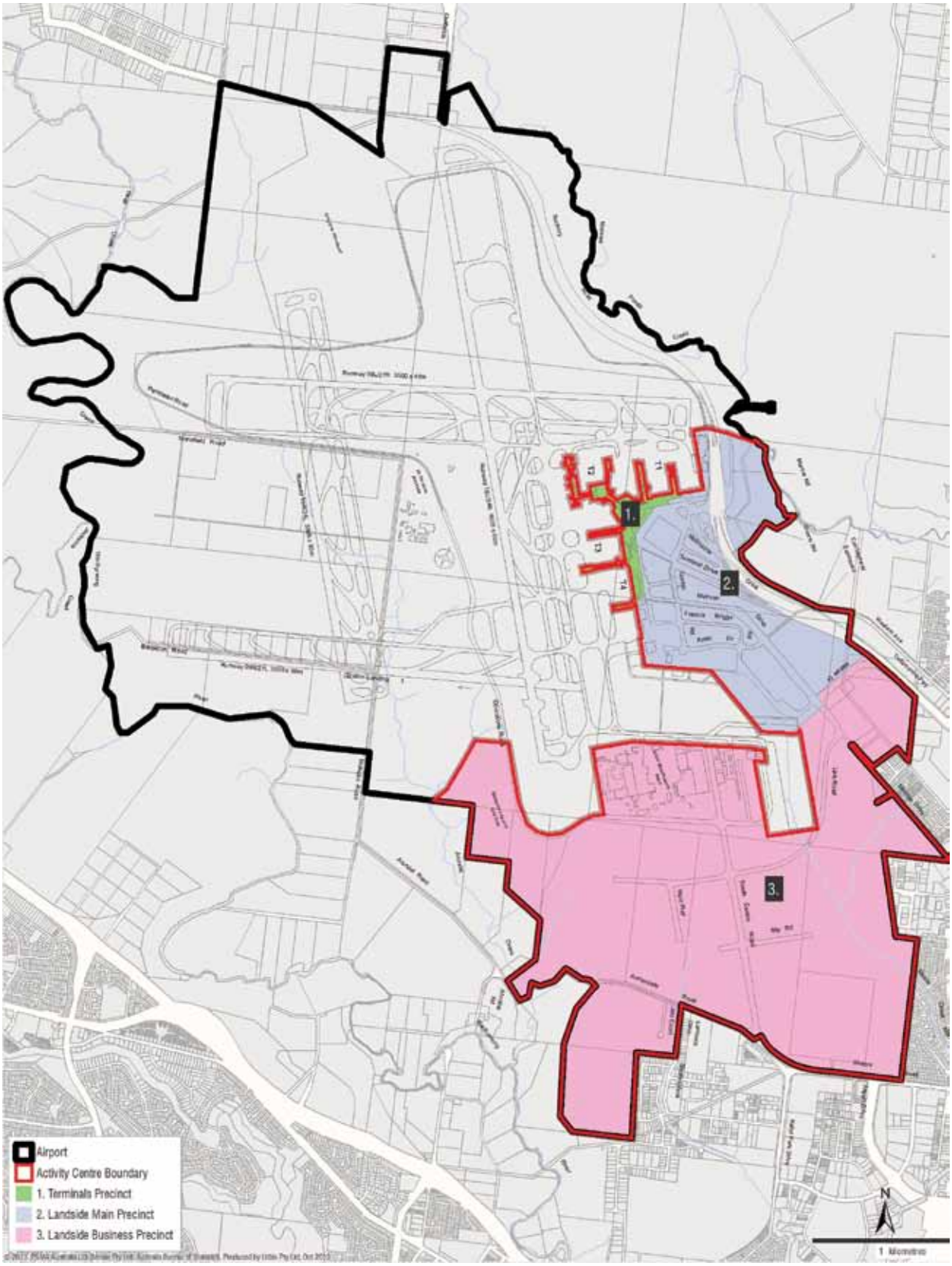
Melbourne Airport Planning Zones

Melbourne Airport Activity Centre Zone

Purpose

- To implement the Melbourne Airport Master Plan 2013.
- To advance Melbourne Airport as one of the state's key activity centres.
- To provide for the long term and sustainable growth of Melbourne Airport.
- To encourage a mixture of uses and the development of the activity centre:
  - As a focus for airport activities, complementary business and shopping activities, working, travellers accommodation, leisure, transport and community facilities.
  - To support sustainable urban outcomes that optimise the use of infrastructure.
- To create through good urban design an attractive, pleasant, safe, secure and stimulating environment.
- To facilitate use and development of land in accordance with the Framework Plan for the activity centre.

1.0 Melbourne Airport Framework Plan



2.0 Land use and development objectives to be achieved

- To implement the Melbourne Airport Master Plan 2013.
- To provide for the safe and secure operation of the airport.
- To optimise the efficient operation of the airport as an intermodal facility.
- To ensure that the Melbourne Airport Activity Centre complements the wider activity centre network.
- To reinforce the economic functions of the Melbourne Airport Activity Centre.
- To provide flexible development opportunities for businesses that do not conflict with airport activities.
- To encourage the development of high quality buildings that enhance amenity and incorporate environmentally sustainable design features.
- To facilitate the long term growth of the airport.

3.0 Major Development Plan

Any activities listed in Section 89 and 89A of the Airports Act 1996 (Commonwealth) that are classified as a major airport development or a sensitive development that require a Major Development Plan to be prepared are subject to approval by the Commonwealth Minister for Infrastructure and Regional Development.

4.0 Table of uses

Section 1 – Permitted uses

Use	Condition
Airport	
Car Park	
Cinema	
Cinema based entertainment facility	
Conference centre	
Convenience restaurant	
Education centre	Must be an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport
Emergency services facility	
Food and drink premises	
Freeway service centre	Must not be in Precinct 1
Fuel depot	
Function centre	
Heliport	
Hotel	
Industry	Must not be in Precinct 1. Must not be a use with adverse amenity potential.
Medical centre	

Use	Condition
Minor sports and recreation facility	
Motel	Must not be in Precinct 1
Office	
Place of assembly	
Place of worship	
Railway station	
Research and development centre	
Residential hotel	
Retail premises	
Road	
Service station	
Transport terminal	
Utility installation	
Warehouse	Must not be in Precinct 1

Section 2 – Consent uses (Airport-Lessee Company approval required)

Use	Condition
Any use not included in Sections 1 or 3	
Any use in Section 1 if the condition is not met	

Section 3 – Sensitive uses (Commonwealth Minister's approval required)

Use
Residential dwelling (does not include accommodation for students studying at an aviation educational facility at the airport)
Community care facility
Pre-school
Primary, secondary, tertiary or other educational institution (does not include an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport)
Hospital (does not include a facility with the primary purpose of providing emergency medical treatment and which does not have in-patient facilities)

5.0 Airport-wide provisions

5.1 Use of land

Planning and Design Approval is required from the Airport-Lessee Company for any Section 2 use of land.

Use of land must be consistent with the Melbourne Airport Master Plan (including the Ground Transport Plan and Environment Strategy) and Melbourne Airport Planning and Design Guidelines.

5.2 Buildings and works

Planning and Design Approval and a Building Activity Consent are required from the Airport-Lessee Company and a Building Permit from the Airport Building Controller for all buildings and works (subject to exemptions).

The Airport-Lessee Company may specify buildings and works that are exempt from Planning and Design Approval. Planning and Design Approval is not required if a Major Development Plan is required and approved.

5.3 Design and development

Design and development must be generally in accordance with the Melbourne Airport Planning and Design Guidelines, Melbourne Airport Planting Guidelines and the Melbourne Airport Development Manual. Design and development must comply with the CASA Manual of Standards Part 139- Aerodromes.

6.0 Precinct provisions

6.3 Precinct 1 – Terminals Precinct

6.3-1 Precinct map

6.3-2 Precinct objectives

- To provide for the operation, use and development of land for the purpose of the passenger and baggage processing at Melbourne Airport, enabling the terminal processors to operate safely, efficiently and in a cost-effective manner.
- To provide world-class facilities for airlines and passengers, including but not limited to efficiently operating terminal processors with adequately located and sized retail areas.
- To provide an integrated terminals facility ("single-roof") with ample commercial and retail uses.
- To provide for expansion of passenger terminal facilities to meet forecast demand.

6.3-3 Precinct requirements

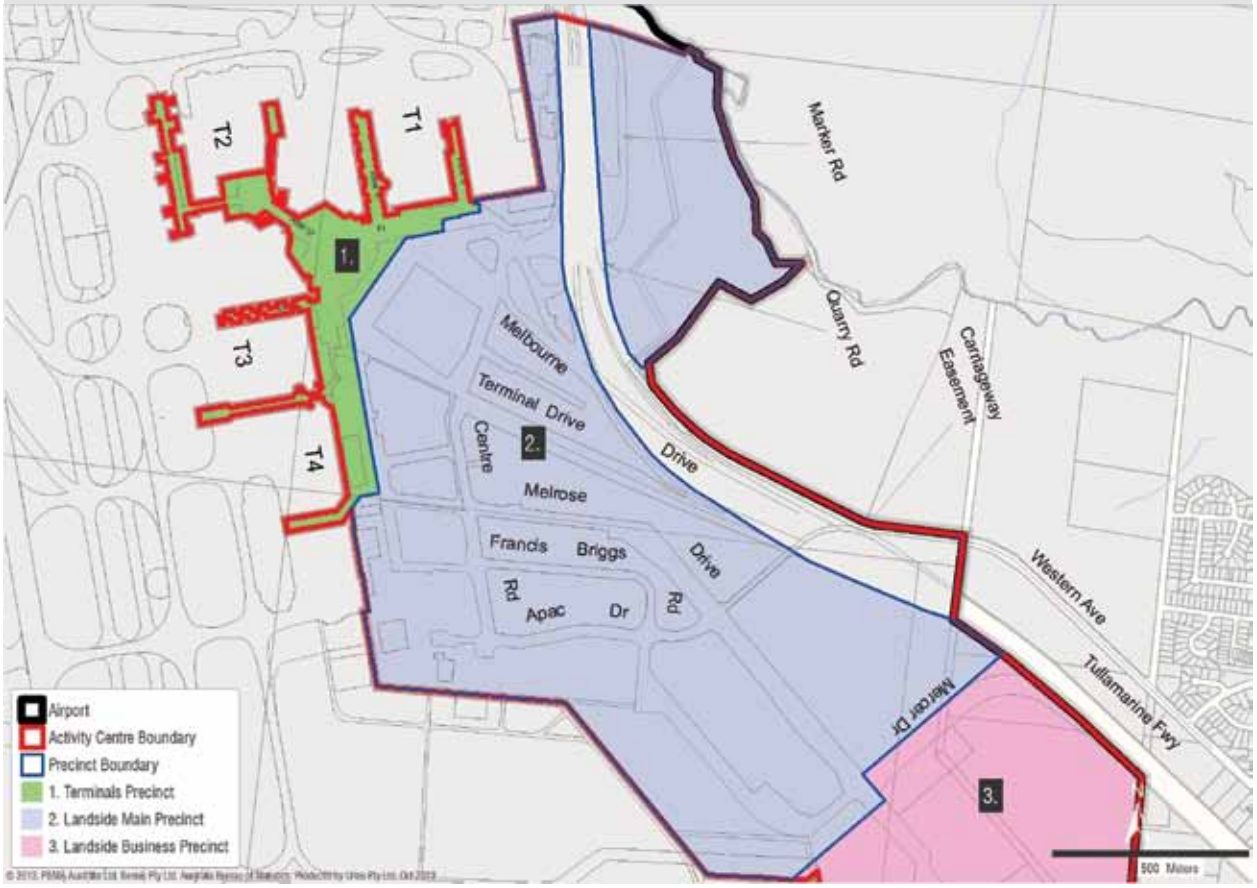
Applications for development should be generally in accordance with the Melbourne Airport Planning and Design Guidelines, Melbourne Airport Planting Guidelines and Melbourne Airport Terminal Works Fitout Guide.

6.3-4 Precinct guidelines

- The precinct should be used for the continued operation, enhancement and expansion of the terminal complex.
- The precinct must continue to provide essential passenger services and act as an efficient transport modal interchange.
- The precinct should not be used or developed for any purpose that may interfere or conflict with safe and secure aircraft operations in the Airside Operations Precinct or Airport Expansion Precinct.

6.4 Precinct 2 – Landside Main Precinct

6.4-1 Precinct map



6.4-2 Precinct objectives

- To provide for a range of airport support activities, services and facilities for use by airlines, passengers, government agencies, freight businesses and transport providers.
- To provide integrated car parking, hotel accommodation, commercial and retail uses that support the airport.
- To provide an attractive and functional gateway to the airport.
- To provide ground transport facilities and services for efficient access to the airport.
- To provide for expansion of passenger terminal facilities to meet forecast demand.

6.4-3 Precinct requirements

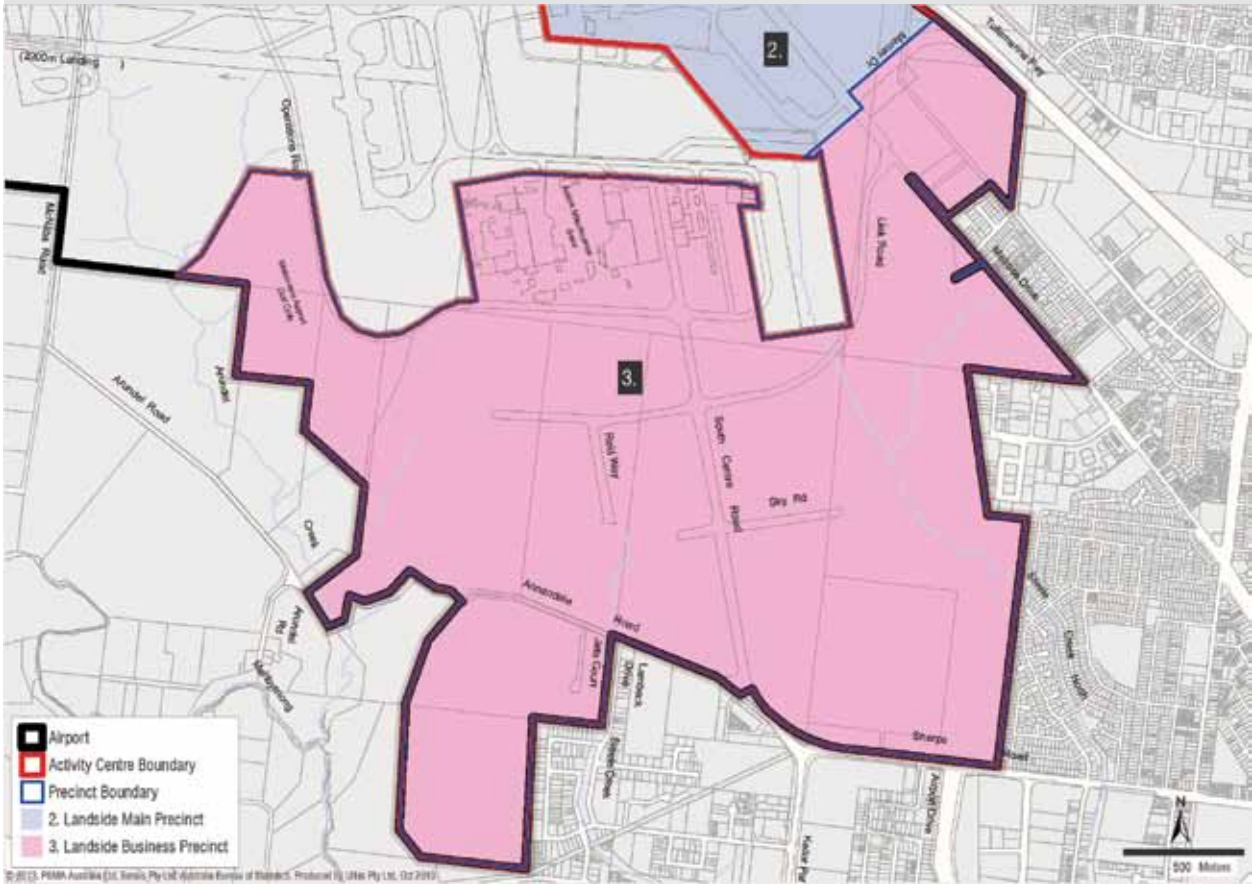
Applications for development should be generally in accordance with the Melbourne Airport Planning and Design Guidelines and Melbourne Airport Planting Guidelines.

6.4-4 Precinct guidelines

- The precinct should be used for a range of activities that support the airport consistent with the precinct's prime location including freight, car parking, hotel accommodation, offices, commercial uses and retail premises.
- The use and development of the precinct must provide for safe and efficient ground transport access.
- The use and development of the precinct must provide for a high level of visual amenity.
- The precinct should not be used or developed for any purpose that may interfere or conflict with safe and secure aircraft operations in the Airside Operations Precinct or Airport Expansion Precinct.

6.5 Precinct 3 – Landside Business Precinct

6.5-1 Precinct map



6.5-2 Precinct objectives

- To provide land for a range of aviation and non-aviation uses.
- To provide a range of aviation related services including maintenance and servicing of aircraft and freight/cargo terminals.
- To provide for a range of non-aviation uses including industrial, commercial, retail, office, recreational, manufacturing, warehousing and associated activities.

6.5-3 Precinct requirements

Applications for development should be generally in accordance with the Melbourne Airport Planning and Design Guidelines and Melbourne Airport Planting Guidelines.

6.5-4 Precinct guidelines

- The precinct should be used for aviation and non-aviation uses.
- The use and development of the precinct must provide for safe and efficient ground transport access.
- The use and development of the precinct must provide for a high level of visual amenity.
- The development must not affect the safety and amenity of adjacent more sensitive land uses.
- The precinct should not be used or developed for any purpose that may interfere or conflict with safe and secure aircraft operations in the Airside Operations Precinct or Airport Expansion Precinct.

7.0 Application requirements

These requirements relate only to applications for Planning and Design Approval. Separate requirements apply to applications for the Building Activity Consent and the Building Permit process.

Use

An application to use land must be accompanied by the following information and/or any information specified by the Airport-Lessee Company, as appropriate:

- A description of the proposed use and the types of activities which will be carried out and any proposed staging of use and activities on the land.
- Plans drawn to scale and dimensioned which show:
  - The siting and use of buildings.
  - Areas not required for immediate use.
  - Adjacent buildings.
- The likely effects, if any, on aircraft operations, traffic, infrastructure, and any other matters that the Airport-Lessee Company deems relevant.
- A written statement providing an assessment of the proposal's consistency with the relevant sections of the Melbourne Airport Master Plan and Melbourne Airport Planning and Design Guidelines.

Buildings and works

An application to construct a building or construct or carry out works must be accompanied by the following information and/or any information specified by the Airport-Lessee Company, as appropriate:

- Plans drawn to scale and dimensioned which show:
  - The boundaries and dimensions of the site.
  - Adjoining roads.
  - The location and height of buildings and works on adjoining land.
  - Levels of the site and the difference in levels between the site and surrounding properties to a defined point at the site boundaries or to Australian Height Datum (AHD).
  - The layout of existing and proposed buildings and works.
  - The internal layout and use of the proposed development.
  - All access and pedestrian areas.
  - All driveway, car parking and loading areas, including turning circles.
  - Existing and proposed vegetation.
  - All external storage and waste treatment areas.
  - The location of easements and services.
- Elevation plans drawn to scale and dimensioned which show:
  - The building form and scale.
  - Setbacks to property boundaries.
  - Finished floor levels and building heights to Australian Height Datum (AHD).
- A schedule of finishes for the proposed development detailing materials and colours of external surfaces including walls, roofs and fences.
- A written statement providing an assessment of the proposal against the relevant sections of the Melbourne Airport Planning and Design Guidelines.
- A landscape plan in accordance with the Melbourne Airport Planting Guidelines which includes the description of vegetation to be planted, the surfaces to be constructed, site works specification and method of preparing, draining, watering and maintaining the landscape area.
- Construction details of all drainage works, driveways, vehicle parking and loading areas.
- A Stormwater Management Plan.

8.0 Decision guidelines

Before deciding on an application, the Airport-Lessee Company must consider, as appropriate:

General

- The Airports Act 1996 and Regulations.
- The Melbourne Airport Master Plan 2013.
- The Melbourne Airport Planning and Design Guidelines.
- The Melbourne Airport Development Manual.
- The Melbourne Airport Planting Guidelines.
- CASA Manual of Standards Part 139- Aerodromes
- The framework plan.
- The land use and development objectives.
- The relevant precinct objectives and guidelines.

Aircraft operations

- Whether the proposal impacts on the safe and secure operation of the airport.
- Whether the proposal complies with the Prescribed Airspace requirements (protection of OLS and PANS-OPS surfaces).
- Whether the proposal addresses the Australian Noise Exposure Forecast (ANEF) and AS2021 requirements.

Access

- The Melbourne Airport Ground Transport Plan (part of the Melbourne Airport Master Plan).
- Movements systems through and around the site including the movement of pedestrians, and vehicles providing for supplies, waste removal, emergency services.
- The provision of car parking, loading of vehicles and access to parking spaces and loading bays, including turning circles, where appropriate.

Use

- The interim use of those parts of the land not required for the proposed use.
- Whether the use is compatible with adjoining and nearby land uses.
- Compatibility of the use with aircraft operations.

Design and built form

- The consistency of the proposal with the Melbourne Airport Planning and Design Guidelines.
- Whether the proposal contributes to enhancing the amenity of the airport.

Environmental sustainability

- The Melbourne Airport Environment Strategy (part of the Melbourne Airport Master Plan).

9.0 Advertising signs

Applications for advertising signs should be generally in accordance with the Melbourne Airport Planning and Design Guidelines.

10.0 Reference documents

Melbourne Airport Master Plan 2013

Melbourne Airport Planning and Design Guidelines

Melbourne Airport Development Manual

Melbourne Airport Planting Guidelines

Melbourne Airport Terminal Works Fitout Guide

CASA Manual of Standards Part 139 – Aerodromes

11.0 Definitions

All land use terms have the same meaning as defined in the Victoria Planning Provisions except for the following terms which have the meaning according to the Airports Act 1996:

- Aviation educational facility
- Community care facility
- Educational institution
- Hospital
- Pre-school
- Residential dwelling

MELBOURNE AIRPORT SPECIAL USE ZONE

1.0 Purpose

- To implement the Melbourne Airport Master Plan 2013.
- To recognise or provide for the use and development of land for specific purposes as identified in a schedule to this zone.

2.0 Major Development Plan

Any activities listed in Section 89 and 89A of the Airports Act 1996 that are classified as a major airport development or a sensitive development that require a Major Development Plan to be prepared are subject to approval by the Commonwealth Minister for Infrastructure and Regional Development.

3.0 Table of uses

Section 1 – Permitted uses

Use	Condition
Any use in Section 1 of the schedules to this zone	Must comply with any condition in Section 1 of the schedule to this zone. If a condition is not met then the use becomes a Section 2 use.

Section 2 – Consent uses (Airport-Lessee Company approval required)

Use	Condition
Any use not included in Sections 1 or 3	
Any use in Section 1 if the condition is not met	

Section 3 – Sensitive uses (Commonwealth Minister's approval required)

Use
Residential dwelling (does not include accommodation for students studying at an aviation educational facility at the airport)
Community care facility
Pre school
Primary, secondary, tertiary or other educational institution (does not include an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport)
Hospital (does not include a facility with the primary purpose of providing emergency medical treatment and which does not have in patient facilities)

4.0 Approvals

4.1 Use of land

Planning and Design Approval is required from the Airport-Lessee Company for any Section 2 use of land.

Use of land must be consistent with the Melbourne Airport Master Plan (including the Ground Transport Plan and Environment Strategy) and Melbourne Airport Planning and Design Guidelines.

4.2 Buildings and works

Planning and Design Approval and a Building Activity Consent are required from the Airport-Lessee Company and a Building Permit from the Airport Building Controller for all buildings and works (subject to exemptions).

The Airport-Lessee Company may specify buildings and works that are exempt from Planning and Design Approval.

Planning and Design Approval is not required if a Major Development Plan is required and approved.

4.3 Design and development

Design and development must be generally in accordance with the Melbourne Airport Planning and Design Guidelines, Melbourne Airport Planting Guidelines and the Melbourne Airport Development Manual.

Design and development must comply with the CASA Manual of Standards Part 139 – Aerodromes.

5.0 Application requirements

These requirements relate only to applications for Planning and Design Approval. Separate requirements apply to applications for the Building Activity Consent and the Building Permit process.

Use

An application to use land must be accompanied by the following information and/or any information specified by the Airport-Lessee Company, as appropriate:

- A description of the proposed use and the types of activities which will be carried out and any proposed staging of use and activities on the land.
- Plans drawn to scale and dimensioned which show:
  - The siting and use of buildings.
  - Areas not required for immediate use.
  - Adjacent buildings.
- The likely effects, if any, on aircraft operations, traffic, infrastructure, and any other matters that the Airport-Lessee Company deems relevant.
- A written statement providing an assessment of the proposal's consistency with the relevant sections of the Melbourne Airport Master Plan and Melbourne Airport Planning and Design Guidelines.
- Any other information specified in the schedule to this zone.

Buildings and works

An application to construct a building or construct or carry out works must be accompanied by the following information and/or any information specified by the Airport-Lessee Company, as appropriate:

- Plans drawn to scale and dimensioned which show:
  - The boundaries and dimensions of the site.
  - Adjoining roads.
  - The location and height of buildings and works on adjoining land.
  - Levels of the site and the difference in levels between the site and surrounding properties to a defined point at the site boundaries or to Australian Height Datum (AHD).
  - The layout of existing and proposed buildings and works.
  - The internal layout and use of the proposed development.
  - All access and pedestrian areas.
  - All driveway, car parking and loading areas, including turning circles.
  - Existing and proposed vegetation.
  - All external storage and waste treatment areas.
  - The location of easements and services.
- Elevation plans drawn to scale and dimensioned which show:
  - The building form and scale.
  - Setbacks to property boundaries.
  - Finished floor levels and building heights to Australian Height Datum (AHD).

- A schedule of finishes for the proposed development detailing materials and colours of external surfaces including walls, roofs and fences.
- A written statement providing an assessment of the proposal against the relevant sections of the Melbourne Airport Planning and Design Guidelines.
- A landscape plan in accordance with the Melbourne Airport Planting Guidelines which includes the description of vegetation to be planted, the surfaces to be constructed, site works specification and method of preparing, draining, watering and maintaining the landscape area.
- Construction details of all drainage works, driveways, vehicle parking and loading areas.
- A stormwater management plan.
- Any other information specified in the schedule to this zone.

6.0 Decision guidelines

Before deciding on an application, the Airport-Lessee Company must consider, as appropriate:

General

- The Airports Act 1996 and Regulations.
- The Melbourne Airport Master Plan 2013.
- The Melbourne Airport Planning and Design Guidelines.
- The Melbourne Airport Development Manual.
- The Melbourne Airport Planting Guidelines.
- CASA Manual of Standards Part 139 – Aerodromes.
- The zone purpose.
- Any guidelines in the schedule to this zone.

Aircraft operations

- Whether the proposal impacts on the safe and secure operation of the airport.
- Whether the proposal complies with the Prescribed Airspace requirements (protection of OLS and PANS-OPS surfaces).
- Whether the proposal addresses the Australian Noise Exposure Forecast (ANEF) and AS2021 requirements.

Access

- The Melbourne Airport Ground Transport Plan (part of the Melbourne Airport Master Plan 2013).
- Movements systems through and around the site including the movement of pedestrians, and vehicles providing for supplies, waste removal, emergency services.
- The provision of car parking, loading of vehicles and access to parking spaces and loading bays, including turning circles, where appropriate.

Use

- The interim use of those parts of the land not required for the proposed use.
- Whether the use is compatible with adjoining and nearby land uses.
- Compatibility of the use with aircraft operations.

Design and built form

- The consistency of the proposal with the Melbourne Airport Planning and Design Guidelines.
- Whether the proposal contributes to enhancing the amenity of the airport.

Environmental sustainability

- The Melbourne Airport Environment Strategy (part of the Melbourne Airport Master Plan).

7.0 Advertising signs

Applications for advertising signs should be generally in accordance with the Melbourne Airport Planning and Design Guidelines.

8.0 Reference documents

Melbourne Airport Master Plan 2013

Melbourne Airport Planning and Design Guidelines

Melbourne Airport Development Manual

Melbourne Airport Planting Guidelines

CASA Manual of Standards Part 139 – Aerodromes

MELBOURNE AIRPORT SPECIAL USE ZONE SCHEDULE 1 – AIRSIDE OPERATIONS PRECINCT

1.0 Purpose

- To implement the Melbourne Airport Master Plan 2013.
- To provide for safe, secure and efficient airfield activities including the landing, take-off, taxiing and parking of aircraft.
- To accommodate the provision of aircraft navigation aids, aviation rescue and firefighting services and other facilities essential for safe and efficient aircraft operations.
- To provide for aircraft operations on a 24 hour a day, 7 day a week basis.
- To provide for the safe and secure operation of the airport.
- To optimise the efficient operation of the airport as an intermodal facility.
- To facilitate the long term growth of the airport.

2.0 Table of uses

Section 1 – Permitted uses

Use	Condition
Airport	
Emergency services facility	
Fuel depot	
Heliport	
Road	
Transport terminal	
Utility installation	

Section 2 – Consent uses (Airport-Lessee Company approval required)

Use	Condition
Any use not included in Sections 1 or 3	
Any use in Section 1 if the condition is not met	

Section 3 – Sensitive uses (Commonwealth Minister's approval required)

Use
Residential dwelling (does not include accommodation for students studying at an aviation educational facility at the airport)
Community care facility
Pre school
Primary, secondary, tertiary or other educational institution (does not include an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport)
Hospital (does not include a facility with the primary purpose of providing emergency medical treatment and which does not have in patient facilities)

3.0 Application requirements

Applications for development must be in accordance with the CASA Manual of Standards Part 139 – Aerodromes, the Melbourne Airport Planning and Design Guidelines and Melbourne Airport Planting Guidelines.

4.0 Decision guidelines

Land is this zone should continue to be used and developed for aircraft services and facilities including runways, taxiways, taxilanes, aprons and associated navigation aids.

The land should not be used or developed for any purpose that may interfere or conflict with safe and secure aircraft operations.

MELBOURNE AIRPORT SPECIAL USE ZONE SCHEDULE 2 – AIRPORT EXPANSION PRECINCT

1.0 Purpose

- To implement the Melbourne Airport Master Plan 2013.
- To provide for the future expansion of the airport including additional future runways and taxiways and possible future terminal or aviation support services.
- To provide for the ongoing operation and growth of aviation related organisations, including Airservice Australia's facilities (i.e. the Control Tower, Air Traffic Control and Fire Training School).
- To provide for the conservation of environmentally significant land where such land is not required for future airport operations.
- To provide for the safe and secure operation of the airport.
- To optimise the efficient operation of the airport as an intermodal facility.
- To facilitate the long term growth of the airport.

2.0 Table of uses

Section 1 – Permitted uses

Use	Condition
Airport	
Car park	
Emergency services facility	
Fuel depot	
Heliport	
Railway station	
Road	
Transport terminal	
Utility installation	

Section 2 – Consent uses (Airport-Lessee Company approval required)

Use	Condition
Any use not included in Sections 1 or 3	
Any use in Section 1 if the condition is not met	

Section 3 – Sensitive uses (Commonwealth Minister's approval required)

Use
Residential dwelling (does not include accommodation for students studying at an aviation educational facility at the airport)
Community care facility
Pre school
Primary, secondary, tertiary or other educational institution (does not include an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport)
Hospital (does not include a facility with the primary purpose of providing emergency medical treatment and which does not have in patient facilities)

3.0 Application requirements

Applications for development must be in accordance with the CASA Manual of Standards Part 139 – Aerodromes, the Melbourne Airport Planning and Design Guidelines and Melbourne Airport Planting Guidelines.

4.0 Decision guidelines

Land in this zone has been identified for airport expansion which in the future will include additional runways, taxiways and associated aviation support infrastructure.

The land should not be used or developed for any purpose which may prejudice or conflict with the zone purposes.

The land should not be used or developed for any purpose that may interfere or conflict with safe and secure aircraft operations.

MELBOURNE AIRPORT ROAD ZONE

1.0 Purpose

- To implement the Melbourne Airport Master Plan 2013.
- To identify significant existing roads.
- To identify land which has been identified for a significant proposed road.

2.0 Major Development Plan

Any activities listed in Section 89 and 89A of the Airports Act 1996 that are classified as a major airport development or a sensitive development that require a Major Development Plan to be prepared are subject to approval by the Commonwealth Minister for Infrastructure and Regional Development.

3.0 Table of uses

Section 1 – Permitted uses

Use	Condition
Railway	
Road	
Tramway	
Utility installation	

Section 2 – Consent uses (Airport-Lessee Company approval required)

Use	Condition
Any use not included in Sections 1 or 3	

Section 3 – Sensitive uses (Commonwealth Minister's approval required)

Use
Residential dwelling (does not include accommodation for students studying at an aviation educational facility at the airport)
Community care facility
Pre school
Primary, secondary, tertiary or other educational institution (does not include an aviation educational facility or a facility with the primary purpose of providing in house training to staff of an organisation conducting operations at the airport)
Hospital (does not include a facility with the primary purpose of providing emergency medical treatment and which does not have in patient facilities)

4.0 Approvals

4.1 Use of land

Planning and Design Approval is required from the Airport-Lessee Company for any Section 2 use of land.

Use of land must be consistent with the Melbourne Airport Master Plan (including the Ground Transport Plan and Environment Strategy) and Melbourne Airport Planning and Design Guidelines.

4.2 Buildings and works

Planning and Design Approval and a Building Activity Consent are required from the Airport-Lessee Company and a Building Permit from the Airport Building Controller for all buildings and works (subject to exemptions).

The Airport-Lessee Company may specify buildings and works that are exempt from Planning and Design Approval.

Planning and Design Approval is not required if a Major Development Plan is required and approved.

5.0 Decision guidelines

Before deciding on an application, the Airport-Lessee Company must consider, as appropriate:

- The views of the relevant road authority.
- The effect of the proposal on the operation of the road and on public safety.
- The Airports Act 1996 and Regulations.
- The Melbourne Airport Master Plan 2013.
- The Melbourne Airport Planning and Design Guidelines.
- The Melbourne Airport Development Manual.
- The Melbourne Airport Planting Guidelines.
- The Melbourne Airport Ground Transport Plan (part of the Melbourne Airport Master Plan 2013).
- The zone purpose.

6.0 Advertising signs

Applications for advertising signs should be generally in accordance with the Melbourne Airport Planning and Design Guidelines.

7.0 Reference documents

Melbourne Airport Master Plan 2013

Melbourne Airport Planning and Design Guidelines

Melbourne Airport Development Manual

Melbourne Airport Planting Guidelines

CASA Manual of Standards Part 139 – Aerodromes

APPENDIX C
Environment Legislation

Aspect	Relevant legislation and policies
Energy and climate change	*National Greenhouse and Energy Reporting Act 2007* (Commonwealth)
	National Greenhouse and Energy Reporting Regulations 2008 (Commonwealth)
	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Commonwealth)
	Ozone Protection and Synthetic Greenhouse Gas (Import Levy) Act 1995 (Commonwealth)
	Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 (Commonwealth)
	Climate Change Act 2010 (Victoria)
Waste and resource management	National Environment Protection (Used Packaging Materials) Measure 2011 (Commonwealth)
	National Environment Protection (Movement of Controlled Waste between States and Territories) Measure as varied 2004
	Airports (Environment Protection) Regulations 1997
	Environment Protection (Industrial Waste Resource) Regulations 2009 (Victoria)
	Water Act 1989 (Victoria)
	Waste Management Policy (Used Packaging Materials) 2012 (Victoria)
	Waste Management Policy (National Pollutant Inventory) 2012 (Victoria)
	Waste Management Policy (Movement of Controlled Waste between States and Territories) 2012 (Victoria)
	Occupational Health and Safety Act 2004 (Victoria)
	Occupational Health and Safety Regulations 2007 (Victoria)
	Industrial Waste Resource Guidelines 2009 (EPA Victoria)
	Industrial Waste Fact Sheet 2012 (EPA Victoria)
	Applying the Environment Protection Principles in Waste Management Regulation 2010 (EPA Victoria)
	Polychlorinated Biphenyls Management Guidelines 2009 (EPA Victoria)
	Asbestos Transport and Disposal 2009 (EPA Victoria)
	Classification for Contaminated Soil – Industrial Waste Management Policy 2002 (EPA Victoria)
	Polychlorinated Biphenyls Management Plan (ANZECC) 2003

Aspect	Relevant legislation and policies
Water quality – stormwater	*Airports Act 1996* (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Variation to the National Environment Protection (National Pollutant Inventory) Measure 2008 (No. 1) (Commonwealth)
	Catchment and Land Protection Act 1994 (Victoria)
	State Environment Protection Policy (Waters of Victoria) 2003 and Schedules (Victoria)
	Waste Management Policy (National Pollutant Inventory) 2012 (Victoria)
	Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2002 (Environment Australia) (Commonwealth)
	Water Act 1989 (Victoria)
	Urban Stormwater: Best Practice Environmental Management Guidelines 1999 (Victoria)
Water quality – groundwater	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	State Environment Protection Policy (Groundwaters of Victoria) 1997 (note variation in 2002) (Victoria)
	Water Act 1989 (Victoria)
	EPA Publication 840 – Information Bulletin: The Clean Up and Management of Polluted Groundwater 2002 (Victoria)
	Groundwater Sampling Guidelines 2000 (EPA Victoria)

Aspect	Relevant legislation and policies
Water management	Code of Practice – Onsite Wastewater Management 2008 (EPA Victoria)
	Disinfection of Treated Wastewater – Guidelines for Environmental Management 2002 (EPA Victoria)
	Sampling and Analysis of Waters, Wastewaters, Soils and Wastes 2009 (EPA Victoria)
	Draft Code of Practice for Onsite Wastewater Management 2010 (EPA Victoria)
	Guidelines for Environmental Management: Use of Reclaimed Water 2003 (EPA Victoria)
	Bunding Guidelines 1992 (EPA Victoria)
	Guidelines: Environment and Resource Efficiency Plans 2008 (EPA Victoria)
Biodiversity and conservation management	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act)
	Environment Protection and Biodiversity Conservation Regulations 2000 (Commonwealth)
	Native Vegetation Management – a Framework for Action 2002 (Department of Natural Resources and Environment) (Victoria)
	Flora and Fauna Guarantee Act 1988 (Victoria) (FFG Act)
	Flora and Fauna Guarantee Regulations 2011 (Victoria)
	Airports Act 1996 (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Australian Heritage Council Act 2003 (Commonwealth)
	Catchment and Land Protection Act 1994 (Victoria)
	Significant Impact Guidelines 1.1: Matters of Environmental Significant 2009 (Commonwealth)
	Significant Impact Guidelines 1.2: Action on, or Impacting upon, Commonwealth Land and Actions by Commonwealth Agencies 2006 (Commonwealth)

Aspect	Relevant legislation and policies
Cultural heritage	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
	Environment Protection and Biodiversity Conservation Regulations 2000 (Commonwealth)
	Airports Act 1996 (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Native Title Act 1993 (Commonwealth)
	Australian Heritage Commission Act 1975 (Commonwealth)
	Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)
	Australian Heritage Council Act 2003 (Commonwealth)
	Protection of Movable Cultural Heritage Act 1986 (Commonwealth)
	Australian Heritage Commission Amendment Act 1991 No. 17 (Commonwealth)
	Australian Heritage Commission Amendment Act 1976 (Commonwealth)
	Aboriginal Heritage Act 2006 (Victoria)
	Heritage Act 1995 (Victoria)
	Heritage (General) Regulations 2005 (Victoria)
	Land Titles Validation Act 1994 (Victoria)
	Standards for Recording Victorian Aboriginal Heritage Places and Objects 2008 (Department of Planning and Community Development) (Victoria)
	Guidelines for conducting and reporting on Aboriginal cultural heritage investigations 2012 (Department of Planning and Community Development) (Victoria)

Aspect	Relevant legislation and policies
Air quality	Environment Protection (Vehicle Emissions) Regulations 2003 (Victoria)
	Environment Protection (Industrial Waste Resource) Regulations 2009 (Victoria)
	National Environment Protection Council (Victoria) Act 1995 (Victoria)
	Industrial Waste Management Policy (Protection of the Ozone Layer) 2001 (Victoria)
	Waste Management Policy (National Pollutant Inventory) 2012 (Victoria)
	State Environment Protection Policy (Ambient Air Quality) 1999 (Victoria)
	State Environment Protection Policy (Air Quality Management) 2001 (Victoria)
	National Environment Protection Council Act 1995 (Commonwealth)
	Fuel Quality Standards Act 2000 (Commonwealth)
	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
	Airports Act 1996 (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Air Navigation (Aircraft Engine Emissions) Regulations 1995 (Commonwealth)
	Air Navigation (Fuel Spillage) Regulations 1999 (Commonwealth)
	National Environment Protection (Ambient Air Quality) Measure as varied July 2003 (Commonwealth)
	National Environment Protection (Diesel Vehicle Emissions) Measure as varied May 2009 (Commonwealth)
	Variation to the National Environment Protection (National Pollutant Inventory) Measure 2008 (No. 1) (Commonwealth)
	A Guide to the Sampling and Analysis of Air Emissions and Air Quality 2002 (EPA Victoria)
	Protocol for Environment Management: Minimum Control Requirements for Stationary Sources 2002 (EPA Victoria)
	Protocol for Environment Management: Greenhouse Gas Emissions and Energy Efficiency in Industry 2002 (EPA Victoria)
	Managing Emissions of Volatile Organic Compounds 2003 (EPA Victoria)
	Policy Impact Assessment: Variations to State Environment Protection Policy (Air Quality Management) and State Environment Protection Policy (Ambient Air Quality) 2002 (EPA Victoria)
	Victorian Greenhouse Strategy 2002 (Department of Natural Resources and Environment) (Victoria)
	National Pollutant Inventory Guide 2012 (Commonwealth)

Aspect	Relevant legislation and policies
Ground-based noise	Air Navigation (Aircraft Noise) Regulations 1984 (Commonwealth)
	Environment Protection (residential Noise) Regulations 2009 (Victoria)
	State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) 1989 (Victoria)
	Airports Act 1996 (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Aircraft Noise Levy Act 1995 (Commonwealth)
	Aircraft Noise Levy Collection Act 1995 (Commonwealth)
	Aircraft Noise Levy Regulations 1995 (Commonwealth)
	Environment Protection (Residential Noise) Regulations 2008 (Victoria)
	Occupational Health and Safety Act 2004 (Victoria)
	Occupational Health and Safety Regulations 2007 (Victoria)
	Australian Standard 2021–2000
	Noise Control Guidelines: Publication 1254 October 2008 (EPA Victoria)
	A Guide to the Measurement and Analysis of Noise 1991 (EPA Victoria)
	Environmental Guidelines for Major Construction Sites 1996 (EPA Victoria)
Land management	*Airports Act 1996* (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)
	Environment Protection and Biodiversity Conservation Regulations 2000 (Commonwealth)
	Catchment and Land Protection Act 1994 (Victoria)
	State Environment Protection Policy (Prevention and Management of Contamination of Land) 2002
	Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999

Aspect	Relevant legislation and policies
Hazardous materials	*Civil Aviation Act 1988* (Commonwealth)
	Civil Aviation Regulations 1988 (Commonwealth)
	National Environment Protection (Movement of Controlled Waste Between States and Territories) Measure as varied 2004 (Commonwealth)
	Work, Health and Safety Act 2011 (Commonwealth)
	Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Commonwealth)
	Australian Dangerous Goods Code 2010 (7th Edition) (Commonwealth)
	Australian Explosives Code (3rd Edition) 2009 (Commonwealth)
	Australian Standard 1940 The Storage and Handling of Flammable and Combustible Liquids 2004 (Standards Australia) (Commonwealth)
	Dangerous Goods Act 1985 (Victoria)
	Dangerous Goods (Storage and Handling) Interim Regulations 2011 (Victoria)
	Dangerous Goods (HCDG) Regulations 2005 (Victoria)
	Occupational Health and Safety Act 2004 (Victoria)
	Occupational Health and Safety Regulations 2007 (Victoria)
	Bunding Guidelines 1992 (EPA Victoria)
	Guidelines on the design, installation and management requirements for underground petroleum storage systems 2009 (EPA Victoria)
	Australian Standard 4977, Australian Standard 4897 and Australian Standard 4976 (Commonwealth)
Airport development	*Airports Act 1996* (Commonwealth)
	Airports (Building Control) Regulations 1996 (Commonwealth)
	Airports (Building Control) Amendment Regulations (No. 1) 1999 (Commonwealth)
	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
	Environment Protection and Biodiversity Conservation Regulations 2000 (Commonwealth)
	Planning and Environment Act 1987 (Victoria)
	Environmental Guidelines for Major Construction Sites 1996 (EPA Victoria)

Aspect	Relevant legislation and policies
Soil contamination	*Airports Act 1996* (Commonwealth)
	Airports (Environment Protection) Regulations 1997 (Commonwealth)
	National Environment Protection (Assessment of Site Contamination) Measure 1999 (Commonwealth)
	Variation to the National Environment Protection (National Pollutant Inventory) Measure 2008 (Commonwealth)
	Catchment and Land Protection Act 1994 (Victoria)
	Conservation, Forest and Lands Act 1987 (Victoria)
	Waste Management Policy (National Pollutant Inventory) 2012 (Victoria)
	State Environment Protection Policy (Prevention and Management of Contaminated Land) 2002 (Victoria)
	Guidelines for environmental management of on-site remediation 2008 (EPA Victoria)
	Environmental auditor guidelines – Provision of environmental audit reports, certificates and statements 2007 (EPA Victoria)
	Environmental auditor guidelines for conducting environmental audits 2007 (EPA Victoria)
	Environmental auditor (contaminated land) – Guidelines for issue of certificates and statements of environmental audit 2007 (EPA Victoria)
	Environmental auditor appointment and conduct – Guidelines 2012 (EPA Victoria)
	Sampling and Analysis of Waters, Wastewaters, Soils and Wastes 2009 (EPA Victoria)
	Guideline on the Investigation Levels for Soil and Groundwater 1999 (to be read in conjunction with National Environment Protection (Assessment of Site Contamination) Measure 1999 (Commonwealth)
	Prevention and Management of Contaminated Land 2002 (EPA Victoria)
	Contaminated soil – organic compounds – Classification for reuse 2009 (EPA Victoria)
	Classification for Contaminated Soil – Industrial Waste Management Policy 2002 (EPA Victoria)
Soil erosion	*Catchment and Land Protection Act 1994* (Victoria)
	Conservation, Forest and Lands Act 1987 (Victoria)
	Construction Techniques for Sediment Pollution Control 1991 (EPA Victoria)
	Environmental Guidelines for Major Construction Sites 1996 (EPA Victoria)
	Control of Erosion on Construction Sites (Soil Conservation Authority) 1984 (Victoria)

APPENDIX D

Figure 12.2 Ultimate Capacity Australian Noise Exposure Forecast (2013) Notes

AS 2021 - 2000

ACOUSTICS - AIRCRAFT NOISE INTRUSION - BUILDING SITING AND CONSTRUCTION

TABLE 2.1 - BUILDING SITE ACCEPTABILITY BASED ON ANEF ZONES

(To be used in conjunction with Table 3.3)

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

NOTES :

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of AS 2021 Clause 2.3.2 may be followed for building sites outside but near to the 20 ANEF contour.

2. Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also AS 2021 Figure A1 of Appendix A)

3. There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 2.1 should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3.

4. This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.

5. In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.

AUSTRALIAN NOISE EXPOSURE FORECAST (ULTIMATE CAPACITY ANEF) ORIGIN

The Ultimate Capacity ANEF and the associated Australian Noise Exposure Concept (ANEC)'s have been prepared using the Integrated Noise Model package (INM and taking ground topography into account.

The Melbourne Airport 2009/10 Australian Noise Exposure Index (2010 ANEI) is used as the source of current aircraft noise exposure.

Three (3) Melbourne Airport Australian Noise Exposure Concepts (ANEC's) are used as the source of the forecast aircraft noise exposure for the three (3) airfield development phases.

The Ultimate Capacity ANEF as shown is the composition of the 2010 ANEI and the three ANEC's combined to give the worst case scenario from the extremities of each individual noise contour.

Annual Aircraft Movements for ANEI and ANEC configurations	Annual Aircraft Movements
2010 ANEI (existing 2 runways)	196,820
ANEC 1 - 2 runway ultimate layout	272,300
ANEC 2 - 3 runway (3rd runway in East-West direction)	390,000
ANEC 4 - 4 runway ultimate layout	410,000

Qualification

Factors taken into account in the ANEF calculation are the following :
- the numbers and types of aircraft forecast to operate on the average day, their distribution on the various runways and flight paths and their destinations.
- the noise characteristics of each aircraft type at each phase of its operation (landing or takeoff)
- whether the operation was in daytime (7am - 7pm) or night-time (7pm - 7am).

Contours are plotted at steps of 5 ANEF over the range 20 to 40 ANEF - the higher the ANEF value the greater the noise exposure.

Aircraft noise does not stop at the 20 ANEF contour, but outside 20 ANEF, noise from sources other than aircraft may predominate over aircraft noise.

The aircraft noise contours on this chart have been calculated using the best available modelling process. The data input to that process are forecasts, and Airservices Australia cannot warrant their ultimate correctness. Airservices Australia accepts no liability for any reliance placed on any data on this chart by any third party. Airservices Australia accepts no responsibility for any interpretation of this data by third parties.

Australia Pacific Airports (Melbourne) Pty Ltd. neither assumes liability nor accepts responsibility for the accuracy of the contours or any reliance placed upon them.

APPENDIX E

Figure 12.6 Melbourne Airport Environs Overlay Notes

45.08 MELBOURNE AIRPORT ENVIRONS OVERLAY

Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
To ensure that land use and development are compatible with the operation of Melbourne Airport in accordance with the relevant airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield.
To assist in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise sensitive buildings.
To provide for appropriate levels of noise attenuation depending on the level of forecasted noise exposure.

45.08-1 Use of land

Any requirement in a schedule to this overlay must be met.

45.08-2 Buildings and works

Any requirement in a schedule to this overlay must be met.
Any building for which a permit is required under this overlay must be constructed so as to comply with any noise attenuation measures required by Section 3 of the Australian Standard AS 2021-2000, Acoustics - Aircraft Noise Intrusion - Building Siting and Construction, issued by Standards Australia International Ltd.

Note: In Section 3 of Australian Standard AS 2021-2000, Table 3.3 refers to both building types and activities within those buildings. Each building type listed has its ordinary meaning and should not be interpreted as defined in this scheme.

45.08-3 Subdivision

A permit is required to subdivide land.
Subdivision must occur in accordance with any lot size or other requirement specified in a schedule to this overlay.

45.08-4 Decision guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

* The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
* Whether the proposal will result in an increase in the number of dwellings and people affected by aircraft noise.
* Whether the proposal is compatible with the present and future operation of the airport in accordance with the current Melbourne Airport Master Plan approved in accordance with the Airports Act 1996.
* Location of the development in relation to the criteria set out in table 2.1 Building Site Acceptability based on ANEF Zones in Australian Standard AS 2021-2000.

45.08-5 Exemption from notice

An application is exempt from the notice requirements of Section 52(1)(a), (b) and (d) of the Act.

45.08-6 Notification requirements

In accordance with Section 52(1)(c) of the Act, notice of an application to use land, subdivide land or to construct a building or construct or carry out works must be given to the airport lessee company of Melbourne Airport in accordance with the Commonwealth Airports Act 1996, unless otherwise agreed in writing between the responsible authority and the airport lessee. The notice must be accompanied by a copy of the application, existing condition and development plans.

Notes: Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land. Check the requirements of the zone which applies to the land. Other requirements may also apply. These can be found at Particular Provisions.

CONTACT DETAILS

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MELBOURNE AIRPORT