

Melbourne Airport Master Plan

2008

Preliminary Draft



Melbourne Airport Master Plan 2008

Please Note

- This Master Plan was prepared by Australia Pacific Airports (Melbourne) Pty Ltd 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 Minister in September 2003. The fundamental philosophies of the previous Master Plan are maintained in this version.
- Development strategies and scenarios in this Master Plan are based on certain assumptions and forecasts which have been prepared by Australia Pacific Airports (Melbourne) Pty. Ltd. 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 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.

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Abbreviations

Abbreviation/Term	Meaning
A380	Airbus A380 series aircraft
ABGR	Australian Building Greenhouse Rating
Aircraft mix	Proportion of international, domestic, commuter and other aircraft by type
Airport Strategy	Melbourne Airport Strategy (MAS)
AEO	Airport Environs Overlay – Schedule 1 and 2 (now Melbourne Airport Environs Overlay)
ANEC	Australian Noise Exposure Concept. A set of noise contours based on hypothetical aircraft operations at an airport in the future. The concept is constructed on the basis of a set of specified variables including the number of aircraft movements, the aircraft mix and the daily profile of movements.
ANEF	Australian Noise Exposure Forecast. An Australian Noise Exposure Forecast is the Australian Standard set of contours to be used for planning operations and administrative purposes and is generally for a specified time period. It is derived from a firm forecast of aircraft operations for a particular year or period. The ANEF can be based on one particular ANEC or can be a composite of a number of ANECs. For Melbourne Airport it is a composite.
ANEI	Australian Noise Exposure Index. A noise contour plan calculated using ANEF techniques, but with actual aircraft movement figures from a past year.
AS2021	Australian Standard AS2021-2000
BAA	BAA Limited. Owners and operators of airports: London Heathrow, Gatwick and Stansted.
B747	Boeing 747 ‘Jumbo’ Jet
B767	Boeing 767-200 and 300 series aircraft
B737	Boeing 737 aircraft
CAAGR	Compound Average Annual Growth Rate
Commonwealth Department of Infrastructure	Department of Infrastructure, Transport, Regional Development & Local Government
DOTARS	Department of Transport and Regional Services (now Department of Infrastructure, Transport, Regional Development & Local Government)
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMP	Environmental Management Program
ESD	Ecological Sustainable Development
GSE	Ground Support Equipment
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
INM	Integrated Noise Model
LAHSO	Land and Hold Short Operations

Abbreviation/Term	Meaning
MAEO	Melbourne Airport Environs Overlay – Schedule 1 and 2
Melbourne 2030	Victorian Government Metropolitan Planning Strategy
NFPMS	Noise and Flight Path Monitoring System
OLS	Obstacle Limitation Surfaces
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
RPAAs	Rules and Practices for Aerodromes (Civil Aviation Safety Authority, Australia)
SPPF	State Planning Policy Framework
T1	Terminal 1 (Domestic) - home to Qantas and Jetstar domestic passenger services
T2	Terminal 2 (International) - home to international passenger services
T3	Terminal 3 (Domestic) - home to Virgin Blue, Regional Express and Skywest domestic passenger services
T4	Terminal 4 (Domestic) - home to Tiger Airways domestic passenger services
TAAATS	The Advanced Australian Air Traffic System
Taxiway A	Taxiway Alpha
Taxiway E	Taxiway Echo
Taxiway G	Taxiway Golf
Taxiway S	Taxiway Sierra
Taxiway T	Taxiway Tango
Taxiway U	Taxiway Uniform
Taxiway V	Taxiway Victor
UGB	Urban Growth Boundary
VFR	Visual Flight Rules
VPPs	Victoria Planning Provisions
WSUD	Water Sensitive Urban Design
09 L	Approach to west end of existing east-west runway
09 R	Approach to west end of proposed east-west runway
27 L	Approach to east end of proposed east-west runway
27 R	Approach to east end of existing east-west runway
16 L	Approach to north end of existing north-south runway
16 R	Approach to north end of proposed north-south runway
34 L	Approach to south end of proposed north-south runway
34 R	Approach to south end of existing north-south runway

Foreword

I am pleased to present Melbourne Airport's 2008 Preliminary Draft Master Plan. This plan outlines our vision for Melbourne Airport's future. Melbourne Airport is a key focal point within the State's economic and transport infrastructure contributing to the growth of Victoria's economy through tourism, air freight and business development. Well thought out, well-planned development, on and off airport, ensures Melbourne Airport continues to meet the changing needs of airport users, local community and business. This plan builds on Melbourne Airport's strategic strengths including absence of night time curfew, excellent transport links, Government support and capacity to grow.

Since privatisation in 1997, Melbourne Airport has achieved the highest compound annual rate of passenger growth of any major Australian airport, despite major global and domestic challenges. During that period we have welcomed the entry of three new domestic carriers and the emergence of new generation aircraft.

During the last five years we have steadily been putting in place the development plans we outlined in the 2003 Master Plan. These include the widening of our north-south runway to accommodate the Airbus A380 aircraft and commencement of work on the largest ever series of expansions of our international terminal (T2), which are set to establish new Australian benchmarks in passenger experience when they are complete in 2012.

Other developments include completion of additional short and long term car parking facilities, the construction of the Australia Post Mail Facility, Australian Air Express Facilities (International and Domestic), and a number of commercial property projects including Mercedes Benz, child care centres, Unigas, The Reject Shop, Kathmandu, Global Machinery Company, Gibson Freight and Caterpillar Logistics.

Using the Melbourne Airport Master Plan approved in 2003 as our foundation, we have been able to refine our direction, focus our efforts on key issues and once again earn the trust and support of our stakeholders by operating and growing our airport responsibly and communicating clearly. This process of consultation will be ongoing with the Master Plan being reviewed every five years. We see it as part of the continuous and sustained improvement at the airport.

Through the plans outlined here we aim to enhance our position as the gateway to Victoria and as a major generator of employment for the region. At the same time we recognise the need to successfully manage the interaction between a major transport hub and our residential neighbours.

We appreciate you taking the time to view our Master Plan and welcome any comments.



Chris Woodruff
CEO and Managing Director
Melbourne Airport

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Executive Summary

Melbourne Airport is the second busiest airport in Australia for passengers and provides the main aviation hub for the southern part of the continent. Located 22km north-west of the Central Business District, adjacent to the Tullamarine Freeway, the Victorian Government recognises that the airport is a key component of Victoria's transport infrastructure. It is a focal point within the State's economy through tourism, air freight and business development. Although the airport has undergone substantial expansion since its opening in 1970, the site has the capacity to further respond to the significant development opportunities that continuing growth in aviation activities will present.

The Master Plan covers the 20 year planning period as required by the Airports Act 1996 and provides the ability to capitalise on the potential of the airport site to serve all Victorians. The planning for the next 20 years is consistent with longer term planning which provides a vision for the ultimate development of the airport. It is a long term planning concept for safe, secure, efficient and environmentally sustainable use of the airport site.

The Master Plan retains the fundamental concepts of the 1998 and 2003 Master Plans. The changes that have been made are minor, largely reflecting changes in aviation industry structure (for example, the emerging low cost carrier market) and actual changes in use that have occurred.

The Master Plan provides concept plans for maintaining and expanding aviation facilities at high levels of service, whilst achieving a commercial return to Melbourne Airport's shareholders. It includes requirements for protection of the airport for current and future aircraft operations.

Master Plan Process

During the preparation of this Preliminary Draft Master Plan a program was established for extensive consultation with a wide range of industry stakeholders and representatives from Federal, State and Local Government. This consultation has continued the integrated approach to planning for Melbourne Airport which was established during previous planning cycles to develop the long term strategy for the airport.

The primary inputs to the Master Plan have been:

- Upper and lower aviation forecasts to year 2027/28 prepared by BAA. These forecasts indicate that by the year 2027/28 annual aircraft movements are expected to be between 263,000 and 316,000 (180,200 in 2006/07) and annual passenger movements between 43.9 million and 54.9 million (22.3 million in 2006/07);
 - The adoption of ICAO Code F aircraft (up to 80m wingspan) as the design aircraft for airfield clearances and apron planning over the next 20 years. The largest aircraft code currently operating at the airport is Code E (B747). The new A380 aircraft, which is scheduled to commence operations in 2008/09 will be the first commercial Code F aircraft;
 - Consideration of the State Planning Policy Framework and associated zoning and overlays;
 - Information provided by a review of the airport's existing Master Plan. This review has covered airside, terminal and aviation facilities, surface access and vehicle parking, commercial requirements, the assessment of aircraft in flight noise impacts and the adequacy of existing land use controls in the airport environs; and
 - The requirements of relevant legislation and Melbourne Airport's Management Systems. Using these inputs, overall integrated layouts for aviation, aviation support, commercial areas and surface access provisions have been proposed for the next 20 years and for the safe, secure, efficient and environmentally sustainable long-term operation of the airport.
- The proposed locations for the various facilities are presented in two drawings:
- A year 2027/28 Airport Development plan which provides in concept form the facility location requirements during the next 20 years (refer to Figure 1.1); and
 - An Ultimate Airport Development Concept plan which depicts the indicative aviation, aviation related and commercial requirements for the airport site necessary to service the long term operating potential of the proposed four runway system (refer to Figure 1.2).
 - The Ultimate Airport Development Concept requires resolution of appropriate Planning mechanisms for privately owned land located west of McNabbs Road.

Master Plan Features

Features of the airside development are:

- Retention of the previously planned four runway configuration to provide for future development of wide-spaced parallel north-south and east-west runways as per the previous Master Plan;
- Provision for future aprons and taxiway enhancements to service the growth in aircraft movements;
- Ground servicing equipment storage; and
- Extension of Runway 09L/27R to the west.

Features of the terminal and aviation facilities development include:

- Completion of the T2 (International) expansion projects;
- New freight apron and facilities to the east of the existing maintenance areas;
- New and expanded maintenance facilities; and
- Provision to expand terminal facilities in a southerly direction and linked to existing terminal buildings.

Features of surface access and vehicle parking development include:

- Preparation of Ground Transport Plan;
- Widening of the Tullamarine Freeway to provide a two lane off ramp into Terminal Drive;
- Construction of a new two lane on ramp onto the Tullamarine Freeway between Melbourne Drive and Mickleham Road;
- Improvements to forecourt operations including improved transport services;
- Provision of additional short, long term, taxi and staff parking; and
- Development, by the State Government, of an airport rail link if and when commercially viable.

Features of commercial development include:

- Further development of the Melbourne Airport Business Park;
- Implementation of the Mixed Use Development and adjacent areas for office, warehouse and retail activities; and
- Provision of an additional hotel in proximity to the terminals.

Airport Protection

In 1992, the State Government introduced land use planning controls for the areas around Melbourne Airport which were expected to be adversely affected by aircraft noise over the life of the airport. These were amended in May 2007, primarily to align with the 2003 Australian Noise Exposure Forecast (ANEF). The controls incorporate limitations on the numbers and types of uses that can be established within the noise affected zones and require that all new buildings be assessed for acoustic insulation requirements in accordance with the Australian Standard AS-2021. These restrictions were implemented to ensure that the citizens of Melbourne and the State can continue to enjoy, well into the future, the employment, commercial and tourism benefits that flow from having an efficient, 24-hour, curfew-free airport.

The other form of protection necessary for the immediate and long-term operation of the 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. These matters are controlled by the Protection of Airspace Regulations which are administered by Local and Commonwealth governments and Melbourne Airport. However, Melbourne Airport considers that improvements to the Victorian planning system need to be made to provide greater certainty and rigor in relation to protection of Melbourne Airport's Prescribed Airspace. Melbourne Airport is currently exploring this issue in consultation with the State Government.

Environmental Issues

The Master Plan also details environmental issues associated with the development projects documented. Melbourne Airport has a comprehensive environmental management program that ensures environmental issues are considered from the beginning of the project to the end.

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1.0 Introduction

1.1 Location

Melbourne Airport is located adjacent to the Tullamarine Freeway, 22km north-west of the City of Melbourne's Central Business District and is the major gateway to the State of Victoria and Southern Australia for airline passengers and airfreight.

The original airport site was selected in 1959 and developed as the State's primary airport to cater for international and domestic passenger services, air freight and aircraft maintenance. International operations were transferred from Essendon Airport when Melbourne Airport was opened in 1970, with domestic operations following in 1971.

The airport is well situated in respect to major commercial/retail developments in the immediate surrounding and nearby population centres. In addition, air services support the major manufacturing base in the Melbourne area. Melbourne Airport has excellent transport linkages with regional areas and the Ports of Melbourne and Geelong.

The surrounding suburbs are easily accessible via the Western Ring Road to the Hume, Calder, Western and Princes Freeways.

1.2 Land Availability

Facilities available for aircraft operations at present include a primary north-south runway 3,657 metres long and a secondary east-west runway with a length of 2,286 metres. Land acquisition to accommodate the future two runways will eventually increase the area of the airport site from 2,379 hectares today to approximately 2,647 hectares. Sufficient airport land is or will be available to provide for operational areas, terminals, aviation support and commercial facilities to match the airport's capacity potential. Of the 26 properties identified in the 1990 Melbourne Airport Strategy for acquisition, the majority have now been acquired by negotiation.

1.3 2008 Master Plan Review

This Master Plan has been prepared in accordance with the Airports Act 1996 and the Regulations made pursuant to the Act. Under the Airports Act, the Master Plan is to relate to a planning period of 20 years. In order to meet the legislative requirements and position the airport to respond to the forecast growth in aviation traffic levels during the next 20 years, Melbourne Airport has undertaken a review of the airport's forward planning.

The review has been undertaken in consultation with airlines, Commonwealth and State organisations, Local Government, and other stakeholders. This consultation process has further strengthened the strong co-operative relationship between State Government, adjoining municipalities and Melbourne Airport, that has been built up over the last 20 years. Benefits to flow from these relationships include:

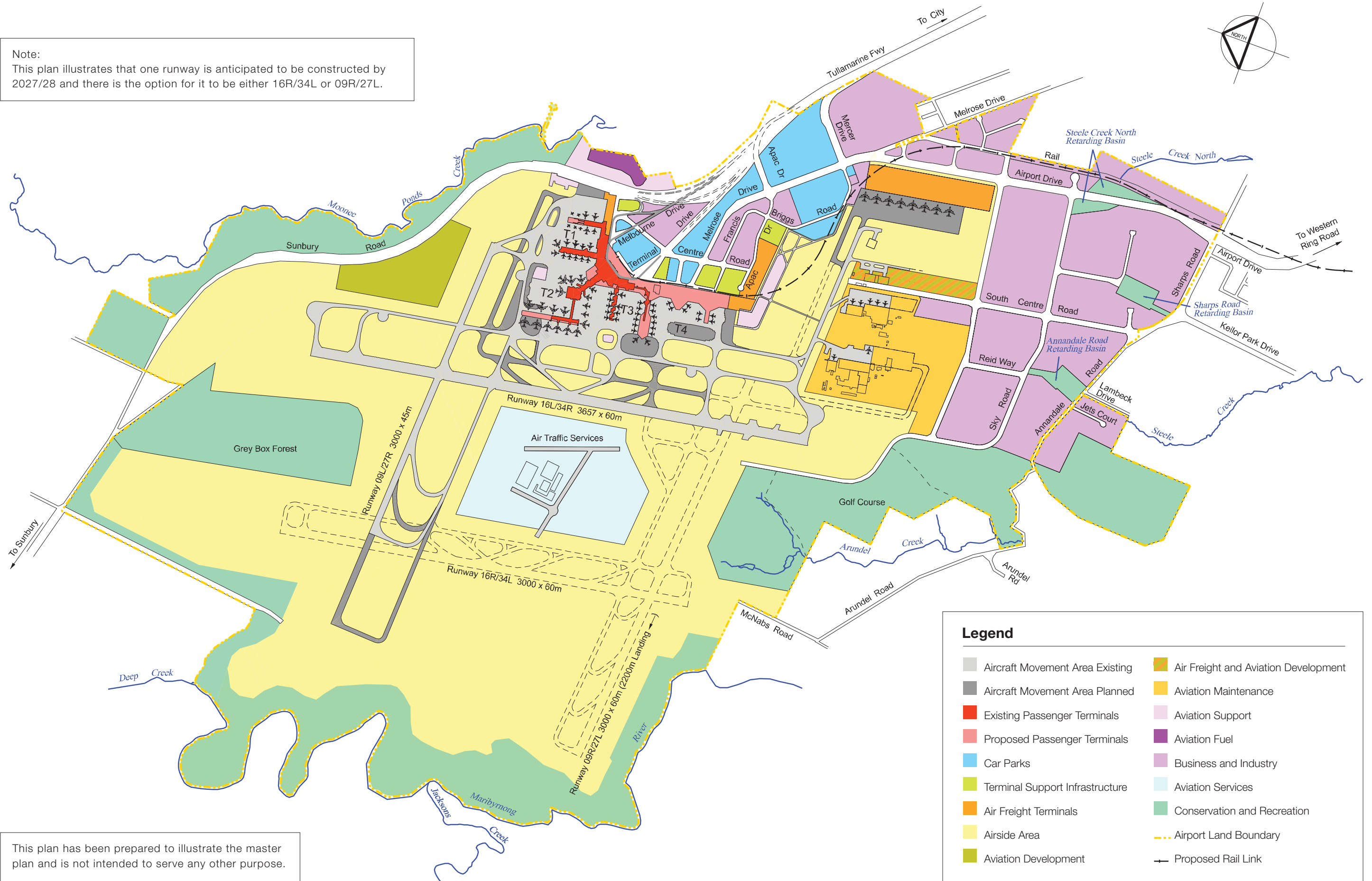
- the development and introduction by the State Government of the Melbourne Airport Environs Overlay, designed to protect its curfew-free status;
- planning controls over privately owned land to the west of the airport to provide for future expansion of the airport; and
- new and expanded airline services to Melbourne.

The Master Plan presents concepts for the period covering the next 20 years (refer to Figure 1.1) and the ultimate development of the airport site (refer to Figure 1.2). Proposals for development in response to growth in air traffic during this period are outlined. Future growth in traffic demand levels and the changing commercial needs of Melbourne Airport's customers will however, determine the extent and timing of particular projects. This Master Plan retains the fundamental concepts of the 1998 and 2003 Master Plans.

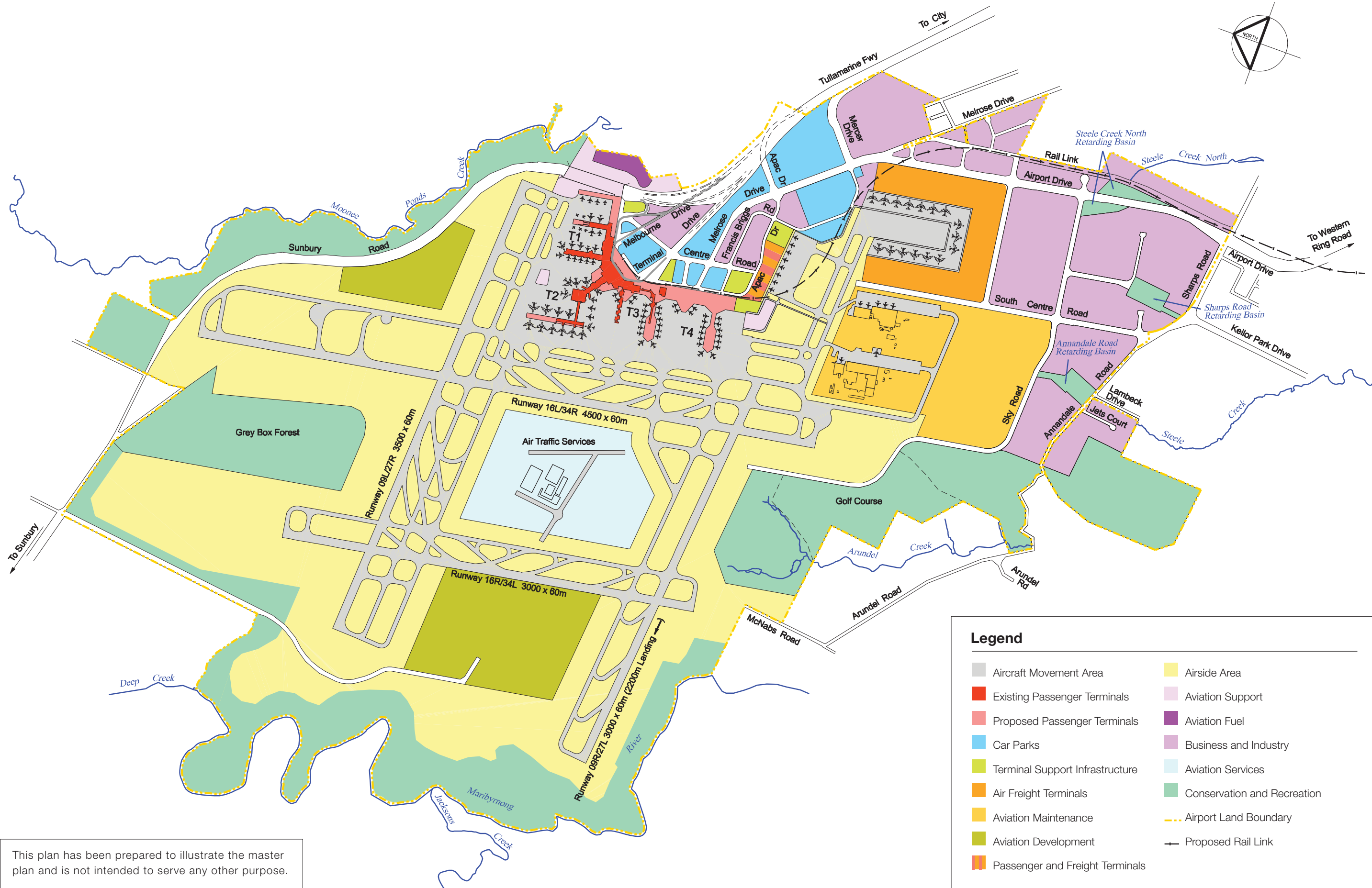
The Master Plan is a key document in ensuring the necessary balance between maintaining and expanding aviation facilities at high levels of service, whilst achieving a commercial return to Melbourne Airport's shareholders. It is a long term planning concept for safe, secure, efficient and environmentally sustainable use of the airport site.

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Note:
This plan illustrates that one runway is anticipated to be constructed by 2027/28 and there is the option for it to be either 16R/34L or 09R/27L.



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



Legend

Aircraft Movement Area	Airside Area
Existing Passenger Terminals	Aviation Support
Proposed Passenger Terminals	Aviation Fuel
Car Parks	Business and Industry
Terminal Support Infrastructure	Aviation Services
Air Freight Terminals	Conservation and Recreation
Aviation Maintenance	Airport Land Boundary
Aviation Development	Proposed Rail Link
Passenger and Freight Terminals	

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

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2.0 Background

2.1 Previous Studies, Strategies and Plans

The planning and development of Melbourne Airport is the result of a long history of initiatives and decisions by various levels of government and other parties over a period of some 50 years. This started with the selection of the airport site in 1959 and progressed through a series of studies, hearings, policies, strategies and plans, leading to the planning framework which today regulates the operation and future development of Melbourne Airport.

In reviewing this latest Master Plan, an understanding of the history behind it is important. The following are some of the key elements of that history.

Melbourne Airport Strategy 1990

In response to long range traffic forecasts covering the period 1990 to 2050, the airport's previous operator (the Federal Airports Corporation) and the State Government jointly developed a long term strategy for the airport's development and management. This strategy was formally endorsed by both Federal and State Governments in 1990 following an environmental impact study involving extensive community and industry consultation.

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

Melbourne Airport Land Use Study 1992

Following the adoption of the Melbourne Airport Strategy in 1990, the Melbourne Airport Land Use Study was prepared. This study made a number of recommendations relating to:

- the introduction of 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 a requirement in building construction; and
- areas of land suitable for airport related commercial and industrial development.

In determining areas which should be subject to restrictive planning controls the Study adopted the principles contained within the Australian Noise Exposure Forecast (ANEF) System, Australian Standard AS2021 and the recommendations by the House of Representatives Select Committee on Aircraft Noise (HORSCAN, 1985) together with the Commonwealth Government's response dated September 1990.

The recommendations of the Melbourne Airport Land Use Study lead to the introduction of the first land use planning controls for areas around Melbourne Airport in 1992 (the Melbourne Airport Environs Areas).

Melbourne Airport Master Plan 1998

Following privatisation in 1997 and as a requirement of the Airports Act 1996, the 1998 Master Plan was developed. This was consistent with the findings of the 1990 Airport Strategy and adopted the Airport Strategy recommendations for a future four runway airside system.

Melbourne 2030

The metropolitan strategy *Melbourne 2030 – Planning for Sustainable Growth* was released in October 2002. Melbourne 2030 is a 30-year plan to manage growth and change across metropolitan Melbourne and the surrounding region. The main thrust of the strategy is to protect the liveability of the established urban areas and values of Green Wedges by implementing an Urban Growth Boundary and by concentrating major change in strategic redevelopment sites such as activity centres and underdeveloped land.

Melbourne 2030 recognises Melbourne Airport's importance 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 which provides a mix of economic activities and generates high numbers of work and visitor trips.

Melbourne Airport Environs Strategy Plan 2003

The Melbourne Airport Environs Strategy Plan was prepared by the State Government to address a number of issues and concerns associated with the then Airport Environs Overlay as it related to Melbourne Airport. A key driver of the Melbourne Airport Environs Strategy Plan was to ensure that Victoria retains its key competitive advantage of 24-hour curfew-free Melbourne Airport operation whilst at the same time appropriately managing the impact of aircraft noise on residential areas.

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

The recommendations of the Strategy Plan, and in particular the new overlay control, were implemented by the State Government in May 2007 through Planning Scheme Amendment VC30 which introduced the new Melbourne Airport Environs Overlay (MAEO).

Melbourne Airport Master Plan 2003

The 2003 Master Plan was prepared by Melbourne Airport in accordance with the requirements of the Airports Act 1996, and approved by the Federal Minister on 7 September 2003. This 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.

2.2 Economic Benefits

The economic benefits generated by Melbourne Airport for Victoria are significant, as outlined below:

- In the 2006/07 financial year, Melbourne Airport handled 180,200 aircraft movements and 22.5 million passenger movements, of which 4.5 million were international originating and terminating passengers. Melbourne Airport is Australia's second largest airport in terms of domestic and international passenger and freight throughput.
- Melbourne Airport's success and growth over recent years has generated a large amount of employment which would not have otherwise occurred. The airport is estimated to employ some 12,500 people in an estimated 11,000 equivalent full time positions. This compares with some 10,300 people in 9,000 equivalent full time positions in September 2002, a growth of 22% over five years.
- The airport indirectly employs thousands more in offsite businesses affiliated with the airport such as freight forwarders, airline back-office staff and others. Thousands more again are employed in industries which supply labour and materials to the air services sector.
- In mid 2007, Tiger Airways announced it would base its Australian operations in Melbourne, with the likely creation of over 1,000 additional Victorian jobs. Tiger's fleet of A320-200 aircraft will provide extra air services to Victoria and attract visitors to the State.
- The expansion of the International Terminal commenced in late 2007, and is scheduled for completion by 2012. The \$330 million expansion projects will create around 1,400 new jobs and aims to cater for prospective growth in passenger throughput as well as new aircraft dimensions.
- In Australia, Melbourne Airport is second in terms of total freight lifted and carries around 27% of the national total of air freight. In 2006/07, Melbourne Airport handled 350,000 tonnes of international and domestic airfreight.
- Melbourne Airport, in active partnership with Tourism Victoria, plays a role in securing international flights and in facilitating government airline negotiations for new or expanded international services to Melbourne. Convenient and efficient air links provided by Melbourne Airport contribute around \$1 billion to Victoria's interstate domestic tourist revenues each year.
- Contributing to the efficiency of Melbourne Airport is its curfew free status, which in 2007/08 is estimated to contribute \$309 million in Gross State Product and \$77 million to the local value of production. 24 hour operation at Melbourne Airport facilitates around 1,160 jobs locally and 4,640 jobs state-wide.

2.3 Master Plan Approach

Airport Purpose

The primary aim of master planning for Melbourne Airport is to establish medium and long term planning concepts for the airport site to fully realise Melbourne Airport's potential as an international gateway and hub for passengers and freight.

A key objective for Melbourne Airport is to efficiently use and develop the airport site for operational purposes and associated commercial activities in an environmentally sustainable manner as outlined in the Melbourne Airport Environment Strategy.

Medium Term Concepts

The medium term master planning concept shown in Figure 1.1 provides more detailed planning concepts within the context of the vision for ultimate development of the airport.

This planning rests on important assumptions in the following areas:

- Aviation forecasts;
- Environmental requirements for major projects; and
- Provision by a range of suppliers of external infrastructure at the appropriate time.

Ultimate Development Concept

An important purpose of the Master Plan is to articulate a clear vision for the ultimate development of the airport so that the potential of the airport site is optimised to satisfy long term aviation needs and complementary commercial development. To achieve this objective, Figure 1.2 provides location details for proposed operational facilities consistent with optimal operation of the airport site. It also identifies areas for development of aviation support and commercial activities beyond the 20 year Master Plan period.

The basis of the Ultimate Development Concept for the airport site is the 1990 Airport Strategy and subsequent findings of the master planning and facility planning studies. It includes two additional runways with airside and landside areas available to support the full operating potential of a future four runway system.

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

The Ultimate Development Concept is fundamentally unchanged from the previous 2003 Master Plan.

Review by Melbourne Airport

The first task of the review was to update the aeronautical forecasts which are the principal drivers of the various airport business segments. Updated forecasts to 2027/28 have been the primary inputs to planning and capacity reviews for indicative provision of airside and landside infrastructure during the next 20 years. Ongoing studies examining issues and requirements associated with airfield capacity, surface transport, land use protection, infrastructure services and environmental matters have provided essential inputs for the Master Plan review.

For the landside part of the airport, the Regulations associated with the Airports Act require that proposals for land use and related planning be described using State legislation planning terminology. Proposals for airport landside use have, therefore, been set out in a format consistent with the Victoria Planning Provisions (refer to Section 7).

Melbourne Airport, in reviewing the Master Plan, has been mindful of the content of the State Government's metropolitan planning strategy Melbourne 2030 (refer to Section 7.1).

An updated ANEF has been prepared after taking into consideration noise impacts from present aircraft operations and future operations during the various stages of proposed airfield development (refer to Section 9.1). This is still subject to Commonwealth Government endorsement.

In addition, an example of the flight path data which is used in the preparation of the ANEF has been provided (refer to Section 9.1).

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Consultation

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3.0 Consultation

3.1 Previous 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 ongoing planning process.

An initial Public Information Program in 1984 described options for the development of future runways. The release of a Draft Environmental Impact Statement in 1989 during the Airport Strategy process was accompanied by extensive Government, community and industry consultation. Consultation with State, Local Government and industry continued during the terminal precinct and airport land use planning studies that followed the development of the Airport Strategy.

Extensive consultation was held with a wide range of stakeholders prior to the Minister's approval of both previous Master Plans in 1998 and 2003. That consultation was conducted in accordance with the provisions of the Airports Act.

In subsequent years, consultation has continued with stakeholders. Most noteworthy has been:

- Work with Tourism Victoria on the development of services to and from Melbourne;
- Participation in the development of new Melbourne Airport Environs Overlay controls;
- Ongoing liaison with a range of stakeholders on aircraft noise issues through the Noise Abatement Committee and community noise forums chaired by Melbourne Airport; and
- Consultation with airlines on the development of aviation infrastructure, especially in the context of new pricing arrangements applying from 1 July 2007, within the Melbourne Airport Aeronautical Service Agreement.

3.2 Consultation Process

During the preparation of this Master Plan a program was established for formal consultations with a wide range of industry stakeholders and representatives from Federal, State and Local Government.

The consultation process included initial correspondence to key stakeholders which informed them that the 2003 Master Plan was being reviewed and updated. Stakeholders were requested to provide input on any issues they wished to have addressed during the review process.

Ongoing informal contact, as required, was then maintained with State Government organisations, municipalities and the airline industry. A further briefing was given to these organisations to describe the emerging Preliminary Draft Master Plan prior to general public release.

Before giving the Federal Minister the Draft Master Plan, Melbourne Airport will advise, in writing, the following persons of its intention to give the Minister the Draft Master Plan:

- the Minister, of the State or Territory in which the airport is situated, with responsibility for town planning or use of land;
- the authority of that State or Territory with responsibility for town planning or use of land; and
- each local government body with responsibility for an area surrounding the airport.

Such advice will be served on:

- The Minister for Planning;
- The Department of Planning and Community Development; and
- Cities of Hume, Brimbank, Maribyrnong, Melton, Moonee Valley, Moreland and Whittlesea.

After giving the advice above, but before giving the Minister the Draft Master Plan, Melbourne Airport will also:

- cause to be published in a newspaper circulating generally in the State or Territory in which the airport is situated, and on the airport's website, a notice:
 - stating that the company has prepared a preliminary version of the draft plan;
 - stating that copies of the preliminary version will be available for inspection and purchase by members of the public during normal office hours throughout the period of 60 business days after the publication of the notice;
 - specifying the place or places where the copies will be available for inspection and purchase;
 - in the case of a notice published in a newspaper
 - stating that copies of the preliminary version will be available free of charge to members of the public on the airport's website throughout the period of 60 business days after the publication of the notice;
 - in the case of a notice published in a newspaper
 - specifying the address of the airport's website; and
 - in any case - inviting members of the public to give written comments about the preliminary version to the company within 60 business days after the publication of the notice;
- make copies of the preliminary version available for inspection and purchase by members of the public in accordance with the notice; and
- make copies of the preliminary version available free of charge to members of the public on the airport's website:
 - in a readily accessible format that is acceptable to the Minister; and
 - in accordance with the notice.

3.3 Submission to Minister

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

- a copy of the advice given in Section 3.2 above;
- a written certificate signed on behalf of the company listing the names of those to whom the advice was given; and
- if members of the public have given written comments about the preliminary version in accordance with the notice, the draft plan submitted to the Minister must be accompanied by:
 - copies of those comments;
- 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.

Development Objectives

04

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4.0 Development Objectives

In order to position the airport to achieve its primary aim, Melbourne Airport has established the following development objectives:

- Ensure developments provide and maintain a safe, secure, efficient and environmentally sustainable solution;
- Ensure developments are consistent with the requirements of the Master Plan;
- Ensure developments meet relevant standards and statutes;
- Attract a range of investments that maximise the growth in shareholder value commensurate with risk;
- Provide timely, cost-efficient and appropriately financed infrastructure following adequate levels of investigation;
- Ensure public facilities provide a high level of service, are user-friendly and enhance the airport experience for customers;
- Integrate environmental considerations into processes, decision making and work practices related to development of airport facilities and services;
- Seek and be sensitive to the expectations of our business partners, regulators, neighbours and the community in relation to environmental aspects relating to airport development;
- Work with the neighbouring municipalities with respect to optimising development, both on the airport and in the surrounding region;
- Provide a business environment which allows our business partners to develop and grow their businesses in accordance with their shareholder's objectives;
- Pursue flexibility in facilities to cope with changing circumstances;
- Enhance the flow of passengers and freight through the airport and strive towards achieving a reputation as an efficient, delay-free airport;
- Maximise the use of existing infrastructure; and
- Minimise disruption to airport customers and tenants.

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Forecasts

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5.0 Forecasts

BAA in consultation with Melbourne Airport has produced the forecasts for this Master Plan which cover a 20 year period from 2007/08 to 2027/28. Upper and lower limit forecasts are presented in this Plan. The resulting band encompasses any long term effect associated with economic cycles and the impact that they have on passenger and aircraft activity demand.

These forecasts are based on various scenarios dealing with economic factors and aviation policy changes as described below, and cover:

- Historical Air Traffic Performance;
- Passenger movements;
- Aircraft movements; and
- International freight tonnage.

5.1 Historical Air Traffic Performance

Since Melbourne Airport was opened to international traffic in July 1970 and to domestic traffic in May 1971, total traffic levels in 2006/07 had reached 22.5 million passengers and 180,200 aircraft movements. Over the last five years, a number of factors have influenced traffic growth. Some of these factors include:

- Delay of new aircraft deliveries;
- Changes to international services; and
- The emergence of new domestic carriers.

During the 35 year period, 1971/72 to 2006/07, total passengers have grown at a compound average annual growth rate (CAAGR) of 5.8% and total aircraft movements have grown by 3.1% CAAGR.

5.2 Passenger Movements

Forecasts for total passenger movements are based on econometric modelling of the international and domestic sectors of Melbourne Airport’s business. Economic factors used include gross domestic product, personal consumption, airfares and exchange rates, as well as aviation policy changes such as international air services deregulation.

The forecasts indicate that the number of international passenger movements is expected to increase from 4.53 million in 2006/07 to between 9.3 and 12.3 million by 2027/28 resulting in a CAAGR of 3.5% to 4.8% respectively.

Domestic passenger growth has been forecast to moderate over the next 20 years resulting in a CAAGR of between 3.5% and 4.4%. This is expected to result in an increase from 17.77 million passengers in 2006/07 to between 34.6 million and 42.6 million in 2027/28¹.

Total passenger movements are shown graphically in Graph 5.1 and in tabular form in Table 5.1 below. They include international, domestic and also international transit passengers. It is forecast that transit passengers will be negligible by 2027/28.

In 2006/07 International transits were 0.16 million and declining as triangulated flights linking two Australian airports reduces, with airlines preferring direct services.

5.3 Aircraft Movements

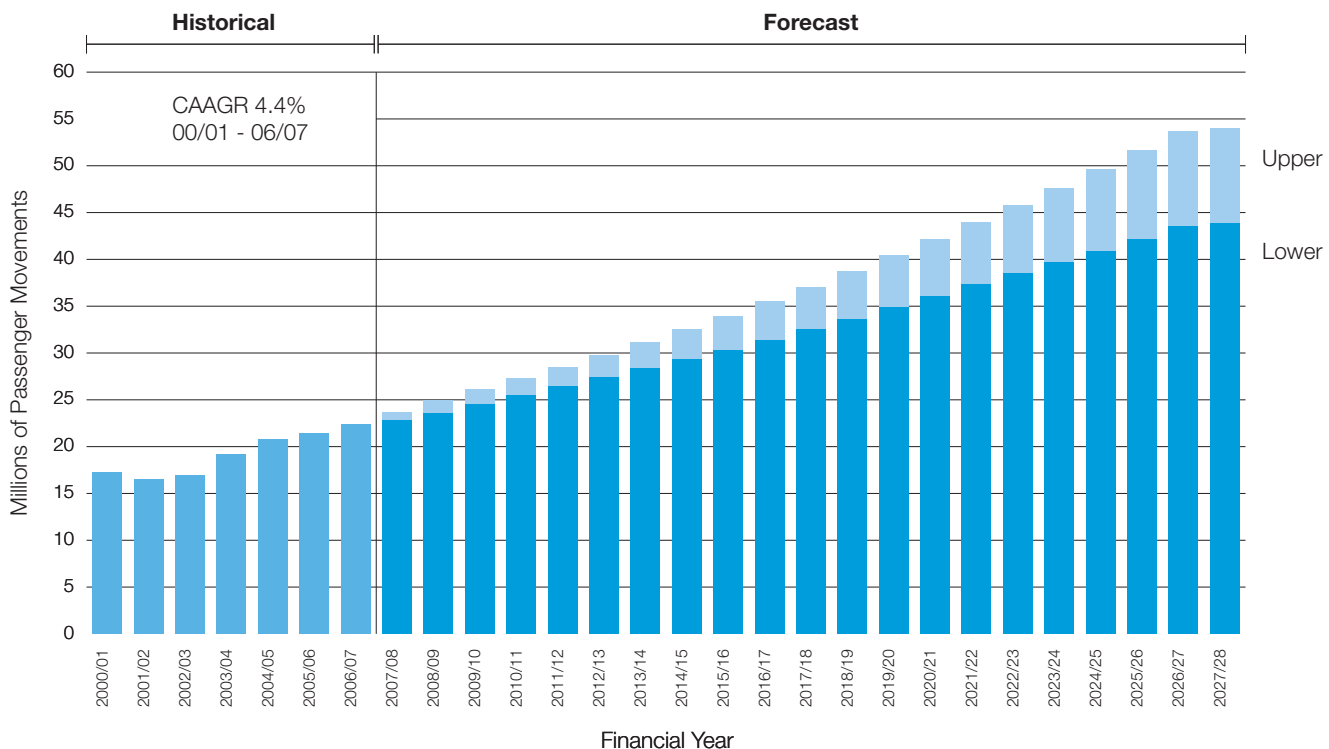
The long term forecasting approach rests fundamentally on the view that the primary driver of air traffic development is the growth in the demand for travel by individuals. Consequently, airlines respond to that demand by deploying aircraft of a size and at a frequency which optimises the balance between operating costs and traffic revenues. Aircraft movement forecasts are, therefore, a derivative of passenger forecasts.

Total aircraft movements are forecast to grow from 180,200 in 2006/07 to between 263,200 and 316,500 movements annually in 2027/28, resulting in a CAAGR of 1.8% and 2.6% respectively.

Total aircraft movements include passenger aircraft, freight aircraft and a small component of heavy general aviation activity.

Total aircraft movements are shown graphically in Graph 5.2 and in tabular form in Table 5.2 below.

Graph 5.1
Total Passenger Movements (millions)



Note: These forecasts are based on various assumptions including economic factors and aviation policy changes and should not be used or relied upon by any person for any other purpose.

¹ These forecasts were finalised prior to any knowledge of Tiger Airways.

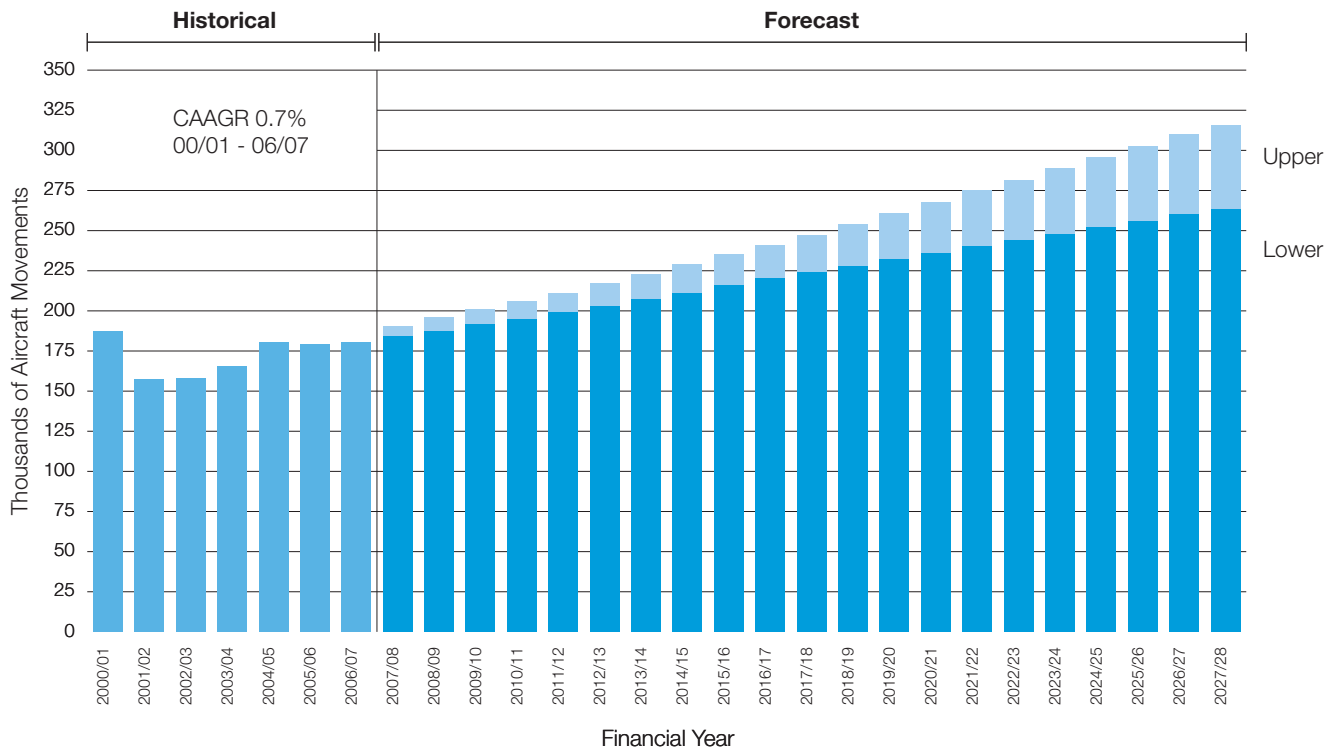
Table 5.1 – Total Passenger Movements (millions)

Traffic	Year	Passenger Movements	
Actual	2006/07	22.5	
Forecast		Lower	Upper
	2007/08	22.8	23.7
	2012/13	27.4	29.8
	2017/18	32.5	37.1
	2022/23	38.5	45.8
	2027/28	43.9	54.9
CAAGR 2007/08 to 2027/28		3.3%	4.3%

Table 5.2 – Total Aircraft Movements (thousands)

Traffic	Year	Aircraft Movements	
Actual	2006/07	180.2	
Forecast		Lower	Upper
	2007/08	184.0	190.5
	2012/13	203.0	217.0
	2017/18	223.9	247.4
	2022/23	243.9	281.7
	2027/28	263.2	316.5
CAAGR 2007/08 to 2027/28		1.8%	2.6%

**Graph 5.2
Total Aircraft Movements (thousands)**



Note: These forecasts are based on various assumptions including economic factors and aviation policy changes and should not be used or relied upon by any person for any other purpose.

5.4 International Freight

Melbourne Airport enables a large amount of freight to be delivered to and from Melbourne Airport and other locations across south eastern Australia.

Victorian airfreight represents up to a quarter of all Australian airfreight by value and its contribution to the competitiveness of high value and time sensitive exports in international markets is significant.

Melbourne's international air freight is well balanced leading to greater utilisation of aircraft and the ability to minimise the risk associated with empty back loading. In addition, Melbourne Airport also achieves greater utilisation levels by international aircraft than other Australian airports leading to more tonnage being moved per aircraft.

The future growth of airfreight tonnage will be directly influenced by the number of international airlines operating at Melbourne Airport and the destinations they service. It is anticipated that Melbourne's airfreight volumes will grow in response to initiatives to gain additional international flights and destinations.

Planning Criteria

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6.0 Planning Criteria

To define a Master Plan layout for airside and terminal aviation infrastructure, it is first necessary to define and adopt a set of planning criteria. Airside infrastructure planning requires a design aircraft to be defined. Terminal facility planning requires the adoption of a level of service standard.

6.1 Design Aircraft

Airbus has developed the A380, a new large aircraft based on ICAO Code F aircraft sizing (80 metre wingspan), which is currently in service and is expected to be in service at Melbourne Airport by the end of 2008. Both Airbus and Boeing have indicated that development of their large aircraft is now based on compliance with ICAO Code F design parameters.

Adoption of Code F enables a parallel taxiway system to be developed and optimises the capacity and functionality of the existing and future airside facilities.

6.2 Terminal Facilities

The International Air Transport Association (IATA) Guidelines for Airport Capacity/Demand Management provide a level of service framework which permits comparison between sub-systems within the airport complex. The framework ranges from levels of service category A, which provides an excellent level of service, no delays, and excellent level of comfort, to category F, which provides unacceptable levels of service, delays and an unacceptable level of comfort.

Future passenger terminal facility planning in this Master Plan has been based on IATA level of service Category C, which provides good levels of service and comfort at a reasonable cost.

6.3 Airport Roads

Airport road design has followed the relevant codes, standards, guidelines and accepted traffic engineering practice. These include the Austroads Guide to Traffic Engineering Practice Series which refers to relevant Australian Standards, guidelines and codes of practice. These documents relate issues such as road geometry, lane widths and other design constraints to performance measures such as capacity, vehicle queues and delays and general service.

6.4 Building Design

The Green Star rating introduced by the Green Building Council of Australia is characterised by a holistic approach to ESD. This works on the basis of achieving credit points determined by the degree of the adoption of sustainable development principles from project conception through design, commissioning, tuning and operation. The Green Star rating tool involves many aspects of building operations.

The Green Star rating system uses the Australian Building Greenhouse Rating (ABGR) scheme in the calculation of energy assessment. The ABGR is recognised as an industry standard that assists office building owners and tenants to reduce energy use, reduce energy costs and reduce greenhouse emissions. ABGR was developed and is managed by Government, and is endorsed by the Property Council of Australia. There is also a performance-based rating system that measures an existing building's overall environmental performance during operation.

Melbourne Airport's aspirational targets are to:

- Ensure Green Star 5 star ratings for major new developments where Green Star ratings tools are available beginning in 2009.
- Ensure Green Star 4 star ratings for major building refurbishments where Green Star ratings tools are available beginning in 2013.

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Airport Land Use

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7.0 Airport Land Use

The Airports Act requires Melbourne Airport, as lessee of the airport, to prepare a Master Plan for a 20 year planning period showing proposals for land use and related development of the airport site.

Planning requirements for the airport site, which is Commonwealth land, are administered under the Airports Act. As a result, State planning laws do not apply to the airport site. However, regulations made under the Act require that the Master Plan must, where possible, 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.

Wherever possible the preparation of this Master Plan has been cognisant of the Victorian State Planning Policy Framework and has used zones, overlays and other planning provisions derived from the Victoria Planning Provisions.

7.1 State Planning Policy Framework

The State Planning Policy Framework (SPPF) covers strategic issues of State importance. Every planning scheme in Victoria contains this policy framework, which is identical in all schemes. There are a number of policies in the SPPF which relate to Melbourne Airport.

Clause 12 of the SPPF relates to Metropolitan Development. This clause sets out objectives and strategies for Metropolitan Melbourne derived from the metropolitan strategy *Melbourne 2030 – Planning for Sustainable Growth*. The strategies set out in Clause 12 address a range of matters including activity centres, urban growth boundary, green wedges and the transport network which are all relevant to Melbourne Airport.

Specialised Activity Centre

Clause 12.01 of the SPPF relates to the Melbourne 2030 direction “*A More Compact City*”. This identifies activity centres as the focus of major change over the next 30 years and encourages more development in these areas to foster more sustainable, and vibrant communities.

Under Melbourne 2030 Melbourne Airport is identified as a Specialised Activity Centre. Specialised Activity Centres are important economic precincts that provide a mix of economic activities that generate high numbers of work and visitor trips. The future development of these centres will be promoted and encouraged by:

- *Ensuring Melbourne Airport, major university campuses and key research and development precincts, including the specialised precincts of particular importance to the State’s innovation, are developed as Specialised Activity Centres.* [Melbourne Airport emphasis.]
- *Reinforcing the specialised economic functions of the Specialised Activity Centres and supporting use and development consistent with the primary specialist function of the centre.*
- *Encouraging complementary mixed-uses that do not compete with nearby Principal or Major Activity Centres or inhibit the centre’s specialised role.*
- *Locating Specialised Activity Centres on the Principal Public Transport Network.*

Melbourne Airport’s status as a Specialised Activity Centre supports its ongoing development as one of the most important transport and economic hubs in Victoria.

Melbourne 2030 requires structure plans to be developed for activity centres which give effect to the key policies and objectives for activity centres. This Master Plan is essentially the structure plan for the Melbourne Airport Specialised Activity Centre, and its preparation has considered the social, economic and environmental performance criteria for activity centres outlined in Melbourne 2030.

Urban Growth Boundary

Another key element of Melbourne 2030 is the Urban Growth Boundary (UGB), which sets clear limits to Metropolitan Melbourne's urban development. According to Clause 12.02 of the SPPF, the UGB does this by:

- *Defining the urban area of Metropolitan Melbourne with an urban growth boundary to manage outward expansion, to facilitate achievement of a compact city, to protect non-urban areas and to ensure ready access to infrastructure in the key transport corridors.*
- *Defining the non-urban area of Melbourne to be retained for rural and agricultural uses, natural resources, landscape, heritage, open space and conservation values.*
- *Containing urban development within the established urban growth boundary. Any change to the urban growth boundary must only occur to reflect the needs demonstrated in the designated growth areas.*
- *Protecting the continued rural use of land within the urban growth boundary until conversion to urban use is required and the extension of urban services is approved as part of the sequencing of development.*

The Melbourne Airport site, and much of the land adjoining the airport site (particularly to the north and west) is located outside the UGB. This protects the ongoing operation of the airport by retaining the land outside the UGB for non-urban purposes.

(The location of the UGB relative to the Melbourne Airport site and the MAEO is shown on Figure 9.4.)

Green Wedges

Under Melbourne 2030 all land outside the UGB is classified as Green Wedge land. Pursuant to Clause 12.02 of the SPPF, the Green Wedges of Metropolitan Melbourne will be protected from inappropriate development by:

- *Ensuring strategic planning and land management of each green wedge area to promote and encourage its key features and related values.*
- *Supporting development in the green wedge that provides for environmental, economic and social benefits.*
- *Planning and protecting major transport facilities that serve the wider Victorian community, such as airports and ports with their associated access corridors.* [Melbourne Airport emphasis.]

This policy will help ensure that the Green Wedge land around Melbourne Airport is not used or developed in a manner which is inconsistent with the ongoing operation of the airport.

Transport and Freight Network

Clause 12.04 of the SPPF relates to the Melbourne 2030 direction "A More Prosperous City". Under the heading "Transport and Freight" this clause includes the following policies:

Further develop the key transport gateways and freight links and maintain Victoria's position as the nation's premier logistics centre by:

- *Protecting the region's airports from incompatible land-uses.*
- *Ensuring that in the planning of airports, land-use decisions are integrated, appropriate land-use buffers are in place and provision is made for associated businesses that service airports.*
- *Ensuring the planning of airports identifies and encourages activities that complement the role of the airport and enables the operator to effectively develop the airport to be efficient and functional and contributes to the aviation needs of the State.*
- *Protecting the curfew-free status of Melbourne Airport.* [Melbourne Airport emphasis.]

This policy emphasises the importance of protecting Melbourne Airport as a transport and freight hub, including maintaining its curfew-free status.

Airfields Policy

Clause 18.04 of the SPPF specifically relates to Airfields. The objective of this policy is:

To facilitate the siting of airfields and extensions to airfields, restrict incompatible land use and development in the vicinity of airfields, and recognise and strengthen the role of airfields as focal points within the State's economic and transport infrastructure.

Clause 18.04-3 relates specifically to Melbourne Airport and states:

Planning for areas around Melbourne Airport should:

- *Strengthen the role of Melbourne Airport as a key focal point within the State's economic and transport infrastructure.*
- *Ensure the effective and competitive operation of Melbourne Airport at both national and international levels.*
- *Ensure any new use or development does not prejudice the optimum usage of Melbourne Airport.* [Melbourne Airport emphasis.]
- *Ensure any new use or development does not prejudice the curfew-free operation of Melbourne Airport.* [Melbourne Airport emphasis.]

The above policy provides strong support for Melbourne Airport and its role within the State's economic and transport infrastructure. It also provides a strategic basis to support land use decisions which aim to protect the airport's ongoing operations and its future runway developments.

7.2 Zones

Using the Master Plan concept development drawings as a base (refer to Figures 1.1 and 1.2) the applicable land zones have been applied to the various areas of the airport and are shown in Figure 7.1 "Land Zoning". Wherever possible, the standard zones from the Victoria Planning Provisions (VPPs) have been used.

Three **Special Use Zones** have been incorporated to cover the main terminal and operational areas of the airport, open space areas (generally alongside the creeks surrounding the airport) and airside areas.

The Special Use Zones apply to areas of land which are linked with the operation of the airport itself. Special Use Zone 1, "Aircraft terminal/support" applies to the main terminal building and surrounding land associated with the main passenger terminal. It also includes related uses such as terminal retail, short-term car parking, hotels, freight terminals, aircraft maintenance areas and other airport operational areas such as air traffic control and emergency services. Special Use Zone 2, "Airside", applies to the remaining areas known as airside, which are essential to aircraft operations and are not accessible to the general public. Special Use Zone 3, "Park and Recreation", applies to open space areas along Moonee Ponds Creek, Maribyrnong River, Deep Creek, the Golf Course, the Grey Box Forest area and retarding basins.

The remaining zones applied on the airport area:

- Business 2 Zone
- Business 3 Zone

The **Business 2 Zone** has been applied to land with relatively high exposure, enabling various uses to be established in close proximity to the passenger and freight terminal areas of the airport. Such uses may supplement the industrial and airport activities, or may be attractive to businesses which would see a competitive advantage in being located in close proximity to the terminals.

The **Business 3 Zone** also covers areas of high exposure where a wide range of uses such as small office related industries, warehousing, petrol stations are being developed.

Some land required for future airport development located west of McNabbs Road (north and south of Barbiston Road) is still currently privately owned and 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 Infrastructure is also a referral authority for applications made within this land. The land is shown on the Melbourne Airport – Future Runway Development Plan (May 2007) which is incorporated into the Hume Planning Scheme. Melbourne Airport is continuing to work with State and Local Governments to ensure appropriate planning mechanisms are in place for this land, to provide for future expansion of the airport.

7.3 Overlays

In accordance with the provisions of the VPPs, the airport has also applied various overlays to target a single issue or related set of issues. The overlays used are:

- Environmental Significance Overlay; and
- Heritage Overlay

Each of the overlays has a strategic justification and is also linked to the policies, development objectives and zoning described in the Master Plan. The requirements and restrictions of each overlay are similar to those in the VPPs.

The Environmental Significance Overlay applies to land along Deep Creek, the Maribyrnong River and Moonee Ponds Creek, the Golf Course and the Grey Box Forest area. It ensures the protection of the natural environment and provides for flora protection and fauna corridors.

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

The overlays are shown on Figure 7.1.

7.4 Particular Provisions

Where applicable, the Particular Provisions contained in the VPPs, which include sets of standard statewide provisions for a range of matters, are taken into consideration in all airport development proposals. These contain requirements for matters such as car parking, signage, loading and unloading of vehicles.

7.5 Implementation

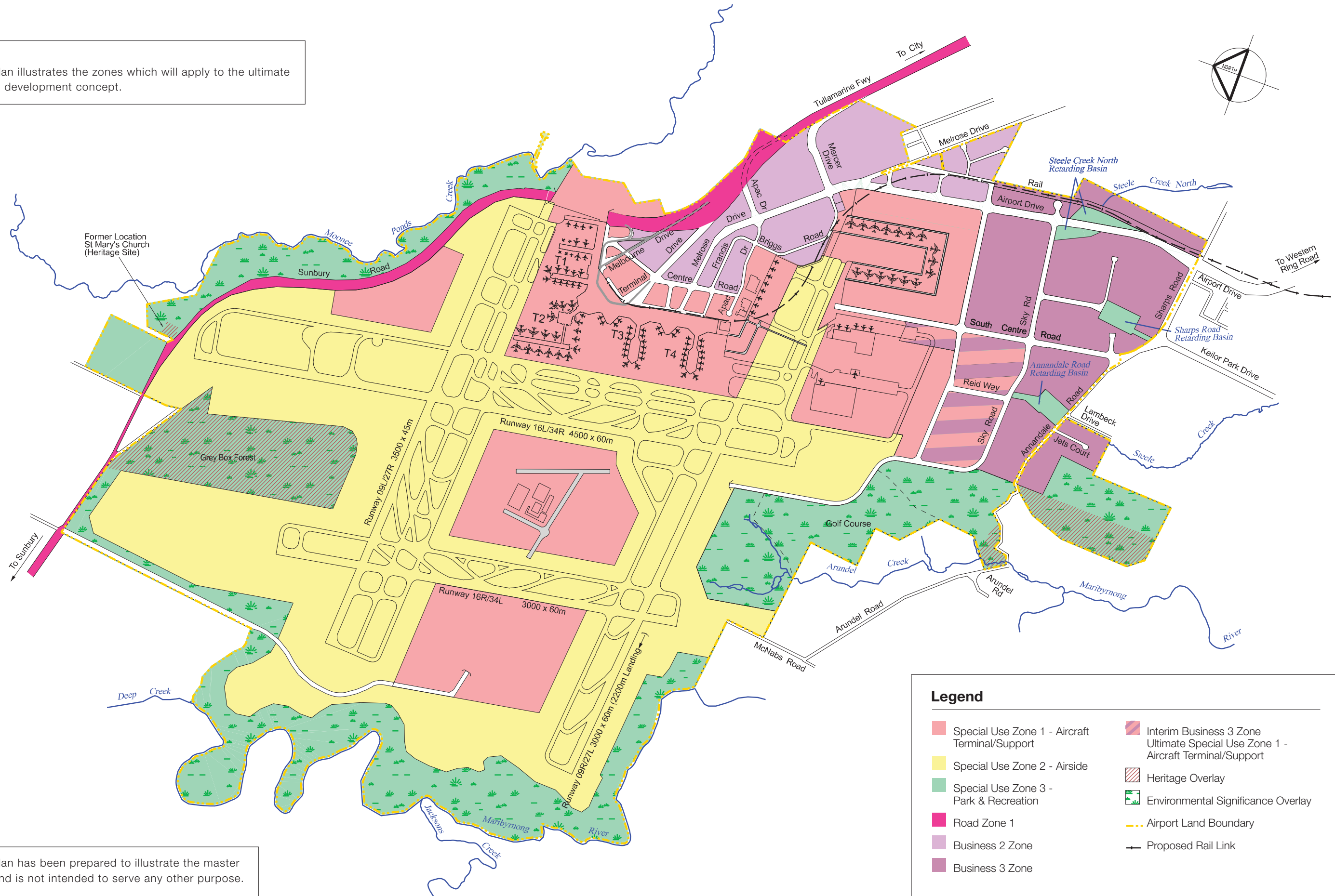
If a use or development is proposed on Commonwealth land within Melbourne Airport, an Operators Consent and Building Approval is required under the Airports Act. Melbourne Airport has a set of Development Guidelines for on-airport developments that must be considered.

The Development Guidelines apply to all new developments on airport land. For the impact of development on airport operations, the guidelines require consideration of matters such as building heights, building materials to ensure acoustic treatments, safety and security, use of non-reflective materials, illumination levels and signage.

The potential impacts of on-airport commercial and industrial developments on the amenity of neighbouring residential properties must also be considered. This process will provide for consideration of issues such as privacy, impact on sunlight, noise levels, building setbacks and landscaping.

All "major developments", as defined in the Airports Act, must be submitted to the Minister for approval and be subject to a 60 business day public comment period.

Note:
This plan illustrates the zones which will apply to the ultimate airport development concept.



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

Proposals for Airport Development

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8.0 Proposals for Airport Development

In the preparation of this Master Plan, Melbourne Airport has reviewed previous planning and re-assessed the locational and spatial provisions for developments needed to cater for forecast growth in airport activity levels during the next 20 years. Requirements in the longer term have also been considered.

This section of the Master Plan describes, in general terms, the planning approach and proposed developments for:

- Airside (includes runways, taxiways, aprons and air navigation facilities and services);
- Terminal and Aviation Facilities (includes passenger and freight terminals, aircraft maintenance facilities and general aviation facilities);
- Surface access (external, internal and vehicle parking); and
- Commercial activities (includes aviation support).

The triggers for each development proposal will depend on the actual rates of growth in demand and the commercial considerations of Melbourne Airport and its customers. These will continue to be monitored and assessed closer to the time of facility need. All major airport developments will be planned and developed in consultation with relevant stakeholders and, at a minimum, with relevant statutory requirements.

Implementation of these proposals is required to ensure comprehensive development responses to progressively increase capacities, maintain levels of service and provide for commercial developments.

The planning approach has involved the assessment of demand for space on the airport site and the determination of an integrated layout for various airside, terminal, access and commercial requirements. The future development areas required on the airport have been planned in such a manner as to be compatible with the State Government VPP (Victoria Planning Provisions) zones.

For reference purposes, an aerial photograph of the airport taken in January 2008 is provided in Figure 8.1.

8.1 Major Developments Since Previous Master Plan

There have been a number of significant developments at Melbourne Airport since the previous Master Plan. A considerable amount has been invested in expanding the airport since the 2003 Master Plan. These are as follows:

Taxiway and Runway Works

- Runway 16/34 Widened to 60m
- Runway 16/34 Slab Replacement
- Runway 16/34 Lighting Upgrade
- Taxiway Fillet Widening
- Taxiway Alpha and Tango Slab Replacement
- T3 (Domestic) Dual Taxiway Operations
- New Replacement Taxiway Victor
- New Northern Apron A380 Standoff Bays
- T2 (International) A380 Aircraft Parking Bays
- Aerobridge Upgrades on Bay D4 and D10
- Runway Stop Bar Installation
- CAT III Lighting Installation
- Northern Apron and Juliet Ground Servicing Equipment Area
- Western Apron Infill

Terminals

- Checked Bag Screening Projects in T1 (Domestic), T2 (International) and T3 (Domestic)
- Airline Lounges
- T2 Fifth Baggage Reclaim Carousel
- Landside and Airside Retail Development in T2 and T3
- T3 Foxtrot Concourse (recommissioned 2006)
- T4 (recommissioned 2007)
- Commencement of T2 Expansion Projects
- Security and CCTV upgrades
- T2 (International) A380 Gate Expansion

Ground Transport and Car Parks

- Construction of Mercer Drive
- Duplication of Melrose Drive, Apac Drive Extension and Francis Briggs Road extension
- Duplication of South Centre Road at Annandale Road
- Construction of Link Road, Sky Road and Reid Way
- Multi-Level Car Park Expansion
- Long Term Car Park Expansion and Transfer Facilities Upgrades
- Staff Car Park Expansion

Commercial Developments

- T2 Duty Free (Inbound and Outbound)
- Mercedes Benz
- Australian Air Express Domestic
- ABC and Qantas Joey Child Care Centres
- Unigas
- Global Machinery Company
- Schenker
- Kathmandu
- The Reject Shop
- Caterpillar Logistics
- Star Track Express
- Gibson Transport
- Jets Transport
- Australian Discount Retailers
- Agility
- Toll
- Virgin Blue offices
- Skybus, Thrifty, Hertz, and Qantas Valet vehicle storage areas

Freight Developments

- Australian Air Express International
- Australia Post Mail Handling Facility
- Qantas Freight Terminal Expansion

8.2 Management Systems

Melbourne Airport is committed to a systematic risk management approach for all proposed Airside and Landside Developments.

This commitment is a matter of policy and is evidenced by ongoing maintenance of two certified management systems. These are for Occupational Health & Safety, and Environmental Management Systems.

In addition, dedicated risk management programs are in place for Corporate, Security and Airside Operational risks.

All these systems are driven by the fundamental principle of continuous improvement in performance. Melbourne Airport management systems are also subjected to internal and external audit regimes including regular audits by State and Federal Governments.

8.3 Airside

Aircraft movement area facilities presently available include intersecting north-south and east-west runways, associated taxiways and apron areas. These are shown on the existing aerodrome drawing, Figure 8.2.

Runways

North-South Runway (16/34)

The existing north-south runway (Runway 16L/34R) is currently 3,657 metres long and 60 metres wide. The Master Plan protects a possible 843 metre extension of the northern end to provide an ultimate runway length of 4,500 metres. The runway has been developed to accommodate the Airbus A380 aircraft by widening the runway.

A new runway (3,000 metres long and 60 metres wide), designated 16R/34L, is planned 1,311 metres west of the existing north-south runway.

East-West Runway (09/27)

The existing east-west runway (Runway 09L/27R) is currently 2,286 metres long and 45 metres wide. An ultimate length of 3,500 metres can be provided by extending the west end 714 metres and the east end 500 metres. Should the 500 metre eastern extension ever be required, the impact of the extension on Sunbury Road/Tullamarine Freeway would be the subject of separate studies at that time.

It may be necessary to lower the roadway to accommodate expansion requirements. In addition to arrivals, these extensions, if constructed, would allow the use of the runway as a departure runway for the majority of aircraft.

A new runway, 3,000 metres long and 60 metres wide and designated 09R/27L, is planned approximately 2,035 metres south of the existing east-west runway.

Future Runway Layout

The locations of the proposed future runways, associated taxiways and apron areas to support passenger and freight terminals in the long-term are shown on the Ultimate Airport Development Concept drawing, Figure 1.2.

Computer modelling for this Master Plan studied hourly capacities of various modes of operation of the existing two runway system. It indicated that the annual capacity of the existing two runway system is about 256,000 movements. Landings on Runway 27 and simultaneous Land and Hold Short Operations (LAHSO) on Runway 34 for domestic aircraft are assumed to continue during peak landing periods when weather conditions permit. Several peaks occur during the day but as air movements grow, these peaks are expected to spread. Certain runway operating modes have higher capacities and the availability of modes is governed by a number of factors such as demand, weather and noise abatement procedures.

The previous Master Plan anticipated a third runway being required within the 20 year Master Plan period. Current expectations are for a third runway to be required around 2026 and unlikely to be required earlier than 2020. Therefore, there is adequate lead time available to monitor growth in aircraft movements, changes in aircraft mix, peak hour demands and noise impacts before a decision is required on the precise timing and choice of future runway.

The 2027/28 Airport Development drawing, Figure 1.1, covers the 20 year planning period. It shows, for indicative purposes only, the probable future runways north-south direction and east-west direction. Both runways are illustrated to indicate that the decision on the orientation and location of the future runways is made, but not the decision on which runway will be constructed first. The taxiway system proposed to service a third runway and further terminal and apron developments in this period is depicted on the drawing.

Taxiways

North-South Taxiway System

The existing north-south Taxiway A (Alpha), parallel to Runway 16L/34R, is located 373 metres east of the runway and is 3,428 metres long and 23 metres wide (refer to Figure 8.2). It is a full length parallel taxiway and provides access to Runway 16/34. Seven entry/exit taxiways are provided between Runway 16L/34R and Taxiway A. The rapid exit taxiways aid in the efficiency and operation of Runway 16L/34R.

A second parallel Taxiway S (Sierra) is located 189 metres east of Taxiway A and is 23 metres wide. Taxiway S provides apron access to the terminals and the freight apron. Due to the T2 Expansion Projects, Taxiway S will be closed to through traffic (between Taxiway T (Tango) and Taxiway U (Uniform)). Taxiway V (Victor) (between Taxiway T and Taxiway G (Golf)) was constructed to ensure dual taxiway operations are maintained.

In order to maximise runway capacity and delay the need for a third runway, development of additional rapid exit taxiways is planned. (refer to Figure 1.1).

East-West Taxiway System

The existing east-west Taxiway E (Echo) parallel to Runway 09L/27R, is located 373 metres south of the runway and is 2,541 metres long and 23 metres wide. It is a full length parallel taxiway and provides access to runway thresholds 09 and 27. Five entry/exit taxiways are provided between Runway 09L/27R and Taxiway E. These taxiways aid in the efficiency and operation of Runway 09L/27R.

A second parallel taxiway (Taxiway T) is located 189 metres south of Taxiway E. It is 23 metres wide and operates as an apron access route to the terminals.

In order to maximise runway capacity and delay the need for a third runway, development of an additional rapid exit taxiway is planned (refer to Figure 1.1).

Apron Taxilanes

The apron taxilane system is planned to optimise access and egress to terminal gates through a dual taxilane wherever possible.

Aprons

Terminal Aprons

The existing terminal aprons provide access and gate capacity at T1, T2, T3 and T4. In addition, an apron space north of T2 provides for two remote parking gates and an area for ground servicing equipment storage.

It is planned that as the demand for terminal gates grow, additional apron areas will be developed west of Taxiway S and north of Taxiway T.

Freight Apron

Three B747 parking positions are provided for international freight aircraft in front of the existing freight terminal, south of T4. Domestic freight aircraft use the southern apron areas when not being utilised by international freight or international/domestic passenger aircraft.

The location of the future freight apron is located east of the maintenance facilities (refer to Figure 1.1).

Air Navigation Facilities and Services

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

Airservices Australia has the following operational facilities on the Airport:

- The Advanced Australian Air Traffic System (TAAATS) South Centre;
- Flight Service Centre and Regional Briefing Office;
- Control Tower;
- Navigation Aids; and
- Main and Satellite Fire Stations.

The Master Plan provides for a continuation of this operational use in the central area of the airport. Adequate allowance for expansion is provided to enable for further developments as and when required by technological change or the need for additional services.

Summary of Airside Development Proposals

Airside developments proposed over the next 20 years, in response to demand, could include:

- Construct rapid exit taxiways for Runway 16/34;
- Construct a rapid exit taxiway for Runway 09/27;
- Provide additional passenger aircraft gates and apron areas;
- Develop a new freight apron to the east of the existing maintenance facilities and airside road access;
- Provide a replacement parallel taxiway for Taxiway Tango;
- Extend Runway 09/27 to the west;
- Possible construction of a third runway and associated taxiways; and
- Provide ground servicing equipment storage.

8.4 Terminals and Aviation Facilities

Passenger Terminals

The present terminal complex combines international facilities with three domestic terminals.

T1 (Domestic) is operated under separate long term lease arrangements with Qantas Airways. This lease extends to the year 2018, allowing it to undertake terminal developments over the lease period to cater for growth in its domestic passenger traffic within its terminal lease. T1 has two concourses with 20 gate positions, of which 15 positions are equipped with aerobridges and options are available to expand facilities.

T2 (International) has one concourse with 12 gate positions, of which 11 are currently equipped with aerobridges. Of these 11 aerobridges, two serve aircraft up to the size of an A380 (or four narrow body aircraft), seven serve aircraft up to the size of a B747, and the remaining two serve aircraft up to the size of B767 and B737 aircraft. Two remote A380 and two remote B747 parking positions are also provided.

Growth in T2 will be accommodated by expanding the existing terminal which will include:

- Construction of a new outbound international passenger security and customs processing zone and associated departure lounge and retail area;
- Enhanced baggage facilities including space for additional two A380 baggage carousels;

- A new passenger concourse providing five new aircraft parking bays including three gates with dual level aerobridges. These will each be able to accommodate one A380 or two smaller aircraft; and
- Increased arrivals processing areas.

In accordance with the forecasts, it is feasible to provide for up to 20 aircraft gates (up to eight Code F gates) and supporting passenger processing and retail areas for T2. Figure 1.1 includes the layout for the T2 development.

Beyond 2027/28, it is envisaged that international activities will expand through redevelopment of concourses in T3 for international use.

T3 currently has two concourses with 20 parking positions, including 11 aerobridge gates. Of these 11 aerobridges, ten serve aircraft up to the size of a B737 and the remaining position serves aircraft up to the size of a B747.

Growth in T3 will be accommodated by expanding the existing terminal which will include:

- New inbound and outbound bag rooms;
- Reconfigured and expanded departure processing areas;
- New baggage reclaim areas; and
- New contact gates provided on Foxtrot Concourse.

T4 currently has one apron area with 5 parking positions. These parking positions serve aircraft up to the size of an A320.

Growth in terminal facilities will be accommodated by expanding in a southerly direction which will include:

- New facilities linked to existing terminal buildings;
- New inbound and outbound bag rooms;
- New departure processing areas;
- New baggage reclaim areas;
- Expanded apron areas for aircraft parking;
- Expanded road access and forecourt areas; and
- New multi-level car park.

Terminal expansions are depicted in Figure 1.1 and Figure 1.2.

Freight Terminals

Existing freight terminal facilities at the airport consist of six separate buildings and associated aircraft parking areas. Locations of the freight terminals are shown in Figure 8.2.

With the expansion of terminal facilities, future freight facilities will be provided east of the existing maintenance areas as illustrated in Figures 1.1 and 1.2.

Aircraft Maintenance Facilities

Existing aircraft maintenance facilities are provided to the south of the airport, north of Operations Road as depicted in Figure 8.2. The four facilities are operated under lease arrangements and allow for incremental development.

An area south of Operations Road, as indicated in Figure 1.1 and Figure 1.2, is proposed to provide for expansion of maintenance facilities and associated aviation services.

General Aviation Facilities and Aviation Development

General aviation operations are facilitated through the existing maintenance facilities.

In accordance with current Commonwealth Government policy, this Master Plan assumes Essendon Airport will continue to operate as a general aviation airport. The role of Melbourne Airport is to service air transport demand (passenger and freight) and not general aviation.

Work done in the past to examine possible closure of Essendon Airport indicates that the impact on Melbourne Airport would not pose master planning problems on the condition that future facility development is limited to providing adequate space for speed compatible (heavy jet) aircraft from Essendon. Such development would need to be commercially justified.

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.

Summary of Terminals and Aviation Facility Development Proposals

Terminal and aviation facility developments proposed over the next 20 years, in response to demand, could include:

- New T2 bag rooms, passenger processing areas, reclaim areas and aircraft gates;
- New T3 bag rooms, departure processing areas, reclaim areas and aircraft gates;
- New T4 bag rooms, departure processing areas, reclaim areas and apron areas;
- New freight apron and facilities to the east of the existing maintenance areas; and
- New and expanded maintenance facilities.

8.5 Surface Access and Vehicle Parking

The location of Melbourne Airport in relation to the major highways and freeways and key transport modes servicing the City of Melbourne is shown on the Transport Connections drawing, Figure 8.3.

Ground Transport Plan

Melbourne Airport will prepare a Ground Transport Plan by mid 2009. This will consider all modes of transport to the airport and recommend a series of actions to promote and facilitate viable non car travel alternatives to the airport. These could include improved local bus services particularly for staff, facilities for the proposed orbital bus, shared paths and work with the State Government regarding suitability of the proposed Airport Rail Link.

Implementation of the Ground Transport Plan will be reliant on an efficient and effective road network and on reaching commercial arrangements with forecourt users.

External Road Access

Currently the main access to the airport is via the Tullamarine Freeway at Terminal Drive, Melbourne Drive and Mercer Drive. Other direct access/egress roads are:

- Sunbury Road;
- Melrose Drive (which, except for the section on the airport site is not presumed to be a major access now and is anticipated to be downgraded in the future); and
- South Centre Road.

The recent completion of the Tullamarine Freeway and Calder Freeway interchange has significantly improved road access times to and from the airport. The duplication of South Centre Road near Annandale Road including installation of traffic signals has improved access and safety.

The widening of the Tullamarine Freeway to provide a two lane off ramp into Terminal Drive is proposed to be undertaken during 2008/09.

A new on ramp onto the Tullamarine Freeway is proposed between Melbourne Drive and Mickleham Road. It is proposed to commence at the intersection of Melrose Drive and Apac Drive, through the long term car park over the Tullamarine Freeway before merging prior to Mickleham Road.

A new airport road, Airport Drive, is proposed as a major airport access to link with the airport connector road that has been provided from the Western Ring Road. It links the intersections of Sharps Road/Airport Drive and Melrose Drive/Mercer Drive.

In the medium to long term, it is expected that additional lanes may be required along the Tullamarine Freeway between the airport and the Calder Freeway/Tullamarine Freeway interchange, to cope with both the increase in airport traffic and the residential growth in the north-west suburbs.

Internal Road Network

Key internal roads are Centre Road, Melrose Drive, Apac Drive and Link Road and roads within the forecourt area including Arrivals and Departures Drives.

Key planning features for staged development of the road network to service growth are:

- Maximum use of existing road infrastructure; and
- Segregation of passenger and non passenger (freight, maintenance and staff) vehicle movements as far as possible.

A strategy to improve / develop forecourt operations will be progressively implemented including capacity improvements to traffic signal operations, improved traffic flow and safety and improved drop off and pick up facilities for private cars, taxis/VHA, buses and loading.

In addition to these projects, progressive implementation of upgrades and extensions, as well as provision of new internal roads in response to subdivision requirements, will be provided to ensure the required levels of service are provided and maintained as the airport develops.

The likely extent of these road improvements over the next 20 years is shown in broad concept form in Figure 1.1. Detailed design and layouts are yet to be prepared and discussed with relevant stakeholders.

An indicative layout for major roads in the presently undeveloped southern area of the airport is also illustrated in Figure 1.1. The nature and timing of use of this area will determine the need for further subdivisional roads.

External Rail Access

The Albion East route is shown in the Master Plan in Figures 1.1 and 1.2. The route is to be underground for the entire on-airport section to maximise airport development opportunities, unless commercial negotiations between Melbourne Airport and the State Government facilitate some above-ground routing.

An underground station, with direct links to the passenger terminal complex, is proposed between the existing multi-level car park and the passenger terminal complex.

The timing for the introduction of a rail service to the airport will, to a large extent, be determined by commercial considerations. However, the on-airport planning will allow this to proceed at whatever time is appropriate.

Vehicle Parking

The Master Plan provides areas for short and long term public car parking, staff car parking, taxi holding areas, bus/coach parking and car rental storage.

The major parking requirement in other airport areas where facilities are located is employee and tenant parking. The provision of this parking is the tenant's responsibility and is accommodated in the individual facility lease areas or areas specifically leased for staff car parking.

The multi-level car park provides 3,500 short term spaces, 2,000 premium long term spaces and 600 car rental bays. The multi-level car park is currently being extended north-eastward to service growth in parking demand.

It is proposed that long term public car parking accommodating 12,500 spaces adjacent to Melrose Drive will continue in its present location, with future provision proposed south of Link Road. Existing staff car parking and taxi holding areas can be expanded to accommodate future growth.

These provisions do not specifically take into account the impact on parking demand if improved transport services, including a rail service, are provided to the airport. A review of demand is needed when there is more certainty about the timing for a rail service.

Summary of Development Proposals for Surface Access

Development proposals for the airport surface access system over the next 20 years could include:

- The widening of the Tullamarine Freeway to provide a two lane off ramp into Terminal Drive;
- Construction of a new two lane on ramp onto the Tullamarine Freeway between Melbourne Drive and Mickleham Road;
- Improvements to forecourt operations including improved transport services;
- Duplication of Melrose Drive from Apac Drive to Centre Road;
- Construction of Airport Drive road link from Sharps Road to Melrose Drive to provide an alternative major airport access;
- Provision of additional short term, long term, taxi and staff parking; and
- Development by the State Government of an orbital bus service and an airport rail link if and when commercially viable.

8.6 Commercial

Revenue to the airport from car parking, retail outlets, site rentals and leased premises, including passenger terminals and freight facilities, form a significant component of airport income. Therefore, it is important for airport planning to provide scope to derive income from terminal commercial areas and those areas on the airport that are not required for aviation and aviation support purposes at this time. These areas may be required in the longer term for expansion of passenger and freight facilities, as well as aircraft maintenance and other support services. Therefore, the interim usage of these areas will be arranged with due regard to the timing requirements of these future facilities.

Within passenger terminals, it is important to provide adequate space to locate commercial areas in order to service passengers and airport visitors. Extensive work has been undertaken to integrate the landside retail areas of T2 and T3. There is an existing retail link between T1 and T2. The retail area within T2 was further developed in 2007.

It is intended that, as far as possible, terminal expansions continue this integrated terminal concept. Terminal footprint planning makes adequate space provision for both passenger processing and commercial needs.

Figure 1.2 indicates the co-location of passengers and freight in the terminal precinct and the extent of commercial development feasible in the terminal precinct. This plan also indicates the extent of area in the south sector available for interim commercial leasing until aircraft maintenance activities are required in response to the long-term growth in demand. Any commercial activities in these areas will be in accordance with the zoning requirements shown in Figure 7.1.

Aviation Services

In the Ultimate Development Concept, the terminal precinct areas not required for passenger handling and vehicle parking will continue to be available for commercial use including additional hotels. After provision for long-term aviation uses, extensive areas in the South Centre Road, Annandale Road, Airport Drive and Link Road precincts remain available for commercial use.

The Master Plan makes adequate provision for space to service a range of airline support and aviation ancillary activities (other than Airservices Australia requirements) that need to be located appropriately according to their service function.

This category includes:

- Aviation fuel storage areas;
- Areas for storage of Ground Support Equipment (GSE); and
- Areas for terminal support services (eg: airline catering and mechanical equipment maintenance facilities) and airport maintenance facilities.

These sites will be developed to meet the demand of commercial and industrial users.

The proposed locations for these service areas are shown in Figure 1.1.

Melbourne Airport Business Park

The Business Park is located to the south of the airline maintenance bases on Operations Road, on land that has been identified as not being required for future aviation development.

Star Track Express, Laminex Industries, Jets Transport Express, Caterpillar Logistics, Gibson Freight and Willow Ware, AAE Domestic, Reject Shop and Kathmandu currently operate from state-of-the-art facilities in the Business Park. Toll office/café, Australian Discount Retailers and Agility are currently under construction.

Airport Entry Development Site

This site is approximately 34 hectares and is bounded by the Tullamarine Freeway, Melrose Drive and Mercer Drive. In July 2007, the Minister approved a Major Development Plan for a 48,000sqm Mixed Use Development on approximately 12.5 hectares of this site. The balance of the site is proposed to be used for activities such as office, warehousing and associated retail and commercial activities but not those associated with suburban shopping centres. Major frontages to the Tullamarine Freeway and Melrose Drive have high visual exposure, making the site well suited to commercial development.

Summary of Commercial Development Proposals

Development proposals in response to demand for commercial facilities over the next 20 years could include:

- Develop the proposed Melbourne Airport Business Park and other commercial, industrial and service industry sites in line with market demand;

- Implement the approved Mixed Use Development in Airport Entry site and further develop this site for office, warehouse and retail activities;
- Provide serviced sites progressively for airline maintenance and aviation services in the southern areas of the airport; and
- Provide an additional hotel in proximity to the terminals.

8.7 Infrastructure Provision

Water Supply

Existing Supply

Water is supplied to the Airport boundary at four locations.

Melrose Drive

Water received via this point is supplied from Greenvale Reservoir via City West Water's 375mm main in Melrose Drive. From there it is delivered to two separate Airport locations:

- Terminal Precinct: via a 300mm cast iron cement lined supply main to the Airport's Terminal Precinct storage and pumping facility. This facility consists of an elevated water tank (0.455 ML), two ground level tanks (0.57 ML and 4.55 ML) and associated pumps. It supplies domestic and fire fighting potable water to the Airport's Terminal Precinct and Airservices Operations Area to the west of the airfield.
- Airline Maintenance Area: via a 300mm cast iron cement lined branch supply main to the Airport's Maintenance Base area in Operations Road.

Sharps Road

Water received via this point will be supplied from two sources:

- Greenvale Reservoir: via City West Water's 375mm main in Sharps Road; and
- Sugarloaf Reservoir: via Melbourne Water's 1200mm transfer main in Sharps Road.

When commissioned in late 2008, this main will supply the Terminal Precinct Storage and Pumping Facility via the new Airport Drive alignment, augmenting the supply currently received from Melrose Drive and doing away with the need for the two ground level storage tanks.

South Centre Road

Water received via this point is supplied from Greenvale Reservoir via City West Water's 150mm main in Annandale Road. From there water is supplied to all Business Park development sites along South Centre Road, Sky Road and others.

Jets Court

Water received via this point is supplied from Greenvale Reservoir via City West Water's 150mm main in Annandale Road. From there water is supplied to all Business Park development sites along Jets Court.

Proposed Extensions

Proposals for various developments described above may require extensions to the present system particularly in the Business Park area. This will be assessed in more detail when water supply requirements are known for specific developments.

Sewerage

Existing Sewerage System

The existing trunk sewerage system is supplied from the south from Sharps Road and Annandale Road and is owned by City West Water.

Small pumping stations are operated as part of the sewerage system to serve the long term car park, car wash facility, fuel facility, customs dog kennels, and the Qantas catering complex. Another pump station and rising main connected to the main sewer outfall south of the airline maintenance area services the Airservices Australia operations/maintenance area and fire station on the western side of the Airport.

Proposed Extensions

Proposals for various developments described earlier will require extensions to the present system. A study has identified the extensions that are feasible east of the main sewer outfall to service areas in the Terminal Precinct and in the south/south-east areas of the Airport where developments are proposed during the next twenty years. Some areas to the east of Melrose Drive may need to be serviced by pumping stations.

The study included extensive simulation modelling of the present system and concluded that it is adequate to cope with the future developments proposed.

Stormwater Drainage

Existing Situation

Stormwater discharge from the Airport is directed from catchment areas on the Airport into the adjoining creek systems, these being:

- Arundel Creek*;
- Moonee Ponds Creek;
- Deep Creek*/Maribyrnong River; and
- Steele Creek*.

Most of the presently developed aircraft movement and building areas discharge into Arundel Creek.

The Moonee Ponds Creek catchment on the eastern side of the Airport is partially developed at present.

The Steele Creek catchment, comprising three sub-catchments, covers most of the south and south-east areas of the Airport. Existing development in this catchment is confined to the northern sections of the catchment and to the eastern section of the airline maintenance area. Piped stormwater from the developed areas discharges into a number of Airport unlined drains which direct flows to three discharge locations along the Airport Boundary.

At present there are no major developments in the Deep Creek/Maribyrnong River catchment.

Proposals for Trunk Drainage Infrastructure

The Ultimate Airport Development Concept (refer to Figure 1.2) indicates provisions for aviation and commercial developments to take up most of the Steele Creek catchment area. A drainage study of the outfall drainage needs of this catchment has considered options for handling/discharging stormwater flows from the three sub-catchments in the catchment area into the Responsible Authority's drainage system.

The study has identified a requirement for locating three retarding basins on the Airport site due to limitations imposed on discharge from Airport land by the Responsible Authority. The locations and areas required for these retarding basins are shown on Figure 10.1. In general the proposed pipe drainage sets out to collect piped drainage from existing development and to provide a point of discharge for each parcel of land or development proposed in the Master Plan.

Of the retarding basins proposed, one – Steele Creek at Annandale Road – has been constructed. The remaining retarding basins and associated drainage infrastructure will be introduced in stages to progressively replace open unlined drains and to keep discharges from Airport land within the prescribed limits.

The retarding basins have been designed to increase run-off retention times, to increase sedimentation, incorporate wetlands to further aid stormwater treatment and assist in the removal of suspended solids.

Preliminary planning for both the proposed north-south and east-west runways indicates that final design can allow for most of the stormwater drainage to be controlled and directed into Arundel Creek. This will limit the extent of runoff from the airfield areas direct into Deep Creek and the Maribyrnong River.

In the Arundel Creek catchment stormwater flows from terminal expansions and associated apron and taxiway developments will generally be directed into the existing drainage system.

Electricity

Existing High Voltage Infrastructure

Existing electricity supply to Melbourne Airport is at present provided by two 66-kV feeders configured as a loop out of from AGL Electricity's Keilor Terminal Station. The feeders connect to a 66/22-kV substation at Melbourne Airport. Both feeders are about ten kilometres long, take separate routes to the airport and connected to different buses at either end.

The 66-kV loop has a capacity to provide 60-MVA to the Airport. The Melbourne Airport substation has two 25-MVA transformers and two 40-MVA buses rated at 22-kV. The transformers can provide up to 30-MVA in an emergency. The substation is located on Melbourne Airport property on South Centre Road.

Melbourne Airport operates and maintains its own high voltage electrical distribution infrastructure within the Airport site. The electrical network comprises the boundary substation and some 80 smaller substations, approximately 3 kilometres of overhead lines and 30 kilometres of underground cables distributing electricity to some 400 metered sites.

* minor tributaries of the Maribyrnong River system.

The airport has undertaken substantial works to improve the reliability and flexibility of the electrical infrastructure over the last ten years. This includes:

- Replacing overhead lines with under ground cable to critical internal services
- Providing looped (dual) feeds to all critical services
- Replacing all the old original switch gear
- Upgrading the protection monitoring and control of the system

The current maximum demand is 23-MVA. The current T2 expansion projects will add up to an additional 3-MVA. The trigger point for the upgrade of the expansion of boundary substation will be when the airport load exceeds 30-MVA.

Internally the infrastructure is designed to provide power to zones within the airport. The zones are:

- International & domestic terminals
- Terminal precinct (freight services and car parks)
- Operations area (air traffic control tower etc)
- Maintenance bases & business park development

The terminal precinct and the business park are the two areas most likely to drive growth in the future.

Proposals for Infrastructure Development

There are two options available for augmentation of external supply to meet Airport electricity requirements over the next 20 years. These are:

- A second boundary substation within the airport and connected to the same 66-kV loop; and
- Provision of a third transformer in the boundary substation.

The timing of the augmentation is very much dependant on the commercial developments.

Telecommunications

Telstra and Optus are currently the only carriers to provide landline (copper and/or fibre optic) telecommunications infrastructure to the airport. Telstra has seven main services running though the airport, five of which connect to the terminal or Airservices Australia operations areas. Optus has one main service to the terminal.

The cabling infrastructure within T2 is provided by Melbourne Airport. Airservices Australia provides communications cabling infrastructure from the terminal and its on-airport navigational aids to and within its operations areas.

Telstra, Optus, Vodac, Hutchinson Telecom, Ericsson, Sita and Link Communications have mobile phone and/or pager transmitters at the Airport located either at T2, Holiday Inn building, East Street and the long term car park.

Melbourne Airport and many of the international airlines have radio transmitters located in T2. Each company is responsible for its own equipment.

These services will be expanded in the future in accordance with demand and in response to changes in technology. Melbourne Airport will consider taking over the responsibility for Telecommunications delivery at the airport interface. This will alleviate issues with multiple carriers accessing the airport infrastructure and provide a central storage for data relating to the cabling infrastructure. New fibre optic cabling will generally be located in road reserves.

Gas

Existing Situation

The present gas reticulation for the terminal area enters the Airport along Melrose Drive and continues along Centre Road to supply the Hilton Hotel and Terminal Services Building 2. A branch off this supplies Terminal Services Building 1 and the Terminal 2 and 3 precinct.

Supply for the airline maintenance base area enters from Annandale Road. This section of main is covered by a license agreement between the gas supply company and the airport operator.

Individual gas customers will continue to negotiate with the supply authority, TRU Energy for their energy needs.

Future Gas Supplies

The gas supply to the terminal area of the airport is sufficient to manage the existing service which is heating. In the near future it is unlikely that the gas infrastructure will change much unless a substantial user of gas locates at the airport. It is a 50KPA supply and is therefore insufficient to supply heavy users.

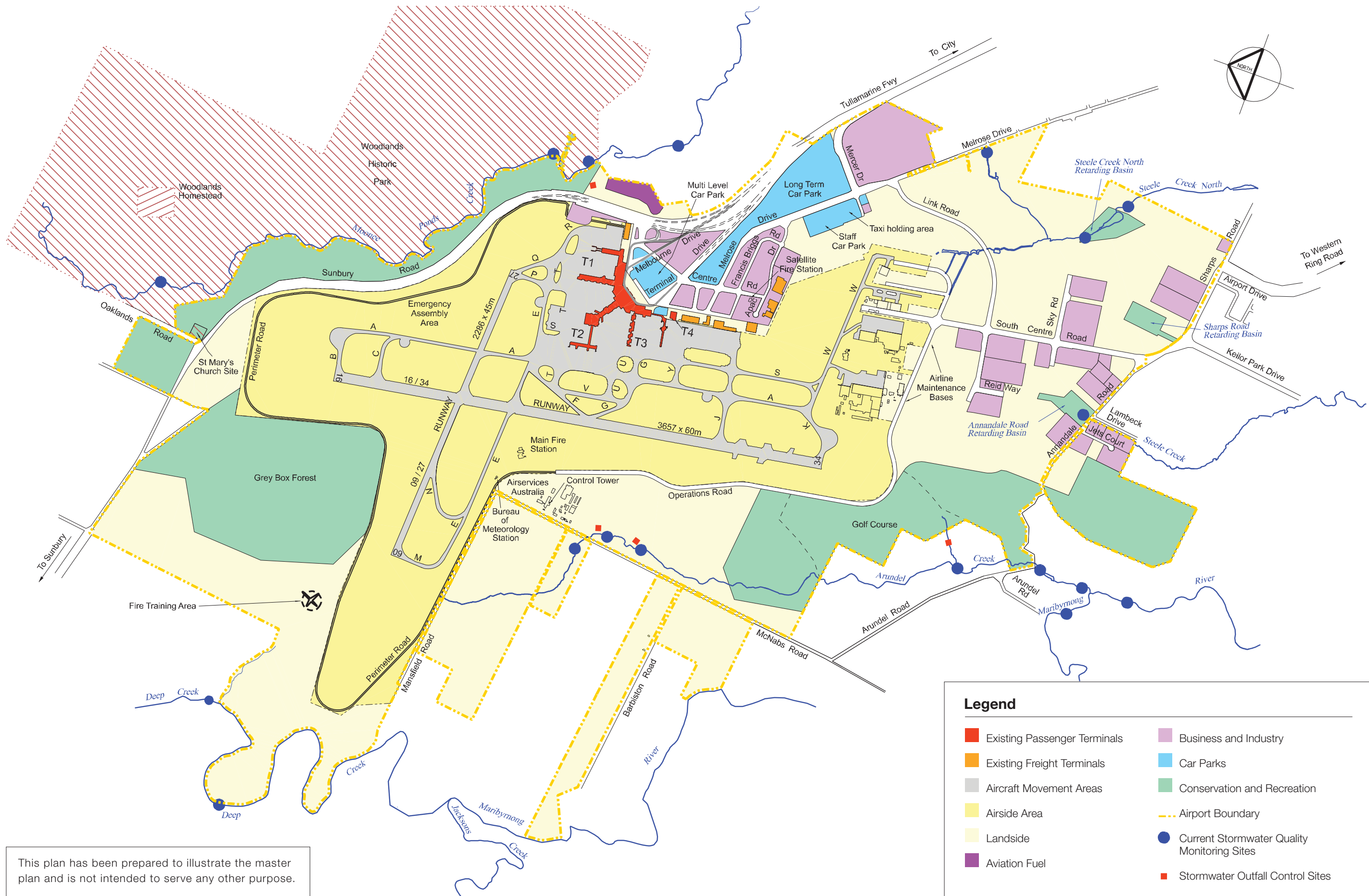
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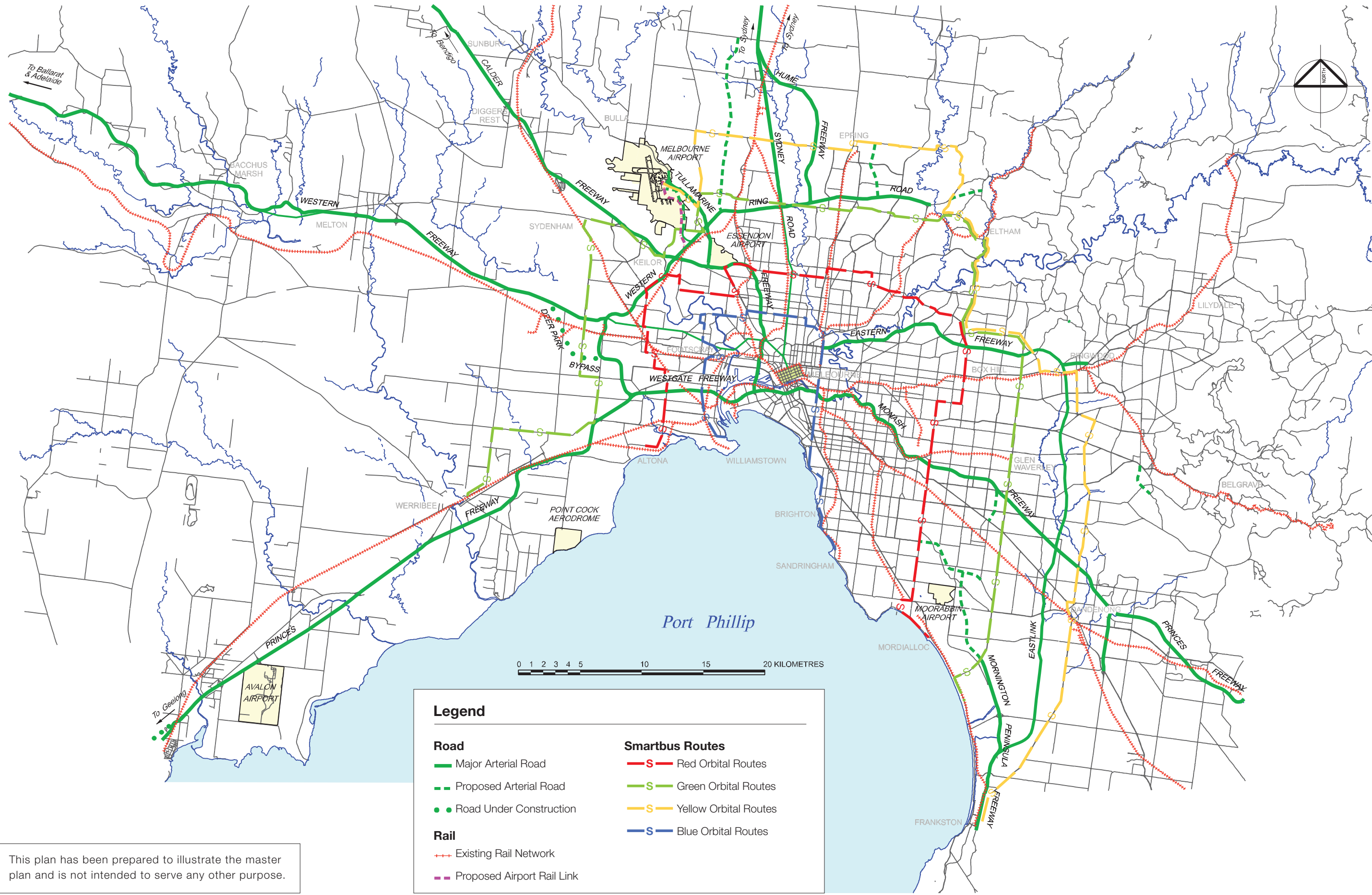
This plan has been prepared to illustrate the master plan and is not intended to serve any other purpose.

Legend

- Airport Boundary
- Watercourses



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



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

Airport Protection

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9.0 Airport Protection

The ongoing operation of Melbourne Airport is supported and protected by a range of legislation, planning controls, studies, strategies and other measures. These include:

- The Melbourne Airport Economic Impact Study 2008 which highlights the significant contribution Melbourne Airport makes at the local, state and national levels in terms of employment generation and economic value.
- Legislation including the *Airports Act 1996*, *Civil Aviation Act 1988*, *Planning and Environment Act 1987* and Local Planning Schemes.
- Land use strategies and plans such as the Melbourne Airport Strategy 1990, Melbourne Airport Land Use Study 1992 and the Melbourne Airport Environs Strategy Plan 2003.
- Aircraft noise management measures such as the Australian Noise Exposure Forecast, Australian Standard AS2021-2000, Melbourne Airport Environs Overlay, Noise Monitoring Systems and the Noise Abatement Committee.
- Airspace protection measures particularly the Airports (Prescribed of Airspace) Regulations 1996.
- Measures to deal with other hazards to aircraft such as birdstrikes, dangerous lighting and interference to air navigation aids.
- Environmental protection measures including the Melbourne Airport Environment Policy, Environment Strategy and Environmental Management System.
- Education and communication measures designed to better inform interested parties about the airport and associated land use issues.

These measures combined form a land use framework which aims to maintain, protect and support the ongoing operation of the airport for the benefit of all Victorians. This framework is summarised in the following diagram.

Melbourne Airport Strategic Land Use Protection Framework



Two of the key components of this airport protection framework are the aircraft noise and airspace protection measures, which are discussed in more detail below.

9.1 Aircraft Noise Management

Aircraft noise is perhaps the most important issue for all airports in terms of land use protection. The original airport greenfield site was selected, in part, to minimise the impact of aircraft noise on surrounding areas, which at the time was largely rural in nature. Aircraft noise is an unavoidable by-product of an airport's operation, and whilst modern commercial jet aircraft are quieter now than when they were first introduced, this is still an issue that requires considerable attention. Accordingly, Melbourne Airport has a raft of systems and procedures designed to deal with the issue of aircraft noise.

Use of ANEF System

Commonwealth Government policy requires the adoption of the Australian Noise Exposure Forecast system for determining likely noise exposure around Australian airports. 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 different types of aircraft noise charts produced using the ANEF system, these being:

- The ANEF - Australian Noise Exposure Forecast;
- The ANEI – Australian Noise Exposure Index; and
- The ANEC – Australian Noise Exposure Concept.

These charts are described in the Abbreviations.

The ANEF charts include the cumulative noise effect of a full year's operations so that seasonal changes in weather patterns and airline schedules are included. The resulting contours are therefore a measure of the total noise exposure over a full 12 month period divided by 365 to give a daily average. They do not represent the maximum exposure caused by a single noise event (an aircraft over flight).

The ANEF is required to be endorsed for technical accuracy by the Commonwealth Government.

Melbourne Airport ANEF

The first Melbourne Airport ANEF was initially issued in 1993 and since then, updated ANEF's were issued in 1996, 1998 and 2003. A new ANEF was produced in conjunction with the preparation of this Master Plan. Endorsement of the 2008 Ultimate Capacity ANEF for technical accuracy by the Commonwealth Government is currently being undertaken, and a copy is included at Figure 9.1.

As with the previous ANEF's, the 2008 ANEF contours represent the forecast worst case situation for noise impact, after taking into account the development stages of the four-runway system and a long term maximum operations level of 397,000 movements. It is therefore an Ultimate Capacity ANEF, which is a compilation of the latest ANEI and four ANEC's prepared for the major operational stages of the airport's development. The description of these four ANEC's and their forecast operational levels are as follows:

Table 9.1 - ANEC Scenarios

ANEC	Runway Configuration	Annual Aircraft Movements
1	Two existing runways at maximum capacity	254,000
2	Three runways (east-west as the third runway) at maximum capacity	272,000
3	Three runways (north-south as the third runway) at maximum capacity	372,000
4	Four runways at maximum capacity	397,000

In the production of the ANEI and ANEC's, the latest version of the Integrated Noise Model (INM) was used. The INM is an aircraft noise modelling software package produced by the United States Federal Aviation Administration. The INM now 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 types, arrival/ departure, ANEF day and night periods, 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 taken into consideration noise abatement procedures aimed at directing noise away from heavily populated areas.

All aircraft tracks, operating procedures and allocation of aircraft to the various runways have been supplied by Airservices Australia Melbourne Centre, air traffic management staff. Figures 9.2 and 9.3 illustrate the indicative jet 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 the effects of weather, aircraft type and payload etc. The computer modelling process has included an allowance for track dispersal to accommodate these variations.

The 2008 Ultimate Capacity ANEF contours have generally contracted when compared with the previous ANEF (2003). This is attributed, in the main, to the following factors:

- Revised Airfield Capacity Study resulting in changes to runway usage and total annual aircraft movements.
- Changes to the aircraft fleet mix forecasts incorporating 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 has been upgraded and is now more comprehensive and able to more realistically model a greater range of aircraft types.

Melbourne Airport Environs Overlay

Land use controls for the areas around Melbourne Airport have been in place for approximately 15 years. The purpose of these controls is to ensure that the efficient operation of Melbourne Airport and its economic benefits to Victoria, both now and in the future, are not adversely affected by inappropriate land use and development in the noise-affected areas surrounding the Airport.

Land use controls for the areas around Melbourne Airport were first implemented by the State Government in 1992. The introduction of 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), 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 purposes of the MAEO controls are to:

- Ensure that land use and development are compatible with the operation of airport in accordance with the 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 new dwellings and other noise sensitive buildings in accordance with the airport's Ultimate Capacity ANEF and Australian Standard AS2021-2000.
- Limit the number of people residing in the area or likely to be subject to significant levels of aircraft noise.
- Require planning permits for certain developments and the subdivision of land with provision for notification of the airport operator.

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 on the plan at Figure 9.4*, which also shows the two levels of controls – namely MAEO Schedule 1 coloured pink and MAEO Schedule 2 coloured blue. The MAEO boundaries 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.

Details and requirements of the MAEO1 and MAEO2 are contained in the Local Planning Schemes of the five Councils covered by these controls (namely Hume, Brimbank, Moonee Valley, Melton and Whittlesea). In accordance with AS2021, the controls of MAEO1 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 are required to be assessed for AS2021 acoustic requirements.

Noise Monitoring Systems

Noise monitoring is undertaken via the following systems.

- Airservices Australia has set up permanent noise monitoring equipment in a number of suburbs around Melbourne to measure aircraft noise. When any of these terminals experience a noise event, Airservices Australia's computerised Noise and Flight Path Monitoring System (NFPMS) 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 determine whether a noise complaint is due to a particular aircraft and whether an aircraft was operating in accordance with the approved flight procedures at a particular time.
- There is also a 24 hour noise enquiry unit. Noise complaints are received, logged and investigated by Airservices. These complaints are monitored on a monthly basis to determine whether there are any particular trends or issues evident or whether any aircraft has operated outside its assigned tracks or altitude. If so, appropriate investigations are initiated and corrective action taken.

Noise Abatement Committee

The Noise Abatement Committee is chaired by Melbourne Airport and consists of representatives from Airservices Australia, the major airlines, State Environment Protection Authority, State Department of Planning and Community Development, Commonwealth Department of Infrastructure and local councils around Melbourne Airport. The Committee's role is to review the impact of aircraft noise exposure on the surrounding community and in a consultative manner, make recommendations to minimise the effect of aircraft noise. The Committee meets on a quarterly basis.

Community noise forums have also been initiated with local communities.

Other Noise Management Considerations

There are a number of other noise management issues being considered by Melbourne Airport, including:

- Placing restrictions on marginally compliant / noisier aircraft (eg: 727 and 737-200).
- Extension of the existing east-west runway to mitigate noise impacts to the south of the airport.

*Figure 9.4 also shows the location of the Urban Growth Boundary (UGB) relative to the Melbourne Airport site and the MAEO1 and MAEO2. The UGB assists in protecting the airport from the encroachment of noise sensitive urban development.

9.2 Airspace Protection

After the issue of noise protection, 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. These matters are controlled by the Prescribed Airspace Regulations which are administered by Local Government, Melbourne Airport and the Commonwealth Department of Infrastructure.

Prescribed Airspace Regulations

Under the provisions of the Airports Act 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 using the airport.

Prescribed Airspace is the airspace above any part of either an Obstacle Limitation Surface (OLS) or a Procedures for Air Navigational Services - Aircraft Operations (PANS-OPS) surface, which are defined as:

- 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 (ie. when the pilot is flying by sight).
- Procedures for Air Navigational Services - Aircraft Operations (PANS-OPS): This surface is usually higher than the OLS and is designed to provide protection for instrument flying, or IFR (ie. when the pilot is flying by instruments). The PANS-OPS may also protect airspace around the network of 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". Controlled activities cannot be carried out without approval. The regulations provide for the Commonwealth Department of Infrastructure or the airport operator to approve applications to carry out controlled activities, and to impose conditions on approval.

Melbourne Airport 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 Airspace Regulations by the Commonwealth Department of Infrastructure.

Melbourne Airport's Prescribed Airspace is shown on Figures 9.5 and 9.6. Figure 9.5 shows the Obstacle Limitation Surfaces (OLS) based on the ultimate four runway layout. Figure 9.6 shows Procedures for Air Navigational Services - Aircraft Operations (PANS-OPS) surfaces based on the ultimate four runway layout.

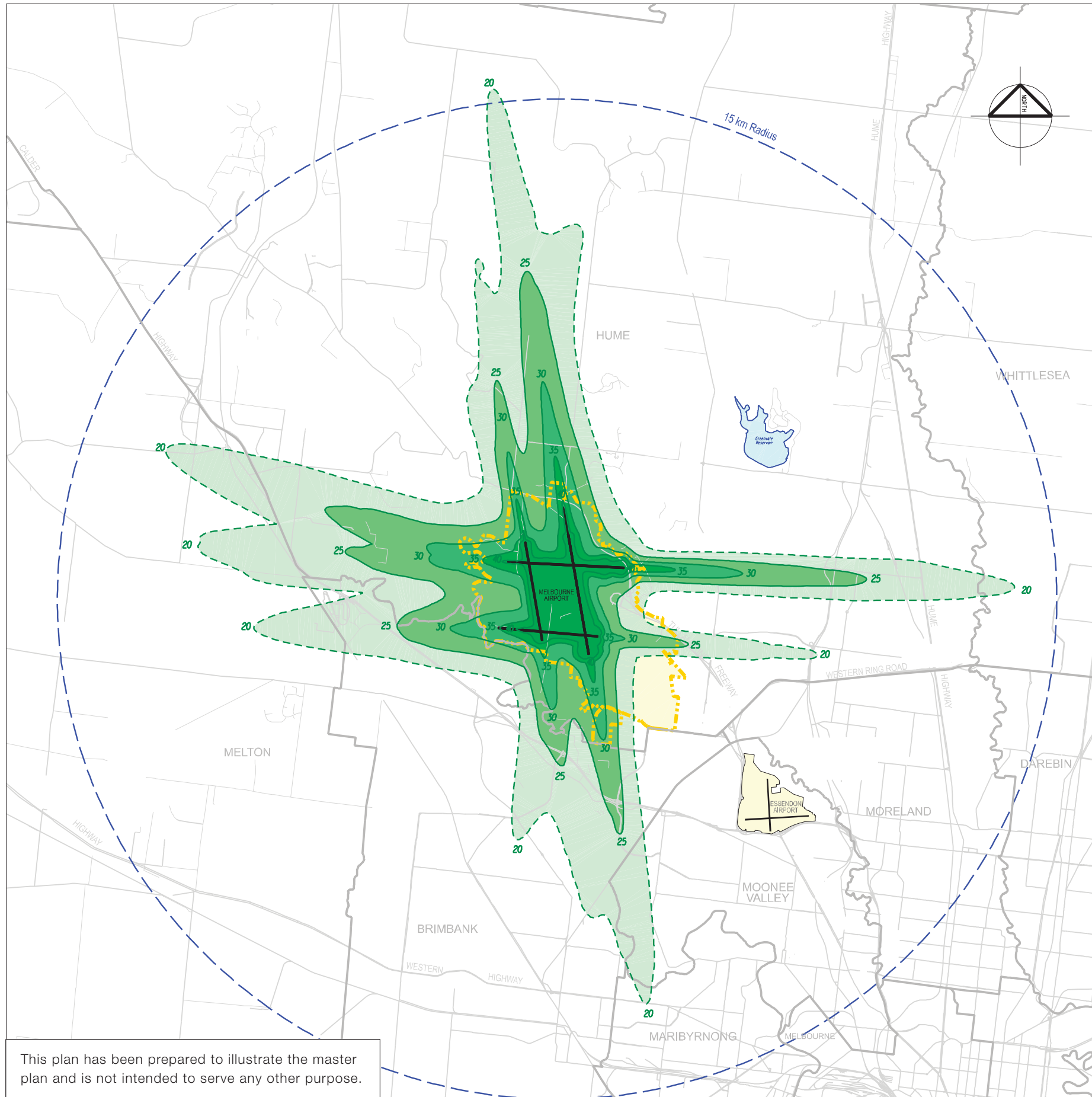
It is important to note the distances covered by the Prescribed Airspace. In some areas the Prescribed Airspace extends beyond 25 kilometres from the airport. At least 16 municipalities are either wholly or partly affected by Melbourne Airport's prescribed airspace.

Airspace Protection Planning Control

Prescribed Airspace should not be confused with the Melbourne Airport Environs Overlay (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 not relate to Prescribed Airspace and does not control the height of structures.

Whilst Melbourne Airport's Prescribed Airspace is protected by the Commonwealth Airports Act and Airports (Protection of Airspace) Regulations, there is evidence that this is not widely known or understood by developers, local government officers/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 in any way. While the MAEO controls land use in relation to noise, there is no equivalent planning scheme mechanism in the Victoria Planning Provisions that enables the height of structures or other land use/emissions that may impact on Prescribed Airspace to be considered or controlled.

This is an issue of concern to Melbourne Airport. Melbourne Airport considers that improvements to the Victorian planning system need to be made to provide greater certainty and rigor in relation to protection of Melbourne Airport's Prescribed Airspace. There are a number of possible initiatives which Melbourne Airport is currently pursuing to address this issue in consultation with the State Government's Department of Planning & Community Development.



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

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 :

- 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.
- 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)
- 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.
- 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.
- 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 6.2a) and taking ground topography into account.

The Melbourne Airport calendar year 2006 Australian Noise Exposure Index (2006 ANEI) is used as the source of current aircraft noise exposure.

Four (4) 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 2006 ANEI and the four ANEC's combined to give the worst case scenario from the extremes of each individual noise contour.

Annual Aircraft Movements for ANEI and ANEC configurations	Annual Aircraft Movements
2006 ANEI (existing 2 runways)	176,400
ANEC 1 - 2 runway ultimate layout	254,000
ANEC 2 - 3 runway (3rd runway in East-West direction)	272,000
ANEC 3 - 3 runway (3rd runway in North-South direction)	372,000
ANEC 4 - 4 runway ultimate layout	397,000

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.

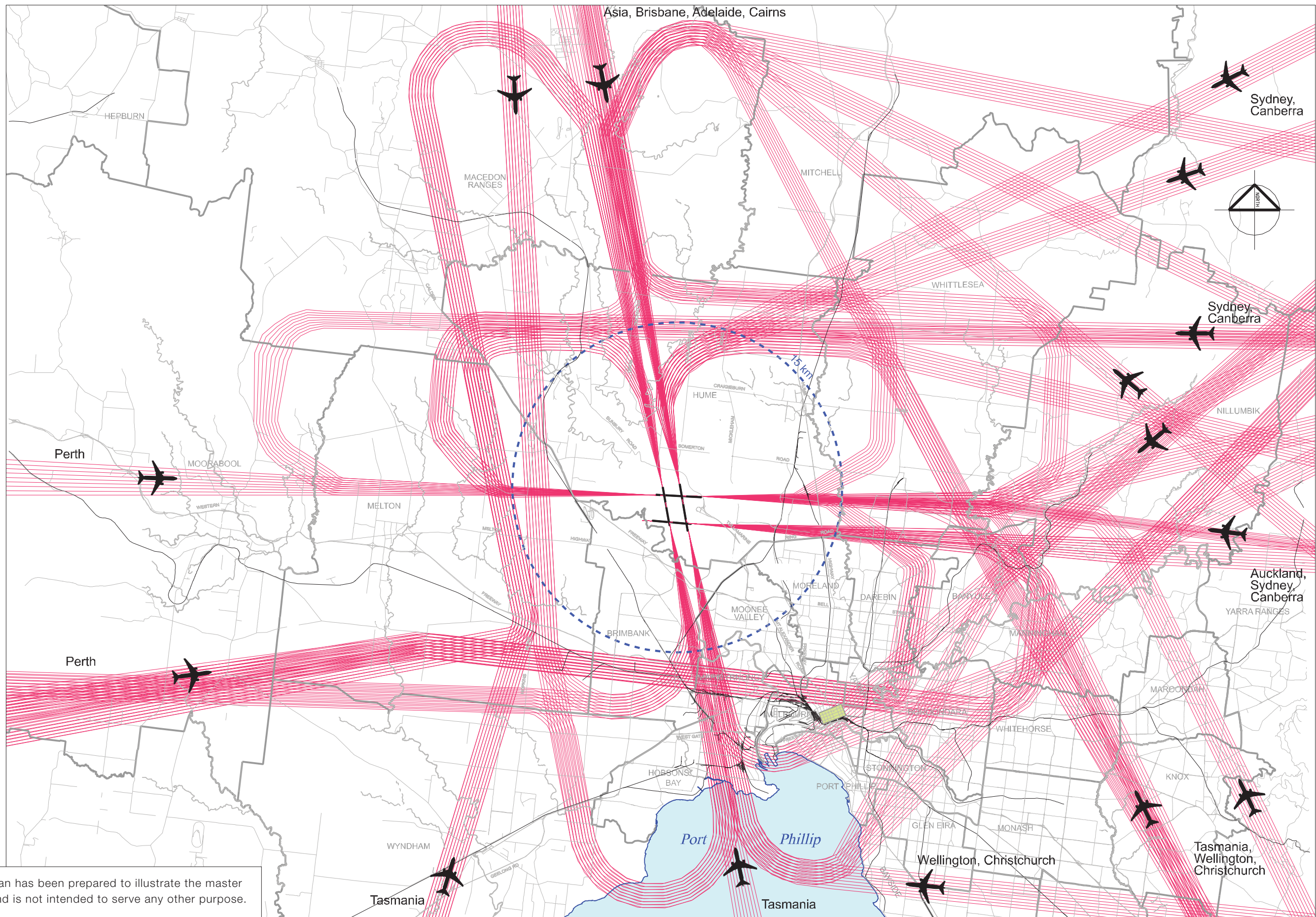
Australia Pacific Airports (Melbourne) Pty Ltd. neither assumes liability nor accepts responsibility for the accuracy of the contours or any reliance placed upon them.

Legend

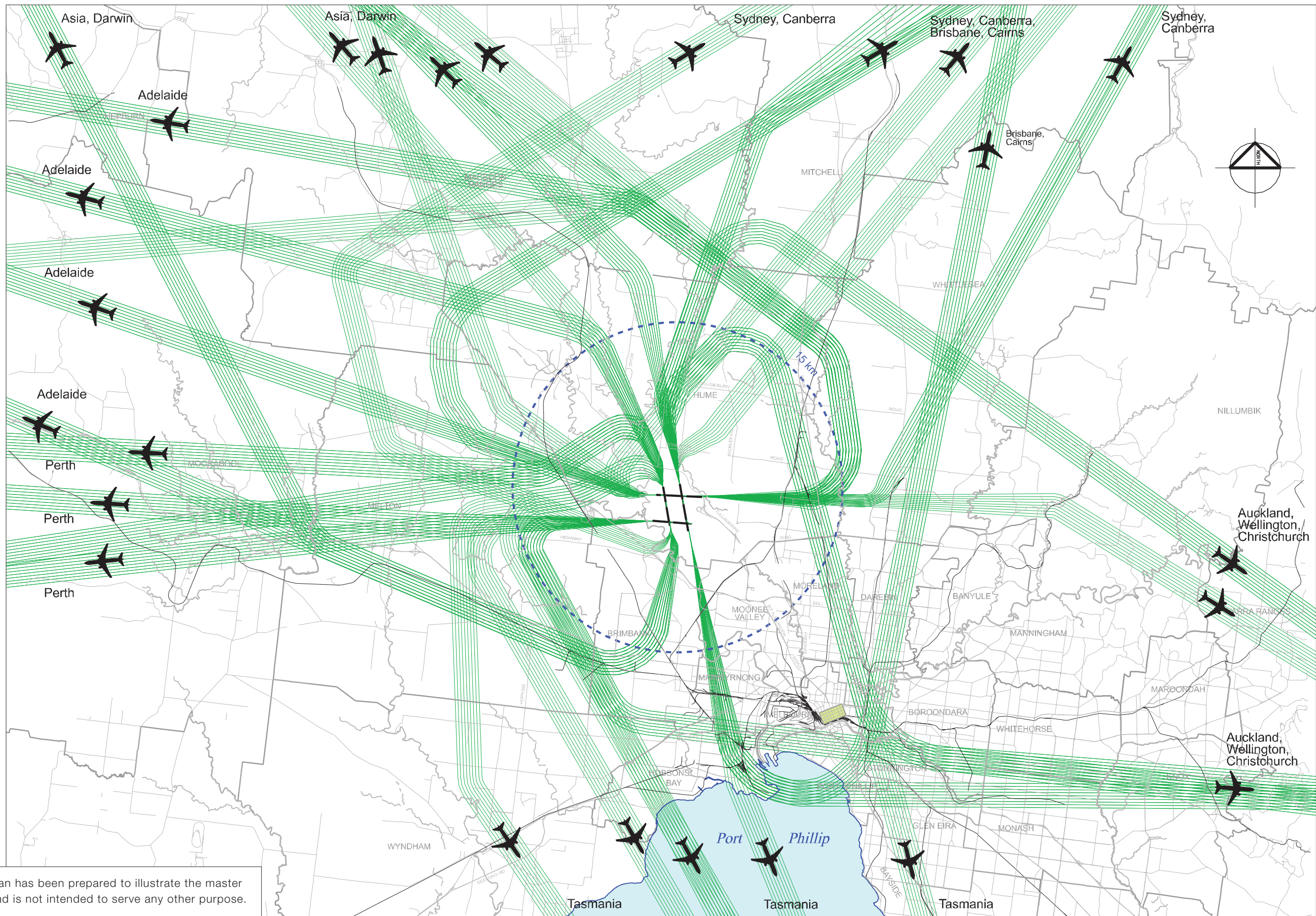
- Municipal Boundary
- Ultimate Airport Boundary
- 20 ANEF Noise Contour Lines
- 25 ANEF Noise Contour Lines

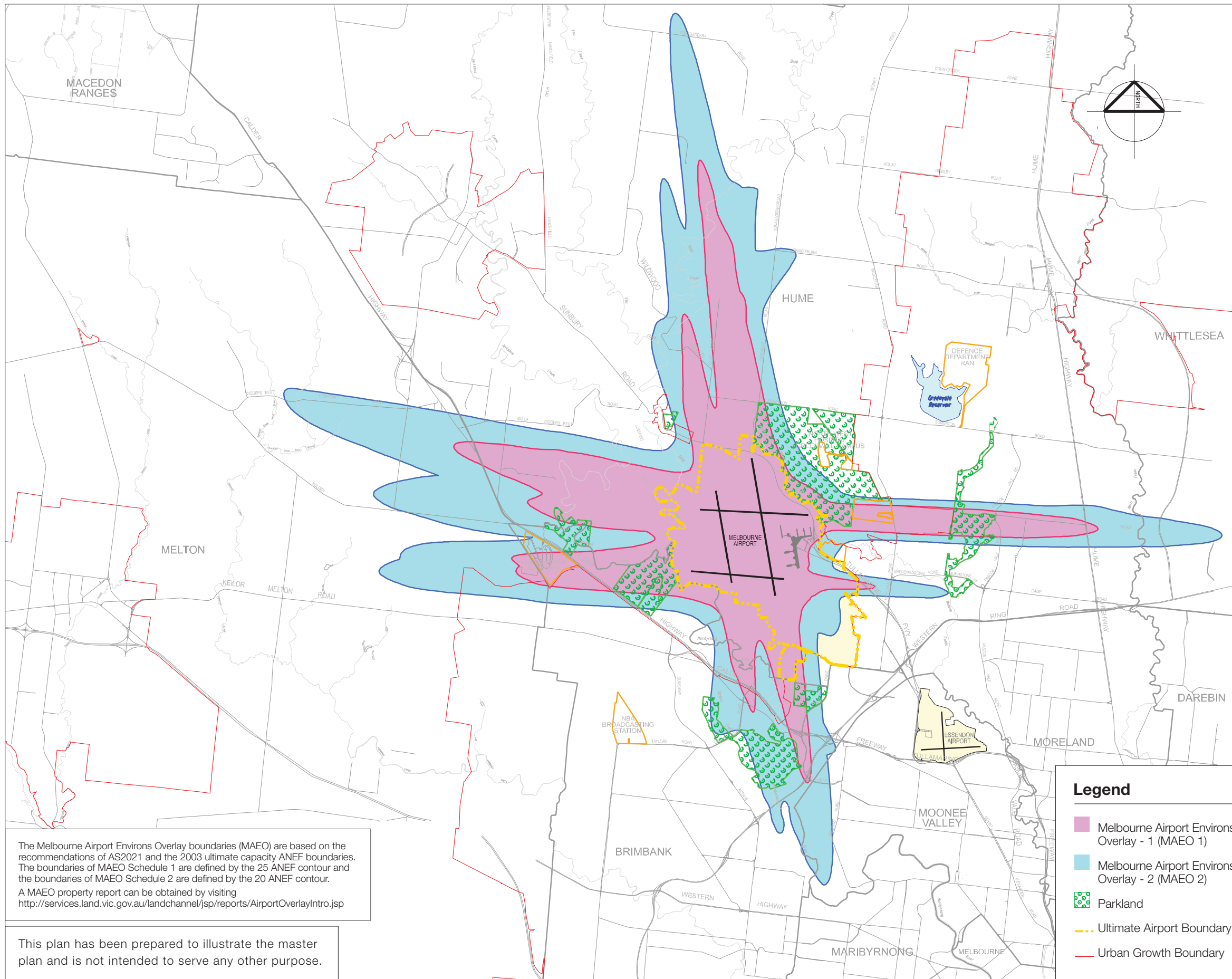
Enquiries about this plan and aircraft movement numbers adopted for the four (4) ANECs and the 2006 ANEI should be directed to :

Environment, Strategy & Planning Department
Australia Pacific Airports (Melbourne) Pty.Ltd.
Melbourne Airport ACN 076 999 114
Telephone: 9297 1600 Facsimile: 9297 1788



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





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

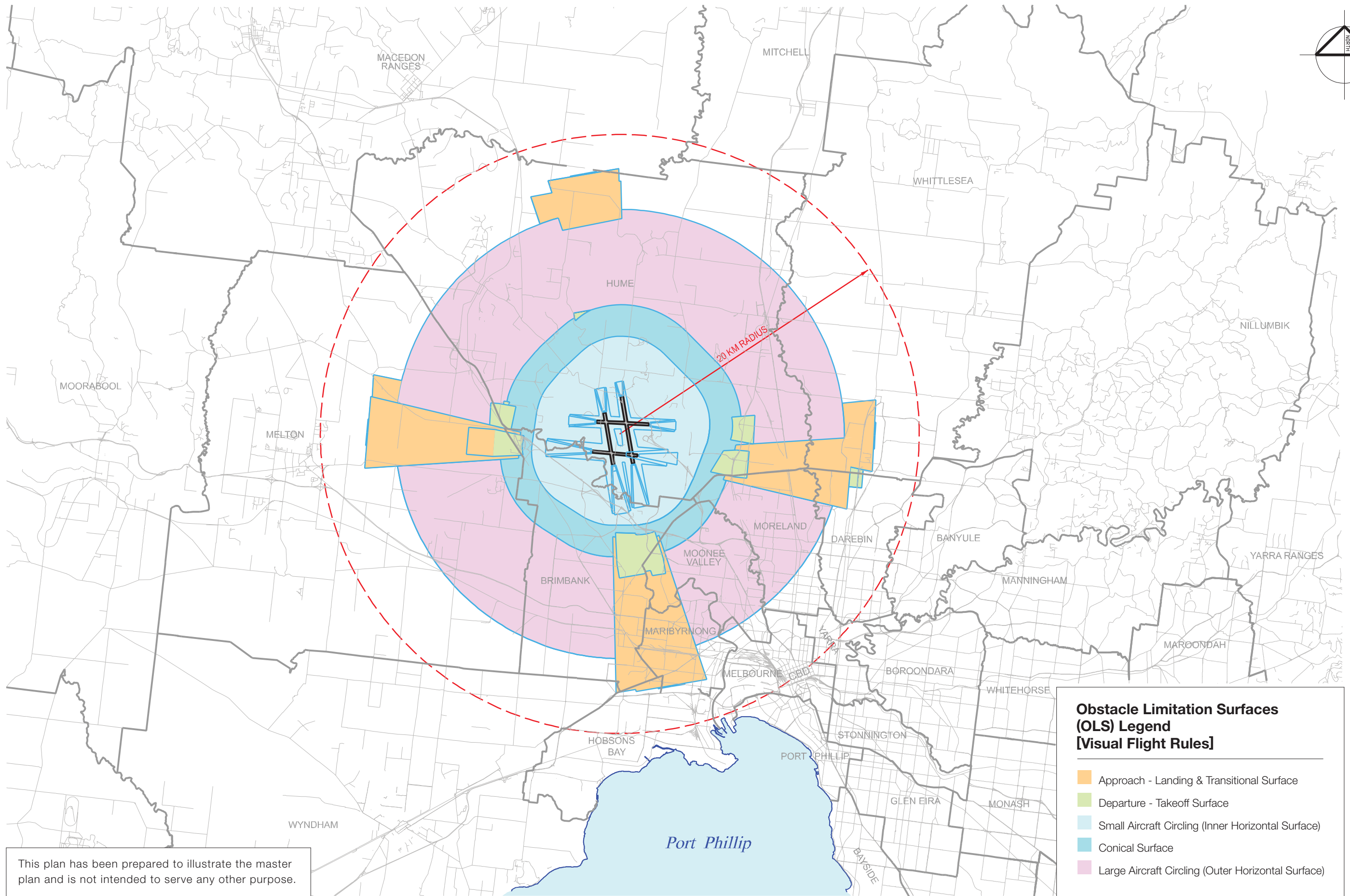
- Land must not be used for :
- * More than one dwelling on a lot.
 - * More than one dependent person's unit on a lot.
 - * Accommodation (other than Backpackers lodge, dwelling, dependent person's unit, host farm and residential hotel).
 - * Child care centre.
 - * Drive-in theatre.
 - * Education 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.

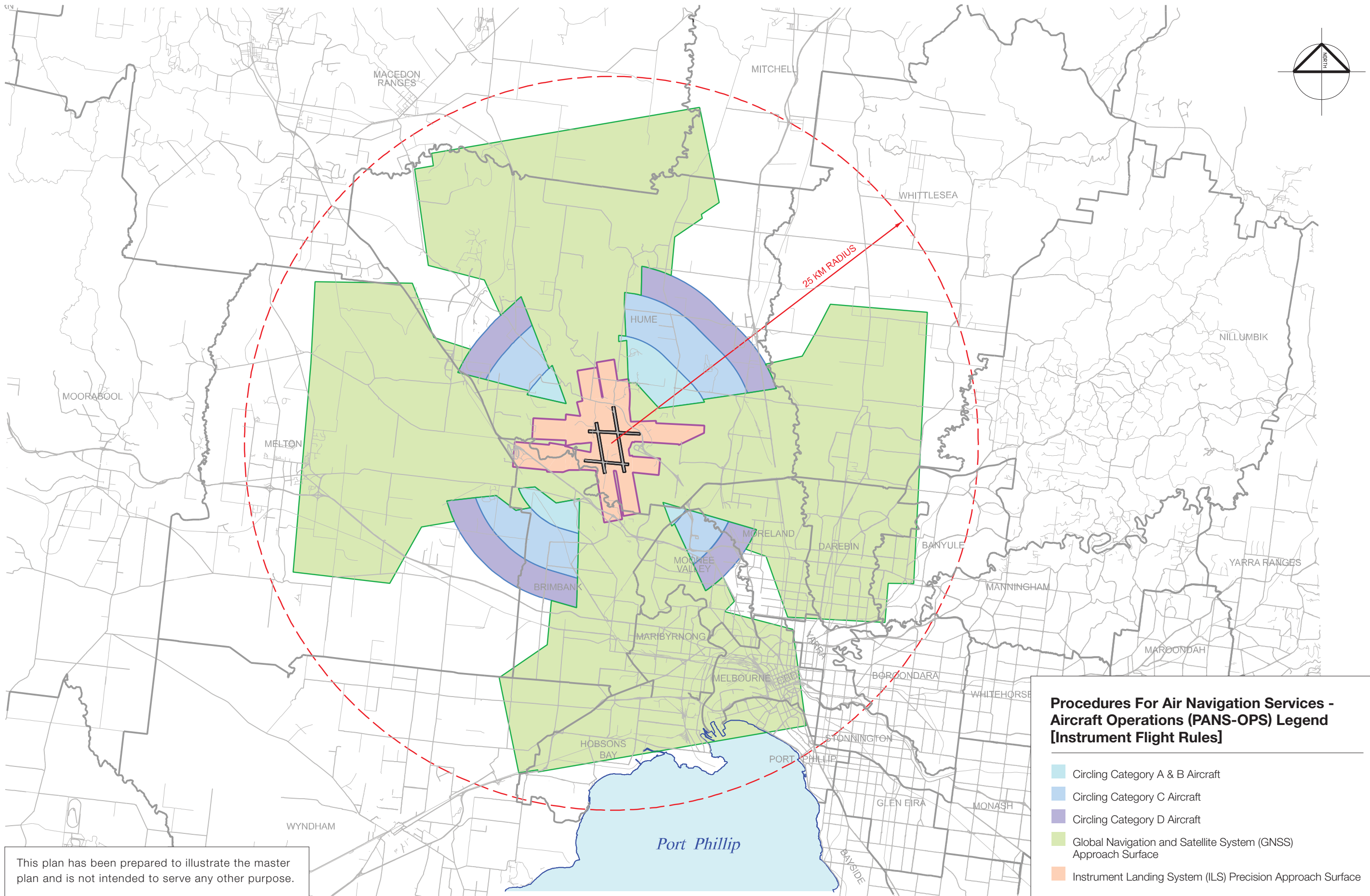
SCHEDULE 2 TO THE MELBOURNE AIRPORT ENVIRONS OVERLAY (MAEO2)
Requirements

- 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.

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.





Environmental Issues

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10.0 Environmental Issues

10.1 General

Melbourne Airport maintains a comprehensive level of management of the environmental aspects and impacts at Melbourne Airport. The Environment section of this Master Plan is developed in parallel with the Melbourne Airport Environment Strategy every 5 years, aiming to improve on the environmental initiatives achieved in the past strategies. The Airports Act requires the Master Plan to include an assessment of environmental issues that might reasonably be expected to be associated with projects outlined.

An Environmental Impact Statement (EIS) was prepared by the previous airport operator in the Melbourne Airport Strategy process, which covered proposals to fully develop the airport site for aircraft operations. The EIS, which was prepared under the requirements of the Commonwealth *Environment Protection (Impact of Proposals) Act 1974*, identified the likely social, physical, biological and economic impacts of the Airport Strategy.

The findings of the EIS recognised that Melbourne Airport could continue to undertake timely developments over the next 50 years in response to growth in aviation demand. This led to joint Federal and State Government adoption of the Airport Strategy. Projects proposed to be undertaken during the next 20 years have been identified in Section 8 of this Master Plan. The development scenario proposed by these projects is consistent with the broad planning framework for the airport that was established by the Airport Strategy process.

The development proposals are a response to the ongoing growth characteristic of aviation traffic and the accompanying activity levels at the airport. This growth in activity levels has the capacity to have potential impacts at the airport in various environmental aspects which include:

- Environmental Management
- Ecological Sustainable Design
- Energy Management and Climate Change
- Water Quality-Stormwater
- Water Quality-Groundwater
- Water Consumption Management
- Waste and Resource Management
- Biodiversity and Conservation Management
- Land Management
- Air Quality
- Cultural Heritage
- Ground Based Noise
- Community Engagement
- Hazardous Substances

These environmental aspects and associated impacts have been considered in the Environment Strategy as they already occur with the present level of airport operations on a day-to-day basis.

Within the existing framework of environmental management at the airport including the Environmental Management System, these potential areas of impact can be monitored and managed to achieve compliance with standards set out in the Airports (Environment Protection) Regulations and Victorian State legislation to the extent that its activities impact on surrounding Victorian land and waterways will be considered, along with the Commonwealth's statutory requirement for improving environmental management.

The Master Plan addresses those environmental issues that can be attributed to further airport development in the next 20 years and that are not specifically covered in the Environment Strategy.

10.2 Identification of Issues

The proposals identified in this Master Plan for implementation during the next 20 years provide for additional runway capacity and incremental extensions to various facilities and infrastructure services. Although these projects will have a varying degree of impact in the environmental areas listed in the previous section, they are expected to be manageable with the implementation of appropriate environmental management controls through the Environmental Management System (EMS) process.

Environmental issues that might reasonably be expected to be associated with project implementation include:

- Effects on landform;
- Impact on flora and fauna;
- Removal of trees and significant flora;
- Impact on indigenous and heritage sites;
- Demolition and construction impacts;
- Downstream and on-airport effects of increases in stormwater discharge; and
- Ecological Sustainable Development; and
- Climate change.

The following section assesses these impacts and indicates plans for managing them. The assessment of in-flight aircraft noise impact and external land use planning is discussed in Section 9.1. Melbourne Airport has prepared an Operational Safety Policy to control noise from aircraft ground running for test purposes. This document specifies procedures to minimise the level of noise exposure to the airport environs. An area can be made available on the airport for a noise attenuation facility, should this be required in the future.

10.3 Plans for Dealing with Environmental Issues

Melbourne Airport has chosen to adopt the International Standard for Environmental Management Systems ISO14001 (2004) as the standard against which its EMS will be audited, Melbourne Airport successfully achieved re-accreditation in June 2007. The EMS enables the formulation of policies and objectives, taking into account legislative needs and information about significant environmental aspects.

Landform

The two areas most affected by the development proposals will be the presently undeveloped south and south-east areas of the airport and the areas of the airport where future runway construction is planned. The construction of the new east-west runway and associated taxiway system will require filling across Arundel Creek. There will be a requirement to pipe Arundel Creek underground in the fill areas.

Earthworks to provide the required runway and approach surfaces for a new north-south runway will significantly alter the western hillside of the Grey Box Forest area.

When constructed, the proposed runways and taxiways will emphasise the comparatively flat nature of the airport site and remove the present landform patterns in these areas.

The changes in landform to result from the development proposals are unavoidable but are consistent with other sites developed for airport and industrial purposes.

As mentioned above, extensive earthworks involving deep cut and fill areas are required for construction of either of the proposed future runways. At the appropriate time, steps will be taken to assess the stability of batters and to ensure by trimming and plantings that final batters are visually acceptable. Excluding new pavement areas, topsoiling and grassing of all other disturbed areas will be undertaken.

Proposed developments in the south and south-east areas will remove the slightly undulating rural character of these areas. The airport operator's consent process covers a range of issues, from building envelopes and architecture to landscaping and the need for development and ongoing operations to be conducted in accordance with the Melbourne Airport Environment Policy.

Certain areas set aside for conservation value at the airport are not affected by proposals in the Master Plan, these being:

- The golf course area in the south-west sector;
- A northern area where more than 50% of the Grey Box Forest will remain and be extended;
- An area between Sunbury Road and Moonee Ponds Creek Frontage areas along Deep Creek and the Maribyrnong River;
- Requirement to develop a conservation management plan for the Annandale Road conservation area; and
- Frontage areas along Deep Creek and the Maribyrnong River.

These areas are shown on the Ultimate Airport Environmental Plan drawing, refer to Figure 10.1, and comprise some 579 hectares.

Flora and Fauna

Flora and fauna issues are assessed for every new development on-airport and, where warranted, appropriate assessments undertaken in accordance with the 2008 Environment Strategy. The Master Plan includes a provision (refer to Figure 10.1) to provide a fauna corridor from the Grey Box Forest to Deep Creek. The Grey Box Forest and St Mary's Church are entered on the Register of the National Estate. An initial habitat hectare assessment was undertaken in 2007 to verify the habitat requirements for a future third runway.

Comprehensive airport-wide flora and fauna studies were undertaken at Melbourne Airport for the potential or actual presence of threatened flora and fauna listed under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* and the *Victorian Flora and Fauna Guarantee Act 1988*. This included studies of the Striped Legless Lizard, Earless Dragon and the Golden Sun Moth. In 1997 fauna studies indicated that the Swift Parrot, the common dunnart, a bull ant and the Australian Grayling (a fish) are the only threatened species, under the Commonwealth and State legislation referred to above, which have been recorded at, or could potentially occur at, Melbourne Airport. This investigation concluded that these areas contained little vegetation of significance and that it is extremely unlikely that listed species are present.

Removal of Trees

Two areas of the airport where existing stands of trees are to be affected by the development proposals are:

- The Grey Box Forest area, of which approximately 48% is required for the construction of the proposed north-south runway. This forest is one of the largest remaining stands of Grey Box south of the divide and is listed on the Australian Heritage Commission Register of the National Estate; and
- A pine plantation along the south-eastern boundary of the airport from Sharps Road to Melrose Drive.

Some tree removal may be required to construct the proposed rail link and potentially a rail car stabling facility. The extent of further clearing will be determined by development requirements adjacent to the rail link. Clearing part of the Grey Box Forest for runway construction and providing for obstacle clearance requirements also allows a parallel taxiway to be constructed for the full length of the runway.

To partly off-set for the proposed removal of the western section of the Grey Box Forest, new planting of 24 hectares is being undertaken to maintain and extend the environmental and visual amenity of the area.

The tree plantation along the south-eastern boundary of the airport was planted in the 1970s and does not contain plant varieties of significance.

When development in this area takes place, any removal of trees along this boundary will be compensated for by landscaping in accordance with the Melbourne Airport "Tree Removal Procedure" and the "Urban Landscape Plantings" guidelines and the new Federal Requirements for land clearing.

Indigenous and Heritage

There are a number of registered heritage sites in the environs of the airport, three of which occur on the airport. These are the Grey Box Forest area, the former site of St Mary's Church and the Keilor Archaeological sites.

A cultural heritage survey in 2005 identified numerous sites in the (Western corner) of Melbourne Airport. A conservation zone has been established to ensure no future development occurs at this site. Previous Aboriginal and European cultural heritage survey of the northern part of the airport, including the Grey Box Forest area, were undertaken in 1995. Aboriginal sites and Historic Archaeological sites were recorded during the study. Airport development in these areas will be preceded by further archaeological work and Aboriginal consultation.

Construction Impacts

Contractors are required to assess their activities against potential environmental impact and where required develop and implement controls to either eliminate or significantly reduce their impact upon the environment to the satisfaction of Melbourne Airport and the Airport Environment Officer. The airport operator's consent process covers a range of issues, from building envelopes and architecture to landscaping and the need for development and ongoing operations to be conducted in accordance with the Melbourne Airport Environment Policy.

Construction impacts which are addressed during the planning and documentation phase for projects can arise from:

- Soil erosion;
- Opening and operating borrow and fill areas;
- Generation of dust;
- Increase in heavy vehicle use of airport external and internal access roads; and
- Noise from equipment operation.

All projects are assessed for the need to have a construction Environmental Management Plan (EMP) and/or an operational EMP. Construction EMPs are required to include all relevant aspects and impacts of the project. Melbourne Airport contract tenders are evaluated for their environmental impact before projects are approved. A lifecycle approach to the review of contractor performance is undertaken.

Environment control measures also include grading, topsoiling and grassing for spoil areas, requirements for watering with non-potable water equipment to minimise dust, maintaining access roads clear of debris and hours for equipment operation for projects in areas sensitive to noise. This plan is prepared and submitted by the construction company and outlines the environmental impacts associated with construction of the project, measures in place to manage environmental impacts identified, and implementation of training and monitoring programs necessary for the project. The plan is assessed and approved by Melbourne Airport.

Climate change and Ecological Sustainable Design

By the end of 2009, Australia Pacific Airports (Melbourne) will have identified its carbon footprint and mapped the journey towards zero carbon emissions. Melbourne Airport will continue to undertake initiatives to ensure airport expansion does not increase energy consumption. In the last Environment Strategy period Melbourne Airport developed and implemented an Energy Management Plan to maximise the energy efficiencies within its facilities. To ensure Melbourne Airport maintains energy efficiency Ecological Sustainable Design (ESD) principles are to be adopted to address development projects at Melbourne Airport during the next five years.

Stormwater Quality

Facilities and procedures are in place for stormwater quality monitoring.

The long term effects on stormwater that arise from Melbourne Airport include:

- Increases in surface runoff caused by the creation of large impervious areas such as runways, taxiways, aprons, buildings, roads and car parks; and
- Diversion and concentration of surface and sub-surface flows by the construction of airfield works, buildings and drainage works.

In the project implementation process, detailed design must incorporate appropriate engineering solutions to these long term effects to mitigate potential downstream flooding problems. Water Sensitive Urban Design (WSUD) principles will also be incorporated into the design, where feasible, to treat runoff from runways and taxiways at source.

A drainage study of the southern and south-eastern areas of the airport, where extensive developments are planned during the next 20 years, has been undertaken to provide a drainage strategy (2007) for these areas. This drainage strategy provides for:

- Future construction of three retarding basins;
- Progressive provision, to service developments, of underground trunk drainage in accordance with the drainage plan;
- As required maintenance to unlined drains to control erosion; and
- A program to relocate underground stormwater drains as development progresses.

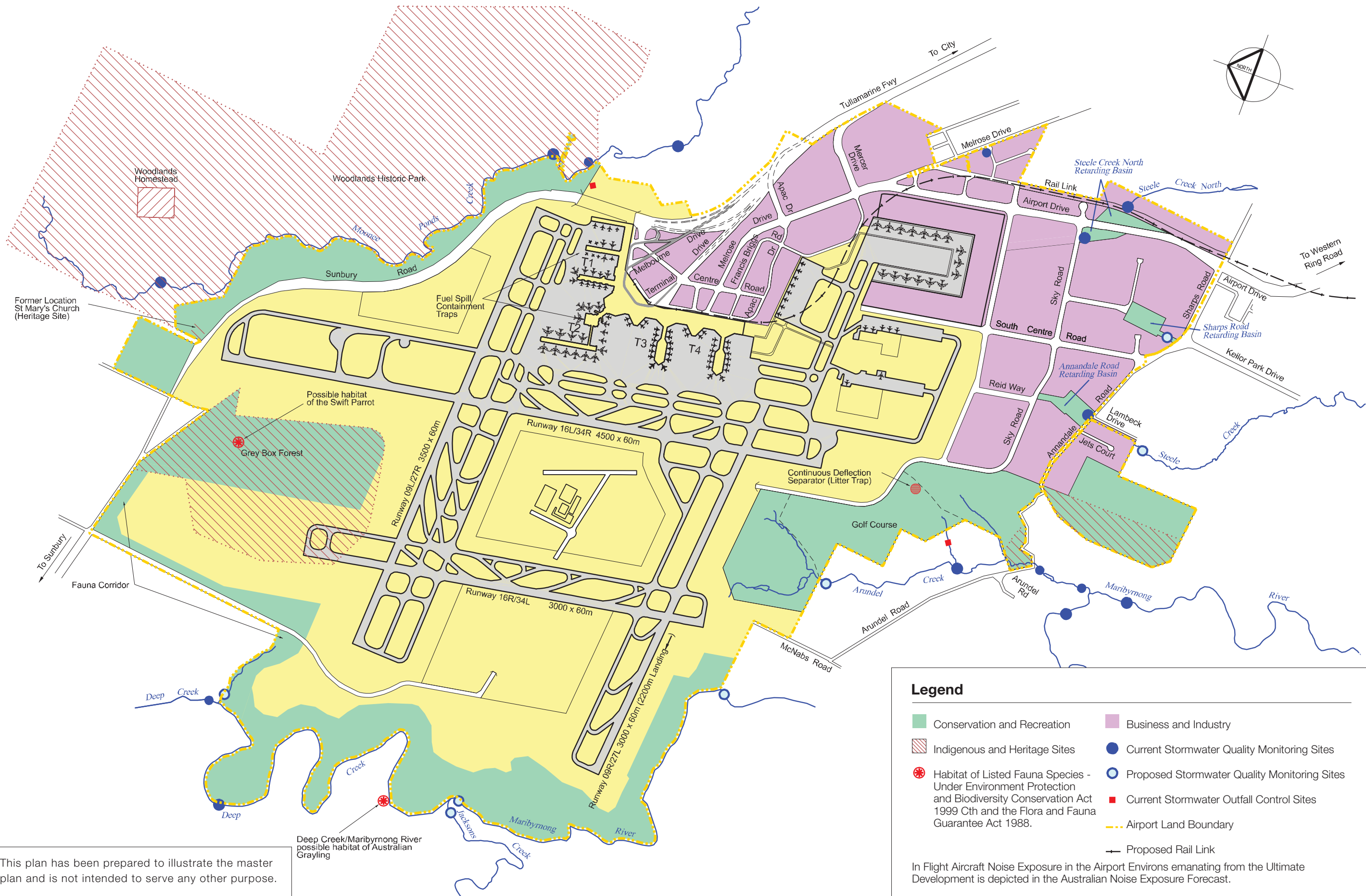
The natural drainage pattern for most of the south eastern and southern areas of the airport directs discharges to Steele Creek. Melbourne Water has placed discharge limits on the three Steele Creek sub-catchment areas to avoid flooding of residential and industrial development downstream. The construction of the retarding basins will be timed to ensure that the discharge limits are not exceeded. The existing three piped outlets for stormwater entry into Arundel Creek are designed to provide for energy dissipation and trapping of pollutants. These outlets are adequate to cope with the increases in stormwater discharge that will arise from an expansion of impervious areas from works to provide incremental capacity increases in aprons, taxiways and buildings within the Arundel Creek catchment on the airport.

The stormwater drainage outflow into Arundel Creek from the construction of a third runway will significantly increase, but the impact of this discharge will not be significant in volumetric terms relative to the annual discharge of the Maribyrnong River. Runway design provisions will provide for pollution and erosion controls on water discharge.

Increase in stormwater discharge to Moonee Ponds Creek and the Deep Creek system from proposed projects will be relatively small and will be provided for by appropriate water sensitive urban design of drainage and outfall.

Construction periods for projects potentially have short term effects on stormwater discharge that will be managed by the Stormwater Management Plan and regular on-site audits by Melbourne Airport and the Airport Environment Officer.

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

Deep Creek/Maribyrnong River possible habitat of Australian Grayling

Legend

- Conservation and Recreation
- Indigenous and Heritage Sites
- Habitat of Listed Fauna Species - Under Environment Protection and Biodiversity Conservation Act 1999 Cth and the Flora and Fauna Guarantee Act 1988.
- Business and Industry
- Current Stormwater Quality Monitoring Sites
- Proposed Stormwater Quality Monitoring Sites
- Current Stormwater Outfall Control Sites
- Airport Land Boundary
- Proposed Rail Link

In Flight Aircraft Noise Exposure in the Airport Environs emanating from the Ultimate Development is depicted in the Australian Noise Exposure Forecast.

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11.0 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 Act makes similar provisions for review and replacement of the Environment Strategy which has been prepared in addition to 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 Section 8.0 based on updated annual forecasts.

The ANEI noise contours are calculated using 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.

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 under the Prescribed Airspace Regulations.

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12.0 References

Airports Act 1996

Australian Standard AS2021-2000 Acoustics
– Aircraft Noise Intrusion – Building Siting
and Construction

Austrroads Guide to Traffic Engineering Practice

International Air Transport Association – Guidelines
for Airport Capacity/Demand Management

International Standard for Environmental
Management Systems ISO14001 (2004)

Melbourne Airport Strategy 1990

Melbourne Airport Land Use Study 1992

Melbourne Airport Master Plan 1998

Melbourne 2030 – Planning for Sustainable Growth

Melbourne Airport Environs Strategy Plan 2003

Melbourne Airport Master Plan 2003

Victorian Planning Provisions