REHBEIN Airport Consulting

LatrobeRegional Airport Board
a new energy in aviation

Latrobe Regional Airport
Master Plan 2015 (Updated 2016)
For Latrobe City Council

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GLOSSARY OF TERMS AND ABBREVIATIONS

ACN (Aircraft Classification Number)	A number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.
ASV	Annual Service Volume
Aerodrome	A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
AFRU (Aerodrome Frequency Response Unit)	The AFRU is an electronic, ground based, aviation safety enhancement device, intended for use on the CTAF or MBZ frequency at non-controlled aerodromes.
AIP ERSA	Airservices Australia Aeronautical Information Package En-Route Supplement Australia
ANEF	Australian Noise Exposure Forecast
ARC (Aerodrome Reference Code)	A code used to specify the standards for individual aerodrome facilities which are suitable for use by aeroplanes within a range of performances and sizes. The code is composed of two elements: the first is a number (from 1 to 4) related to the aeroplane reference field length and the second is a letter (from A to F) related to the aeroplane wingspan and outer main gear wheel span.
ARP	Aerodrome Reference Point
ATC	Air Traffic Control
AWIS	Automatic Weather Information Service
AWS	Automated Weather Station
BoM	Bureau of Meteorology
CAGR	Compound Annual Growth Rate
CASA (Civil Aviation Safety Authority)	The Australian federal government department responsible for setting and maintaining safety standards for civil aviation. CASA is responsible for the codification of international standards and recommended practices into Australian legislation and for the issue of licences for aviation personnel including pilots, amongst other responsibilities.
CASR (Civil Aviation Safety Regulation)	CASRs establish the regulatory framework (*Regulations*) within which all service providers must operate.
Council	Mid-Western Regional Council
CTAF	Common Traffic Advisory Frequency
FAA	Federal Aviation Administration (United States Department of Transportation)
General Aviation (GA)	The sector of the aviation industry that does not include regular public transport (RPT) airlines and military aviation.
GPS	Global Positioning System
IATA	International Air Transport Association

ICAO	International Civil Aviation Organisation
IFR/IMC (Instrument Flight Rules/ Instrument Meteorological Conditions)	Refers to rules under which flight involving navigation requiring reference to radio navigational aids or instruments is carried out. Weather conditions below a certain minima are referred to as instrument meteorological conditions (IMC). IFR flight requires pilots to be qualified in the use of instrument navigation and to use radio navigational aids provided at airports.
INM	Integrated Noise Model
IWI	Illuminated Wind Indicator
LCC	Latrobe City Council
LIRL	Low Intensity Runway Lighting
LPPF	Local Planning Policy Framework
LPS	Latrobe Planning Scheme
LRAB	Latrobe Regional Airport Board
LVAC	Latrobe Valley Aero Club
MOS	Manual of Standards
MTOW	Maximum Take-off Weight
NASF	National Airports Safeguarding Framework
Navaid	Commonly-used abbreviation for 'radio navigational aid'
NDB (Non Directional Beacon)	A simple and common type of radio navigational aid which allows pilots to track to or from its location.
Non-precision instrument approach	An instrument approach and landing that uses lateral guidance but does not use vertical guidance.
OLS	Obstacle Limitation Surfaces
PAL	Pilot Activated Lighting
PANS-OPS	Procedures for Air Navigation Systems – Aircraft Operations
Pavement Classification Number (PCN)	A number expressing the bearing strength of a pavement for unrestricted operations by aircraft with ACN value less than or equal to PCN.
Payload	The total weight of passengers and cargo that an aircraft can carry.
PSI	Unit of pressure or stress (pounds per square inch)
RESA (Runway End Safety Area)	Area provided at the end of a runway strip, to protect the aeroplane in the event of undershooting or overrunning the runway.
RFDS	Royal Flying Doctor Service
RNAV/GNSS Approach	Area Navigation/Global Navigation Satellite System Approach. A form of instrument approach procedure using signals from orbiting satellites to determine an aircraft's precise position at a point in time.
RPT (Regular Public Transport)	Air services operated by airlines that are scheduled to occur on a regular basis at fixed times or frequencies and on fixed routes.

RWS (Runway Strip)	A defined area including the runway and stopway, intended to reduce risk of damage to aircraft running off a runway and to protect aircraft flying over it during take-off or landing operations.
RWY	Runway
TGAR	Traralgon Growth Areas Review
TWSP	Traralgon West Structure Plan
TWY	Taxiway
VFR/VMC (Visual Flight Rules/ Visual Meteorological Conditions)	Refers to rules under which flight involving navigation solely by reference to visual cues (rather than requiring reference to radio navigational aids or instruments) is carried out. VFR flight is permissible only when meteorological conditions (cloud base and visibility) are above defined limits. Such conditions are referred to as visual meteorological conditions (VMC). VFR flight does not require pilots to be qualified in the use of instrument navigation, nor does it require expensive radio navigational aids to be provided at airports.
VPP	Victoria Planning Provisions
VSS	Visual Segment Surface. Forms part of the PANS-OPS surfaces associated with a non-precision instrument approach to a runway and may, in some circumstances, be lower than the OLS
WI	Wind Indicator

EXECUTIVE SUMMARY

Background and Purpose

It is routine to review airport master plans every five years. The Latrobe Regional Airport Master Plan was last reviewed in 2009 and over the last five years significant changes in the economic outlook for the Latrobe Valley have occurred. Latrobe City Council (LCC) therefore engaged REHBEIN Airport Consulting to develop the Latrobe Regional Airport Master Plan 2015 with the objective of providing:

- A visionary, vibrant and achievable Master Plan to guide the development of the Latrobe Regional Airport until 2035; and
- A business strategy which contributes to the sustainable development of the Latrobe Regional Airport and to the creation of employment.

An important purpose of airport master planning is to link and coordinate on- and off-airport planning and future development, to ensure that surrounding land uses remain compatible with the long-term plans for the airport.

Objectives

The Latrobe Regional Airport Master Plan acts as a foundation to underpin all activities and decisions of the Latrobe Regional Airport Board and Latrobe City Council. The overall aim of this review is to revise the current 20-year Master Plan for Latrobe Regional Airport in order to revitalise the airport. The specific goal of the Latrobe Regional Airport Master Plan is to facilitate the appropriate development of the Latrobe Regional Airport and surrounds over the next 20 years, which will in turn, increase levels of employment, output and investment at the Latrobe Regional Airport.

Site Context

Latrobe City is located approximately 150 kilometres east of Melbourne and encompasses the towns of Churchill, Moe-Newborough, Morwell, and Traralgon. The city has a population in excess of 70,000 and is one of Victoria's major regional centres. Latrobe's status as one of the 10 regional cities identified within Victoria's strategic planning policy (and the only eastern regional city) recognises its importance to the continued growth and development of Victoria as a whole.

Most of Victoria's electricity generation facilities are located in the area, which is also the centre of a large forestry industry which services Australia's largest pulp and paper mill.

Latrobe Regional Airport is located approximately midway between the towns of Morwell and Traralgon, some 500 metres north-west of the Princes Highway and the Gippsland Railway. The airport comprises 200 hectares of relatively flat, open land used for a variety of aviation and related uses. The surrounding areas are characterised by a variety of uses including: rural living

development to the east; plantations to the north and west; and the Latrobe Regional Hospital, a motel and caravan park to the south. **Figure A** (at Appendix A) provides a locality plan.

The Latrobe Regional Airport is wholly owned by Latrobe City Council on behalf of the Latrobe City community. The airport operates under the management of the Latrobe Regional Airport Board which comprises representatives from local government, the aviation sector, related firms and the community.

Existing Development

The airport land includes the following land uses, which are illustrated on **Figure B** and **Figure C** (at Appendix A):

- Aerodrome movement area consisting of a main sealed runway 1,430m long by 23m wide, a secondary unsealed runway 919m long by 18m wide, a glider facility, taxiways, sealed and unsealed apron areas;
- Mahindra Aerospace, formerly Gippsland Aeronautics (GippsAero), occupies an area of approximately 2.3 hectares including a fabrication workshop, assembly shop, paint bay, finishing hangar, offices and canteen, together with employee and visitor car parking;
- A hangar precinct incorporating five hangars, including a large facility housing the Latrobe Flying Museum's collection of ex-military aircraft;
- Hangar and administrative facilities owned by the Latrobe Valley Aero Club;
- A precinct incorporating bases for emergency services providers including: Helimed 1, Air Ambulance Victoria's regional base for helicopter aeromedical operations; and the Department of Environment, Land, Water and Planning (DELWP – formerly DEPI) aerial fire-fighting base;
- A private hangar precinct with 34 privately-owned hangar units housing light aircraft;
- Terminal area including the terminal building, roads and car parks and engineering services;
- Support facilities including aircraft fuelling and airport maintenance; and
- Operational facilities including navigational aids and an automated weather station.

The areas to the north of Runway 09/27 and west of Runway 03/21 are largely undeveloped.

Current Activity

Annual aircraft movements are estimated at around 30,000 per year. Around 30% of movements are due to private, sports and recreational users, almost half are devoted to flying training, and the remainder are composed of emergency services, helicopters, charter, business and warbird activity.

The majority of movements are undertaken by single engine aeroplanes, including a substantial proportion of ultralight and microlight categories.

Relevant Planning Background

The Latrobe Planning Scheme, including the Municipal Strategic Statement, provides strategic context and planning controls for the Latrobe Regional Airport and its surrounds. The Latrobe Regional Airport is formally recognised within the *Latrobe City Economic Sustainability Strategy 2011* as one of the City's three key employment zones, which have an emphasis on job creation, industry diversification and the ability to offer opportunities to prospective investors. These zones are of significant interest in terms of future prosperity and growth for the municipality.

Traralgon Growth Areas Review

Traralgon is the largest urban area in the Gippsland region and Latrobe City Council undertook the *Traralgon Growth Areas Review* (TGAR) in response to a number of critical factors which put pressure on the ability of Traralgon and surrounds to accommodate future development. The TGAR was adopted by Council in 2014.

The purpose of the TGAR is to identify all future urban development growth options in and around Traralgon to ensure sufficient land is set aside for long term residential, commercial and industrial requirements as a result of future population, housing, retail and employment demands.

The TGAR acknowledges the importance of Latrobe Regional Airport as a major regional asset with considerable existing investment and recommends that consideration be given to the long term needs and opportunities of the aerodrome in a broader strategic context, including the land requirements for the airport.

One of the key outputs of TGAR is the *Traralgon West Structure Plan* (TWSP) which provides additional detail and direction regarding future land use and planning of the Traralgon-Morwell corridor, within which Latrobe Regional Airport is situated. The TWSP presents a number of opportunities which are relevant to the potential development at Latrobe Regional Airport. To the south of the airport site, the land immediately adjoining the hospital and south of the airport is identified as an 'employment investigation area', to be developed with employment generating uses directly related to Latrobe Regional Airport or the hospital, to support the Regional City of Latrobe. The TWSP identifies that further work in the form of a development plan or master plan is required in relation to this area. As such, this Latrobe Regional Airport Master Plan 2015 should be considered in any land use decisions affecting this area.

Development Constraints

The key constraints on development within the Latrobe Regional Airport site are depicted on **Figure D** (at Appendix A) and include:

- An urban amenity buffer in relation to the Australian Paper Maryvale pulp mill as identified within TGAR. Whilst this buffer is not included in the Latrobe Planning Scheme as an overlay control, it is considered a constraint to further residential development or intensification in the area without the agreement of both Australian Paper and the EPA.

- A Gippsland Water emergency storage facility is located adjacent the northern boundary of the site, on the opposite side of Old Melbourne Road. Gippsland Water has requested that an odour buffer to this facility be recognised. However, there is some ambiguity regarding the interpretation of the application of the buffer as it might apply to the airport, between Gippsland Water and the Latrobe Regional Airport. Nevertheless, if this buffer is to apply it would be contained within the proposed urban amenity buffer associated with the Australian Paper Maryvale pulp mill. Furthermore, Council has resolved through the C87 Planning Scheme Amendment process to not apply the conceptual emergency storage facility odour buffer but new words are to be included in the Latrobe Planning Scheme Municipal Strategic Statement that identifies potential interface issues around the storage facility, where further work is required to be undertaken to justify applying an appropriate odour buffer if needed in the future; and
- A gas pipeline runs adjacent the western and northern boundary of the airport, within the airport fence.

Strategic Direction

The adopted vision for the Latrobe Regional Airport to be reflected in the 2015 Master Plan is:

To promote the development and expansion of the Latrobe Regional Airport as a regionally significant airport providing a hub for aviation services and employment thereby adding economic and social benefit to the region, whilst maintaining options for future passenger transport services.

Future Growth and Business Development Opportunities

Broad trends in the aviation industry which are expected to influence the range of opportunities available for aviation businesses at regional airports such as Latrobe were considered. These opportunities were then refined in light of regional economic context, existing activities and aviation businesses already established at Latrobe Regional Airport and a SWOT assessment undertaken with the Latrobe Regional Airport Board.

In line with LCC's Community Engagement Strategy, consultation was undertaken with a range of stakeholders to identify key issues and opportunities. This consultation targeted key internal and external stakeholders, existing airport tenants and users, landowners in the surrounding area, and other interested organisations to provide early input to the development of the draft Latrobe Regional Airport Master Plan 2015.

Through this process, a refined and prioritised list of possible opportunities for aviation business growth was developed.

Regional Aerospace Manufacturing Hub

The presence of an aircraft development and manufacturing capability offers a number of unique opportunities which could combine to create a regional aerospace manufacturing hub. Such a hub could incorporate a number of related activities consistent with state and local government's stated employment priorities for the

Latrobe Valley region, including: component manufacture; aircraft parts storage/warehousing and supply; advanced materials and manufacturing; and research and development.

Aerospace Education and Training

There are major industry-wide skills shortages across all forms of aircraft engineering. Skills shortages in aircraft maintenance sectors lend themselves naturally to education and training opportunities. Latrobe City is the educational centre for Gippsland, offering some of the finest educational facilities in regional Australia. The opportunities to channel the existing education and training infrastructure towards the aerospace industry's skills gaps are significant.

Aircraft Maintenance

If Latrobe Regional Airport can establish an education and training capability, then clear synergies exist to attract aircraft maintenance, repair and overhaul organisations to the airport. Avionics in particular offers an opportunity due to particularly acute skills shortages and increased reliance on new technologies and roll-out of computer-based systems to airframes.

Emergency Services

There is potential for future expansion of emergency services activities at Latrobe Regional Airport. The established presence of DELWP and Helimed 1, a clear commitment to ensuring these are model facilities for regional areas, and the strategic importance of the airport as a regional emergency services hub for Gippsland, mean that other related service providers could be attracted to the airport in the future. It is important to recognise the importance of the airport and its support to the emergency services in the region and to protect and enhance the emergency precinct at the site.

Private Aircraft Storage Hangars

Uptake of the recently developed private hangar precinct has been strong, with a majority of the existing sites available having been let. Growth in this opportunity is considered to remain solid, leading to demand for expansion of the private hangar precinct

Aviation-related Events

Latrobe City Council has an events-focussed strategy. Previous events including musical performances have been held at the airport and this could be an opportunity for similar activities in the future. Possibilities include: aviation fly-ins for the recreational aviation community, sporting-related activities musical or other cultural events, with the possibility that ambassadors and performers could arrive and depart by air; Displays of an aerobatic, warbird or other aviation heritage nature; Mahindra/GippsAero promotions; and aviation trade events

Helicopters

Given the growth in the helicopter sector generally, and the suitability of the facilities at Latrobe for helicopter training including winch/rappel activity, helimed crew training and confined space assessments, which are undertaken in the adjacent plantation it is expected that there will be opportunities to attract helicopter operators, training and maintenance providers to the airport.

Residential Airpark

The demand for hangar accommodation combined with residence is becoming increasingly popular in Australia and can, in general, be considered an important growth sector. The concept of a residential airpark at Latrobe is one which is not, per se, conducive to business and employment objectives. It is however acknowledged that the ability to offer residential airpark style blocks may assist in attracting aviation businesses to the airport. There are, however, currently insurmountable constraints on residential land use in the northern sector of the

airport. The only alternative area is the southern commercial precinct, which provides the only short-term response to aviation business enquiries, including several immediate opportunities.

In the medium- to long-term, appropriate aviation-related residential uses, which acknowledge and are compatible with the primary objective of employment generation, have the potential to contribute to business development at Latrobe Regional Airport.

Pilot Training

It is considered likely that opportunities will be present for existing flying training providers to expand their business or for additional providers of similar services. However major airline flight training academies would not be expected to establish at Latrobe.

Passenger services

The re-establishment of regular public transport services at Latrobe Regional Airport is considered to be highly unlikely. Excellent road and rail connectivity means these modes compete favourably with air travel to Melbourne. Increasing limitations on regional airline access to Melbourne Airport will make it even more difficult for airlines to re-establish scheduled airline services. Adequate demand for services to other destinations is considered unrealistic, give the relative proximity to the superior range of destinations, airlines and service frequency available from Melbourne. Frequent charter or air taxi services offer an alternative model which, given the factors outlined above, are likely to be more viable than a traditional airline service.

Aircraft Movements

Future aircraft movements will be directly driven by the number and scale of businesses on airport. The Master Plan envisages an expansion from around 15 hectares of active precincts to between 30 and 40 hectares. This would suggest movement levels of between 60,000 and 75,000 per year could occur upon realisation of the Master Plan vision.

Development Concept

The development concept established for Latrobe Regional Airport in this Master Plan seeks to support the principal objective of the airport as one of the Latrobe Valley's key employment hubs and is underpinned by the following principles:

- Focus on providing for opportunities which offer the greatest business and employment potential; and
- Maximise the ability for directly aviation-related development through the provision of airside access wherever possible.

The development concept establishes a land use plan which maximise the potential for a wide variety of potential commercial aviation-related business operations at the airport in response to existing and likely future opportunities The land use plan sets out a vision for the ultimate development of Latrobe Regional Airport, and provides principles and guidance about land use and development on the airport to the Latrobe Regional Airport Board.

The land use plan divides the airport into a series of broad zones, which are further subdivided into smaller precincts providing for specific uses where a logical benefit exists to ensuring these are located in particular physical areas.

Figure E (at Appendix A) provides a Land Use Concept and Development Zone Master Plan, which sets out the extent of the various zones and precincts and provides an indicative layout for development within each area. A degree of flexibility has deliberately been incorporated within these concepts to enable the actual layout of lease lots and infrastructure to be refined in response to specific opportunities as these eventuate.

Modest expansion of aviation business sited within the terminal zone is anticipated, and three further zones on the airport have been identified where activities associated with business and employment opportunities will be prioritised. A park, recreational and events zone is also envisaged.

Due to its location, lack of access or services, it would not make sense to develop the area between the two runways until other development areas have been exhausted. Requirements to establish infrastructure in this area is not envisaged within the 20-year horizon of this Master Plan. However, whilst this area remains undeveloped it would be suitable for a range of activities which might be required by aviation business currently established on the airport and those which Latrobe Regional Airport aspires to attract. The objective of this area within this Master Plan, therefore, is to remain as open area for use by those aviation activities which require it.

Aerodrome Facilities

Aerodrome facilities have been identified to serve the development concept above, driven by the operational and other needs of the aviation businesses and other airport users envisaged through the land use plan.

The current runways are of adequate length and width to serve the current aircraft types and traffic levels, and their orientation is suitable to achieve adequate runway usability with respect to prevailing wind patterns. In order to preserve the future capability for Latrobe Regional Airport to accommodate operations by Code 3 aeroplanes in accordance with the applicable regulatory standards, previous Master Plans have included for a possible Code 3C runway aligned parallel to and north-west of the existing. Future opportunities that might require such a runway to be provided would be primarily related to passenger services (including charters), aircraft manufacturing, and the maintenance, repair and overhaul (MRO) sector. This Master Plan identifies two possible location options for a future runway. For the purpose of maximising future flexibility, planning which safeguards both options is required.

Airport Safeguarding

Adequate protection of the basic capability to undertake aircraft operations in accordance with prescribed safety standards and regulatory requirements, and in an efficient and economic manner, is imperative to the future realisation of aeronautical opportunities at Latrobe Regional Airport. These aeronautical operations provide the essence of the airport's activity and hence the catalyst for all employment and business activity envisaged by this Master Plan. Without adequate safeguarding, the vision established by the 2015 Latrobe Regional Airport Master Plan will not be achieved.

It is vitally important to protect Latrobe Regional Airport from encroachment from incompatible urban expansion and ensure continued operations whilst protecting the amenity of surrounding properties. In order to adequately protect for potential future aircraft operations envisaged by this Master Plan, safeguarding of a number of aspects will be required through appropriate planning and development restrictions and monitoring processes. In order to be most effective, these restrictions will be referenced within the Latrobe Planning Scheme.

1.0 INTRODUCTION

1.1 BACKGROUND

The Latrobe Regional Airport Master Plan was last reviewed in 2009. The 2009 Master Plan evolved from the plan originally prepared in 1998, and subsequently revised in 2004, building on the original Master Plan's strengths and addressing some of its weaknesses.

In keeping with good practice it is routine to conduct a review of an Airport Master Plan every five years and this period has now elapsed since the 2009 Master Plan was adopted. In addition, over the last five years significant changes in the economic outlook for the Latrobe Valley have occurred as a result of changing attitudes and policies regarding carbon emissions. These global, national and state contexts have obvious potential to impact on the traditional coal and power generation sectors in which the region has been especially strong.

The purpose of this study is therefore to undertake a comprehensive review of the Latrobe Regional Airport Master Plan 2009 to develop a visionary, vibrant and achievable Master Plan to guide the development of the Latrobe Regional Airport until 2035, and provide a business strategy which contributes to the sustainable development of the Latrobe Regional Airport and to the creation of employment.

Latrobe City Council (LCC) engaged REHBEIN Airport Consulting to develop the Latrobe Regional Airport Master Plan 2015 to achieve this strategic planning goal.

1.2 PURPOSE

Airport master planning is undertaken to enable best-management practices and sound land use development in addressing diverse aviation and community interests. An Airport Master Plan is the primary strategic tool available to airport owners and operators, and communicates the operator's intentions with respect to development of the airport – to existing users, potential businesses, stakeholders and the general public.

Its purpose is to set out a long-term framework for the development of all facilities within the airport that provides adequately for short- and long-term opportunities and which protects future development against the effect of current decisions. Local government, industry and the community are informed of these intentions through the Master Plan, enabling compliant and compatible land-use planning and maximisation of any synergies across the local economy.

Master plans are not only developed to strategically guide the development of aeronautical-related aspects of the airport but also used to identify non-aeronautical opportunities for development. Airports are not merely pieces of infrastructure but businesses in their own right. Appropriate consideration and integration of aeronautical, aviation-support, aviation-related and compatible non-aviation land uses is key to guiding the successful development of a modern airport.

Consistent with these strategic considerations, the *Airports Act 1996* summarises the aims of an Airport Master Plan as follows:

- Establishing strategic direction for the efficient and economic development of the airport over the planning period;
- Providing for the development of additional uses of the airport site;
- Indicating to the public the intended uses of the airport site; and
- Reducing potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport.

Although the *Airports Act 1996* does not have statutory application to Latrobe Regional Airport, it is an appropriate industry benchmark for airport master planning and these four key aims remain relevant.

The specific purpose of the Latrobe Regional Airport Master Plan is to facilitate the appropriate development of the Latrobe Regional Airport and surrounds over the next 20 years, which will in turn, increase levels of employment, output and investment at the Latrobe Regional Airport.

1.3 PLANNING OBJECTIVES

The Latrobe Regional Airport Master Plan acts as a foundation to underpin all activities and decisions of the Latrobe Regional Airport Board and Latrobe City Council. The overall aim of this review is to revise the current 20-year Master Plan for Latrobe Regional Airport in order to revitalise the airport. The principal objectives for the Latrobe Regional Airport Master Plan 2015 are that it should:

- Set the vision for the Latrobe Regional Airport to 2035, and beyond, including the key market opportunities that should be pursued to achieve the vision;
- Clarify the positioning work that needs to be undertaken in order for the Latrobe Regional Airport to achieve its vision including processes and timing that need to occur;
- Link into the strategic context of Latrobe City Council and its objective of the Latrobe Regional Airport as a key employment zone.

At a more detailed level, the objectives of the review include a desire to:

- Review and revise the existing Latrobe Regional Airport Master Plan 2009 as identified within the Latrobe Planning Scheme's Local Planning Policy Framework (LPPF);
- Review the current vision statement and develop a revised Master Plan for the sustainable development of the airport and its environs that will guide future growth of associated industries and business at the Latrobe Regional Airport over the period;
- Assess the success of the current business model under which the Latrobe Regional Board operates;

- Identify future growth and business development opportunities at the Latrobe Regional Airport, highlighting community benefits and opportunities while providing direction for diversity in business and industry at the Latrobe Regional Airport;
- Identify marketing opportunities that will attract aviation businesses and achieve a critical mass that will ensure the continued development of a recognised aviation/aerospace hub at the Latrobe Regional Airport;
- Review the land tenure model (leasehold, premium leasehold, freehold) to ensure it remains relevant;
- Review existing land use planning and development controls applicable to the Latrobe Regional Airport and its environs and identify any necessary amendments to the Latrobe Planning Scheme where required to support the objectives of the revised Master Plan;
- Review existing and future Obstacle Limitation Surfaces (OLS) areas together with Procedures for Air Navigation Systems – Aircraft Operations (PANS-OPS) surfaces and the Australian Noise Exposure Forecast (ANEF) mapping applicable to the Latrobe Regional Airport and verify their incorporation within the appropriate provisions of the Latrobe Planning Scheme;
- Prepare Development Guidelines for the Latrobe Regional Airport to ensure an attractive and sustainable built form of new development. The Development Guidelines will facilitate the ongoing useability, functionality and viability of the development precincts over the next 20 years;
- Consider future demand for Airport services in the context of projected demographic and economic changes in the region;
- Review relevant Commonwealth, State and Local government policy, and other relevant studies and strategies likely to be of significance to the future planning and development of the Latrobe Regional Airport; and
- Ensure that Latrobe Regional Airport Board, Latrobe City Council, key stakeholders and the community are fully engaged in the review and development of the Master Plan.

1.4 MASTER PLAN STRUCTURE

This 2015 Latrobe Regional Airport Master Plan is structured in three broad segments.

- **Sections 2 and 3** provide analysis of the existing site and planning context against which the Master Plan has been developed;
- **Sections 4 and 5** establish the strategic vision for Latrobe Regional Airport through an analysis of key business development opportunities and a development concept for land use;
- **Sections 6 and 7** are focussed on implementing the vision. Section 6 outlines a business development and marketing strategy with key steps required to ensure the future growth and vibrancy of businesses at Latrobe Regional Airport, whilst Section 7 identifies

important airport safeguarding requirements in accordance with nationally accepted principles for inclusion within the Latrobe Planning Scheme to ensure future development opportunities are adequately protected far into the future.

Figures illustrating various aspects of the Master Plan are incorporated at **Appendix A**. Appendices B through D provide other supporting information as referenced throughout this document.

2.0 EXISTING SITE ANALYSIS

2.1 SITE CONTEXT

2.1.1 LATROBE CITY

Latrobe City is located approximately 150 km east of Melbourne and is one of Victoria's major regional centres. It covers an area of 1,426 square kilometres and, at the 2011 Census, had a population of 72,395. The region is made up of four central towns: Churchill, Moe-Newborough, Morwell, and Traralgon.

Most of Victoria's electricity generation facilities are located in the Latrobe Valley and the region has Australia's largest reserves of brown coal. Power generation resources and facilities dominate the landscape of large areas of the valley. To the immediate southwest of Traralgon is the Loy Yang Power Complex and open cut coal mine. Large areas of rural land to the south of Traralgon have been set aside as long term future coal reserves.

Latrobe City is also the centre of a large forestry industry which services Australian Paper's Maryvale pulp and paper mill (the largest in Australia) and other sawmills. Other industries in the area include food processing (Lion, Morwell), engineering, post-secondary education with the new Federation University Australia and the service sector. Being the largest population centre in the Gippsland region, Latrobe City acts as the regional headquarters for Government agencies and private operators.

Latrobe City is one of 10 regional cities identified within Victoria's strategic planning and the only eastern regional city. Latrobe's status as a regional city recognises its importance to the continued growth and development of Victoria as a whole. Latrobe's location means that the catchment for service provision extends outside the Latrobe City Council administrative boundaries and encompasses Sale and Bairnsdale to the east, Leongatha and Mirboo to the south. Realisation of the regional city objectives will continue to place development pressure on available land within Latrobe for employment and residential uses.

2.1.2 LATROBE REGIONAL AIRPORT

Latrobe Regional Airport is located in a predominantly rural and farming area approximately midway between the towns of Morwell and Traralgon. The site is located some 500m north-west of the Princes Highway and the Gippsland Railway, which provide direct links to Melbourne and the region. A locality plan for Latrobe Regional Airport is shown in **Figure A**.

The site was originally chosen as the location for the airport as it was a large parcel of land and the proposed use was compatible with the surrounding uses at the time. It was also central to key transport routes and could make use of prevailing winds for runway positioning. The airport comprises 200 hectares of relatively flat, open land used for a variety of aviation and related uses.

The Latrobe Regional Airport is wholly owned by Latrobe City Council on behalf of the Latrobe City community. The airport operates under the management of the Latrobe Regional Airport Board which comprises representatives from local government, the aviation sector, related firms and the community.

The importance to Latrobe City Council of the Latrobe Regional Airport is formalised in the *Latrobe City Economic Sustainability Strategy 2011*. The Latrobe Regional Airport is recognised as one of the City's three key employment zones which are of significant interest in terms of future prosperity and growth for the municipality. These three employment zones have an emphasis on job creation, industry diversification and the ability to offer opportunities to prospective investors.

The existing operations and services at Latrobe Regional Airport are divided into seven precincts:

- Main Apron and Terminal area;
- North East Commercial area;
- Central Hangar Precinct
- GippsAero / Mahindra Aerospace facilities;
- Emergency Services Precinct;
- Southern Commercial Area; and
- Northern and western development areas

Figure B at Appendix A provides a layout of existing airport facilities. The airport land includes the following land uses:

- Movement area consisting of a main sealed runway, a secondary unsealed runway, a glider strip, taxiways, RPT Apron and a Southern Apron.
- Hangars including Latrobe Valley AeroClub hangars, GippsAero / Mahindra Aerospace aircraft manufacturing precinct, a former glider facility and private hangars.
- Terminal area including the terminal building, roads and car parks and engineering services.
- Support facilities including aircraft fuelling, aircraft maintenance, airport maintenance and the Latrobe Valley Aero Club.
- Operational facilities including navigational aids and an automated weather station.

The above uses and existing infrastructure at the site are described in greater detail in **Section 2.2**.

The topography of Latrobe Regional Airport land and the surrounding area is relatively flat, with the exception of rising ground to the north east. The vegetation at the site has been somewhat disturbed during the development of the airport. However, vegetation is present, particularly around the terminal.

2.1.3 SURROUNDING DEVELOPMENT

The surrounding areas are characterised by a variety of uses including: rural living development to the east; plantations to the north and west; and the Latrobe Regional Hospital, a motel and caravan parks to the south. Surrounding land uses are described in further detail in **Section 3.1**.

Development pressures are also a concern with continual pressure on residential development in the area historically leading to the potential for incompatible land uses in close proximity to airport operations. The main concern with the potential development of these areas is the appropriate location of new sensitive uses and ensuring compatibility between long-term airport operational needs and surrounding land uses. These issues are discussed further in **Section 3.0**.

2.2 EXISTING AERODROME INFRASTRUCTURE

2.2.1 RUNWAYS

There are currently two operational runways at Latrobe Regional Airport:

- The primary runway, Runway 03/21, is 1,430m long by 23m wide and located within a 90m wide and 1,550m long graded runway strip. Runway 03/21 has recently been resurfaced with asphalt. The published pavement strength rating allows for unrestricted operations by aircraft up to 5,700kg MTOW and 450kPa (65psi) tyre pressure;
- A secondary runway, Runway 09/27, is 919m long by 18m wide within a 90m wide and 1,039m long graded runway strip. The runway has a gravel surface, with sealed sections at each end.

Runway 03/21

Runway 03/21 currently meets the requirements of CASA MOS Part 139 for non-precision instrument operations by aeroplanes up to reference code 2B. It is provided with low intensity runway edge lights and has published RNAV(GNSS) instrument approach procedures to both ends.

The present length and width of the main runway were adopted in the 1990s to cater for the Saab 340B aircraft previously operated by Hazelton Airlines. Although this is a reference code 3C aircraft, by virtue of its outer main gear wheel span, the Civil Aviation Safety Authority (CASA) agreed at that time to its use of 23 metre wide runways in lieu of the normal 30 metre standard for this class.

Because of the limited strength sub base and condition of the original runway pavement, aircraft over 5,700 kg are required to operate subject to a pavement concession. The surface is generally in good condition although the runway has a very flat cross fall which retards runoff and allows water to soak into and weaken the underlying base course and subgrade. Runway shape correction and drainage works have been undertaken in the past to address this problem. The runway was resurfaced with stone mastic asphalt in early 2015.

The runway strip width is presently 90 metres which is adequate for a Code 2 runway served by non-precision GPS instrument approach procedures.

Runway 09/27

This runway was designed for reference code 1B aircraft operating at maximum take-off weight and currently meets the requirements of CASA MOS Part 139 for non-instrument operations by aeroplanes up to reference code 1B. The runway is not equipped with lighting.

Glider strip

A grassed strip formerly used for gliding is aligned parallel with, and to the west of, the main runway. The strip is used for advanced pilot training by the Aero Club and by the Helimed Service provider for pilot recurrent and emergency service crew training (rappelling and winching, etc). As such it is a useful resource and continues to be maintained.

2.2.2 TAXIWAYS

Four (4) main taxiways provide access to the various runways and aircraft parking areas. These are indicated on **Figure B** and **Figure C** and have been designated as Taxiways A, B, C and D for the purposes of the Master Plan.

Taxiway A

Taxiway A runs parallel to Runway 03/21 for its original length and provides access for all existing users to Runway 03/21. Two stub taxiways (A1 and A2) provide connections to the runway.

Following recent upgrade works, Taxiway A is generally suitable for Code B aeroplanes in accordance with CASA MOS Part 139, with a weight restriction of 4,000kg. The section between Taxiway A2 and the Mahindra Aerospace precinct has recently been provided with an asphalt surface. From Mahindra Aerospace north-east to the Runway 21 threshold the taxiway has a concrete surface.

Taxiway A allows aircraft access to and from the runway with reduced backtracking on the runway itself, and so minimises delays to other aircraft. It also helps to overcome the sight distance deficiencies which exist on Runway 03/21. The southern portion of this taxiway also serves the private hangar precinct, the aviation turbine (AVTUR) refuelling installation, the Helimed apron and Mahindra Aerospace.

Taxiway B

Taxiway B links the RPT apron with Runway 03/21. Taxiway B is sealed and suitable for Code C aeroplanes although weight limited to 5,700kg without a pavement concession.

Taxiway C

A gravel taxiway provides a link from Runway 09/27 to Runway 03/21 and thence to the main apron area via Taxiway B.

Taxiway D

Taxiway D runs parallel to the eastern half Runway 09/27 and provides access to the 09 threshold from Taxiway C. This taxiway is suitable for Code A aeroplanes and has a gravel surface.

Link Taxiway

A short, sealed, taxiway links the 21 and 27 thresholds.

2.2.3 AIRCRAFT PARKING AREAS

Terminal apron

The terminal apron is very limited in size and at times becomes very congested. Parking is available for one aircraft up to SAAB 340 size on a self-manoeuvring position immediately in front of the terminal.

Taxi-through tie-down parking areas for up to nine Code A general aviation aircraft are also provided to the north.

Large Helicopter pad

A concrete pad for parking and servicing large firebombing helicopters during the bushfire season is provided between Taxiway A and Runway 03/21. Permanent drainage is provided and temporary amenities for use by helicopter crew are supplied when the helicopter is in operation.

2.2.4 HANGAR PRECINCTS

There are a number of existing hangar facilities at Latrobe Regional Airport. These have been divided into several precincts as shown in **Figure C** and the locations of individual facilities are identified on **Figure D**.

North-east commercial area

A hangar precinct to the north east of the terminal incorporates five (5) hangars, including a large facility housing the Latrobe Flying Museum's collection of ex-military aircraft. Two other hangars are owned by the museum. A fourth is home to Latrobe Valley Airframes and Welding. Space within the fifth hangar is rented out to individual aircraft owners by its owner, a private individual.

Access to this precinct is off Taxiway A to the north east of the main apron. The area between the hangars meets Code B aircraft taxilane minimum dimensions.

Central hangar precinct

A central hangar precinct immediately southwest of the terminal contains a number of hangars. These include:

- A conventional hangar owned by LVAC and divided in half. One half houses LVAC and private aircraft and the other half accommodates East Coast Aviation, an aircraft maintenance organisation, as a tenant to LVAC. East Coast Aviation intends to expand its lease to encompass the whole of this hangar and is also in discussion about constructing an adjoining structure to the western elevation adjacent to Taxiway A.

- A series of 10 hangar units, also owned by LVAC, each capable of housing one average sized light aircraft; and
- 24 other individual privately-owned hangars housing light aircraft (also referred to as the Private Hangar Precinct).

A few private hangar sites remain and LCC plans to expand the private hangars further to the southeast, towards Airfield Road.

GippsAero / Mahindra Aerospace facilities

Mahindra Aerospace, formerly Gippsland Aeronautics (GippsAero), occupies an area of approximately 2.3 hectares located to the southwest of the central hangar precinct. Facilities in this area include a reception and offices, fabrication workshop, canteen, assembly shop, paint bay and finishing hangar together with employee and visitor car parking. More information on Mahindra Aerospace is provided in **Section 4.4.2**

Emergency services precinct

South west of Mahindra Aerospace is a precinct incorporating bases for emergency services providers. Included here are:

- Helimed 1, Air Ambulance Victoria's regional base for helicopter aeromedical operations, which includes a helipad, hangar, offices and crew facilities; and
- The Department of Environment, Land, Water and Planning (DELWP – formerly DEPI) aerial fire-fighting base. DELWP has recently expanded its lease area to accommodate additional aircraft based at Latrobe during the bushfire season.

Southern commercial area

Two (2) hangars have been constructed so far in the Southern precinct which is directly south of the DELWP fire base. These are occupied by Osprey Aviation Services and Jelfor Pty Ltd. Access to the Southern precinct is via Taxiway A.

Northern and Western development areas

The areas to the north of Runway 09/27 and west of Runway 03/21 are largely undeveloped. A private residence and hangar facility occupied by Aerial Extras is located within the northern area. Much of the land within these areas is currently leased for grazing, which provides LCC with income.

2.2.5 REFUELLING FACILITIES

AvGas

An aviation gasoline (AvGas) facility, which has a 9,000 litre capacity is located adjacent to the terminal apron near the Latrobe Valley Aero Club facilities. The area around the installation also serves the East Coast Aviation workshop and is the main entrance to the apron area for the fuel tanker and service vehicles.

Jet A-1

An AVTUR (Jet A-1) refuelling facility, which has a 30,000 litre capacity, is located adjacent to the Mahindra Aerospace hangar. Jet A-1 is also dispensed by a mobile tanker.

2.2.6 NAVIGATION AIDS

There is a non-directional beacon (NDB) navigation aid in the northern corner of the airport site. The NDB has recently been relocated from the south-east of the GippsAero/Mahindra facilities in order to facilitate additional development in this area.

The NDB is listed on the Airservices Australia Back-up Navigation Network (BNN) as one of a series of national ground-based navigation aids that will be retained beyond 2016 in order to supplement the primary satellite-based en-route navigation system.

The airport has published instrument approach procedures to Runway 03 (with a minimum altitude of 850 feet) and Runway 21 (with a minimum altitude of 750 feet).

2.2.7 LANDSIDE DEVELOPMENT

A number of landside facilities exist and these are located in proximity to the terminal. These include:

- A terminal, originally used for RPT operations but which now sees only limited use for charter operations in terms of passenger facilitation. The terminal also houses the LCC airport management functions;
- The Latrobe Valley Aero Club facilities adjoining the terminal;
- A central, sealed and lit public car park with space for 40 vehicles.;
- A LCC residence andmaintenance compound which provides direct access to airside via the north east commercial area.
- The Australian Air Force cadets 426 squadron facilities; and
- Training and other facilities for the State Emergency Services (SES) and Country Fire Authority (CFA), which are vital locations for the provision of emergency responses to the community.

2.2.8 ACCESS

There are three main access points to the airport located along Airfield Road and an access point to the northern part of the site, which currently leads to a dwelling and hangar. These access ways are considered to be appropriate for the efficient use of the airport and currently cause no traffic concerns. Access to the Village Avenue Commercial Precinct is via each individual lot.

The airport has an internal road network which provides access to each of the existing buildings.

A new road and vegetated buffer along the southern boundary of the site adjacent to the Village Caravan Park was proposed in the 2009 Master Plan, to provide appropriate separation from the proposed uses along this boundary. This is now designated as a conservation area.

2.2.9 VEGETATION

Open spaces exists in the form of a reserve along Airfield Road (where remnant vegetation exists). The 2009 Master Plan recommended this area should be retained as open space for recreational purposes.

2.3 CURRENT ACTIVITY

2.3.1 AIRPORT USERS

Latrobe Regional Airport currently services a region with a population of over 70,000 people. This catchment extends beyond the Latrobe City local government area and includes users from parts of Baw Baw Shire.

There are a number of existing tenants at the site which make use of its facilities. Current Latrobe Regional Airport tenants are indicated on **Figure C**. Aviation businesses operated by these tenants are described in **Section 4.4.2**.

2.3.2 AIRCRAFT MOVEMENTS

The Latrobe Regional Airport Master Plan 2009 does not make any analysis of existing aircraft movements, nor propose any forecasts of these into the future, against which to compare existing activity levels. This is perhaps because Latrobe City Council does not actively monitor aircraft movements for the purpose of aeronautical charging. The lack of historical records makes it difficult to establish the existing situation with respect to aircraft activity.

However, LCC recorded movements for a four-month period between November 2009 and February 2010. Annualising the results of this provides an estimated 29,970 movements per year. There is little reason to expect that movement levels have changed significantly since that time and airport management confirms that historically annual aircraft movements have remained relatively constant at between 25,000 and 30,000 per year.

Based on an assessment of the recorded aircraft movements, the approximate split between various categories of aircraft operation is shown in **Figure 1**. Operations are reasonably well distributed across a variety of purposes, with around 30% due to private, sports and recreational users, almost half devoted to flying training and the remainder composed of emergency services, helicopters (of which the majority are operated by the emergency services), charter, business and warbird activity from the Latrobe Flying Museum. It expected that aircraft manufacturing and maintenance operations have increased slightly in line with recent increases in production rates at Mahindra Aerospace, however other categories are considered to remain representative of the current situation.

An estimation of the respective proportions of various aircraft types is given in **Figure 2**. The majority of movements are undertaken by single engine aeroplanes, including a substantial proportion of ultralight and microlight categories which are consistent with sports and recreational flying activities.

Figure 1: Estimated Existing Aircraft Movements by Industry Sector

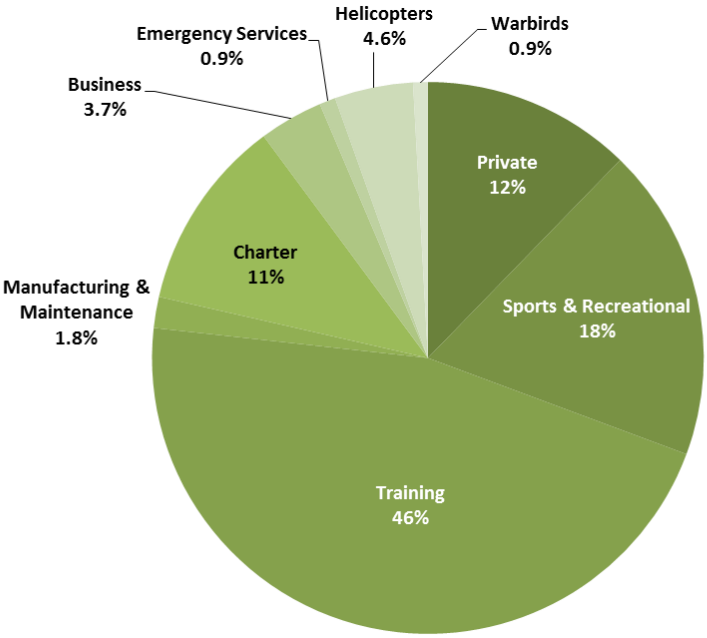
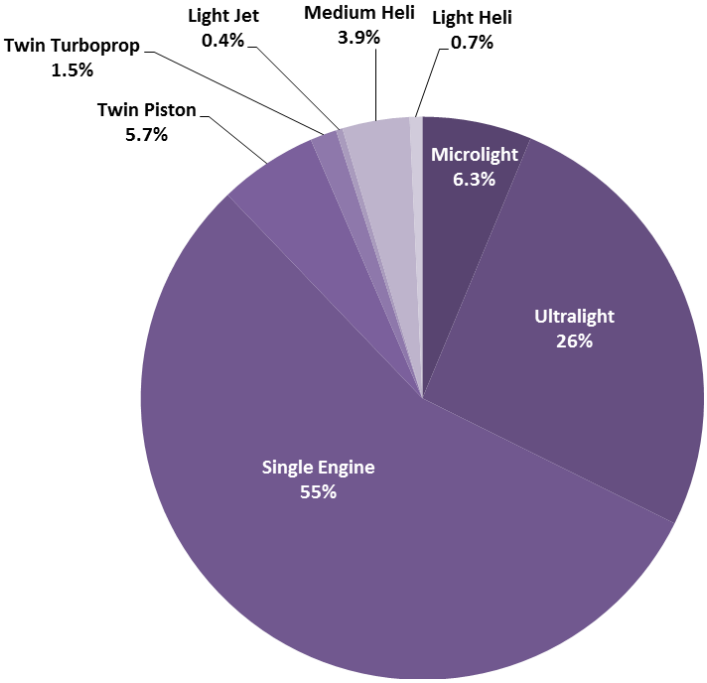


Figure 2: Estimated Existing Aircraft Movements by Aircraft Type



3.0 PLANNING CONTEXT

This section provides context to the 2015 Latrobe Regional Airport Master Plan in terms of surrounding land uses, relevant strategic planning background documentation and key development constraints.

3.1 SURROUNDING LAND USES

Historically, the land between Traralgon and Morwell had primarily been set aside as a non-urban area. However, recent planning undertaken by LCC anticipates a more diverse range of land uses in this corridor to complement the existing industrial and residential land uses. This section of the report identifies the existing surrounding land uses in the area.

3.1.1 RURAL RESIDENTIAL AND FARMING

The land to the east of the site is dedicated to farming and rural living purposes or is vacant. Rural residential properties generally contain a single dwelling and sheds or other structures related to rural living. Land to the west is used primarily for farming purposes and similar development pressures exist. The importance of this Master Plan is increased with the need to control urban encroachment.

3.1.2 PLANTATIONS

There are plantations located to the north and west of the subject site. The plantations present issues regarding fire management and should be considered in light of risks to any future development at, or near to, the site. The development guidelines for the northern part of the site should reflect fire risks.

3.1.3 PAPER MILL

Australian Paper's Maryvale paper mill is located approximately 4 kilometres to the north-west of the Latrobe Regional Airport. According to the Environmental Protection Authority, paper mills have a buffer distance of 5 kilometres for sensitive uses to protect them from adverse amenity impacts such as noise, dust and smells. Currently, noise and pollutant modelling is more frequently used in the assessment of the appropriate distance for development from paper mills. The EPA's main concern is that residential subdivisions do not encroach any further into the buffer 'zone'. The applicable buffer and constraints are described under **Section 3.3.1**.

3.1.4 LATROBE REGIONAL HOSPITAL

Latrobe Regional Hospital is located to the south of the airport. It is understood that the hospital has future plans for expansion, including possible multi-level buildings.

A Planning Scheme Amendment (C64) in December 2009 introduced planning controls for the protection of emergency medical service helicopter flight paths for the Hospital helipad. The amendment constrains development in an area at the airport to the north of the Village caravan

park. However, the extent of constraint over and above the Latrobe Regional Airport OLS in this area of the site is minimal.

Development in the southern parts of the airport site is overlain by height constraints, however in practical terms there are not likely to be restrictive in terms of the type of hangar development which might be expected at the airport.

3.1.5 TOURISM

A motel and three caravan parks are located within the vicinity of the site. The caravan parks cater to both permanent and temporary residents. This accommodation is often used by families of hospital patients.

3.1.6 LOCAL BUSINESS

There are several local businesses in the area surrounding the Latrobe Regional Airport. A nursery and local caravan sales yard are located to the south-east of the site. These businesses are well established in their location and are considered to be compatible with the current and future use of the Latrobe Regional Airport.

3.1.7 PRINCES HIGHWAY & GIPPSLAND RAILWAY

The Princes Highway runs approximately 500m to the south of the airport, providing freeway standard road access to Melbourne. In the future, the proposed Traralgon bypass will deviate from the current highway alignment heading west.

The Gippsland railway, linking Traralgon and Morwell to Melbourne and Bairnsdale runs south of and adjacent to the Princes Highway.

3.2 RELEVANT PLANNING BACKGROUND

3.2.1 LATROBE PLANNING SCHEME

The Latrobe Planning Scheme, including the Municipal Strategic Statement, provides strategic context and planning controls for the Latrobe Regional Airport and its surrounds.

Latrobe Regional Airport Interim Land Use and Development Controls were put in place prior to the 2009 Master Plan, being originally introduced through planning scheme amendment C49 in April 2008. The controls applied to all land currently located within the flight circuit paths of the operational runways at Latrobe Regional Airport and served to ensure that a planning permit is triggered by any sensitive proposed developments in the vicinity of the airport. These interim controls were subsequently extended through further planning scheme amendments.

Recommendations were made in the 2009 Master Plan relating to how the Latrobe Planning Scheme can better assist to encourage the development and expansion of the airport whilst maintaining options for future operations. The 2009 Master Plan and its recommendations were intended to assist to ensure that an appropriate planning framework with strategic justification is put in place.

The Latrobe Planning Scheme currently contains the following provisions in relation to the Latrobe Regional Airport.

State Planning Policy Framework

The State Planning Policy Framework (SPPF) seeks to ensure that the objectives of planning in Victoria are fostered through appropriate land use and development in the interests of net community benefit and sustainable development.

Clause 11.05-1 of the Latrobe Planning Scheme determines Latrobe's Regional City status under the State Planning Policy Framework.

From an economic development perspective, the SPPF under Section 17 of the Latrobe Planning Scheme, identifies that:

- Planning is to provide for a strong and innovative economy, where all sectors of the economy are critical to economic prosperity; and
- Planning is to contribute to the economic well-being of communities and the State as a whole by supporting and fostering economic growth and development by providing land, facilitating decisions, and resolving land use conflicts, so that each district may build on its strengths and achieve its economic potential.

Clause 18.04-2 Planning for airports sets out an objective to strengthen the role of Victoria's airports within the State's economic and transport infrastructure and protect their ongoing operation. Strategies to achieve this include:

- Protect 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; and
- 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.

Under clause 18.04-3 Planning for airfields, the Latrobe Planning Scheme stipulates that planning for areas around all airfields will be such that:

- Any new use or development which could prejudice the safety or efficiency of an airfield is precluded;
- The detrimental effects of aircraft operations (such as noise) is taken into account in regulating and restricting the use and development of affected land; and
- Any new use or development which could prejudice future extensions to an existing airfield or aeronautical operations in accordance with an approved strategy or master plan for that airfield is precluded.

Municipal Strategic Statement

The Latrobe Planning Scheme Municipal Strategic Statement links the elements of the Latrobe City 'Integrated Planning Framework', which consists of the following:

- **Latrobe 2021** provides the broad future directions for Latrobe. It is Council's most important strategic document which contains directions, objectives and indicators by which Council will monitor progress for the community as a whole;
- **Latrobe City Council Plan** which contains four-year strategies, indicators and a strategic resource plan that contributes to achieving the key objectives of the Latrobe 2021 Vision; and
- **Latrobe City Council Annual Business Plan and Budget** which identifies the allocation of resources to Latrobe City Council's services and projects, to be delivered over the financial year.

The Municipal Strategic Statement provides the objectives and strategies for land use planning in the municipality focussing on 'sustainability' and 'liveability'. It confirms the contribution of the Latrobe Regional Airport as follows:

> *Latrobe Regional Airport is integral to the region's transport network and provides a range of employment and recreation opportunities. Well equipped and of a high standard, it ranks as one of the best regional airports in Australia. The airport's supply of serviced industrial land is currently being expanded to facilitate enhanced aeronautical development.*

When preparing amendments to this scheme and before making decisions about permit applications, planning and responsible authorities must take the Municipal Strategic Statement into account.

Design and Development Overlay

Schedules 7 and 8 to the Design and Development Overlay (DDO7 and DDO8) were introduced under planning scheme amendment C26 in June 2012. DDO7 and DDO8 cover areas in the immediate vicinity of the runways at Latrobe Regional Airport and restrict the heights of buildings which do not require a permit.

DDO7 restricts buildings to a height of 55m AHD and DDO8 restricts buildings to a height of 65m AHD. These heights equate to approximately 0m and 10m above the aerodrome reference elevation[1].

[1] The aerodrome reference elevation at Latrobe Regional Airport is approximately the same as the highest runway threshold elevation. However, this is also around 7m higher than the lowest runway threshold. As the obstacle limitation surfaces defined in CASA MOS Part 139 are defined for each runway based on the runway threshold elevation, this means that, the building height limits in DDO7 and DDO8 may not be sufficient to prevent intrusion of all applicable obstacle limitation surfaces.

Airport Environs Overlay

Under the Victorian Planning Provisions (VPP) the purpose of the Airport Environs Overlay (AEO) is to identify areas which are or will be subject to high levels of aircraft noise, including areas where the use of land for uses sensitive to aircraft noise will need to be restricted.

The AEO within the Latrobe Planning Scheme is currently based on the 20 ANEF contour determined through the development of an Australian Noise Exposure Forecast (ANEF) which was prepared in 1998.

Any new building within the extent of the AEO must be constructed so as to comply with any noise attenuation measures required by Section 3 of Australian Standard AS 2021-2000, Acoustics - Aircraft Noise Intrusion - Building Siting and Construction, issued by Standards Australia International Ltd.

Schedule 2 to the AEO identifies uses for which an application must be referred to the airport owner.

Other relevant provisions

Other provisions of the Latrobe Planning Scheme which have particular relevance to Latrobe Regional Airport are:

- Planning scheme amendment C15 introduced the Public Acquisition Overlay to facilitate the expansion of the Latrobe Regional Airport, rezoned airport land so that development and land use is in accordance with a Special Use Zone and introduced a local policy relating to the airport. The local policy was reviewed and removed by planning scheme amendment C62 in January 2010; and
- Parts of the airport land are also affected by DDO5 and DDO6 which control the development of land within a 926m radius of the Latrobe Regional Hospital Helipad site, as described in **Section 3.1.4**.

3.2.2 LATROBE CITY COUNCIL PLAN 2013 – 2017

The Council Plan 2013-2017 outlines Latrobe City Council's vision and direction for the community over the period and will guide decision making and allocation of resources to deliver outcomes and services to the community.

The Council Plan identifies five Themes each with supporting Objectives which provide the framework for Strategic Directions. Under Theme 01 | Job Creation & Economic Sustainability, the Council Plan identifies the following Objectives:

- Actively pursue long term economic prosperity for Latrobe City, one of Victoria's four major regional cities;
- Actively pursue further diversification of business and industry in the municipality; and

- Actively pursue and support long term job security and the creation of new employment opportunities in Latrobe City.

The Latrobe Regional Airport Master Plan is identified as a key supporting plan to Theme 01. The other Themes identified in the Council Plan are:

- 02 | Appropriate, Affordable& Sustainable Facilities, Services & Recreation
- 03 | Efficient, Effective and Accountable Governance
- 04 | Advocacy for & Consultation with Our Community
- 05 | Planning for the Future

3.2.3 GIPPSLAND REGIONAL GROWTH PLAN

The *Gippsland Regional Growth Plan*, finalised in May 2014, is one of eight regional growth plans have been developed to provide broad direction for land use and development across regional Victoria.

The regional growth plans respond to directions established in the regional strategic plans that were prepared across regional Victoria between 2007 and 2010.

Having been developed in a partnership between local government and state agencies and authorities, regional growth plans reflect state and local government objectives and provide a long-term view of the region to 2041 and beyond.

Under Aviation and Manufacturing, the *Gippsland Regional Growth Plan* notes:

> *"Gippsland has existing capabilities in advanced manufacturing and engineering services that support the mining and power generation sector, and specialised operations in agriculture, aircraft manufacturing and paper production. The region includes businesses with capabilities in steel fabrication, precision engineering and maintenance, packaging and plastics manufacturing that generate exports to both national and international markets.*
>
> *Recent investment to redevelop defence facilities and the potential for expansion of RAAF operations in central Gippsland provide leverage opportunities for construction, manufacturing and technical service industries across Gippsland. The region's capacity in aircraft manufacturing also presents opportunities to diversify into similar high technology enterprises that may grow through collaboration with the Latrobe Regional and West Sale airports as well as supporting the defence sector "*

The plan includes key strategies for future land use in this sector which:

- Facilitate opportunities within aviation-related industries;
- Develop further the region's research and development profile;
- Increase Gippsland's capacity in advanced manufacturing and engineering; and
- Support the continued presence and future growth of the defence sector in Gippsland.

3.2.4 GIPPSLAND FREIGHT STRATEGY

The *Gippsland Freight Strategy*, developed by the Gippsland Local Government Network in 2013 sets out a number of priority actions for addressing the freight task associated with the development of a coal derivative export industry along with intensification of primary industry.

Given the nature of the freight task, the strategy focusses on road, rail and port infrastructure requirements. However promoting the development of an air freight service out of Gippsland, subject to its commercial viability, is identified as Priority Action 14.

3.2.5 LATROBE CITY ECONOMIC SUSTAINABILITY STRATEGY 2011

The Latrobe City Economic Sustainability Strategy describes the framework by which Latrobe City Council will work with the community to cultivate sustainable economic development in Latrobe City and contribute to the delivery of the liveable, vibrant and enterprising region described in the Latrobe 2026 community vision.

Opportunities for investment and growth that bring new capital into the local economy, align with the strengths of Latrobe City, complement existing industries and serve to diversify the economy will be proactively identified and aggressively pursued. Prospects that will be targeted include: food processing, power generation; shared services; and education and training. With specific reference to the Latrobe Regional Airport, the strategy identifies the following actions:

- Attracting aviation related businesses including aerospace industries, adventure tourism firms, aviation training facilities and related service providers to establish or expand their operations on the expanding Latrobe Regional Airport site
- Developing the Latrobe Regional Airport as a concentrated Employment Zone.

The Latrobe Regional Airport Master Plan forms a key document directly referenced by the Economic Sustainability Strategy.

3.2.6 TRARALGON GROWTH AREAS REVIEW

Traralgon is the largest urban area in the Gippsland region and Latrobe City Council undertook the *Traralgon Growth Areas Review* (TGAR) in response to a number of critical factors which put pressure on the ability of Traralgon and surrounds to accommodate future development. The TGAR was adopted by Council in 2014.

The purpose of the TGAR is to identify all future urban development growth options in and around Traralgon to ensure sufficient land is set aside for long term residential, commercial and industrial requirements as a result of future population, housing, retail and employment demands.

The TGAR acknowledges the importance of Latrobe Regional Airport as a major regional asset with considerable existing investment and recommends that consideration be given to the long term needs and opportunities of the aerodrome in a broader strategic context, including the land requirements for the airport.

Population Forecast

The TGAR adopts population growth forecasts of between 0.97% (low-growth case) and 1.32% (high-growth case) for the period to 2051, derived from an assessment of various population growth forecasts developed for Latrobe City and Traralgon over the preceding few years. The medium-growth case assumes 1.15% growth in population per year.

Traralgon West Structure Plan

One of the key outputs of TGAR is the *Traralgon West Structure Plan* which provides additional detail and direction regarding future land use and planning of the Traralgon-Morwell corridor, within which Latrobe Regional Airport is situated. A copy is included for reference at **Appendix B**.

The proposed *Traralgon West Structure Plan* presents a number of opportunities which are relevant to the potential development at Latrobe Regional Airport. These include:

- A proposed train station on the Gippsland Railway at the Airfield Road/Princes Highway intersection;
- A neighbourhood activity centre at the Airfield Road/Princes Highway intersection;
- Indicative active open space to support the residential development envisaged east of Airfield Road;
- The Traralgon – Morwell shared path adjacent to the northern and western boundaries of the airport; and
- An indicative bus stop on Airfield Road within close proximity to the terminal and north-east commercial area.

To the south of the airport site, the *Traralgon West Structure Plan* identifies the land immediately adjoining the hospital and south of the airport as an 'employment investigation area', to be developed with employment generating uses directly related to Latrobe Regional Airport or the hospital to support the Regional City of Latrobe. The plan identifies that further work in the form of a development plan or master plan is required in relation to this area. This should include discussions with the Latrobe Regional Airport Board, Latrobe Regional Hospital and relevant landowners, to clarify the best future use for the land as well as finalisation of master plans for both key facilities. As such, this Latrobe Regional Airport Master Plan 2015 should be considered in any land use decisions affecting this area.

3.2.7 LATROBE VALLEY INDUSTRY AND EMPLOYMENT ROADMAP

The *Latrobe Valley Industry and Employment Roadmap* is the Victorian Government's long-term plan to assist the Latrobe Valley to grow and diversify its industry base. The Roadmap was developed in response to a need for the region to transition its economy as a result of a national price on carbon. It sets out a strategic framework for guiding future investment and collaboration in response to locally developed advice for addressing the challenges facing the region's economy.

The Roadmap recognises that aviation and aerospace are well established capabilities within the region and that Mahindra Aerospace activities supported by Latrobe Regional Airport are an important element of this.

Federation University (formerly Monash University's Gippsland Campus) is also identified in the Roadmap as well placed to continue as a major site of research in the region with a strategy of developing education and training courses in areas of expertise linked to local need.

The Roadmap framework is based around seven Strategic Directions. Strategic Direction Two (Strengthening the Workforce) has direct relevance to the Latrobe Regional Airport Master Plan.

3.2.8 PLAN MELBOURNE

In May 2014 the Victorian Government released *Plan Melbourne*, intended to guide Melbourne's housing, commercial and industrial development through to 2050 and seeking to integrate long-term land use, infrastructure and transport planning. The plan identifies that access to Melbourne Airport from the east and south-east is becoming increasingly difficult.

Under Initiative 1.5.6 of *Plan Melbourne* the government has committed to plan for a third airport in Melbourne's south-east. Although the realisation of a third airport is seen only as a possibility even in the long term, it would serve one third of Victoria's population including the 300,000 residents of Gippsland, would have the benefit of good road connections and would be an important driver for significant job creation. The Shire of Cardinia has identified locations between Koo Wee Rup and Lang Lang as potential sites, and the state government has undertaken to confirm a preferred site in partnership with local governments as a first step in the process.

3.3 DEVELOPMENT CONSTRAINTS

3.3.1 URBAN AMENITY BUFFER

Land on which the Australian Paper Maryvale pulp mill is located is zoned Industrial 2 Zone. There is a requirement in the Latrobe Planning Scheme for the establishment of a nominal 5km buffer around the uses occurring on the site. This nominal buffer can be adjusted on the basis of more location specific modelling and assessment.

Modelling has been undertaken for the Australian Paper mill by GHD and the resultant buffer is shown in both the TGAR and the Gippsland Regional Growth Plan. Whilst this buffer is not included in the Latrobe Planning Scheme as an overlay control, it is considered a constraint to further residential development or intensification in the area without the agreement of both Australian Paper and the EPA. The buffer would not be a constraint for other industrial land uses.

The urban amenity buffer is shown on **Figure D** and affects the northern and western portion of the Latrobe Regional Airport land, limiting the uses available in the northern and western development areas. It is however noted that the buffer is directly linked to the processes undertaken at the paper mill and there is, therefore, the possibility that the location may change or that restrictions may be adjusted in the future should those processes change.

3.3.2 GIPPSLAND WATER FACILITY

A Gippsland Water emergency storage facility is located adjacent the northern boundary of the site, on the opposite side of Old Melbourne Road. Gippsland Water has requested that an odour buffer to this facility be recognised which would, if implemented, cover approximately one third of the northern portion of the site.

Gippsland Water submitted as part of the TGAR project and the subsequent C87 TGAR Planning Scheme Amendment process that the wastewater emergency storage facility required an odour buffer and that the odour buffer is included in C87. The independent Planning Panel appointed to consider C87 commented that further work is needed to determine whether it is appropriate to apply the buffer and did not support the buffer being included in C87. Council resolved to not apply the buffer to C87 but new words are to be included in the Latrobe Planning Scheme Municipal Strategic Statement that identifies potential interface issues around the storage facility, where further work is required to be undertaken to justify applying an appropriate buffer if needed in the future.

There is some ambiguity regarding the interpretation of the application of the buffer as it might apply to the airport, between Gippsland Water and the Latrobe Regional Airport. Although this has the potential to limit any future sensitive uses (such as the airpark units), if the buffer is to apply it would be contained within the proposed urban amenity buffer associated with the Australian Paper Maryvale pulp mill. The application of the proposed Australian Paper urban amenity buffer is yet to be finalised.

3.3.3 GAS PIPELINE EASEMENT

A gas pipeline runs adjacent the western and northern boundary of the airport, within the airport fence. An easement approximately 50m in width, based on the applicable Design and Development Overlay Schedule 1 (DDO1), accommodates the pipeline. Development within the confines of DDO1 is subject to restrictions to ensure that buildings and works, particularly buildings designed to accommodate people, are sufficiently separated from high pressure pipelines for safety reasons.

For the purposes of this Master Plan, development within DDO1 is generally avoided. However before further detailed design is undertaken, further investigations into the implications of this pipeline should be considered, particularly with regards to access.

3.3.4 BIODIVERSITY ASSETS

A Native Vegetation Assessment was prepared by Indigenous Land Design Management in May 2008. This assessment provides a comprehensive native vegetation survey within Latrobe Regional Airport land. This assessment looked at the potential impacts of the previous Airport Master Plan. It provided a map that shows the location of remnant patch areas (habitat zones) and indigenous trees that are identified to be protected. The remnant patch areas identified across the study site should continue to provide the appropriate guidance for the provision of offsets as conditions of planning permits. This assessment was utilised in the 2009 Master Plan to identify

areas of vegetation that should be retained. As far as possible, the proposed development avoids these areas.

The northern development area is considered appropriate for future development. No remnant patch areas were found here and the remnant indigenous tree on the northern boundary is able to be protected.

3.3.5 CULTURAL AND HERITAGE

It is understood that neither indigenous nor built heritage sites exist within the Airport boundary.

4.0 STRATEGIC DIRECTION

4.1 VISION

The 2009 Master Plan incorporated a vision for the Latrobe Regional Airport. An important element of this 2015 Latrobe Regional Airport Master Plan is to test and adjust this vision as necessary to ensure it continues to reflect the community's aspirations for this important asset. During a visioning workshop at the airport in December 2014, the following points were identified as important components of the vision:

- To promote development and expansion;
- Regionally significant;
- Provide a hub for aviation and employment;
- Add economic and social benefit; and
- Maintain options for passenger services.

The adopted vision for the Latrobe Regional Airport to be reflected in the 2015 Master Plan encapsulates all of the above. The vision statement itself remains essentially identical to that developed in the 2009. It is:

To promote the development and expansion of the Latrobe Regional Airport as a regionally significant airport providing a hub for aviation services and employment thereby adding economic and social benefit to the region, whilst maintaining options for future passenger transport services.

Further detail on particular opportunities to fulfil this vision, including the viability of various forms of passenger operations, is provided in **Sections 4.3 through 4.5** below.

4.2 STAKEHOLDER CONSULTATION

4.2.1 CONSULTATION SCHEDULE

In line with Council's Community Engagement Strategy consultation was undertaken with a range of stakeholders to identify key issues and opportunities. This consultation targeted key internal and external stakeholders, existing airport tenants and users, landowners in the surrounding area, and other interested organisations to provide early input to the development of the Draft Latrobe Regional Airport Master Plan 2015.

Consultations with airport-based stakeholders were undertaken in person at Latrobe Regional Airport either individually or in group sessions. Other organisations were contacted by email.

A full schedule of consultation achieved throughout the early consultation phase, which ran from March to October 2014, is provided at **Appendix C**. Key feedback from this consultation is summarised below.

4.2.2 KEY CONSULTATION FEEDBACK

- 24-hours automated weather information service (AWIS) is essential for a number of operators and in particular Air Ambulance Victoria.
- Accessibility of the current AvGas fuel bowser location in proximity to the maintenance workshop and public areas is not good.
- Adequate provision should be made for growth in helicopter operators, with adequate definition of helicopter landing site locations and appropriate separation of fixed-wing and rotary-wing operations as far as practicable.
- Multiple access points to airport development is confusing and a number of visitors can easily get lost when the location they seek is not within the terminal area. It will be important to address this through clear wayfinding and obvious road access routes.
- Although regular public transport services are generally considered unlikely, some form of low-capacity commuter service to Melbourne along with occasional larger aircraft charters for local events, remains an aspiration and must be provided for.
- There is a view that the vision for the airport may need to change in order to enable the Master Plan requirements to get incorporated into the planning scheme, and that the previous LRAB commitment to a residential airpark may have been a reason for previous failure to ensure adequate provisions for airport safeguarding in the planning scheme previously.
- Emergency services will continue to be an important and expanding role which the airport must facilitate.
- The airport and Council must direct the focus outwardly to convince people and businesses the Latrobe Valley is a great place to locate.
- The need for and value of operational efficiency should not be underestimated, versus the number of lease sites provided.
- It is important that LCC continues to promote and raise awareness of the value of the airport within the wider community, to ensure that the importance of this asset and the full extent of benefits to the region in terms of employment and the economy are understood.

4.3 AVIATION TRENDS AND OPPORTUNITIES

There are a number of broad trends in the aviation industry nationally and globally which can be expected to influence the range of opportunities available for aviation businesses at regional airports such as Latrobe. The key trends considered most relevant to regional locations like Latrobe Regional Airport are outlined in the following sub-sections.

4.3.1 REGIONAL AIR SERVICES

Regional air services have, in general terms, experienced a trend towards a reduction in the number of routes and destinations served, but with a trend toward larger aircraft types which is helping to drive passenger numbers on those routes which have retained services through more favourable aircraft operating economics leading to more affordable fares.

The major regional carriers (Regional Express, Virgin Australia Regional Airlines, and QantasLink) are now unlikely to perceive a route as viable where there is annual demand of less than 30,000 passengers per year.

This trend is related to the fact that aircraft types in the sub 50-seat category are now all out of production. An increasingly ageing fleet capable of serving ports with very low annual traffic is likely to contribute to a further reduction in viability of thin regional markets into the future. Despite widespread calls for new, modern and efficient aircraft suitable of serving the 19-seat market, this segment of the regional aircraft market is still under-provided.

4.3.2 AIRLINE PERSONNEL TRAINING

The expected growth in global air travel demand is fuelling demand for unprecedented expansion of the airline fleet. Boeing forecasts an increase of 21,270 aircraft in the global fleet over the next 20 years whereas Airbus suggests 31,000 will be required. A large proportion of these aircraft will be destined for airlines based in developing markets such as the Asia-Pacific region. These aircraft will, typically, need 5-6 crews (comprising both flight and cabin personnel) to operate each on an ongoing basis.

Australia is well placed to provide airline personnel training, as a pioneer of aviation and an acknowledged global leader in many aspects of the industry. Generally favourable meteorological conditions and relatively uncongested airspace mean that pilot training in particular is served by a number of Australian-based providers already, with more seeking to enter the market.

Flight training for commercial airlines is gravitating towards an academy model, focussed around high-intensity flying operations combined with intensive study. Academies generally seek to operate in the 100-200 students per year range to maximise efficiencies in what is becoming an extremely cost-competitive market. Such academies need easy access to international gateways for cadets, educational linkages to provide basic English skills, and airport facilities which are compatible with high-levels of training operations including large volumes of touch-and-go circuits. Ideally, such airports will be dedicated to flight training or at least prioritise this activity over other aviation uses. As such, commercial pilot training is largely confined to the major metropolitan general aviation airports, with Moorabbin Airport in Melbourne establishing itself as Australia's premier flight training facility. This however presents opportunities for regional aerodromes to serve the pilot training needs of individuals in a less congested environment and where a more personal service can be offered.

Cabin crew training also offers an opportunity although there is a lesser requirement for this to be undertaken outside of an airline's home country. Nor is it essential that training facilities for cabin crew be located on-airport. Similar accessibility requirements apply as airlines seek to minimise the time spent training in what is a high-turnover industry where costs must be minimised.

4.3.3 AIR FREIGHT

The economics of regional air freight services suffer from the same challenges as regional passenger services, although to a lesser extent. The freight sector has always tended to operate older aircraft types which have reached the end of their economic passenger-service life and this sector is still relatively well provided for in terms of freight operations.

The establishment of direct international freight services from regional locations is often considered to be a possibility. However, the vast majority of air freight is carried on passenger aircraft where imbalances in directional flows of passengers and freight can be used to offset each other. The dedicated air freighter segment requires a balance of inbound and outbound freight in order to make services economically viable. In markets with good highway access to international gateways where freight can be carried on passenger services or consolidated to feed demand for larger freighter operations, air freight activity is likely to be limited.

4.3.4 AIRCRAFT MAINTENANCE

With growth in the airline fleet comes an increasing need for aircraft maintenance, repair and overhaul (MRO). Despite trends for this activity to be undertaken outside Australia, the country retains a strong presence in the MRO sector. A number of regional ports have been successful in establishing and expanding maintenance facilities to serve regional aircraft markets, including the Regional Express maintenance facility and Wagga Wagga and QantasLink engineering base at Tamworth. However, these locations benefit from being on the network of the respective airlines and so ferry costs and down-time are minimised. Efficiency is the key to remaining competitive with offshore providers where labour costs may be substantially lower than in Australia.

4.3.5 AEROSPACE TRAINING & EDUCATION

The aviation industry continues to face significant skills shortages in aircraft maintenance, repair and overhaul (MRO) sectors. This includes airframe, powerplant and internal fit-out. The avionics field in particular is suffering from skills shortages as new technology rolls out across the general aviation fleet at an increasing rate. There is an urgent need to provide training and education in this sector, which has not to date been as responsive to the challenge as the pilot training sector has. However, a number of initiatives are beginning to emerge involving partnership between regional airports, aircraft maintenance providers and technical training institutions such as TAFE.

4.3.6 HELICOPTERS

The rotary-wing sector has been one of the fastest growing in Australia for much of the last decade. The sector is diverse, but is highly active in important areas such as emergency services (including air ambulance, firefighting, surf lifesaving and police), search and rescue, agricultural, charter and pleasure flights.

The industry requires a support and service network covering all of the same requirements as the fixed-wing sector including manufacture and assembly, maintenance, pilot training, and crew

training and currency in specialist aspects such a winching and rappelling and night vision operations. Helicopters are particularly versatile in the urban metropolitan environment and so regional airports such as Latrobe which are proximate to major cities offer good opportunities to service requirements such as crew training and maintenance.

4.3.7 UNMANNED AERIAL VEHICLES

One of the fastest growing sectors of the industry at present is the manufacture and operation of unmanned aerial vehicles (UAVs)[2]. UAVs have primarily been utilised in military or special operations, but are increasingly used in a growing number of civil roles generally involving aerial photography or surveillance of some kind. Accordingly UAVs come in a variety of sizes dependent on use, but are typically much smaller than piloted aircraft.

Operationally, a great degree of care is required in operating UAVs in the vicinity of other aircraft, which results in obvious potential conflicts in close proximity to aerodromes. In the context of Latrobe, however, there may be some opportunities associated with UAV development, prototyping and manufacturing which could offer synergies with existing activities in similar fields. It would be imperative, however, that safety issues associated with UAV operation and interaction with piloted aircraft be appropriately managed.

4.4 OPPORTUNITIES REFINEMENT

4.4.1 REGIONAL ECONOMIC CONTEXT

The largest industries in the Latrobe Valley by number of businesses are classified as property and business services (21%), construction (20%) and retail trade (14%). This is consistent with the trend for Victoria as a whole. Agriculture, forestry and fishing are also significant components of the local economy, comprising 12% of the local economic base.

A major strength of the region is the extraction of coal resources for the generation of electricity, with major power generators in the Latrobe Valley representing 85% of the total electricity generated in Victoria. Latrobe City is also the location of a number of significant manufacturing facilities, many of which are associated with the region's electricity generation and coal mining activity. It is anticipated that technological advances will assist in securing this industry over the long term, although the region remains focussed on diversifying its economic base.

Key economic drivers over the period of the Master Plan are expected to revolve around diversification of the economy generally, 'cleaner' coal technology production and use, advanced manufacturing, and the attraction/retention of specialist skills. In terms of employment, Latrobe Regional Hospital and Australian Paper are expected to be important job providers while the power generation industry reduces its workforce.

[2] UAVs are commonly referred to as 'drones' and also known as unpiloted aerial vehicles or remotely piloted vehicles.

4.4.2 EXISTING AIRPORT ACTIVITIES

Existing businesses operating at Latrobe Regional Airport are indicated on **Figure C**. The activities encompassed by these include the following areas.

Aircraft manufacturing

GippsAero (now Mahindra Aerospace/GippsAero) has designed and manufactured aircraft since the 1970s and been based in the Latrobe Valley since its formation as Gippsland Aeronautics in 1977. GippsAero's design and manufacturing capabilities are unique in Australia and this provides Latrobe Regional Airport with Australia's only commercial aircraft manufacturing facility.

Building on the development of the GA200 agricultural aircraft in the early 1990s, GippsAero's flagship aircraft is the GA8 Airvan. The Airvan is an eight-seat, high-wing, single-engine utility aircraft capable of operating on short, low-cost, semi-prepared airstrips that has proven ideal for many Australian operators in remote areas. Since its first delivery in 2000, the Airvan has been exported around the world and is used throughout Australia. With the success of the GA8, GippsAero is developing the GA10 (a stretched version of the GA8), and the GA18 – a twin turbo-prop commuter and multi-role aircraft.

The Airvan is an Australian success story and one of the few new aircraft types fulfilling low-capacity passenger sector needs.

Charter services

Both the Latrobe Valley Aero Club and Aerial Extras offer aircraft hire and charter services currently. However, there is no operator specifically serving a passenger charter market or freight operation.

Aircraft maintenance

East Coast Aviation offers aircraft maintenance for about 120 aeroplanes across the area from Flinders Island to Northern NSW. Services cover airframes and engines and the company is considering adding an avionics bay. Workforce has grown to seven employees in total. Diversification opportunities include the supply of aircraft parts to private individuals

Test and ferry

Aerial Extras offers test flying and ferry services. The company is widely known and respected for undertaking tasks which are beyond the capability or desire of other operators. The presence of such a company is seen as an asset for Latrobe Regional Airport which could provide opportunities for expansion of associated businesses, including maintenance providers and prototype development.

Emergency Services

The Department of Land, Water, Environment and Planning (DELWP) operates a minimum of 2 and up to 6 fixed wing fire-bombing aircraft from Latrobe Regional Airport during each bushfire

season. A dedicated fire base facility has been established to accommodate this, in addition to temporary operations which occur in the area between Taxiway A and Runway 03/21.

The DELWP fire base at Latrobe Regional Airport sets the benchmark for DELWP aerial firefighting bases across Victoria. DELWP has recently expanded its lease area to accommodate a mixture of fixed and rotary-wing operations including Bell JetRanger and Eurocopter Squirrel aerial attack platforms.

40-50 personnel are domiciled locally during the bushfire season. This includes a number of people on duty continually at the airport on a 15-30 minute call-out basis. During winter the facilities are utilised by the CFA or engaged in maintenance activities and infrastructure upgrades.

Flying Training

There are currently three flying training providers at Latrobe Regional Airport. Osprey Aviation Services and Aerial Extras offer training in accordance with Recreational Aviation Australia (RAAus) requirements.

The Latrobe Valley Aero Club provides Private Pilots Licence, Commercial Pilots Licence and Multi-engine command rating as well as recreational pilot training.

Warbirds and historical aircraft

Latrobe Flying Museum houses a collection of historical aircraft and operational warbirds.

4.4.3 OTHER AIRPORTS

There are a number of other airports in the region. Whilst in some senses these will be competing for the same opportunities as Latrobe Regional Airport, an understanding of the current activities will assist in identifying the relevant points of difference.

Moorabbin

Moorabbin Airport in Victoria is Australia's largest centre for commercial flight training for both fixed and rotary wing aircraft with training-related movements accounting for a large majority of all aviation activity.

More than 200 businesses (50 aviation-related) operate within the airport land, which is leased and operated by Moorabbin Airport Corporation from the Commonwealth under the *Airports Act 1996*.

Aviation-related activities and businesses include maintenance, charter, freight, recreational flying, and aerial work (aerial photography and surveying).

As well as aviation, on-airport land uses include light industrial, manufacturing, logistics, commercial and retail. Non-aviation businesses that operate within the airport land include: Direct Factory Outlets, Kensington Central Plaza and Chifley Business Park. The Australian National Aviation Museum and the Royal Victorian Aero Club are also based at the airport, which is surrounded by a mix of industrial, commercial, business and residential land use.

Facilities at Moorabbin include two intersecting pairs of parallel runways, two helipads, and an air traffic control tower which enable it to serve several flight training organisations.

The airport currently operates at a level of almost 250,000 movements per annum and it is predicted that there is a long-term capacity of 500,000 movements.

West Sale

The West Sale Airport serves as a regional facility for commercial, recreational and military purposes. It is predominantly utilised by the oil and gas industry, emergency services such as the air ambulance, commercial charter operators, private business, recreational flying and RAAF flight training. Facilities at West Sale Airport include fuelling services, an airport terminal building that provides car parking, public phones and a waiting room. The airport does not charge any landing fees.

There are a limited number of business and other organisations, including a TAFE (Federation Training) automotive engineering training facility, an accommodation and aviation-oriented business and an oil and gas safety training facility.

Bairnsdale

Bairnsdale Airport is a relatively small aerodrome, but it supports a number of commercial aviation enterprises including corporate charters, aerial firefighting, emergency medical services, recreational flying and a courier service.

Support facilities include fuelling services and aircraft and fleet maintenance. The airport is open 24 hours and does not charge a landing fee. Both of these incentives are designed to attract business to the airport.

Tyabb

Tyabb Airport, on the Mornington Peninsula, is a privately owned, unlicensed airfield. The owner-operator is the Peninsula Aero Club, which provides a flight school, charter flights and joy flights. The airport also offers aircraft engineering services and support for emergency services.

The airport attracts aviation tourists and other visitors through the Tyabb Air Show, which is held every two years.

Leongatha

Leongatha Airport is the only commercial airfield within the South Gippsland Shire. A flying school operates from the airport and other businesses include four car rental agencies. An air services company offers pilot training and aircraft charter and hire as well as aerial agriculture and fire operations. The airport site was recently subdivided to facilitate future aviation-related development opportunities.

4.4.4 SWOT ASSESSMENT

A SWOT (Strengths, Weaknesses, Opportunities, Threats) assessment was undertaken with the Latrobe Regional Airport Board on 7 October 2014. The assessment considered general aspects of the region as they relate to opportunities at Latrobe Regional Airport, as well as specific airport features. The key points identified during the assessment are indicated in **Table 1**.

Table 1: SWOT Assessment

STRENGTHS	WEAKNESSES
▪ **Proximity to Melbourne**'s population base as this gravitates to the south east of the metropolitan area ▪ **Central location** to attractions including beaches, the snow, and a major capital city (with associated amenity) ▪ Recognition from government as one of the **identified regional centres** in Victoria ▪ General **population growth** +1% (in excess of other regional centres) ▪ Excellent **health facilities** ▪ **Accessibility** ▪ Friendly people and a **strong sense of community** ▪ Rich in **natural resources** including productive agricultural land ▪ A **well-developed airport with respected businesses** such as GippsAero and Helimed.	▪ **Image** of the Latrobe Valley has a number of negative perceptions including: - "Cancer cluster" - Mining accidents - Industrial & polluted area - Heavy union influence on industrial relations - Colloquial ▪ **Low connectivity** between the residential and employment areas of the Morwell, Moe and Traralgon, for pedestrians especially ▪ An **ageing workforce** and **lack of diversity** in the skills base ▪ **Difficulty retaining skills** in the region or attracting them to relocate from elsewhere ▪ **Limited public transport** connections to/and from Melbourne at times suited to a 'reverse-commute' ▪ **A lack of community engagement**
OPPORTUNITIES	**THREATS**
▪ **Population growth** ▪ **Recreation** infrastructure ▪ A **Gippsland Aviation Hub**, in conjunction with military pilot training at RAAF Base East Sale ▪ **Lifestyle** ▪ **Tourism** ▪ Airport businesses already provide over 200 **jobs** ▪ **Education** including flying training	▪ **Land use pressures** including the need to maintain compatible land uses, requirements for additional residential development and the need for public acceptance of the airport and all associated activities ▪ Incompatibility of long-term initiatives with **Government policy timeframes** based on an electoral cycle ▪ **Relocation of the freeway** (through the proposed Traralgon Bypass) risks disconnecting it from the town.

4.5 FUTURE GROWTH AND BUSINESS DEVELOPMENT OPPORTUNITIES

Taking into account the vision established for Latrobe Regional Airport, feedback from the stakeholder consultation process, consideration of global and national trends in the aviation industry, the regional economic context, current airport operations and the assessment of strengths, weaknesses, opportunities and threats presented above, a refined and prioritised list of possible opportunities for aviation business growth was developed for further consideration.

The list includes:

- Regional aerospace manufacturing hub;
- Aerospace education and training;
- Aircraft maintenance;
- Emergency services;
- Private aircraft storage hangars;
- Aviation-related events;
- Helicopters;
- Residential Airpark
- Pilot training; and
- Passenger services.

These opportunities are discussed in the following sub-sections.

4.5.1 REGIONAL AEROSPACE MANUFACTURING HUB

Existing Latrobe Regional Airport tenant Mahindra Aerospace is Australia's only commercial aircraft manufacturer and currently employs approximately 200 personnel on airport. Production of the GA-8 at Latrobe has increased to between 1 – 2 aircraft per month. Over the next five years Mahindra is looking to achieve a sustainable production rate of 30 per year for this aircraft whilst increasing production of the GA-10 from 3 to 30 per year also. In the longer term, production rates of 70-80 aircraft per year in 10 years are conceivable.

Future expansion of Mahindra activities at Latrobe needs to be considered in the context of the comparative cost-effectiveness of offshore manufacturing activities. Development of new aircraft types is also necessarily subject to market feasibility and business case development, and there is the possibility that global aircraft manufacturers are waking up to the gap in the 18- to 20-seat market with a revamp of the DHC6 Twin Otter expected. For Mahindra the GA-18 concept will need to be evaluated in this light.

Regardless of the nature of activity, it is considered a priority that Mahindra Aerospace operations remain at Latrobe in the long term. The presence of an aircraft development and manufacturing capability offers a number of unique opportunities which could combine to create a regional aerospace manufacturing hub. Such a hub could incorporate a number of related activities consistent with state and local government's stated employment priorities for the Latrobe Valley region, including:

- Component manufacture;
- Aircraft parts storage/warehousing and supply;
- Advanced materials and manufacturing; and

- Research and development;

The development of such a hub will inevitably be an incremental process. Although a number of the elements are in place within the region, finding the right balance and application of these supporting activities to the aerospace sector and the appropriate level of facilities to locate at Latrobe Regional Airport will require effort. Whilst there are clearly synergies in having some of Mahindra's onshore providers located on-site, as these suppliers' have other customers in different industries there would need to be other benefits realisable to them by relocating. Nonetheless Mahindra is keen to work with LCC to identify which onshore providers might locate adjacent to its operations.

A key enabler in such a concept is for aerospace engineers to be attracted to Latrobe Valley as a place to live.

4.5.2 AEROSPACE EDUCATION AND TRAINING

As discussed in **Section 4.3.4**, there are major industry-wide skills shortages across all forms of aircraft engineering. Skills shortages in aircraft maintenance sectors lend themselves naturally to education and training opportunities. Few airports have, so far, been successful at establishing effective campuses which address apprenticeship and skills development requirements with a capability to provide aircraft maintenance services.

As indicated within the *Latrobe City Economic Sustainability Strategy 2011*, Latrobe City is the educational centre for Gippsland, offering some of the finest educational facilities in regional Australia. Due to a strong relationship between education providers and industry, Latrobe City has been a leader in vocational education and industry training for many years.

The opportunities to channel the existing education and training infrastructure towards the aerospace industry's skills gaps would appear to be significant.

4.5.3 AIRCRAFT MAINTENANCE

If Latrobe Regional Airport can establish an education and training capability, then clear synergies exist to attract aircraft maintenance, repair and overhaul organisations to the airport. These MRO facilities would be able to draw on the available pool of apprentice talent to add to experienced licensed aircraft engineer resources, which would develop in the region over time if the challenges of retaining skills in the area can be overcome at a municipal level.

Avionics in particular offers an opportunity due to particularly acute skills shortages combined with increased reliance on new technologies and roll-out of computer-based systems to airframes.

4.5.4 EMERGENCY SERVICES

There remains potential for future expansion of emergency services activities at Latrobe Regional Airport. DELWP has indicated that despite recent expansion, aerial firefighting aircraft numbers could conceivably double in the 5 – 10 year timeframe.

The established presence of DELWP and Helimed 1, together with a clear commitment to ensuring these are model facilities for regional areas, and the strategic regional importance of the airport as a regional emergency services hub for Gippsland, mean that other service providers such as training and maintenance providers could be attracted to the airport in the future.

It is important to recognise the importance of the airport and its support to the emergency services in the region and to protect and enhance the emergency services precinct at the site.

4.5.5 PRIVATE AIRCRAFT STORAGE HANGARS

Uptake of the recently developed private hangar precinct has been strong, with a majority of the existing sites available having been let. Growth in this opportunity is considered to remain solid, leading to demand for expansion of the private hangar precinct. This might include a combination of individual hangars along with further common-use facilities which might serve a more temporary need, through consolidation of hangar space and sub-letting individual aircraft parking on a short-term (yearly, monthly or weekly) basis. Nonetheless, the requirement for private aircraft storage is driven primarily by the local population. Based purely on expected population growth rates an increase in demand for hangar sites of 20% – 35% of the current demand is expected.

4.5.6 AVIATION-RELATED EVENTS

Latrobe City Council has an events-focussed strategy which includes activities such as motor sports and timber industry conferences. It is considered that some of these events could be used to raise the profile of the airport within the community. Previous events including musical performances have been held at the airport and this could be an opportunity for similar activities in the future. Possibilities include:

- Aviation fly-ins for the recreational aviation community, which would require parking for large numbers of itinerant light aircraft;
- Sporting-related activities such as Auskick or other youth development promotions, with the possibility that ambassadors could arrive and depart by charter aircraft;
- Musical or other cultural events, with the performers arriving and departing by air;
- Air displays of an aerobatic, warbird or other aviation heritage nature;
- Mahindra/GippsAero promotions; and
- Aviation trade events.

4.5.7 HELICOPTERS

Given the growth in the helicopter sector generally, and the suitability of the facilities at Latrobe for helicopter training including winch/rappel activity, helimed crew training and confined space assessments, which are undertaken in the adjacent plantation, it is expected that there will be opportunities to attract helicopter operators, training and maintenance providers to the airport.

4.5.8 RESIDENTIAL AIRPARK

The demand for hangar accommodation combined with residence is becoming increasingly popular in Australia and can, in general, be considered an important growth sector. Previous Master Pans for Latrobe Regional Airport in 1998 and 2009 have identified space for a residential airpark on the airport.

A number of factors however contribute to the success of an airpark development, including resident demographics, facilities and safety standards.

There are several successful airparks within Australia and these include the Whitsunday Aviation Village Estate, Gatton Airpark in Queensland, Yarrawonga in Victoria and Temora in New South Wales. Despite their popularity, the quality and aesthetic of these airparks varies considerably.

The Whitsunday Aviation Village Estate and Temora Park incorporate residential and commercial precincts. The Gatton Airpark is residential only, however the residents own the airpark. There are also airparks in planning stages located in Gympie, Queensland, and Denmark, Western Australia.

Airparks appeal to a certain demographic, which generally includes aviation enthusiasts, charter businesses and holiday-makers. Key motivations for choosing to live in an airpark include:

- Sharing a common interest with like-minded people;
- A ready availability of aviation infrastructure; and
- The high level of security and convenience provided.

Airport-related amenity issues, such as potential noise from aircraft, are understood and are expected by residents.

According to a study of airparks in the USA, the estates generally consist of people, aged over 50 who are semi-retired professionals, with significant assets and moderate to high disposable income. They also have time available to fly and maintain their own aircraft. This selective demographic may also be attracted to the investment potential of airparks because there are few parks and property values within them are high, relative to similar property, whilst being low relative to conventional residential land. No such studies are available in relation to Australian airparks, although there is no reason to suggest the findings would be different.

At a minimum, airparks must adhere to the relevant Civil Aviation Safety Authority (CASA) guidelines in relation to infrastructure, technical support and resident-use amenity. However, there is no requirement for airparks to be licensed. It should be noted however that none of the existing airpark developments are at airports which also serve airline or commercial GA operations and therefore the requirements in relation to segregation and control of airpark users with respect to safety and security have never been fully tested in Australia. Generally, resident access to the runway, taxiway and terminal areas has to be monitored and this requires a security system that can be accessed via a key pad or swipe card together with a limited number of taxiway connections to the airfield proper.

Lot size differs and depends on the location of the airpark, but general lot size falls between 800m^2 and 2,500m^2. The price of lots also varies, depending on the location and the facilities offered on site and the surrounding areas.

Uncontrolled and uncongested airspace is often a consideration among many potential airpark residents. The ability to incorporate both recreation and commercial facilities within an airpark also contributes to its success.

For a variety of reasons, long-leasehold arrangements provide greater power to ensure users comply with safety, security and general behavioural requirements. However, to encourage the investment needed to achieve a quality development freehold tenure may be necessary.

The concept of a residential airpark is one which is not, per se, conducive to business and employment objectives. Whilst it is acknowledged that the ability to offer residential airpark style blocks may assist in attracting aviation businesses to the airport, there are currently insurmountable constraints on residential land use in the northern sector of the airport. The only alternative area is the southern commercial precinct. However, this precinct also currently provides the only short-term response to aviation business enquiries, including the immediate opportunities associated with education and training discussed above.

In the short-term, therefore, residential airpark and air chalet development at Latrobe Regional Airport is not recommended unless and until development constraints in the northern sector can be removed, or sufficiently relaxed to enable this use. In the medium- to long-term, appropriate aviation-related residential uses, which acknowledge and are compatible with the primary objective of employment generation, have the potential to contribute to business development at Latrobe.

Prior to any such development commencing suitable design controls should be established in order to ensure an appropriate level of quality and aesthetic, consistent with other precincts at Latrobe Regional Airport.

4.5.9 PILOT TRAINING

The *Latrobe Valley Industry and Employment Roadmap* notes that there are opportunities to increase flying training and related activities, suggesting that capacity for training at Moorabbin Airport will become increasingly constrained. Moorabbin Airport is currently operating around 250,000 annual movements with an approximate long-term capacity (based on the Moorabbin Airport 2015 preliminary draft Master Plan) of 500,000 movements.

At typical GA growth rates, even allowing for the abovementioned expected demand, it is unlikely that Moorabbin Airport will reach capacity before about 2040 and may take until 2060 before significant constraints occur. During this period it is possible that some smaller flying schools serving recreational and private pilots may be displaced. However alternative locations closer to Melbourne's south eastern population base, such as Tyabb which already has a significant recreational pilot presence, are likely to be the first to absorb any displaced activity for reasons of

geographical convenience. Major commercial pilot training is likely to remain consolidated at Moorabbin.

Whilst opportunities for pilot training schools of various types to establish at Latrobe are not to be ignored, it is important to be realistic and target appropriate possibilities. Rather than major airline flight training academies, it is considered more likely that opportunities will be present for existing flying training providers to expand their business or for additional providers of similar services.

The Latrobe Valley Aero Club already offers the highest level of qualification of the current on-airport flight training providers. LVAC also has aspirations to increase its range of flight training capability. The model for this is to be determined but might include a component of outsourcing, offering an opportunity for one or more other flight training providers to establish at the airport on the strength of such a partnership.

4.5.10 PASSENGER SERVICES

The re-establishment of regular public transport services at Latrobe Regional Airport is considered to be highly unlikely. The excellent road and rail connectivity means that these modes compete extremely favourably with air travel to Melbourne from both a time and cost of travel perspective. Increasing limitations on regional airline access to Melbourne (Tullamarine) Airport in the future will make it even more difficult for airlines to re-establish scheduled airline services here from places like Latrobe.

The relatively short travel time and vastly lower cost of travel by road to Melbourne Airport will make air travel an uncompetitive mode in all but the most time-sensitive of situations. Of those airlines approached in consultation, QantasLink and Virgin provided responses confirming their position that Latrobe does not meet their key criteria for consideration as a potential part of their network. No response was received from Regional Express.

As far as other destinations go, there are two factors which are likely to inhibit the establishment of airline services to places other than Melbourne. Firstly, it is unlikely that the population of Latrobe will reach a level that will be able to support a RPT service to any particular destination based on outbound traffic alone. Secondly, the relative proximity to the superior range of destinations, airlines and service frequency available from Melbourne can be expected to ultimately erode any RPT demand.

Nonetheless, a potential market for passenger services is considered possible. An independent view put forward previously by one of the major regional airlines is that Latrobe is an ideal 18-seat route, with base level demand that could be catered for by aircraft such as the Embraer Bandeirante, Beechcraft 1900 and Metro III. The GA-18 Airvan, if ever developed, would be an obvious local candidate. Other options which could be viable include 8-12 seat services operated by Piper Chieftain or Cessna Caravan aircraft. Frequent charter or air taxi services using these aircraft offer an alternative model which, given the factors outlined above, are likely to be more viable than a traditional RPT service.

4.5.11 AIRCRAFT MOVEMENTS

General Aviation aircraft movement growth rates nationally are expected to sit somewhere between 0.5% and 3.0% per year over the next 20 years. General Aviation aircraft movements are significantly more difficult to forecast with any accuracy than are passenger movements, due to substantial variations in movement rates associated with different sectors and sub-sectors of the general aviation industry.

As a lower-bound, forecast population growth rates often serve as a reasonable proxy for predicting general aviation movements. Although it relates to the ABS Traralgon statistical local area only, rather than Latrobe City as a whole or the catchment of Latrobe Regional Airport generally, the medium-growth population forecast of 1.15% per year adopted by the TGAR is considered a reasonable lower-bound growth rate for aircraft movements at Latrobe Regional Airport. This would result in around 38,800 aircraft movements by 2035.

However, aircraft movements will be directly driven by the number and scale of businesses on airport. This can be assumed, very approximately, to be proportional to the extent of commercial aviation areas which are developed. The Master Plan envisages an expansion from around 150,000m^2 of active precincts to between 300,000 and 400,000m^2 assuming full occupancy of available land in the southern and eastern areas of the airport and depending on the extent of development in the Northern Business and Employment Zone. This would suggest movement levels of between 60,000 and 75,000 per year could occur upon realisation of the Master Plan vision.

5.0 DEVELOPMENT CONCEPT

The development concept established for Latrobe Regional Airport in this Master Plan seeks to support the principal objective of the airport as one of the Latrobe Valley's key employment hubs.

The development concept establishes a land use plan which maximise the potential for a wide variety of potential commercial aviation-related business operations at the airport, in response to existing and likely future opportunities (as set out in **Section 4.0**). The land use plan sets out a vision for the ultimate development of Latrobe Regional Airport and provides principles and guidance about land use and development on the airport to the Latrobe Regional Airport Board.

The aerodrome facilities plan is driven by the operational and other needs of the aviation businesses and other airport users envisaged through the land use plan.

The development concept is underpinned by the following principles:

- Focus on providing for opportunities which offer the greatest business and employment potential; and
- Maximise the ability for directly aviation-related development through the provision of airside access wherever possible.

The land use plan divides the airport into a series of broad zones, which are further subdivided into smaller precincts providing for specific uses where a logical benefit exists to ensuring these are located in particular physical areas.

Figure E provides a Land Use Concept and Development Zone Master Plan which sets out the extent of the various zones and precincts and provides an indicative layout for development within each area. A degree of flexibility has deliberately been incorporated within these concepts to enable the actual layout of lease lots and infrastructure to be refined in response to specific opportunities as these eventuate.

Each of the zones and precincts is described in the following sub-sections. The aerodrome facilities which are proposed to facilitate the development concept are described in **Section 0**.

5.1 TERMINAL ZONE

This zone encompasses the majority of existing activities at Latrobe Regional Airport, including the terminal and main apron areas, Latrobe Valley Aero Club facilities, East Coast Aviation, the Latrobe Flying Museum and the private hangar precinct. Landside facilities for the SES, CFA and airport maintenance are also located here.

These activities are integral to the present character of the airport. In addition several of the businesses are significant employers. It is envisaged that all of these uses will remain essential to Latrobe Regional Airport in the future. They are generally adequately provided for in the current locations. As such the principal objective of the precincts within this zone is to provide for the continuation and modest expansion of the existing activities.

Central activity precinct

This precinct, which currently houses the terminal and main apron, LVAC building, LVAC hangar, East Coast Aviation, and AVGAS fuel bowser, will remain a central focus of operational activity at the airport. Although RPT passenger services are not envisaged to return to Latrobe Regional Airport, facilities will still be required to serve charter or air taxi operations and itinerant aircraft. The current terminal and LVAC facilities meet this requirement in general. Although the airside area within this precinct is subject to some existing congestion and conflict (especially in the area around the AVGAS facility, LVAC hangar and East Coast Aviation), there is room for expansion of airside infrastructure to the north-west which would be further facilitated by the ultimate realignment of Taxiway A.

The area to the north of East Coast Aviation (where the large helicopter pad is currently located) would make an appropriate location for consolidated AVGAS and Jet A-1 fuel storage facilities. As it is impractical to establish direct landside road access to this area, it would not be suitable for additional hangar or aviation business facilities. The existing taxiway could also be retained and used for taxi-up AVGAS bowser access.

Aviation heritage precinct

This precinct currently houses several hangars occupied by the Latrobe Flying Museum, along with some other tenants. The Latrobe Flying Museum offers the potential to increase employment through expansion of its operations in an aviation heritage context. Naturally, consolidation of these activities into a compact precinct would be ideal. The current hangar precinct offers considerable expansion opportunity, if the other existing activities were to ultimately relocate to other development areas on the airport. The adjacency to the existing park area also presents an opportunity to incorporate some static displays which could enhance the experience for locals and visitors in respect of the park area.

Private hangar precinct

Modest expansion of the existing private hangar precinct is envisaged. This includes the completion of Stage 2 to the south. With the relocation or redevelopment of the hangars currently occupied by LVAC and the Latrobe Valley Sport Aircraft Association, combined with realignment of Taxiway A, there exists capacity to approximately double the number of existing hangar sites.

Landside precinct

Little change to the landside precinct is envisaged. Car parking is important to support any future passenger operations, as well as the adjacent businesses, but is considered generally of sufficient size for the purpose into the future.

Current landside sites provide important facilities for essential local services including the SES, CFA and RAAF cadets. It is considered beneficial to retain these organisations on-airport in the future and the current locations are considered appropriate.

Should these users relocate of their own volition to alternative facilities off-airport in the future then alternative uses which support the fundamental aviation activities within the terminal zone could be considered. These uses could include a café, food van, or other local food and beverage offering which would be specifically focussed on serving the airport community.

Aviation business expansion precinct

Within the terminal zone to the north of the aviation heritage precinct there exists the potential, through realignment of Taxiway A, to establish 2-3 additional lots for aviation businesses. By upgrading the realigned taxiway to Code C standards, these lots could be accessible for larger aircraft such as Dash 8 (Series 100 – 300) types, or other Code C aeroplanes which are permitted to use the existing runway infrastructure.

As sites which could potentially accommodate Code C aeroplanes on the airport are limited, these sites (along with those possible at the southern end of the runway) should be reserved for those operators which are likely to require operations by these larger aircraft. This might include the acquisition of larger aircraft by the Latrobe Flying Museum.

5.2 BUSINESS AND EMPLOYMENT ZONES

Outside of the modest expansion of aviation business sited within the terminal zone, three further zones on the airport have been identified where activities associated with business and employment opportunities will be prioritised.

5.2.1 CENTRAL BUSINESS & EMPLOYMENT ZONE

The central business and employment zone is located immediately south-west of the terminal zone. It currently accommodates Mahindra Aerospace and emergency services activities. The objective of this zone is to allow for the future expansion of these users' operations and provide opportunities for related businesses to establish in close proximity.

Mahindra Aerospace precinct

Mahindra Aerospace is presently Latrobe Regional Airport's most significant employer. Ensuring continuance of this activity is the objective of this precinct. Whilst some modest opportunity would exist for expansion with the realignment of Taxiway A to the north-west and relocation of the Jet A-1 aviation fuel storage facility, space within the existing precinct is limited. Should additional space for Mahindra Aerospace be required this would need to be accommodated within the adjacent precinct.

Manufacturing support precinct

The objective of this precinct is to support the continued operations of Mahindra Aerospace by providing sites suitable for aviation-related manufacturing activity. These might be occupied solely by Mahindra Aerospace, or by associated suppliers. Whilst the detail of the internal layout of this precinct would be subject to further consideration in light of the intended users and their specific

requirements, the Master Plan adopts a concept layout which allows all or part of the site to be occupied by Mahindra as an expansion of its current footprint.

Emergency services facilities precinct

Having recently established both the Helimed 1 Air Ambulance Victoria helicopter base and the Department of Environment, Land, Water and Planning (DELWP) fire base, significant expansion of these facilities is not envisaged in the short- to medium-term. In the longer term, however, there may be a requirement for additional facilities associated with emergency services activity by these operators and their contractors, or by other emergency service providers.

5.2.2 SOUTHERN BUSINESS & EMPLOYMENT ZONE

Development of the Southern Business and Employment Zone has already commenced, with the hangars occupied by Osprey Aviation Services and Jelfor Pty Ltd. This zone provides for immediate expansion opportunities to accommodate additional aviation businesses. This zone also offers the potential to connect with activities on adjacent land which might include industrial aviation related businesses.

The option exists to provide a taxiway connection onto adjacent land for the purposes of facilitating airport-related activities which are unable to be accommodated within the airport land boundary.

Aviation business precinct

This precinct represents the logical expansion of the existing lots in the southern precinct. These are in general suitable for Code B aircraft and consist of 23m wide by 51m deep lots which would be suitable for occupation singly or in combination by a wide variety of aviation businesses.

Education and training precinct

One of the more immediate opportunities is the potential establishment of aerospace training and education facilities. Based on preliminary discussions with a possible anchor tenant, a dedicated precinct with the objective of consolidating education and training activities relevant to the aviation sector is proposed.

Large aircraft precinct

Locations where aircraft of dimensions larger than Code B (such as the SAAB 340 or Dash 8) can be operated on the airport are limited. Although some hangar sites can be incorporated within the aviation business expansion precinct in the Terminal Zone, additional sites may be required. The large aircraft precinct is proposed to enable further opportunities for wider and deeper hangar sites needed for larger Code B and Code C aeroplanes. The proposed location of this precinct minimises the extent of Code C taxiway pavement that would be required to allow access to the runway.

Emergency services operations reserve

This area is reserved for the regular operations of emergency services aircraft, in particular aeroplanes and helicopters associated with firefighting activities. Each bushfire season, when

firefighting activities are in progress, additional aircraft are based at Latrobe Regional Airport. These aircraft cannot be accommodated within the leased area occupied by DELWP and presently the area between Taxiway B and Runway 03/21 is used. With continued development and realignment of Taxiway B, this area will no longer be available. The emergency services operations reserve fulfils the objective of ensuring adequate operational space when required in close proximity to the emergency services facilities.

This reserve is suitable for operation and temporary parking of aircraft and should remain clear of hangars or other permanent facilities. The area would be close to serviced water supply which could potentially be utilised for refilling of firefighting aircraft.

5.2.3 NORTHERN BUSINESS & EMPLOYMENT ZONE

This zone has the advantages that it would be accessed directly off Old Melbourne Road, which carries a large amount of local traffic between Morwell and Traralgon. It is the only area within the current airport boundary where freehold disposal of lots could be considered by Council without jeopardising the long term flexibility for future development of the airport (see **Section 5.5**).

Aviation enterprise precinct

The objective of this precinct is to provide for a range of uses to enable the establishment of small businesses by providing access to a variety of facilities under different terms of tenure. This might include a mix of freehold, long leasehold lots, and shorter-term lease of multi-purpose building facilities constructed by Council (or by another larger developer).

If freehold is deemed desirable in order to establish businesses on airport and increase the critical mass of activity, the provision of freehold blocks should be limited to this precinct and remain within clearly defined areas, which should be as close to Old Melbourne Road Boundary as possible so as not to unduly restrict the future flexibility of airfield development.

Future development precinct

This precinct would be suitable for a range of uses and the most appropriate activities would to a certain extent be determined by the preceding development as well as the future situation with respect to various existing constraints (in particular determination of the proposed urban amenity buffer, further justification and resolution of any proposed Gippsland Water emergency storage facility odour buffer if needed and any bushfire management overlays associated with adjacent plantation). Subject to these constraints, future uses of this precinct could include:

- Residential lots, either as a pure residential airpark or a residential component attached to aviation business operations;
- Private hangars; or
- Expansion of the aviation enterprise precinct.

5.3 OTHER DEVELOPMENT AREAS

5.3.1 PARK, RECREATIONAL AND EVENTS ZONE

Whilst retention of the current park area within the aviation heritage precinct is envisaged, as development of aviation businesses occurs the current adjacency of the park to the airfield and in particular the runway will be eroded. In addition to this, an area is needed where the opportunities for aviation-related events described in **Section 4.5.6** might occur. This area would need sufficient room for parking of light aircraft and road vehicles, basic services (to feed ablutions and other amenities such as barbecue facilities and perhaps showers), as well as good access to the airfield but separate from the operational areas.

The northern corner of the airport meets these requirements. This area is of limited use for other purposes, being constrained by the clearances required to the NDB and the need to avoid constructing permanent structures or other facilities within the reserve which may be required for a future Code 3C runway and associated obstacle limitation surfaces.

Appropriate management and control of potential wildlife hazards to aircraft operations (such as from carelessly discarded rubbish, food scraps and other sources) appropriate to an on-airport environment would need to be implemented by the Latrobe Regional Airport management.

5.3.2 FUTURE DEVELOPMENT ZONE

This zone, which is situated between the two runways, would be available for future development. Due to its location, lack of access or services, it would not make sense to develop this area until other development areas have been exhausted. Requirement to establish infrastructure in this area is not envisaged within the 20-year horizon of this Master Plan.

Whilst this area remains clear it offers a large open area that would be suitable for activities such as helicopter crew training (winching, rappelling and hover training), skydiving and as an aerobatics box. All of these are activities which might be required by the types of aviation business currently established on the airport and which Latrobe Regional Airport aspires to attract. The objective of this zone within this Master Plan therefore, is to remain as open area suitable for use by those aviation activities which require it.

5.4 DEVELOPMENT GUIDELINES

A set of Development Guidelines for reference by the Latrobe Regional Airport Board in assessing development within each precinct is provided at **Appendix D**. These guidelines provide additional detail on requirements at an individual lot level.

5.5 TENURE & OWNERSHIP OF DEVELOPMENT SITES

A common difficulty at regional airports is the complaint that lease arrangements make it difficult for small aviation-related businesses to finance developments which would expand the range of aviation activities on airport land. Users often advocate the subdivision and freehold sale of airport

land, with Council potentially retaining ownership of the land required for runways, taxiways, aprons and the passenger terminal area. This arrangement, however, is predicated on having confidence that there will never be a need for major redevelopment or reconfiguration of facilities within the airport site. Given the dynamic nature of the industry and ever-changing development opportunities, it is widely acknowledged that it is essential to retain as much flexibility as possible with respect to future requirements. The lease of sites within the airport boundary is generally favourable on the basis that Council maintains long-term control of the land, even if the lease periods are relatively long.

The current arrangement at Latrobe Regional Airport, where leasehold sites are offered, is standard practice for airports throughout Australia, and fulfils the flexibility imperative described above. On the other hand it is acknowledged that it may prove difficult to arrange development finance for lease terms shorter than 20, or in some case 30 years.

LCC and the LRAB should therefore consider carefully how the available land will be made available to developers. Although the option exists to sell freehold some or all of the individual sites, this approach is not recommended in relation to the terminal zone, nor for the southern and central business and employment zones. In these areas, individual sites held on freehold purchase basis may restrict future plans for the adjacent sites and would reduce the flexibility of the surrounding precincts to develop in response to business opportunities. Through projects at other regional airports, REHBEIN Airport Consulting has also witnessed regional councils' difficulties in developing airports based on past decisions to sell land on a freehold basis.

It is recommended instead that LCC and LRAB adopt an extended lease arrangement. The standard leases offered by the Federal Airports Corporation (FAC) were for 25 years with 40 year tenure available for special developments and a number of regional airports are now considering 20 years as a minimum lease period, sometimes with extension options. Shorter lease terms may be negotiated by mutual agreement and longer terms could also be considered as preferable to a freehold arrangement.

In the event that the ability to offer freehold land is considered absolutely essential to attract businesses or residential aviators, and that the vision for development of Latrobe Regional Airport cannot be fulfilled without recourse to a freehold tenure, then limited release of freehold sites within the northern business and employment zone could be considered, as described in **Section 5.2.3**.

5.6 GROUND TRANSPORT

The proposed development zones and precincts will be accessed by the existing transport network, which provides road access to all of the proposed development areas. Ground transport links will be further enhanced through initiatives proposed within the TWSP.

Existing ground transport elements include:

- Access to the terminal zone off Airfield Road. The existing access point to the Landside Precinct will remain and other precincts in this zone will be accessed internally from here;

- Access to the Mahindra Aerospace Precinct from the existing access off Airfield Road;
- Access to the Manufacturing Support Precinct via Valley Drive;
- Access to the Southern Business and employment Zone from Village Avenue, which currently serves the DELWP firebase and Helimed 1;
- Public transport (bus services) at the intersection of the Princes Highway and Village Avenue, which serve the Latrobe Regional Hospital, are only 350m from the proposed Education & Training Precinct; and
- Access to the Northern Business & Employment Zone and the Recreational & Events Zone through a single additional access off Old Melbourne Road.

Proposed ground transport elements within the TWSP which will assist in supporting the development of the Master Plan include:

- The identification of the Princes Highway as a high frequency multi nodal public transport corridor including rapid local bus services and on-road commuter cycle paths as well as rail services.
- Consideration of the establishment of an additional train station to service the Latrobe Regional Hospital (allowing better access to regional users) and the residents and employees of this area.
- Development of Old Melbourne Road as a green movement corridor between Airfield Road and the Traralgon CBD
- The proposed Traralgon-Morwell Shared Path adjacent to the northern perimeter of the airport
- Additional bus stop on Airfield Road close to the Aviation Business Expansion Precinct.

Reference should be made to Section 3.3 and Figure 8 of the draft TWSP included at Appendix B for further details.

5.7 AERODROME FACILITIES

Aerodrome facilities have been identified to serve the development concept above.

5.7.1 PLANNING PARAMETERS

ICAO Reference Code

The dimensions, shape and layout of basic aerodrome facilities such as runways, taxiways and aprons are essentially determined by the performance capability and size of the aircraft that are intended to use them. The planning and design of these facilities therefore begins by identifying the most demanding or critical aircraft that will use them.

In Australia this is achieved by using an ICAO reference code system. The reference code has two elements, a number and a letter, which are derived by grouping aircraft with similar performance capability and key physical dimensions. Thirteen aircraft groupings, each with a unique code number and letter combination such as 1A, 2B, 3C and 4D have been identified.

The objective is to plan individual facilities for the critical aircraft likely to use them. Different facilities at the airport are normally planned for their specific critical aircraft. On the other hand, common use facilities such as the primary runway and taxiway system will be planned for the most demanding aircraft envisaged to use the airport.

Pavement Strength

The strength of airfield pavements is classified using the ICAO Aircraft Classification Number/Pavement Classification Number (ACN/PCN) system. The ACN is calculated by the aircraft manufacturer for each aircraft, based on the damaging effect of the aircraft on different types of pavement. The ACN is dependent on both the maximum weight of the aircraft and the number, type and configuration of the landing gear. The ACN also includes a component related to the tyre pressure of the main gear, which can often become the critical parameter in relation to pavement strength.

Principal Aircraft Parameters

Aircraft types in operation at Latrobe Regional Airport are expected to change in the long term to reflect the ongoing modernisation of the broader Australian fleet. To accommodate possible opportunities for the expansion of aircraft manufacturing and maintenance activities in the future, longer term planning for Latrobe Regional Airport includes large turbo-prop and regional jet aircraft with passenger capacity of at least 70 and up to 120 seats.

Table 2 summarises the principal relevant planning parameters that relate to aeronautical facilities for each of the key aircraft types that might conceivably use Latrobe Regional Airport in the future. The aircraft in **Table 2** have been separated into those able to use the current Runway 03/21 and those for which a possible future Code 3C runway would need to be provided.

Table 2: Principal Design Aircraft Key Parameters

Aircraft Type	ICAO Aerodrome Reference Code	Wingspan (m)	MTOW (kg)	Typical Passenger Capacity (Pax)
Cessna 172	**1A**	10.9	1,160	N/A
Mahindra Airvan 8 / 10	**1A**	12.3	2,150	7 / 9
Cessna 310	**1A**	11.3	2,495	N/A
Cessna 404	**1A**	14.1	3,810	N/A
Beech Super King Air 200	**1B**	16.6	5,670	8-10
Cessna 208 Caravan	**1B**	15.9	3,310	9 – 12
Cessna 441	**1B**	15.1	4,468	8 – 10
DHC6 Twin Otter	**1B**	19.8	5,670	19
Air Tractor AT-802A	**1B**	18.0	7,257	N/A
Pilatus PC-12	**2B**	16.2	4,740	N/A
Embraer EMB-110	**2B**	15.3	5,670	19
Cessna Citation I/II	**2B**	15.8	6,030	8
Beech 1900D	**2B**	16.6	7,530	19
Metro III	**2B**	17.4	6,580	19
Dash 8-100, -200	**2C**	27.4	15,650	36
Dash 8-300	**2C**	27.4	18,645	50
Bombardier CL-600	**3B**	18.9	19,620	19
Dassault Falcon 900	**3B**	19.3	20,640	19
Embraer E-145	**3B**	20.0	24,100	50
Metro 23	**3C**	17.4	7,480	19
Saab 340	**3C**	21.4	13,155	34
ATR 72	**3C**	27.0	22,000	68
Dash 8- Q400	**3C**	28.4	29,260	74
Fokker F50	**3C**	29.0	20,820	55
Fokker 100	**3C**	28.0	45,810	100
Embraer E-170	**3C**	26.0	37,200	78
Boeing 717-200	**3C**	28.5	54,900	117

(1) For flexible pavement on a medium (category B) sub-grade

5.7.2 RUNWAYS

The current runways are of adequate length and width to serve the current aircraft types and traffic levels. Their orientation is suitable to achieve adequate runway usability with respect to prevailing wind patterns.

Runway 03/21

An extension of Runway 03/21 to the south-west to achieve an additional 150m length is possible. Implementation of this would be subject to Runway 03/21 remaining a Code 2 runway as it is impractical to implement the runway strip width required by the standards for Code 3 instrument non-precision approach runways.

In order to preserve the future capability for Latrobe Regional Airport to accommodate operations by Code 3 aeroplanes in accordance with the standards set out in CASA MOS Part 139, the previous Master Plans in 1998 and 2009 included for a possible Code 3C runway aligned parallel to and north-west of the existing. Based on analysis of the previous Master Plan contents, this 2015 Master Plan preserves two possible location options for this runway.

- **Option 1:** Provides for a separation of 156m between the existing and parallel runway centrelines[3]. This separation would enable the existing runway to be retained as Code 1 or 2 capable runway, together with a Code C parallel taxiway between the two runways.
- **Option 2:** Provides for a separation of 93m between the existing and parallel runway centrelines. This is the minimum separation required between a Code 3C instrument non-precision approach runway and a Code C parallel taxiway, to which it is assumed the existing runway will be converted.

Both options would enable a Code 3C instrument non-precision runway 1,680m long by 30m wide together with 90m long Runway End Safety Areas to the current standards at each end.

For the purpose of maximising future flexibility in the long term, and on the basis that this requires no undue sterilisation of land from other uses in the interim, planning to preserve both options is recommended.

Runway 09/27

Runway 09/27 currently meets Code 1B non-instrument runway standards. Sealing of the full length to provide for all-weather capability could be considered in the future. Subject to demand and development of the Aviation Enterprise Precinct, lighting of this runway could be considered to improve its availability.

[3] Note: The 2009 Master Plan assumed a separation of 168m between the existing and future runways on the basis that the future runway would allow for Code 3C precision approaches and the existing runway would become a Code C parallel taxiway. As discussed further in Section 7.4, the feasibility and need for a precision approach capability is considered unlikely.

5.7.3 TAXIWAYS

The Master Plan envisages realignment of Taxiway A in the medium- to long- term to align with the section between Taxiways A1 and A2. This realignment would place the taxiway centreline approximately 65m from the existing Runway 03/21 centreline enabling expansion of the existing main apron area and relieving congestion, as well as providing for expansion of other precincts.

5.7.4 NAVIGATION AIDS

Having recently been relocated, it is envisaged the NDB will remain in its current location for its life, which is anticipated to be for the period of this Master Plan. Beyond that, should the NDB be removed entirely, the opportunity would exist for expansion of the Aviation Enterprise Precinct.

6.0 BUSINESS DEVELOPMENT AND MARKETING STRATEGY

6.1 BACKGROUND

The preceding sections of this Master Plan set out the context, strategic direction and development concept for the Latrobe Regional Airport over the next 20 years and beyond. The identification of a prioritised set of business opportunities, and subsequent establishment of a development concept with the flexibility to accommodate various types of aviation business activity, are necessary enabling factors in the realisation of the Master Plan vision. They are, however, insufficient in themselves to ensure that the full potential of the Latrobe Regional Airport as an employment hub is realised.

In order to attract businesses and other aviation activity to establish at the airport, Latrobe City Council and the Latrobe Regional Airport Board will need to work proactively with existing airport tenants – and to identify, engage and initiate dialogue with prospective organisations – to understand the critical success factors for individual businesses.

For regional airports such as Latrobe where passenger services are marginal or uneconomical, a vibrant general aviation sector encompassing a diverse range of non-passenger aircraft operations is essential for maximising viability. Latrobe Regional Airport already hosts a range of aviation activities which are in good commercial health relative to the industry. The private hangar precinct, Mahindra Aerospace, Latrobe Valley Aero Club, Latrobe Flying Museum, Aerial Extras, East Coast Aviation, DELWP base and Helimed 1 are all commercially important operators. This level of activity already makes Latrobe Regional Airport one of the more vibrant non-passenger regional airports in Australia and offers a sound platform for expansion.

6.2 OBJECTIVES

The principal objectives of the Latrobe Regional Airport Business Development and Marketing Strategy are to:

- Establish a clear development vision reflecting the Latrobe Regional Airport Master Plan 2015 and the prioritised business development opportunities;
- Increase diversification of aviation businesses at Latrobe Regional Airport through targeted and effective marketing, undertaken in parallel with respect to each of the key opportunities; and
- Set out the key actions required by the Latrobe Regional Airport Board and Latrobe City Council to realise growth and development at the airport on the basis of the opportunities identified through this Master Plan.

6.3 THE LATROBE REGIONAL AIRPORT VISION

A key starting point for engagement with prospective tenants is to present a clear, concise and consistent vision of the future development of the airport, which describes exactly how Latrobe City Council and the Latrobe Regional Airport Board see the mix of airport related activities which will occur there in future. The development vision should clearly articulate the key strengths of Latrobe Regional Airport and Latrobe City for prospective businesses.

The three key elements of the development vision and how each is supported by other layers of the Master Plan are:

A Regional Aerospace Manufacturing and Maintenance Hub

- Australia's only commercial aircraft manufacturing facility provides established aircraft manufacturing activity within a dedicated Mahindra Aerospace precinct.
- Development has commenced on a Manufacturing Support Precinct to accommodate expansion of Mahindra's facilities and dedicated provision for new aircraft manufacturing businesses.
- Existing aircraft maintenance providers will be supplemented with new maintenance, repair and overhaul organisations.
- Establishment of an aerospace education and training centre will provide an essential skills and labour pool for manufacturing and maintenance providers.
- The ability to accommodate larger aircraft in the short term, through strategic sites with connectivity to the existing runway and in the longer term through a possible new runway alignment.

A Strategic Emergency Services Base serving the Gippsland Region

- Latrobe Regional Airport is a key regional base for aerial fire-fighting and aeromedical retrieval operators serving the Gippsland region.
- Strategic sites adjacent to existing facilities are preserved within the Master Plan, which are suitable for operational, maintenance and training contractors wishing to co-locate their operations with these important airport users.
- Access to education and training services through an aerospace education and training centre, in partnership with local education providers.

An Enabler of Aviation Enterprise and Innovation

- A dedicated precinct to encourage the establishment of aviation businesses through flexible development arrangements.
- A strong and vibrant private aviation user base fostered by the availability of private hangar sites and an events-focussed strategy.
- Access to aerospace education and training service providers and apprentices on airport.
- A wide range of commercial aviation operators offering the full suite of aviation related services expected of a multi-purpose general aviation airport.

6.4 KEY ACTIONS

The following targeted actions are recommended as initial steps in the process of implementing the Master Plan vision and attracting aviation business development to fulfil the development concept set out in **Section 5.0**.

Latrobe City Council and The Latrobe Regional Airport Board, through the Airport Manager, are already proactively implementing several of these initiatives. This work should continue to be supported and, where necessary, additional resources made available to further increase the effectiveness of the strategy.

Short Term

- Continue regular discussions to secure the future of Mahindra Aerospace at Latrobe Regional Airport. Develop further definition as to the nature of this presence and how it relates to Mahindra's global operations.
- Work with Mahindra Aerospace to identify supply chain opportunities which could be attracted to locate operations at Latrobe Regional Airport.
- Engage with Federation University and Federation Training to identify opportunities to locate relevant training and education facilities on-airport, within a dedicated Training and Education precinct.
- Consolidate on the success of the private hangar precinct to attract further leases. Ensure the business case for this development incorporates the costs of realignment of Taxiway A, thus enabling expansion and reconfiguration of a number of existing facilities which are constrained.
- Work with LVAC to identify specific immediate opportunities for aviation-related events which could be successful at Latrobe and to promote these to the general aviation community.
- Formulate a clear policy on commercial arrangements within the Aviation Enterprise Precinct, including the nature of lease agreements, tenure (including clear definition of any areas where any freehold lots would be offered along with associated user agreements and covenants).

Medium Term

- Continue to promote the strengths of Latrobe City and Latrobe Regional Airport for aviation businesses through relevant channels including the Australian International Airshow held bi-annually at Avalon Airport as well as industry publications and representation at general aviation events.
- Work with the Latrobe Valley Aero Club to understand and facilitate LVAC's expansion aspirations in the field of pilot training and to target complementary businesses in this area to attract.

- Review the Latrobe City events calendar and identify opportunities for a wider range of events to be held at Latrobe Regional Airport which could benefit from the location and which can also encourage aviation uses.
- Engage with contractors and suppliers to the emergency services providers to identify the potential for associated services to co-locate within the Emergency Services Precinct.
- Seek out and engage potential passenger charter, commuter service or air taxi operators, which might be capable of establishing and growing a potential passenger transport market based on Latrobe, to further enhance the attractiveness of the location to business executives. Also consider working with Melbourne (Essendon or Moorabbin) based operators with the objective of fostering charter services to and through Latrobe.

7.0 AIRPORT SAFEGUARDING

7.1 THE NEED FOR SAFEGUARDING

Adequate protection of the basic capability to undertake aircraft operations in accordance with prescribed safety standards and regulatory requirements, and in an efficient and economic manner, is imperative to the future realisation of aeronautical opportunities at Latrobe Regional Airport. These aeronautical operations provide the essence of the airport's activity and hence the catalyst for all employment and business activity envisaged by this Master Plan. Without adequate safeguarding, the vision established by the 2015 Latrobe Regional Airport Master Plan will not be achieved.

It is vitally important to protect Latrobe Regional Airport from encroachment from incompatible urban expansion and ensure continued operations whilst protecting the amenity of surrounding properties.

In order to adequately protect for the potential future aircraft operations at Latrobe Regional Airport envisaged by this Master Plan, safeguarding of a number of aspects will be required through appropriate planning and development restrictions and monitoring processes. In order to be most effective, these restrictions must be referenced within the Latrobe Planning Scheme and it is recommended that the relevant requirements also be incorporated into the planning permit assessment process, to the extent possible under the Victorian Planning Policy Framework.

7.2 CURRENT PLANNING TOOLS

A number of planning tools or controls are available within the Victoria Planning Provisions for airport safeguarding:

- The Local Planning Policy Framework, including the Municipal Strategic Statement and Local Planning Policies, can be used to highlight the strategic importance of a municipality's airport(s) and set out objectives and strategies to support their ongoing operation and protection in accordance with the seven principles of NASF;
- Appropriate zones can be used to ensure that future land use and development around an airport is responsive to ongoing aviation activities at the airport; and
- Overlays, particularly the Airport Environs Overlay (AEO) and Design and Development Overlay (DDO), can be used to deal with specific matters such as protecting aircraft noise contours and operational airspace surfaces in accordance with the relevant NASF Guidelines.

7.3 NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK

The National Airports Safeguarding Framework (NASF) is a national land use planning framework that aims to:

- Improve community amenity by minimising aircraft noise-sensitive developments near airports including through the use of additional noise metrics and improved noise-disclosure mechanisms; and
- Improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.

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

NASF currently consists of a set of seven principles and six guidelines, as follows:

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

- **Guideline A**: *Measures for Managing Impacts of Aircraft Noise*
- **Guideline B**: *Managing the Risk of Building Generated Windshear and Turbulence at Airports*
- **Guideline C**: *Managing the Risk of Wildlife Strikes in the Vicinity of Airports*
- **Guideline D**: *Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation*
- **Guideline E**: *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*
- **Guideline F**: *Managing the Risk of Intrusions into the Protected Airspace of Airports.*

The full NASF principles and guidelines can be found on the Department of Infrastructure and Regional Development's website at:
www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf

Two further NASF guidelines are understood to be under preparation by NASAG. One of these will cover the application of Public Safety Zones which are intended to protect third parties from risk as a result of aircraft crashes. The other will provide guidance on ensuring sensitive areas around aviation communication, navigation and surveillance (CNS) airways facilities are adequately protected against the impacts of surrounding structures on radio signals.

The NASF was agreed to by Commonwealth, State and Territory Ministers at the Standing Council on Transport and Infrastructure meeting on 18 May 2012. The agreement represents a collective commitment from governments to ensure that an appropriate balance is maintained between the social, economic and environmental needs of the community and the effective use of airport sites. NASF applies to all airports in Australia.

As of March 2015, the Victoria Planning Provisions incorporate controls to deal with specific matters such as the protection of operational airspace surfaces and aircraft noise contours in accordance with the relevant NASF Guidelines. These issues and the applicable planning controls are described in **Section 7.4** and **Section 7.5** respectively.

Also as at March 2015, a new Victorian Planning Policy Framework is under development. A draft of the proposed Planning Policy Framework released in 2014 contains a number of policies that support the ongoing protection of airports and their operation. The NASF is listed as a background document in Clause 12.09 of the draft Planning Policy framework. Other safeguarding considerations covered or envisaged by NASF are discussed in **Section 7.6** below.

7.4 AIRSPACE PROTECTION

7.4.1 AIRSPACE PROTECTION LEGISLATION

The safety, efficiency and regularity of aircraft operations require airspace to be largely free of obstacles which may make it unsuitable for the conduct of visual and instrument flights.

The Commonwealth provides for the protection of airspace around its federally leased airports through Part 12 of *the Airports Act 1996* and the *Airports (Protection of Airspace) Regulations 1996*. This Master Plan adopts the *Airports Act 1996* definitions of 'prescribed airspace' for Latrobe Regional Airport to ensure consistency with the latest Commonwealth practice. Prescribed airspace protected is defined thus asthe airspace above any part of either an OLS or a PANS-OPS surface for the airport.

7.4.2 OBSTACLE LIMITATION SURFACES

The Obstacle Limitation Surfaces (OLS) for an airport describe the airspace boundaries for flight in proximity to an airport which should be kept free of obstacles that may endanger aircraft operations in visual operations or during the visual stages of an instrument flight.

The OLS elements are defined in the International Civil Aviation Organization (ICAO) Annex 14 and in Chapter 7 of the CASA Manual of Standards Part 139. The OLS are used to define when objects are to be considered as obstacles and assessed for their impact on aircraft operations in visual

flight. Subject to an aeronautical assessment, CASA may permit an obstacle to penetrate the OLS without placing restrictions on the allowable operations, but will normally require it to be marked and/or lit to make it conspicuous to pilots.

However, CASA's general approach to obstacles is that every effort should be made to implement the OLS standards and limit the introduction of new obstacles. It is the responsibility of the aerodrome operator, to monitor surrounding airspace for obstacles and avoid penetrations of the OLS. The implication here is that for regional airports, which are not protected by the *Airports (Protection of Airspace) Regulations 1996*, that permitting obstacles within the OLS without a confirmatory aeronautical assessment may result in a mandate from CASA to alter the operational parameters of the aerodrome to remove the obstacle from the resultant OLS. This could easily result in closure or effective closure of a runway.

The previous (2009) Master Plan made provision for a precision approach runway. The feasibility of providing precision approach capability at Latrobe Regional Airport is highly questionable, given the existing obstacle environment. It is instead considered that improvements to satellite-based navigation procedures such as that offered by RNP are likely to represent the most cost-effective landing minima. Such procedures can be adequately protected by non-precision OLS requirements.

In order to adequately protect for all possible runway options, a composite OLS has been developed based on applying Code 3C instrument non-precision criteria to both possible future runway alignments (Option 1 and Option 2 on **Figure F**) together with Code 2C instrument non-precision criteria to the existing runway alignment (including the possible extension). This is shown on **Figure G**. Although it is acknowledged that some existing obstacles may penetrate this composite OLS, it is justifiable to protect for all possible future runway options by restricting the presence of any additional obstacles within the potential OLS of any future runway development.

7.4.3 PANS-OPS

Obstacle assessment or accountability requirements for instrument flight are prescribed by ICAO in document 8166-OPS/611: Procedures for Air Navigation Services – Aircraft Operations. These PANS-OPS surfaces define the absolute upper limit required of new structures so that the procedure designer can guarantee that an aircraft will have required minimum vertical clearance when flying in instrument conditions. In these situations the pilot may be relying entirely on the information derived from cockpit instruments and may have no external reference to the ground, to obstacles or other aircraft.

As a minimum, the existing procedures must be protected from intrusion by obstacles in the same way as the OLS. However, with PANS-OPS it is important to emphasise that there is no discretion in penetrating the surfaces – any structures must be kept below the PANS-OPS surfaces. If a new building or structure penetrates a PANS-OPS surface the procedures designer will need to adjust the PANS-OPS surface vertically to compensate, and in doing so raise the minimum safe altitude

for that segment of the instrument flight. As a result, structures in the vicinity of an airport may prevent a pilot from descending below cloud and landing at the airport.

In light of changes to the required PANS-OPS surfaces associated with non-precision instrument approaches, Council should review its current operational PANS-OPS surfaces to ensure it is fulfilling its obligations under Civil Aviation Safety Regulations Part 139 and Part 173 to monitor and protect the relevant obstacle inspection areas for the current instrument approach procedures.

In terms of ensuring future capability is preserved, development of a future PANS-OPS plan, developed to the relevant current protection criteria, sufficient to protect conceptual instrument approach procedures to future Runway 03/21 runway alignment options, is recommended prior to incorporating updated obstacle protection controls into the Latrobe Planning Scheme.

7.4.4 DESIGN & DEVELOPMENT OVERLAY

There is no standard planning scheme mechanism in the Victoria Planning Provisions that specifically enables the height of structures that may impact on aircraft operations to be considered or controlled. In the absence of a standard overlay, several airports, including Latrobe Regional Airport, have used the Design and Development Overlay (DDO) as a form of airspace protection.

To ensure that the future vision of the Latrobe Regional Airport Master Plan 2015 is adequately protected in terms of obstacle limitation, revision and update of the current DDO schedules (DDO7 and DDO8) will be required. In preparing the relevant planning scheme amendment, reference to the obstacle limitation surfaces and PANS-OPS surfaces applicable to the future runway configuration(s) which may be necessary at the airport (as described above) should be made to ensure the DDO adequately protects these future requirements.

For the purposes of identifying updated DDO schedules, **Figure G** incorporates a composite OLS and PANS-OPS visual slope segment (VSS) surface plan for all three runway options.

7.5 AIRCRAFT NOISE

7.5.1 AUSTRALIAN NOISE EXPOSURE FORECAST

Restrictions on airport operations as a result of annoyance caused by exposure to aircraft noise can significantly limit the ability of an airport to facilitate aviation related business and employment. The Australian Noise Exposure Forecast (ANEF) system is one metric used for conveying the levels of aircraft noise exposure in the vicinity of airports. It is the only system which currently has statutory meaning for land use planning, through Australian Standard AS2021-2015, *Acoustics: Aircraft Noise Intrusion – Building Siting and Construction.*

The ANEF is constructed using the Integrated Noise Model (INM) to generate contours of equal noise exposure level. It is normal to show contours of 20, 25, 30, 35 and 40 ANEF units. It is based upon the:

- Intensity, duration, content and spectrum of the sound;

- Forecast aircraft types and movements on various flight paths; and
- Average daily distribution of aircraft take-offs and landing.

In accordance with the safeguarding principles and manner of endorsement for ANEFs[4], aircraft noise forecasts should represent the future expected state of aircraft noise exposure in the vicinity of an airport. The ANEF can be prepared for a specific forecast year, or to represent the anticipated aircraft operations associated with the ultimate development of the airport.

The ANEF system forms the basis of the Airport Environs Overlay.

7.5.2 AIRPORT ENVIRONS OVERLAY

The Airport Environs Overlay (AEO) is a standard overlay available in the Victoria Planning Provisions intended specifically for implementing the land use recommendations within AS2021-200 associated with the ANEF. The AEO has two schedules: Schedule 1 is more restrictive and is applied to land inside the ANEF 25 contours; Schedule 2 is applied to land between the ANEF 20 and ANEF 25 contours. To be correctly applied, the boundaries of the overlay should relate to an endorsed ANEF chart and both AEO schedules (rather than just one) should be applied.

Currently, the Latrobe Planning Scheme incorporates an Airport Environs Overlay based on a 2010 ANEF prepared in 1998 and endorsed by Airservices Australia. However, only Schedule 2 is currently referenced.

As a result of a number of factors, an update to the Latrobe Regional Airport ANEF has been prepared. These factors include:

- Revised expectations regarding the likely number, frequency and type of aircraft movements that may occur in future;
- Incremental changes in the sophistication of the noise modelling software since the time the current ANEF was prepared;
- Recent advances in the modelling of helicopter noise which could result in changes to the contours. Helicopter movements could form a substantial element of future activity, and are generally noisier than fixed wing general aviation movements; and
- The fact that the horizon of the previous ANEF has now passed.

Preparation of an updated ANEF which reflects the ultimate airport development scenario ensures that the resulting noise contours provide more accurate information to Council and stakeholders for use in future land use planning decisions. The updated ANEF is included at **Appendix E**. These contours and the ANEF model behind them have been submitted to Airservices Australia to be endorsed for technical accuracy in the manner of endorsement approved by the Minister for

[4] All ANEFs are endorsed for technical accuracy by Airservices Australia, to ensure that the modelling assumptions adopted in INM appropriately reflect the parameters associated with aircraft operations, that consultation with relevant stakeholders including local and state government agencies has been undertaken, and that the forecast movements do not exceed the capacity of the future proposed airport infrastructure (ie runways).

Infrastructure, Transport, Regional Development and Local Government. Endorsement of these contours is anticipated to occur following the completion of the public exhibition of the Latrobe Regional Airport Master Plan 2015 and

7.6 OTHER SAFEGUARDING CONSIDERATIONS

In addition to the protection of Latrobe Regional Airport operational airspace surfaces and ANEF contours described above, the NASF highlights a number of other aspects of airport safeguarding which ought to be considered, but which are not yet covered by specific controls within the Victoria Planning Provisions. These are each described briefly under the respective sub-sections below.

7.6.1 N-ABOVE CONTOURS

NASF Guideline A – *Measures for Managing the Impacts of Aircraft Noise* recognises that the 20 ANEF and 25 ANEF zones within which residential developments are restricted under AS2021, do not capture all high noise affected areas around an airport. AS2021 itself recognises that the ANEF contours are not necessarily an indicator of the full spread of noise impacts, particularly for residents newly exposed to aircraft noise.

N-above contours have been developed and are now being applied by strategic planners to complement the ANEF metric and provide an additional communication and planning tool. N-above contours indicate the number of aircraft noise events equal to or greater than a specified noise level expected to occur on an average day.

Where there is no major existing or approved development, there is scope to plan ahead to take account of potential noise disturbance and in particular to minimise the zoning of noise-exposed land for residential development.

For this reason, NASF Guideline A recommends that existing and future development need to be treated differently, with rezoning of greenfield to permit noise sensitive uses only undertaken subject to the following approach:

- There should be no new designations or zoning changes that would provide for noise sensitive developments within a 20 ANEF where that land was previously rural or for non-urban purposes. Zoning for noise–sensitive development should be avoided where ultimate capacity or long range noise modelling for the airport indicates either:
  - 20 or more daily events greater than 70 dB(A);
  - 50 or more daily events of greater than 65 dB(A); or
  - 100 events or more daily events of greater than 60 dB(A).

N-above contours have been prepared based on the updated ANEF and are included for reference at **Appendix E**.

7.6.2 WILDLIFE HAZARDS

Wildlife strikes and/or their avoidance can cause major damage to aircraft and a reduction in safety. The majority of aircraft collisions with wildlife occur near the airfield during take-off, landing and associated phases. They may cause damage that may impact on the pilot's ability to manoeuvre the aircraft and are a leading cause of aircraft crashes

The risk of a strike on or in the vicinity of an airport relates to the level and form of wildlife activity both within the boundary of an airport and in surrounding areas.

Airports actively reduce wildlife populations and manage the risk of strikes on airport land. Such on-airport activities are underpinned by current aviation safety regulations. Australia's international aviation safety obligations as a contracting state to the Convention on Civil Aviation include responsibilities to take action to manage the risk from wildlife hazards. Aviation safety regulations do not address the risk of wildlife strikes occurring outside the boundary of airports in the same way as they address on-airport risk. The risk of a strike off-airport relates mostly to wildlife activity in areas surrounding the airport. Wildlife attracted to land uses around airports can migrate onto the airport or across flight paths, increasing the risk of strikes.

Land use planning decisions and the way in which existing land use is managed in the vicinity of airports can, therefore, significantly influence the risk of wildlife hazards. Minimising the risk of wildlife strike requires careful consideration from a planning perspective to identify potential land uses that may attract birds or other wildlife.

NASF Guideline C identifies land uses that have the potential to increase wildlife strike potential and provides guidance on buffer zones within which certain activities around airports should be controlled. Within these buffers it is recommended that some activities are excluded whilst others have monitoring and control measures.

The buffer zones applicable to Latrobe Regional Airport are indicated on **Figure H**.

7.6.3 LIGHTING RESTRICTIONS

Ground lights may cause confusion or distraction to pilots as a result of their colour, position, pattern or intensity of light emission above the horizontal plane. CASA has the power, through Regulation 94 of the Civil Aviation Regulations 1988 (CAR 1988), to require lights which may cause confusion, distraction or glare to pilots in the air, to be extinguished or modified.

Section 9.21 of the CASA MOS Part 139 provides advice with regard to the design and provision of lighting systems for use at or in the vicinity of an aerodrome, with the intention of minimising the potential hazard to aircraft operations from the lighting. Anyone proposing to install a lighting system within the vicinity of the aerodrome should be made aware of the requirements by the airport operator.

The advice provided by CASA is applicable to lighting installations within a 6 kilometre radius of the airport. The lights within this radius fall into a category most likely to be subjected to the provisions

of Regulation 94 of CAR 1988. Within the 6km radius, a primary area exists which is divided into four light control zones designated A. B, C and D. These zones reflect the degree of interference ground lights can cause as a pilot approaches to land. Each zone has specified limits on the intensity of light emissions (at 3 degrees above the horizontal plane) which should be maintained.

The extent of lighting restriction zones with respect to Latrobe Regional Airport are indicated on **Figure I**.

NASF Guideline E contains information to assist development proponents and planning authorities to ensure that lighting in the vicinity of airport does not compromise aviation safety. It is important that the guideline is consulted or CASA advice sought when new sources of significant lighting are being planned in the vicinity of airports. Examples of such developments include: motorway/freeway lighting; container yards; refinery flare plumes; stadium flood lighting; and construction lighting.

7.6.4 BUILDING GENERATED WINDSHEAR AND TURBULENCE

Buildings of a certain size and dimensions, when sited near to runway ends, can sometimes generate windshear and turbulence effects which can pose a safety risk to aircraft. The effect depends on a number of factors and NASF Guideline B sets out:

- empirically determined criteria for windshear and turbulence;
- generic guidance on mitigating risks from proposed buildings;
- a methodology for assessment of proposed buildings;
- options, where required, for subsequent detailed modelling of wind effects; and
- options to mitigate wind effects of existing buildings where required.

The assessment envelopes for building generated windshear and turbulence associated with NASF Guideline B cover an area 1,200m or close perpendicular to the runway centreline and extend 900m along the extended centreline of the runway prior to the runway threshold and 500m along the runway.

Figure J indicates the extent of the assessment envelopes applicable to each runway option. Within these areas, NASF Guideline B recommends that any proposed buildings be evaluated to confirm there will be no unacceptable impacts on the safety of aircraft operations.

7.6.5 WIND FARMS

Wind farms in the immediate vicinity of aerodromes pose a number of obvious risks to aviation safety, including the presence of tall structures which are likely to penetrate the protected operational airspace and the generation of turbulence.

NASF Guideline D provides general information and advice to proponents of wind turbine installations and planning authorities with jurisdiction over the approval of such structures. The guideline also provides specific advice on measure to reduce hazards to aviation and how to implement these.

Wind farm developments typically incorporate turbine structures in the order of 150m or more above ground level. These can be influential on aircraft safety some distance from the airport. To ensure that Latrobe Regional Airport is adequately protected from possible wind turbine development, the planning controls in relation to the height of structures within the DDO should be sufficiently extensive in area to capture any potential wind farm developments.

7.6.6 PUBLIC SAFETY

Public safety zones are intended to limit the risks to third-parties as a result of potential aircraft crashes in the vicinity of airports, rather than to ensure levels of safety to aircraft occupants which is addressed through the civil aviation regulatory framework. Currently in Australia there is no clearly-defined national policy with regard to public safety zones at airports. Although the NASAG is currently considering the issue, the NASF does not currently include guidance on the protection of public safety zones at runway ends.

In the absence of a finalised national approach to public safety around airports, planning authorities should consider existing approaches to public safety zones, associated safety principles and how these might be applied in taking a precautionary approach to the treatment of development and public risk around airport sites.

Queensland is currently the only state which has adopted a policy which defines Public Safety Areas (PSAs) which are applicable to certain aerodromes considered to be of state significance. The Queensland Government has released planning guidelines for land uses at runway ends in its December 2013 *State Planning Policy: State interest – strategic airports and aviation facilities.* The Queensland SPP identifies 'Public Safety Areas' (PSAs) within which development should be restricted in order to protect the safety of both aircraft and passengers, and property and people on the ground in the event of an aircraft accident during landing or take-off.

The PSA as defined by the Queensland SPP is trapezoidal with a base width of 350m at the runway end, a length of 1,000m and a final width of 250m. The dimensions of the PSA enclose an area where the risk per year, to a representative individual, resulting from an aircraft crash is estimated to be in of the order of 1 in 10,000 (10^{-4}). They also partly enclose an area of individual risk of the order of 1 in 100,000 (10^{-5}).

Under the Queensland policy, a PSA is required at the end of a runway where:

- Regular Public Transport (RPT) jet aircraft services are provided; or
- Greater than 10,000 aircraft movements occur per year (excluding light aircraft movements[5]).

These criteria do not apply to either of the runways at Latrobe Regional Airport. However, the Queensland criteria have incorporated methodology adopted by the UK Department for Transport

[5] Light aircraft are generally defined as those with a maximum take-off weight (MTOW) of less than 5,700kg.

in defining Public Safety Zones (PSZs). Since the 1990s, a considerable amount of quantitative risk work has been carried out to determine PSZs for major UK airports based on tolerable individual risk contours. The size of the individual risk contours and hence the PSZ is proportional to the number of aircraft movements, the type and size of the aircraft.

Recent work undertaken by REHBEIN Airport Consulting suggests that airports with significant numbers of light aircraft movements may generate PSZs of comparable size to the current Queensland PSA dimensions, as a result of the generally higher crash rates of smaller aircraft.

Pending any policy guidance from the NASF in terms of public safety, it is recommended that the Queensland PSA dimensions form the basis of guidance to Latrobe City Council in terms of permissible future off-airport land uses.

7.7 IMPLEMENTATION OF SAFEGUARDING

Measures for safeguarding of the future airport operations should be implemented progressively through appropriate amendment(s) to the Latrobe Planning Scheme. This would require the following steps to be undertaken:

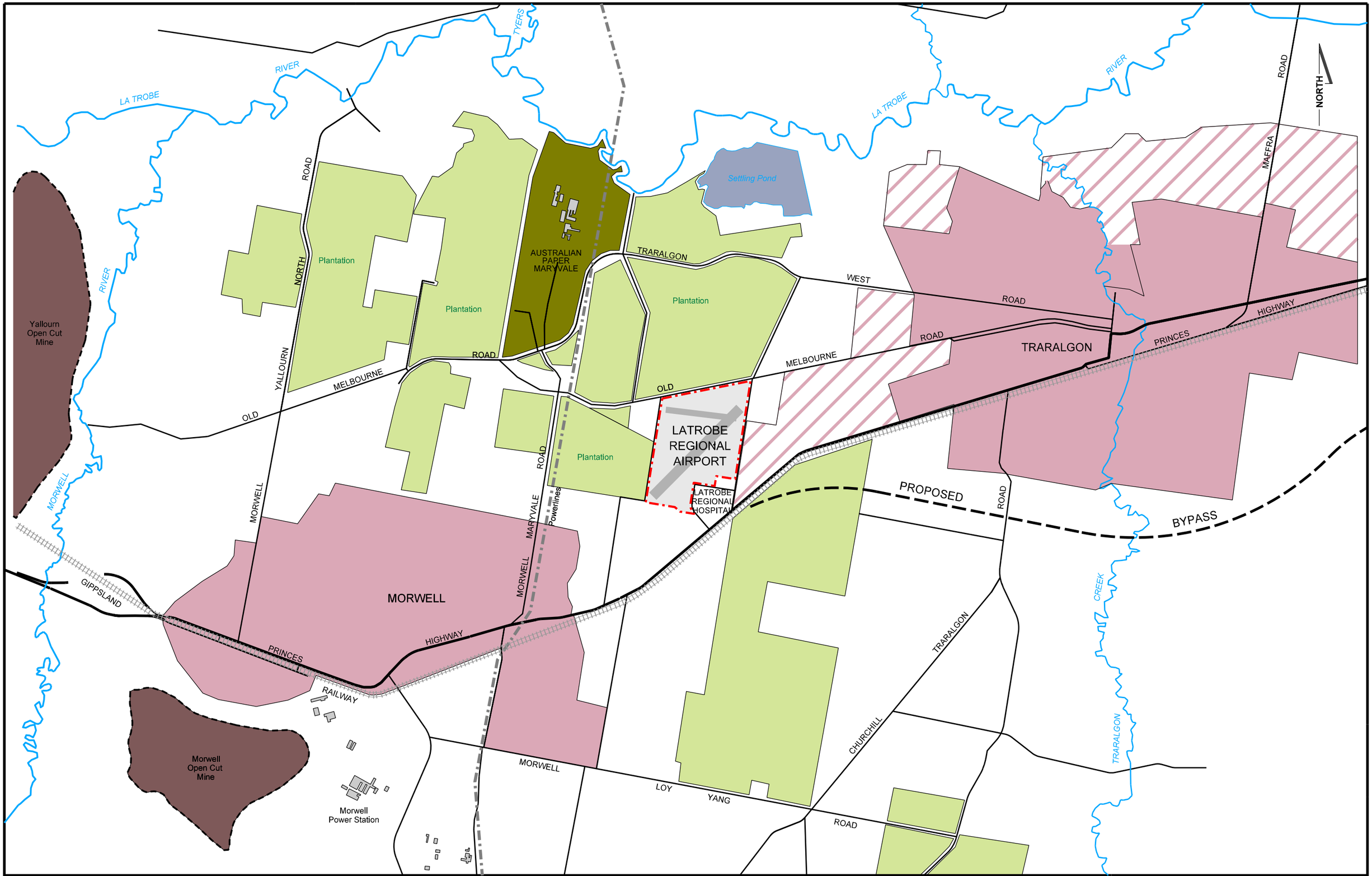
- This Latrobe Regional Airport Master Plan 2015, once adopted, should be introduced in the Latrobe Planning Scheme as a reference document;
- At a strategic level, it is imperative that a master plan be developed for the area identified as 'employment investigation area' within the *Traralgon West Structure Plan*, in order to determine what mix and allocation of uses is appropriate within this area. This work should take into account the airport safeguarding principles described in this section as well as how best to complement vision and development concept for airport described in **Sections 4.0 and 5.0** above. In particular, it must ensure that any residential uses in the area do not present any potential to compromise the future operations of the airport;
- In light of the proximity of the Latrobe Regional Airport and Latrobe regional Hospital, and the potential for interaction in terms of land uses, Latrobe City Council, the Latrobe Regional Airport Board and the Latrobe Regional Hospital should engage in discussions, with the objective of establishing a Memorandum of Understanding allowing both to work together in achieving their respective development objectives.
- Restrictions on the height of surrounding structures, vegetation and other objects which may present a hazard to existing or possible future aircraft operations will need to be implemented through the application of Schedules to the Design and Development Overlay (DDO) to the Latrobe Planning Scheme. The DDO Schedules will need to identify areas and applicable height restrictions which will form the planning permit trigger.
- The DDO Schedules will be based on a set of Obstacle Limitation Surfaces required to ensure the safety of future aircraft operations in accordance with the Civil Aviation Safety Regulations Part 139 and the minimum standards required by the Civil Aviation Safety Authority set out in **Figure G**.

- The strategic justification for the DDO will be provided through the adoption of the Final Latrobe Regional Airport Master Plan 2015 and the need for Council to enable the vision set out in the Master Plan to be realised.
- Land use restrictions on inappropriate development are currently implemented through an Airport Environs Overlay (AEO). The AEO should be based on an Australian Noise Exposure Forecast contour map which has been endorsed for technical accuracy by Airservices Australia. The ANEF is a forecast of future aircraft operations expected as a result of the realisation of the Master Plan and not a measure of the noise footprint of existing operations.
- It is justifiable and permissible to establish an ANEF based either on a long-range (beyond 20-years) timeframe or to represent the expected ultimate development of the airport. Given the long-term nature of land use zoning and the irreversibility of allowing incompatible development, a long-range ANEF has been prepared consistent with the development vision of the Master Plan. This ANEF has been endorsed for technical accuracy by Airservices Australia.
- The Airport Environs Overlay in the Latrobe Planning scheme should then be replaced with the updated long range (2050) ANEF. As the ANEF preparation and endorsement process can take some time, in the interim, the current AEO remains relevant and should be retained within the Planning Scheme.
- A set of N-above contours reflecting the advice of the National Airports Safeguarding Framework has been prepared in association with the updated ANEF. These are included at **Appendix E**. Council should investigate and keep under review the ability to incorporate the N-above contours within the Latrobe Planning Scheme in a manner which can guide future planning decisions and inform the public of the expected impacts of airport operations as a supplement to the ANEF.
- Council should consider the windshear, wildlife hazard, wind farm, lighting and public safety guidelines, as outlined in **Section 7.6**, when assessing planning proposals around the airport (but not apply planning controls for these matters at this stage pending completion of the State Government's work on implementing NASF and further work by NASAG relating to Public Safety Areas).

APPENDIX A

FIGURES

LIST OF FIGURES:



Project:	LATROBE REGIONAL AIRPORT MASTER PLAN 2016
Client:	LATROBE CITY COUNCIL
Title:	**LOCALITY PLAN**

REHBEIN Airport Consulting
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4	26.02.16
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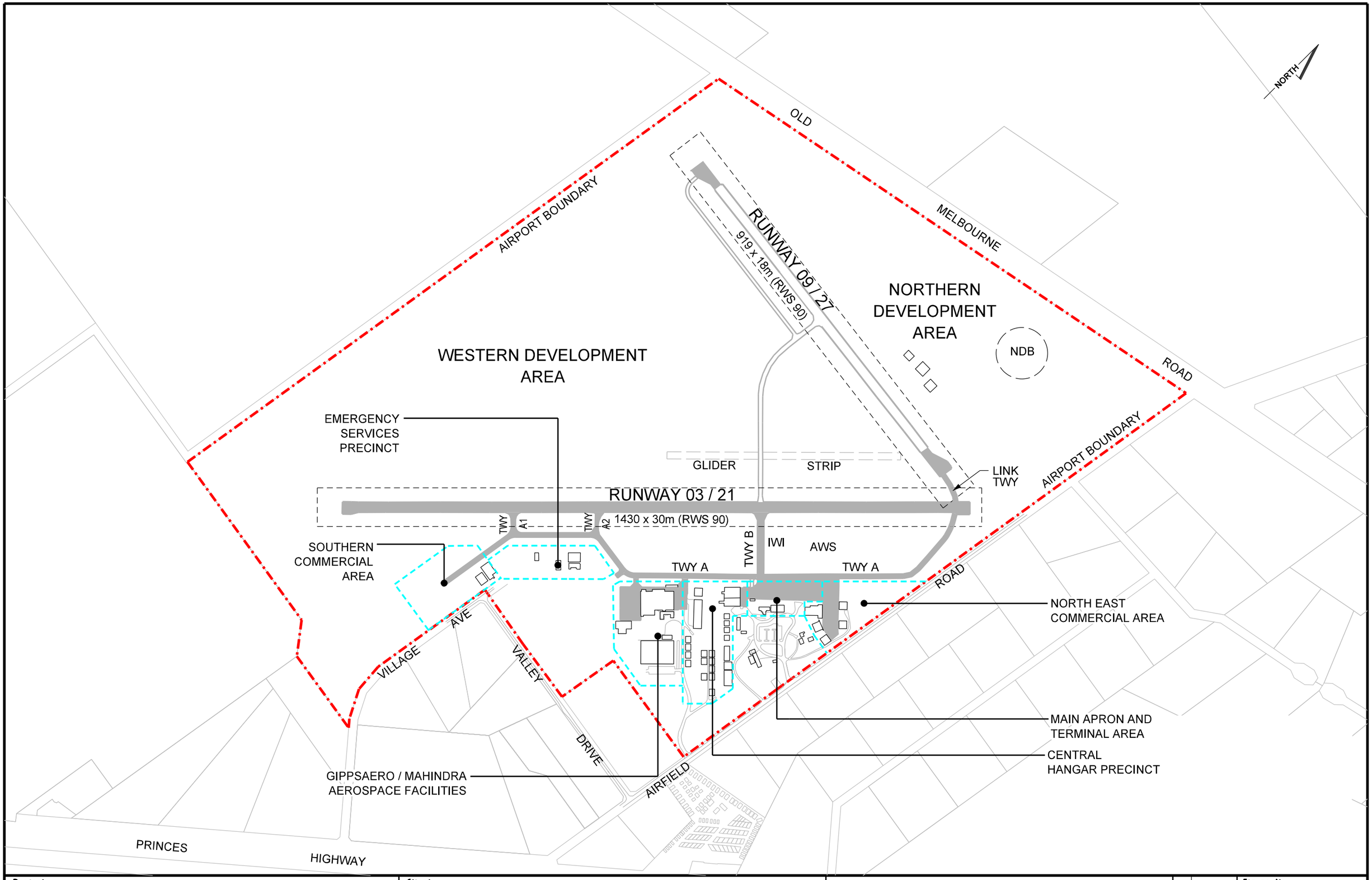
Figure No: FIGURE **A**

Scale: 1:50,000 | A3 Sheet Size

File Ref: M13237



Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **EXISTING FACILITIES LAYOUT**

REHBEIN Airport Consulting
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1	16 03 15
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Figure No: FIGURE **B**

Scale: 1:8000 | A3 Sheet Size

File Ref: M13237

RUNWAY 03 / 21

TWY A1

TWY A2

TWY A

TWY A

TWY A

TWY A

TWY A

TWY B

NORTH

DELWP FIREBASE

HELIMED1

LARGE HELICOPTER PAD

IWI

AWS

JET A-1

MAHINDRA AEROSPACE

PRIVATE HANGAR PRECINCT

TERMINAL APRON

AVGAS

TERMINAL

CAR PARK

PAVED APRONS

VALLEY DRIVE

AIRPORT BOUNDARY ROAD

AIRFIELD

DECOMMISSIONED NDB (TO BE REMOVED)

	TENANT
1	LATROBE FLYING MUSEUM
2	
3	MICK NORTH
4	LATROBE VALLEY AIRFRAMES & WELDING
5	LATROBE FLYING MUSEUM
6	LCC RESIDENCE & MAINTENANCE WORSHOP
7	LATROBE VALLEY AERO CLUB (LVAC)
8	EAST COAST AVIATION (TENANT TO LVAC)
9	LATROBE VALLEY AERO CLUB (LVAC)
10	LATROBE VALLEY SPORT AERO CLUB
11	LATROBE VALLEY AERO CLUB (LVAC)
12	426 SQN AUSTRALIAN AIR FORCE CADETS
13	VICTORIAN STATE EMERGENCY SERVICES (SES)
14	CFA
15	OSPREY AVIATION SERVICES
16	JELFOR PTY LTD

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **EXISTING AIRPORT DEVELOPMENT**

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4	26 02 16
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1	16 03 15
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Figure No: FIGURE **C**

Scale: 1:2500 | A3 Sheet Size

File Ref: M13237

LEGEND

URBAN AMENITY BUFFER

BIODIVERSITY ASSETS

GAS PIPELINE EASEMENT

RESIDENTIAL INTENSIFICATION AREA (PROPOSED UNDER TGAR)

EMPLOYMENT INVESTIGATION AREA (UNDER TGAR)

FZ FARMING ZONE
RLZ3 RURAL LIVING ZONE (Schedule 3)
RLZ5 RURAL LIVING ZONE (Schedule 5)

NORTH

OLD

FZ

FZ

AIRPORT BOUNDARY

MELBOURNE

GIPPSLAND WATER STORAGE FACILITY

RUNWAY 09 / 27

NDB

POSSIBLE FUTURE CODE C RUNWAY RESERVE

RUNWAY 03 / 21

RLZ3

ROAD

ROAD

FZ

VILLAGE AVE

RLZ5

VALLEY DRIVE

CARAVAN PARK

AIRFIELD

RLZ3

RLZ5

LATROBE REGIONAL HOSPITAL

MOTEL

CARAVAN SALES

PRINCES

HIGHWAY

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **SITE CONTEXT AND CONSTRAINTS PLAN**

REHBEIN Airport Consulting
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Rev. 5 | Date 08.06.16

Figure No: FIGURE D

Scale: 1:10000 | A3 Sheet Size

File Ref: M13237

NORTH

OLD

NORTHERN BUSINESS & EMPLOYMENT ZONE

AVIATION ENTERPRISE PRECINCT

RECREATIONAL & EVENTS ZONE

POSSIBLE RUNWAY EXTENSION (150m LONG)

FUTURE DEVELOPMENT

GAS

PIPELINE

EASEMENT

MELBOURNE

ROAD

RUNWAY 09 / 27

TAXIWAY CODE B

NDB

RESERVE

POSSIBLE

EMERGENCY SERVICES OPERATIONS RESERVE

FUTURE

EMERGENCY SERVICES FACILITIES PRECINCT

CODE C

RUNWAY

CENTRAL ACTIVITY PRECINCT

RESA

RUNWAY 03 / 21

TAXIWAY CODE B

TAXIWAY CODE B

TAXIWAY CODE C

POSSIBLE TAXIWAY ACCESS TO ADJACENT LAND

HEAVY AIRCRAFT PRECINCT

SOUTHERN BUSINESS & EMPLOYMENT ZONE

EDUCATION & TRAINING PRECINCT

AVIATION BUSINESS PRECINCT

AVE

VILLAGE

VALLEY

DRIVE

AIRFIELD

MANUFACTURING SUPPORT PRECINCT

CENTRAL BUSINESS & EMPLOYMENT ZONE

MAHINDRA AEROSPACE PRECINCT

AVIATION BUSINESS EXPANSION PRECINCT

AVIATION HERITAGE PRECINCT

TERMINAL ZONE

LANDSIDE PRECINCT

PRIVATE HANGAR PRECINCT

PRINCES HIGHWAY

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **LAND USE CONCEPT AND DEVELOPMENT ZONE MASTER PLAN**

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4	26 02 16
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Figure No: FIGURE E

Scale: 1:8000 | Sheet Size: A3

File Ref: M13237

POSSIBLE FUTURE RUNWAY OPTION 1

1,680m LONG x 30m WIDE

156m SEPARATION FROM EXISTING RUNWAY 03/21

EXISTING RUNWAY MAY REMAIN OPERATIONAL

POSSIBLE FUTURE RUNWAY OPTION 2

1,680m LONG x 30m WIDE

93m SEPARATION FROM EXISTING RUNWAY 03/21

EXISTING RUNWAY TO BECOME PARALLEL TAXIWAY

EXISTING RUNWAY 03/21

POSSIBLE EXTENSION TO 1,580m LONG x 23m WIDE

OLD

NORTH

AIRPORT BOUNDARY

MELBOURNE

RUNWAY 09 / 27

TAXIWAY

NDB

156m

93m

ROAD

ROAD

RUNWAY 03 / 21

AVE

NDB

VALLEY

DRIVE

AIRFIELD

VILLAGE

PRINCES

HIGHWAY

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **FUTURE RUNWAY OPTIONS**

REHBEIN Airport Consulting

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4	26 02 16
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Figure No: FIGURE F

Scale: 1:8000 | A3 Sheet Size

File Ref: M13237

RUNWAY CLASSIFICATION / CODE		
RUNWAY	APPROCH	TAKE OFF
03	CODE 2 INSTRUMENT NON-PRECISION	CODE 2
21	CODE 2 INSTRUMENT NON-PRECISION	CODE 2
03 (OPT 2)	CODE 3 INSTRUMENT NON-PRECISION	CODE 3
21 (OPT 2)	CODE 3 INSTRUMENT NON-PRECISION	CODE 3
03 (OPT 1)	CODE 3 INSTRUMENT NON-PRECISION	CODE 3
21 (OPT 1)	CODE 3 INSTRUMENT NON-PRECISION	CODE 3
09	CODE 2 NON-INSTRUMENT	CODE 2
27	CODE 2 NON-INSTRUMENT	CODE 2

APPROACH SURFACES										
RUNWAY	ELEVATION AT INNER EDGE	LENGTH OF INNER EDGE	DISTANCE FROM THRESHOLD	DIVERGENCE EACH SIDE	FIRST SECTION LENGTH	SLOPE	SECOND SECTION LENGTH	SLOPE	HORIZONTAL SECTION LENGTH	TOTAL LENGTH
03	50.2	90	60	15%	2500	3.33%	3600			
21	54.8	90	60	15%	2500	3.33%	3600			
03 (OPT 2)	50.2	150	60	15%	3000	3.33%	3600	2.5%	8400	15000
21 (OPT 2)	54.8	150	60	15%	3000	3.33%	3600	2.5%	8400	15000
03 (OPT 1)	50.2	150	60	15%	3000	3.33%	3600	2.5%	8400	15000
21 (OPT 1)	54.8	150	60	15%	3000	3.33%	3600	2.5%	8400	15000
09	47.8	80	60	10%	2500	4%				
27	54.5	80	60	10%	2500	4%				

TAKE OFF SURFACES							
RUNWAY	ELEVATION AT INNER EDGE	LENGTH OF INNER EDGE	DISTANCE FROM THRESHOLD	DIVERGENCE EACH SIDE	FINAL WIDTH	OVERALL LENGTH	SLOPE
03	54.8	80	60	10%	580	2500	4%
21	50.2	80	60	10%	580	2500	4%
03 (OPT 2)	54.8	180	60	12.5%	1800	15000	2%
21 (OPT 2)	50.2	180	60	12.5%	1800	15000	2%
03 (OPT 1)	54.8	180	60	12.5%	1800	15000	2%
21 (OPT 1)	50.2	180	60	12.5%	1800	15000	2%
09	54.8	80	60	10%	580	2500	4%
27	47.8	80	60	10%	580	2500	4%

TRANSITIONAL SURFACE	
RUNWAY	SLOPE
03 / 21	20%
OPTION 1	14.3%
OPTION 2	14.3%
09 / 27	20%

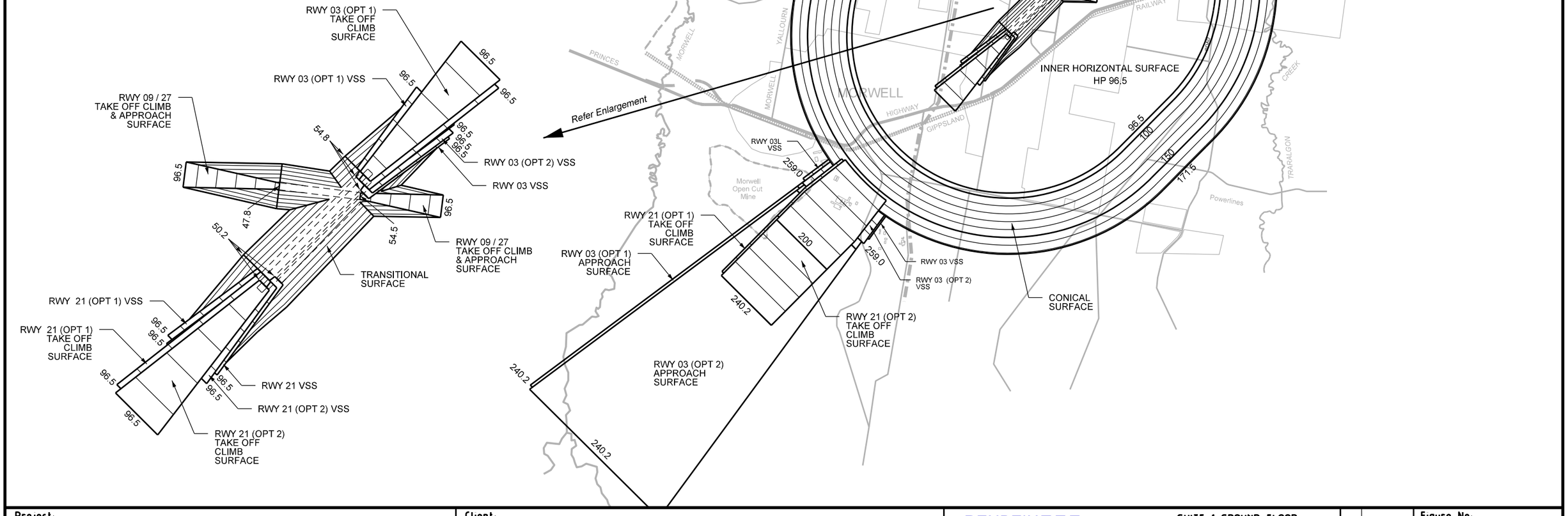
INNER HORIZONTAL SURFACE		
RUNWAY	ELEV.	RADIUS
03 / 21	96.5	3500
OPTION 1	96.5	4000
OPTION 2	96.5	4000
09 / 27	96.5	2500

CONICAL SURFACE		
RUNWAY	SLOPE	HEIGHT
03 / 21	5%	60
OPTION 1	5%	75
OPTION 2	5%	75
09 / 27	5%	55

ARP / RED	
ARP ELEVATION	51.5
REFERENCE ELEVATION DATUM	51.5

NOTES:
1. ALL DIMENSIONS AND DISTANCES ARE IN METRES
2. ELEVATIONS BASED ON AUSTRALIAN HEIGHT DATUM (AHD)
3. HP DENOTES HORIZONTAL PLANE

PANS-OPS VISUAL SEGMENT SURFACE (VSS)							
RUNWAY	ELEVATION AT INNER EDGE	LENGTH OF INNER EDGE	DISTANCE FROM THRESHOLD	DIVERGENCE EACH SIDE	ELEVATION AT OUTER EDGE	SLOPE	TOTAL LENGTH
03	50.2	150	60	15%	259.0	3.28%	6361.3
21	54.8	150	60	15%	228.6	3.28%	5295
03 (OPT 2)	50.2	300	60	15%	259.0	3.28%	6361.3
21 (OPT 2)	54.8	300	60	15%	228.6	3.28%	5295
03 (OPT 1)	50.2	300	60	15%	259.0	3.28%	6361.3
21 (OPT 1)	54.8	300	60	15%	228.6	3.28%	5295



Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **AIRSPACE PROTECTION**

REHBEIN Airport Consulting
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Figure No: FIGURE G

Scale: 1:100,000 | A3 Sheet Size

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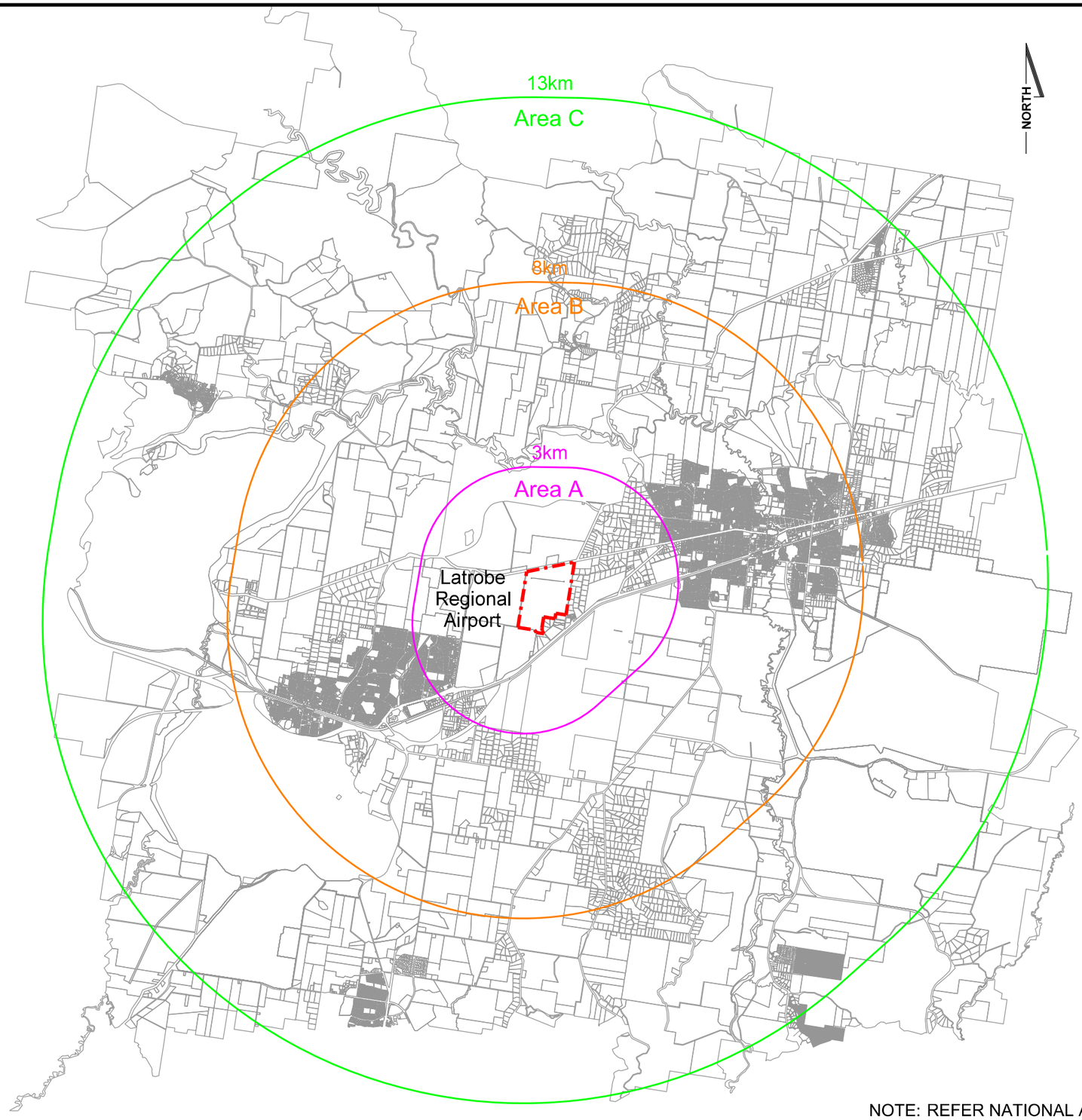

NOTE: REFER NATIONAL AIRPORTS SAFEGAURDING FRAMEWORK (NASF) GUIDELINE C: MANAGING THE RISK OF WILDLIFE STRIKES IN THE VICINITY OF AIRPORTS

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **WILDLIFE HAZARD AREAS**

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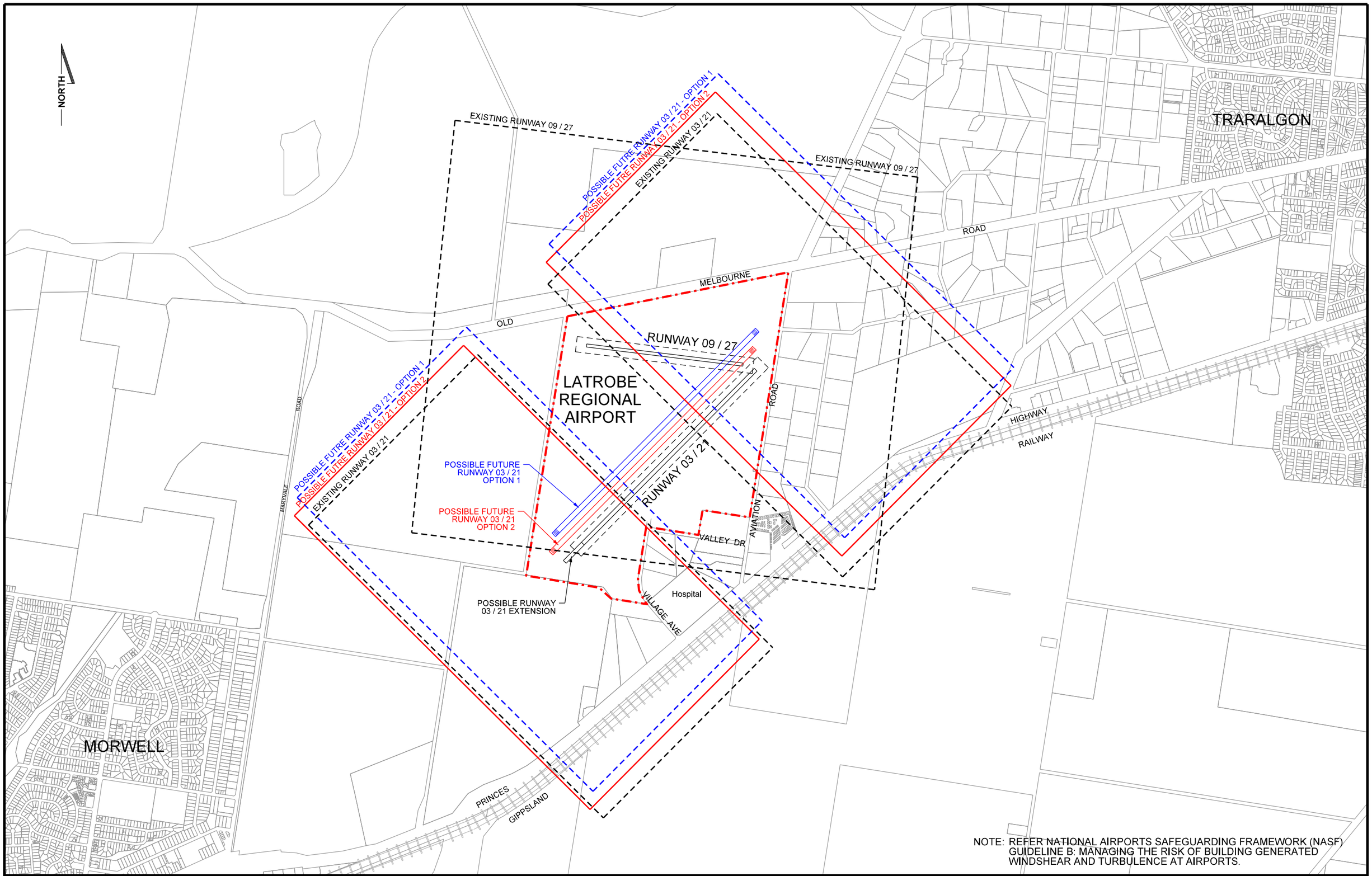
Figure No: FIGURE **H**

Scale: 1:125,000 | A3 Sheet Size

File Ref: M13237



NOTE: REFER NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK (NASF) GUIDELINE B: MANAGING THE RISK OF BUILDING GENERATED WINDSHEAR AND TURBULENCE AT AIRPORTS.

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2016

Client: LATROBE CITY COUNCIL

Title: **BUILDING GENERATED WINDSHEAR & TURBULENCE ASSESSMENT ENVELOPES**

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Figure No: FIGURE J

Scale: 1:20,000 | A3 Sheet Size

File Ref: M13237

REHBEIN Airport Consulting

APPENDIX B

TRARALGON WEST STRUCTURE PLAN

hansen

traralgon west structure plan

traralgon growth areas review

august 2013

The Traralgon West Structure Plan was undertaken by **hansen partnership** as part of the Traralgon Growth Areas Review.

The Traralgon Growth Areas Review is a shared initiative of the Victorian State Government and Latrobe City Council.

August 2013

hansen

table of contents

figures

1 introduction

The *Traralgon West Structure Plan* will become a key guiding document designed to shape the future development of a significant area of land strategically located between the Latrobe City towns of Morwell and Traralgon. The structure plan was commissioned by Latrobe City Council in 2010 as part of a broader long term growth strategy known as the *Traralgon Growth Areas Review* and was undertaken by hansen partnership pty ltd (urban planning, urban design and landscape architecture), in association with Cardno Grogan Richards (traffic and engineering) and Tim Nott (economics).

Latrobe City Council has a responsibility under the State Planning Policy Framework to ensure that sufficient land is available for urban growth within the municipality. The Traralgon Growth Areas Review was undertaken due to a number of critical factors that have, or will, put pressure on the ability of Traralgon and surrounds to accommodate likely future development. Among these factors is the State Government decision to nominate the northernmost alignment for the future Traralgon Bypass. That decision had a direct impact on the adopted *Traralgon-Morwell Corridor Concept Plan* (2007) which earmarked a large area of land (approximately 500 ha) for future urban growth, south of the confirmed highway bypass alignment.

Latrobe City has therefore needed to revise its current strategies to accommodate future urban growth, as land to the south of the proposed bypass is no longer feasible nor is it a desirable settlement outcome. In addition to this, recent strategic assessments (undertaken in 2009) of current land supply estimates in Traralgon and surrounds indicated there was a substantial shortage of residential land earmarked for future urban needs and that a number of possible areas had significant constraints that limit where urban growth can be located. While recent rezonings (Amendments C47, 56 and 58) may have alleviated some of the short term pressures, these pressures will remain in the longer term.

The Traralgon Growth Areas Review comprises three separate documents:

- A *Background Report*, which investigated both the existing situation on the ground in relation to the location of land uses but also constraints to development in the wider Traralgon area.
- The *Traralgon Growth Areas Framework*, which looks longer term at the identification of sustainable directions for growth and the policy and strategies which may be required to achieve this.
- The *Traralgon West Structure Plan* (this document) which is designed to provide guidance in relation to a strategically important area of land currently experiencing ad-hoc or inefficient development and facing increasing development pressures.

These reports form the collective findings of the Traralgon Growth Areas Review, although each document, including this Structure Plan, can be read as individual parts.

This document seeks to establish an agreed vision for the Traralgon West area (which extends through to Morwell) to be realised over a period of up to 20 years. The Structure Plan is intended to establish a number of principles to guide future development of the area. It will also lay the foundation for amendments to the Latrobe Planning Scheme to facilitate significant changes in the land uses and structure of the area, in view of broader strategic issues facing Latrobe City.

1.1 project brief

The project brief set out the primary objectives of this project as follows:

- Recommend an equivalent or if possible superior long term outcome to the redundant *Traralgon–Morwell Corridor Concept Plan*;
- Identify and map appropriate residential urban densities in existing and future urban areas;
- Include structure plan maps that designate key land uses, in terms of precincts, zonings and linkages;
- Recommend appropriate changes to the Latrobe Planning Scheme (zone, overlay & ordinance) to facilitate the future use and development of land; and
- Respond to the outcomes of the stakeholder engagement process.

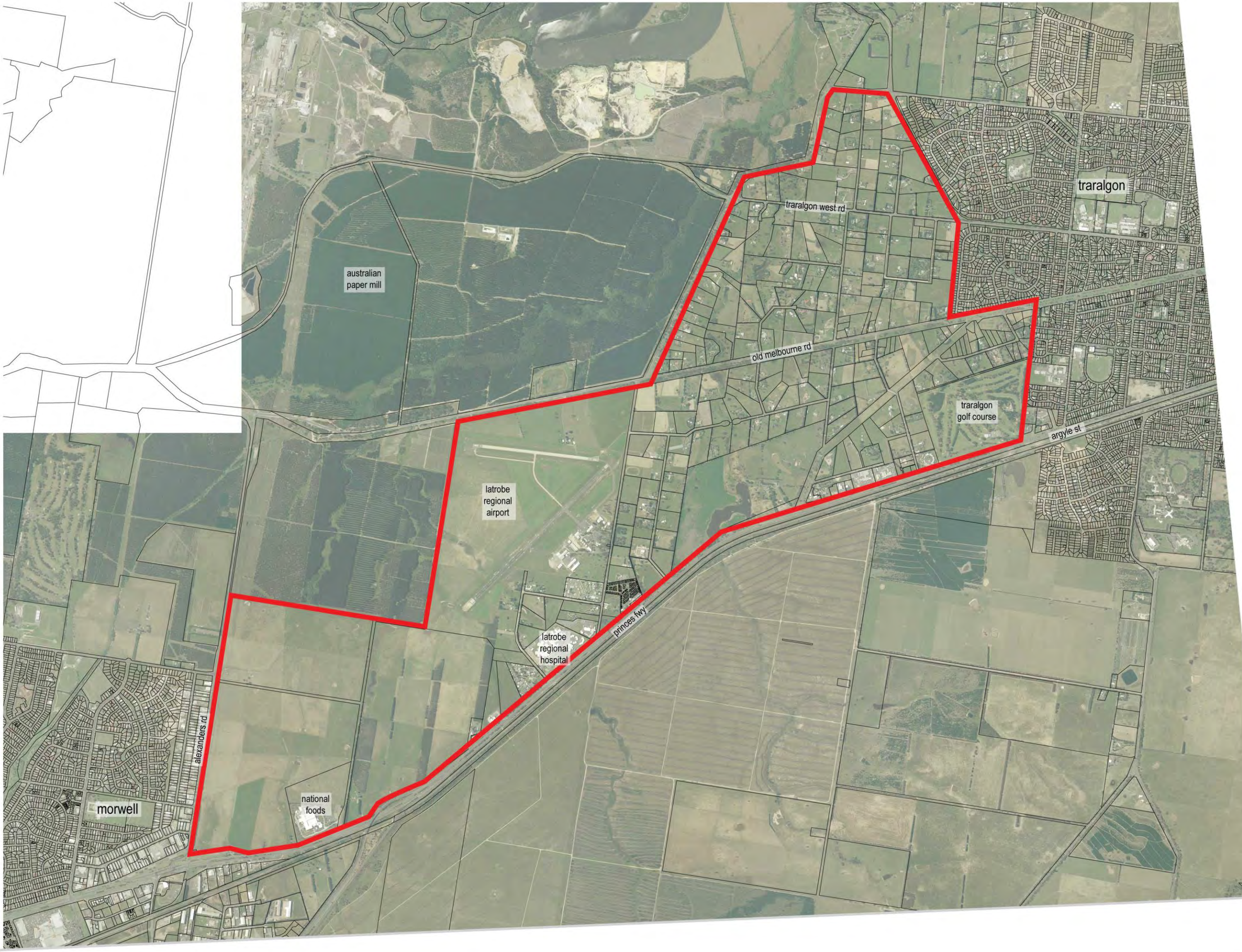
1.2 land affected by the project

The study area for the *Traralgon West Structure Plan*, shown in Figure 1 on the following page, is an irregular shaped area which extends along the north side of the Princes Highway between the existing urban extents of Traralgon and Morwell. It extends north towards the plantations associated with the Australian Paper Mill and existing parcels of land occupied by rural residential dwellings.

The study area covers approximately 1,150 hectares of land, of which around 550ha is currently used for low density residential development (in either a Low Density Residential or a Rural Living Zone) and around 200ha is occupied by the Latrobe Regional Airport. Other significant parcels of land in the area include the National Foods manufacturing site, the Latrobe Regional Hospital, the currently undeveloped ‘Hollydale’ site and the Traralgon Golf Course.

1.3 preparing the structure plan

A number of studies have been undertaken to guide the development of Traralgon over the last two decades. These documents have shaped the growth and development of Traralgon West (or Traralgon-Morwell Corridor) in particular, including the *Traralgon–Morwell Corridor Concept Plan* prepared by Beca Consultants in 2007. The current study builds upon the base established by earlier documents, but also responds to the broader strategic objectives outlined in the *Traralgon Growth Areas Framework.* Consultation with stakeholders and the community further informs this document.



hansen

traralgon west structure plan

study area

legend

site boundary

Project Ref:	11.101
Dwg No.:	LCD-001
Scale:	1:10000 @ A1 1:20000 @ A3
Date:	08.07.2013
Revision:	B

0 100 200 300 400 500m

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melbourne | vietnam
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melbourne vic 3000
t 61 3 9654 8844 **f** 61 3 9654 8088
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w hansen-online.com.au

Figure 1: study area aerial

2 background

In order to establish a plan for the future development of the Traralgon West area, it is necessary to understand elements of the context that are likely to exert an influence on this precinct. These include the policy context of the area, the current land uses and planning controls, constraints to development within the precinct and existing development pressures.

2.1 regional context

The Moe, Morwell, Churchill and Traralgon network of towns is one of the key regional centres in Victoria. It is located 164km to the east of Melbourne along the Princes Highway. Traralgon is the largest of a string of towns which stretch out towards Lakes Entrance on the Victorian coast which include Drouin, Warragul, Moe, Morwell, Traralgon, Sale and Bairnsdale.

The municipality of Latrobe City has previously adopted a model of development that establishes a hierarchy of townships comprising four main towns: Moe (approximately 15,300 persons), Morwell (13,700) and Traralgon (21,700), and the satellite town of Churchill (4,600) which form what is known as a 'networked city' with the remaining settlements within the municipality being identified as 'small towns'.

The population of Latrobe that does not reside in the 'networked city' is distributed across seven smaller settlements and a rural hinterland. The Municipal Strategic Statement recognises that while each town within the 'network' provides many of the services and facilities required by its residents, they are not separate, self contained entities which operate in isolation from each other. The towns interact, to varying degrees, to create what is effectively a 'networked city', highlighting the need for good inter-town connections.

Most of Victoria's electricity generation facilities are located in the Latrobe Valley and the region has Australia's largest reserves of brown coal. Power generation resources and facilities, and open cut mines associated with them, dominate the landscape of large areas of the Latrobe Valley. This can be seen clearly on Figure 2.

To the immediate southwest of Traralgon is the Loy Yang Power Complex and open-cut coal mine. In addition, large areas of rural land to the south of Traralgon have been set aside as long term future coal reserves. As such, the land around Traralgon plays a role in the functioning of the whole state of Victoria, well beyond that which would otherwise be the case in a regional area.

Traralgon's large commercial centre includes the Stockland Shopping Centre, South Side Central (which incorporates the major regional railway station) and shops which line the attractive Franklin, Seymour and Hotham Streets. The landmark building in the town centre is the elegant post office building built in 1887.

To the immediate west of the study area is the Mid Valley Shopping Centre which provides a range of large format retail uses such as Bunnings, Target and Big W as well as supermarket and specialist retail stores. Cinema and other entertainment options not available elsewhere mean this centre attracts residents from a wide catchment.

Regional facilities include the Latrobe Regional Hospital, a purpose built 257-bed, fully integrated health service located at Traralgon West, and a University of Ballarat campus at Churchill, 10 kilometres to the southwest of Traralgon.

These services, facilities and retail offering serve a very large catchment. Anecdotal evidence suggests the retail opportunities of the town, as well as larger scale infrastructure such as the Latrobe Regional Hospital, and entertainment such as nightclubs attract people from the full extent of Gippsland. As such, Latrobe City plays a role as the 'capital' of Gippsland.

great dividing range (foothills)
tyers
brown coalmine rd
glengarry west
maryvale
australian paper mill
gippsland water facility storage
traralgon
traralgon golf club
princess highway
hollydale
latrobe rd
to moe 6.5km
yallourn north
princes fwy
morwell
hazelwood rd
traralgon creek rd
hazelwood north
driffield
hazelwood

hansen

traralgon west structure plan

context

legend

- study area
- existing urban areas
- residential growth areas
- mining areas
- water courses
- main roads
- proposed highway bypass
- plantation
- gippsland water facility storage
- great dividing range (foothills)
- australian paper mill
- urban amenity buffer
- principal activity centre
- shopping centre

Project Ref:	11.101
Dwg No.:	LCD-002
Scale:	1:25000 @ A1
	1:50000 @ A3
Date:	22.08.2013
Revision:	D

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Figure 2: regional context

2.2 current land use and development

The Traralgon West Precinct is more accurately described as the Traralgon-Morwell Corridor and encompasses land uses which occur in the existing 'urban break' between the developed urban areas of Morwell and Traralgon. The land is currently used for the following purposes:

- The Traralgon Golf Course is located on the Princes Highway at the eastern edge of the precinct.
- Large areas of the precinct are used for low density residential uses. While some sections of the land are zoned Low Density Residential and others are zoned Rural Living, both areas are developed with similar lot sizes of between 1.5 and 3.5ha. Limited lots within the LDRZ land have been subdivided down to the allowed minimum lot size of 0.4ha. Conversely, while the RLZ has a default minimum lot size of 8ha, within the study area the schedule to the zone allows subdivision down to 2ha. The majority of these lots have been developed with one dwelling.
- A strip of around 10 lots zoned Special Use along the Princes Highway are designated as an 'Urban Gateway' under the Latrobe Planning Scheme. These lots accommodate almost exclusively car and caravan yards and associated businesses.
- A very large site located centrally within the precinct's Princes Highway frontage is known as 'Hollydale'. While this land is currently mostly undeveloped (with one dwelling located on the site) there have been a number of concepts suggested for the land, including higher density residential development and bulky goods retailing.
- A number of sites within the precinct are used for accommodation purposes within the Rural Living Zone, including sites used for retirement living, hotels and caravan parks. These uses are primarily clustered around the Latrobe Regional Hospital.
- The Latrobe Regional Hospital is located on the Princes Highway at the intersection with Airfield Road. The hospital also supports a number of associated uses such as consulting suites. A masterplan has been prepared by Latrobe Regional Hospital to guide the future development of the site.
- Large portions of the land are also currently used for non-intensive, non-residential uses or are not currently developed. The majority of such land is zoned for farming. A portion of this land was also set aside for many years for the diversion of the Morwell River. The Special Use Zone which protected this corridor has recently been removed and there are various other potential uses for the area that are subject to further investigation.
- The Latrobe Regional Airport occupies a large (approx 200ha) site central within the precinct. The airport has two runways, with the main runway aligned on a south-west / north-east alignment and a smaller runway running east / west. A number of buildings associated with the airport are located in the south-east corner of the site, where access is provided off Airfield Road. The adopted masterplan for the site seeks to intensify development on the site and was partially implemented through Amendment C26, noting that the masterplan is proposed to be revised and updated. The airport has been identified as one of three "concentrated employment zones" in Latrobe City (*Latrobe Economic Sustainability Strategy 2011*). The employment zones have an emphasis on job creation, industry diversification and the ability to offer opportunities to prospective investors.
- To the immediate north and west of this site are plantations associated with the Australian Paper Mill which are unlikely to see change.
- Towards the Morwell end of the precinct there is a large parcel which accommodates the National Foods / Lion major processing site.
- The remainder of the land between National Foods / Lion and the existing urban edge of Morwell is currently vacant. However this land has been rezoned to allow for industrial development. It is also expected to accommodate a substantial bulky goods retail cluster through rezoning approved under Amendment C39 part 2.

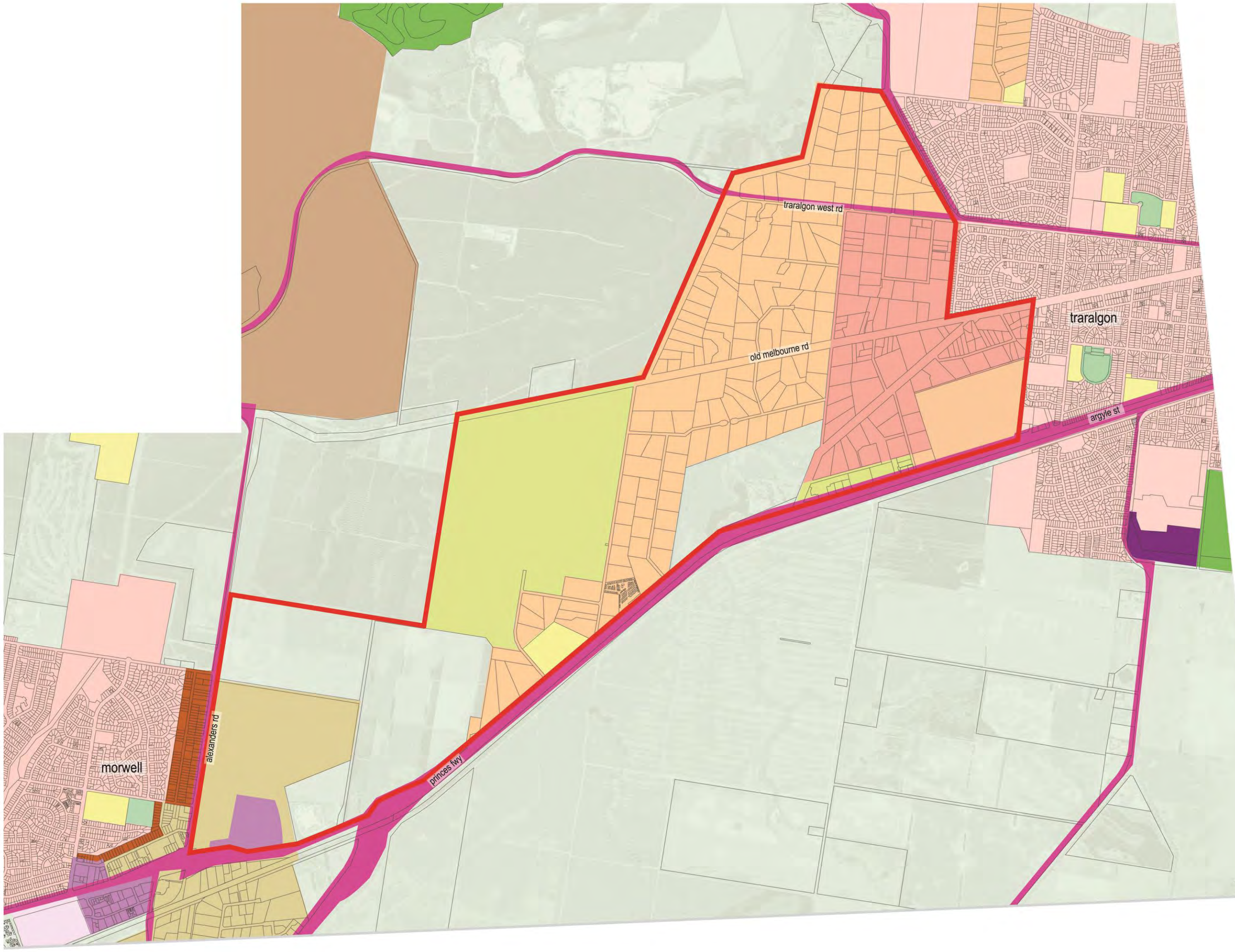
2.3 current land use planning controls

Existing zoning controls for the precinct are outlined below and illustrated on the following plans:

- Land adjoining Morwell within the study area is zoned Industrial 1, Business 4 or Farming Zone;
- The airport, hospital site and strip of car yards are zoned Special Use;
- Land at the western edge of Traralgon and the Traralgon Golf Course are all zoned Rural Living, while the Hollydale site remains in a Farming Zone; and
- Land immediately contiguous to the Residential 1 Zone of Traralgon is zoned Low Density Residential.

A number of overlays also apply to the area, in particular the western end of the precinct, as follows:

- A Development Plan Overlay applies to the Industrial 1 zoned land adjacent to Morwell.
- A Design and Development Overlay acts as a permit trigger where a major gas pipeline runs through the site and where the helipad associated with the hospital is located.
- There is currently an Airport Environs Overlay which affects land around the airport and a Design and Development Overlay was applied through Amendment C26, which has implications for the allowable height of buildings in proximity to the airport.
- Floodway and Land Subject to Inundation Overlays affecting land along waterways, have been implemented through Amendment C9).



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traralgon west structure plan

existing zoning

legend

- study area
- business 1 zone (commercial 1 zone)
- business 4 zone (commercial 2 zone)
- business 5 zone (commercial 1 zone)
- industrial 1 zone
- industrial 2 zone
- industrial 3 zone
- residential 1 zone
- low density residential zone
- rural living zone
- public use zone
- road zone - category one
- special use zone
- public park & recreation zone
- public conservation & resource zone
- farming zone

Project Ref: 11.101
Dwg No.: LCD-003
Scale: 1:10000 @ A1
1:20000 @ A3
Date: 08.07.2013
Revision: D

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Figure 3: current land use zoning

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traralgon west structure plan

overlays

legend

- study area
- environmental significance overlay (ESO)
- wildfire management overlay (WMO)
- public acquisition overlay (PAO)
- state resource overlay (SRO)
- development plan overlay (DPO)
- design & development overlay (DDO)
- airport environs overlay (AEO)
- floodway overlay (FO)
- land subject to inundation overlay (LSIO)
- design & development overlay (DDO)

traralgon west rd
traralgon
old melbourne rd
argyle st
morwell
alexanders rd
princes fwy

Project Ref: 11.101
Dwg No.: LCD-004
Scale: 1:10000 @ A1
1:20000 @ A3
Date: 08.07.2013
Revision: C

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Figure 4: existing overlays

2.4 constraints within traralgon west

There are some significant constraints to the development of this precinct. Development to date has been relatively ad-hoc and until recently, local planning policy has encouraged the retention of a 'non urban' break between Traralgon and Morwell. This 'break' was compromised by incremental development of motels, caravan parks, car yards and the presence of the Latrobe Regional Hospital. Much of the land within the study area, where it adjoins the existing urban area of Traralgon, is already developed with low density or rural living uses as a result of previous policy positions. In seeking to reposition this corridor and promote more sustainable development of the City as a whole, some of the important constraints which must be considered include:

- The existing fragmentation of the land, where landowners may have differing aspirations for their land and coordination of development may be difficult.
- Flooding associated with drainage lines which run though the precinct.
- Lack of existing connectivity through the study area.
- Potential impacts from noise / odour associated with the Australian Paper Mill and the extent of any urban amenity buffer to residential development that would be required to manage this to avoid conflict.
- Impacts in terms of safety or noise buffers to protect long term uses that may be required in relation to the Latrobe Regional Airport, including the existing Airport Environs Overlay.
- Lack of public transport or cycle lanes within the precinct.
- Potential bushfire impacts due to the proximity of plantations to the northwest of the precinct.
- Buffer requirements associated with the Gippsland Water storage lagoon located to the immediate north of the airport.

The extent of some of these constraints is identified on the following page.

2.5 opportunities for traralgon west

There are also a number of clear opportunities available which can be maximised to obtain benefit not just for new and existing residents in the immediate area but also for the broader Latrobe community as a whole. These include:

- Maximisation of the opportunities to develop employment generating uses supported by the airport and hospital.
- Improvements to public transport potential due to proximity to the Princes Highway.
- Locational advantage for residents between two Principal Activity Centres (Morwell and Traralgon).
- Proximity to Mid Valley Shopping Centre.
- Potential to provide interesting and diverse areas of public open space that can provide links to the wider open space network of Traralgon.
- Clear opportunities for excellent cycle and pedestrian linkages.
- The presence of two large strategic redevelopment sites that could act as catalysts for development.
- Highly amenable landscape setting.
- Opportunities to provide additional land for long term industrial or other employment uses contiguous with existing identified areas.

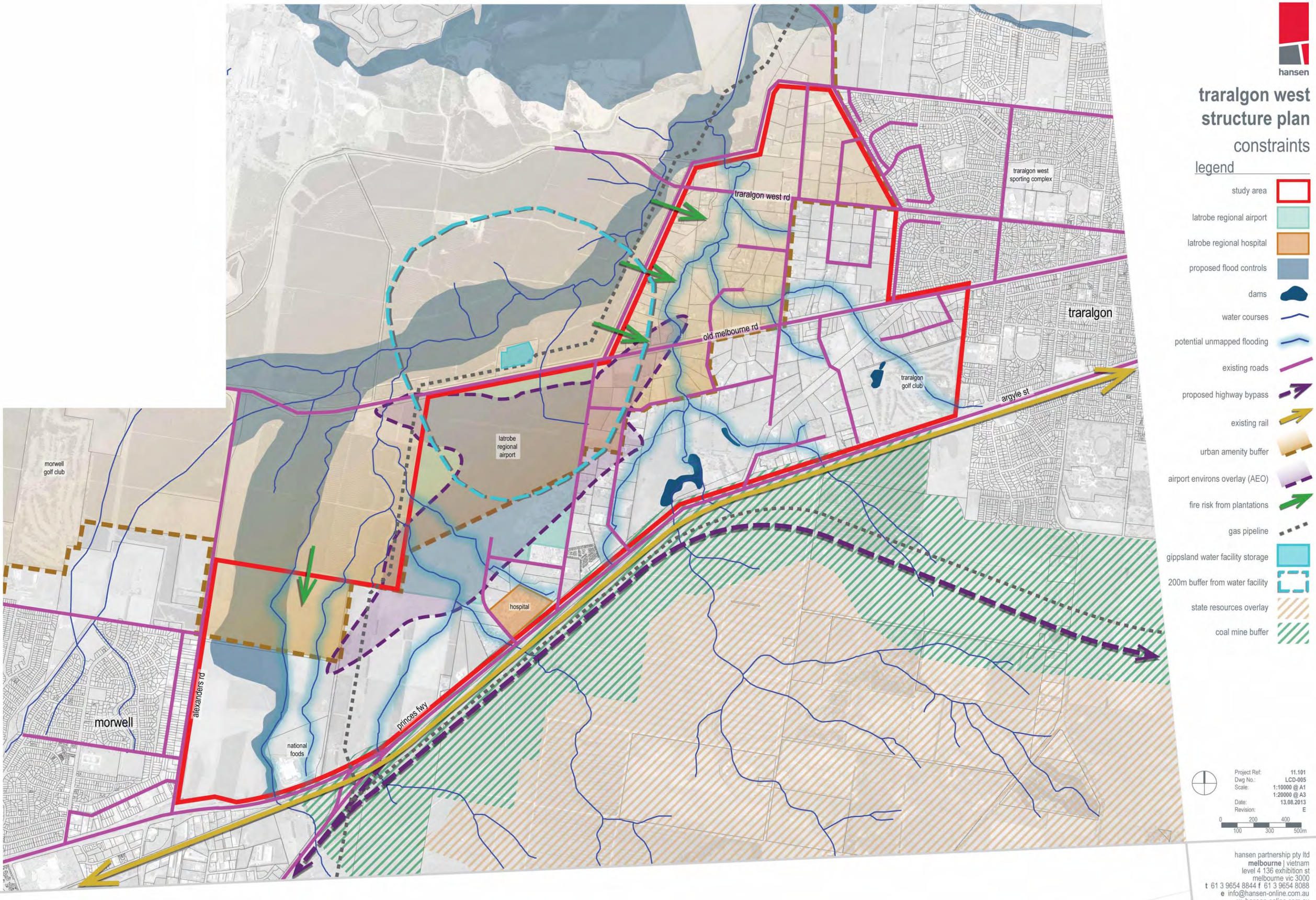


Figure 5: traralgon west key constraints

3 traralgon west structure plan

The long term strategic future of Traralgon West will evolve over time. However, this structure plan seeks to facilitate the transition of this important corridor to an area which better reflects the opportunities available within the precinct, while responding appropriately to the constraints which exist within the area. The precinct will develop over time into a higher density residential corridor in the areas closest to the Princes Highway. The northern areas will remain as lower density residential in order to respond to the position of this land both at the 'urban edge' and also in proximity to the Australian Paper Mill. Residential areas along the corridor will be strongly connected to the urban areas of both Morwell and Traralgon by sustainable transport options. While the corridor will primarily accommodate residential uses to the east of Airfield Road, there are opportunities for the development of employment generating uses on the land between the Latrobe Regional Airport and the Princes Highway which is more constrained for residential development but which offers exciting opportunities to support the growth and development of new and existing industries.

3.1 key precinct principles

Key principles which should guide the development of this corridor include:

- The identification of the Princes Highway as a high frequency multi nodal public transport corridor. This should include rapid local bus services and on-road commuter cycle paths as well as rail services.
- The development of a Neighbourhood Activity Centre around the Latrobe Regional Hospital to provide services and facilities, both for residents of the higher density accommodation which exists in this area but also to provide for employees and users of both the hospital and the airport. This NAC should not compromise development in either the Morwell or Traralgon PACs.
- Consideration of the establishment of an additional train station to service the Latrobe Regional Hospital (allowing better access to regional users) and the residents and employees of this area.
- The development of the Old Melbourne Road and the existing Coopers Road road reserve leading to the 'Hollydale' site as key green links, providing not only vehicular access but priority cycle paths and landscaped pedestrian pathways (in addition to considerations of the Traralgon–Morwell shared path).
- The creation of a key corridor of open space leading from the large waterbody central on the 'Hollydale' site, along the creekline to connect with a broader system of new open space to be established to the north of Traralgon.
- Development of both the 'Hollydale' site and the Traralgon Golf Course in the longer term as medium density 'villages' in landscaped settings.
- Re-subdivision of identified low density and rural living land not affected by the urban amenity buffer for conventional residential development.
- Retention of lower residential densities in the northern areas of the precinct where there may be odour impacts arising from the presence of the paper mill. These areas may be able to redevelop over time as improvements to the management of emissions could reduce the extent of buffer requirements and should be reviewed periodically.
- Exploration of employment generating uses which may be suitable for land immediately adjoining the hospital and south of the airport identified as an 'employment investigation area' to support the Regional City role of Latrobe.
- Retention and potential long term expansion of the eastern industrial (and bulky goods) precinct of Morwell, to the north of existing zoned land.
- Clear policy to avoid 'strip' retail development fronting the Princes Highway in the study area.
- Clear movement networks and appropriate levels of highly accessible public open spaces, community infrastructure and local shopping opportunities.

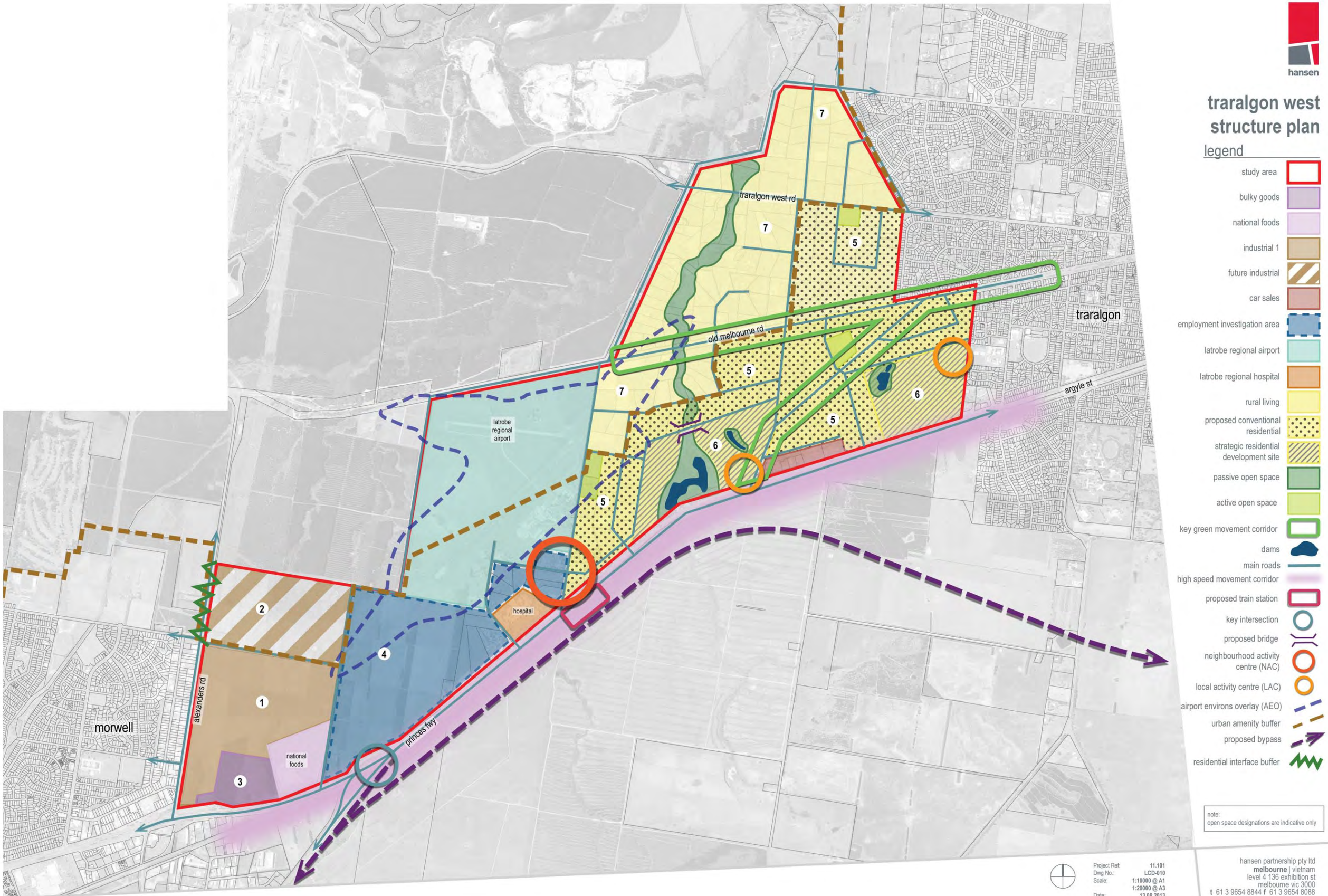


Figure 6: traralgon west structure plan

3.2 land use

Land uses proposed within the precinct are identified on the following land use plan as follows:

- AREAS 1 & 3: The existing areas of industrial and Business 4 (bulky goods) zoned land to the immediate east of Morwell are retained.
- AREA 2: Land to the north and east of the industrial area is retained as farming zoned land to protect longer term opportunities for the expansion of the industrial precinct. The need to maintain areas to accommodate additional industrial development in the longer term to protect the economic sustainability of the city is recognised by the identification of this land. Any development in this area will need to take into account appropriate buffers to the identified residential growth area on the western side of Alexanders Road.
- AREA 4: The hospital should be retained and expansion or intensification of health related uses should be encouraged. This may occur either though intensification of the existing area shown on the plan or through expansion into the 'employment investigation area'.
- The development of higher densities of residential development, including retirement villages and aged care, proximate to the hospital on otherwise unconstrained land (as is currently occurring) should continue on unconstrained land, preferably to the east of Airfield Road in order to not preclude development of employment generating uses.
- Land to the immediate west and north of the hospital should be retained as an 'employment investigation area' to be developed with either employment generating uses which are directly related to the hospital or airport. Regard should be had to the masterplans undertaken for both those key facilities and appropriate zoning should be considered once further detail regarding these land uses is determined.
- The airport should continue to be developed to make better use of the opportunities for more integrated development on the site. The existing masterplan for the site is currently being reviewed to ensure consistency with the Australian Paper Mill urban amenity buffer and as part of an assessment of economic development opportunities within the area.
- A Neighbourhood Activity Centre should be developed adjoining the hospital to provide service facilities and local shopping opportunities to both users and employees of the hospital and airport, and also to residents of medium density residential development in the area. This centre will provide a clear focal point for the *"concentrated employment zone" (Latrobe Economic Sustainability Strategy*) to be developed in relation to the airport as well as facilitating health related development. This centre should have strong connections to sustainable transport options, as well as pedestrian pathways. The centre should not compete with the larger activity centres of Morwell, Traralgon or Mid Valley, but may contain a small supermarket. A specific site has not been identified for this centre as the appropriate extent of this centre will need to be determined prior to an area being identified. This should be further explored at a broader level through an Activity Centre Strategy. However, the centre should be located close to the intersection of the Princes Highway and Airfield Road close to the Latrobe Regional Hospital.
- AREA 5: Existing Low Density Residential and Rural Living zoned land in the south of the precinct (as identified on the following plan) should intensify through development at conventional residential densities. A Development Plan should be prepared for the identified areas in collaboration with the existing landowners to ensure that appropriate connections and infrastructure are established as densities increase. Appropriate mechanisms to ensure developer contributions to fund infrastructure will also need to be considered.
- AREA 6: The 'Hollydale' site and Traralgon Golf Course should be developed with medium density urban 'villages' within a landscape context. This will diversify the housing offer within Traralgon as a whole and should be designed as 'sustainable' housing.
- Large waterbodies on those sites should be retained to provide areas of public open space, with the central waterbody on the 'Hollydale' site to be designed as a 'focal' area of open space with an important interface with the Princes Highway. These areas could connect through to an open space corridor to be established along the main drainage line through the area and to the broader new area of open space recommended to be established to the north of Traralgon in the *Traralgon Growth Areas Framework.*
- AREA 7: The remainder of existing Rural Living zoned land in the precinct should be retained as such, to respond to the potential impacts of odour associated with the Australian Paper Mill. Opportunities for new development in line with the potential allowable under existing zoning are supported where they are supported by the EPA and Australian Paper.
- The existing strip of car sales within the precinct is identified as remaining; however the extent of that area along the highway should not be increased and further retail activities should be discouraged in this precinct.
- Two smaller Local Activity Centres have been identified within the precinct. These have been located within the 'urban village' strategic sites. While their locations are indicative only, the relationship between the eastern centre and Lavalla College is to be pursued to ensure that co-location of any community facilities is possible. The proposed Local Activity Centre on the 'Hollydale' site is identified as being located on the Princes Highway, adjacent to the existing car yards. This location ensures that the centres are distributed in a way what provides equitable access to residents within the precinct. These centres are identified as playing a local 'convenience' role only, and are not identified as providing supermarket or bulky goods retailing. The size of these centres will need to be confirmed as part of an Activity Centre Strategy or similar study that considers this area as part of the broader Traralgon or Latrobe City context.

3.2.1 bulky goods and medium density development on the 'Hollydale' site.

It is understood that there are a number of options which have been put forward for the future development of the large site within Traralgon West known as 'Hollydale'. There is some pressure to allow development of this site for the purpose of bulky goods development. There is a clear strategic rationale for encouraging the uses of the land as identified above, which is elaborated further below.

The site is one of two large 'strategic' sites within the Traralgon-Morwell Corridor which are relatively unconstrained. The other site is the Traralgon Golf Course discussed in the following section. As such, the 'Hollydale' site represents the most likely site for development within the precinct.

It is acknowledged that the site was identified as the third option for the identified bulky goods requirements of Latrobe City in the adopted *Bulky Goods Retail Sustainability Assessment* (March 2009). It is noted that this was identified as having advantages due to the low density nature of residential development around the site and the potential for co-location with other trade supplies or light industrial uses. Should the corridor be developed for primarily residential purposes, then the suitability of this site for bulky goods development would be subsequently reduced.

That report identified that around 5-7 ha of B4Z land was required in the short term (to 2013), another 5-7 ha in the medium term (to 2018) and that longer term needs (beyond 2021) be assessed at a later date to ensure that decisions responded to changes in the retail environment or context. Subsequent to that report being issued, Council has rezoned land in the east of Morwell and the east of Traralgon for bulky goods uses (as part of Amendment C39). Those parcels were the top two ranked parcels in the bulky good assessment and combined provide over 20 ha. This is well in excess of the 10 – 14 ha identified as required to 2018.

It is not considered appropriate to allow for the establishment of a third area of bulky goods retailing until such a time as the existing available land has been utilised, particularly given those parcels were identified as more suitable than the 'Hollydale' site. At such a time as the available land is diminished, providing additional land that is proximate to the existing bulky goods centre, rather than dispersing the use is recommended (and is supported by the existing assessment which recommends the establishment of defined precincts rather than standalone sites).

An additional assessment of bulky goods needs was provided by proponents of a development seeking to utilise the Hollydale sites for such purposes. This report (*Latrobe Bulky Goods Retail Need Analysis Traralgon West*, MacroPlan Dimasi 2012) identified that there was a need to provide land above and beyond that identified in the original MacroPlan report. However, a peer review of that assessment (Review of economic support for the Masters development proposal in Traralgon West, Tim Nott 2012) identified:

- There is no need to rezone any additional land to accommodate bulky goods uses and the two recently rezoned sites can easily accommodate demand to 2026.
- Both the original MacroPlan report and the more recent development justification are based on a significant underestimate of existing bulky goods retail space.
- The development of the Hollydale site would be unlikely to result in any net increase in economic activity or employment as the development would be balanced by losses by existing businesses. As such there would not be sufficient overall community benefit to strategically justify (on the basis of economic development) an additional rezoning given existing available land.
- In addition, the assessment found that while the reduction in housing potential within Traralgon West would be modest, the impact on the development of a Neighbourhood Activity Centre at the hospital site would be compromised.
- Development of bulky goods on the relatively restricted Hollydale site may also compromise the ability for a more extensive precinct to develop. This may compromise the ability of independent bulky goods development to maximise benefits from co-location with an anchor tenant such as Masters in the longer term.

Furthermore it is considered that, due to the topographical and landscape characteristics of this parcel (including the presence of two large dams), there are clear opportunities for development of a more intensive residential use on the site. A medium density development on this site, within a landscape context, could go some way to offsetting the loss of land earmarked for residential development south of the Princes Highway. As such, the development of an integrated medium density residential development on the site is of strategic benefit to the broader area. Should the Princes Highway be established as a high frequency transit corridor, then residents in this precinct would have a high level of accessibility which is not found in all of the urban areas of Traralgon. While the use of the land for this purpose cannot be forced, there is considered enough justification to pursue this as a strategic objective through the *Traralgon West Structure Plan.*

3.2.2 traralgon golf course

The other large strategic development site within the Traralgon West area is the Traralgon Golf Course. However, although the golf club has the potential for medium density development, it does not mean that the club must develop their land. It allows for that opportunity in the longer term should the club management decide this is appropriate, either as a replacement for the club or part of a redevelopment of the course to include a housing component (as has occurred on many other sites).

The development of land to the north of the club at higher densities has been a long standing strategic aim, as identified through the Traralgon Structure Plan (at Clause 21.05 of the Latrobe Planning Scheme) and reflected in the inclusion of the land under DPCD's land supply calculations as 'future residential'. The land was originally proposed for rezoning under Amendment C58 but this rezoning did not proceed.

This Traralgon Growth Areas framework supports the rezoning of both the golf course itself, and the Low Density Residential land to the north land to the General Residential Zone. However, any rezoning of both areas of land would need to be accompanied by a Development Plan which addressed the interface with the golf course and ensure that appropriate setbacks or other measures are included. There may be merit in considering any future development of the golf course as part of this Development Plan to ensure both interim and potential long term interfaces are considered, as well as setting in place mechanisms for any required financial contributions towards necessary infrastructure.

3.2.3 neighbourhood activity centre

The identification of a Neighbourhood Activity Centre (NAC) is intended to support a network of activity centres in line with Clause 11.01 of the planning scheme. It is considered that the potential location of a train station in the area due to the regional nature of the hospital as well as the needs of hospital and airport workers means a high level of activity within this area is inevitable, particularly in the longer term given the aspirations of the draft *Gippsland Regional Growth Plan* which see Latrobe City growing substantially in reflection of its role as the 'capital city' of Gippsland. When this is considered in line with the existing and future residential populations in the area, the identification of a NAC in this area will allow this to be planned and considered strategically.

Under the *Melbourne 2030* definition, NACs have a limited mix of uses meeting local needs and are dominated by small businesses and shops and limited community services. They offer some local convenience services and some public transport provision. Their key features are:

- *generally, a limited mix of uses meeting local convenience needs*
- *generally less than 10,000 square metres of retail floor space*
- *accessible to a viable user population by walking/cycling*
- *accessibility by local bus services, and public transport links to one or more Principal or Major Activity Centres*
- *their role as important community focal points, ideally close to schools, libraries, child care, health services, police stations and other facilities that benefit from good public transport*.

It is noted that this definition relates to a metropolitan context and within the Latrobe context (where there are no Major Activity Centres), one of the key characteristics of a Neighbourhood Activity Centres should be a higher level of connectivity through public transport, which it is considered this centre can achieve. There is also more likelihood and strategic justification in improving connections to this area given the presence of the hospital. The issues with the application of a metropolitan hierarchy to a regional city is reflected in the recommendations as part of the Traralgon Growth Areas Review for an Activity Centre Strategy to be undertaken to ensure that the land use mix, level of transport connections and relevant floorspace targets at various level of the activity centre hierarchy are locally responsive. This is particularly the case given the ability of regional Councils to retain floorspace caps under recent changes to the Victorian Planning Provisions.

A single Neighbourhood Activity Centre (NAC) has been identified as establishing around the Latrobe Regional Hospital (LRH). This is considered a suitable site for a Neighbourhood Activity Centre for a number of reasons, including:

- Large number of people employed at the airport and hospital who would be able to access the centre.
- Availability of services and facilities within the NAC to users of the LRH.
- Recommended establishment of an additional rail station at this location would ensure improved and sustainable access.
- Existing higher density residential development in the form of retirement villages and a caravan park, as well as the accommodation options such as motels, in the area.

This activity centre is not intended to serve a significant retail function, as seen in centres such Mid Valley and the Traralgon and Morwell CBDs, rather it is intended to provide a locally accessible range of services and retail offer to meet the day to day needs of the resident and worker population of the area as well as support the airport and hospital by offering flexibility for related land uses to establish in proximity. Larger scale office uses should be restricted to the Traralgon CBD, or where there is a demonstrated nexus through co-location, such as in association with the hospital or airport.

The establishment of a supermarket in this area could be supported due to the increased residential population identified for the catchment and the siting of the centre where it is easily accessible by employees, patients and visitors to the hospital and to residents of retirement villages or aged care facilities which may be attracted to the Airfield Road area given proximity to the hospital.

3.2.4 local activity centre

While two Local Activity Centres (LACs) have been identified in the plan, these locations are indicative. Their identification is intended to highlight the need for locally accessible convenience retailing to be available to residents should the population density in this area increase. This principle is in line with established growth area planning principles which have been established though State Planning Policy. The definition of a local centre varies and is one of the reasons an Activity Centre Strategy has been suggested, however in this case the definition identified as part of the Growth Area Authority's (GAA) *Precinct Structure Planning Guidelines* has been adopted, as follows:

"An activity centre smaller than a neighbourhood activity centre which may include a small limited line supermarket or convenience store of between 500sqm and 1500sqm plus non-retail uses."

As identified, further consideration will need to be given to the most appropriate size for any retail uses rather than convenience store in the Traralgon West context once an understanding of the population and densities in the area are further tested through a development plan process (understanding that the GAA's definitions as developed in a metropolitan context). While Section 3.2.6 identifies an indicative population, it is important to recognise that this is very much a high level assessment based on the theoretical capacity. The Traralgon West area is relatively unusual in that, while significant increases in population are expected, the area that will accommodate these new communities represents intensification of existing residential areas rather than being greenfield land. A more detailed assessment of the development capacity of the area once landowner expectations are better understood will provide a more accurate prediction. This understanding should not unduly influence the hierarchy of centres identified in this plan.

The locations shown on the plan have been identified where it has appeared logical. Establishing a LAC in proximity to the existing school site (Lavalla) allows the centre to be accessed not only by local residents but also by those accessing the school, increasing the catchment of the centre. This also offers the potential of the use of the activity centre to co-locate other educational or early years' facilities. The location of the other centre adjacent to the car yards, means that the centre will be accessible to those working in that precinct and its position on the highway offers potentially greater economic viability of any retail uses.

In addition, for practical reasons these have been identified on sites identified as being developed for medium density 'urban villages'. Establishing a new commercial centre as part of an integrated redevelopment of large parcels of land in single ownership allows for better outcomes to be pursued and more straightforward establishment of the centres. In addition, these areas are likely to see the greatest potential increases in density and therefore the location of centres within these sites would provide the greatest access to large residential catchments.

3.2.5 employment investigation area

Land to the immediate north and west of the Latrobe Regional Hospital (Area 4) is identified as an 'employment investigation area'. This report identifies it should be developed for either employment generating uses preferably associated with the airport or hospital.

The Latrobe Regional Airport is identified as one of three areas of "*significant commercial importance*" to Latrobe City and as such this document has sought to provide an outcome which supports the areas identified role as a "*concentrated employment zone*" by providing the following:

- The potential for expansion to the south if required through this identification of an 'investigation area' and the avoidance of rezoning to residential uses which may conflict with future uses
- Identification of the area as a Neighbourhood Activity Centre, supporting a range of commercial and retail activities associated with the two facilities and providing facilities and services for employees in the area.
- The identification of an additional train station to provide sustainable transport access to the area for employees.

A priority of this investigation area is the protection of the long term economic opportunities associated with the two key sites. Latrobe City has enormous potential to grow as a key regional city but this will largely be driven by employment opportunities. Protecting a substantial area of land to allow exploration and establishment of innovative economic generators or land uses which benefit from synergies with the airport or hospital will support the long term growth of the municipality.

Given the proposed establishment of a Neighbourhood Activity Centre (discussed above) and the recommended establishment of an additional train station to provide increased access to the LRH facilities across the region, as well as the employment opportunities provided by the hospital, airport and associated businesses, the establishment of additional residential development in the area would also provide a good planning outcome. Given existing constraints, residential development should generally only be provided to the east of Airfield Road. However, a residential component as part of a mixed use development on unconstrained land (where it will not compromise airport or hospital uses) could be supported.

The land has not been identified for retail uses with the exception of land that may form part of the NAC or be directly associated with the airport or hospital as dispersal of retail development is to be avoided without strong justification. This area lacks strategic justification for retail uses other than those outlined above.

3.2.6 anticipated traralgon west population

Given the existing development of much of the land within the Traralgon West area, an understanding of the likely population and dwelling numbers is difficult to predict without further assessment. A Development Plan process that establishes the desire for change among landowners and more clearly articulates how the residential areas are likely to develop will provide a greater level of understanding of the likely population that can be accommodated in these areas. This process will also allow further consideration of the appropriate densities for this area noting the figures used below are indicative only.

In the interim, in order to provide a broad understanding of the likely residential population, a series of nominal figures have been developed. It is important to note that these figures are preliminary and should not be used to guide decision making. This is particularly the case when assessing the establishment of activity centres, given the role that non-residential and worker populations will play in supporting identified centres.

In relation to the calculations, the following informed the relevant figures:

- Areas of potential residential land were identified and areas calculated using GIS mapping on the basis of the Traralgon West Structure Plan.
- A figure of 75% of land was presumed to be developable. This is lower than the 85% figure used within the Traralgon Growth Areas framework in light of the drainage lines which affect the Traralgon West area and the extent of existing development within the area.
- Differing development densities were used for calculating dwelling numbers within the area, with a gross figure of 8.5 lots/ha used for the conventional residential areas and a higher figure of 20 lots/ha used for strategic sites in light of the integrated and masterplanned development anticipated for those sites.
- In areas proposed for intensification a nominal 900sqm lot was deducted from the total in recognition of each existing dwelling within these established areas.
- Once the number of dwellings was identified, the average household size figures for Traralgon were applied to generate an indicative population figure.

Strategic Development Sites

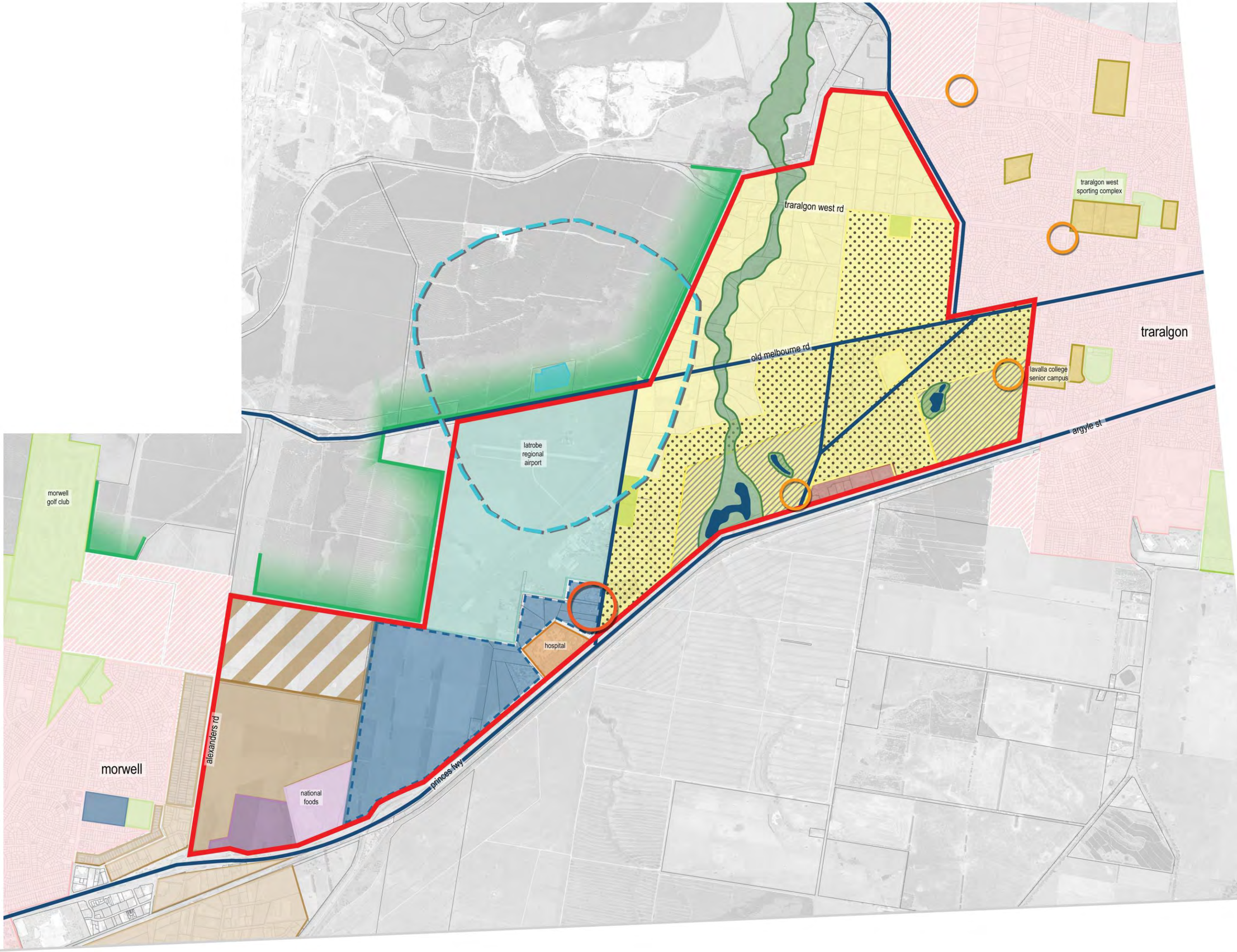
site	total area	developable area	potential dwelling numbers
Hollydale	57ha	42.75ha	855
Golf Course	41ha	30.75	615

Residential areas

areas	total area	existing dwelling numbers	potential dwelling numbers
intensifying	235ha	29 + 55 (7.56ha)	1933
existing	n/a	61	n/a

Given the identification of potential for 3,403 new dwellings in the precinct and 61 existing dwellings in the precinct, and the average household size in Traralgon of 2.46 persons per dwelling (2011 census figures), the preliminary residential population anticipated in the Traralgon West area is estimated at close to 8,500. As identified, these figures are very high level and are subject to further investigation and refinement through the recommended implementation actions outlined in Section 4 of this report.

It is also noted that the population within this area has the potential to increase should any reconsideration of the alignment of the Traralgon bypass and coal resource needs by the State Government occur. Should the identified alignment be revised to a more southerly position, additional land would become available within the Traralgon West area and this plan should be revised on that basis.



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traralgon west structure plan
land use

legend

- study area
- bulky goods
- industrial 1
- industrial 3
- future industrial
- car sales
- employment investigation area
- latrobe regional airport
- latrobe regional hospital
- national foods
- existing residential
- residential growth
- rural living
- proposed conventional residential
- strategic residential development site
- schools
- recreation
- proposed open space corridor
- plantation edge
- dams
- main roads
- neighbourhood activity centre (NAC)
- local activity centre (LAC)

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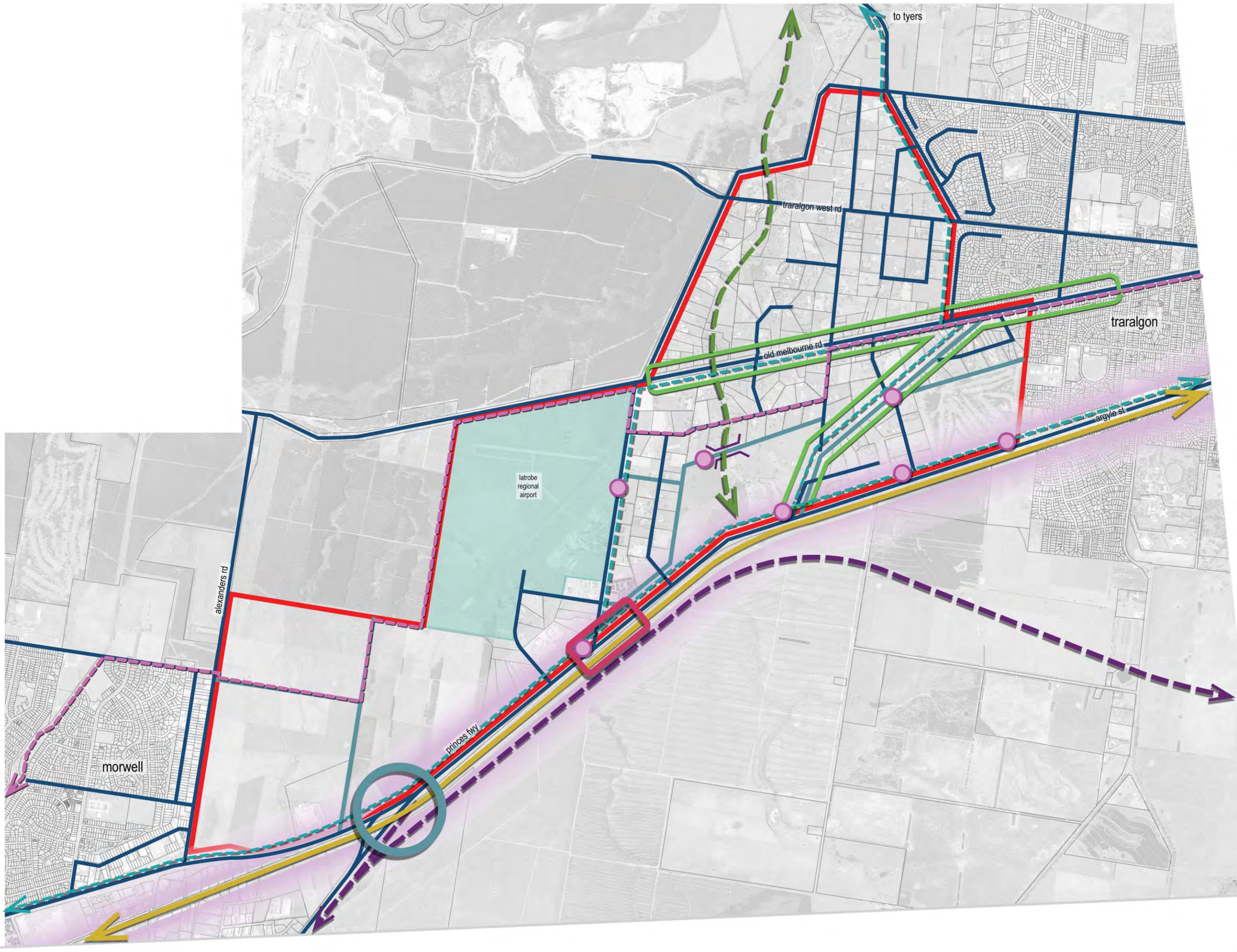
Figure 7: traralgon west: land use

3.3 movement and access

The structure plan seeks to provide clear and logical routes through the area, and to increase opportunities to access more sustainable modes of transport both to, and within, Traralgon West. The plan identifies only key roads within the precinct and principles for future networks of local roads. The layout of the network of local roads will need to be determined as part of any future development plan for both the strategic development sites and the area that is to transition in dwelling intensity (i.e. existing low density and rural living land). Any development plan should have regard to the contents of this document. Movement and access within the precinct is proposed as follows:

- The Princes Highway will continue to develop as a key transport corridor. As identified in the *Traralgon Growth Areas Framework*, a high frequency bus service should be established along this corridor, in addition to cycle lanes and existing vehicular movement.
- A new train station should be provided adjacent to the hospital and near the proposed Neighbourhood Activity Centre.
- Old Melbourne Road and the existing Coopers Road road reserve within the precinct (which should be constructed to form a road) will be developed as key green movement corridors, having regard to the need to protect any important areas of native vegetation. Old Melbourne Road and Coopers Road should provide a high amenity pedestrian pathway, which may be uses as part of a broader network of jogging/ walking tracks. The alignments of these green movement corridors should be further refined both through the Development Plan process, but also through the upcoming *Pathways, Tracks and Trails Strategy* which should have regard to this Structure Plan
- Another new shared path will be established along the key drainage line which is identified as an open space corridor providing a connection through to a broader area of open space proposed to the north of Traralgon as part of the *Traralgon Growth Areas Framework*.
- Bus services should be extended from the existing urban area into the southern portion of the precinct proposed for increased development and intensity of residential use. Bus stops should be provided within a 400m distance of dwellings as identified on the plan and stops should be provided at key areas of open space and activity centres.
- Apart from the construction of the existing road reserve (Coopers Road) which angles though the precinct, a number of other key road connections have been identified on the following plan, including along he boundaries of the 'Hollydale' and Traralgon Golf Club sites to provide east–west access across the centre of the precinct to Airfield Road.
- Careful consideration will need to be given to the most appropriate configuration of the bridge that will be required to cross the main drainage line (between Areas 5 and 6), to ensure that it is complementary to the proposed open space corridor.
- The remainder of the local road network must provide clear, permeable and legible connections through the precinct to key locations such as public open space, schools and activity centres, in line with relevant subdivision design standards.
- Cul-de-sacs should be avoided where possible and when provided must integrate pedestrian connections to avoid restrictions on movement.
- Roads should follow existing boundary alignments where possible to integrate and preserve existing canopy vegetation.
- Car parking provided in association with any commercial development in activity centres should be provided to the rear of buildings to ensure activated frontages are achieved and car parking does not dominate.



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traralgon west structure plan

access & movement

legend

- study area
- existing roads
- proposed bypass
- existing rail
- bus route
- on-road bicycle route
- off-road shared path
- high frequency bus corridor
- train station
- latrobe regional airport
- key green movement corridor
- key intersection
- proposed bridge
- bus stop (indicative location)
- proposed connector road
- proposed traralgon - morwell shared path

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Figure 9: traralgon west: access and movement

3.4 community and open space

The structure plan details the distribution of proposed public open space and location of key community facilities within the precinct. The particular requirements for community infrastructure have not been identified at this time and will be subject to more detailed assessment over time, given the dependence on the rate of transition of previously developed land. Key elements of community infrastructure and open space are identified on the following plan, including:

- Ongoing development and expansion of health facilities and services associated with the Latrobe Regional Hospital.
- Development of aged care facilities and services in proximity to the hospital.
- Development of one Neighbourhood and two Local Activity Centres which should include community infrastructure such as kindergartens, child care, and community meeting rooms as required.
- Given there is no current school within the area, a preferred area for development of a new public primary school (if required) has been identified. While an indicative location has been identified proximate to the Neighbourhood Activity Centre, whether a school is required will need to be considered further once a Development Plan has been prepared for the residential areas as this will provide a more accurate indication of the likely local population. The location of any new school will need to be subject to further detailed analysis and the requirements of the relevant department for site location.
- A key green corridor of public open space has been identified along the drainage line which runs north south through the precinct, which will connect to a broader network of open space around Traralgon. A large area of public open space on the 'Hollydale' site will provide an 'end' or 'entry' point for this broader open space network and will be highly visible from the Princes Highway.
- Existing drainage basins and waterbodies have been utilised to provide areas of interest and focal points for areas of local open space. Open space has been identified in locations that ensure the majority of residents within the areas have access to open space not further than 400m distance from their dwelling.
- An area of public open space should also be developed within the Neighbourhood Activity Centre, although this is not specifically identified in the plan. Providing this open space close to the hospital site provides opportunity for users of the hospital to access quality open space and consideration should be given to working with the hospital to achieve this outcome
- Three indicative locations have been identified for the development of additional active open spaces, in line with the recommended GAA *Precinct Structure Planning Guidelines* which seek to have active open space provided within 1km of new residences.
- Residential areas adjoining areas of open space should all be developed with an active or attractive frontage and increase passive surveillance of these areas. In particular 'back fence' interfaces to public parkland should be avoided.
- Key green movement corridors link many of these open spaces and community facilities increasing access for residents via cycle and high amenity pedestrian pathways. The upcoming Pathways, Tracks and Trails Strategy should consider the growth patterns outlined in this framework and provide additional detail about how these linear connections might be achieved.
- The proposed Morwell-Traralgon Shared Path offers another opportunity for the development of a key linear open space that provides opportunities for both informal recreation and active connections and should be pursued.
- Other areas of public open space should be provided in line with any adopted Public Open Space Strategy prepared by Council.

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traralgon west structure plan

community & open space

st pauls anglican primary school
st gabriels primary
traralgon west sporting complex
lavalla college junior campus
traralgon secondary college
traralgon primary school
traralgon west rd
old melbourne rd
traralgon
lavalla college senior campus
argyle st
morwell golf club
hospital
princes fwy
morwell
kurnai college (maryvale)
alexanders rd

legend

- study area
- latrobe regional hospital
- public schools
- private schools
- proposed open space corridor
- passive open space
- active open space (indicative location)
- existing ovals
- dams
- water courses
- key green movement corridor
- area to encourage aged care / retirement living
- neighbourhood activity centre (NAC)
- local activity centre (LAC)
- 400m radius from public open space
- potential location of new primary school campus
- proposed traralgon - morwell shared path

note:
location of open space are indicatove only and suject to further consideration as part of a development plan process

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Figure 9: traralgon west: community and open space

4 implementation

The implementation of this structure plan is unlikely to be achieved in the short term, and will require careful on-going management due to the large number of landowners within the precinct and the existing nature of development. Nonetheless, it important that a clear strategic direction be established for the precinct in order to guide development as it occurs and to provide landowners with an understanding of the potential of their holdings.

New commercial and residential zones being introduced to the Latrobe Planning Scheme should not have a significant impact on the area, given existing minimum lot sizes and sewerage connections. However, following the release of the new Rural zones there may be a need for consideration of additional policy in order to protect the 'employment investigation area' from uses which may become 'as-of-right' and potentially compromise the longer term development of his area.

4.1 development plans

It is important that Council continues to work pro-actively with both the owners of identified strategic sites and also with groups or individual landowners of existing Low Density Residential or Rural Living zoned land. The preparation of this structure plan is the first step in the process. However a more detailed development plan will need to be prepared for particular areas and will need to be undertaken in close consultation with landowners. A development plan (or plans) will be particularly important for the areas proposed for redevelopment within this area.

Importantly, a Development Plan will also allow the identification of appropriate funding mechanisms to ensure that contributions from developers to the required infrastructure in the area is provided in a timely manner.

A Development Plan Overlay (and potential Development Contribution Plan Overlay) will ensure that development on the two large single landholdings in the area will need to be in accordance with the strategic aims of the precinct before any rezoning occurs. In relation to area 5, given the large number of landowners within the affected land, a development plan will be needed to ensure appropriate staging and provision of infrastructure is incorporated through and as part of any rezoning and subsequent development. The development plan process will allow a more site specific assessment of the relevant biodiversity, cultural heritage, servicing and other matters prior to the approval of any more intensive development of the land.

In particular it will be important to identify which landowners are interested in maximising the development potential of their land in the short to medium term to ensure orderly development is possible. In addition to the consultation held as part of TGAR, further contact should be made with landowners to ascertain level of interest in development and use this feedback to inform areas of change and staging of development as required. Any interest in commercial development of those landowners close to the intersection of Airfield Road and the Princes Freeway could also be ascertained through this process, noting that further investigations would be required prior to any of this land being identified for commercial use.

Council will also need to work closely with the owners of the 'Hollydale' site to ensure that a Development Plan is prepared for that area which accords with broader strategic objectives for Latrobe City.

Discussions should also be held with owners of the Traralgon Golf Course in relation to the possible relocation or redevelopment of the course to allow the site to be utilised for residential purposes. Relocation of this facility should be driven by the club, rather than Council.

4.2 further work

A number of other matters and / or further work will need to be considered or undertaken in order to implement the plan as outlined in the previous sections, as follows:

- The agreed urban amenity buffer for the Australian Paper Mill will need to be translated into appropriate planning controls, noting the need for further modelling to be undertaken in two investigation areas (Morwell North and Tyers South) identified in the *Traralgon Growth Areas Framework* (outside the Traralgon West study area).
- Discussions with the Latrobe Regional Airport Board, Latrobe Regional Hospital and relevant landowners in relation to land identified as an 'employment investigation area', to clarify the best future use for the land, as well as finalisation of masterplans for both those key facilities.
- A detailed landscape masterplan for the open space corridor should be prepared. This may be prepared as part of a larger project for the broader area of open space identified in the *Traralgon Growth Areas Framework,* or it may be prepared independently and feed into that project.
- Masterplans should be prepared to identify the preferred configuration of the Key Green Movement Corridors. This should be integrated with work undertaken in relation to the Traralgon-Morwell shared path.
- A detailed drainage assessment should be prepared for the area in order to inform any development plan, including the likely extent of flooding associated with the existing drainage lines, given the extent of current flood mapping does not cover this area.

- As part of an Activity Centre Strategy for Traralgon (or the Latrobe Regional City), the preferred location, extent, indicative floorspace and potential community infrastructure to be located within different activity centres within the precinct should be confirmed. This recommendation has been included to allow Council to establish a robust strategic basis for decision making in relation to the location of activity centres and the anticipated size and needs of activity centre residential catchments. An Activity Centre Strategy will enable a defined hierarchy and role for each area of commercial activity to be established. While this work may be undertaken for Traralgon, given the Regional City context (and in particular the proximity of Traralgon and Morwell) it is considered it may be more useful to undertake a study on that basis (i.e. for the Regional City). An Activity Centre Strategy would also offer the opportunity to assess the establishment of areas of commercial activity in a holistic manner based on an understanding of where growth is likely to occur and thus to ensure orderly planning of these centres. While a 'retail strategy' assesses floorspace requirements, an Activity Centre Strategy should also consider the incorporation of community and social uses which better reflects the accepted definition of an 'activity centre'. In the context of the *Traralgon West Structure Plan*, an Activity Centre Strategy could also consider in greater depth the most appropriate location for the identified Local Activity Centres, based on further analysis of existing activity and anticipated residential densities. In addition, it could also provide greater detail, assessed in an holistic manner, of the optimal size of the proposed Neighbourhood Activity Centre. Recommendations in relation to any additional community facilities that may provide benefit for the community by being located in this centre should also be explored.
- As a broad guide, the Activity Centre Strategy should include the following:
    - Updates to existing floorspace demand across a range of sectors;
    - Identification of existing areas of commercial activity (within all zones);
    - Establishment of a range of broad principles to underpin activity centre policy;
    - Identification of an activity centre hierarchy and definitions (from Principal to Local centres) suitable for a regional context; and
    - Identification of a new network of centres in line with the established hierarchy, this could include (indicative) floorspace targets and key actions for each centre.

4.3 planning controls

In order to implement the structure plan for Traralgon West, there will need to be a number of steps undertaken. As discussed previously the development of this area will be determined largely by the speed of redevelopment by individual landowners, given the existing fragmented land ownership within the precinct. In order to best facilitate this transition over time, the following actions in relation to the Latrobe Planning Scheme are recommended.

- Update Clause 21 of the Latrobe Planning Scheme to reflect the objectives of the Traralgon West Structure Plan. In particular, sections relating to Clauses 21.04-2 and 21.04-7, which deal with settlement, and Clause 21.05-6, which address Traralgon's growth and development, will need to be updated. A plan should also be included within that Clause to ensure development direction is clear. In addition, this document should be included as a reference document under Clause 21.04-8.
- Rezone land within the precinct as identified on the following plan (Figure 10).
- Rezone land identified as 'employment investigation area' around the Latrobe Regional Hospital from Rural Living to a more suitable zone, once the best use for this land has been identified. The current minimum subdivision size of 8ha is considered to be a sufficient size to function as a 'holding' zone as most lots within the area are already significantly smaller than that. Uses which may compromise or 'lock-in' a future use of this land should be discouraged where possible until a clear set of objectives have been developed.
- Apply a Development Plan Overlay to the 'Hollydale' site and the Traralgon Golf Course site to ensure development of these key strategic sites is maximised and issues such as vehicular connections and public open space are considered in a broader, precinct wide context. Consider coordinating Development Plans for the golf course with the adjoining Low Density Residential area pending feedback from stakeholders.
- Apply a Development Plan Overlay to the areas currently zoned LDRZ and RLZ, which are proposed for rezoning to the General Residential Zone, in order to ensure that re-subdivision occurs in an orderly manner and that appropriate linkages, drainage management and open spaces are provided.
- Apply a Development Contribution Plan Overlay or other appropriate mechanism to the area to be rezoned to General Residential Zone, to ensure that key infrastructure is appropriately costed and costs are distributed equitable among landowners.

traralgon west rd
old melbourne rd
traralgon
argyle st
princes fwy
alexanders rd
morwell

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traralgon west structure plan

proposed zoning

legend

- study area
- business 1 zone (commercial 1 zone)
- business 4 zone (commercial 2 zone)
- business 5 zone (commercial 1 zone)
- industrial 1 zone
- industrial 2 zone
- industrial 3 zone
- residential 1 zone
- low density residential zone
- rural living zone
- public use zone
- road zone - category one
- special use zone
- public park & recreation zone
- public conservation & resource zone
- farming zone
- proposed residential 1 zone (with DPO) or urban growth zone
- employment investigation area
- proposed industrial zone

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Figure 10: proposed rezoning

APPENDIX C

STAKEHOLDER CONSULTATION SCHEDULE

Organisation	Representative(s)	Date/Time Undertaken	Response
GippsAero	Lloyd Clarke Don Love	8/5/14 13:00	Present in person
Latrobe Valley Aero Club	John Warren President	8/5/14 08:00	Present in person
East Coast Aviation	Dave Dawson Proprietor	8/5/14 09:00	Present in person
Ambulance Victoria	Anthony DeWit Manager Air Operations	24/6/14 10:00	Present in person
Helimed 1	Steven Grove Team Manager HEMS2	16/6/14	Present in person
DEPI	John Wood Fire Base Manager	8/5/14 10:00	Present in person
Latrobe Valley Gliding Club		19/6/14 08:30	Present in person
Latrobe Flying Museum			Present in person
State Emergency Service			Present in person
CFA – Traralgon West Fire Brigade			Present in person
Osprey Aviation Services			Present in person
Latrobe Valley Airframes & Welding			Present in person
Aerial Extras	Gerard Lappin Proprietor	8/5/14 14:00	Present in person
Latrobe City Business Tourism Association	Linda Brock	30/9/14 Email	No response received
Morwell Chamber of Commerce and Industry Inc	E: info@morwell.latrobe.net.au	30/9/14 Email	No response received
Traralgon Chamber of Commerce and Industry Inc	E: traralgonchamber@gmail.com	30/9/14 Email	No response received
HVP Pty Ltd	Simon Gatt	29/9/14 Email	No response received
Hazelwood	Garry Smith	29/9/14 Email	No response received
Loy Yang Power	Roland Davies	29/9/14 Email	No response received
Lion	Darren Day	29/9/14 Email	No response received
Sam Suleman	Adjoining Landowner	30/9/14 Email	31/10/14 Letter

Organisation	Representative(s)	Date/Time Undertaken	Response
Gippsland Water	David Mawer CEO Paul Young, Asset Planner	30/9/14 Email	5/11/14 Letter
Energy Australia	Geoff Gay	29/9/14 Email	No response received
Australian Paper Maryvale Ltd	Rohan Wilks	29/9/14 Email	14/11/14 Email 17/11/14 Telephone 31/12/14 Letter
QantasLink	Todd Chapman	29/9/14 Email	3/10/14 Email
Virgin Australia Regional Airlines	Ms Merren McArthur	30/9/14 Email	No response received
Regional Express Airlines	Warrick Lodge	29/9/14 Email	No response received
Sharp Airlines	General Inquiries	29/9/14 Email	No response received
Department of State Development Business and Innovation	Andrew Heasley	26/3/14	Present in person
	The Hon. Gordon Rich-Phillips MLC	2/7/14	Present in person
Latrobe Regional Hospital	TBA	TBC	No response received

REHBEIN Airport Consulting

APPENDIX D

DEVELOPMENT GUIDELINES

Latrobe Regional Airport Board
a new energy in aviation

Latrobe Regional Airport | Master Plan 2015 (Updated 2016)

Development Guidelines

For Latrobe City Council

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0	16/3/15	DRAFT	GW		BJH		BJH	
1	25/8/15	FINAL DRAFT	GW		BJH		BJH	
2	26/2/16	FINAL	GW		BJH		BJH	
3	15/5/16	FINAL	GW		BJH		BJH	

1.0 INTRODUCTION

1.1 PURPOSE

The long-term viability of Latrobe Regional Airport depends upon the adoption of sound planning practice and therefore strategies must be put in place to protect the site from incompatible developments. This must be balanced against the need for environmentally responsible and appropriate development.

General guidelines are provided in this document for future development within the following development zones and their relevant constituent precincts envisaged within the Latrobe Regional Airport Master Plan 2015 and defined in **Table 1**. Reference should also be made to **Figure E** at Appendix A of the Latrobe Regional Airport Master Plan 2015.

Table 1: Future Development Zones and Precincts

Zone	Precincts
Terminal Zone	Private Hangar Precinct
	Aviation Business Expansion Precinct
Central Business & Employment Zone	Manufacturing Support Precinct
Southern Business & Employment Zone	Aviation Business Precinct
	Education & Training Precinct
	Heavy Aircraft Precinct
Northern Business & Employment Zone	Aviation Enterprise Precinct

Guidelines for specific building types are also provided under **Section 3.0**.

Variation in the design response is encouraged where development is compatible with existing and proposed development.

A checklist tool is provided to assist the assessment of proposed development at the site.

1.2 OBJECTIVES

The primary objectives of these development guidelines are to provide guidance for lease holders at the Latrobe Regional Airport in terms of private and commercial aviation and non-aviation development by providing criteria which:

(a) Ensure that land use is consistent with the Latrobe Regional Airport Master Plan 2015.

(b) Establish a strong precinct identity.

(c) Ensure that private and commercial developments proposed to be constructed are assessed against minimum design standards as set out in this policy.

(d) Maintain a high level of building and landscaping presentation throughout the Airport to achieve the desired street-scape.

(e) Minimise impacts on the natural environment, and promote the adoption of sustainable design principles into development at Latrobe Regional Airport.

(f) Ensure development does not adversely impact upon the airports core aviation activities.

(g) Encourage development that achieves the most effective and best use of sites

(h) Provide guidance to Council and Council's representatives when considering applications made under this policy.

(i) Assist in the management of the Latrobe Regional Airport and ensure growth in value of Airport assets.

1.3 DEFINITIONS

The following are definitions that may be used as part of this policy in addition to the definitions included in Latrobe Planning Scheme:

"Council" means Latrobe City Council.

"Master Plan" means the Latrobe Regional Airport Master Plan 2015 which incorporates Figures A to G within Appendix A.

"OLS" means Obstacle Limitation Surface(s) as defined in CASA Manual of Standards Part 139 and indicated on Figure G at Appendix A of the Latrobe Regional Airport Master Plan 2015.

"Aerodrome" means Latrobe Regional Airport.

"NCC" means National Construction Code.

1.4 DISCLAIMER

All appropriate legislative and regulatory standards take precedence over this development guideline where any aspects are contradictory.

2.0 GENERAL GUIDELINES

2.1 LATROBE REGIONAL AIRPORT MASTER PLAN

The Latrobe Regional Airport Master Plan 2015 incorporates a Development Zone Master Plan which identifies development precincts which are characterised by certain types of permitted development.

The Development Zone Master Plan is depicted in **Figure G** (at Appendix A of the Master Plan) and, in conjunction with these development guidelines, sets out the objectives and desired outcomes for each precinct.

The land uses within each precinct should comply with the Master Plan and the permitted uses specified in the lease for the site. All uses must have a lease approved by Council prior to commencement of any works or occupation of a premises.

2.2 LAND USE

Development and land use within the Latrobe Regional Airport must be consistent with the intent of the Master Plan, specifically the Development Zone Master Plan. **Table 2** indicates the type of developments that are acceptable according to the development zones and precincts allocated by the Master Plan.

The uses indicated in Table are not exhaustive and should be considered as a guide to the development intent only. Other uses may be considered but they must be consistent with the Master Plan and they must add value in the context of the established vision and objectives for the Latrobe Regional Airport.

Final decisions on permitted land uses will be made by the Latrobe Regional Airport Board.

Table 2: Anticipated Uses by Development Area

Development Zone	Precinct	Anticipated Uses
Terminal Zone	Central Activity Precinct	Existing uses including aircraft parking, passenger terminal, aero club, aviation fuel facilities, hangars
	Private Hangar Precinct	_Maintenance and parking hangars for general aviation fixed wing aircraft sizes up to and including code B
	Aviation Business Expansion Precinct	Aviation and commercial activities requiring direct access to Code C Taxiway including: _Maintenance and parking hangars for fixed wing aircraft sizes up to and including code C _Administration functions

Development Zone	Precinct	Anticipated Uses
	Aviation Heritage Precinct	Existing uses including hangars for historical aircraft Park/recreational area
	Landside Precinct	Common car parking
	Manufacturing Support Precinct	Larger scale commercial development requiring code B taxi lane access to the apron including: _Logistics _Maintenance _Assembly _Administration functions
	Heavy Aircraft Precinct	Larger scale light industrial development requiring code B taxi lane access to the apron including: _Light and heavy maintenance of aircraft _Administration functions
	Education & Training Precinct	Smaller scale commercial and light industrial development including: _Administration functions _Maintenance _Avionics _Engineering
	Aviation Business Precinct	Smaller scale light industrial development requiring code B taxi lane access to the apron including: _Maintenance and parking hangars for Rotary and fixed wing aircraft _Flying school _Light industrial development _Administration functions
	Aviation Enterprise Precinct	Smaller scale commercial and light industrial development including: _Business start-ups _Non aviation related activity _Administration functions _Maintenance _Logistics _Manufacturing / assembly

2.3 SUBDIVISION

Subdivision is not encouraged.

2.4 HEIGHT

All development in this zone is to comply with the future Obstacle Limitation Surfaces requirements shown in the Master Plan. Refer to **Section 3.0** for additional height controls within specific development precincts.

2.5 OTHER AIRPORT SAFEGUARDING CONTROLS

All developments should be assessed against the latest National Airport Safeguarding Framework (NASF) Guidelines and other relevant standards and guidance applicable to an airport environment, including (but not limited to) assessment of issues such as:

- Building generated windshear and turbulence;
- Plume rise;
- Reflectivity and glare;
- Wildlife hazards;
- Construction stage impacts; and
- Public safety and dangerous goods.

2.6 BUILDING DESIGN AND PLACEMENT

The following principles should be used in the design of new development:

- Positive contribution to the street-scape.
- Buildings should be sited to take advantage of views, provide a positivepresentation to road and to provide a strong corporate image and an inviting entrance.
- The main entrance to the building is to be clearly visible and located along the developments road frontage.
- Generally, architectural form and character should avoid large unrelieved expanses of facade or roof.
- Where a site will have more than one building, the design and layout of the buildings should result in the creation of a group of integrated buildings clearly expressing their interrelationship.
- Massing and building form should be of a contemporary nature, based on simple bold and strong forms using the selection of various materials, texture and colour to highlight the design, develop the corporate image within the overall design vision of the precinct.

2.7 FACADES

Facades of buildings are to be well articulated and modulated to reduce the appearance of the bulk of the building from adjoining roads. Varying heights and setbacks are encouraged where this is practical acknowledging the fundamental functional requirements of some types of aviation facilities.

The use of texture and colour should reflect adjoining and existing developments. In general neutral shades of greys, creams and earth colours are encouraged for the major facades with architectural features expressed in panels of strong, bold corporate colours with integrated building signage.

Although the use of 'Colourbond' or similar materials is permitted for all buildings, developments are encouraged that use brick / concrete walls particularly for the frontage of a building (particularly those used for administration and education purposes).

The use of un-painted 'Zincalume' wall cladding is not permitted on any building.

Colours and finishes should be non-reflective and appropriate for an aerodrome environment.

2.8 BUILDING SIGNAGE

The following guidelines are provided for the provision of signage on buildings:

- Building signage may contain the business name and/or corporate logo.
- There is to be only one tenant sign per building.
- No building sign shall be larger than 5% of the total area of the wall onto which it is placed.
- Signs must be specified, installed and maintained to a high standard, with three-dimensional approach preferred and laser cut raised lettering encouraged.
- Building signage facing primary roads shall be illuminated to enhance the presentation of the precinct and it must be compliant with CASA MOS Part 139.
- Sub-tenants are not permitted to place a sign on the building but may place their business name on or adjacent to the main entrance door to their premises.
- No advertising or promotional signs are permitted within leased sites.
- Signs are to be static with no dynamic elements.

2.9 ROOF FORM AND MATERIALS

Roof form should be pitched and flat roofs discouraged. All roofing materials are to be non-reflective and not interfere with the operation of the aerodrome.

Roof mounted plant is discouraged, and if unavoidable will require special screening or design treatments to avoid visually detracting from the precinct.

2.10 ENTRANCES

All development should have their primary entrance oriented to the road, and include architectural elements, such as canopies or porte cocheres which identify the entry.

Whenever possible, building entrances for pedestrians should be well separated from vehicular entrances.

Where a development has a boundary along an airside movement reserve, apron or taxi lane shall retain access to the airside.

2.11 LANDSCAPING AND OPEN SPACE

The following guidelines are provided for the provision of landscaping and open space:

- All plant and equipment shall be hidden from view from public areas including public roads.
- Any screening should be designed as an integral part of the building form and character.
- Respect and build upon the historical and current landscape character and be visually complementary to the surrounding landscape and uses.
- Ensure quality landscaping throughout the Airport area and maintain a high standard of landscaping.
- Adhere to obstacle height limitations with the location and height of landscape features.
- Provide broad boulevards at appropriate locations in key Airport precincts.
- Encourage low growing or large, open canopy trees to maintain the “open feel” of the Airport.
- Tree and shrub species will be selected to avoid attracting birds.
- Provide definite and exciting entry statements at appropriate locations in the Airport.
- Site and design to minimise disruption to the natural landscape systems.
- At least 5% of each main development precinct area is to be developed and landscaped for use as open space.
- Existing vegetation should be retained where possible.
- Landscape planting zones are encouraged in the frontage setback.
- Provide planting to western and northern facades to reduce building heat loading.
- Landscaped areas are to be reticulated and maintained at all times to the satisfaction of Council.
- The use of native vegetation and water efficient plants is encouraged.
- Buildings shall be arranged to provide landscaped outdoor places for people to use during breaks.

2.12 ENVIRONMENTALLY SUSTAINABLE DESIGN

Good building design based on best practice ESD principles can significantly reduce everyday running costs of buildings without significant additional building costs.

Building envelopes and internal layouts should be designed to minimise energy consumed for heating, cooling and light where:

- Window design and shading facilitates good thermal performance and optimises access to day light.
- Building materials and insulation minimise energy loss through heat gain / loss through the building fabric.
- Building materials and energy sources are specified from sources which minimise the impact to the environment.

Building services shall be designed to minimise energy and resource use through:

- Maximising the use of natural light and ventilation.
- Selection of energy efficient building engineering systems.
- Minimising water use via water efficient fixtures and fittings and maximising water reuse and recycling where possible.

2.13 FENCING

Airside perimeter security fencing to minimum specifications acceptable to the Latrobe Regional Airport Board shall be provided where required by the Board.

In all other areas, boundary fencing to a maximum height of 1.8m is permitted, except on the frontage. Fencing is to be proprietary 'Colourbond' fencing system or galvanised chain wire fencing. Fencing along street frontages is prohibited.

2.14 CAR PARKING

Access and parking is to be provided in accordance with the regulatory requirements given development type. Car parking areas can be located within the front setback area or other suitable location that allows for visitors to locate the bays easily, provided adequate landscaping is included in the layout. Car parking areas and crossovers should be constructed in accordance with the relevant Australian standards.

2.15 LOADING

Loading and service areas for industrial and commercial buildings should generally be located away from the road frontage of developments and visually screened from public roadways.

2.16 TRAFFICABLE AREAS

Regular trafficked areas, such as driveways, are to be paved or sealed. Areas that are used for hardstands, truck turnarounds, etc can be of gravel construction, except where direct vehicular access to the airside is provided. However, these areas are to be constructed to ensure that dust does not cause a nuisance to the occupants of the property or adjoining properties.

2.17 LIGHTING AND ELECTRICITY

Lighting must be designed to avoid impacts on airport operations and be in accordance with the applicable aviation regulations.

2.18 DESIGN FOR FIRE

The airport site is within the vicinity of land used for forestry purposes. The design of developments should consider the use of fire resistant materials and fires escapes. The design of the layout for this part of the site should consider muster areas and appropriate access.

2.19 DESIGN FOR NOISE

The Australian Standard provides guidance on building siting and construction to minimise aircraft noise intrusion in Section 3 of Australian Standard AS 2021-2000, *Acoustics - Aircraft Noise Intrusion*. Reference shall be made to the applicable Latrobe Regional Airport Australian Noise Exposure Forecast as may be from time to time in force.

2.20 USE OF TRANSPORTABLE BUILDINGS

The use of transportable buildings such as offices and ablutions is permitted only with the consent of the Latrobe Regional Airport Board. Where used as a detached building, transportable buildings are to be painted and/or clad to complement other buildings on the site. Where a transportable building is to be attached to an industrial building, it is to be painted and/or clad to match the main building.

2.21 PERMITTED USE

The use of any development or part of a development for human or animal habitation is prohibited without the specific written approval of the Latrobe Regional Airport Board. Such approval, if granted, may be conditional and any such conditions should be complied with in full at all times.

2.22 FUEL STORAGE

Aviation fuel and combustible chemicals are to be stored in accordance with established guidelines/. No more than 500 litres of aviation fuel is to be stored on a lease area without the approval of the Latrobe Regional Airport Board.

3.0 PRECINCT SPECIFIC DEVELOPMENT CONTROLS

3.1 PRIVATE HANGAR PRECINCT

3.1.1 SETBACKS

Private hangars shall comply with the following minimum building setbacks:

To road:	Nil Setback
To taxiway/taxilane edge	Nil Setback
Sides:	1.0m Setback

3.1.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar Face masonry (unpainted)

3.1.3 BUILDING HEIGHT

All development is to be single storey and have a maximum wall height of 4.5 metres.

3.1.4 CAR PARKING

All vehicles are to be parked entirely within the leased area.

3.1.5 ABLUTIONS

Developers of private hangars are not obligated to provide private ablution facilities within the hangar. There are public ablution facilities at the nearby terminal that can be accessed.

3.1.6 STORAGE OF EQUIPMENT

Storage of all equipment used in the operation of the private hangar is to be contained within the hangar(s) at all times.

3.1.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of private hangar sites shall maintain the hangar in a neat and tidy manner and ensure the surrounding lease site is kept free of disused materials and rubbish.

3.1.8 RAINWATER TANK

A minimum of 1,000 litre rain water tank is to be installed within the leased area.

3.2 AVIATION BUSINESS EXPANSION PRECINCT

3.2.1 3.2.1 SETBACKS

Development shall comply with the following minimum building setbacks:

To road:	6m Setback
To taxiway/taxilane edge	30m Setback
Sides:	3.0m Setback

3.2.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
Translucent open cell roof cladding system on a proprietary framing system, for example Danpalon or similar	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar
	Translucent open cell wall cladding system on a proprietary framing system, for example Danpalon or similar
	Pre-cast concrete cladding panels

3.2.3 BUILDING HEIGHT

All development is to be a maximum of two storey and have a maximum wall height of 8.0 metres.

3.2.4 CAR PARKING

Car parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.2.5 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.2.6 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.2.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.2.8 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

3.3 MANUFACTURING SUPPORT PRECINCT

3.3.1 SETBACKS

Development shall comply with the following minimum building setbacks:

To road:	6m Setback
To taxiway/taxilane edge	Nil Setback
Sides:	3.0m Setback

3.3.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
Translucent open cell roof cladding system on a proprietary framing system, for example Danpalon or similar	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar
	Translucent open cell wall cladding system on a proprietary framing system, for example Danpalon or similar
	Pre-cast concrete cladding panels

3.3.3 BUILDING HEIGHT

All development is to be a maximum of two storeys and have a maximum wall height of 9.0 metres.

3.3.4 CAR PARKING

Car Parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.3.5 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.3.6 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.3.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.3.8 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

3.4 HEAVY AIRCRAFT PRECINCT

3.4.1 3.4.1 SETBACKS

Development shall comply with the following minimum building setbacks:

To road:	6m Setback
To taxiway/taxilane edge	30m Setback
Sides:	3.0m Setback

3.4.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
Translucent open cell roof cladding system on a proprietary framing system, for example Danpalon or similar	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar
	Translucent open cell wall cladding system on a proprietary framing system, for example Danpalon or similar
	Pre-cast concrete cladding panels

3.4.3 BUILDING HEIGHT

All development is to be a maximum of two storey and have a maximum wall height of 9.0 metres.

3.4.4 CAR PARKING

Car Parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.4.5 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.4.6 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.4.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.4.8 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

3.5 EDUCATION AND TRAINING PRECINCT

3.5.1 SETBACKS

Development shall comply with the following minimum building setbacks:

To road:	6m Setback
To taxiway/taxilane edge	3.0m Setback
Sides:	3.0m Setback

3.5.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar

3.5.3 BUILDING HEIGHT

All development is to be a maximum of two storeys and have a maximum wall height of 8.0 metres.

3.5.4 CAR PARKING

Car Parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.5.5 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.5.6 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.5.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.5.8 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

3.6 AVIATION BUSINESS PRECINCT

3.6.1 SETBACKS

Development shall comply with the following minimum building setbacks:

To road:	4m Setback
To taxiway/taxilane edge	14m Setback
Sides:	2.0m Setback

3.6.2 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
Translucent open cell roof cladding system on a proprietary framing system, for example Danpalon or similar	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar
	Translucent open cell wall cladding system on a proprietary framing system, for example Danpalon or similar

3.6.3 BUILDING HEIGHT

All development is to be single storey and have a maximum wall height of 6.0 metres.

3.6.4 CAR PARKING

Car Parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.6.5 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.6.6 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.6.7 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.6.8 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

3.7 AVIATION ENTERPRISE PRECINCT

3.7.1 Setbacks

Development shall comply with the following minimum building setbacks:

To road:	4m Setback
To taxiway/taxilane edge	14m Setback
Sides:	2.0m Setback

3.7.1 BUILDING MATERIALS TO BE USED

Roof Cladding	**Wall Cladding**
Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar	Proprietary pre-painted steel sheet wall and roof cladding system, for example colour bond or similar
Translucent open cell roof cladding system on a proprietary framing system, for example Danpalon or similar	Face masonry (unpainted)
	Composite refinished cassette type cladding system, for example Alucobond or similar
	Pre-cast concrete cladding panels

3.7.2 BUILDING HEIGHT

All development is to be single storey and have a maximum wall height of 6.0 metres.

3.7.3 CAR PARKING

Car Parking bays are to be provided within the leased area at a minimum rate as stipulated by the NCC. All visitor parking is to be contained within the leased area.

3.7.4 ABLUTIONS

Ablutions facilities are to be provided as specified within the NCC.

3.7.5 STORAGE OF EQUIPMENT

Storage of all equipment and material associated with the development is to be contained within the building(s) at all times.

3.7.6 MAINTENANCE OF BUILDINGS AND SURROUNDS

The owners of development sites shall maintain the leased area in a neat and tidy manner and ensure the site is kept free of disused materials and rubbish.

3.7.7 RAINWATER TANK

A minimum of 2,000 litre rain water tank is to be installed within the leased area.

4.0 ASSESSMENT TOOL

GUIDELINE	COMPLIES?
Does the development comply within Latrobe Regional Airport 2015 Master Plan?	
Does the proposed height comply with the relevant OLS and PANS-OPS obstacle height limits?	
Does the proposed height comply with the precinct specific height control?	
Are building set back appropriately from internal and external roads and adjoining development?	
Is the developments main entry orientated to the road and is readily identifiable?	
Are facades well modulated and articulated?	
Are the materials proposed appropriate and compliant with the precinct specific materials to be used?	
Is building signage complaint with the development guideline?	
Is existing vegetation retained in accordance with the identified conservation areas?	
Does the proposed landscaping respond appropriately to the existing character and contribute positively to the site?	
Are proposed trees and shrubs low growing?	
Is 40% of the Airport site open space?	
Is 5% of each main development precinct area landscaped for open space?	
Is adequate solar access provided?	
Is boundary fencing a maximum of 1.8 metres in height and not located along the road frontage?	
Is the level of car parking provided suitable for the uses proposed?	
Are loading and servicing areas screened from view?	
Are services provided underground?	

REHBEIN Airport Consulting

APPENDIX E

AIRCRAFT NOISE CONTOURS (ANEF AND N-ABOVE)

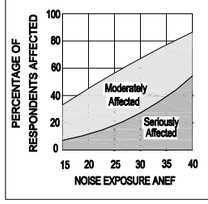
M13237/A/005	**Long Range (2050) ANEF Contour Map**
M13237/A/006	**N60 Contours**
M13237/A/007	**N65 Contours**
M13237/A/008	**N70 Contours**

LAND USE COMPATIBILITY ADVICE FOR AREAS IN THE VICINITY OF AUSTRALIAN AIRPORTS

Shall be read in conjunction with AS2021:2015
Acoustics - Aircraft noise intrusion - Building siting and construction

Building Type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
Home, 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		

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 of the Standard may be followed for building sites outside but near to the 20 ANEF contour.
2. Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate. (See Exposure - Response graph below)
3. There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 2.1 of the Standard should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3 of the Standard.
4. The 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 of the Standard. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.
5. In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.



PERCENTAGE OF PEOPLE SERIOUSLY & MODERATELY AFFECTED BY AIRCRAFT NOISE

This graph shows that a proportion of the community will still be SERIOUSLY and MODERATELY affected by aircraft noise when the noise exposure is below 20 ANEF

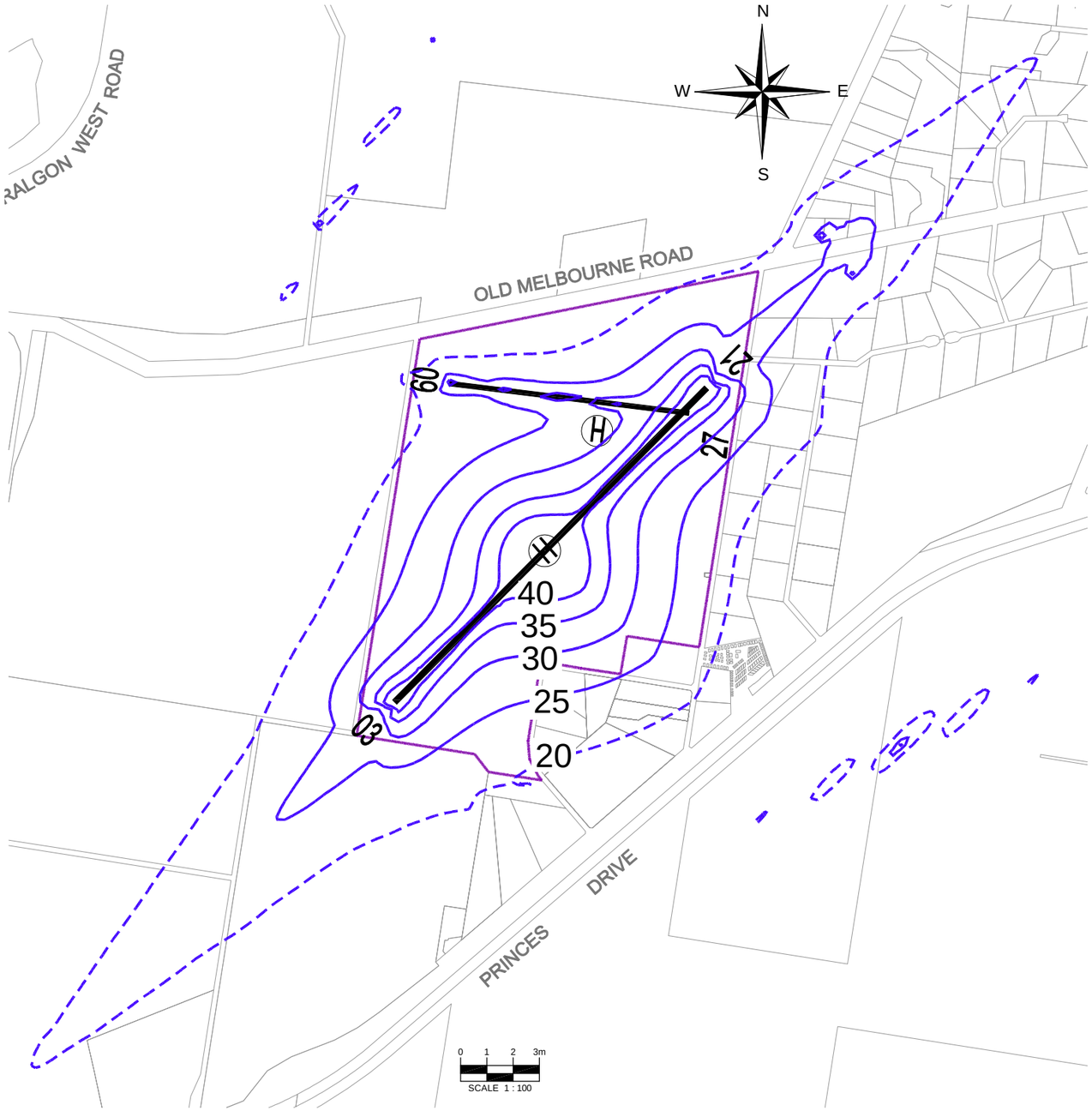
Over flight of aircraft will still occur in areas outside the 20 ANEF

Source: Australian Standard AS2021:2015

GENERAL NOTE:
1. WHERE FIGURES HAVE BEEN ROUNDED DISCREPENCIES MAY OCCUR BETWEEN TOTALS AND THE SUMS OF COMPONENT ITEMS.

2. AFTER EXAMINATION IT WAS DETERMINED THAT THE TERRAIN SURROUNDING LATROBE REGIONAL AIRPORT COULD HAVE AN INFLUENCE OVER THE SIZE AND SHAPE OF THE NOISE CONTOURS AND THEREFORE THE INCLUSION OF LOCAL TOPOGRAPHY IN THE MODEL WAS WARRANTED.

RUNWAY	AIRCRAFT	ARRIVALS		DEPARTURES		TRAINING		GRAND TOTAL
		DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	
03	717200	0.583480	0.043918	0.583480	0.043918	1.166960	0.087836	2.509592
	BEC200	1.090394	0.082074	1.090394	0.082074			2.344936
	BEC58P	0.310340	0.023359	0.310340	0.023359	1.230658	0.092630	1.990686
	CNA172	2.511255	0.189019	2.511255	0.189019	18.442028	1.388110	25.230686
	CNA206	0.694060	0.052241	0.694060	0.052241			1.492602
	CNA441	0.990132	0.074525	0.990132	0.074525			2.129314
	CNA500	0.041785	0.003145	0.041785	0.003145			0.089860
	CNA560	0.139118	0.010472	0.139118	0.010472	0.278236	0.020942	0.598358
	DC3	0.372000	0.028000	0.372000	0.028000			0.800000
	DHC8	0.139118	0.010472	0.139118	0.010472	0.278236	0.020942	0.598358
	DHC830	0.583480	0.043918	0.583480	0.043918	1.166960	0.087836	2.509592
	GASEPF	4.603374	0.346491	4.603374	0.346491	7.992140	0.601560	18.493430
	GASEPV	1.821272	0.137084	1.821272	0.137084	3.073078	0.231308	7.221098
	JPATS	0.174144	0.078239	0.174144	0.078239			0.504766
	PA44	0.346520	0.026082	0.346520	0.026082			0.745204
	SA226	0.348559	0.026236	0.348559	0.026236			0.749590
	YAK42	0.372000	0.028000	0.372000	0.028000			0.800000
03 Total		15.121031	1.203275	15.121031	1.203275	33.628296	2.531164	68.808072
09	BEC200	0.014396	0.001083	0.014396	0.001083			0.030958
	BEC58P	0.044335	0.003337	0.044335	0.003337	0.175808	0.013234	0.284386
	CNA172					2.634576	0.198302	2.832878
	GASEPF	0.657624	0.049499	0.657624	0.049499	1.141736	0.085936	2.641918
	GASEPV					0.439010	0.033044	0.472054
	JPATS	0.024878	0.011177	0.024878	0.011177			0.072110
09 Total		0.741233	0.065096	0.741233	0.065096	4.391130	0.330516	6.334304
21	717200	0.875219	0.065877	0.875219	0.065877	1.750438	0.131752	3.764382
	BEC200	1.634151	0.123000	1.634151	0.123000			3.514302
	BEC58P	0.461076	0.034704	0.461076	0.034704	1.828406	0.137620	2.957586
	CNA172	3.766882	0.283528	3.766882	0.283528	27.399584	2.062334	37.562738
	CNA206	1.041091	0.078361	1.041091	0.078361			2.238904
	CNA441	1.485197	0.111788	1.485197	0.111788			3.193970
	CNA500	0.062680	0.004718	0.062680	0.004718			0.134796
	CNA560	0.208677	0.015706	0.208677	0.015706	0.417352	0.031414	0.897532
	DC3	0.558000	0.042000	0.558000	0.042000			1.200000
	DHC8	0.208677	0.015706	0.208677	0.015706	0.417352	0.031414	0.897532
	DHC830	0.875219	0.065877	0.875219	0.065877	1.750438	0.131752	3.764382
	GASEPF	6.839297	0.514785	6.839297	0.514785	11.874036	0.893746	27.475946
	GASEPV	2.731906	0.205626	2.731906	0.205626	4.565714	0.343656	10.784434
	JPATS	0.258728	0.116240	0.258728	0.116240			0.749936
	PA44	0.519781	0.039123	0.519781	0.039123			1.117808
	SA226	0.522839	0.039354	0.522839	0.039354			1.124386
	YAK42	0.558000	0.042000	0.558000	0.042000			1.200000
21 Total		22.607420	1.798393	22.607420	1.798393	50.003320	3.763688	102.578634
27	BEC200	0.023034	0.001735	0.023034	0.001735			0.049538
	BEC58P	0.070935	0.005339	0.070935	0.005339	0.281292	0.021172	0.455012
	CNA172					4.215322	0.317282	4.532604
	GASEPF	1.052200	0.079198	1.052200	0.079198	1.826774	0.137498	4.227068
	GASEPV					0.702418	0.05287	0.755288
	JPATS	0.039804	0.017883	0.039804	0.017883			0.115374
27 Total		1.185973	0.104155	1.185973	0.104155	7.025806	0.528822	10.134884
H1	R44	1.541917	0.660822	1.541917	0.660822	4.097096	0.308384	8.810958
	S76	1.541917	0.660822	1.541917	0.660822	4.097096	0.308384	8.810958
H1 Total		3.083834	1.321644	3.083834	1.321644	8.194192	0.616768	17.621916
Grand Total		42.739491	4.492563	42.739491	4.492563	103.242744	7.770958	205.477810



AERODROME DATA

LOCATION IDENTIFIER - YLTV
(WAC 3050)
Magnetic Variation - 12° EAST

ELEVATION - 180 FEET

Aerodrome Reference Point - ARP
(WGS 84)
Latitude - 38° 12.4'
Longitude - 146° 28.2'

INM SOFTWARE:
VERSION: FAA INM v7.0d
DATE OF RUN:
20 JULY 2015

airservices

ENDORSEMENT FOR TECHNICAL ACCURACY

LONG RANGE ANEF

.....

Date: ...../...../.....

Executive General Manager Safety, Environment & Assurance
Airservices Australia. Canberra

The aircraft noise contours on this chart have been calculated using an appropriate modelling process. Airservices Australia has, in accordance with the approved manner of endorsement, considered the physical ultimate capacity of the existing or proposed runway/s in its endorsement process.
The data input and assumptions made in that process are derived in part from external sources. Airservices Australia makes no warranty in respect of that information and excludes all liability for any loss arising from reliance on that information.

No.	Date	By	Amendment	Checked
3	3/11/15	ND	FINAL	BJH
2	18/08/15	ND	DRAFT	BJH
1	20/07/15	ND	DRAFT	BJH
0	17/07/15	ND	DRAFT	BJH

REHBEIN Airport Consulting
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120 WICKHAM STREET
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A.C.N. 110685160 ABN. 77126939768
TELEPHONE (07) 3250 9000
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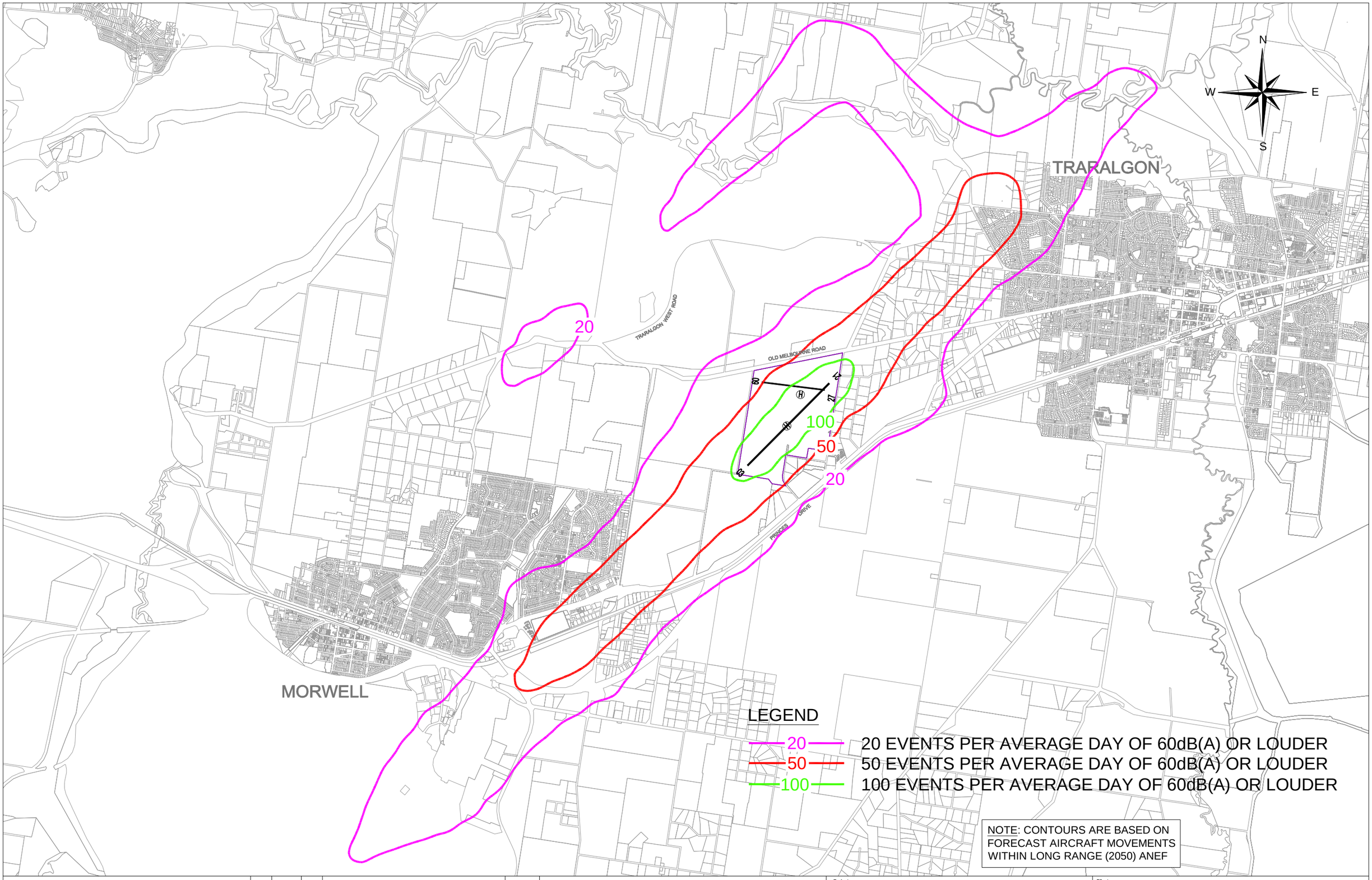
EMAIL mail@ar.net.au
The Association of Consulting Engineers Australia

Project: LATROBE REGIONAL AIRPORT MASTER PLAN 2015

Title: LONG RANGE (2050) ANEF CONTOUR MAP

Client: *LATROBE CITY COUNCIL*

Draftsperson:	Checked:	Sheet Size	Drawing No.
ND	BJH	A1	M13237A005
Designer: ND	Approved: BJH		
Scale: AS SHOWN	Date: 16/03/2015	0 / 1 / 2 / 3	



No.	Date	By	Amendment	Checked
1	26/02/16	MJ	FINAL	BJH
0	25/08/15	ND	DRAFT	BJH

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Project: LATROBE AIRPORT MASTER PLAN 2015

Title: N60 CONTOURS

Client: Latrobe City Council

Draftsperson: ND	Checked: BJH	Sheet Size: A3	Drawing No.: M13237A006
Designer: ND	Approved: BJH		
Scale: 1:25,000 @ A3	Date: 25/08/15	0 / 1	

N
W E
S

TRARALGON

TRARALGON WEST ROAD

OLD MELBOURNE ROAD

MORWELL

100
50
20

LEGEND

20 — 20 EVENTS PER AVERAGE DAY OF 65dB(A) OR LOUDER

50 — 50 EVENTS PER AVERAGE DAY OF 65dB(A) OR LOUDER

100 — 100 EVENTS PER AVERAGE DAY OF 65dB(A) OR LOUDER

NOTE: CONTOURS ARE BASED ON FORECAST AIRCRAFT MOVEMENTS WITHIN LONG RANGE (2050) ANEF

No.	Date	By	Amendment	Checked
1	26/02/16	MJ	FINAL	BJH
0	25/08/15	ND	DRAFT	BJH

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Project: LATROBE AIRPORT MASTER PLAN 2015

Title: N65 CONTOURS

Client: Latrobe City Council

Draftsperson: ND	Checked: BJH	Sheet Size: A3	Drawing No.: M13237A007
Designer: ND	Approved: BJH		
Scale: 1:25,000 @ A3	Date: 25/08/15	0	1

N
W
E
S

TRARALGON

TRARALGON WEST ROAD

OLD MELBOURNE ROAD

80

24

100

50

20

MORWELL

LEGEND

20 — 20 EVENTS PER AVERAGE DAY OF 70dB(A) OR LOUDER

50 — 50 EVENTS PER AVERAGE DAY OF 70dB(A) OR LOUDER

100 — 100 EVENTS PER AVERAGE DAY OF 70dB(A) OR LOUDER

NOTE: CONTOURS ARE BASED ON FORECAST AIRCRAFT MOVEMENTS WITHIN LONG RANGE (2050) ANEF

No.	Date	By	Amendment	Checked
1	26/02/16	MJ	FINAL	BJH
0	25/08/15	ND	DRAFT	BJH

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Project: LATROBE AIRPORT MASTER PLAN 2015

Title: N70 CONTOURS

Client: Latrobe City Council

Draftsperson: ND	Checked: BJH	Sheet Size: A3	Drawing No. M13237A008
Designer: ND	Approved: BJH		
Scale: 1:25,000 @ A3	Date: 25/08/15	0	1