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**Master Plan 2009
Latrobe Regional Airport
Latrobe City Council**

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1. Introduction

1.1 Background

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

The Latrobe Regional Airport was initially established in 1958 as the permanent home of the Latrobe Valley Aero Club. It is located approximately 150km east-south-east of Melbourne, between Morwell and Traralgon.

In 1992/93, the ownership of the airport was transferred to regional local government, which managed the airport until 1996. In 1996, a committee of the Latrobe City Council assumed responsibility for the operation of the airport.

The airport services a region in excess of 72,000 people in the four main Latrobe City towns of Moe, Morwell, Traralgon and Churchill.

The airport was served by various operators including Hazelton Airlines from 1993 to 2001, and later by REX and Brindabella Airlines. RPT services ceased in May 2006. At its peak in 1996, there were around 18,000 RPT movements per annum.

The Latrobe Regional Airport encompasses approximately 200 hectares, and comprises two runways, a number of taxiways and aprons, a terminal building, hangars and other support buildings. There are currently 24 tenants on the airport, providing 120 full-time positions on-site. Major tenants include:

- Gippsland Aeronautics;
- Helimed 1 Air Ambulance;
- Department of Sustainability and Environment (Fire Bomber base);
- State Emergency Services;
- Latrobe Valley Aero Club;
- East Coast Aviation;
- The Latrobe Valley Flying Museum; and
- RAAF 426 Squadron Cadets.

The existing operations and services are divided into five precincts, ensuring that the use and development of the site is consistent with the responsibilities for aviation and non-aviation activities of the Latrobe Regional Airport Board. The precincts are identified as follows:

- Gippsland Aeronautics;
- Commercial/Industrial;
- Private Hangars;
- Emergency Services; and
- Northern Development Precinct.

In 1998, a Master Plan for the development of the airport was first prepared, with subsequent reviews in 1998, 2003, 2005 and 2007.

Development pressures both at Latrobe Regional Airport and on the surrounding land have brought about the need to again review the current Airport Master Plan, and to prepare a new 2009 version. In

recent months, both formal and informal requests relating to the development of the airport from airport stakeholders and potential investors have included planning applications for hangar developments and the removal of native vegetation. Further, the absence of suitable planning controls on adjoining land is a primary concern in terms of the protection of immediate airspace.

1.2 Terms of Reference

The aim of the study is to prepare a 20-Year Master Plan for Latrobe Regional Airport, with particular emphasis on identifying any infrastructure upgrades or other changes required to enable continued growth and development (both aviation and non-aviation) of the Latrobe Regional Airport.

Council's objectives in commissioning the preparation of the Airport Master Plan include a desire to:

- Review the existing Latrobe Regional Airport Master Plan 1998 and subsequent revisions of the plan, as identified within the Latrobe Planning Scheme's Local Planning Policy Framework (LPPF);
- Develop a 'vision' statement and 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 until 2028;
- Identify future growth and 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;
- Map and record existing land uses, built form and natural features at the Latrobe Regional Airport and its surrounds;
- Review existing land use planning and development controls applicable to the Latrobe Regional Airport and its environs and prepare appropriate documentation in support of necessary amendments to the Latrobe Planning Scheme;
- Review existing and future Obstacle Limitation Surfaces (OLS) areas together with Procedures for Air Navigation Systems Operation Surfaces (PANS-OPS) and the Australian Noise Exposure Forecast (ANEF) mapping applicable to the Latrobe Regional Airport; and prepare documentation to have these incorporated 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 Industrial Park and Private Hangar Precinct over the next 20 years;
- 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 City Council, Latrobe Regional Airport Board, key stakeholders and the community are fully engaged in the review and development of the Master Plan.

1.3 Airport Master Planning Objectives

The purpose of this project is to establish a 2009 Master Plan and provide a review of the existing planning framework in order to facilitate the appropriate development of the Latrobe Regional Airport and surrounds over the next 20 years. This report details the 2009 Latrobe Regional Airport Master Plan and should be read in conjunction with the 'Latrobe Regional Master Plan Final Report' which reviews the existing land use planning and development controls and provides the strategic justification for appropriate amendments to the Latrobe Planning Scheme.

In planning to meet future demand a number of important considerations have been defined, including the following.

- **Aircraft Safety**

The safety of aircraft operations is paramount. The planning and development of facilities are therefore based on established national standards.

- **Airport Capacity**

The increase in aircraft movements, passengers and freight will be supported by the expansion of facilities such as aprons/taxiways, terminals, freight facilities, car parking, ground access and other associated infrastructure.

- **Forecast Demand**

With no current RPT services, the demand for new airport facilities is being driven by the General Aviation aircraft industry including charter, flying training, agriculture work, aerial work, community service flying and private or business flying, together with associated aircraft manufacturing and maintenance industries.

- **Regional Planning**

Council has a regional development objective to encourage economic diversification and job growth. It is an objective of this Master Plan to diversify the economy by facilitating jobs in aviation. The development of Latrobe Regional Airport should be considered in terms of the regional development context. This means taking into account community impacts of air transport growth particularly factors like aircraft noise, airspace protection and hazard of aircraft operations whilst ensuring that the airport meets the community's expectations in regard to the provision of services. It is also important to consider the potential for future urban encroachment.

The master planning for the airport is also based on the philosophy of planning to accommodate the aviation needs of the Latrobe Valley Region for the long term. This means predicting changes in demand and aviation technology well beyond usual planning horizons. In recent years aircraft performance improvements have generally stabilised the length of runways required for aircraft operating domestic and regional air services.

The planning seeks to allocate sufficient space to meet the long term needs of the various airport activities and identify areas that could be used for non aviation uses thereby enhancing the financial income of the airport.

1.4 Stakeholder Interface

Consultation with key stakeholders, neighbouring local authorities and government agencies has formed an integral part in the development of the Airport Master Plan.

The approach has aimed to fulfil the following primary objectives:

- To inform stakeholders about the project;
- To engage relevant stakeholders in the study process;
- To inform and complement the technical work in developing a robust study outcome; and
- To create a basis for future communication and consultation activities to continue, particularly during the implementation phase.

In addition, the outcomes of the consultation have aimed at enhancing the outcomes of various elements of the study by:

- Considering the stakeholders perceptions and priorities;
- Describing the preferred options for the future; and
- Embracing stakeholder needs and, where appropriate, reflecting them in the technical process.

1.5 Scope of Report

This report on the work undertaken as part of the master planning process is structured as follows:

Executive Summary

Provides an abbreviated summary of the key points resulting from the master plan study.

Section 1 – Introduction

Provides background information and sets the objectives of the preparation of the master plan.

Section 2 – Existing Airport Facilities

Describes the current facilities at the airport.

Section 3 – Planning and Development Legislative Framework

Details the Commonwealth, State and local government legislative framework that impacts on the airport master plan.

Section 4 – Forecast Demand

Provides information on current and future aircraft traffic.

Section 5 – Future Needs and Development Options

Provides a description of the proposed future operations and forecast traffic, together with the regulatory requirements governing airport planning, including the planning standards adopted.

Section 6 – Stakeholder Consultation

Presents the results from the stakeholder consultation process conducted as part of the master plan study.

Section 7 – Airport Master Plan

Provides the planning standards adopted, and details of the proposed airside and landside developments to accommodate the forecast traffic.

Section 8 – Environmental and Land Use Planning

Presents the effects of the proposed airport development on the existing environment and explains how future land use planning is affected.

Section 9 – Airport Development Strategy

Provides details of the proposed staged airside and landside development to accommodate future aircraft traffic and commercial/industrial facilities.

Section 10 – Development Guidelines

General guidelines are provided in this document for future development within the commercial / industrial, private hangar, air park and air chalet precincts. Guidelines are also provided for specific building types.

Section 11 – Business Plan

Provides a reference to the SKM Business Development Strategy prepared in June 2008 and provides comments on future land ownership.

1.6 Glossary

The following glossary has been provided to facilitate the reading and understanding of the Airport Master Plan:

AFRU	Aerodrome Frequency Response Unit
AHD	Australian Height Datum
AIP	Aeronautical Information Publication
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ANEI	Australian Noise Exposure Index
ARC	Aerodrome Reference Code
ARFL	Aeroplane Reference Field Length
ARP	Aerodrome Reference Point
ASDA	Accelerate/Stop Distance Available
ATC	Air Traffic Control
AT-VASIS	Asymmetrical T-VASIS
AVGAS	Aviation Gasoline for Piston Engine Aircraft
AVSTATS	Aircraft and Passenger Movements Statistics supplied by DOTARS
AVTUR	Aviation Turbine Fuel
CAAP	Civil Aviation Advisory Publication
CAO	Civil Aviation Order
CAR	Civil Aviation Regulation
CASA	Civil Aviation Safety Authority
CATF	Common Traffic Advisory Frequency
CTAF(R)	Common Traffic Advisory Frequency (carriage of Radio is mandatory)
DME	Distance Measuring Equipment
DOTARS	Department of Transport and Regional Services
ERSA	Enroute Supplement Australia
FATO	Final Approach and Take-Off Area
GA	General Aviation (<i>GA operations include non-scheduled airlines, charter, private flying, pilot training, aircraft testing, ferrying and aerial work.</i>)
GPS	Global Positioning System
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IWDI	Illuminated Wind Direction Indicator
JUHI	Joint User Hydrant Installation
Km/h	Kilometres/hour
Kt	Knot
LAP	Local Area Plan
LDA	Landing Distance Available
LPPF	Local Planning Policy Framework
LRAB	Latrobe Regional Airport Board
LVAC	Latrobe Valley Aero Club
MOS	Manual of Standards (CASA)
MTOW (M)	Maximum Take-Off Weight (Mass)
NDB	Non-Directional Beacon
OLS	Obstacle Limitation Surface
PAL	Pilot Activated Lighting
PANS-OPS	Procedures for Air Navigation System Operation Surfaces
PAPI	Precision Approach Path Indicator
RESA	Runway End Safety Area
RFFS	Rescue and Fire Fighting Service
RPT	Regular Public Transport

TODA	Take off distance available
TORA	Take off run available
T-VASIS	T-Visual Approach Slope Indicator System
VMC	Visual Meteorological Conditions
VOR	VHF Omni - Directional Radio Range

1.7 References

Documents that have been referred to during the course of the master planning process included the following:

- i) Civil Aviation Safety Authority (CASA)
"Manual of Standards (MOS) Part 139 – Aerodromes"
Version 1.3 – January 2008
- ii) International Air Transport Association (IATA)
"Airport Development Reference Manual"
9th Edition – January 2004
- iii) International Civil Aviation Organisation (ICAO)
"Annex 14 – Aerodromes – Volume 1, Aerodrome Design and Operations"
4th Edition – July 2004
- iv) SKM Consulting
Business Development Strategy
June 2008
- v) AOS Airport Consulting
Latrobe Regional Airport – Airspace Protection Report
October 2004

1.8 Aircraft Identification

Table 1.1 provides details of typical aircraft currently operating RPT and Charter services in Australia.

Table 1.1: Aircraft Identification Guide

DESIGNATOR	CODE	WINGSPAN (m)	LENGTH (m)	OMGWS (m)	MTOM (kg)	Approximate Passengers
A321-200	4C					
A320-200	4C	33.9	37.6	8.7	72 000	150
B737-900	4C	34.3	41.9	6.6	79 000	177
B737-800	4C	35.8	39.5	6.6	70 535	170
B737-700	4C	34.3	33.6	6.6	70 080	149
B737-400	4C	28.9	36.5	6.4	63083	129
B737-300	4C	28.9	30.5	6.4	61230	106
B717-200	4C	28.4	37.8	6.0	51710	106
F100	4C	28.1	35.5	5.0	44450	107
EMB190	4C	28.7	36.2	5.9	47790	98
Q400	3D	28.4	32.8	8.5	27330	78
EMB170	3C	26.0	29.9	5.2	35990	78
SF340	3C	21.4	19.7	7.5	12371	34
EMB120	3C	19.8	20.0	7.3	11500	30
CRJ-200	3B	21.2	26.8	4.0	21 523	50
EMB145	3B	20.0	29.9	4.8	19 200	50
DHC8-300	2C	27.4	25.7	8.5	18642	50
DHC8-100/200	2C	25.9	22.3	8.5	15650	37
B1900	2B	16.6	17.6	5.8	7 530	19
Metro III	2B	17.4	18.1	5.4	6 577	19
King Air 350	1B	16.61	13.34	5.6	5 670	8
GA8	1A	12.41	8.95	2.8	1 814	7

2. Existing Airport Facilities

2.1 Description

Latrobe Regional Airport is a regional airport providing important air transport links to the broader Gippsland region in particular the four main Gippsland towns of Moe, Morwell, Traralgon and Churchill. It supports aircraft manufacturing, air charter operations, general aviation, sport aviation, Helicopter Medical (Helimed) Services and Department of Sustainability and Environment permanent fire fighting base.

Fire fighting aircraft during the past few years have increasingly depended on the Latrobe Regional Airport as a base for both helicopters and fixed wing fire bombers. Up to 20 helicopters and fixed wing aircraft have operated from Latrobe Regional Airport during the horrific fires of 2003, 2005, 2007 and more recently the Churchill and other Gippsland fires of February 2009. The proximity of the Airport to alpine communities and major water catchments supplying potable supplies to metropolitan Melbourne make it an ideal site for a permanent regional fire-fighting base. In 2007 a lease with the Department of Sustainability & Environment (DSE) for the establishment of such a fire bomber base was signed. This facility is adjacent to the new Helimed 1 base and will complement the expanding Emergency Precinct, further emphasising the importance of the Latrobe Regional Airport as a major asset to the broader Gippsland community.

The current airport site and facilities arrangement is shown on the Existing Airport Plan in **Appendix A**.

2.2 Current Operations

Currently there are no Regular Public Transport (RPT) services operating at Latrobe Regional Airport. Previously various airlines including Hazelton, REX and Brindabella Airlines had undertaken RPT operations at Latrobe Regional Airport however services have now ceased. The airports current operations cater for charter aircraft services on the occasional basis however the predominate aircraft movements are GA aircraft. The Helimed Air Ambulance also utilise the airport servicing patient requirements at Latrobe Valley Hospital. Fire bombing aircraft are stationed at the airport during the fire season and supports the DSE State Emergency Centre and CFA offices located on site.

2.3 Movement Area

2.3.1 Runways

The airport has a main sealed runway (03/21) and a secondary unsealed runway (09/27) with details as shown in **Table 2.1**.

Table 2.1: Runway Details

Item	03/21 Runway	09/27 Runway
Aerodrome Reference Code	2B	1B
Runway Length	1430m	919m
Runway Width	23m	18m
Surface	Sealed	Gravel (72m sealed at East End and 58m sealed at West End)
PCN Rating	Unrated (Above 5700kg requires pavement concession)	Unrated (Max 5700kg)
Runway Shoulder Width	Nil	Nil
Runway Strip Width - Graded	90m	90m

Runway Strip Width - Total	90m	90m
RESA	90m	90m

Take-off and landing distances available are as shown in **Table 2.2**.

Table 2.2: Runway Take Off and Landing Distances

Item	Runway 03	Runway 21	Runway 09	Runway 27
TORA	1430m	1430m	919m	919m
TODA	1490m	1490m	978m	978m
ASDA	1430m	1430m	919m	919m
LDA	1400m	1430m	919m	919m

2.3.2 Glider Facility

A grassed strip formerly used for gliding is aligned parallel to the 03/21 Runway. A glider hangar facility is currently located north of the 09/27 Runway and there is road access via Old Melbourne Road.

2.3.3 Taxiways

There are three taxiways that provide access to the various runways and aprons.

- The apron is serviced by a 150m long Code B sealed taxiway equipped with permanent edge lighting. Aircraft with a weight above 5700kg are required to use this taxiway to access the apron area.
- A sealed taxiway parallel to the 03/21 Runway has connections at the 21 Runway end and also at 400m from the 03 Runway end. This taxiway is not lit and is suitable for light aircraft only. The taxiway also provides access to aircraft hangars, the aviation turbine (AVTUR) refuelling installation, the Helimed apron and Gippsland Aeronautics.
- A gravel taxiway provides a link from the 09/27 Runway to the main apron via the Code B sealed taxiway. The gravel taxiway extends to the threshold of the 09 Runway end.

2.3.4 RPT Apron

There is one designated parking bay for RPT aircraft and three general aviation parking bays in the sealed area. Recently the gravel overflow area has been sealed and can accommodate more GA aircraft parking stands. This has assisted in alleviating congestion previously experienced within the RPT apron.

2.3.5 Southern Apron

The southern apron is a concrete apron that is located in front of the Gippsland Aeronautics manufacturing precinct. The AVTUR fuelling facility is located within this apron along with the aircraft maintenance facility.

2.4 Hangars

2.4.1 Latrobe Valley Aero Club Hangars

Latrobe Valley Aero Club currently owns a large hangar that is divided in half. It houses the Aero Club and other private aircraft in one half, and East Coast Aviation (an aircraft maintenance organisation) in the other half. This hangar is located in the south-west corner of the RPT Apron which can be very congested due to the aircraft refuelling facility located nearby. Additionally the Latrobe Valley Aero Club owns 10 hanger units located south of the fuelling facility.

2.4.2 Gippsland Aeronautics Manufacturing Precinct

Gippsland Aeronautics is an aircraft manufacturing facility that is currently producing 8 seater Airvan aircraft. The company occupies 5 main buildings and employs some 120 staff. Recently the company obtained the Type Certificate for the Nomad Aircraft and has plans to put this aircraft back into production.

2.4.3 Glider Facility

A glider hangar and associated building is located north of the 09/27 Runway. This facility can be accessed from Old Melbourne Road.

2.4.4 Private Hangars

There are 6 private hangars located north-east of the RPT Apron that are serviced by a gravel taxiway. A further 19 private hangars are currently under construction south of the Latrobe Valley Aero Club hangars near the NDB.

2.5 Terminal Area

2.5.1 Terminal Building

The domestic terminal building was constructed in the 1980's and further upgraded during the 1990s with a capacity to cater for 250 people at peak hour operational levels. The building contains facilities including toilets, light refreshments and waiting areas. There are no security facilities (X-ray and/or magnetometer) in the current terminal.

2.5.2 Roads and Car Parks

Public access to the airport terminal is via Airfield Road approximately 800m from the Princes Highway.

The entry road leads to connections to the terminal building, carpark, Aero Club, hangars and airport industries. The roadway in front of the terminal building allows loading/unloading for passengers, taxi pick up and drop off. A separate entry and carpark services Gippsland Aeronautics.

The general car park is lit and has space for 40 vehicles with an additional 20 to 25 spaces available for vehicles in a secured fenced car park.

2.5.3 Engineering Services

Latrobe Regional Airport is serviced by water, sewerage, electricity and telecommunications reticulated from the city supply.

2.6 Support Facilities

2.6.1 Aircraft Fuelling

Aircraft fuelling for GA aircraft at the airport is currently provided by Latrobe Valley Aero Club (LVAC) from the AVGAS facility located adjacent to the terminal apron, near the LVAC hangar. The facility has a capacity of 19,000 litres.

An Aviation Turbine (AVTUR) facility is located near the Gippsland Aeronautics hangar apron. The refuelling facility has a capacity of 32,000 litres and complimented by a mobile tanker with a capacity of 15,000 litres.

2.6.2 Aircraft Maintenance

East Coast Aviation provides aircraft maintenance services within a hangar owned by LVAC located on the south west corner of the RPT Apron. There is also another maintenance hangar located near the Southern Apron which is operated by Gippsland Aeronautics.

2.6.3 Airport Maintenance

Maintenance of the facilities at Latrobe Regional Airport is generally performed by the Latrobe City Council. General maintenance at the airport includes grass mowing, landscaping, apron, taxiway and runway pavement repairs, pavement markings, electrical power and lighting facilities maintenance, road maintenance, building maintenance and fencing.

2.6.4 Latrobe Valley Aero Club (LVAC)

The Latrobe Valley Aero Club is located in the south-west corner of the RPT Apron and has a club building and a maintenance hangar. LVAC offers a variety of flying training for various pilot licenses and advanced training.

2.7 Operational Facilities

2.7.1 Control Tower / Air Traffic Control

There is no air traffic control tower at the airport. Air Traffic Control is provided through the Common Traffic Advisory Frequency (CTAF) and the carriage of a radio is not mandatory airside, although because of number and variety of traffic, it is highly desirable and encouraged. The CTAF applies within 10nm radius of the aerodrome. The airport is equipped with an Aerodrome Frequency Response Unit (AFRU) which provides an automatic response when pilots or ground staff transmits on the CTAF frequency (126.0).

When an aircraft operating within approximately 20 to 30nm of the AFRU makes a transmission of 2 seconds duration or more on the aerodrome frequency, the AFRU automatically responds.

2.7.2 Navigational Aids

Navigational aids at Latrobe Regional Airport include:

- Non-Directional Beacon (NDB);

The NDB is owned and operated by Latrobe Regional Airport and is located on the aerodrome in the south-eastern quadrant adjacent to the Gippsland Aeronautics main entry.

Aerodrome lighting includes the following:

- Runway edge lighting (low intensity);
- Runway end lighting;
- Taxiway edge lighting to Code B taxiway only;
- Illuminated Wind Direction Indicator (IWDI) on the south-eastern side of the 03/21 Runway;
- Pilot Activated Lighting (PAL).

2.7.3 Rescue and Fire Fighting Services

The Latrobe Regional Airport Board, as the aerodrome owner, is responsible for establishing aerodrome emergency procedures for Latrobe Regional Airport.

The procedures are detailed in the Latrobe Regional Airport Emergency Manual.

Country Fire Authority (CFA) and a State Emergency Services (SES) are located south of the terminal building.

2.8 Current Projects

The airport has a capital expenditure program in place with a budget of around \$1M that is jointly funded by Regional Development Victoria and the Latrobe Council.

Projects currently in progress include:

- Development of 19 lots for private hangarage; and
- Improvement of emergency access arrangements;

Projects completed within the last 5 years include:

- Taxiway extension to the western end of the 03/21 Runway;
- Extension of the same taxiway to provide runway access to lots in Industrial Precinct 1;
- Improvements to apron and parking areas; and
- Development of commercial lots for aviation related businesses with direct runway access.

3. Planning and Development Legislative Framework

3.1 Agency Roles and Responsibilities

3.1.1 Commonwealth Government

The Commonwealth Government is responsible for implementing the standards and recommended practices adopted by the International Civil Aviation Organisation (ICAO). This responsibility is primarily delegated to CASA and Airservices Australia, through the Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government. The Commonwealth also maintains the Australian Transport Safety Bureau's investigation of aircraft accidents and incidents.

Airservices Australia (ASA)

Airservices Australia has responsibility under the *Air Services Act 1995* as delegated from the *Civil Aviation Act 1988*, to manage airspace and air traffic, and to provide Australia's network of aviation facilities used in aircraft navigation, communication and surveillance. Interference with Airservices Australia's communications can invoke powers available under the *Australian Communications Authority Act 1997* and its regulations. Local governments are encouraged to seek advice from Airservices Australia on any development that has the potential to impact an aviation facility's sensitive areas such as landing and navigational areas.

Airservices Australia provides endorsement of the technical accuracy of Australian Noise Exposure Forecast (ANEF) charts for Latrobe Regional Airport and the issuing authority for the Instrument Approach Procedures.

Civil Aviation Safety Authority (CASA)

CASA has responsibility under the *Civil Aviation Act 1988* and *Civil Aviation Regulations 1988* for the safety regulation of civil aviation in Australia. Amongst other things, CASA conducts surveillance to ensure airport and aircraft operators meet their responsibilities under Civil Aviation legislation. In the interest of aviation safety, CASA has powers under Commonwealth legislation to require the removal of a building or other structure that penetrates operational airspace, to require such obstacles to be lit, and/or to curtail aircraft operations.

CASA also has the legislative power to certify aerodromes. The certifying is primarily safety related and for aerodromes having RPT services operated by aircraft with a capacity of 30 persons or more. Latrobe Regional Airport was last registered by CASA under CASR 139.265 on 9 March 2006.

Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government

The Department has responsibility under the Civil Aviation policy for security and air safety investigation. The *Aviation Transport Security Act 2004* has been enacted to provide for a wider range of aviation industry participants to develop and put in place security programs including:

- all operators of RPT services;
- operators of charter aircraft, private or corporate jets;
- operators of freight aircraft; and
- airports that service these aircraft.

In addition, the Department has an overriding responsibility for the development of policy settings and regulatory arrangements for environmental matters such as; aircraft noise, aircraft engine emissions and fuel spillage from aircraft. The Departments' role also includes regulation, under the *Airports Act*

1996, of the privatised Commonwealth airports, to ensure they are operated in a safe, efficient and environmentally sustainable manner.

3.1.2 Victorian State Government

Department of Transport

The Australian Constitution gives State and Territory Governments power over regional aviation as it is largely an issue of intra-state trade. In Victoria, licensing of intra-state aviation services is administered by the Department of Transport.

Funding under the Regional Infrastructure Development Fund is made available through the Regional Development Victoria.

Department of Planning and Community Development

The Victorian land use planning framework is set by the Planning and Environment Act 1987 (“the Act”) in conjunction with the Planning and Environment Regulations 2005 and Planning and Environment (Fees) Regulations 2000.

The Department of Planning and Community Development is responsible for land use planning and environmental assessment in Victoria. This includes managing the regulatory framework and providing advice on planning policy, urban design and strategic planning, as well as information on land development and forecasting.

The Latrobe Planning Scheme is applicable to the site. The Department of Planning and Community Development is responsible for approving planning scheme amendments. It may, depending on the extent of development proposed on the airport site, also be the approving authority for any environmental assessment or review of environmental factors.

Other Victorian Government Departments

There are a number of other Victorian Government agencies including the Department of Sustainability and Environment and VicRoads that potentially could be involved in airport planning and development issues with respect to environmental controls and regulations.

3.1.3 Local Government

Latrobe City Council

The role of Latrobe City Council as owner and operator of Latrobe Regional Airport is to manage, maintain and improve the airport in accordance with operational airspace, aviation facility requirements, aviation noise standards and aviation security requirements. The Council must comply with Victorian Government legislation in the first instance, and also with Commonwealth legislation in regulatory areas where State legislation does not exist.

The Airport is managed by the Latrobe Regional Airport Board and its staff, who are empowered by Latrobe City Council to develop each of these activities, whilst operating the Airport in a safe, professional and financially viable manner.

Latrobe City Council will ensure that legislative requirements are appropriately reflected in any future Planning Schemes or amendments to the Planning Scheme.

The Obstacle Limitation Surface (OLS) endorsed by the relevant Commonwealth agency (Airservices Australia) is a mandatory document required to be prepared by the airport owner.

3.2 Legislative Framework

The legislative and regulatory requirements for airports are covered by a wide range of Federal and State Government legislation. **Table 3.1** identifies the major legislative and regulatory guidelines applicable to the further development of Latrobe Regional Airport.

Table 3.1: Significant Legislation or Guidelines

Commonwealth Government	Comments
Aviation Transport Security Act 2004 Aviation Transport Security regulations 2005	Prescribed minimum requirements for airport security, air operator security, access control, equipment and procedures.
Civil Aviation Act 1988 Civil Aviation Regulations 1988 Civil Aviation Safety Regulations 1998 Civil Aviation Orders	Provides the legislative basis for air safety and the network of aviation facilities.
Air Services Act 1995	Delegates responsibilities to Airservices Australia to manage airspace and air traffic and to provide for Australia's network of aviation facilities used in aircraft navigation and communication.
Environment Protection and Biodiversity Conservation Act 1999	Federal Legislation for the assessment of projects where impacts on matters of environmental significance may occur. E.g. Listed threatened species and communities, Listed migratory species, Ramsar wetlands of international importance, The Commonwealth marine environment, World Heritage properties, National Heritage places, Nuclear actions
Victorian Government	
Planning and Environment Act 1987	The overarching statutory planning document for the planning assessment and approval process within Victoria.
The Environmental Effects Act 1978	Provides for the consideration of potential environmental impacts or effects.
The Catchment and Land Protection Act	Establishes a framework for the integrated and coordinated management of catchments.
Environment Protection Act 1970	Protection of the environment and pollution control, largely noise, air, waste and water.
Flora and Fauna Guarantee Act	This act provides for the protection and management of native vegetation within the state.
Aboriginal Heritage Act 2006	Provides for the protection of Aboriginal cultural heritage in Victoria.
National Parks Act	Protection and management of national parks, reserves and other public land.
Dangerous Goods Act 1985	Promotes the safety of persons and property with regards to dangerous goods.
Environmental Management and Pollution Control Act 1994	Environmental protection legislation.
Country Fire Act 1958	This act governs the prevention, mitigation and suppression of bush and other fires.
Latrobe City Council	
Local Government Act 1989	Allows for the establishment of special committees of the Council.
Latrobe Planning Scheme	Governs all development within the Latrobe municipality.
State Planning Policy Framework	Informs Victorian planning authorities of State level planning policy which they are to consider in planning and administering their respective areas.
Municipal Strategic Statement	Strategic statement within the Planning Scheme that guides land use and development in the municipality.
Local Planning Policies	Planning Scheme policies that are specific to certain issues or sites within the municipality.
Interim Planning Provisions 2008-09	Introduced to allow provide temporary controls and a review of the Latrobe Regional Airport Master Plan.

3.3 Planning Framework

There are several planning policies, studies and strategies that are relevant to the future development of Latrobe Regional Airport and the surrounding area. Consideration of the most relevant strategies and policies has been included in the Final Report.

Changing land uses and development pressures, including those described in this Master Plan, have resulted in the Latrobe Planning Scheme being unable to provide for the appropriate development of the Latrobe Regional Airport and surrounding area. In particular, the consideration of airport operations has not been adequately integrated into the planning framework.

Interim planning controls have been introduced to provide some of the necessary controls and to allow a review of the Master Plan and Planning Scheme to take place. The interim controls expire in March 2010.

The purpose of this project is to establish a planning framework that will facilitate the development of the Latrobe Regional Airport and surrounds over the next 20 years. In order to facilitate the establishment of this framework, a review of the existing land use planning and development controls is provided in the Final Report that accompanies this Master Plan. The Final Report provides the strategic justification for appropriate amendments to the Latrobe Planning Scheme in order to facilitate the Master Plan and provide the framework for appropriate development at the site and in the surrounding area.

The abovementioned review of the Latrobe Planning Scheme has included consideration of the vision for the Latrobe Regional Airport; development opportunities and constraints; and the issues raised by stakeholders and the community. The review is provided in the Final Report and has resulted in recommendations to amend the Planning Scheme. The documentation required to support these recommended amendments is provided in the Final Report.

A summary of these recommendations is also provided in Section 8.3 of this Master Plan.

4. Forecast Demand

4.1 General Aviation Movements

General Aviation comprises of a range of flying activities commonly including charter, flying training, agriculture work, aerial work, community service flying and private or business flying. Accurate account of these movements through Latrobe Regional Airport (Latrobe Regional Airport) is not possible as the airport has an open access regime. However, **Table 4.1** shows the estimated aircraft movements in 2006.

Table 4.1: Estimated Aircraft Movements at Latrobe Regional Airport in 2006

Category	Movements
Charter, hire, aerial work	9000
Flying training	12500
Community service	2000
Private, business	1500
Total Movements	25,000

The Bureau of Infrastructure, Transport and Regional Economics General Aviation 2007 Annual Survey covered all of the Australian registered aircraft in the GA and Regional Airline sectors of the Australian aviation industry.

The GA sector is made up of all non-scheduled flying activity in Australian-registered aircraft, other than that performed by the major domestic and international airlines. The major categories of flying are private, business, training, aerial agriculture, charter and aerial work. In addition, the sport aviation segment of GA includes operations in ultralight aircraft, gliders, hang gliders and autogyros.

The basic measure of General Aviation is flying hours. All owners of Australian (VH) registered aircraft (with the exception of the Australian domestic and international airlines) are surveyed annually and asked to report hours flown by each aircraft in various categories of operation, as well as total landings per aircraft.

The survey results indicated:

- After declining in 2006, total hours flown in the General Aviation and Regional Airlines sectors in 2007 were 2.07 million, an increase of 7.1 per cent. Activity in the General Aviation sector was 1.83 million hours, an increase of 8.1 per cent, while Regional Airlines showed a marginal increase of 0.2 per cent to 241 900 hours.
- In the major flying activity categories the greatest increase was recorded in Charter flying with an increase of 13.8 per cent. The mining states of Western Australia and Queensland recorded the largest increase in Charter flying (an increase of 24 300 and 18 400 hours respectively). Agriculture, which suffered a drop of 35.0 per cent between 2005 and 2006—most likely as a result of the drought—recorded little improvement in 2007 (0.6 per cent increase to 62 100 hours).

- Training (455 400 hours), Aerial Work (368 000 hours) and Business flying (153 400 hours) also recorded substantial increases in 2007 (7.4 per cent, 8.9 per cent and 6.5 per cent respectively).
- Private flying activity fell again in 2007 (2.0 per cent decrease to 222 700 hours). This is offset by continued growth in ultralight flying, as reported by Recreational Aviation Australia, from 120 200 to 138 300 hours (15.0 per cent increase). The strong growth in ultralight flying hours has resulted in this sector approaching the levels of activity being recorded for Private General Aviation flying, with the number of hours flown in ultralights equivalent to nearly two-thirds of the Private flying hours in General Aviation aircraft.
- After a decrease in 2006, the number of registered aircraft in scope of the General Aviation collection rose in 2007 by 3.8 per cent to 11 541. In 2007, the average age of active aircraft fell for the first time in more than a decade, reducing by 0.2 years to 26.5 years. Aircraft conducting Aerial Work (0.7 years), Charter (0.6 years) and Business (0.4 years) flying were the major contributors to this reduction, whilst the average age of aircraft engaged in Agriculture increased by 0.7 years. Aircraft used in Regional Airline flying increased in average age by 0.3 years to 19.3 years.
- A contributor to the overall reduction in average age is the number of new aircraft that have entered service in recent years. Aircraft categories accounting for the greatest numbers of new aircraft in the past five years are: rotary wing single engine (20 new in 2002 compared to 102 new in 2007), fixed wing single engine (24 to 87), fixed wing multi-engine (5 to 25) and fixed wing amateur-built (35 to 55).
- Fixed wing single engine aircraft make up 60.3 per cent of General Aviation aircraft. These aircraft are gradually progressing into older age categories. Between 2002 and 2007, the number of these aircraft under 26 years old halved from 40.5 per cent to 19.3 per cent. However, the number of hours performed did not reduce to the same extent, indicating that the newer aircraft are being used increasingly to fly more hours than the older aircraft. Conversely, in 2002, 59.5 per cent of fixed wing single engine aircraft were aged 26 and above, while in 2007 this had increased to 80.7 per cent, with the percentage of these aircraft over 40 increasing from 17.9 per cent in 2002 to 28.9 per cent in 2007 or more than 2 000 aircraft.

Table 4.16 shows the total GA hours flown for the period 1993-2007.

Table 4.16: Hours flown ('000') in Australian General Aviation 1993 to 2007

Year	Private	Business	Training	Agriculture	Aerial work	Test & Ferry	Charter	TOTAL
1993	265.3	212.3	436.8	89.2	278.8	28.2	393.4	1 703.9
1994	256.9	198.5	419.5	78.9	301.7	25.9	424.4	1 705.7
1995	251.0	189.1	430.6	94.5	302.4	28.2	465.7	1 761.3
1996	261.6	182.8	444.9	117.4	285.7	26.2	480.4	1 799.0
1997	266.7	176.0	449.5	128.4	307.4	27.6	483.7	1 839.3
1998	263.0	163.8	478.5	139.2	312.4	26.6	494.6	1 877.9
1999	275.9	153.3	448.8	126.3	306.6	26.6	504.6	1 842.2
2000	248.5	136.3	413.6	115.0	296.9	27.9	476.7	1 714.8
2001	261.7	144.9	406.2	106.7	294.2	23.2	466.0	1 702.9
2002	270.2	142.2	410.8	70.8	327.1	20.9	445.7	1 687.7

2003	239.7	143.4	420.3	69.7	322.5	21.3	429.2	1 645.9
2004	247.2	143.0	352.2	86.5	312.4	22.3	481.4	1 645.0
2005	239.2	149.1	415.8	95.0	318.8	22.3	482.6	1 722.8
2006	227.2	144.1	424.0	61.7	337.9	21.7	478.4	1 695.0
2007	222.7	153.4	455.4	62.1	368.0	25.7	544.5	1831.8

Total GA hours flown remain relatively steady, and it is difficult to perceive any significant growth in resident aircraft or GA traffic at Latrobe Regional Airport for private flying. Rather any such growth may be related to the establishment of new businesses at the airport.

For the purposes of this master plan, GA and Sport Aviation fixed wing traffic has been forecast to grow at 2% per annum which represents an additional 500 movements per annum.

4.2 Helicopter Movements

Current helicopter operations are limited and are mainly related to air ambulance, search and rescue and fire fighting activities. There are currently approximately 2,000 movements per year including some 1,000 Helimed movements plus other usage by television stations, police and so on. Usage is increasing.

5. Future Needs and Development Options

5.1 Basis for Airport Planning

5.1.1 Airport Planning Criteria

The planning criteria for airport development may be categorised into a three-tiered structure as follows:

- International standards and recommended practices (ICAO);
- National standards and advisory publications (CASA); and
- Local standards and practices.

The international standards and recommended practices are formalised in Annex 14 to the Convention on International Civil Aviation adopted by the International Civil Aviation Organisation (ICAO) under the provisions of the Convention. In addition, ICAO publishes a number of Aerodrome Design Manuals and Airport Services Manuals.

National standards and advisory publications are published by the Australian Civil Aviation Safety Authority (CASA) which administers the Civil Aviation Act (1988) through the accompanying Civil Aviation Regulations (CAR's) and Civil Aviation Orders (CAO's).

The Manual of Standards Part 139 – Aerodromes (MOS Part 139) is a CASA policy manual, made pursuant to Civil Aviation Safety Regulations CASR Part 139. CASR Part 139 sets out the regulatory regime of aerodromes used by aeroplanes conducting air transport operations under CASR Part 121A and Part 121B. The regulatory regime provides for aerodromes to be certified or registered.

MOS Part 139 sets out the standards and operating procedures for certified and registered aerodromes, as well as for other aerodromes used for air transport operations.

The local standards and practices include:

- Federal and State government legislative requirements for environmental protection;
- Requirements of Local Government; and
- Requirements of Statutory Authorities supplying engineering services.

For the Latrobe Regional Airport Master Plan, the planning and design considerations include a combination of the requirements and recommendations of ICAO, MOS Part 139, and the adoption of local standards and practices. Generally MOS Part 139 standards have been adopted, but the report highlights where there are any significant differences between ICAO and MOS Part 139 standards.

5.1.2 Aerodrome Certification Requirements

Latrobe Regional Airport was registered by CASA under CASR 139.265 on 9 March 2006.

5.1.3 Aerodrome Reference Codes

Australia has adopted the ICAO methodology of using a code system, known as the Aerodrome Reference Code (ARC), to specify the standards for individual aerodrome facilities that are suitable for use by aeroplanes with a range of performances and sizes.

The intent of the Aerodrome Reference Code is to provide a simple method for inter-relating the numerous specifications concerning the characteristics of aerodromes so as to provide a series of aerodrome facilities that are suitable for the aircraft that are intended to operate at the aerodrome.

The code is composed of two elements that are related to the aeroplane's performance characteristics and dimensions. Element 1 is a number based on the aeroplanes reference field length. Element 2 is a letter based on the aeroplane's wing span and outer main gear wheel span.

For taxiway and apron works, the various geometric standards are controlled by Code Element 2. The code letter for Element 2 is determined from Table 5.1, Column 3, by selecting the code letter which corresponds to the greatest wing span, or the greatest outer main gear wheel span, whichever gives the more demanding code letter of the aeroplanes for which the facility is intended. For instance, if code letter C corresponds to the aeroplanes with the greatest wing span and code letter D corresponds to the aeroplanes with the greatest outer main gear wheel span, the code letter selected would be "D".

Table 5.1: Aerodrome Reference Codes (Source: MOS Part 139)

Code Element 1		Code Element 2		
Code Number	Aeroplane Reference Field Length	Code Letter	Wing Span	Outer Main Gear Wheel Span (a)
(1)	(2)	(3)	(4)	(5)
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

a. Distance between the outside edges of the main gear wheels.

For reference purposes, Aerodrome Reference Codes for various aircraft are shown in **Table 5.2**.

Table 5.2: Aerodrome Facility Reference Codes for Various Aircraft

Code 1A	Code 1B	Code 1C	Code 1D	Code 1E	Code 1F
Beech 23-100 Britten BN2 Cessna 152-421 Fuji FA200-180 Gippsland GA8 Grumman G164 Mitsubishi MU2 Piper PA18-PA60 Pitts 2A	Beech 80 Beech 90 Beech 200 Cessna 402 Cessna 414 Cessna 441 Dornier D0228 DHC-6 Twin Otter Nomad N24A	DHC-4 Caribou DHC-7	DHC-5E		
Code 2A	Code 2B	Code 2C	Code 2D	Code 2E	Code 2F
Lear Jet 24F Lear Jet 28/29	Beech 1900 Casa C212 Embraer EMB110 Shorts SD3-30 Metro III	DHC-8 8 ATR42 Cessna 550			
Code 3A	Code 3B	Code 3C	Code 3D	Code 3E	Code 3F
BAe125-400 Dassault DA-10 Lear Jet 25D Lear Jet 36A Lear Jet 55 IAI 1124 Westwind	BAe125-800 Canadair CL600 Canadair CRJ-200 Cessna 650 Dassault DA-20 Dassault DA-50 Dassault Falcon 900 EMB145 F28 – 2000 Shorts SD3-60	BAe146 BAe748 BAe Jetstream 31 BAe Jetstream 41 DC-3 DC-9-20 EMB120 F27-500 F28-3000 F28-4000 F50 F100 Saab SF340A	Airbus A300 B2		
Code 4A	Code 4B	Code 4C	Code 4D	Code 4E	Code 4F
		Airbus A320 B717 B727 B737 Concorde DC-9/MD80	Airbus A300 Airbus A310 B707 B757 B767 DC-8 DC-10/MD11 Lockheed L100 (C130) Lockheed L188 Lockheed L1011	Airbus A340 B747 B747 SP B777	Airbus A380

5.2 Movement Area Development

5.2.1 Overall Strategy

The existing 03/21 Runway is 1430m long and complies with the requirements for a Code 2B Instrument Non-Precision Runway. The existing 09/27 Runway is 919m long and complies with the requirements for a Code 1B Non-Instrument Runway.

The existing 03/21 satisfies the forecast future demand for GA aircraft and occasional Charter services. Unless RPT services recommence at Latrobe Regional Airport it is not foreseeable that any upgrading works on the existing 03/21 Runway and 09/27 Runway or construction of any new runways will be required. However preservation of land for a future Code 3C runway parallel to the existing 03/21 Runway should be undertaken to protect the option for long-term future development.

New taxiways would be required to provide a link from the runways to future development ventures. These taxiways will be built in stages and consideration is to be given to the impact a future runway may have on the taxiway system.

There should be a provision for expansion of existing aprons to increase the aircraft parking capacity.

5.2.2 Runways

Capacity

The capacity of the runway system is primarily dependent on:

- The number, dimensions and relative arrangement of runways;
- The number, location and type of runway exit and entry taxiways;
- The aircraft mix;
- The landing/take-off mix;
- The ambient weather conditions and
- The mode of runway use.

The existing runway system at Latrobe Regional Airport has an estimated long-term annual capacity of the order of 220,000 movements per annum. Comparison with the estimated 2006 traffic of approximately 25,000 aircraft movements and the estimated future growth of 2% per annum indicates that there is no requirement for any additional runways.

The Latrobe Regional Airport Board should reserve land for the construction of a future Code 3C runway that would be located parallel to the existing 03/21 Runway. The Code 3C runway would be designed to allow for precision approach instrument operations and have a runway width of 30m and a strip width of 150m to allow for potential jet or large turbo prop activity.

The existing 09/27 Runway is 18m wide. There is no foreseeable reason for this runway to be widened as it only services code 1B aircraft and the current width is suitable for these operations. Depending on future aircraft traffic growth particularly from any development in the northern quadrant of the airport site, consideration should be given to gravelling to shape improvement with crushed rock and then sealing the 09/27 Runway.

Runway Length

The runway length required for take-off, which is normally the determining requirement for most aircraft, (landing length is seldom critical), is dependent on a wide range of factors including;

- Aircraft configuration;
- Power plant;
- Take-off weight;
- Airport attitude;
- Air temperature;
- Flap settings;
- Longitudinal gradient of the runway;
- Wind direction and strength;
- Take-off climb requirements;
- Obstacle clearance obstructions; and
- Runway surface type.

The determination of relatively accurate runway length requirements is contingent upon knowledge of specific aircraft performance data for actual aircraft airframe and power plant combinations, and details of route structures, payloads, fuel utilisation and fuel reserves policies.

In the absence of such information, only indicative runway length requirement can be determined.

The Aeroplane Reference Field Length (ARFL) is the minimum runway length required for take-off at maximum take-off mass, at sea level, in standard atmospheric conditions, in still air, and with zero runway slope. It provides a means for comparing relative runway length requirements for various aircraft.

Table 5.3 provides ARFL's for typical Code 2 3 aircraft (as extracted from RPA).

Table 5.3 ARFL's for Code 2 and 3 Aircraft.

Code	Aircraft	ARFL(m)
2A	Lear Jet 28/29	912
2B	Casa C212	866
	EMB 110 Bandeirante	1199
	Fairchild Metro III	890
	Shorts SD3-30	1106
2C	ATR42-200	1010
	Cessna 550	912
	DHC-8 100	948
	DHC-8 300	1122
3A	Lear Jet 55	1292
	IAI Westwind 2	1495
3B	BAe Jetstream 31	1440
	Canadair CRJ-200	1527
	Cessna 650	1581
	Falcon 900	1515
	F28-2000	1646
	Shorts SD3-60	1320
3C	BAe 146-200/300	1615
	F27 – 500	1670
	F28 – 4000	1640
	F50	1760
	Saab SF340	1220

It can be concluded that an ARFL of 1500m is representative for most aircraft up to Code 3A standard, and an ARFL of 1700m for most aircraft up to Code 3C standard.

There is a significant length penalty for high ambient temperatures and for elevations above sea level, with ICAO Aerodrome Design Manual Part1 – Runways, indicating a typical increase of 1% for every 1°C by which the aerodrome reference temperature exceeds the temperature in the standard atmosphere for the aerodrome elevation, and 7% for each 300m increase in elevation.

The implication for Latrobe Regional Airport is that the existing runway length of 1430m, when appropriately factored down for temperature and elevation, probably restricts aircraft to below Code 3A standard if they are to operate at Maximum Take-off Mass.

Orientation

For this Master Plan, wind frequency analysis and wind rose data was sourced from the National Climate Centre, and details are provided in **Appendix G**.

The data shows that:

- Morning winds are predominantly from the west (35%), south-west (12%), east (15%) and south-east (11%). The annual mean wind speed average is 12.1km/hr.
- Afternoon winds are predominantly from the west (35%), south-west (19%), north-east (15%) and east (11%). The annual mean wind speed average is 18.5 km/hr.

The 09/27 Runway is required principally for General Aviation aircraft (and particularly for flying training) when the cross wind component on the 03/21 Runway becomes excessive. For this reason, there is a benefit in retaining and maintaining both runways.

The orientation of the any future Code 3C Runway should be in a northeast – southwest orientation as for the existing 03/21 Runway to suit the local predominant wind.

5.2.3 Taxiways

Currently only one taxiway can be used by Code B aircraft to access the RPT Apron from the 03/21 Runway. A new Code B parallel taxiway extending from the 03 Runway end to the 21 Runway end is proposed. This new taxiway is to be offset at a distance of 63m from the centreline of the existing 03/21 Runway which is the required separation distance for a code 2C non-precision approach runway. An existing section of taxiway located west of the Helimed Building has already been constructed at an offset of 63m from the 03/21 Runway centreline. However, it needs to be widened from 7.5m to 10.5m to be compliant as a Code B taxiway.

A parallel Code B taxiway from the 09 Runway end to the 27 Runway end is also proposed to provide access to greater capacity on the 09/27 Runway. This taxiway should be built in stages as further development is completed within the proposed Airpark/Air Chalet zone.

To provide a link from the RPT Apron, the 03/21 Runway and the 09/27 Runway, a future Code B taxiway should be constructed branching from the gravel taxiway located west of the 03/21 Runway to the 27 Runway end. This taxiway improves efficiency with aircraft moving between different movement areas and limits movement of aircraft within the approach paths for both runways.

The existing Code A taxiway that runs parallel to the 03/21 Runway extending up to approximately 400 metres from the 03 Runway end should be retained in the short term until such time that the RPT Apron is extended further north-west.

The Code A taxiway that has currently being constructed within the new Business Development Area located near the 03 Runway end should be lengthened to allow for future aviation related development towards the south-east.

Widths

New taxiways should generally be Code B for use by GA and commuter aircraft, and Code C for RPT aircraft. The taxiway, shoulder, graded strip and strip widths are as shown in **Table 5.7**.

Table 5.7: Taxiway Dimensions

Code	Taxiway Width (m)	Shoulder Width (m)	Graded Taxiway Strip Width (m)	Taxiway Strip Width (m)
B	10.5	3 (Note 1)	25	43
C	18 (Note 2)	3.5	25	52

Notes: 1. Not mandatory

2. Code C taxiway width may be reduced to 15m if the aircraft wheelbase is less than 18m.

5.3 Aprons

RPT Apron

The existing RPT Apron measures approximately 170 metres in length and 60 metres in width. The gravel overflow area has recently been sealed. This means that the existing RPT Apron has a capacity for one RPT aircraft parking bay and another nine GA parking positions.

Given the constraints of existing buildings to the north, east and south for the RPT Apron, any future expansion of the RPT Apron will have to be in a westerly direction. The RPT Apron can be extended as far as the proposed Code B parallel taxiway. Moving the RPT Apron further west creates additional space to also shift and upgrade the terminal building if required.

Expansion of the Apron in a westerly direction would require the relocation of the Primary Wind Indicator, the signal area and the weather station. The Primary Wind Indicator, the signal area and the weather station could be moved further north west towards the 21 Runway End within the grass area beyond the strip. The new location would be required to comply with all requirements as stated in MOS Part 139.

Southern Apron

The Southern Apron has the capability to be extended either in a westerly or a southerly direction. Should the apron expand in a westerly direction up to the proposed parallel Code B taxiway, this would create additional room for Gippsland Aeronautics or any other business venture to either expand their building footprints or provide for additional aircraft parking stands. Should additional parking positions be required, consideration will have to be given to shifting the existing AVTUR fuel facility to a different location.

GA Apron

A new GA Apron has been proposed west of the Latrobe Valley Aero Club hangar to accommodate future growth in GA aircraft movements. The new apron would provide opportunities for Latrobe Valley Aero Club to relocate their existing building and facilities further west thereby reducing the current congestion of GA traffic in the area.

Grass Overflow Parking Area

Currently there is a mixture of fixed wing and rotary wing aircraft that utilise the grass area on the eastern side of the 03/21 Runway. In particular, fire fighting aircraft use this area during the bush fire season. It is proposed that as apron development extends out into the existing grass areas, a new grass overflow parking area will be developed north of the proposed RPT apron extension.

5.3.1 Helicopter Facilities

Consideration should be given to establishing a helicopter specific apron area north of the existing Helimed helicopter parking pad. The planning of the GA area should incorporate development of a

designated helicopter area in order to segregate as much as possible, the mix of fixed wing and rotary wing aircraft. Helicopters will access this area via the proposed parallel Code B taxiway.

5.4 Support Facilities

5.4.1 Aircraft Refuelling

The current location of the AVGAS fuelling point is not considered appropriate as it clashes with aircraft parked in the vicinity. It is proposed that a new above ground self bunded fuelling facility be provided west of the RPT Apron. Fuelling for smaller aircraft will be from a bowser located in the designated fuelling apron using a swipe card access. Should there be a requirement to fuel any bigger aircraft or aircraft located within the proposed Airpark development this will need to be done using a mobile tanker.

The council may consider negotiating a period contract arrangement with one of the fuelling companies for supply of aviation fuels to the airport.

The AVTUR refuelling facility should be relocated from in front of the Gippsland Aeronautics facility to combine with the AVGAS facility to form a common user fuel farm.

5.4.2 Latrobe Valley Aero Club

The Latrobe Valley Aero Club is a GA aircraft operator providing flying training, charter and aerial work services. There is presently no identified need for additional facilities.

5.5 Operational Facilities

5.5.1 Rescue and Fire Fighting Service

These services are provided by the CFA facility located on the south-east corner of the terminal car park and this situation will continue in the future.

5.5.2 Navigation Aids

The NDB that is located near Airfield Road in close proximity to new hangars that are currently being built, needs to be relocated in order to better utilise the area and also to prevent any loss of performance as a result of neighbouring infrastructure developments. It is proposed that the NDB be moved to a location in the northern corner of the site within an area allocated for future air chalet development.

5.6 Proposed Developments

The Business Development Strategy prepared for the Latrobe Regional Airport Board by SKM in June 2008 identified the following list of facility developments that would enhance the amenity of the airport and increase its attractiveness to a variety of tenants;

- Increased aircraft parking capacity;
- Increased hangarage availability;
- Increased width of 03/21 Runway (30m);
- Relocation of the NDB and a request to Airservices Australia to assume responsibility for its operation;
- Further extension of the taxiway to the western end of the 03/21 Runway;
- Resurfacing of part of the 03/21 Runway; and
- Development of the north residential precinct.

Additionally, existing tenants identified the following potential developments/improvements.

- Gippsland Aeronautics is seeking additional space to increase its manufacturing capacity and to enable new products to be developed;
- East Coast Aviation is seeking more space for aircraft maintenance and modifications; and
- LVAC has expressed concern about lack of office space but has no specific plans for expansion.

6. Stakeholder Consultation

6.1 Early Discussions

Initial stakeholder discussions were initially held with the Airport Manager, representatives from the council's planning department and a variety of airport tenants. The scope of discussion aimed to focus on the following aspects:

- Adequacy of the past air service operations;
- Identification of past, current and expected future aviation activities 'growth drivers';
- Factors that have/should encourage or inhibit air service demand growth dynamics; and
- Any other relevant aspects.

Airside and landside development issues that were raised by stakeholders for possible consideration in the master planning process were as follows:

Scheduled Air Services

- Latrobe Regional Airport was served by RPT services until May 2006. With the upgraded train services and the completion of the highway duplication to Melbourne including the Pakenham by pass, the Melbourne CBD is now less than 2 hours away.
- It is highly unlikely to see the return of RPT services to Melbourne or any other locations.

Airside

- Additional aircraft parking positions near terminal;
- Additional apron for sport and General Aviation aeroplanes;
- Construction of parallel taxiway to the threshold of 03 Runway; and
- Compatibility for airport development to allow the continuation of parachute operations.

Terminal

- Retain capability of the passenger terminal;
- Find alternative use (meetings, muster of emergency services personnel during emergency crisis, etc) when not being used as a passenger terminal;

Landside (other than terminal)

- Encouragement and facilitation of commercial aviation industries at Latrobe Regional Airport;
- Provision of more serviced/unserviced hangars;
- Terminal Car Park is adequate for non RPT operations ; and
- Concept of an air park/air chalet in vacant area of the airport to north of 09-27 Runway;
- Retain NDB in its current location until it has to be moved for new development or becomes unserviceable and requires replacement;
- Expansion of SES facilities; and
- Expansion of CFA facilities

6.2 Targeted Stakeholders

A workshop was held at the Latrobe Regional Airport terminal on 20 April 2009 and involved the following entities:

HVP Plantations; Latrobe Regional Hospital; Latrobe Valley Gliding Club; Latrobe Valley Aero Club; Aerial Skydives; Gippsland Aeronautics; East Coast Aviation; Osprey Aviation Services; DSE; CFA; Latrobe City Council and Latrobe Regional Airport Board.

A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis was developed through the workshop and feedback was obtained on the draft 2009 Master Plan.

The Tables below summarise the SWOT analysis.

Strengths	Weaknesses
RAAF airspace opportunities Established in it's location No landing fees Existing community / operators Radio Navigation Aid Accessible to the community and business No RPT Council support 120 jobs on site Strategic location for bushfire activities Air ambulance and (good quality) hospital nearby Good runway capacity Aircraft manufacturing Close to Melbourne Registered airport Valued emergency precinct Regional value On-site maintenance and repair On-site re-fuel All weather, 24 hours Appropriate security levels Existing terminal and infrastructure Tourism asset Recreation asset Flat terrain Relatively unconstrained General community support Regional transport link	No public toilet Fog / weather Proximity to Melbourne for commercial operations Noise complaints (increasing) Overlapping with RAAF airspace Increased congestion due to recreational traffic Location in eastern Traralgon Corridor

Opportunities	Threats
Regional transport links Competitions at the site Quality local accommodation	West Sale Urban expansion / encroachment RAAF increase airspace

Opportunities	Threats
Rail link to Melbourne Increased tourism Potential to attract aviation related business development / manufacturing RAAF expansion – spin-off opportunities RPT introduction Increased fire operations CFA 5 year plan – may be eligible for a tanker Protection of the plantation / catchment / power industry	Increased operations = increased risk

The workshop attendees were divided into two groups to discuss specific issues, review the draft 2009 Master Plan and to make recommendations regarding any issues raised during the SWOT discussion.

Group 1 focussed on the issues raised during the SWOT process and discussed possible solutions. The issues and the recommendations are outlined below.

- GPS approach issues (Hazelwood): Re-orientation of runway to 195 degrees.
- Drainage issues: Dam the area proposed for residential and reconfigure to take this into account.
- No power to proposed non-directional beacon location: Move to old dairy.
- CFA expansion: Reserve area.
- Chalet location: Put on southern side of 09.
- RPT: Not able to be resolved due to security requirements, disruption of other activities and no benefits for the airport.

These comments were taken into consideration in the revision of the draft 2009 Master Plan. The re-orientation of the runway would not be feasible as it would mean effectively shutting down the airport in order to construct. The accommodation would need to remain in the northern region of the site due to noise concerns but the area can be designed to take into account drainage issues.

Group 2 made the following suggestions:

- Amend the planning scheme to protect the airport.
- Market the airport.
- Provide education / communication with Latrobe City 2020 Plan (also important for new councillors, now and into the future).
- Future business emergency service development increase security airport. (HVP, DSE, CFA, SES, Hospital, Helimed, power industry).
- Maintain current services (emergency and operators) to consolidate future airport.
- Move fuel.
- Gippsland aero issues (access).
- Perhaps subsidise RPT operation. Leave this option open.
- Leave the option open for residential development.

The above comments have been considered in the revision of the draft 2009 Master Plan. Other relevant stakeholders were also contacted during this period and their comments provided valuable

input into the 2009 Master Plan with respect to the paper mill and appropriate buffer zones and the pipeline that traverses the land at the northern and western boundaries of the site.

6.3 Landowners and the General Public

All landowners within the vicinity of the Latrobe Regional Airport were invited to attend the afternoon 'meet the planner' sessions. A notice was also placed in the local paper and on Council's website to notify the community about the project. Approximately 20 people responded to the letters and media release and attended on the day. The following issues were raised and considered in the revision of the draft 2009 Master Plan.

Issue	Response
Noise from aerobatics and isolated incidents	There were only two noise concerns raised. The noise concerns related to aerobatics over the caravan park and a one-off low flying incident. This is a management issue and it is recommended that the Board consider a designated aerobatic area. The other issue has since been resolved.
The Village Caravan Park would like to see a 30m setback from their boundary.	A new road and buffer has been proposed at this boundary to provide adequate separation from the caravan park.
Relocate the airport to the southern side of the Highway.	The relocation of the airport is not supported by Council. The Council and the Board are committed to developing the airport in its existing location in a sustainable way into the foreseeable future. Furthermore, the area to the south is constrained by long-term coal reserves and environmental overlays.
Airfield Road traffic – vehicles travel via Airfield Rd to get to traffic lights.	Another set of traffic lights would not be suitable so close to the existing set.
There is potential for pilot training, maintenance facilities, aircraft component manufacturers, commuter services, a business park and dwellings.	These opportunities have been considered in the formulation of the Master Plan.
Runways should be upgraded.	An area has been reserved in the Master Plan for a new runway that can accommodate RPT services if required.
Land acquisition.	No land acquisition is proposed as part of this Master Plan.
Low flying planes across Airfield Road.	This is a management issue that cannot be addressed by this Master Plan.
Development pressures.	The new planning controls will ensure that encroachment of urban development is constrained and is appropriate to the area.
Move non-directional beacon to new location ear old dairy. The provision of electricity to the currently proposed area would be costly.	The draft Master Plan has been modified to reflect this change.
Create a dam / water feature in the proposed	This should be able to be integrated into the final

Issue	Response
airpark. The site already drains to this point.	design for the northern part of the site.
Keep gliding facility in current location.	This should be able to be integrated into the final design for the northern part of the site.
Relocate part of the airpark further to the south.	This location is not feasible due to its proximity to the runway and potential noise issues.

The outcomes of the consultation was a comprehensive summary of the strengths, weaknesses, opportunities and threats; an appreciation of surrounding landowner issues and a review of the draft 2009 Master Plan. It is considered that the engagement of the community and key stakeholders has contributed to a robust Master Plan.

7. Airport Master Plan

7.1 Vision Statement

Through a review of the previous Master Plans together with consultation with Latrobe City Council, Latrobe Regional Airport Board, key stakeholders and the wider community, a vision has been developed for the Latrobe Regional Airport.

It is proposed to develop a viable Airport with growth potential retained through the inclusion of new airport related initiatives including commercial and industrial investment and airpark-type accommodation options.

We have noted that the principal objective in undertaking the 2009 Master Plan is to provide a realistic representation of the future airport layout that will maximise the capacity of the site in a way which is compatible with the environment, the local community, and rational development of facilities, and yet maintain flexibility to cater to future changes in response to the dynamic aviation industry.

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

It is also 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.

The vision for the Master Plan encapsulates all of the above. 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 RPT services.

7.2 Master Plan Principles and Objectives

The purpose of an airport master plan is to document the perceived development of the airport from its present configuration to its ultimate optimum configuration and to make this information available to all stakeholders and other interested parties.

The master plan is, in essence, a site reservation plan that optimises the long-term layout of facilities in a manner that satisfies the strategic, operational and functional needs of the airport while minimising its impact on the local environment. The master plan is a management tool to assist in the planning and development of facilities in a rational, logical and economical manner without compromising existing operations. It is based on a long-term planning horizon of 20 years to 2029, but needs to consider the development staging of the various facilities to be constructed over the life of the airport.

The principal objective in undertaking the master planning is to provide a realistic representation of the future airport layout that will maximise the capacity of the site in a way which is compatible with the environment, the local community, and rational development of facilities, and yet maintain flexibility to cater to future changes in response to the dynamic aviation industry. It is also vital to provide for the protection of the airport from potential urban encroachment.

To achieve this objective the following planning principles have been observed:

- Catering adequately and economically for forecast and potential volumes and type of aviation traffic and associated ground traffic throughout the life of the airport site;
- Making maximum use of the airport site in an economical and effective way;
- Achieving a balanced airport design whereby each element of the airport has a potential capacity commensurate with the capacity of each other element;
- Ensuring the effective and efficient operation of each separate facility within the framework of the most effective and efficient overall design;
- Permitting the progressive development of airport facilities to meet the demand with minimum dislocation to existing facilities and operations;
- Retaining as far as practicable, flexibility and options for development to meet unforeseen demand or changed circumstances in foreseen demand;
- Achieving as far as practicable, compatibility with the surrounding community and development;
- Recognising the potential for urban encroachment and providing for appropriate protection measures;
- Providing for the integration of the airport system with other airports and with the surface transport system.

The operational and functional requirements of the Latrobe Regional Airport Board as detailed in the Brief and as determined from discussions during the course of the commission have been incorporated in the Airport Master Plan.

Adoption of this Airport Master Plan does not represent a commitment by the Latrobe Regional Airport Board to provide the facilities described, or to adhere to the facility locations and dimensions, or to follow the time scales as documented. Additionally, promulgation of the master plan does not obviate the requirement to evaluate and justify specific developments at the time that they are proposed. It does, however, provide the Board with a framework in which to guide the future development of the Latrobe Regional Airport.

7.3 The 2009 Latrobe Regional Airport Master Plan

The Latrobe Regional Airport Master Plan is shown in **Appendix C**. The details that follow provide a consolidated description of the facilities adopted for the master plan which have emanated from the consideration of the future needs and development options detailed in **Section 5**, and the stakeholder consultation as detailed in **Section 6** and the Final Report.

7.3.1 Precinct 1 – Helicopter Apron

This precinct allows for the development of additional helicopter parking pads to service both the Helimed ambulance facility and also provide for a common user parking area for helicopter traffic. A dedicated precinct will allow for adequate separation of rotary wing traffic from fixed wing operations.

7.3.2 Precinct 2 – Southern Apron Extension

This precinct allows for expansion of the Southern Apron in a north-west direction. Currently Gippsland Aeronautics are located in this area and this expansion provides scope for Gippsland Aeronautics or other potential tenants to build additional hangars and building facilities or expand the apron area to allow for additional aircraft parking positions. Development of this area would require the relocation of the AVTUR fuelling facility to precinct 14 to form part of the common user fuel farm.

7.3.3 Precinct 3 – Latrobe Valley Aero Club Building and Apron

This precinct allows additional apron for GA aircraft located north-west of the LVAC maintenance hangar. Pedestrian access via marked walkways on the airside pavement in front of the LVAC Maintenance Hangar will be required to provide access from the LVAC clubhouse and terminal to the GA Apron.

7.3.4 Precinct 4 – RPT Apron Expansion

This precinct allows for an expansion of the existing RPT apron in a north-west direction. Should RPT operations recommence, the additional space shall allow for additional parking bays that may cater for larger aircraft than the SAAB 340 that previously serviced the airport. Alternatively, if there was a requirement to expand the car park, there is the option of relocating the terminal further north-west.

7.3.5 Precinct 5 – Overflow Grass Parking Area

This precinct allows for an area to park fixed wing and rotary wing aircraft when the capacity of paved parking areas has been exceeded. This area would be utilised during the fire season when there is a number of fire fighting aircraft stationed at the airport.

7.3.6 Precinct 6 – Park Recreation Area

This precinct is an open reserve recreation area and remains unchanged from its existing use.

7.3.7 Precinct 7 – Private Hangar Development (Under Construction)

This precinct is currently under development to provide 19 additional hangars for private use. The hangars will be serviced by a gravel taxilane that will be extended to intersect with the proposed Code B parallel taxiway.

7.3.8 Precinct 8 – Future Aviation Development

These precincts provide for the development of land to cater for aviation related businesses to be located within the airport boundary. Commonly these precincts will allow for direct access for aircraft from the business premises to the taxiways and runways. Currently there is already land and an extension of an existing taxiway that have been constructed and developed. It is proposed that additional land north of this existing development be reserved to cater for future expansion of aviation related business activity at the airport.

7.3.9 Precinct 9 – Future Air Chalet Development

This precinct allows for the development of an Air Chalet area designed specifically to provide residential options with direct access to the runways. Air chalets are typically a hangar with a small flat or attic included, usually for use as a 'weekender'.

7.3.10 Precinct 10 – Future Air Park Development

This precinct allows for the development of an Air Park designed specifically to provide residential options with direct access to the airfield and runways. The residential houses would be joined to hangars used by private owners for maintenance of their aircraft. Vehicle access shall be provided via an existing access road entering from Old Melbourne Road.

7.3.11 Precinct 11 – Gliding Facilities

This precinct is currently occupied by the Latrobe Valley Gliding club hangar. It is proposed that this facility remain in its current location in order to provide close access to the glider strip. Should there be a requirement to relocate in the future; a new facility may be built in Precinct 9 where the air chalets shall be located.

7.3.12 Precinct 12 – Future Commercial Development

This precinct allows for future commercial development that is to be aviation related.

7.3.13 Precinct 13 – Area reserved for Future Development

This precinct contains land that currently is unused however may be available for development in the future. There is potential to lease this land for farming purposes in the interim.

7.3.14 Precinct 14 – Common User Fuel Farm

This precinct allows for the development of a joint user fuel facility that shall combine AVGAS and AV-TURBINE fuel. This facility will mean that the existing AVGAS fuel bowser in front of the LVAC club house and the AVTUR fuelling facility located north-west of the Gippsland Aeronautics buildings shall be removed. Provision should be made to have an above ground bunded fuel tank and the Latrobe Regional Airport Board should consider a period contract arrangement with one of the fuelling companies for the supply of aviation fuels to the airport. Fuelling of larger aircraft will be by mobile tanker and fuelling for smaller aircraft will be from a bowser with access provided by a swipe card system. Access to the refuelling facility will need via an access gate in between the LVAC clubhouse and the LVAC/East Coast Aviation Maintenance Hangar.

7.3.15 Precinct 15 – DSE Base

This precinct currently caters for DSE operations. There are no plans for expansion of this area.

7.3.16 Precinct 16 – Future Terminal Expansion

This precinct allows for the expansion of terminal building to the north and south of the existing building footprint should there ever be a need to increase its capacity. The likelihood of this expansion being required is considered very remote however reintroduction of RPT services or alternative uses for the existing terminal facility may trigger this expansion. This would mean that the LVAC club house will need to be relocated to Precinct 3.

Due to the absence of RPT services, the terminal is currently underutilised. Temporary uses for the terminal include meetings by various Council departments and community groups and as a staging base for fire crews and other emergency services. The latter use is particularly appropriate due to the airport's location near the Latrobe Regional Hospital.

7.3.17 Precinct 17 – SES and CFA Expansion

This precinct allows for any future expansion of the CFA and/or SES operations at the important. The marked out space could be used to erect new buildings or provide for supplementary services such as equipment storage, water tanks, car parks etc.

7.3.18 Precinct 18 – Helicopter Business Precinct

This precinct allows for any potential development of a commercial helicopter business. The precinct would be suitable for Helicopter specific hangars and apron for parking with road access through a proposed road entering from Village Drive.

7.4 Movement Area

7.4.1 Runways

The existing 03/21 Runway is to be retained. Should there be a requirement to build a new Code C runway parallel to the 03/21 Runway to accommodate for larger aircraft, the 03/21 can be converted to Code C parallel taxiway. The runway pavement strength is suitable for the current traffic comprising propeller-driven aircraft, but strengthening of the existing runway will be required for jet aircraft if and when they are introduced in the future.

The 09/27 Runway is to be retained in its current configuration. In the long term, and depending on the practicality and cost of maintaining the gravel surface, consideration should be given to sealing this runway.

7.4.2 Taxiways

The master plan retains all existing taxiways, and provides for new full-length parallel Code B taxiways on the eastern side of the 03/21 Runway and on the northern side of the 09/27 Runway. New connecting taxiways are provided between the runways and aprons as shown in **Appendix C**.

The parallel taxiway to the 03/21 Runway is located 63m from the runway centreline, which makes it suitable for Code 2C aircraft non-precision approach operations.

All new taxiways for Code C aircraft use will be less than 18m wide (15m wide if to be used only by aircraft with wheelbases less than 15m), with 3.5m shoulders. For Code B aircraft, all new taxiways will be 10.5m wide. Shoulders are not required.

The pavement strength of the existing taxiways linking the runway and the RPT Apron is suitable for the current traffic comprising propeller-driven aircraft, but upgrading will be required for jet aircraft.

Taxiways for light aircraft use only should be to Code A or Code B requirements as appropriate for their location.

7.5 Support Facilities

7.5.1 Roads and Car Parks

There is no requirement in the short term to relocate or upgrade the existing access road and car park that service the terminal. However should the terminal and RPT Apron be relocated further west, there will be scope to either move the car park to the west or increase the car spaces. The additional car parking capacity could be used for a combination of short term parking, long term parking, and staff parking if increased aviation business activities occur at the airport.

7.5.2 Aircraft Refuelling

The Master Plan proposes a joint user fuel facility be developed as detailed in Precinct 14.

7.5.3 Aircraft Maintenance

East Coast Aviation has previously stated it was seeking to relocate its workshop to new facilities that were more visible and closer to the runway or into the commercial / industrial airpark.

7.5.4 Airport Maintenance

The existing airport maintenance area is well located and of sufficient size to meet future needs.

7.6 Operational Facilities

7.6.1 Navigation Aids

The Master Plan allows for the relocation of the NDB facility to a new location. The new location must be outside the land reserve set aside for a new Code C runway and must ensure that it does not penetrate the OLS. The preferred location is in the area allocated for air chalet development, where an electricity connection is already available.

8. Environmental and Land Use Planning

8.1 Physical Environment

8.1.1 General Description

The airport operational area has been largely disturbed during the development of the airport. The developed area of the airport is asphalt with some unimproved areas (some of which are grassed or otherwise sparsely vegetated). The built areas consist of the terminal, car parking area, hangar facilities, light aircraft operators, freight handling and other airport activity related sheds.

The topography of Latrobe Regional Airport land and the surrounding area is relatively flat. Vegetation is present, both within the Airport site and to the north-west of the terminal and associated buildings.

Surrounding development includes plantations, reservoir, paper mill, rural residential areas, hospital and caravan parks. It should be noted that there is a transmission gas pipeline located to the north and west of the site. These uses place unique restrictions on the development and expansion of the uses on the airport land. For instance, buildings may not be constructed less than 3m from the pipeline under the *Pipelines Act 2005* and extensive plantations raise issues of wildfire management and appropriate development responses.

Further land use issues have been considered in the Master Planning process. It is noted that Structure Plans have been prepared for areas of land to the east and south-west. The Structure Plans incorporate commercial, retail, industrial and residential uses. This development pressure increases the need for the Master Plan and associated Planning Scheme amendments in order to provide appropriate planning controls for future development.

The uses and physical characteristics described above are illustrated by the Existing Airport Plan and Site Context Plan included as **Appendices A and B** to this Master Plan.

8.2 Environmental Effects of Airport Development

8.2.1 Flora and Fauna

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. This assessment has been utilised in the development of the Existing Airport Plan (**Appendix A**) that accompanies the Master Plan. It is noted that the majority of proposed development avoids remnant vegetation stands.

8.2.2 Indigenous and Heritage Areas

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

8.2.3 Airport Noise

Aircraft noise and noise emanating from airport sites continue to receive a large amount of public attention worldwide. Although aircraft engineering advances have significantly reduced aircraft noise, the problem remains as one of the most difficult challenges in airport planning.

The factors that are important in assessing the likely impact and extent of intrusion and disturbance created by aircraft noise include:

- The perceived loudness of the noise;
- The proximity of the airport to community populations;
- The type of aircraft;
- The duration and time for which the noise is present;
- Whether the noise occurs in the day time or night time;
- The location of flight paths in the vicinity of the airport including the ascent and descent profiles;
- The sensitivity to and density of the population in areas exposed to high levels of sound; and
- The number of noise events in any period of time.

A further influence on the perception of aircraft noise is that of the predominant meteorological effects. The propagation of noise through the atmosphere is complex, mainly because the noise is not uniform, and meteorological effects can cause significantly different noise levels to be heard on the ground from one flyover to the next.

The main meteorological factors affecting noise levels are:

- Discontinuities in the air arising from wind or temperature gradients leading to diffraction, scattering or shadowing of the sound;
- Turbulence of that air near the ground surface; and
- Varying rates of atmosphere absorption with temperature and humidity conditions.

The noise level of an actual operation of an aircraft type can vary by about five decibels because of these influences.

The commonly identified effects of noise include:

- *Subjective* effects of annoyance, nuisance and dissatisfaction;
- *Interference* with activities, such as sleep, speech and learning; and
- *Physiological* effect, such as startle and hearing loss.

However, it is clear that the effects differ from person to person. Whilst one particular group of individuals may feel affected by the noise originating as a result of aircraft operations, another may not.

In relation to airports, the most important factors that affect an individual's behaviour in relation to overflying aircraft have been found to be:

- Negative attitudes to the airport, airlines, or the aviation industry in general (including their inability to effectively control noise);
- Sensitivity to noise in general;
- Fears that aircraft might crash into neighbourhoods surrounding the airport; and
- Interference with television and communications between people (personally or whilst on the telephone, etc).

The Australian Noise Exposure Forecast System

The Noise Exposure Forecast ("NEF") techniques developed in the USA were refined for Australian conditions to form the Australian Noise Exposure Forecast (ANEF) system which is now incorporated into Australian Standards (AS 2021 – 1994). The use of this system is in accordance with Commonwealth Government policy.

Three different types of aircraft noise contour maps are produced using the ANEF system. All three types are produced using the same computational process, the US FAA's Integrated Noise Model (INM). The differences between the three types arise from the data that is input.

(a) ANEF – Australian Noise Exposure Forecast

This is a contour map showing the forecast of aircraft noise levels that will exist in the future. The contour set may relate to a particular year, generally about 10 years from the date of issue, or it may be an “ultimate capacity” forecast. In the former case, it is based on a forecast of aircraft movement numbers, aircraft types, destinations and a given set of runways at the airport for a particular year. In the latter case, it may incorporate several sets of such information relating to progressive stages in the development of an airport within a definite time horizon. An ANEF requires review at regular intervals (about 5 years) to ensure its continuing validity.

The Noise Forecast System is the only Government endorsed measure that is used for land use planning. It will have been subjected to review by relevant authorities before release and, for civil airports the map will display the official endorsement of Airservices Australia and the date of that endorsement.

(b) ANEI – Australian Noise Exposure Index

This is a contour map based on historical data from a previous year, where actual numbers and types of aircraft that used the airport are known. It shows the average daily aircraft noise exposure around the airport for that year.

ANEI maps are used principally as benchmarks or indicators of change of aircraft noise exposure.

(c) ANEC – Australian Noise Exposure Concept

This is a noise contour map that may be produced during consideration of options for airport development. It is based on a hypothetical set of conditions of runways, aircraft types, etc., and there may be several ANEC maps prepared for the same future year. It may be a supposition for a long way into the future, and may never occur.

Because it has a hypothetical basis and/or may not have been subject to review by relevant authorities, an ANEC map has no official status and cannot be used for land-use planning purposes.

An ANEC map may be converted into an ANEF map only through endorsement by Airservices Australia

The ANEF is constructed using a computer model to generate contours that link together similar points of equal forecast exposure. The contour levels of 20, 25, 30, 35 and 40 are usually used as ANEF units with the severity of noise exposure increasing with the ANEF value. The model/technique allows a scientific measure of noise exposure levels around an airport taking into consideration the following factors:

- The intensity, duration, tonal content and spectrum of audible frequencies occurring in aircraft take-off, and landing (and reverse thrust after landing) manoeuvres;
- The forecast frequency of aircraft types and movements on flight paths; and
- The average daily distribution of aircraft take-off and landing movements in daytime (defined as 7am to 7pm) and night time (7pm to 7am).

To put the contours described above in context, residential development is commonly considered acceptable in areas outside (below) the ANEF 20 contour, conditionally acceptable in the range of 20-25, and simply not acceptable in the range above 25 ANEF.

It is important to note that contours are sometimes influenced by meteorological influences, described above, and other factors such as individual flight paths etc. For this reason, the ANEF 20 contour is normally shown with a dashed line to reflect the inherent variability in its actual location.

Noise exposure forecasts provide guidance for land use planning in areas surrounding airports. **Table 8.1** details the land use planning guide incorporated in AS 2021 which protects both the community from excessive noise and the longevity of the airport (in terms of encroaching incompatible land uses). Being difficult to retrospectively introduce these guidelines, the table usually provides guidance for new developments.

Table 8.1: ANEF Levels (Planning Guidelines)

Building Type	ANEF Level		
	Acceptable	Conditional	Unacceptable
House, home units, flats, caravan park	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hotels, motels, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
Schools, university	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hospitals, Nursing Homes	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Public Buildings	Less than 20 ANEF	20 to 30 ANEF	Greater than 30 ANEF
Commercial Buildings	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light Industrial Buildings	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other	All ANEF zones		

Source: Standards Association of Australia AS 2021-1994

Notes:

- The actual location of the ANEF 20 contour is difficult to define due to aircraft and flight path variations;
- Within the 20 to 25 ANEF, some people may find the land is not compatible with residential use. Authorities may determine that alterations to building design is required to control noise impacts.
- Further details are available in AS 2021 – 1994.

Latrobe Regional Airport ANEF / ANEC

Neighbouring properties and the close surrounding areas of the airport are affected by aircraft noise when an aircraft takes off, lands or is flying the general circuit area. The extent of these noise impacts may be assessed by using the ANEF System as it is an approved method of assessing noise sensitive areas such as residential dwellings, motels, hospitals, caravan parks and industrial complexes.

A Noise Abatement Procedure is published in ERSA and requires pilots to avoid noise sensitive areas between the airport and the highway to the south of the airport.

Latrobe Valley Airport practices a “good neighbour policy” which requires pilots practicing NDB approaches to add 1000 feet to the altitude published in the NDB approach procedures. It also limits the hours of operation for night circuits.

The existing 2010 Australian Noise Exposure Forecast (ANEF) and 2024 ANEC (Australian Noise Exposure Concept) (refer **Appendix F**) are not suitable for the current or likely future level of operations at the airport. Moreover, they are not consistent with the Latrobe Regional Airport 2009 Master Plan once it is adopted in terms of runway alignment, movements and likely types of aircraft. It is recommended that the existing plans are no longer relied upon for the assessment of planning applications.. This is discussed further in the Final Report.

8.2.4 Air Emissions

Air emissions are an environmental issue for most major urban areas in Australia and throughout the world. As with cars, trucks, trains and the like, aircraft engines also emit exhaust gases however the majority of the substances emitted (*nitrogen, oxygen and water*) are not regarded as air pollutants. It is the particulate matter, carbon monoxide, carbon dioxide, unburnt or partially burnt hydrocarbons and nitrogen oxides that are the most significant air emissions from airports. Dust from excavation works for development can also be a significant potential impact.

Aircraft operation ordinarily consists of five distinct phases relevant for air pollutant discharge consideration:

- Taxi or idle;
- Take-off;
- Climb-out;
- Cruise at altitude; and
- Approach and landing.

Table 8.2 broadly represents the operational phases and indicative pollutant discharge levels:

Table 8.2: Indicative Pollutant Discharge Emissions

Aircraft Operational Phase	Emissions			
	Particulates	Carbon monoxide	Hydrocarbons	Nitrogen Oxides
Taxi or idle	<i>moderate</i>	<i>high</i>	<i>high</i>	<i>low</i>
Takeoff	<i>high</i>	<i>low</i>	<i>low</i>	<i>high</i>
Climb-out	<i>high</i>	<i>low</i>	<i>low</i>	<i>high</i>
Cruise at altitude	<i>moderate</i>	<i>moderate</i>	<i>moderate</i>	<i>high</i>
Approach and landing	<i>moderate</i>	<i>moderate</i>	<i>moderate</i>	<i>moderate</i>

Increasingly stringent controls have led to a decrease in aircraft air emissions, however some have argued that more efficient ‘burns’ of fuel may increase production of NO₂.

Based on the normal operations at Latrobe Regional Airport, it is concluded that the potential impact of air emissions resulting from operations at the Latrobe Regional Airport is not significant.

All developments within the airport boundaries that have potential to emit dust or other significant air emissions must include environmental management strategies to manage or mitigate potential impacts. It is the responsibility of the proponent to identify the need for and undertake assessment and management of air emissions for any proposed development.

8.2.5 Construction Impacts

Potential environmental impacts associated with any of the proposed development works within the airport boundaries must be addressed as part of an environmental assessment and environmental management plan for the works. All assessments and management plans must comply with the requirements of relevant regulatory authorities and, where relevant, Latrobe City Council’s environmental procedures.

It is the responsibility of the proponent to identify the need for and undertake assessment and management of potential environmental impacts for any proposed development.

8.2.6 Pollution Control

No pollution control devices exist in the airport drainage systems installed.

8.2.7 Solid Waste Management

An appropriately qualified waste contractor must remove all solid waste (originating from the airport site) to a Latrobe City Council approved recycling facility or to a licensed treatment or disposal site.

Any new major development at the airport site must develop an environmental management plan that addresses waste management for that development. It is the responsibility of the proponent to identify the need for and undertake assessment and management of potential waste management issues for any proposed development.

8.2.8 Visual Impacts

The visual impact of airport development is expected to be very minimal given the flat elevation of the airport site, the lack of views into the airport precinct and the expansiveness of views across and within the airport boundary. The aesthetic improvement of the airport environs (particularly the entry/exit roads) through increased landscaping and progressive re-development is anticipated to improve the existing visual environment.

8.2.9 Bird Strike Hazard

Bird strikes, while infrequent at Latrobe Regional Airport, do occur and require careful management practices.

Any new (or existing) ornamental landscaping proposed for the airport must take into account the potential to contribute to the risk of bird strike. As such, new developments in the vicinity of Latrobe Regional Airport must ensure that landscaping does not have the potential to affect bird strike risk.

8.3 Land Use Planning

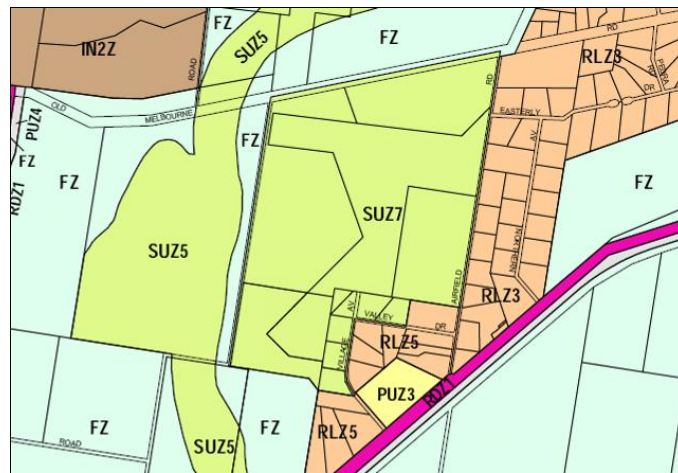
8.3.1 Latrobe Planning Scheme

As noted in Section 3 of this Master Plan, changing land uses and development opportunities, including those outlined in this Master Plan, have resulted in the Latrobe Planning Scheme no longer able to provide for the facilitation of appropriate development of the Latrobe Regional Airport and surrounding area. In particular, the consideration of airport operations has not been adequately integrated into the planning framework.

Due to the long-term nature of the Airport's operations, it is important to provide flexibility within land use zonings to allow for changes in potential uses over the development period. It is therefore important that the land use and planning framework builds in sufficient flexibility to accommodate a wide mix of aviation support industries, commercial development and other compatible uses.

The airport is currently zoned Special Use Zone 7 and is surrounded by land zoned for farming, rural residential and public use purposes (see **Figure 8.1** below). The airport and surrounding land is also affected by various overlays developed to target a single issue or related sets of issues.

Figure 8.1: Planning Zones Surrounding Latrobe Regional Airport



A review of the existing land use planning and development controls is provided in the Final Report that accompanies this Master Plan. The review includes consideration of the effectiveness and suitability of the existing Planning Scheme Zone and Overlays.

The Final Report provides the strategic justification for appropriate amendments to the Latrobe Planning Scheme in order to facilitate the Master Plan and provide the framework for appropriate development at the site and in the surrounding area.

The relevant recommendations of the Final Report are summarised below. Particular regard has been given to the intent of the controls that were introduced by the Interim Land Use and Development Controls.

Clause 21

- To add to Clause 21.01-15 to include mention of potential urban encroachment.
- To remove the reference to the Australian Noise Exposure Forecast from Clause 21.04-1 and Clause 21.04-9.

Clause 22

- To add an objective to Clause 22.04 relating to aviation-related accommodation.
- To replace the reference to 'Latrobe Regional Airport Masterplan 1998' with 'Latrobe Regional Airport 2009 Master Plan' in Clause 22.04.
- To remove the reference to the Latrobe Regional Airport Interim Land Use and Development Controls, June 2008 from Clause 22.04 upon adoption of the 2009 Master Plan.

Zoning

- To add to the purpose of the Special Use Zone (Schedule 7) as follows: *To provide for aviation-related accommodation.*
- To modify the Special Use Zone (Schedule 7) to allow for accommodation that is related to airport activities.
- To include a provision relating to the 'Use of Land' for aviation-related accommodation.
- To modify the 'Exclusion from Notice and Appeal' statements in the Special Use Zone (Schedule 7) to ensure the exemptions don't apply to accommodation.

Overlays

- To remove the Public Acquisition Overlay (Schedule 2) from the land occupied by the Latrobe Regional Airport.
- To introduce Design and Development Overlays (DDOs) to trigger planning permit applications for development greater than a certain height.
- To remove the Airport Environs Overlay from the Planning Scheme (Schedule 2).

8.3.2 Physical Constraints

The topography of Latrobe Regional Airport land and the surrounding area is relatively flat. No topographic constraints exist to the expansion and development of the airport as indicated in this Master Plan. Existing buildings include the passenger terminal building, Latrobe Valley Aero Club, associated hangars and an aircraft manufacturing facility. Constraints to the Airport land and surrounding area are depicted in the Existing Airport Plan and Site Context Plan (refer **Appendix A and B**) and described in the Final Report. Potential land use issues are described above in Section 8.1.

8.3.3 Obstacle Limitation Surfaces

The protection of airspace in the vicinity of Latrobe Regional Airport is important to ensure the safety of aircraft and the surrounding community by eliminating obstacles in the airspace that may pose a hazard to airborne aircraft. This is achieved by developing a set of Obstacle Limitation Surfaces (OLS) which define protection requirements for the initial and final stages of a flight takeoff, preparation to land and the landing itself. Visual connectivity between the airport runway and the pilot is of particular importance during these phases as is the pilot's ability to avoid obstacles and other aircraft.

Obstacle Limitation Surfaces are conceptual (imaginary) surfaces associated with a runway that identify the lower limits of the airport airspace above which objects become obstacles to aircraft operations.

The term OLS is used to refer to each of the imaginary surfaces which together define the lower boundary of airport airspace, as well as to refer to the complex imaginary surface formed by combining all of the individual surfaces.

- **Conical Surface**

The conical surface comprises both straight and curved elements that slope upwards and outwards from the edge of the Inner Horizontal Surface to a specified height above the Inner Horizontal Surface.

- **Inner Horizontal Surface**

The inner horizontal surface comprises a horizontal plane at a specified height above the reference elevation datum extending to an outer boundary comprising:

- (a) in the case of an airport with a single runway, semi-circular curves of a specified radius centred on the middle of each of the runway strip ends and joined tangentially by straight lines on each side of the runway, parallel to the runway centreline; or
- (b) in the case of an airport with multiple runways, curves of a specified radius centred on the middle of each of the runway strip ends and the curves are joined by a tangential line as two curves intersect.

- **Approach Surface**

The approach surface comprises an inclined plane or combination of planes that originate from the inner edge associated with each runway threshold, with two sides originating at the ends of the inner edge.

The inner edge associated with each runway threshold has a specified length, and is located horizontally and perpendicularly to the runway centreline, at a specified distance before the threshold.

The two sides diverge uniformly at a specified rate from the extended centreline of the runway.

The elevation of the midpoint of the threshold is the elevation of the inner edge.

- **Transitional Surface**

The transitional surface comprises inclined planes that originate at the lower edge from the side of the runway strip (the overall strip), and the side of the approach surface which is below the inner horizontal surface, and finish where the upper edge is located in the plane of the inner horizontal surface.

The transitional surface slopes upwards and outwards at a specified rate and is measured in a vertical plane at right angles to the centreline of the runway.

The elevation of a point on the lower edge of the transition surface is:

- (a) along the side of the approach surface, equal to the elevation of the approach surface at that point; and
- (b) along the side of the runway strip, equal to the nearest point on the centreline of the runway or stop way.

NOTE: For the purpose of drawing the transitional surface, the lower edge of the transitional surface along the runway-strip is drawn as a straight line joining the corresponding ends of the approach surfaces at each end of the runway strip.

- **Take-off Climb Surface**

The take-off climb surface comprises an inclined plane (or other shape in the case of curved take-off), located beyond the end of the runway or clearway.

The origin of the take-off climb surface is the inner edge of a specified length, located at a specified distance from the end of the runway or the clearway. The plane from the inner edge slopes upward at a specified rate, with the two sides of the plane originating from the ends of the inner edge concurrently diverging uniformly outwards at a specified rate, to a specified final width, and continuing thereafter at that width for the remainder of the specified overall length of the take-off climb surface until it reaches the outer edge which is horizontal and perpendicular to the take-off track.

The elevation of the inner edge is equal to the highest point on the extended runway centreline between the end of the runway and the inner edge, except that when a clearway is provided the elevation is to be equal to the highest point on the ground on the centreline on the clearway.

An OLS plans for existing runway conditions (Figure 8.2 and 8.3) and an OLS plans based on a proposed runway parallel to the existing 03/21 (Figure 8.4 and 8.5) is shown in **Appendix D**. The existing OLS plan as shown in Figure 8.2 and 8.3 are based on the 03/21 Runway as a Code 3 Non-Precision Instrument Runway and the 09/27 Runway as a Code 2 Non-Instrument Runway. The runway end levels have been used in determining the OLS plans which differs from the previous OLS plans which were referenced from the ARP. The OLS plans as shown in Figure 8.4 and 8.5 are based on a proposed 1720m Code 3 Precision Instrument Runway offset 168m from the existing 03/21 Runway centreline and the 09/27 Runway as a Code 2 Non-Instrument Runway.

The OLS dimensions defined in MOS Part 139 are shown in **Table 8.3** for:

- Code 3 Non-Precision Approach Instrument Runway
- Code 2 Non-Instrument Runway
- Code 3 Precision Approach Instrument Runway

Table 8.3: MOS Part 139 Obstacle Limitation Surface Design Criteria

Runway	Surface	09/27 Runway	03/21 Runway	Future Runway
		Code 2 Non-Instrument	Code 3 Instrument (Non-Precision)	Code 3 Instrument (Precision) Code I
Approach	CONICAL			
	Slope	5%	5%	5%
	Height (m)	55	75	100
	INNER HORIZONTAL			
	Height (m)	45	45	45
	Radius (m)	2500	4000	4000
	APPROACH			
	Length of inner edge (m)	80	150	300
	Distance from threshold (m)	60	60	60
	Divergence each side	10%	15%	15%
First Section Length (m)	2500	3000	3000	
Slope	4%	3.33%	2%	
Second Section Length (m)	-	3600	3600	
Slope	-	2.5%	2.5%	
Horizontal Section Length (m)	-	8400	8400	
Total Length (m)	2500	15000	15000	
TRANSITIONAL				
Slope	20%	14.3%	14.3%	
Take-Off	Length of inner edge	80	180	180
	Minimum distance of inner edge from runway end (m)	60	60	60
	Rate of divergence (each side)	10%	12.5%	12.5%
	Final width (m)	580	1800 ^a	1800 ^a
	Overall length (m)	2500	15000	15000
	Slope	4%	2% ^b	2% ^b

Notes:

- May be reduced to 1200m if the runway is used only by aircraft with take-off procedure which does not include changes of heading greater than 15 degrees for operations conducted in IMC (Instrument Meteorological Conditions), or at night.
- The operational characteristics of aircraft for which the runway is intended should be examined to see if it is desirable to reduce the slope to cater for critical operating conditions as specified in CAO20.7.1.B. If the specified slope is reduced, corresponding adjustment in the length of take-off climb surface is to be made so as to provide protection to a height of 300m. If no object reaches the 2% take-off climb surface, new objects should be limited to preserve the existing obstacle free surface or a surface down to a slope of 1.6%.
- All dimensions are measured horizontally unless otherwise specified.

ICAO requirements for Obstacle Limitation Surfaces are identical to those for MOS Part 139.

The OLS plan has been developed based on the existing runway configuration being retained during the Airport Master Plan period. A large majority of the OLS plan affects areas outside the airport boundary. As such, it is crucial that Latrobe Regional Airport Board take responsibility for raising awareness of the OLS to the general public and development proponents.

Proposed developments within the airport confines will need to ensure compliance with the OLS. Any development outside the airport that includes any element that may penetrate the OLS, should be referred to council for an operational assessment. The trigger and provision for assessment is provided in the recommended Planning Scheme amendments described in the Final Report and summarised above.

The basis of the OLS is to define a volume of airspace that should be kept obstacle free in order to minimise the danger to aircraft operations during entirely a visual approach or during the final visual segment of an instrument approach procedure. The surfaces are of a permanent nature and comprise of the reference datum which defines the surface and anything above the surface is regarded as a hazard. Obstacles should be report so that CASA can determine if they are “hazardous” and therefore need to be marked and/or lit to ensure a safe operation. The OLS standards are based on the runway code and classifications i.e. the “size” of the critical design aircraft and whether or not they are utilised for instrument approach procedures.

The OLS for Latrobe Regional Airport is based on a Code C aircraft non precision instrument approach.

An indicative OLS has been prepared based on a future 1720m Code 3C runway to ensure that the air space is protected. There is no time line for this runway and it will be based on a suitable business case and demand for the new runway. For planning purposes, an OLS has been developed so that council can ensure that the airspace requirement for the future runway is protected. There is potential to bring this OLS into the Planning Scheme in the event that a new runway eventuates.

Further discussion on the OLS is provided in the Final Report that accompanies this Master Plan.

8.3.4 Safety

CASA requires that a Safety Management System (SMS) is implemented for all certified aerodromes, as detailed in Advisory Circular AC 139-16(0) dated 8 March 2005. A SMS is required to clearly state the position of Council with respect to its commitment to the safety of the airport and its users and to identify the role of staff members in the management of the airport safety regime.

The Latrobe Regional Airport is a registered aerodrome. Adoption of a SMS for registered aerodromes is not mandatory, but is not precluded. The Council should consider whether the introduction of a SMS for Latrobe Regional Airport would be beneficial.

If a SMS is not implemented, the Council will need to ensure that relevant airport safety standards and guidelines are complied with during the operation of the airport.

9. Airport Development Strategy

9.1 Airport Development Works

This Section identifies the various facilities and infrastructure upgrades of the airport that may be developed in the short, medium or long-term future to meet forecast passenger and aircraft demand. The development strategy for each stage has been further categorised into airside, landside and terminal building projects.

9.1.1 Short Term Development (2008-13)

The works to be undertaken in the short-term comprise:

Airside

- Provide additional apron area for aircraft parking;
- Extend the parallel field taxiway to the threshold of 03 Runway; and
- Provide additional apron area for Gippsland Aeronautics.

Landside

- Provide adequate land for the future expansion of the Latrobe Regional Airport; and
- Provide sites for additional sport and General Aviation hangars.

Terminal Building

- No change is envisaged to the terminal building.

9.1.2 Medium Term (2013-20)

Development in this phase is expected to be dictated by the development of the Air Park and Air Chalet and an increase in “on airfield aircraft” with the development of additional hangars.

It also assumes that the economic down turn has recovered and the demand for new aircraft is on the increase.

Airside

- The development of the parallel field taxiway on the northern side of 09-27 Runway to support the development of the Air Park and Air Chalets;
- Continue development of GA taxiways and aprons as required depending on demand for take-up of GA lease area;
- Extend the RPT apron if required to accommodate larger aircraft types if required; and
- Additional apron for the expansion of Gippsland Aeronautics.

Landside

- Expansion of CFA and SES activities;
- Further development of landside infrastructure to support the development of the Air Park, Air Chalet and General Aviation areas; and
- Expansion of Gippsland Aeronautics.

Terminal Building

- No change is expected in the medium term.

9.1.3 Long Term (2020-28)

The works proposed in this time frame are entirely dependent on the nature of the traffic operating at the time. Assuming that the greater regional has grown and some larger aircraft types may require operation from Latrobe Regional Airport, it may require the provision of a Code 3C runway.

Airside

- New Code 3C runway subject to demand;
- Convert existing runway to parallel field taxiway; and
- Additional taxiways and apron areas as required.

Landside

- Expansion of Air Park/Air Chalet area;
- Provide infrastructure to support expansion of Air park/Air Chalet; and
- Fully service GA lease areas.

Terminal Building

- Upgrading as required to suit long term utilisation/use.

10. Development Guidelines

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 development guidelines are provided as **Appendix D** in the Final Report for future development within the commercial / industrial, private hangar, air-park and air chalet precincts. Guidelines are also provided for specific building types including private hangars and air-park / air-chalet developments.

The guidelines provide direction for the following design aspects:

- Height
- Building design and placement
- Facades
- Roof form and materials
- Entrances
- Landscaping and open space
- Solar access and energy efficiency
- Fencing
- Car parking
- Loading
- Trafficable areas
- Lighting and electricity
- Transportable buildings

The development guidelines also include examples of building design to illustrate preferred design. An assessment tool has been included to act as a checklist during the design phase of future development.

11. Business Plan

11.1 SKM Business Development Strategy

In June 2008, SKM prepared a Business Development Strategy for the Latrobe Regional Airport on behalf of the Latrobe Regional Airport Board (see Reference iv in Section 1.7).

It is not intended to reproduce the text herein, but it is recommended that the document is read in conjunction with this Airport Master Plan.

11.2 Land Ownership

The ownership of any asset is always a debatable question on whether ownership or leasing is the priority. Each business or organisation will have different views for different reasons. ie the requirement for either short or long a term commitment, tax incentives, the ability to obtain capital, on or off balance sheet, cash flow etc are all driving factors. In some cases there are no options for some assets.

In the current economic climate, government corporations and large businesses seek in some cases leased premises or leased purposely designed and built facilities. The Federal government is a case in point with most new buildings being purpose built to government specifications and secured under a long-term lease arrangement. Property developers under these arrangements can secure finance for the development knowing they have a long-term tenant with financial security.

Smaller organisations that seek leased premises tend to lease facilities already established ie. warehouses, factories, shops etc. The ability to raise capital is also an issue for some small businesses, although given the opportunity many business or organisations would prefer a freehold arrangement for the long term if it were available.

Latrobe Regional Airport currently leases land and buildings to a number of tenants on the airport while other tenants lease the land only and the tenants own the building. This was the practice of the day when the airports were owned and operated by the Commonwealth Government. Following privatisation of the 18 Federally owned airports in the mid to late 1990's, the option of only leasing land with the tenant providing the facilities is changing as the new airport owners seek to maximise the return on their investment. Many of these airports now offer the lease of complete facilities.

In addition to privatisation of the Federal airports in the 1990's many local and regional airports had their ownership transferred to local councils under the Airports Local Ownership Scheme. Many of these through the Master Plan process have identified land that is surplus for aviation activities, titled "Non Aviation Use". Some airport owners have elected on a case by case basis to address the land ownership as follows:

- Retain the land and lease land content only
- Retain the land, develop a facility and lease
- Develop a facility and sell freehold
- Sell the land or land with an existing building freehold

While a detailed study of freehold versa leasehold and the economic drivers is outside the scope of this Master Plan, it would be prudent for Latrobe Regional Airport to undertake a similar review of the facilities in due course. This may assist in future investment.

Latrobe Regional Airport needs to undertake a review of the assets and the way the business is run at the airport to ensure a long term and viable aviation industry. That is to say, a decision needs to be made on retaining the leasehold arrangements or the sale parcels of land freehold. In the process,

land needs to be classified as “Aviation and Non Aviation” use and then assessed as highest and best value for each category. The land use plan in this Master Plan will assist Latrobe Regional Airport in determining the parcels of land that it may wish retain or dispose.

Where parking areas outside hangars exists, an annual fee for a “Licence Parking Area” linked to the owner/occupier of the hangar for ongoing maintenance should be charged. Areas should also be marked.

Latrobe Regional Airport holds the ownership of the undeveloped airport land and it would be sensible for a coordinated and integrated strategy to be adopted within Council to maximise the development benefits.

Aviation businesses that require movement area access and other aviation support businesses, which could create a cluster effect at the airport, should be located in a designated land at the airport.

Realistically, the vacant airport land with immediate movement area access would appear to meet Latrobe Valley Airports short to medium term requirements considering the current level of utilisation and demand for general aviation and other commercial aviation business activity.

If the aim is to protect airport land for future aviation industry use over the longer term, 20 years and beyond, a parcel of vacant land between the runways should be preserved. The land abutting the northern boundary with direct road frontage, should in the first instance be persevered propose Air Park and Air Chalet precincts. This can be provided with direct airside access. This area would become more attractive if it was available freehold. Currently, the Board has a policy of not providing land freehold and not allowing Non Aviation business to establish on the airport.

12. Summary of Recommendations

12.1 Future Development

The following recommendations are made regarding the future development of the site. A summary is provided of the main changes proposed. The recommendations relate to both maximising the existing operations of the Airport as well as providing for future expansion.

- Reserve land for a new Code C parallel runway and convert 03/21 to taxiway.
- Provide new connecting taxiways.
- Expansion of the existing Aprons, including the existing RPT apron.
- Continuation of private hangar development.
- Extension of taxiway to intersect with the proposed Code B taxiway.
- Reserve additional land for expansion of aviation related business activity and other commercial activity.
- Provide for air chalet and airpark development.
- Retain the gliding facility.
- Relocation Non-directional Beacon.
- Develop fuel facility.
- Provide for DSE expansion.
- Provide for future expansion of terminal if required.
- A dedicated precinct to allow for adequate separation of rotary wing traffic from fixed wing operations.

12.2 Planning Scheme Amendments

The following recommendations are made with regards to amendments to the Latrobe Planning Scheme (see Final Report).

Clause 21

- To add to Clause 21.01-15 to include mention of potential urban encroachment.
- That the reference to the Australian Noise Exposure Forecast be removed from Clause 21.04-1 and Clause 21.04-9.

Clause 22

- To add an objective to Clause 22.04 relating to aviation-related accommodation.
- To replace the reference to 'Latrobe Regional Airport Masterplan 1998' with 'Latrobe Regional Airport 2009 Master Plan' in Clause 22.04.
- To remove the reference to the Latrobe Regional Airport Interim Land Use and Development Controls, June 2008 from Clause 22.04 upon adoption of the 2009 Master Plan.

Zoning

- To add to the purpose of the Special Use Zone (Schedule 7) as follows: *To provide for aviation-related accommodation.*
- To modify the Special Use Zone (Schedule 7) to allow for accommodation that is related to airport activities.
- To include a provision relating to the 'Use of Land' for aviation-related accommodation.
- To modify the 'Exclusion from Notice and Appeal' statements in the Special Use Zone (Schedule 7) to ensure the exemptions don't apply to accommodation.

Overlays

- That the Public Acquisition Overlay (Schedule 2) is removed from the land occupied by the Latrobe Regional Airport.
- To introduce Design and Development Overlays (DDOs) to trigger planning permit applications for development greater than a certain height.
- To remove the Airport Environs Overlay from the Planning Scheme (Schedule 2).

Other

It is recommended that:

- The existing ANEF is no longer relied upon for the assessment of planning applications.
- Separate ANEFs be prepared and endorsed by Airservices Australia for the existing and proposed runways.
- Future consideration regarding the return of RPT services takes into account the economic benefits for the region.
- The final agreed vision for the Master Plan is integrated into Latrobe 2021.
- The Traralgon-Morwell Corridor Concept Plan be revised on the basis of the new planning controls.
- The helipad DDO is reviewed by Latrobe City Council in consultation with the Latrobe Regional Hospital and the Latrobe Regional Airport Board.
- Outer areas are investigated in order to ascertain whether they may present risks to the OLS.

Appendix A

Existing Airport Plan

Appendix B

Site Context Plan

Appendix C

Airport Master Plan

Appendix D

Obstacle Limitation Surfaces Plan

Appendix E

PAN-OPS Plan

Appendix F

ANEF and ANEC Plans

Appendix G

Climate and Wind Data for Latrobe Regional Airport