



## BENDIGO AIRPORT STRATEGIC PLAN

June 2009

**The City of Greater  
Bendigo will create a  
transport network that  
gets people to where  
they want to be.**

Prepared by the Strategy Unit in  
association with Airports Plus P/L,  
Dench McClean Carlson and  
Compelling Economics

**Adopted by Council 3 June 2009**

Prepared by the Strategy Unit in association with Airports  
Plus P/L, Dench McClean Carlson and Compelling Economics

# CONTENTS

---

EXECUTIVE SUMMARY .....	4
1 INTRODUCTION .....	7
2 STRATEGIC CONTEXT .....	10
3 AIRPORT DEVELOPMENT .....	15
4. AIRPORT BUSINESS DEVELOPMENT .....	21
5. RISK MANAGEMENT .....	25
6. AIRPORT MANAGEMENT .....	26
7. PROJECT OVERVIEW .....	28
Stage 1 .....	28
Stage 2 .....	28
Stage 3 .....	28
Stage 4 .....	29
8. CONCLUSION .....	30
6. IMPLEMENTATION .....	31
APPENDIX .....	35

# EXECUTIVE SUMMARY

---

The *Bendigo Airport Strategic Plan* articulates the vision and development opportunities for the Bendigo Airport. It is underpinned by the *Bendigo Airport Master Plan 2007-2022* and the *Bendigo Airport Business Case 2008* in consultation with aviation industry leaders, Bendigo aviation and non-aviation related businesses and the Bendigo Airport leaseholders.

The vision for the Bendigo Airport is:

***Bendigo Airport – the Centre for Aviation Excellence***

*The Bendigo Airport offers a wide range of services to its users, and acts as a base for emergency services, private and commercial light aircraft operations.*

*The operation and development of Bendigo Airport will be directed to supporting emergency services, private and commercial flight activity and their support services, including flight training, recreation, corporate and charter operations.*

The Bendigo Airport is located in Bendigo East off Victoria Road. The Airport has two runways, 17/35 (paved) and 05/23 (partially paved), numbered in relation to their magnetic direction (Figure 1). The Airport is managed and operated by the City of Greater Bendigo with the assistance of an Advisory Group. The City of Greater Bendigo took on full responsibility to develop and maintain the Airport in 1992 through a Deed with the Commonwealth, which released the Commonwealth from ongoing development and maintenance obligations.

The Bendigo Airport has seen an increase in use in recent years, with current estimations to be in the order of 15,000 aircraft movements per annum (Business Case 2008). Airport movements include: Air Ambulance for fixed wing and helicopter operations, CFA and Department of Sustainability and Environment (DSE) fire prevention and emergency operations, several flight training schools (approximately 250 students in total), maintenance, flying club, various small businesses, several private hangars and operators that fly regularly to facilitate their own business ventures (including specialist medical services).

The Business Case is based on the implementation of the Master Plan and clearly states that such infrastructure and development has the potential to realise Airport growth. The consultants, who developed the Business Case, identified a strong need to undertake a marketing and promotional campaign and implement a revised management body to assist in realising the developments full potential.

Using the Master Plan scenario, Compelling Economics completed a REMPLAN analysis to project economic impact of the development as a component of the Business Case. REMPLAN is an economic modelling and analysis system applied to assist in strategic planning by modelling potential outcomes. The REMPLAN analysis indicates the creation of nine jobs during the Business Park construction phase (the multiplier effect creating a further 36 jobs) and 360 jobs on an ongoing basis. The Master Plan proposes a facility that can operate as a regional centre. Attracting small to medium businesses to the Airport will create additional employment opportunities as

sites become available with the necessary infrastructure and appropriate tenure terms and conditions. In addition, the availability of improved air services would make Bendigo more accessible to other locations, an easier place to visit for special events; and of critical importance to the region, as a central point from which emergency and medical services can continue to operate and expand.

Greater Bendigo is now faced with a facility that needs significant investment for both continued operation as an airport and for future growth. The lack of infrastructure and poor runway condition is a concern for the viability of the operations that exist (such as emergency services and flight training) and a reason for missed opportunities in the past. This Strategic Plan, together with the Master Plan provides an immediate and future framework to ensure current activities remain and new opportunities are attracted to the Bendigo Airport.

There are two key components to the development of the Bendigo Airport.

1. **Runway 17/35.** The Master Plan identifies construction of a runway parallel to the existing runway to avoid closure of the airport during construction; to increase land for business park development; and to increase efficiency of the aircraft movement by using the existing runway as a taxiway. This runway is to be constructed longer (from 1135 metres to 1600 metres) and wider (from 18 metres to 30 metres) than the existing runway, promoting growth for the Airport by allowing larger aircraft to land, for example a Beechcraft 1900 (19 seats) or a Q400 Dash 8 (70 seats); both of which are commonly used regional aircraft.
2. **Business Park** (COGB owned land at the airport). The Master Plan proposes that this land be used to attract aviation and future non-aviation related business to the Bendigo Airport. The land is in need of services (specifically power, reticulated water and sewerage) to attract and maintain business opportunities. Subdivision, precinct allocation and servicing will give the business park the opportunity to develop its potential.

In order to advance the two key components above, a Project Development Plan has been prepared. A summary of the four stages is provided below:

**Stage 1:** Identify the areas for further investigation and establish a way forward

Through the key stakeholders forum and consultation with the Bendigo aviation community, the draft Strategic Plan was developed. The release of this for community comment and consideration of submissions will ensure the recommendations and actions contained in the Plan are generally accepted by the Greater Bendigo community. A funding application to Regional Development Victoria is also necessary at this stage.

**Stage 2:** Complete investigations and detailed design

Detailed work is required in relation to the proposed runway (including whether to extend north or south) and taxiways. A flora and fauna assessment, together with a geotechnical report and cost estimation is required for the new runway, while a subdivision and services plan is required for the Business Park. In addition, a review of lease arrangements, management structure and the role of the Bendigo Airport Advisory Group is required to ensure the correct processes are in place to facilitate the development of the Airport.

**Stage 3:** Capital works begin in tandem with marketing and promotion



Key milestones for this stage relate to implementing a revised management structure for the Airport, capital works for the Business Park, and construction of parallel runway 17/35 and taxiways. Expertise in marketing and promotion will also be required to maximise the new developments' potential.

**Stage 4:** Report and evaluate to ensure the project progresses in a timely fashion and allow revisions as necessary.



**Figure 1: 2008 Aerial Photograph of Bendigo Airport (City of Greater Bendigo)**

# I INTRODUCTION

---

## I.1 Background

The Bendigo Airport is located in Bendigo East, off Victa Road, and was constructed in the early 1970s. The Airport consists of two runways, 17/35 and 05/23 (numbered in relation to their magnetic direction). The characteristics of each runway are as follows:

	Runway 17/35	Runway 05/23
<b>Length</b>	1135 metres	767 metres
<b>Width</b>	18 meters	18 metres
<b>Surface</b>	Asphalt	Asphalt (east end gravel/west end grass)
<b>Pavement Classification Number</b>	8 (below characteristics contribute to this number)	unrated
<b>Pavement type</b>	F (flexible pavement)	unrated
<b>Subgrade Strength Category</b>	D (Ultra low strength; lowest category)	unrated
<b>Maximum Take Off Weight</b>	5700 kilograms	5700 kilograms

Source: Airservices Australia, 2009

The Maximum Take Off Weight at the airport is 5700kg, designating the size of aircraft and activities that can safely operate on the runway.

The Bendigo Airport has a long history of plans and requested works for an upgrade and redevelopment of the site. The issue taking precedence since the early 1990s has been the condition and necessity of upgrading the major runway (runway 17/35). In addition, previous master plans similarly aim to facilitate an increase in traffic as well as an increase in aircraft size (up to 80 passengers). Each portrays the development of the Airport necessary to support the local community as well as actively contributing to the development of regional aviation.

### Management

The City of Greater Bendigo manages and operates the Airport currently through its Organisation Support and Planning and Development Directorates in cooperation with the Bendigo Airport Advisory Group. The Advisory Group operates under Section 86 of the *Local Government Act 1989*, special committees of the Council.

Pursuant to the provisions of Section 86 of the *Local Government Act 1989*, the Council of the City of Greater Bendigo established the Bendigo Aerodrome Advisory Group as detailed in the Deed

of Appointment (1995). The purpose of the Advisory Group as state in the Deed of Appointment is:

*To recommend to the Council, through the Business Manager Property, operational and development improvements that can be achieved to enhance the financial viability and development role of the Bendigo Aerodrome; and to provide general advice in respect to the Aerodrome and its operations.*

Membership to the Advisory Group is to consist of eight persons from the following user classifications:

- Commercial and aviation site holders 2 representatives
- Aircraft owners 2 representatives
- Pilots 2 representatives
- Council 1 commissioner/Councillor
- Community 1 representative

Persons are to be nominated representatives meeting the required criteria of the appropriate group and elected for a two-year period with a half election being held each year.

The Advisory Group is not to handle funds on behalf of the City of Greater Bendigo nor bind the City in any contractual manner; the sole purpose of the Group is to be advisory to Council.

## **I.2 Bendigo Airport Vision Statement**

### ***Bendigo Airport – the Centre for Aviation Excellence***

*The Bendigo Airport offers a wide range of services to its users, and acts as a base for emergency service, private and commercial light aircraft operations.*

*The operation and development of Bendigo Airport will be directed to supporting emergency services, private and commercial flight activity and their support services, including flight training, recreational, corporate and charter operations.*

## **I.3 Strategic Directions to guide development**

- To develop airport lands to encourage aviation-related and ancillary business to locate at the airport;
- To promote economic growth by targeting aviation related commercial and light industrial business;
- To promote the airport potential as an emergency services centre;
- To promote the airport for charter operations;
- To promote the airport for flight training; and
- To promote community involvement in airport activities.



## 1.4 Consultation

A key component in developing this Plan has been consultation and communication. Throughout the preparation of the Plan the project team met with Latrobe Valley Airport Manager and Latrobe City Planning, Mildura Airport Manager, CEO and Business Manager and the Horsham Rural City Council Mayor and Council representative. These inspections provided the insight into well run, proactive and recently developed facilities.

Discussions have taken place with numerous industry professionals and business operators based both in and outside of Greater Bendigo. These discussions have assisted in providing a robust Strategic Plan that will guide development into the future.

Working with consultants Dench McClean Carlson, Compelling Economics and Airports Plus Pty Ltd has provided the technical expertise in developing future plans for the Airport. Consultants as a part of their work engaged a cross section of aviation related and non-aviation related businesses, charter operators and Airport lease holders for their contribution and insight into the Airport development.

The City of Greater Bendigo held a Key Stakeholders Forum on 29 January 2009 for the individuals and businesses contacted during the preparation of the Business case, as well as all leaseholders currently at the Airport. John Stevens of Dench McClean Carlson provided an overview of the draft report, followed by Ray Oakley of Airports Plus P/L who provided a summary of the draft Bendigo Airport Master Plan. The key issues raised at the forum include:

- Access – taxiways, roads, signage, additional access via Goddards lane should the one access point (Victa Road) be blocked;
- Infrastructure – power, water, sewage, drainage, public toilets;
- Development – sustainable, reclaim terminal, vegetation traffic;
- Tenure arrangements – fair rents, longer leases, consistency;
- Operations – tie down fees, Advisory committee, Business Park, parking, no landing fees, signage; and
- Surrounding community – noise, adhering to flight rules, keep informed, location.

Comments were also sought relating to the importance of the Airport. There was general agreement that a large regional centre, such as Bendigo, needs to have a quality, functional airport and that the airport is a significant community asset. Activities such as emergency and medical services, connectivity to the region and beyond, recreation, employment and business generation were all raised as important elements of an airport for Bendigo.

While targeted consultation and research assisted to inform the draft Strategic Plan, wider community comment has resulted in a number of minor changes being made to the final document including:

- Inclusion of the existing Design and Development Overlay in Section 2.2 Planning Controls;
- Insert action in Stage 2 – hire airport manager;
- Insert action in Stage 2 – revise airport management structure;
- Prioritise the Flora and Fauna assessment in Stage 2;
- Insert time frame for environmental management plan (section 6.4);
- Insert a landscaping plan for the airport precinct as an action in Stage 2;
- Include the Australian Noise Exposure Forecast (ANEF 2020) as an Appendix document.

## 2 STRATEGIC CONTEXT

---

### 2.1 Relevant Documents

The development of this Plan has been influenced by a number of strategic documents and statutory frameworks that have looked at issues, or are directly related to the Bendigo Airport.

#### 2.1.1 Bendigo +25 and Council Plan

The Bendigo +25 Community Plan has the following commitment: *Greater Bendigo will have a transport and distribution network that gets people and goods where they want to be, with minimum disruption to the CBD and residential areas.* An action to do this relates to exploring funding and development opportunities for upgrading the airport.

The Council Plan 2005 - 2009 (update 2008/09) includes the following strategic objective: *We will create a transport network that gets people where they want to be.* An action to achieve this is to investigate options for upgrading the airport.

#### 2.1.2 Bendigo Economic Development Strategy 2007

The Bendigo Economic Development Strategy (2007) was adopted by Council on 16 July 2008. The Strategy identifies opportunities for improvements in utility infrastructure around the Bendigo Airport, and explains that this could enhance business development and attraction to that area. The Strategy also notes that the region has an opportunity for inter-regional air links through a regional airport, and recommends advocacy for the necessary enabling infrastructure to support ongoing economic prosperity in the region and identify the future role and undertake planning for the Bendigo Airport.

#### 2.1.3 Bendigo Aerodrome Deed

The City of Greater Bendigo (via the Bendigo Aerodrome Management Committee) has a deed with the Commonwealth of Australia that was made on 24 August 1992 between the Commonwealth of Australia (“the Commonwealth”) and the Bendigo Aerodrome Management Committee (“the Committee”). The reason for this deed’s revision is to provide aerodrome owners with a greater level of flexibility in the operation of their asset. Prior to this deed, owners were required to seek the consent of the Secretary of the Department of Transport and Regional Services (DOTARS) prior to selling, leasing or otherwise disposing of all or part of their aerodrome. Consent of the Secretary of DOTARS is still required in circumstances that will:

- Result in the closure of the aerodrome, or
- Result in the aerodrome no longer continuing to operate as an aerodrome.

In general this deed releases the Commonwealth from paying to the Committee development maintenance grants for the Aerodrome under the terms and conditions of the Aerodrome Local Ownership Plan and shall have no further obligations under that plan except as provided in Clause

1(c) of this deed. Clause 1(c) outlines the lump sum payment of \$61,500 by way of grant for expenditure by the Committee in carrying out the works specified.

The obligation was fulfilled and the Committee took on the obligation to:

- Operate and maintain the Aerodrome, open to public use, in compliance with Civil Aviation Regulations and Civil Aviation Authority (today known as CASA) standards for the type and category of aircraft operations at the Aerodrome;
- Be solely responsible for developing, operating and maintaining the Aerodrome including visual aids and associated equipment to Civil Aviation Authority standards;
- Permit open, unrestricted and non-discriminatory access to the Aerodrome by airline and aircraft operators on reasonable terms and conditions, consistent with the physical limitations of the Aerodrome in accordance with the Civil Aviation Authority safety standards;
- Be responsible for the safety of the Aerodrome in accordance with the Civil Aviation Act 1988, the Civil Aviation Regulations and others made pursuant to those Regulations;
- Take such action as is within its power to:
  - prevent the restriction of aircraft operations to and from the Aerodrome by objects, such as buildings, other structures, trees or other natural objects, projecting through the existing and potential obstacle limitation surfaces of the Aerodrome
  - create land-use zoning around the Aerodrome which will prevent residential and other incompatible development in areas which are, or which may be, adversely affected by aircraft noise
  - prevent the introduction of activities likely to create a hazard to aircraft including activities likely to attract birds
  - prevent developments which could be incompatible with Civil Aviation Authority air navigation and communications facilities
- Be subject first to the Civil Aviation Authority and second to the Bureau of Meteorology providing meteorological services both above and below ground within the Aerodrome as reasonable required for the purpose of establishing, providing, maintaining, modifying or operating; and
- Sub-lease or license the whole or any part of the Aerodrome so that it will be operated as an aerodrome in compliance with CASA that any company or persons engaged in businesses directly relate to the air transport industry without unjust discrimination and on fair and reasonable terms and conditions.

## **2.1.4 Civil Aviation Safety Authority (CASA)**

CASA's primary function is to conduct the safety regulation of civil air operations in Australia and the operation of Australian aircraft overseas. It is also required to provide comprehensive safety education and training programmes, cooperate with the Australian Transport Safety Bureau, and administer certain features of Part IVA of the Civil Aviation (Carriers' Liability) Act 1959.

The Civil Aviation Regulations (CARs) 1988 and the Civil Aviation Safety Regulations (CASR) 1998, made under authority of the Civil Aviation Act, provide for general regulatory controls for the safety of air navigation. The Civil Aviation Act and CARs 1988 empower CASA to issue Civil Aviation Orders on detailed matters of regulation. The CASRs 1998 empower CASA to issue Manuals of Standards which support CASR by providing detailed technical material.

Other legislation affecting CASA in the exercise of its powers include the:

- Air Navigation Act 1920;
- Commonwealth Authorities and Companies Act 1997;

- Auditor-General Act 1997;
- Ombudsman Act 1976;
- Freedom of Information Act 1982;
- Privacy Act 1988;
- Administrative Appeals Tribunal Act 1975; and
- Administrative Decisions (Judicial Review) Act 1977.

The Chief Executive Officer manages CASA, and is responsible to the Minister for Infrastructure, Transport, Regional Development and Local Government.

Bendigo Airport is inspected by an Aerodrome Inspector each year. The safety audit is based on observance of aerodrome operating procedures, inspection of aerodrome facilities, and compliance of aerodrome operation with the requirements of the:

- Civil Aviation Safety Regulations 1998, (CASR) Part 139;
- Manual of Standards Part 139 – Aerodromes; and
- Bendigo Aerodrome operational procedures.

The most recent audit (10 July 2008) ‘revealed that limited aerodrome operations manual is being maintained to provide operational procedures for a level matching the requirements for registered aerodrome status.’

## 2.2 Planning Controls

A number of planning controls contained in the Greater Bendigo Planning Scheme relate to the Bendigo Airport. Bendigo was one of the first regional airports in Victoria to apply airport related planning controls (implemented mid 1980s), and they have been developed to ensure that operation and development of the airport receives due recognition within the statutory planning framework (Figure 2).

### 2.2.1 Special Use Zone

The Bendigo Airport is zoned Special Use Zone Schedule 7 (SUZ7). The purpose of a Special Use Zone is to recognise or provide for the use and development of land for specific purposes as identified in a schedule in this zone. In the SUZ7, the purpose is to ensure that the combination of uses, the density, scale and character of any development does not prejudice the amenity of surrounding land.

Under SUZ7, no permit is required for use of an airport. Examples of uses that require a permit are car park, industry, place of assembly, restaurant, take away food premises, transport terminal (other than Airport) and warehouse.

### **2.2.2 Airport Environs Overlay**

The Airport and runway approaches are covered by the Airport Environs Overlay (AEO).

The purpose of the AEO is:

- To identify areas, which are or will be subject to high levels of aircraft noise, including areas where the use of land for uses sensitive to aircraft noise will need to be restricted;
- To ensure that land use and development are compatible with the operation of airports in accordance with the appropriate airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield;
- To assist in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in new dwellings and other noise sensitive buildings; and
- To limit the number of people residing in the area or likely to be subject to significant levels of aircraft noise.

### **2.2.3 Development Plan Overlay**

The land owned by the City of Greater Bendigo, otherwise known as the Business Park, is subject to Schedule 19 to the Development Plan Overlay (DPO19). The purpose of the Development Plan Overlay is to identify areas, which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land. In addition, the purpose is to exempt an application from notice and review if it is generally in accordance with a development plan.

Schedule 19 to the Development Plan Overlay lists conditions and requirements in areas such as access, utility services, safety and operations and use of the land. Specifically all uses must relate to and promote aerodrome activities as the dominant use of the land.

### **2.2.4 Design and Development Overlay – Schedule I**

The runway approaches are covered by the Design and Development Overlay Schedule I (same contours as AEO). The purpose of the DDO is to identify areas which are affected by specific requirements relating to the design and built form of new development. Schedule I specifies the airfield environs and restricted building heights. It outlines design objectives, buildings and works, consultation, subdivision and decision guidelines to ensure efficiency and safety of Airport operations.





## 3 AIRPORT DEVELOPMENT

---

### 3.1 Bendigo Aerodrome Master Plan 2007-2022

The Bendigo Airport Master Plan 2007 – 2022 (Airports Plus Pty Ltd 2007) is a land use strategy for the whole of the Airport including support infrastructure. The Master Plan has been prepared to guide development for the next 10 – 15 years (refer to Figure 3 page 21), with key trigger points identified for infrastructure expenditure. In addition, it includes a preliminary assessment of constructing a new north – south runway parallel to existing runway 17/35.

The Master Plan is a technical document that incorporates all relevant CASA requirements. The Master Plan demonstrates the potential for the Bendigo Airport to operate in a General Aviation capacity in the short to medium term.

‘General aviation commonly refers to that part of the aviation industry that engages in activity other than scheduled commercial airline activity. This may include charter operations, aero medical operators, agricultural aviation businesses, aviation-based fire-fighting services, training and aerial work such as aerial photography and surveying. It also includes private, business, recreational and sports aviation activity and supporting businesses such as maintenance providers’ (Department of Infrastructure, Transport, Regional Development and Local Government).

The methodology adopted to undertake the Master Plan included:

- Reviewing all previous reports and Master Plans;
- Investigating available survey data and if not adequate arranging for a new survey that could be used to prepare a preliminary design of the proposed runway;
- Preparing preliminary runway design to CASA standards;
- Assessing the impact of the runway location on existing infrastructure on the aerodrome site and surround areas;
- Consultation with key stakeholders regarding this preliminary design, including Council, Aerodrome Advisory Committee, aerodrome tenants and others as required;
- Updating assessment of aviation and non-aviation development growth for Bendigo Aerodrome over the next 15 years;
- Assessing current capacity of supporting infrastructure and estimation of future capacity requirements;
- Updating the land use strategy plan for the whole of the aerodrome for aviation and non-aviation development;
- Preparing preliminary cost estimate for upgrading major infrastructure including proposed runway and terminal building;
- Reviewing land use strategy with key stakeholders;
- Reviewing the impact of the Master Plan on the existing 2020 Australian Noise Exposure Forecast (ANEF);
- Presentation of the Master Plan to Council and Aerodrome Advisory Committee;
- Production of final Master Plan after input from Council and Aerodrome Advisory Committee.

### 3.1.1 Future Aviation Activity

Airports Plus P/L consulted with various industry organisations, Airport based services and users to survey existing and potential activity. There is one airport operator that provides charter services on request carrying up to nine passengers. Common destinations for charters in 2006/07 included Mildura, Swan Hill and occasionally Canberra. They generally operate as a same day return with passengers carrying minimal hand luggage.

The catchment for Bendigo Airport is not just the city but also the region, particularly north and west. The Bendigo region has a population of approximately 170,000+ and it may be possible to generate as many as 100,000 passengers in the first two years of operation. An industry measure used to estimate the number of passengers that can be generated from a population base is three to five times that population. With the introduction of new airline services it takes a period of time for the passenger numbers to reach these levels. A number of variables including aircraft type, cost per seat and competition can affect the growth of passenger numbers.

Bendigo is the largest regional centre in Australia not serviced by scheduled airline operations. The main destination market for a Regular Passenger Transport (RPT) service from Bendigo would be Sydney with possibly a Canberra link, followed by Adelaide. Melbourne would not be a destination for an aircraft of this type due to the short flying time and the quality of the road link between the City of Greater Bendigo and Melbourne metropolitan area.

### 3.1.2 Aircraft Planning Criteria

Aircraft planning criteria is developed in three categories to provide a reference point from which airport design is based. This reference point provides the basis to apply criteria for design to accommodate the most likely users for the airport into the future.

The three main components involved in aircraft planning are:

1. **Aerodrome Reference Code (ARC):** The ARC is based on the characteristics of an aeroplane not the aerodrome. The Master Plan has designed the Bendigo Airport to be 3C. The number three indicates the runway length to be 1200 metres up to but not including 1800 metres. The C designates use for aircraft with a wing span of 24 metres up to but not including 36 metres, and the outer main gear wheel span to be six metres up to but not including nine metres.
2. **Runway length, width and strength:** Runway length varies and is dependent upon temperature, wind and what the aircraft is carrying. Generally, regional aerodromes providing a runway length up to 1600 meters are able to handle most aircraft types operating in regional Australia. Temperature is often the critical factor influencing aircraft performance. The higher the temperature the more runway length is required. Pavement strength is dictated by construction materials used and the constructed depth of the pavement. To ensure that a range of aircraft can utilise the aerodrome in the future it is recommended the runway be built to a Pavement Classification Number (PCN) in the range 20 – 25. Currently Bendigo's main runway 17/35 has a PCN of 8. Width is the final determining factor that can restrict aircraft operations. Runway 17/35 is currently 18 meters and needs to be 30 meters to accommodate the aforementioned Code 3 aircraft safely.
3. **Design Aircraft:** The selected design aircraft is a theoretical decision and not one based on current or future market trends. The selected design aircraft for the purpose of the Master

Plan is a Q400 Dash 8. The purpose for adopting this size aircraft is solely to ensure that any future facilities built are capable of handling aircraft up to this size. This Dash 8 model is currently the largest aircraft regularly operating domestic air routes in regional Australia that is not a jet aircraft and is expected to be in service for at least the next 15 – 20 years. A jet aircraft was not selected as the critical aircraft as it is unrealistic to expect passenger jet aircraft operations to be commercially viable in the short to medium term.

### 3.1.3 Runway Development

The design and construction of a new runway would need to be orientated in a similar north-south configuration to the existing runway. The key purposes of constructing a parallel runway are:

- Construction can be undertaken with out interruption to normal operations on runway 17/35;
- Construction could be staged over two financial years;
- Existing runway 17/35 could be converted to a parallel taxiway providing access at two or three locations creating efficiency of on ground movement;
- Airport closure due to flooding on runway 17/35 would be eliminated as the centreline profile of the new runway would be higher then the existing runway; and
- More area would be available at the northern end of the airport site for hangar development east of the existing building line.

The distance that the parallel runway is proposed to be built from the centreline of the existing runway is 168 meters. This distance (centreline to centreline) permits precision GPS approaches. Precision GPS approaches are inherently safer and allow much better access during bad weather.

A Flora and Fauna Study was undertaken in 2001, however a new study is required that takes account of the exact dimensions and location of the parallel runway, and considers the new native vegetation assessment framework now in place in Victoria.

### 3.1.4 Airport Land Use Strategy

The Master Plan assesses the existing and future supporting infrastructure for development of the Airport site.

#### Power

Mains power is provided by overhead cable that runs from both Goddards Lane and Dixon Road. A series of electricity poles run from the entry point south to the road that services the main buildings and apron. The power then runs east to the end of this road and terminates in a 100 kVA transformer. A distribution box at the base of the power pole distributes power to various buildings and airport facilities via underground cables.

Airports Plus Pty Ltd in discussions with the electricity provider indicated that long term the preference for supplying and distributing electricity to the airport site could be by the provision of a kiosk substation close to the boundary of the airport and Goddards Lane. From this point electricity could be run underground along the road reserves to the existing power cabinet and any new power distribution cabinets that are established in the northern area of the site.

The advantage of providing underground power on the airport site would need to be assessed against any proposed developments adjacent or close to the existing overhead power lines. It must be noted that currently the power lines cross over an area of land that has been identified for future aviation development in a previous Land Use Strategy and an easement is provided on this land. Initially the overhead power lines can be relocated to the road reserve.

The proposed extension of runway 17/35 to the south would require any future electricity mains running along Victa Road to be placed underground. Provision of ducts under the runway would need to be included in any detailed design of the runway to allow electricity and other services to be extended east of Bendigo Airport.

### Water

Water is provided from an extension of the water main in Goddards Lane onto the airport site. In the past couple of years the water line was upgraded to 150 mm diameter pipe from the boundary along the road reserves down to the terminal area. The Rural Ambulance Service (RAS) hangar is serviced from this water main and it is expected that any future building developments in this sector will be catered for by this water main.

A private water main enters the airport site from Victa Road and provides water to the old terminal building. This water main is a 63 millimetre diameter poly pipe that runs under runway 05/23.

Currently there is sufficient water supply available for any proposed building development on the airport site. If a large building is constructed in the future that requires fire suppression systems then additional water supply for this purpose may be required.

### Drainage

Bendigo Airport occasionally floods after heavy rainfall, although this has not occurred in recent years. The industrial land west of the airport resulted in the construction of a water retention basin on airport land. Drainage for the runways and taxiways is provided by open unlined drains (OUD) and pipes and the building area has OUD and some pipe drainage, all of which flows to the southern side of the site.

Future development of the building area of the airport will need to incorporate extensions to existing drainage systems, underground pipes and possible enlarging of the pipes. The proposed new runway should be designed to ensure that all water flowing east of the centreline of the runway will drain to the eastern side of the airport. Water on the western side of the centreline will be able to flow to existing OUDs adjacent to the current runway, 17/35. The construction of the proposed runway may reduce the total catchment of water that currently flows west towards the existing runway and which is contributing to the local flooding problem.

### Sewerage

Terraco Pty Ltd (registered consultants with Coliban Water for Developer Installed Works) assessed the existing sewerage system in 2007 and provided recommendations of upgrading the system in accordance with Coliban Water's requirements and specifications. Several existing buildings are connected to septic systems via gravity mains. The main septic tank for the area is at the rear of the Bendigo Flying Club building. There are a number of other buildings connected to their own septic tanks which then discharge into the main outfall pipe prior to discharging into the transpiration beds east of the main hangar area.



The transpiration beds are located in an area close to the existing north-south runway effectively preventing further aviation development in this area of the airport. If the proposed new parallel runway was constructed then this area could be used for further hangar apron development.

The Rural Ambulance Service site has an internal pump which transports the effluent to a manhole next to the public toilet block. It is then treated via the main septic tank. Due to the inadequacy of the existing system it will be abolished if the proposed sewer system is installed.

The new sewer system will allow full control of the areas identified for development. It will be installed to Coliban Water requirements and specification and will become Coliban Water's asset upon completion. The new system will include the installation for gravity mains to service the existing buildings with allowance being made to service future demand.

### **3.1.5 Airport Precincts**

The Bendigo Airport can generally be divided into two parts: the airside and the business park. The airside is comprised of the runways and taxiways where the activity of the aircraft takes place. The Business Park is land currently owned by the City of Greater Bendigo, where predominantly aviation related activities occur.

Following further investigation, the business park may be subdivided to facilitate the installation of service utility infrastructure. The subdivision would also detail a number of different precincts to accommodate for uses such as recreation, commercial, terminal facilities and emergency services. In doing so, leases and operations could be tailored to dedicated activities while offering the services and accommodations appropriate to each area.

The Master Plan indicates approximately six hectares as a mix of aviation and non-aviation use in the future. Land for this aforementioned purpose is situated along the western boundary of the Business Park. A planning scheme amendment will be necessary to accommodate non-aviation light industry for this area in the future.

With implementation of services and quality infrastructure in combination with a marketing and promotion plan the airport should be given the opportunity to develop as an aviation area for the short term.

Stage 2 of the Project Development Plan will facilitate subdivision, identify precincts and investigate the lease and operating options for each area.

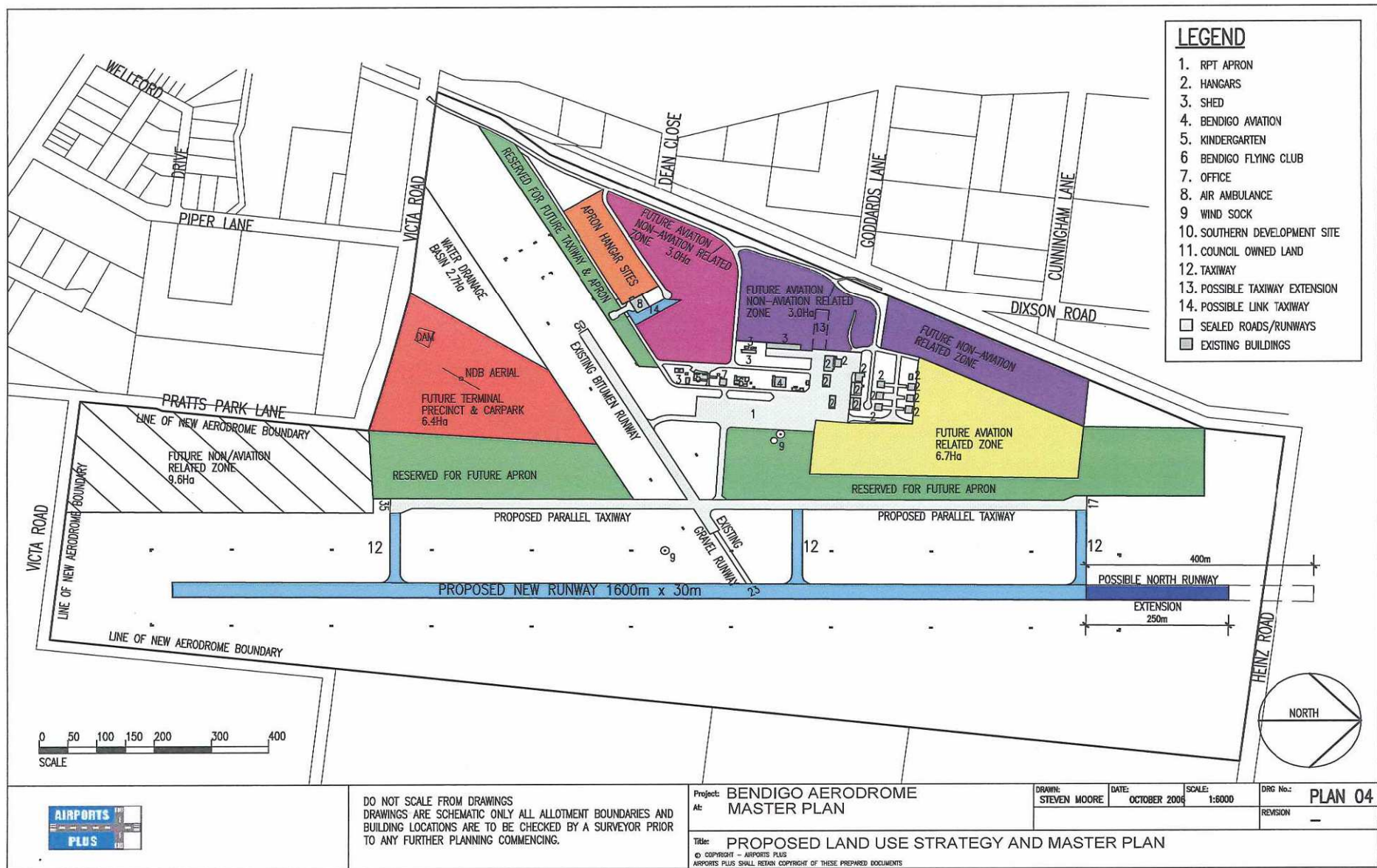
### **3.1.6 Security**

Bendigo Airport is a registered airport with CASA.  
CASA:

- Is responsible for the safety regulation of Australia's civil aviation operators, and for the regulation of Australian-registered aircraft outside Australia territory;
- Sets safety standards and ensures that they are met through effective entry, compliance and enforcement strategies;
- Provides regulatory services to industry and plays a part in safety education for the aviation community; and

- Administers exams and issues Australian Aviation licences.  
(Source: Civil Aviation Safety Authority 2008)

CASA recognises that the aviation industry, particularly the general aviation sector, has entered a period of change and growth. Guidance and procedures are set and provided by CASA to assist the Airport in addressing safety issues such as bird and animal hazard management, airport rescue and fire fighting service procedures and security of airport operations. Airport management is responsible to adhere to rules and regulations put into place and follow the guidelines to implement security measures as activities dictate.



**Figure 3: Proposed Land Use Strategy and Master Plan (Airports Plus P/L 2007)**

## 4. AIRPORT BUSINESS DEVELOPMENT

---

### 4.1 Business Case 2008

The Business Case was prepared by Compelling Economics and Dench McClean Carlson to provide context and understanding around financial and economic impact of implementing the Bendigo Airport Master Plan. The Business Case identifies the option of selling a portion of the Business Park as non-aviation light industry to provide revenue to support the cost of implementing the Master Plan. The Business Case also highlights the need to prepare an application to Regional Development Victoria for grant assistance to fund a large portion of the development through the Regional Infrastructure Development Fund.

The Business Case concluded that with implementation of the Master Plan there are significant opportunities for the Airport to experience growth in a General Aviation capacity, including an opportunity to develop business partnerships with charter operators. In addition, the consultants identified a strong need to undertake a marketing and promotional campaign and implement a revised management body to assist in realising the Airport's potential.

Consultation formed an important component to the development of the Business Case. Discussions took place with a variety of stakeholders from both aviation and non-aviation related businesses to identify usage, potential usage and need of an airport. While comments varied from positive to unsure, it must be realised that the Bendigo Airport has only maintained the minimum requirements to operate as a registered Airport. The consultants identified significant interest to be pursued, should development take place, with various charter operators and aviation related businesses to locate at the Bendigo Airport.

#### 4.1.1 General Aviation

The Federal Government has embarked on a process to develop a National Aviation Plan that aims to support growth and improved capability in the Australian aviation industry.

The Minister for Infrastructure, Transport, Regional Development and Local Government, the Hon Anthony Albanese MP, announced on 10 April 2008 the Australian Government's commitment to the development of a National Aviation Policy Statement.

The National Aviation Policy Statement is to provide greater planning and investment certainty for the industry and provide clear commitments for users of aviation services and communities affected by aviation activity. This Statement is expected to be finalised late in 2009. At present the Government White Paper is being prepared to support the development of the Statement.

The Federal Government has formed a General Aviation Industry Action Agenda Strategic Industry Leaders Group that has prepared an Issues Paper with respect to General Aviation. The Issues Paper identifies the Australian General Aviation industry to be in transition, with some sections of General Aviation growing while others are in decline with some individual businesses struggling to remain viable. In particular the recreation sector is growing strongly, which is a positive development in its own right but also a challenge for the traditional general aviation environment. The rapid growth of commercial airline activity worldwide, and the consequent

demand for airline pilots, has created export opportunities for pilot training services. Australia's flight training industry needs to be able to meet this growth potential. Access to airport infrastructure outside the major capital cities is an increasing concern for general aviation. Most general aviation airports are owned by local councils and fall under state and local government planning and regulatory requirements. Ensuring those airports continue to invest to support the industry is critical.

The commercial airline sector of the aviation industry is experiencing rapid growth, with strong demand for trained pilots. Bendigo Airport has an opportunity to contribute to meeting this demand through the provision of space both on ground and airspace for pilot training. In addition, emerging pressures on hub airports such as Melbourne and Sydney is giving rise to low cost operators seeking alternative airports around capital cities with excellent transport connections. Bendigo Airport, while not able to accommodate international air traffic, is capable of regional connections as a future option.

The privatisation of secondary airports such as Avalon, Essendon and Moorabbin has resulted in the general aviation community being subjected to commercial charging schemes that push this community out. This makes Bendigo Airport an attractive option for the general aviator as it is easily accessible, there is potential for increased hangar space, low operating costs and little to no fees. With strong growth in the recreational sector specifically, Bendigo Airport could become an attractive option.

#### **4.1.2 Stakeholder Consultation**

A number of local stakeholders were consulted with respect to their interest in services that are and / or could be provided through the Bendigo Airport. The stakeholders consulted were a combination of businesses, organisations and government agencies including several that currently operate from the Bendigo Airport. The feedback from the businesses, organisations and government agencies not based at the Bendigo Airport was varied from wanting charter flights through to questioning the need for the Airport. In consultation with stakeholders based at the Airport a range of observations and issues were identified, such as lease arrangements, insufficient services, inadequate marketing, pilot training, and emergency services. Several charter operators expressed an interest in talking further with the City in the context of a 'partnership' to further develop charter operations at the Airport.

## **4.2 Economic Impact**

Using the Master Plan scenario, Compelling Economics completed a REMPLAN analysis to forecast economic impact of the development. REMPLAN is an economic modelling and analysis system applied to assist in strategic planning by modelling potential outcomes.

The REMPLAN analysis indicates the creation of nine jobs (the multiplier effect creating a further 36 jobs) during the Business Park construction phase. The Master Plan proposes a facility that can operate as a regional centre. Attracting small to medium businesses to the park will create additional employment opportunities as sites become available with the necessary infrastructure and appropriate tenure terms and conditions. In addition, the availability of improved air services would make Bendigo more accessible to other locations, an easier place to visit for special events; and of critical importance to the region, a central point from which emergency and medical services can continue to operate and expand.



The Business Case investigates the use of the non-aviation / aviation dedicated land on the Airport's western boundary as potential light industrial land. This would contribute to the development of the precinct and provide the option of more varied business opportunities to take place. However, given the airport has had very little improvement over the past several years which has inhibited aviation related opportunities, it is considered that a rigorous marketing and promotional plan for aviation related industries is required in the short term. The non-aviation / light industry land is an option for the airport, however for non-aviation use of Airport land to proceed an amendment to the Greater Bendigo Planning Scheme is required.

## 5. RISK MANAGEMENT

---

### 5.1 Introduction

Risk management is the term applied to a logical and systematic method of establishing the context for identifying, analysing, evaluating, treating, monitoring and communicating risks associated with any activity, function or process that will enable our organisation to minimise losses and maximise opportunities (City of Greater Bendigo Risk Management Work Book).

The aim of the risk management process is to:

1. Identify events that might affect the achievement of objectives and operations;
2. Rank the risks identified; and
3. Implement treatments/plan to minimise or delete the impact of the risk.

Using the risk management model, the Bendigo Airport project team have established the context and identified the risks using questions such as what can happen? And how can it happen? Following the identification of the risks, they were assessed against their likelihood and consequence. With an established level of risk an evaluation and set of priorities can be listed allowing the risk to be acceptable or not. This analysis demonstrates necessity of the development and assists in staging the project (refer to Appendix A).

Risks identified for the Bendigo Airport project as extreme, and therefore requiring immediate consideration are as follows:

- Pavement/structural failure;
- Shut down the runway;
- No funding assistance;
- Strategy not endorsed by Council;
- Kangaroos on runway;
- Approval for removal of vegetation to accommodate new runway;
- Land for extension to the north and south; and
- Over budget and/or unforeseen costs.

When assessing risk treatment options, it is important to understand that it will often be most appropriate to combine several treatment options. A creative approach is more likely to have the required outcomes.

The majority of the issues relate to the runway as an issue requiring immediate action. This is reflected in the project development plan with respect to staging the project and the works necessary in order to respond appropriately.

## 6. AIRPORT MANAGEMENT

---

### 6.1 Management Structure

A key component to the success of the Bendigo Airport is a management structure that is efficient, proactive and creative. This management structure must align with the Bendigo Airport Strategic Plan to create an active centre for aviation excellence. It must be flexible and innovative to allow the management body to take advantage of opportunities that present themselves. The new structure must also incorporate a certain degree of stability so that the day-to-day tasks that arise are able to be negotiated or completed with efficiency. In addition, the avenues of communication must be easily accessible and reliable so as to provide flexibility and stability both within and between the Airport management and the Greater Bendigo City Council.

The management structure is to be reviewed and revised in Stage 2 with revisions implemented in Stage 3 of the Project Overview. The Bendigo Airport has two options under which it may set up a management structure:

1. Local Government Act 1989 – Section 86; or
2. Management agreement.

#### Option 1: Section 86 Agreement

Section 86 of the Local Government Act 1989 outlines Special Committees of the Council. Under this framework the City of Greater Bendigo may hire an Airport Manager and set up an Airport Board. As an example the Airport Board can be set up to promote the long-term health and prosperity of the Bendigo Airport. To do this the Board may need to:

- Adopt an annual working budget (this is to allow the day to day tasks to be completed and the Board to operate with a degree of autonomy) and monitor financial performance of the Airport;
- Monitor the adequacy and appropriateness and operation, membership and Board strategy;
- Monitor the risks of airport operations and users and review how they are managed;
- Monitor, respond and advocate, where possible, tenant issues, requests and concerns;
- Determine, in cooperation with the City of Greater Bendigo, delegations to the Board;
- Adopt a Board Action Plan that is approved by the Greater Bendigo City Council and is in line with the Bendigo Airport Strategic Plan;
- Select and appoint Board members with final approval by the Greater Bendigo City Council;
- Consider and approve as a preliminary review any major policies relating to the Airport development, maintenance and organisational management prior to presenting to Greater Bendigo City Council;
- Operate as the first point of contact, referral and review to investors, operators or users to the Airport;
- Investigate non-governmental funding sources for the development and opportunities of the Airport;
- Promote the Bendigo Airport as the centre for aviation excellence.

The membership should involve various interest groups such as finance, marketing, aviation, and community. A deed of appointment will need to be established for the Airport Board.

### Option 2: Management Agreement

The City of Greater Bendigo may investigate the option of establishing a management agreement with another incorporated body or company to undertake the management of the Bendigo Airport. This management structure could be similar to that of the Bendigo Stadium or the Bendigo Trust.

## **6.2 Leases**

Review of existing lease terms and conditions will be assessed against proposed development, and following the completion of a subdivision plan. Systems will need to be put in place to deal with existing leases in a way that accommodates the new facility and the tenant. This may need to be completed on a case by case basis with the overall goal of providing consistency with all lease agreements within a three year period.

New lease arrangements will depend on the subdivision plan and precincts designated within the Business Park. The purpose of providing an option such as commercial lease, private lease or license is to allow flexibility in the tenant options as the aforementioned options will respond to differing circumstances.

## **6.3 Existing Users**

Existing users that are not aviation related will need to be reviewed and managed on a case by case basis. The non-aviation related users, such as the Kindergarten and Centre State Rodders, must be consulted to identify any safety issues and/or appropriateness of their operations and the future of the Airport. A plan can be outline and designed to suit both the user and the future of the Bendigo Airport.

## **6.4 Environmental Management**

An environmental management plan is essential. It must be formulated in consultation with the Department of Sustainability and Environment and CASA for the development of the Airport as well as the ongoing maintenance and operations of the Airport. The environmental management plan will be determined as part of Stage 2 of the development.

Components to be reviewed are (but not limited to):

- Emergency Plan;
- Carbon Neutral;
- Run off/Capture;
- Flora and Fauna;
- Ground Water;
- Salinity;
- Footprint;
- Air Pollution;
- Noise Pollution;
- Water and Sewage; and
- Soil.

## 7. PROJECT OVERVIEW

---

### Stage 1

Identify the areas for further investigation and establish a way forward. Through the stakeholders forum and consultation with the Bendigo aviation community, establish the context in which the Council may proceed.

#### Milestones

- Stakeholders Forum;
- Initiate State funding application for runway development;
- Budget allocation to complete stage two;
- Release of the draft Bendigo Airport Strategic Plan for public comment prior to considering the finalised Plan; and
- Adoption of the finalised Bendigo Airport Strategic Plan.

### Stage 2

Develop the detail required to accurately prepare the Master Plan for capital works.

#### Milestones

- Detailed review for the position extension of runway 17/35 and taxiways, including a Flora and Fauna Assessment and Geotechnical Report;
- Subdivision plan for the Business Park;
- Designation of Business Park precincts;
- Evaluation of lease arrangements appropriate to the Business Park precincts;
- Review and revise Airport management structure;
- Hire new Airport Manager;
- Establish Environmental Management Plan;
- Funding application for runway development; and
- Budget allocation to complete Stage three.

### Stage 3

Capital works to begin runway 17/35, infrastructure implementation to Business Park and a marketing and promotion plan for the Bendigo Airport.

#### Milestones

- Implementation of the revised management structure;
- Construction of runway 17/35 and taxiways out for tender and construction initiated;
- Services to the Business Park under construction;
- Existing lease arrangements under review and new lease arrangements available;
- Implementation of marketing and promotion plan for the Bendigo Airport; and
- Budget allocation for the completion of Stage four.



## Stage 4

Evaluate progress with key management staff and report to the Council regularly. Consider engagement of an independent auditor to undertake a project review after 12 months.

### Milestones

- Evaluation of project
  - Runway development
  - Management structure
  - Marketing and promotions
  - Lease arrangements

## 8. CONCLUSION

---

The Bendigo Airport Strategic Plan consolidates and updates existing reports, including the Master Plan and Business Case to ensure current activities remain and new opportunities are attracted to the Bendigo Airport.

The key components of the Plan relate to:

1. A new runway parallel to existing runway 17/35, constructed to Aerodrome Reference Code 3C, to allow larger aircraft to utilise the airport; and
2. The development of a business park to contribute to the ongoing viability of the Airport and to the region's economy in general.

Greater Bendigo is faced with a facility that needs significant investment for both continued operation as an airport and future growth. The Bendigo Airport Strategic Plan, together with the Master Plan provides an immediate and future framework for the Bendigo Airport to be a regional centre that connects and facilitates aviation excellence.

## 9. IMPLEMENTATION

---

	ACTION	PRIORITY	RESPONSIBLE MANAGER	PARTNERS	INDICATIVE COST
<b>STAGE 1</b>	Initiate funding application process	High	Strategy	Business Development	No Additional
<b>STAGE 2</b>	Review position of runway 17/35 to extend north or south	Medium	Strategy	Asset Planning & Design Planning & Development Unit	No Additional
	Engage a consultant to undertake a Geotechnical Report for detailed costing and development of runway 17/35	High	Strategy	Asset Planning & Design Planning & Development Organisation Support	\$50,000
	Engage a consultant to undertake a Flora and Fauna Assessment following established location of runway 17/35	High	Strategy	Planning & Development	\$10,000
	Establish Airport Environmental Management Plan	High	Strategy	Environmental Policy Unit DSE CASA	No Additional
	Undertake a subdivision plan for the Business Park	High	Strategy	Planning & Development Asset Planning & Design	\$50,000
	Designate precincts to the Business Park	Medium	Strategy	Planning & Development Asset Planning & Design	No Additional
	Revise Airport Management structure	High	Strategy	Organisational Support	No Additional

	ACTION	PRIORITY	RESPONSIBLE MANAGER	PARTNERS	INDICATIVE COST
	Hire new Airport Manager	High	Organisational Support (subject to EMT discussion)	Strategy	To be determined (currently a 0.6 EFT position)
	Review lease arrangements as appropriate to Business Park Precincts	Medium	Valuations	Building & Property Strategy	No Additional
	Review roles and responsibilities of Bendigo Airport Advisory Group	Medium	Organisation Support	Organisation Support Planning & Development Asset Planning & Design	No Additional
	Establish a Landscape Plan for Airport grounds	Medium	Strategy	Asset Planning & Design	\$5,000
<b>STAGE 3</b>	Implement revisions to the management structure of the Airport	High	Organisation Support	Organisation Support	No Additional
	Construct runway 17/35 and associated taxiways	High	Major Projects	Asset Planning & Design	To be determined
	Implement services to Business Park	High	Major Projects	Asset Planning & Design	To be determined

	ACTION	PRIORITY	RESPONSIBLE MANAGER	PARTNERS	INDICATIVE COST
	Review existing lease arrangements and make new lease arrangements available	Medium	Valuations	Building & Property Strategy	No Additional
	Undertake a marketing and promotion plan for the Bendigo Airport	Medium	Airport Manager	Business Development Marketing & Major Events	\$10,000
<b>STAGE 4</b>	Evaluate Bendigo Airport Project Development	High	Airport Manager	All partners involved in project	No Additional
	Consider engagement of an independent auditor to undertake a project review after 12 months	Medium	Airport Manager	All partners involved in project	To be determined. Subject to future budget bids.



# APPENDIX

---

## **A – Risk Management Assessment**

## **B – Bendigo Airport Master Plan 2007 – 2022**

## **C – Australian Noise Exposure Forecast**

For a copy of the appendices please contact the Strategy Unit on 5434 6148 or via email at [strategy@bendigo.vic.gov.au](mailto:strategy@bendigo.vic.gov.au) .

# REFERENCE

---

Airservices Australia 2009. *ERSA En Route Supplement Australia* Effective 12 March 2009.

Australian Government Civil Aviation Safety Authority 2008. *Bendigo Aerodrome: 2008 Aviation Safety Audit Completed* 10 July 2008

Australia Government Department of Transport and Communications 1992. *Bendigo Aerodrome Deed* between the Commonwealth of Australia and the Bendigo Aerodrome management Committee (now the City of Greater Bendigo).

City of Greater Bendigo 1995. *Bendigo Aerodrome Advisory Group Deed of Appointment*

Dench McClean Carlson; Compelling Economics; City of Greater Bendigo 2008. *Bendigo Airport Strategic Plan – Business Case*



