



Benalla Airport Master Plan

23 April 2015



Introduction

Benalla Airport is a key asset of the Benalla Rural City Council that provides vital economic and social services to the area. The Council in conjunction with the Gliding Club of Victoria and Gliding Federation of Australia has won the world gliding championship for 2017; which includes the pre world championship in 2016.

Council wishes to be in position to manage and develop its airport infrastructure in a manner that is commensurate with the expected growth in aviation activity over the next 20 years. Council also recognises that some of that activity will be associated with major aviation events such as world or national titles.

The Benalla Airport Master Plan process was funded by the Victorian Government through the Regional Development Victoria Putting Locals First Program.

Purpose of Master Plan

Airport master planning is undertaken to enable best-management practices and sound land use development in addressing the diverse aviation and community interests. An airport master plan is the primary strategic tool available to airport owners/operators and communicates the operator's intentions with respect to development of the airport.

Consultations

The draft master Plan has been prepared from significant individual and workshop consultations with industry and community stakeholders to understand the future aviation and non-aviation needs for Benalla Airport.

Regional Context

The region has developed on the back of agriculture, some agricultural processing, and manufacturing. It has a strong service industry supporting tourism, business and the community, as well as some unique tourism, sporting and cultural attractions. The airport's economic drivers include:

- Growth in aviation activities;
- Growth in existing non-aviation activities (performing arts, museum, education);
- Increase in Benalla's population and visitation to region which will generate demand for a range of aviation and non-aviation activities;
- Improved linkages/relationships with other regional economic drivers such as Winton Wetlands, Winton Raceway, industrial estates, cultural assets, government agencies, etc and
- Local and regional economic development initiatives which will create a range of future opportunities for a wide range of sectors (industry, education health, tourism etc.).

Benalla Airport's existing competitive strength is the resident Gliding Club of Victoria (GCV) operations and, with the airspace and airport capacity, the airport provides for the pursuit of less developed aviation activities. It has relatively easy access from Melbourne via the Hume freeway or V/Line rail services.

Benalla Airport has a very strong perceived brand nationally and internationally, identified as having a reputation even with non-aviation people, as a great place to learn and undertake gliding. This is despite activity at other gliding venues in the region.

Less known is the ballooning, war birds, ultra light and other general aviation and emergency and fire fighting activities at the airport. The air ambulance and fire fighting activities utilise Benalla on an as needs basis.

Executive Summary

Current Situation and Issues

The Benalla Aerodrome became a Council asset in July 1992 under a deed between the then City of Benalla and the Commonwealth of Australia. The deed allows, subject to the consent of the Secretary of the responsible Commonwealth Department, to sell, lease or otherwise dispose of part or the entire airport.

The airport is located on very flat land with minimal fall and suffers from severe flooding during heavy rain falls, as does most of the township of Benalla and surrounding areas.

The airport is well located immediately adjacent to Benalla and between the town and the Hume Freeway. It is within walking distance to the main retail and commercial centres of Benalla. See Figure 1.



Figure 1 Benalla Airport and Environs

Operations

Benalla Airport has a high level of gliding operations, which operate predominately during the month of October through to April with the a major period being in the December - January period. Most gliders operate on a tow launch with limited self launched glider operations (i.e. powered gliders; not winched).

There is a small number of general aviation aircraft based at Benalla including war birds adventure flights, balloon and more recently an aero club and flight training organisation has been established at the airport.

Both the air ambulance and fire fighting activities operate on an as needs basis. There is no regular public transport (RPT) operating from Benalla.

The airport has four (4) runways comprising of two (2) parallel runways. Each parallel runway pair comprises of one (1) runway dedicated to powered aircraft operations while the other runway is dedicated to glider operations.

The taxiways system comprises of one main sealed taxiway connecting the runway with the main apron area, with three (3) unsealed (gravel) taxilanes leading off the main sealed taxiway.

There is a sealed main apron and aviation museum apron. There are numerous small unsealed (grass/gravel) apron areas provided in front of the many privately owned glider/GA hangars. Many of these smaller aprons are subject to flooding which limits the access during high flood periods.

Existing Conditions and Use

The existing airport conditions are shown in Figure 2 and the existing airport land uses in Figure 3.

Executive Summary

EXISTING CONDITIONS



Figure 2 Benalla Airport Existing Conditions

EXISTING LAND USES



Figure 3 Benalla Airport Existing Land Uses

Other Infrastructure

Other infrastructure includes:

- The Glider Club House;
- The Aviation Museum;
- Larger hangars for the storage and maintenance of light aircraft and Gliders;
- A number of historic huts, being the Benalla Accommodation and Recreational Centre (BARC) huts are used by the community for a variety of community and recreational activities; including Ballooning;
- A number of privately leased aircraft hangars;
- Low cost accommodation (the 'Aeropark') comprising huts, demountable cabins, caravans and powered sites;
- An area used for the storage of glider trailers;
- A fuel facility for Avgas, and
- An itinerant passenger shelter and medical patient transfer facility.

Condition of Assets

The glider strips are in need of maintenance and levelling. The sealed runway is in good condition but the single taxiway is in poor condition and is too narrow to comply with regulations for current activity. The BARC huts vary in condition and stages of renovation. Some are in need of plumbing, carpentry and painting. The GCV clubhouse is in good condition but may require some repairs and painting prior to the World Gliding Championships.

Environmental and Social issues

Other than the impact of flooding, there are no known environmental issues. No reports on soil pollution were sighted in the study. Individual studies, as part of the master plan, on Flora and Fauna and Aboriginal Heritage found that there were no issues. There were no noise complaints raised by nearby residents during the public consultations.

Executive Summary

Access and Traffic

Primary access to the site is provided via the intersection of Samaria Road and Ed McKeough Drive. Ed McKeough Drive provides access to the Gliding Clubhouse car park, airfield runway and hangars via a separate entry point, TAFE car park (rear access), Aviation Museum, BARC/Community Huts, temporary Accommodation (Aeropark) and Glider storage. A secondary access point is also provided to the site via the intersection of Samaria Road and a lane beside Coinda. This lane provides rear access to the Aviation Museum, BARC/Community Huts, Temporary Accommodation (Aeropark), and Glider storage. Access to the subject site is also provided from the rear of the TAFE car park. Refer to Figure 4 for the site access points.

The internal road network consists of a combination of sealed and unsealed roads. The sealed road network consists of Ed McKeough Drive, a lane up to the eastern boundary of the temporary accommodation, BARC Avenue and Hangar Lane up to the eastern boundary of the BARC Huts. These roads are highlighted in Figure 4.



Figure 4 Benalla Airport Existing Access

Sustainable Transport

There is a public bus stop located on Samaria Road just north of Perth Street and the lane beside Coinda. This bus route connects Benalla Airport to the Town Centre and railway station and the wider Benalla area. The nearest railway station is Benalla Station located north-west of the site. A bus route provides a 51 minute journey to Benalla Railway Station or alternatively it is a 1.8 kilometre walk (22 minutes) from the airport.

Drainage

The Benalla Township is subject to flooding when a major storm event occurs within the Broken River Catchment. During such a storm event, flood waters spill out of the Broken River and flood the majority of the township including the airport site. Further during a localised storm event Benalla Airport is also subject to flooding due to the flat nature of the site, fall of 1 in 850 from the south-eastern corner of the site to the north-western corner of the site, and inadequacy of the existing internal drainage infrastructure. Refer Figure 5 for an indicative layout of the 1 in 100 Year ARI Broken River Catchment flood area.

Executive Summary



Figure 5 Benalla Airport Flood Area

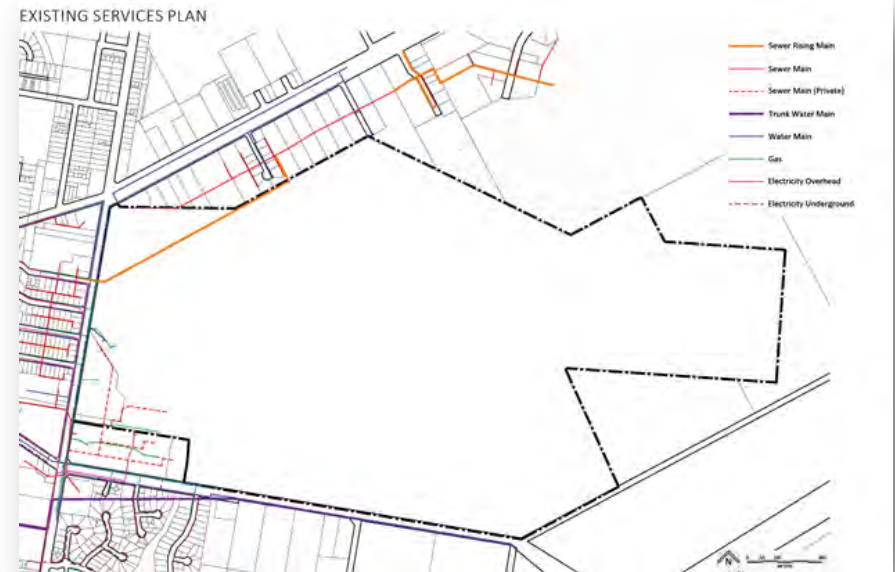


Figure 6 Benalla Airport Existing Services

Services and Utilities

Power, Sewer and water reticulation is available to the western and south western sectors of the airport as shown in Figure 6.

No information is available on the capacity to accept increased demand over the planning period. As such it is recommended that a study be undertaken, as part of the project scoping, prior to any master plan upgrade works.

Airport Financial Status

Table 1 shows that the Council has been operating the airport at a loss over the last three years. This continues a long pattern of losses stretching back many years.

Year	Revenue	Expenditure	Profit/Loss
2012	\$22,206	\$63,232	-\$41,026
2013	\$26,675	\$62,882	-\$36,207
2014	\$27,082*	\$63,589	-\$36,507

Table 1 Benalla Airport Three Year Profit/loss

Executive Summary

Forecasts

Demand

The largest aircraft type currently using Benalla Airport is the Air Ambulance King Air 350, which is a Code 2B aircraft type. The existing infrastructure is currently the limiting factor that prevents larger aircraft using Benalla.

The forecasts show significant growth in light sport aviation with lesser growth in charter aircraft, fire fighting personnel transfers and larger visiting warbird activity at Benalla Airport. Gliding will taper off as shown in Figure 7.

During the public consultation phase it was identified that the long-term plan should adopt the capability of accepting the Fokker F50 as the design aircraft which is a Code 3C aircraft type.

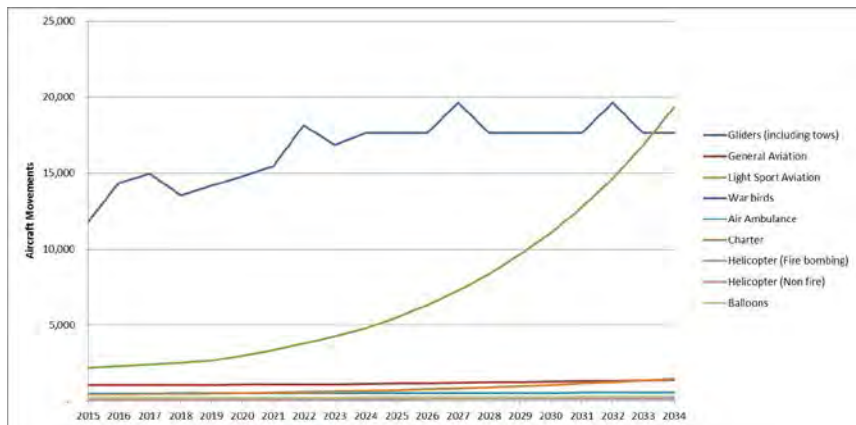


Figure 7 Benalla Airport Forecast Demand

Design Aircraft

By adopting the F50 as the design aircraft type, this will allow the airport to be capable of handling Dash 8, SAAB SF340 and a range of corporate jets. The F50, Dash 8's and SAAB SF340 aircraft are the typical aircraft being chartered during the fire season for the replenishment of fire fighting resources.

The F50 design aircraft would also allow a much larger selection of war birds and visiting aircraft to visit the air museum on selected event days.

Specification	F50	Dash-8-200	SAAB 340
Take-off Runway Length (AUW)	1760	1122m	1220m
Number of Passengers	50	40	37
Max Take-off Weight	19,950 kg	16,465 kg	13,155 kg

Table 2 Design Aircraft Key Specifications

Fokker F50



Executive Summary

SWOT

The strengths, weaknesses, opportunities and threats were identified from the consultant's research, analyses and, in particular, stakeholder consultations.

Strengths (Internal)	Weaknesses (Internal)
Sufficient airport land for aviation and non-aviation development/expansion	Operational airside infrastructure needs maintenance/improvement.
Airport adjacent to town	Some potential expansion areas subject to flooding
Sealed runway, taxiway and apron	Utilities and services are not in place or inadequate.
Stable meteorological conditions - few fogs	Limited revenue activity.
Base for two significant aviation activities- gliding & ballooning	Lack of serviced land for commercial development.
Runway can be extended	Limited amenities for visiting pilots.
On site accommodation	Poor signage on & approaching airport.
Club facilities that welcome visitors	Length of leases
No airspace restrictions	Standard of on-airport accommodation.
	Current management approach and resourcing.
	Lack of a strong Fixed Base Operator at the airport.

Opportunities (External)	Threats (External)
Development of an aviation activity cluster comprising training and recreational flying for gliders, GA, ultra lights, rotor craft & ballooning.	Competition for aviation activity (market share) from other regional airports.
Development of a static and dynamic quality aviation museum enhancing history of the airport and aviation in the region.	Emergence of community noise/safety complaints in regard to its operations.
Establishment of an educative & entertainment theme park in association with the museum and aviation activity cluster.	Inappropriate land use under runway/strip approaches
Facilitation and expansion of commercial historic aircraft joy flights – complementing the Museum and aviation cluster.	Lack of support/ownership of airport by community.
Increased development of hangar sites for sale or lease.	Changed airport regulatory requirements.
Development of a residential airpark.	Decline in market for active participation in aviation sport and recreation flying.
Rationalisation/integration of airport land with adjoining industrial areas.	Lack of co-ordinated approach to value and role of airport in driving and supporting economic and tourism development.
Establishing well positioned tourist/public viewing areas for aviation activity.	
Develop aviation specialist support services connected to the aviation activity cluster.	
Pursue non-aviation revenue producing developments such as expanded retirement villages, accommodation and commerce, business and retail developments	
Regional infrastructure grants from the Victorian Government to support strategic priorities.	

Table 3 SWOT Analysis

Consultations

The master plan process involved significant community and stakeholder consultations including:

- Individual in-person consultations
- Telephone consultations
- Meetings with user groups
- An open access morning at the airport
- A weekend stakeholder workshop
- Further presentations to and feedback from the Council, stakeholders and the community

The Draft Master Plan was presented to Benalla Rural City Council in late 2014, and made formally available for broad community feedback.

Vision Statement

A vibrant recreational aviation and historic airport that honours its heritage and has strong community and cultural connections with locals and visitors.

This means that Benalla Airport will be:

- self-supporting and well maintained
- An attractive, well run, year round tourism destination for aviation, gliding, ballooning, as well as the 'keeper' of its past aviation and immigration history
- A welcoming place for locals as well as regional, national and international visitors whose experience on-site makes them want to come back time and again

Executive Summary

Identified Airport Opportunities

Aviation Opportunities

- Recommended from Analysis
 - Increased aircraft based at Benalla
 - Increased hangar development
 - Increase in military & historic flight experiences
 - Joy flights
 - Open days
 - Local aircraft maintenance
 - Particularly sport aircraft
 - Packaging for aero club flyaways
 - Larger aerial fire fighting base
 - Through extended runway & facilities e.g. Jet A1 fuel
 - Increased powered aircraft training
 - Increased size and number of aircraft exhibits at the Aviation Museum

- Not Recommended
 - Scheduled Airline Operations
 - Parachute operations

Non-Aviation Opportunities

An expansion of non-aviation uses has the potential to significantly enhance the visitor experience to the airport, increasing visitor numbers and on-site activity, while providing important revenue streams to support new infrastructure and services across the site.

The non-aviation opportunities have been categorised as:

- Accommodation
- Industrial
- Conference and function facilities
- Food and beverage
- Arts and culture
- Education and training
- Retirement / Aged Care
- Government and Community
- Retail
- Recreation

The analysis and recommendations are summarised in the Table 4.

Recommended		
Accommodation	High	<ul style="list-style-type: none"> ▪ Accommodation park (mainly for aviation users) including refurbished huts, cabins, caravan sites and powered RV sites ▪ 4-star commercial motel / cabin park with associated amenities ▪ Camping ground to support major events
Arts and Cultural	High	<ul style="list-style-type: none"> ▪ Further development of migrant camp experience, including migrant well ▪ New artist and dance studios ▪ Introduction of film and other media ▪ Community radio ▪ Festivals and events ▪ Outdoor exhibition space ▪ Events plaza
Education	High	<ul style="list-style-type: none"> ▪ Expanded GOTAFE activities ▪ Aviation-related training and education
Food and beverage	Medium/High	<ul style="list-style-type: none"> ▪ Reuse and refurbishment of Glider Club building ▪ Reuse and refurbishment of TAFE catering facilities ▪ New purpose build strategically located café/restaurant facility (s) ▪ Larger restaurant facility to support major conferences
Recreation	Medium	<ul style="list-style-type: none"> ▪ Interpretive walking trails, BBQ and picnic areas ▪ Bike paths ▪ Markets/outdoor exhibitions
Not Recommended / Low Priority		
Retirement /Aged Care	Low	<ul style="list-style-type: none"> ▪ Expansion of Coorinda Residential Living Village (not recommended) ▪ Provision of extended aged care facilities (not recommended)
Government/Community	Low	<ul style="list-style-type: none"> ▪ Emergency services ▪ Community groups ▪ Government agencies (not recommended)
Industrial	Low	<ul style="list-style-type: none"> ▪ General industrial activities (not recommended) but on-site aviation maintenance supported
Conference / functions	Low	<ul style="list-style-type: none"> ▪ Small-scale venue co-located with on-site commercial accommodation facility
Retail	Low	<ul style="list-style-type: none"> ▪ Supermarket, speciality shops etc (not recommended)

Table 4 Non-Aviation Opportunity Analysis

MASTER PLAN



Figure 9 Benalla Airport Master Plan Layout

Executive Summary

Precinct 1

The aviation precincts contain the existing aviation/airfield facilities, including the runways, taxiways aprons, airfield lighting, hangars, maintenance and passenger facilities. See Figures 8 and 10. These precincts must be retained and protected for future airport operations and facilities.

Precinct 2

This precinct is currently occupied by a number of relatively new recreational aircraft hangars. This precinct has direct access to the runway and taxiways and is well located for future expansion and upgrade of aircraft hangar facilities.

This precinct will also benefit in future from a new airport entry and car parking area off Kilfeera Road, as well as controlled access via security fencing and security gates, and close proximity of new aircraft fuelling point. The tarmac access to existing hangars requires upgrading.

Opportunities exist to expand the number of recreational hangars in this precinct, depending on demand and funding. precinct is shown in Figure 11.

Precinct 3

This precinct is currently not used for aviation activities and has been used for cropping for a number of years. It will be set aside for a range of aviation and non-aviation related activities including;

- Major ballooning events – set off point, viewing;
- Other major aviation events – a viewing point, overflow car parking and camping for major events;
- Informal passive recreation and community events.

Temporary access to this precinct for major events and activities will be via the new entry to the Hangar precinct via Kilfeera Road. No direct access to Kilfeera Road is proposed. See Figure 12.



Figure 10 Benalla Airport – Precinct 1 (Hangar/Apron Area)



Figure 11 Benalla Airport - Precinct 2

Executive Summary

Precinct 4

This precinct will primarily used for the staging and launching of gliders and some visitor glider viewing. Opportunities also exist to provide access to this precinct from the adjacent Enterprise Park estate. It is not intended to develop this precinct for industrial or commercial uses but rather ensure that any aviation related businesses within Enterprise Park can benefit from having relatively direct access to the runways.

Such access can also be used to provide additional access and viewing points for major aviation events. See Figure 12.

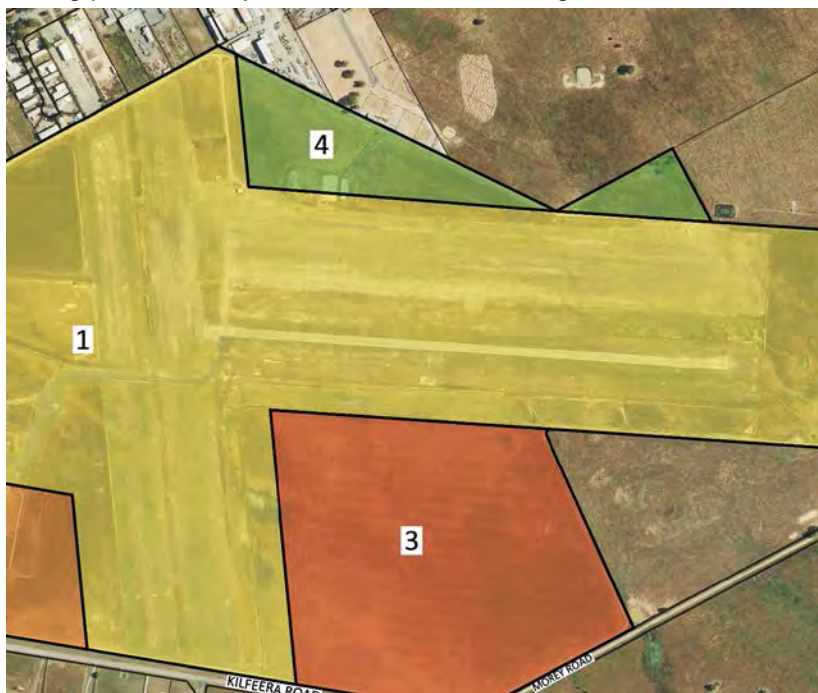


Figure 12 Benalla Airport – Precincts 3 and 4

Precinct 5

This precinct will be upgraded to substantially enhance the visitor experience of the airport and its associated community, recreational, educational and cultural activities. A new tree-lined entry boulevard will be created off Samaria Road, which will deliver visitors to a attractive landscaped space, which celebrates the site's past and current aviation activity, as well as providing a high amenity space for a wide range of community arts and cultural events.

The boulevard road will terminate at a new roundabout and a new shared pedestrian/vehicle zone opposite the heritage hangars and apron. The existing landside delivery fuel point will be relocated to inside the Hangar precinct, and the open space and car parking areas along the east side of the State Gliding Centre facility will be upgraded to rationalise car parking and significantly enhance the landscape/open space value of this area.

The shared pedestrian/vehicle zone will stretch from the existing State Gliding Centre building across to the hangar and apron area, along rear of the BPAC/GoTAFE, the Aviation Museum and Heritage/Community/Arts precinct. It will be trafficable by vehicles as slow speed, and can also be closed off for major events, markets and festivals.

This precinct presents opportunities to expand the range of conference, seminar, training and other events offered by the BPAC/GoTAFE facility. For example, opportunities exist to upgrade and expand the State Gliding Centre building as a complementary meeting space, food and beverage offering to BPAC/GoTAFE. In the longer term, opportunities also exist to deliver on-site tourist accommodation, which would significantly improve the attractiveness of the BPAC as a conference venue. Such accommodation could share kitchen/dining/administration facilities with an upgraded Glider Club facility.

New and upgraded car parking facilities will be provided off the new main entry Boulevard, servicing the BPAC/Go TAFE facility, the State Gliding Centre facility and potentially new accommodation services. Refer to Figure 13.

Executive Summary

Precinct 5a

The future of both the airport and BPAC/GoTAFE can be mutually enhanced if the two areas are master planned together.

The BPAC/GoTAFE offering can be considerably enhanced by the future development of both the Airport Visitor Precinct and Heritage/Community/Cultural precinct. Each of these precincts has the potential to enrich the student/visitor experience, by providing additional accommodation, food/dining, training and recreational opportunities.

This Masterplan envisages that the BPAC/GoTAFE precinct will continue to be used as a performing arts, conferencing and education facility, but that its future development will be undertaken in such a way as to compliment the future development of the airport site. See Figure 13.

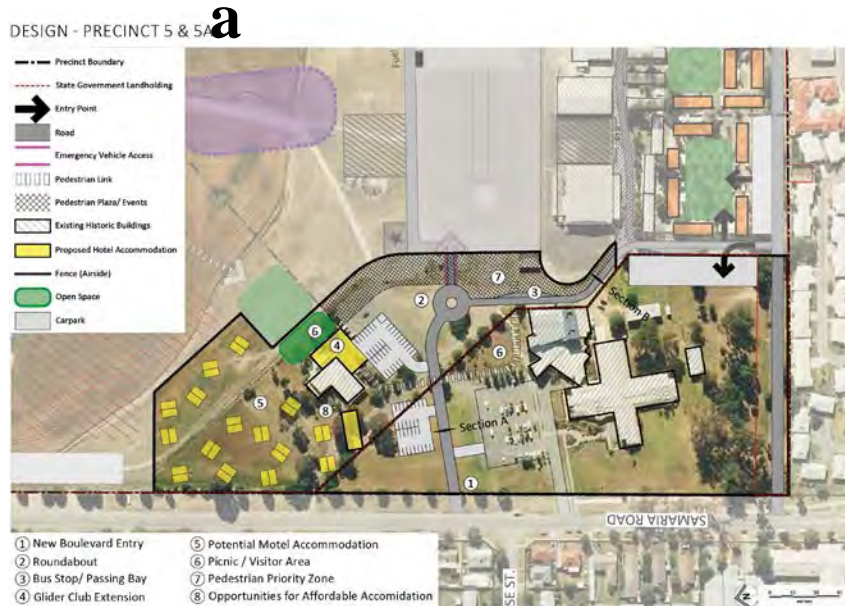


Figure 13 Benalla Airport – Precincts 5 & 5a

Precinct 6

This precinct is currently used for a combination of visitor accommodation, heritage and community uses. The existing aircraft museum can be accessed from this precinct, as can the existing BARC huts and aviation hangars. Some of the existing BARC huts are used for short term affordable accommodation for airport visitors and users, whilst others are used by community and arts groups.

Whilst the existing ‘Aeropark’ provides important affordable accommodation for airport visitors, the amenity of these facilities warrants improvement. This precinct also has considerable potential to be enhanced for heritage, community and arts purposes. See Figure 14.



Figure 14 Benalla Airport – Precincts 6

Executive Summary**Area 6A – Heritage/Community/Arts**

It is proposed that land and buildings within Precinct Area A be upgraded to substantially enhance the visitor experience of the BARC huts and aviation hangars and the heritage, community, recreational, educational and cultural activities associated with them. It will have a focus on the site's heritage (both as an airfield and also as a migrant camp), and on arts, community and cultural activities.

The assemblage of large hangars and BARC huts along the east-west lane present opportunities to create a unique visitor experience, blending together the aviation and migrant heritage, arts and community activities. The opportunity also exists to construct a new Migrant Exhibition Centre within this precinct.

Area 6B – Open Space Amenities

It is proposed that new open space and visitor amenity facilities be created in Precinct Area B (Open Space and Amenities). The new amenities would comprise new toilet and shower facilities. The open space area would provide a high quality outdoor space for visitors of both the accommodation and Heritage/Community Arts precinct to use. The open space would include a large grassed and treed area, designed so as to be suitable for conducting smaller-scale outdoor events and festivals (potentially for use in conjunction with use of the pedestrian plaza space). It would also incorporate a barbeque/outdoor kitchen facility and picnic shelters for use by visitors of the accommodation precinct and other user groups.

Area 6C – Accommodation

Access to low-cost accommodation for glider users and other aviation groups is an important offering that must be maintained at the airport. It is proposed that land within Precinct Area C be redeveloped over time, to provide affordable temporary accommodation for airport visitors and others. The accommodation offer will include a mix of existing and new huts, powered sites for permanent and temporary caravans, as well as sites for campervans and camping.

It is proposed to stage the creation of this precinct over time:

- Initial preparation of the area, including provision of electricity, water supply, landscaping, etc.;
- Relocate caravans and cabins into this precinct over time;

The accommodation currently provided by the BARC huts in Precinct Area A can be replaced by either relocating existing BARC huts into precinct Area C, or constructing new BARC huts in precinct Area C. Extra accommodation would be provided on the site by constructing additional cabins (in a style sympathetic to the BARC hut architecture) within this precinct over the longer term.

This approach would be a highly efficient use of the existing building infrastructure on the site, as well as allowing some of the existing planting and landscaping on the site to be retained. It provides flexibility to either retain existing BARC hut buildings where they are, or relocate them, depending on the nature and timing of constructing other buildings.

Precinct 7

This precinct will be used for passive open space, including picnic spaces, a new children playground, walking and cycling trails. It will also include aircraft viewing decks on its north and south edges.

Then northern viewing platform would be accessible from Samaria Road and also via a new walking trail from the Visitor precinct.

A large portion of this precinct will be set aside to cater for the retardation of stormwater in large storm events. The retarding basin proposed for this location will be profiled so as to make it useable for passive/informal recreation activities – the gradients of the basin edges and the overall shape of the basin will be designed so as to blend into the open landscape across the remainder of the airfield.

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The basin will be landscaped with plan species which assist in treating and disposing of stormwater. However it is important that the basin be designed so as to not hold permanent water, and for temporary stormwater to be released into the downstream drainage system as quickly as possible, so as to minimise the likelihood of water birds occupying the precinct.

The proposed walking trial will be landscaped with water sensitive urban design features (such as a 'dry creeked' features which provide visual interest without becoming an attractor of waterbirds. Limited trees and shrubs trees will be placed on the north and south side of the precinct (to frame the views across to the airfield) but the main area under the flight path will be kept free of trees. See Figure 15.



Figure 15 Benalla Airport - Precinct 7

Airport Staged Development

Stage 1 is 0-2 years to primarily meet the facility upgrades for the World Gliding championships. Stages 2 and 3 are over 3–10 years and 11– 20 years, commensurate with the possible growth in demand.

Stage 1

The triggers for Stage 1 investments are the imminent World Gliding Championships, continued issues with flooding of the site and non compliant or deteriorating airside infrastructure. However Stage 1 includes work items for the other precincts in line with starting to create the vision for Benalla Airport.

The Stage 1 developments are shown in Table 5. Not all these developments are the prerogative of the airport or Council to fund with some of the infrastructure works to be funded by tenants and clubs. However, the drainage and airfield infrastructure are at a level that the airport and its tenants will likely require financial grants support.

Stage/Precinct	Action	0-2 years	3-10 years	11-20 years
Stage 1				
1	Extend glider strips to East and West			
3	Temporary runway in south east paddock			
1	Upgrade existing apron			
1	Prepare and mark balloon launching area			
1	Prepare new glider gridding areas			
1	Install New Fuel Facility to the East			
1	Water reticulation to glider gridding			
1	Resurface GVC hangar floor			
1	Clubman hangar - complete concrete floor			
All	New Fencing			
All	New signage			
1	Toilet facilities in north east corner for ops off RWY 26R			
2	Upgrade existing hangar access tarmac			
5 & 5a	Create landscaped pedestrian plaza adjacent to airport core (initial upgrades)			
5 & 5a	Airport improved drainage - Airside Channels			
8	Retarding basin			
8	Lookout/viewing platform			
8	Car park & access road			
8	WSUD landscaping works			
8	Walking/cycling trails			
8	Landscaping (stage 1)			
8	Construct car park (stage1) - Precinct 8			

Table 5 Master Plan Stage 1 Development Costs

Executive Summary

Stage 2 and 3

The proposed developments for Stage 2 and 3 are shown in Table 6. Similarly, not all these developments are the prerogative of the airport or Council to fund; again with some of the developments to be funded by tenants and clubs. However, these longer term airfield infrastructure and landside works are at a level that the airport and its tenants will likely require financial grant support.

Stage/Precinct	Action	0-2 years	3-10 years	11-20 years
Stage 2				
1	Parallel sealed taxiway			
1	Upgrade existing sealed taxiway			
2	New entry			
5 & 5a	Carparks			
6	Construct new entry boulevard (Aviation land, BARC Avenue)			
7	Aeropark infrastructure - power, landscaping, toilet block			
1	Extend runway to the east			
1	Widen existing sealed runway width (18m to 30m)			
1	Extend taxiway to the east to extended runway threshold			
1	Build helicopter pad			
1	Extend Main Apron East - stage 1			
6	Renovate BARC Huts (stage 1)			
6	Construct new BARC Huts (Stage 1)			
8	Landscaping (stage 2)			
2	New hangars (stage 1) Eastern Precinct 2			
7	Aeropark infrastructure - New cabins, BBQ & outdoor dining facilities			
Stage 3				
1	Extend runway to the west			
1	Extend taxiway to the west to extended runway threshold			
1	Extend Main Apron East - stage 2			
1	Construct charter passenger terminal			
1	Bellman Hangar site servicing - Aviation Museum			
2	New hangars (stage 2) - Eastern Precinct 2			
5 & 5a	Extend Glider club – new restaurant/meeting facilities			
5 & 5a	Create new visitor car parks (stage 2) - BARC Hut Area			
5 & 5a	Construct new TAFE Car park			
5 & 5a	New motel			
6	Heritage walk' pedestrian plaza			
8	Construct car park (stage 2) - Precinct 8			
6	Renovate BARC Huts (stage 2)			
6	Construct new BARC Huts (Stage 2)			
6	Landscaping (stage 2)			
7	Aeropark infrastructure - Additional new cabins			

Table 6 Master Plan Stage 2 & 3 Development Costs

Gliding World Championships

The Council does not have the budget to fund all of the works required for the championships. A proportion of the upgrade costs, in the form of a grant, are to be sought from the Victorian Government Regional Aviation fund (RAF) and “Putting Locals First”. The proposed works will be subject to .Grant funding.

Table 7 shows the BRCC list of works and indicative master plan cost estimates in Stage 1 that were included in the Grant application.

Precinct	Action	Cost	Funding Source
1	Exten glider strips to East and West	528,000	RAF
3	Emergency runway in south east paddock	13,500	RAF
1	Upgrade existing apron	210,000	RAF
1	Prepare and mark balloon launching area	3,000	Military Air Training Heritage Pty Ltd
1	Prepare new glider gridding areas	na	RAF
1	Install New Fuel Facility to the East	200,000	RAF
1	Water reticulation to glider gridding	18,750	RAF
	New Fencing	125,000	Council
	New signage	15,000	Council
1	Amenities in north east corner for ops off RWY 26R	45,000	Council
2	Upgrade existing hangar access tarmac	75,000	Council
5 & 5a	Airport Improved drainage - Airside Channels	110,000	RAF
8	Retarding basin	200,000	RAF
		\$1,543,250	

Table 7 World Gliding Championships RAF Funding Project Application

Other Master Plan Considerations

Residential Airpark Developments

Other aviation related opportunities that may, subject to demand, be developed on or immediately adjacent to the airport with good airside access is the potential to develop an airpark precinct. Airparks which originated in America are now being developed in Australia. Airparks provide aircraft owners with the opportunity to build a residence and an aircraft accommodation hangar on the same parcel of land either within a building or in separate buildings.

Traditional landside access (vehicle and pedestrian) is provided on one side and airside access from the hangar to a taxiway is provided on the other. Airparks are now becoming established in Australia with Temora and Narromine which are both in NSW, surviving as examples. Tocumwal has commenced their subdivision for their airpark development.

While Benalla Airport Master Plan did not identify any on airport land for the development of an airpark, a parcel of land immediately adjacent to the south east boundary was identified by a private owner for the potential development of an airpark.

A triangular piece of land abutting the south east corner of the airport has been purchased by a major Benalla Airport aviation operator. The intention is to develop a residential-aviation subdivision on part of this land. A potential land swap has been suggested for the owner to gain increased access to road frontage to expand the development. The master plan layout in Figure 8 shows the location of this land. The potential use is compatible with the Master Plan but the demand for this and its overall financial feasibility is between the proponent and Council.

RV Dump Point

Council is pursuing the installation of a Recreational Vehicle Dump Point at the rear of the pilot shelter off the main apron.

In the short term, the location of the facility may provide increased exposure to the airport's aviation, heritage, cultural and arts activities from RV itinerant visitors.

However in the mid to longer term, this facility will need to be moved once the full streetscape development commences to create the pedestrian and viewing areas along this landside section of the apron.

Implementation

The implementation of the master plan will require achieving increased revenue, capital grants for priority projects and the effective management of the development of all the proposed airport precincts. This Implementation Plan provides the way forward to pursue the effective organisation of resources and priorities to develop the airport in accordance with the master plan recommendations.

Grants

The financial support from the Victorian Government for Infrastructure and equipment grants will be needed to achieve many of the proposed master plan developments. The Stage 1 Grant application was shown in Table 7. Further Grant applications will be needed for Stages 2 and 3.

Airport Management

Implementation of the master plan and facilitating and managing the development of Benalla Airport will require an appropriate financially sustainable management structure to be considered by Council. The master plan canvassed a range of options that Council might consider that balances facilitation, control and direction with available sustainable funding. The recommended options for Council consideration were:

- Integrated Council Departmental Option augmented by contracting or concessioning out to the private sector various selected functions; including contract management;
- Council Business Unit augmented by contracting an experienced aviation individual to lead and develop the airport.

Airport Precinct Development

The Benalla Airport Master Plan has defined a number of development precincts to be addressed over the 20 year period. The master plan has not been prescriptive in regard to the detailed timing and location of developments within each of the landside precincts. This is to provide flexibility to meet changed circumstances (a master plan is a living document) and provide for stakeholder inputs to the priority and funding and management of each precincts development.

A suggested airport precinct development organisational structure follows for Council and key airport stakeholder consideration. See Figure 16.

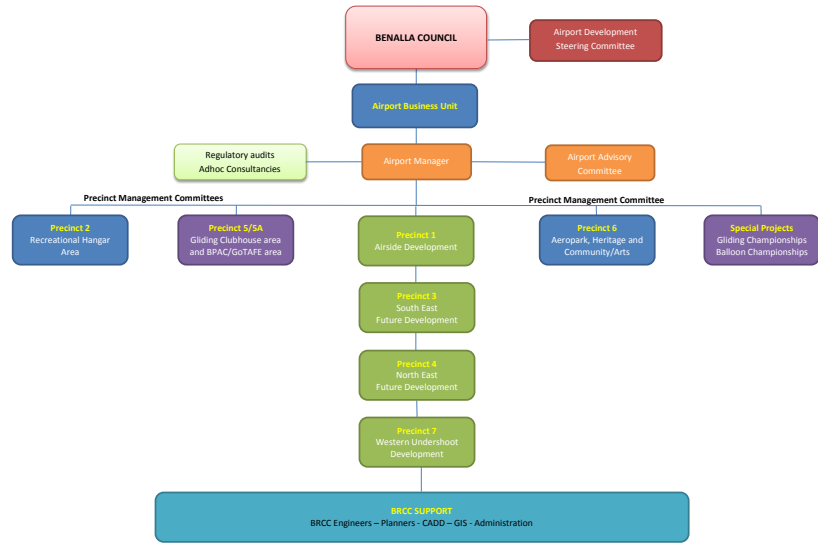


Figure 16 Suggested Airport Precinct Development Organisational Structure

Executive Summary

An Airport Advisory Committee and BRCC Departments will provide input and support as required to the airport manager. It is suggested that the Advisory Committee revised membership be a total of nine (9) comprising:

- The Airport Manager
- 2 x BRCC representatives, possibly
 - Infrastructure/Engineering, and
 - Economic and Tourism development
- 3 x nominated representatives of the Management Committees (see below)
- 3 x other elected members

Airport Revenue and Costs

Airport Revenue

Airport Aircraft Operational Charges

Benalla Airport currently has no landing charges for general aviation aircraft. This is consistent with many other regional/country airports who wish to attract aviation activity to their respective cities/towns. This is based on the fact that when pilots and passengers visit a city they provide some multiplying factor to the economy (i.e. buy fuel, spend money in the town or stay overnight etc.).

Large regional cities such as Bendigo, Latrobe Valley, removed landing fees many years ago. Airports in close proximity to Benalla such as Wangaratta, Shepparton, Yarrawonga, Echuca and

Corowa have no landing fees; with the exception of Mangalore that has landing charges for all operations. It has also been demonstrated that some smaller airports that do impose a landing charge spend almost the same amount of money in administration costs trying to recover the landing fees.

A small charge for turbine (Jet A1) powered aircraft applies at Benalla airport. It is recommended that this be removed.

It is therefore recommended that the existing policy of no landing charges remain in place with the view to attracting aviation activity to Benalla.

Airport Property Charges

Tenure is always an issue with any property development/leases. A significant amount of capital is required to develop facilities on airports and financial lenders seek to have long tenure periods with options. Typical Council leases at airports have been in 5 years blocks which have proved over the years to a major constraint to development at many regional/country airports. Some councils have elected to move to a 25 year lease term with options which allows greater flexibility for the both the lessor and finance companies. This also provides better security and a longer term income for councils.

Leases at Benalla should be reviewed with a plan to adopt a lease strategy that meets Council's requirements for both developed and undeveloped sites. The strategy should seek a balance between encouraging investment, the long term sustainability of the tenant and reasonable returns to the airport entity. A recommended lease period of 15 years with 5 plus 5 year options will provide a good balance for both Council and airport tenants.

Executive Summary

Airport Cost Considerations

Airport costs comprise of management, maintenance and capital projects. In addition to the former costs there are also costs associated with events that may have and impact on either short or long term infrastructure requirements for airport operations.

Appendix A contains a list of indicative costs associated with each stage of development as provided in this Airport Master Plan.

Master Plan Cycle

Airport master plans typically have a 20 year planning horizon with a review period every 5 years. However, for most regional/country airports there is little change within a 5 year period.

Whilst the review period is flexible, it is recommended that the review period be based on the council election cycle (four year term) and that a review be undertaken every 8 years.

Master Plan Adoption

Adoption of this master plan does not represent a commitment by Benalla Rural City Council 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.

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Appendix

Appendix A Indicative Master Plan Costs

Appendix B Acronyms and Abbreviations

1.1 Introduction

Benalla Airport is a key asset of the Benalla Rural City Council that provides vital economic and social services to the area. The Council in conjunction with the Gliding Club of Victoria and Gliding Federation of Australia has won the world gliding championship for 2017; which includes the pre world championship in 2016.

The Council wishes to be in position to manage and develop its airport infrastructure in a manner that is commensurate with the expected growth in aviation activity over the next 20 years. The Council also recognises that some of that activity will be associated with major aviation events such as world or national titles. Ambidji was commissioned by Benalla Rural City Council to prepare a detailed Airport Master Plan and long-term Land Use Plan for Benalla Airport to achieve this strategic planning.

The Benalla Airport Master Plan process was funded by the Victorian Government through the Regional Development Victoria Putting Locals First Program.

1.2 Purpose of Master Plan

Airport master planning is undertaken to enable best-management practices and sound land use development in addressing the diverse aviation and community interests. An airport master plan is the primary strategic tool available to airport owners/operators and communicates the operator's intentions with respect to development of the airport. Its purpose is to set out a long-term framework for the development of all facilities within the airport that protects future development against the effect of current decisions. Local government, industry and the community are informed of these intentions through the master plan, enabling compliant and compatible land-use planning and maximisation of any synergies across the local economy.

Plans are not only developed to strategically guide the development of aeronautical related aspects of the airport but also used to identify non-aeronautical opportunities for development. Airports today are a business in their own right and not just a merely piece of infrastructure. This requires the appropriate consideration and integration of aeronautical, aviation-support, aviation-related and compatible non-aviation land uses and activities is the key to guiding the successful development of an airport. This master plan should be reviewed and/or upgraded every 8 years or on the basis of potential investment or projects outside of the master plan recommendations.

1.3 Strategic Approach

The strategic considerations for the Benalla Airport Master Plan can be summarised as follows:

- Establish strategic direction for the efficient and economic development of the airport over the planning horizon;
- Provide for the development of the proposed uses of the airport site;
- Input from the stakeholders and the broader community on the intended uses of the airport site; and
- Reduce potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport.

1.4 Stakeholder Consultations

The methodology has been based around significant individual and workshop consultations with industry and community stakeholders to understand the future aviation and non-aviation needs and obtain input on the emerging planning outcomes for Benalla Airport.

2. Regional Context

2.1 Characteristics of the Region

The region has been developed on the back of agriculture, some agricultural processing and manufacturing. It has a strong service industry supporting tourism, business and the community, as well as some unique tourism, sporting and cultural attractions. However, many of the regions traditional strengths have become weaknesses in a globalised world.

Most of Benalla's local businesses are small but Benalla has some important larger businesses in manufacturing processing and defence industries. Some of Benalla's most important assets are its designated industrial areas. A new industrial and commercial estate, Enterprise Park, abuts the northern boundary of the airport.

2.2 Economic Drivers

The Council has a population of 13,720 persons (Estimated Resident Population, June 2013), which is projected to increase to 14,830 persons by 2031 (a net increase of 1,110 persons over the period).

The municipality has an older age structure compared to regional Victoria, and this is apparent in the higher proportions of residents in the categories 'older workers and pre-retirees (50 to 59 years)', 'empty nesters and retirees (60-69 years)', 'seniors (70 to 84 years) and elderly aged (85 years and over)'. By 2031, 32% of the Council's population will be aged 65 years and above, a sharp increase from the current proportion of 21%.

In 2013, the value of the municipality's economy (Gross Regional Product) was estimated at \$500 million, supported by 1,500 local businesses and an employed workforce of 6,390 residents.

The Council's unemployment level of 5.6% (December 2013), is similar to the State average.

Benalla's economy is underpinned by traditional sectors such as manufacturing and agriculture, forestry and fishing (24% of all jobs combined), while Benalla's regional service role is highlighted through the proportion of jobs related to healthcare and social assistance (14%) and retail trade (12%), education and training (8%) and public administration and safety (7%).

The Benalla Township offers a range of lifestyle and cultural opportunities including shopping, dining, as well as specific attractions such as the Benalla Regional Art Gallery and Cafe, Benalla Botanical Gardens, Benalla Museum, Lake Benalla Walking Track and the Benalla Aquatic Centre. In the broader region, Winton Wetlands and Winton Raceway also attract visitor to the region, many of them spending time in Benalla.

When considering future opportunities for the Benalla Airport, key socio-economic considerations should include:

- Growth in aviation activities
- Growth in existing on-site non-aviation activities (performing arts, museums, education, recreation)
- Benalla's future population growth and demographic change, along with increased visitation to region which will generate demand for a range of aviation and non-aviation activities
- Improved linkages / relationships with other regional economic drivers such as Winton Wetlands, Winton Raceway, industrial estates, cultural assets, government agencies etc.
- Local and regional economic development initiatives which will create a range of future opportunities for a wide range of sectors (industry, education health, tourism etc.)



Regional Context

2.3 Land Use Planning

2.3.1 Land Use Zoning

The Benalla Airport is located within a Public Use Zone (Schedule 4 - Transport) under the Benalla Planning Scheme. The purpose of this zone is as follows:

- To recognise public land use for public utility and community services and facilities.
- To provide for associated uses that are consistent with the intent of the public land reservation or purpose.

No planning permits are required for use and development of land in this zone if it is for a transport-related purposes and if the use is carried out by or on behalf of the public land manager.

Planning approvals are required for all other use and development on land within this zone.

The adjoining BPACC/GoTAFE facilities are located within a Public Use Zone (Schedule 2 - Education) under the Benalla Planning Scheme.

The land adjoining the airport is in a variety of zones, as set out in Table 2.1 and shown in Figure 2.1.

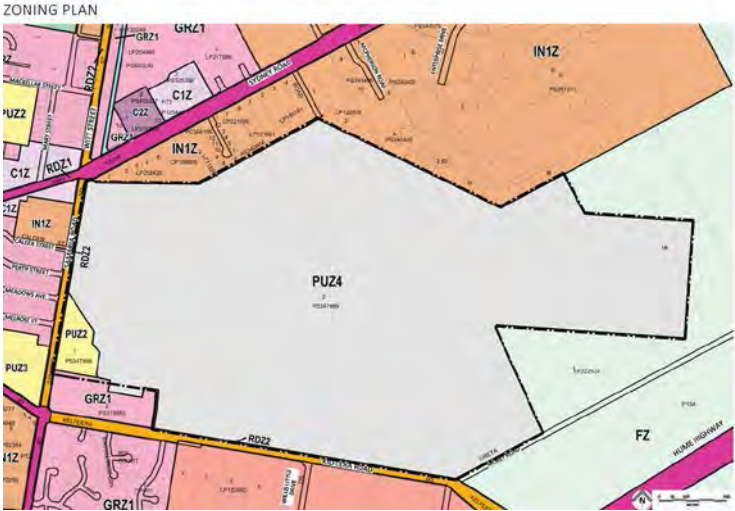


Figure 2.1 Benalla Airport Surrounding Land Zoning

Location	Land use	Zoning
South of Aircraft Lane	Retirement Village	General Residential
South of Kilfeera Road	Residential/rural	General Residential/Low Density Residential
Weest & South-west of airfield	Rural	Farming Zone
East of Samaria road	Hospital Residential Industrial	Public Use Zone 3 (Hospital) General Residential Industrial 1
North of airport	Industrial	Industrial 1

Table 2.1 Adjacent Land Zones

Regional Context

2.3.2 Land Subject to Inundation Overlay

The north-west corner of the airport is affected by flooding and is included with the Land Subject to Inundation Overlay as shown in Figure 2.2.

The purpose of this overlay includes:

- To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.
- To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.
- To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria),
- To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

Planning permits are required for various buildings and works under this overlay provision.

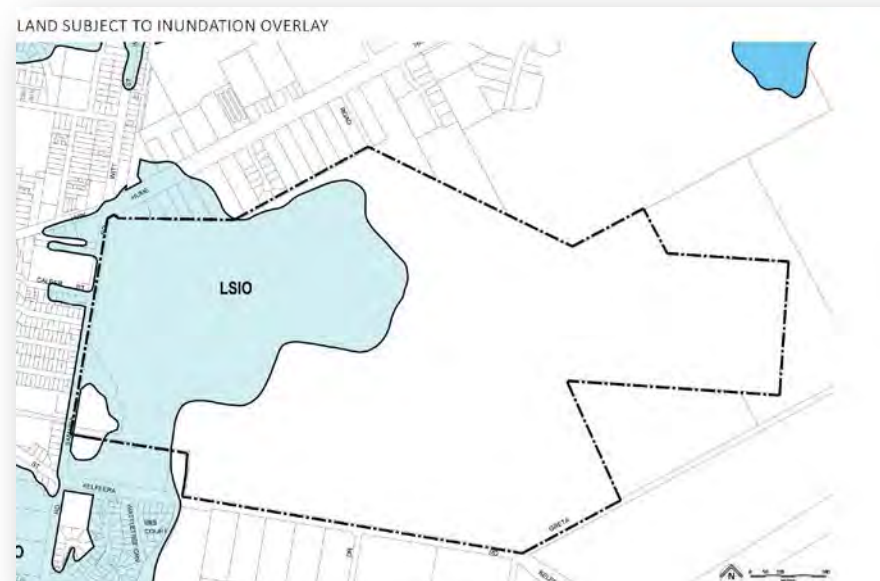


Figure 2.2 Benalla Airport – Inundation Overlay

Regional Context

2.3.3 Design and Development Overlay (DDO1 – Aerodrome Environs Area Benalla)

The Design and Development Overlay (DDO-1 – Aerodrome Environs Area Benalla) is shown in Figure 2.3.

A Design and Development Overlay (DDO-1 – Aerodrome Environs Area Benalla) is in place for the airport and its environs. The objectives of DDO-1 are as follows:

- Protect Benalla aerodrome, an important asset from development that may affect the safe flying environment of the aerodrome and approaches.
- Protect the approaches to the Benalla Aerodrome by regulating the construction and height of buildings or works or natural vegetation.
- Specify the height limitations which apply to the area around the Benalla Aerodrome and along the flight path approaches to the runways.

Before deciding on an application to construct a building or to construct or carry out works, the responsible authority must consider:

- The need to protect the approaches to the Benalla Aerodrome by regulating the construction and height of buildings or works or natural vegetation within the flight path approaches. The requirements to ensure the safety and efficient operation of the aerodrome.

Planning permits are required for various buildings and works under this overlay provision.

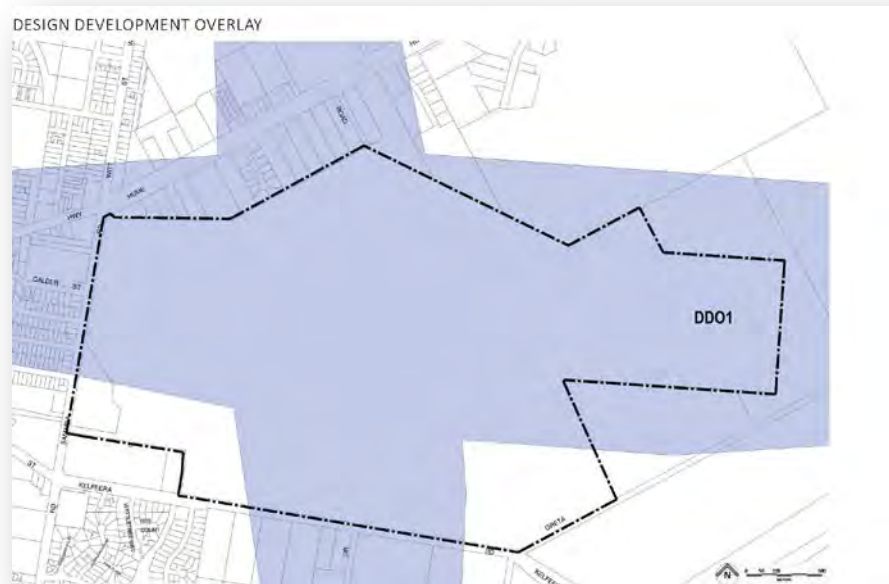


Figure 2.3 Benalla Airport – Design and Development Overlay

2.4 Regional Airport Competition

Benalla Airport's existing competitive strength is the resident Gliding Club of Victoria (GCV) operations and, with the airspace and airport capacity, the airport provides for the pursuit of less developed aviation activities. It has relatively easy access from Melbourne via the Hume freeway or V/Line rail services.

Benalla Airport has a very strong perceived brand nationally and internationally, identified as having a reputation even with non-aviation people, as a great place to learn and undertake gliding. This is despite competing activities at other gliding venues in the region.

Less known is the ballooning, war birds, ultra light and other general aviation and emergency and fire fighting activities at the airport. The air ambulance and fire fighting activities utilise Benalla on an as needs basis.

Ultra light, rotorcraft and powered kite operations occur at other airports in the region, but stakeholder consultation suggest that Benalla has this scope for developing this sport and recreational activity as a significant cluster around gliding, historic flying and the development of the Benalla Aviation Museum.

Other airports in region that have permanent glider operations include:

- Corowa
- Mount Beauty
- Tocumwal
- Wangaratta

Corowa has 2 runways, one of which is sealed and has a length of 1630 m. It attracts European and Japanese visitors during the summer period by offering high end glider package deals. It provides both Avgas and Jet A1 turbine fuel.

Mount Beauty is a single runway airport which has limitations in certain crosswind conditions. The runway is short and it has rising terrain to the east. The airport is used by members from GCV under certain weather conditions and to experience mountain flying. No public fuel is available.

Tocumwal is a large airport comprising of two sealed runways (1273m and 1200m) located on the Murray River in New South Wales. The gliding centre has package deals including low budget accommodation for full time gliding training and flying. It provides Avgas fuel only.

Wangaratta has two runways with the main runway being sealed and a length of 1640 m and a short cross runway of 530 m. It provides both Avgas and Jet A1 turbine fuel on a 24 hr. swipe card access.

Whilst Mangalore is a competitor for ultra light, rotorcraft and homebuilt activity, stakeholder consultations suggest that this activity may not be fully supported or encouraged by Mangalore Airport management.

Both Mangalore and Wangaratta are used by the Victorian Police Air Wing which includes the air ambulance helicopter for Jet A1 fuelling staging points.

Another significant factor is that Benalla Airport provides an optimum compatible environment for most boutique aviation flying because the airport is not served by Regular Public Transport (RPT) operations which requires high security requirements e.g. Albury, or large numbers of powered recreational and training movements.

Benalla Airport is too close to Melbourne to allow for viable airline services. There is insufficient demand for airline services from other regional or capital cities and there are existing RPT services at Albury within the region

2.5 The Aviation Market

The health of the subsectors in the aviation market that currently exist or may be developed at Benalla Airport is quite varied. The Australian Government's Bureau of Infrastructure, Transport and Regional Economics (BITRE) reviewed the general aviation subsector of the aviation market in 2013.

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, balloons, hang gliders and autogyros.

BITRE advised that Charter and Training flying continued to make up the two largest activity categories in the General Aviation sector, representing 27.5 per cent and 23.6 per cent respectively of all General Aviation flying hours during 2010.

A substantial drop in Training flying (11.2 per cent) and increase in Charter flying (8.0 per cent) resulted in Charter hours returning to a position considerably higher than Training hours. Private and Business flying together represented 20.7 per cent of total General Aviation activity. In 2010, 1 214 amateur built aircraft accounted for 9.7 per cent of all VH registered aircraft in the survey. This represents a 3.7 per cent increase over the number of VH registered, amateur built aircraft in 2009 (1 171 aircraft).

The majority of Regional Airline flying hours are conducted by turboprop aircraft (91.2 per cent), with jet aircraft accounting for 5.3 per cent, and piston engine aircraft for 3.5 per cent.

The number of helicopters increased by 5.7 per cent to 1 800 (14.3 per cent of the total), with the number of single engine helicopters increasing by 5.2 per cent to 1 610 and the number of multi-engine helicopters increasing by 9.8 per cent to 190. The hours flown by general aviation aircraft from 200 to 2010 are shown in Table 2.2 and Figure 2.4.

2.6 Surface Transport

Benalla is served well by surface transport options. The Hume Freeway provides private vehicle travel times of some 2 – 2.5 hours to/from Melbourne and Melbourne Airport. It also provides travel times of some 1.5 hours to/from Albury Airport.

Public transport includes V-Line regional train services to Melbourne and Albury, InterCity twice daily train connections to Melbourne and Sydney as well as coach lines operating to/from Melbourne and Sydney.

2.7 Council Controlling and Relevant Documents

Key strategic and controlling documents are as follows:

- Planning (Height) Overlay
- Airport Obstacle Limitation Surfaces (OLS)
- Commonwealth Airport Deed of Transfer

Regional Context

General Aviation										
Year	Private	Business	Training	Test & Ferry	Aerial Work	Agriculture	Charter	Sub-total	Regional Airline	Total
2000	248.5	136.3	413.6	27.9	296.9	115.0	476.7	1,714.8	335.7	2,050.6
2001	261.7	144.9	406.2	23.2	294.2	106.7	466.0	1,702.9	298.0	2,000.9
2002	270.2	142.2	410.8	20.9	327.1	70.8	445.7	1,687.7	250.1	1,937.8
2003	239.7	143.4	420.3	21.2	322.5	69.7	429.2	1,645.9	234.7	1,880.6
2004	247.2	143.0	352.2*	22.3	312.4	86.5	481.4	1,645.0	251.4	1,896.3
2005	239.2	149.1	415.8	22.3	318.8	95.0	482.6	1,722.8	254.7	1,977.5
2006	227.2	144.1	424.0	21.7	337.9	61.7	478.4	1,695.0	241.5	1,936.4
2007	222.7	153.4	455.4	25.7	368.0	62.1	544.5	1,831.8	241.9	2,073.8
2008	228.4	151.7	485.6	21.8	373.4	78.2	518.6	1,857.7	214.7	2,072.4
2009	239.5	148.5	497.1	16.4	363.1	73.3	469.7	1,807.5	204.1	2,011.5
2010	241.9	140.0	436.3	18.2	400.3	103.8	507.3	1,847.7	228.1	2,075.9

Table 2.2 General Aviation Hours Flown - Year 2000 to Year 2010

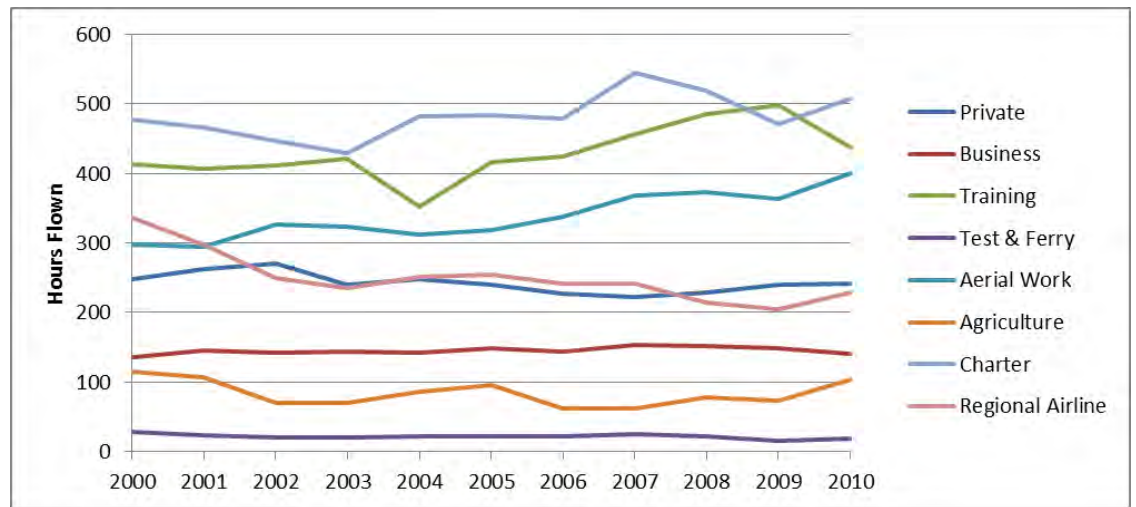


Figure 2.4 General Aviation Hours Flown - Year 2000 to Year 2010

3. Current Situation and Issues

3.1 Ownership and Management

The Benalla Aerodrome became a Council asset in July 1992 under a deed between the then City of Benalla and the Commonwealth of Australia. The deed allows, subject to the consent of the Secretary of the responsible Commonwealth Department, to sell, lease or otherwise dispose of part or the entire airport.

The Airport Manager is responsible for operating the airport in accordance with the Benalla Aerodrome Manual dated May 2009. The Airport Manager is currently the Manager Facilities and this position is supported by a number of aerodrome reporting officers and the Benalla Airport Advisory Committee.

3.2 Location and Description

Benalla is located in Victoria some 175 Km to the northeast of Melbourne, as shown in Figure 3.1.

The airport is well located immediately adjacent to Benalla city centre and between the city and the Hume Freeway. The airport is located approximately 2 kilometres east of the Benalla Town Centre. It is accessed via Samaria Road which connects at the junction of Bridge Street East and Sydney Road.

Figure 3.2 shows the relationship of the aerodrome to Benalla Town Centre. It is within walking distance to the main retail and commercial centres of Benalla.

The airport is located on very flat land with minimal fall and suffers from severe flooding during heavy rain falls as does most of the township of Benalla and surrounding areas. The airport an elevation of 569 feet (173 metres) Above Mean Sea Level (AMSL). Figure 3.3 shows the existing airport site.



Figure 3.1 The Benalla Region

Current Situation and Issues

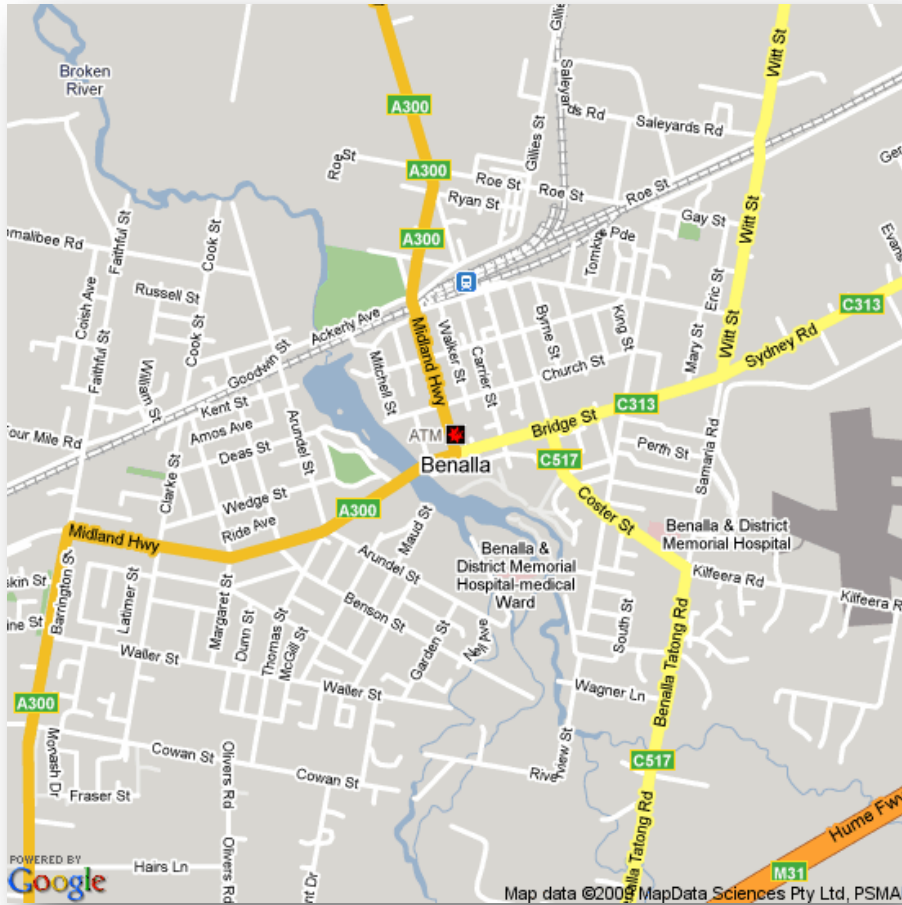


Figure 3.2 Benalla Airport In Relation to the City Centre



Figure 3.3 Benalla Airport and its Immediate Environs

3.3 Relevant Aviation Regulations and Policies

3.3.1 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 the Civil Aviation Safety Authority (CASA) and Airservices Australia, through the Commonwealth Department of Infrastructure and Regional Development. The Commonwealth also maintains the Australia Transport Safety Bureau's investigation of aircraft accidents and incidents.

3.3.2 Civil Aviation Safety Authority

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 curtail aircraft operations.

CASA also has the legislative power to register and certify aerodromes. Benalla Airport is a registered airport for non RPT operation, and for aircraft with a maximum take off weight not exceeding 5,700 kgs.

3.3.3 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.

3.3.4 Commonwealth Department of Infrastructure and Regional Development

The Department advises the Government on the policy and regulatory framework for Australian airports and the aviation industry, manages the administration of the Government's interests in privatised airports under the Airports Act 1996, and provides policy advice to the Minister on the efficient management of Australian airspace and on aircraft noise and emissions. Benalla Airport is not subject to the Airports Act.

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 program. Benalla Airport is a non security controlled airport.

3.3.5 Victorian Government

3.3.5.1 Aviation policy

Victoria is the only State government jurisdiction in the country with a dedicated aviation portfolio. So much of the regional aviation infrastructure in this state is very old. Some of it dates from the Second World War and has had minimal upgrades since the Second World War. So the Victorian government has put in place the Regional Aviation Fund (RAF) with a view to helping airport operators, typically municipalities, and often smaller municipalities, to upgrade their airport infrastructure with a focus on aeronautical infrastructure.

Current Situation and Issues

3.3.5.2 Regional Aviation Fund

This targeted funding program recognises the potential for regional airports to boost economic development in regional Victoria by catering for increased investment in infrastructure and providing greater community access, while complementing the Government's broader commitment to assisting regional development and growth.

Projects eligible for funding include:

- Creation, upgrades or extensions of runways
- Creation, upgrades or extensions of taxiways
- Levelling and/or strengthening of aprons
- Creating or upgrading of aircraft parking areas
- Sealing of internal roads
- Installing, upgrading or relocating navigational aids, airfield lighting, AWIS/ATIS and refuelling areas
- Providing additional infrastructure such as fencing, lighting or drainage
- Initial Departure and Approach Procedure design.

Applications for the RAF grants are considered from councils, state government agencies, regional infrastructure providers, regional organisations, business groups and the private sector located in regional Victoria. Priority will be given to projects that clearly demonstrate an ability to improve the economic viability of the selected airport.

The Council has been a recipient of such grants and will be making further applications on the basis of the priority outcomes of the Benalla Airport Master Plan.

3.3.6 Local Government

The role of the Council as owner and operator of Benalla 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 the Commonwealth legislation in regulatory areas where State legislation does not exist. Council will ensure that legislative requirements are appropriately reflected in their Local Environmental Plan.

Mandatory planning documents must be prepared by the airport owner include, an Obstacle Limitation Surface (OLS) for the protection of airspace both on and off airport and Australia Noise Exposure Concepts (ANEC's). Council may elect to have the ANEC's endorsed by Airservices.

3.4 Operations

Benalla Airport has a high activity of gliding operations, which operate predominately during the month of October through to April with the major period being December - January. Most gliders operate on a tow launch with limited self launched glider operation.

There is a small number of general aviation aircraft based at Benalla including war birds adventure flights, balloon and more recently an aero club and flight training organisation has been established at the airport.

Both the air ambulance and fire fighting activities operate on an as needs basis. There is no regular public transport (RPT) operating from Benalla.

Benalla has contra circuit operation on all runways, that is powered aircraft operates in one direction and glider aircraft operates in the other direction. There is no dead side to the circuit area. This has been a successful operation for many years and details are provided in the En Route Supplement of Australia (ERSA).

Current Situation and Issues

3.4.1 Movement Area

The movement area is defined by ICAO, is “That part of an aerodrome to be used for the take off, landing and taxiing of aircraft, consisting of the manoeuvring area and apron(s).” Figure 3.4 shows the movement area at Benalla Airport.



Figure 3.4 Benalla Airport Movement Areas

3.4.1.1 Runways

The airport has four (4) runways comprising of two (2) parallel runways. Each parallel runway pair comprises of one (1) runway dedicated to powered aircraft operations while the other runway is dedicated to glider operations. The main runway for powered aircraft operations comprises of a sealed runway, designated runway 08R/26L, while the others are unsealed (grass) with details shown in Table 3.1. There is no runway end safety area (RESA) provided on the main runway.

Runway	Feet	Metres	Surface
08R/26L	3,422	1,043	Bitumen
08L/26R	3,422	1,043	Grass
17R/35L	2,356	718	Grass
17L/35R	2,356	718	Grass

Table 3.1 Benalla Airport Runway Details

3.4.1.2 Taxiways

The taxiways system comprises of one main sealed taxiway connecting the runway with the main apron area, with three (3) unsealed (gravel) taxiways leading off the main sealed taxiway.

The sealed taxiway connects the end of the runway at RWY 08R threshold with the apron area. The taxiway is 7.5m wide and suitable for aircraft up to Code B (e.g. King Air 350) Aircraft. At approximately half way along the taxiway and to the west of RWY 17/35 there is a small sealed engine run up bay provided either side of the taxiway centreline. The taxiway is unlit.

The three (3) unsealed gravel taxiways leading off the main sealed taxiway provide access into the hangar storage precinct. The taxiway widths are approximately 4m which are below standard for Code A (typical single engine) aircraft. It is acknowledged however, that most of the taxiways are mainly used by gliders being towed behind motor vehicles. The taxiways are unlit.

Current Situation and Issues**3.4.1.3 Aprons****Main Aprons**

The main apron comprises of a sealed area of approximately 70m by 150m and unsealed area (gravel) of approximately 70m by 90m abutting and to the east of the sealed apron area. There is no apron lighting provided. The main apron area provides access to the Avgas fuel facility.

Museum Apron

Museum apron comprises of two (2) sealed apron areas directly in front of the east and west hangar openings. The museum aprons are unlit.

Other Aprons

There are numerous small unsealed (grass/gravel) apron areas provided in front of the many privately owned glider/GA hangars. Many of these aprons are subject to flooding which limits the access during high flood periods.

3.4.2 Gliding Club Operations**3.4.2.1 Gliding Club House**

The gliding club building comprises of a two (2) level facility. Internally the building has the following facilities:

- Large general area with tables and chairs
- Commercial and general kitchen areas
- Training room
- Flight simulator room
- Offices and storage areas
- Toilets and shower areas
- External to the club room is a covered BBQ and seating areas

3.4.2.2 Airfield Gliding Facilities and Operation

The gliders operate from the end and to the side of the operating duty glider runway/strip. The area is used for glider marshalling and gridding of the gliders prior to launch. Glider tugs operate within the glider strip. Glider club members park their cars adjacent to the launch area and outside the runway strip.

The glider club operates air experience flights for the general public and they are required to navigate themselves out along the airside perimeter road to the glider launch area.

The only public viewing area within line of sight of the glider launch area is airside.

There is one toilet facility provided near the western end of the glider runway/strip RWY 08L/26R

3.4.3 Aircraft Refuelling

Aircraft refuelling is provided on the airport. An in ground fuel tank provides Avgas for piston engine aircraft. Fuel is distributed via a fuel bowser dispenser and is operated by the gliding club. A landside tank refilling point is located at fence line directly behind the fuel dispensing bowser. This location does not comply with current regulations.

There is no Avtur (turbine) fuel provided at Benalla. Avtur fuel is required for Police Air Wing helicopters, air ambulance fixed and helicopters and fire fighting helicopters. There is no Mogas fuel provided at Benalla which is required for most light sport aircraft. There is no gas refilling facility for Balloon operations.



Current Situation and Issues

3.4.4 Aircraft Hangars

The airport has numerous hangars for both powered aircraft and gliders. They are located in two (2) respective precincts that can be described as the Heritage/Glider Precinct and the Eastern Hangar Park.

3.4.4.1 Large Hangars Precinct

The large hangar precinct comprises of four (4) hangars with direct access to the sealed apron areas. Three (3) of the hangars front directly onto the sealed taxiway and in some circumstances infringe the taxiway clearance line.

3.4.4.2 Small Hangars Precinct

The small hangar precinct comprises of twenty-four (24) smaller hangars that are accessed via unsealed (gravel) taxilanes. The apron area for each of these is between the taxilanes and the respective hangar and is unsealed (grass and/or gravel). The area varies with differing floor levels, apron grades and is subject to flooding from heavy rain which severely affects access to the hangars.

3.4.5 Air Traffic Control

There is no air traffic control tower provided at the airport due to the very low number of aircraft movements. Aircraft separation is provided by the pilots (powered and gliders) talking to each other through a Common Traffic Advisory Frequency (CTAF) and the carriage of radio is not mandatory. Whilst the carriage of radio is not mandatory it is recommended by CASA. This procedure is very common throughout regional airports in Australia.

The CTAF is 10 nm radius from the aerodrome reference point. The CTAF frequency for Benalla is 122.5. The airport is not equipped with a Aerodrome Frequency Response Unit (AFRU).

3.4.6 Navigation, Landing Aids and Lighting

3.4.6.1 Navigational Aids

There is no ground based navigational aids at Benalla Airport. The airport has a published GPS non-precision instrument approach to RWY 26.

3.4.6.2 Landing Aids and Airport Lighting

Landing aids and airport lighting includes the following:

- Runway edge lighting (low intensity)
- Runway threshold lighting
- Illuminated Wind Directional Indicator (IWDI) is located adjacent to the sealed apron area
- Pilot Activated Lighting (PAL) on frequency 123.4
- Gable markers
- Runway paint markings

3.4.7 Rescue and Fire Fighting Services

There is no Aviation Rescue and Fire Fighting Service (ARFFS) based at Benalla. The Benalla Rural City Council, as the airport owner, is responsible for establishing emergency procedures at the airport. The procedures are detailed in the Benalla Aerodrome Manual.

Emergency procedures are coordinated by Victoria Police with support from the Country Fire Authority (CFA), Victoria Ambulance and the State Emergency Services (SES) as required. All the emergency services are located within the Benalla township.

3.5 Current Tenants

The range of tenants include individuals or organisations with hangar or part hangar leases, land leases for private hangars, aviation gliding, ballooning and aero clubs as well as cultural and heritage groups.

3.6 Physical Condition

3.6.1 Airside

The runway appears to be in relatively good condition with no loss of shape or large ponding of water following rain. There was some local small ponds observed during the time of inspection. The ride quality is very good. The sealed taxiway appears to be in relative good condition with some minor areas requiring maintenance.

The gravel taxilanes throughout the small hangar precinct vary in levels and is subject to flooding. Some new gravel has been laid along some taxilanes.

The main apron area is in relatively good condition for the amount of traffic that uses Benalla Airport. The area generally lacks signage and clearly marked areas for aircraft tie down and parking limit lines. The unsealed apron area adjacent to the main apron has loose stones and is not suitable for taxiing aircraft or helicopter operations.

At the time of the site inspection the grass runways/strip were heavily water logged and were not trafficable, therefore were not inspected

3.6.2 Landside

Buildings and structures on the landside of the airport have been constructed in an ad-hoc manner over a number of years. A significant number of buildings and facilities require some degree of maintenance and renewal work.

The BPAC and GoTAFE facility are relatively contemporary buildings that have been well maintained, as have the car park and landscaping around them.

Whilst the State Gliding Centre facility is an older building, it has been relatively well maintained and is in sound structural condition. However, opportunities exist to renovate this building to improve its attractiveness and useability.

The Aeropark and BARC hut precinct comprises a series of old buildings (some with heritage values) and infrastructure that is in generally in poor to very poor condition. The toilet block along Hangar Lane is in very poor condition, and most of the building require significance restoration and maintenance. The landscaping and layout of the Aeropark facility has a very poor aesthetic presentation, and this precinct will require rejuvenation for it to be an attractive accommodation facility for future users.

All of the roads and public spaces are in generally poor condition, with roads and pavement areas requiring maintenance and resurfacing, and landscaped areas requiring maintenance and replanting.

3.6.3 Airside – Landside Boundaries

The landside/airside boundary fence has a number of areas where the fencing is in poor condition or missing all together. There is no gates provided at the fence openings onto the airside precinct which allows the general public to either walk or drive airside.

See Figure 3.5.

Current Situation and Issues

EXISTING CONDITIONS



Figure 3.5 Benalla Airport Existing Conditions

3.7 Internal and Adjacent Land Uses

The airport is located very close to the Benalla main street and a range of existing community facilities. The airport adjoins the Benalla hospital and a large retirement village, and it is within walking distance to the river, regional art gallery and a number of accommodation facilities.

The Goulburn Ovens TAFE facility (GoTAFE) and Benalla Performing Arts Centre (BPAC) are located on the Samaria Rod frontage. Whilst these facilities are not located on the airport land holding, they functionally form part of the airport precinct.

The primary activities on the airport site currently include:

- The State Gliding Centre
- The Aviation Museum
- Larger hangars for the storage and maintenance of light aircraft
- A number of historic huts (BARC huts) which are used by the community for a variety of community and recreational activities
- A number of privately leased aircraft hangars
- Low cost accommodation (the 'Aeropark') comprising huts, demountable cabins, caravans and powered sites
- An area used for the storage of glider trailers.

See Figure 3.6.

Until recently unused areas of the airport provided revenue to Council from annual cropping leases.

The adjacent land uses are a mixture of:

- Residential
- Commercial
- Industrial, and
- Farming

Current Situation and Issues

EXISTING LAND USES



Figure 3.6 Benalla Airport Existing land Uses

3.8 Access

3.8.1 Introduction

Primary access to the site is provided via the intersection of Samaria Road and Ed McKeough Drive. Ed McKeough Drive provides access to the Gliding Clubhouse car park, airfield runway and hangars via a separate entry point, TAFE car park (rear access), Aviation Museum, BARC/Community Huts, temporary Accommodation (Aeropark) and Glider storage.

A secondary access point is also provided to the site via the intersection of Samaria Road and the lane beside Cooinda. This lane provides rear access to the Aviation Museum, BARC/Community Huts, Temporary Accommodation (Aeropark), and Glider storage. Access to the subject site is also provided from the rear of the TAFE car park. Refer to Figure 3.7 for the site access points.

3.8.2 Internal Road Network

The internal road network consists of a combination of sealed and unsealed roads. The sealed road network consists of Ed McKeough Drive, a lane up to the eastern boundary of the temporary accommodation, BARC Avenue and Hangar Lane up to the eastern boundary of the BARC Huts. These roads are highlighted on Figure 3.7 in blue. The unsealed road network consists of part Hangar Lane and part of the lane beside Cooinda; including the two north south roads. These roads are highlighted on Figure 3.7 in orange.



Figure 3.7 Benalla Airport Access and parking

3.8.3 External Road Network

3.8.3.1 Samaria Road

Samaria Road is a two-way two lane undivided sealed Council road. It is a north-south connector road connecting Sydney Road to Kilfeera Road. The road cross section adjacent to the site consists of two through traffic lanes, a asphalt shoulder, kerb and channel, grass verge and footpath on the west side and a narrow asphalt shoulder, grass verge with open earth channel on the east side. The road alignment is straight and flat adjacent to the site. A posted speed limit of 60 km/h applies to Samaria Road.

Automatic traffic volume data for Samaria Road was provided by Council. The average weekday 24 hour two-way daily traffic volume for Samaria Road in this location is 2,071 vehicles per day with approximately 17.3% of these vehicles being commercial vehicles. This high percentage of commercial vehicles is attributed to the location of the survey being adjacent to an industrial zone.

3.8.3.2 Kilfeera Road

Kilfeera Road is a two-way two lane undivided sealed Council road. It is an east-west connector road connecting Benalla Town Centre to rural land to the east. The road alignment is straight and flat adjacent to the site. A posted speed limit of 60 km/h applies to Kilfeera Road adjacent to the Cooinda Village and for the first 200 metres adjacent to the site. The posted speed limit then increases to 80 km/h.

Automatic traffic volume data for Kilfeera Road was provided by Council. The average weekday 24 hour two-way daily traffic volume for Kilfeera Road in this location is 1,459 vehicles per day with approximately 9.1% of these vehicles being commercial vehicles.

3.8.4 Car Parking

A large open asphalt car park approximately 2,000 square metres (65 cars) in area is provided adjacent to the Gliding Clubhouse. Directly adjacent to this car park (south side) is a large open gravel car park approximately 1,300 square metres (40 cars). Two access points from Ed Mckeough Drive are provided into the asphalt car park. No signage or line marking is located at these access points to identify if they are one-way access points. The asphalt car park provides uncontrolled access to the airfield.

The gravel car park also has direct access to Ed Mckeough Drive. Directly located south of the gravel car park and adjacent to Ed Mckeough Drive are public toilets. The gravel car park also provides access to fuel tankers for refuelling of the aviation fuel tanks.

3.8.5 Sustainable Transport

3.8.5.1 Public Bus

The nearest public bus stop is located on Samaria Road just north of Perth Street and a lane beside Cooinda. Bus route 2 Benalla East runs south along Samaria Road servicing both bus stops. This bus route connects Benalla Airport to the Town Centre and railway station and the wider Benalla area via a connection to Bus route 3.

Both bus stops are serviced every hour with the first service arriving at 9:47am and the last service arriving at 2:47 pm Monday to Friday.

3.8.5.2 Train

The nearest railway station is Benalla Station located north-west of the site. Bus route 2 provides a 51 minute journey to Benalla Railway Station. Alternatively Benalla Railway Station is a 1.8 kilometre walk (22 minutes) from the airport via Perth and Smythe Streets.

Current Situation and Issues

3.8.5.3 Bicycle Facilities

Bike racks are located adjacent to the club house with access provided from the asphalt car park. Parking for 8 bicycles is provided in this location. No on road or off road bike lanes are provided within the site, on Samaria Road or Kilfeera Road. The nearest on road bike lanes are on Sydney Road (local route) and Salsbury Street (Priority Route).

3.8.5.4 Pedestrian Facilities

A sealed concrete pedestrian footpath is provided on the west side of Samaria Road for the full length between Bridge Street East and Kilfeera Road. A pedestrian footpath is also provided on the eastern side of Samaria Road between Kilfeera Road and the TAFE vehicular access point. A sealed concrete pedestrian footpath is provided on the south side of Kilfeera Road between Samaria Road and Ironbark Drive.

No sealed footpaths are provided along access roads within the site.

3.9 Cultural Heritage

3.9.1 Aboriginal Heritage

The study area is not located within an area of cultural heritage sensitivity and no evidence of Aboriginal cultural heritage material was identified during the information gathering and processing stage of this assessment.

The Master Plan area is not located within an area of cultural heritage sensitivity as defined under the Aboriginal Heritage Regulations 2007. No national or state significant cultural heritage sites (Aboriginal or historical) were identified as part of this assessment. See Figure 3.8.

Therefore, in this instance, an Aboriginal Cultural Heritage Management Plan is not mandated by the Aboriginal Heritage Act 2006.

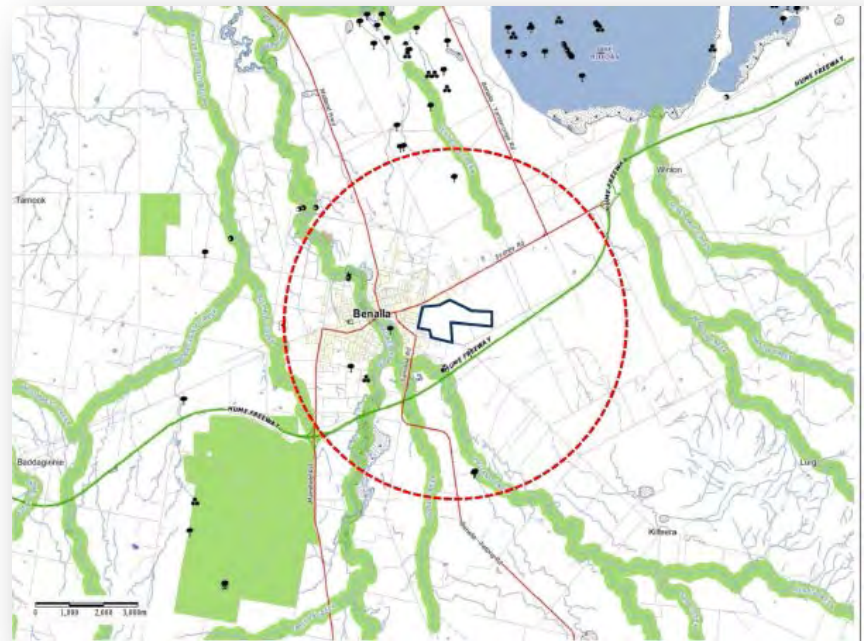


Figure 3.8 Benalla Airport and its Immediate Environs

3.9.2 Post Contact Building Heritage

There have been two culturally significant stages of development:

- WWII Air Training Scheme
- Post-war reuse as a migrant centre

The fabric and place of the two stages is of cultural heritage significance. The Bellman hangar and P-type huts meet the threshold for local significance.

A local heritage overlay is recommended for huts and Bellman hangar.

The Benalla Migrant Centre is of local cultural heritage significance to the City of Benalla. It demonstrates a number of values that were formative for the city both physically and culturally. The cultural values still have a resonance within the community.

The Benalla Migrant Camp was in operation from September 1949 until it closed on 8 December 1967. The Department of Immigration estimates that during these years approximately 60,000 migrants passed through its gates, many of these migrants making Benalla their first Australian home after leaving the camp. The Benalla Migrant Camp was a temporary holding centre unlike Bonegilla Migrant Reception Centre, which provided accommodation and assisted in the processing of migrants from 1947 – 1971.

The post war migrant camps as a group demonstrate the impact and the extent of post-war migration. This has been recognised with the inclusion of Bonegilla Migrant Reception Centre on the National Heritage List and the Victorian Heritage Register.

The Benalla Migrant Camp is a contributory place and an important part of the migration story. It is clearly of local cultural heritage significance and is potentially of cultural heritage significance to the State of Victoria.

3.10 Aircraft Noise

There is no previous Australian Noise Exposure Concept (ANEC) that has been prepared for Benalla Airport. Consultations with the community and industry stakeholders did not produce any major concerns about noise levels and existing aircraft operations.

3.11 Flora and Fauna

Mapping provided by the Department of Environment and Primary Industries, indicates that the study area historically supported Ecological Vegetation Class 55: Plains Grassy Woodland. However, the site assessment confirmed that little evidence of remnant vegetation remains within the study area. The extant vegetation is highly modified due to a history of clearing for the airport, development, and cropping.

One small remnant patch of native vegetation occurs in the north western portion of the study area. It contains an overstorey of native Wallaby-grasses *Austrodanthonia* sp., shrubs comprising Silver Wattle *Acacia dealbata* and Narrow-leaved Wattle *Acacia mucronata*, and an overstorey of River Red-gums *Eucalyptus camaldulensis* and Red Box *Eucalyptus polyanthemos*. Two other indigenous scattered River red-gums are also located in the northern portion of the study area. Vegetation throughout the remainder of the study area was dominated by exotic species including the wheat crop, and environmental weeds.

It is unlikely that the remnant patch of native vegetation located within the study area will require removal. If, however, it requires removal for the future redevelopment of the airport, a biodiversity offset of 0.012 General Biodiversity Equivalence Units would be required. Vegetation offsets should be located within the Goulburn Broken Catchment Management Area with a Strategic Biodiversity Score of at least 0.102 .

No threatened flora or fauna species were recorded during the current assessment, and none are likely to occur due to the high level of vegetation modification that has occurred throughout the study area.

It is recommended that trees, including planted trees, be retained where safe and practicable. These trees provide habitat to local birds and potentially arboreal mammals and bats. The amenity and biodiversity values of the local area could be further improved by providing additional plantings. These plantings should be local provenance where practicable.

Development that encourages large flocks of birds, through on-site refuse or large water bodies should be discouraged to mitigate the potential for bird-strike with aeroplanes.

3.12 Flooding and Drainage

The airport is partly in a flood zone as shown in Figure 3.10 and discussed in Section 3.12.2..

3.12.1 Drainage Infrastructure

The site has two drainage outlet points as follows:

Main Outlet (Legal point of discharge) - Located at the north-western corner of the site adjacent to the SES building. The majority of the sites stormwater flows discharge from the site at this location. The stormwater flow then cross under Sydney Road via a culvert system and into the Benalla East Main Drain. From here the drainage flows make its way to the Broken River.

Minor Outlet – Located at the northern point of the site adjacent to the Enterprise Park development. A minor portion of stormwater flows from the northern catchment of the site discharges into the Enterprise Park drainage system.

The airport site has a substantial network of drainage infrastructure located in both the airside and landside areas. This drainage infrastructure consists of large open drainage channels, small drainage channels, and box culverts. See Figure 3.11.

DRAINAGE AND FLOODING



Figure 3.10 Benalla Airport Flood Zone

Current Situation and Issues

Due to the extremely flat nature of the site, fall of 1 in 850 from the south-eastern corner of the site to the north-western corner of the site, the discharge of surface water flows from the site via the existing drainage infrastructure is inadequate. This is due to a number of reasons as follows:

- Grassed open channels have a high friction factor which reduce flow velocities and hence reduce the capacity of the drainage channels. Further if the channels are poorly maintained the capacity of these channels is further reduced.
- Due to low velocities silt and litter can quickly build up at the base of these systems further reducing their capacity and potentially leading to eventual blockage if not adequately maintained.
- Surface water flows are contained within low lying areas throughout the site and cannot drain to the adjoining drainage infrastructure.
- Buildings do not have direct connections to the drainage infrastructure and hence contribute to the localised flooding of roads, pavement areas and grassed areas.
- Due to the flat grade of roads and parking areas both landside and airside, and flows from these areas being directed to one drainage outlet point, a surcharge of the drainage outlet point occurs due to the surface water flow exceeding capacity. This results in localised flooding of these areas.

3.12.2 Drainage Studies

3.12.2.1 Benalla Flood Mitigation Project

A drainage study was completed by Cardno (NSW/ACT) P/L in 2012 for Benalla Rural City Council to assess what impact the Broken River Catchment flood waters have on the Benalla Township during various storm events from the 1 in 20 Year ARI storm event to the 1 in 200 Year ARI storm event.



Figure 3.11 Benalla Airport Drainage Layout

Cardno's drainage assessment confirms that during a major storm event, flood waters at Bridge Street spill from the Broken River when the flood water rises to 169.9m AHD. The flood waters then cause major flooding in the area bounded by Bridge Street, the Broken River, the railway line and Witt Street. The flood waters then discharge under the railway line embankment at the East Main Drain Outlet north of Grey Street or depending on the storm event return to the Broken River further upstream of the Railway line.

Current Situation and Issues

The site is subject to flooding during the modelled storm events.

The worst case flooding scenario occurs during a 1 in 200 Year ARI storm event. During this storm event the entire site frontage from Samaria Road up to the north-south runway, including the main drainage channel that runs parallel to the east-west runway is subjected to flooding. The depth of flooding varies from 0.01m to 0.5m in low lying areas and up to 1.0 m within the drainage channels.

During a 1 in 100 Year ARI storm event, the flooded area on site is nearly reduced by half when compared to the 1 in 200 Year ARI storm event. The depth of flooding varies from 0.01m to 0.5m in low lying areas and up to 1.0 m within the drainage channels. The flood area and depth then reduces quite substantially during both a 1 in 50 Year and 1 in 20 Year ARI storm event and is localised within the north-western corner of the site adjacent to the SES and at the sites main drainage outlet point.

3.12.2.2 Benalla Airport Flood Study

Council is currently completing a drainage study to address the localised flooding issues associated with the Benalla East Main Drain catchment. The study involves investigating a proposal that includes both retarding stormwater flows from the airport catchment prior to entering the Sydney Road drainage culverts and redirecting stormwater flows from the Enterprise Park development so that they discharge into the Mokoan Channel. Both these proposals combined will free up the capacity of both the drainage culverts under Sydney Road and the East Main Drain, allowing extra stormwater drainage flows from the residential / industrial catchment located west of Samaria Road and on Samaria Road to flow through the drainage system. This will result in a reduction of flooding within these local areas.

Council's current proposal (at the time of producing this report) consists of constructing a retarding basin that will retard back approximately 51,840 cubic metre of stormwater. The retarding basin is to be located in the north-western corner of the site adjacent to the SES building.

It is noted that the retarding basin will not improve the localised flooding issues currently experienced on site. This will need to be addressed separately.



Figure 3.12 Benalla Airport Proposed Retardation Basin

3.13 Airport Financial Status

3.13.1 Revenue vs Expenditure (includes BARC Huts)

Table 3.2 shows that Council has been operating the airport at a loss over the last three years. This continues a long pattern of losses stretching back many years.

Year	Revenue	Expenditure	Profit/Loss
2012	\$22,206	\$63,232	-\$41,026
2013	\$26,675	\$62,882	-\$36,207
2014	\$27,082*	\$63,589	-\$36,507

Table 3.2 Benalla Airport Profit/Loss

3.13.2 Current Annual Utility Charges

Current charges are shown in Tables 3.3 and 3.4.

Year	Electricity	Water	Gas	Total
2011/12	986	5812	0	6798
2012/13	2210	9934	0	12144
2013/14	1323	6333	0	7656
Total:				26,598

Table 3.3 Benalla Airport Annual Utility Charges - Airport

Year	Electricity	Water	Gas	Total
2011/12	1925	510	169	2604
2012/13	4510	0	282	4792
2013/14	4182	668	245	5095
Total:				12,491

Table 3.4 Benalla Airport Annual Utility Charges – BARC Huts

3.13.4 Current Annual Fees

Table 3.5 shows the total annual lease fees collected by Council in the year 2013/14 were \$22,206. In addition, there was a cropping lease fee of \$12,745.20. However, cropping may not continue into the future.

No aircraft landing, aircraft parking or vehicle parking fees are charged at Benalla Airport except for Avtur powered fuel fees.

Current Situation and Issues

Fee Type	Description	Annual Revenue \$	Fee Type	Description	Annual Revenue \$
Lease	Mitchell	\$2,024.00	Lease	PC de Crespigny	\$165.00
Lease	Gawne Aviation	\$9,081.60	Lease	J B Hilton-Wood	\$330.00
Lease	M C Carpenter	\$2,024.00	Lease	D Hogan	\$165.00
Lease	B A Greed	\$2,024.00	Lease	M Kornhauser	\$165.00
Lease	S Shaw	\$2,024.00	Lease	Mr Graham Garlick	\$165.00
Lease	Mr George Vassis	\$3,775.20	Lease	K Mentiplay	\$165.00
Lease	Mr Michael Rose	\$3,775.20	Lease	B A Barry	\$330.00
Lease	Mr Richard Price	\$3,775.20	Lease	Ken Phillips	\$506.00
Lease	Blue Range Aviation	\$165.00	Lease	Reginald Flanigan	\$165.00
Lease	Mark Lindsay Carr	\$330.00	Lease	Albury Corowa Gliding Club	\$165.00
Lease	Douglas Pocknall	\$82.50	Lease	Colin Collum	\$165.00
Lease	Greg Corcoran	\$165.00	Lease	Mr Gerry Hogan	\$330.00
Lease	Shaun Driscoll	\$330.00			

Table 3.5 Benalla Airport Annual Lease Fees – Year 2013/14

3.13.5 Council Assets

The known Council assets on the airport are shown in Table 3.6 and Figure 3.13.

Building ID	Bld_name	Bld_class	Address	Notes
61	State Gliding Centre, Benalla - Office Clubroom and Tower	Municipal Buildings	Aerodrome	Council owned
62	Benalla Airport - Former Reporting Officers Shed (Museum)	Heritage Buildings	Aerodrome	Council owned
63	Benalla Airport - Bellman Hangar	Heritage Buildings	Aerodrome	Council owned
65	Hut 65	Minor Buildings	Aerodrome	Council owned
66	Hut 66	Minor Buildings	Aerodrome	Council owned
92	Airport Huts Amenities (Ladies)	Amenities Blocks	Aerodrome	Council owned
93	Airport Huts Amenities (Mens)	Amenities Blocks	Aerodrome	Council owned
104	Benalla Airport - Terminal	Amenities Blocks	Aerodrome	Council owned
91	Hut 63	Minor Buildings	Aerodrome	Not on a register
105	Hut 64	Minor Buildings	Aerodrome	Not on a register
109	Silver Shed Airport	Municipal Buildings	Aerodrome	Not on a register
110	Green Shed Airport	Municipal Buildings	Aerodrome	Not on a register
67	BARC- Huts 11		Aerodrome	Not on a register
68	Benalla Accommodation & Recreation - Shed		Aerodrome	Not on a register
69	Benalla Accommodation & Recreation - Shed		Aerodrome	Not on a register
64	BARC- Huts 10		Aerodrome	Not on a register
Road Segment	Description	Chainage	Type	Notes
1113	Hanger lane	0-115	Sealed	Council owned
1111	Airport Drive	0-360	Sealed	Council owned
	Main Runway		Sealed	Not on a register
	Main Taxiway		Sealed	Not on a register
	Apron		Sealed	Not on a register
	Apron		Unsealed	Not on a register
	Grassed runway - 1		Unsealed	Not on a register
	Grassed runway - 2		Unsealed	Not on a register
	Grassed runway - 3		Unsealed	Not on a register
	Grassed runway - 4		Unsealed	Not on a register
	Car park off Airport Drive		Unsealed	Not on a register
Lighting		Number	Size	Notes
	Runway edge	20		
	Runway threshold	8		
	Runway threshold	4		
	Taxiway	38		
	Taxiway holding point	3		
	Isolating Transformer	20		
	Isolating Transformer	12		
	Isolating Transformer	41		
	Runway taxi lamps		25 watt	
	Threshold elevated fittings lamps		48 watt	
	Obstruction lights on primary illuminated wind indicator and PAL tower			
	Illuminated wind indicator	4	120 watt	
Other equipment				
	Unknown			Not on a register

Table 3.6 Benalla Airport Known Assets

Current Situation and Issues

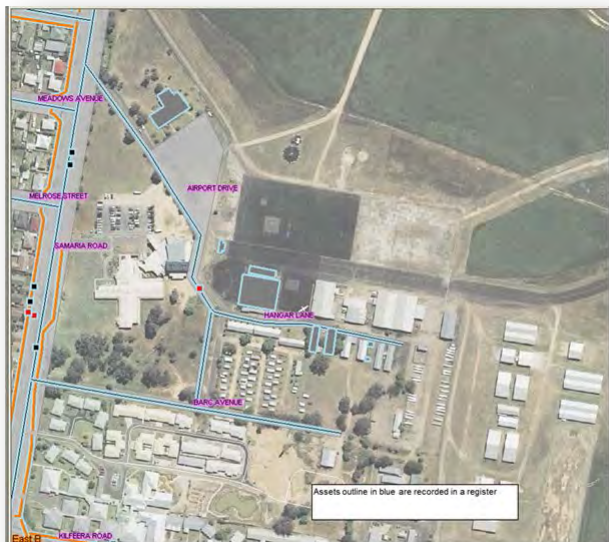


Figure 3.13 Council Airport Assets

3.14 Services and Utilities

Power, Sewer and water reticulation is available to the western and south western sectors of the airport as shown in Figure 3.14.

No information is available on the capacity to accept increased demand over the planning period.

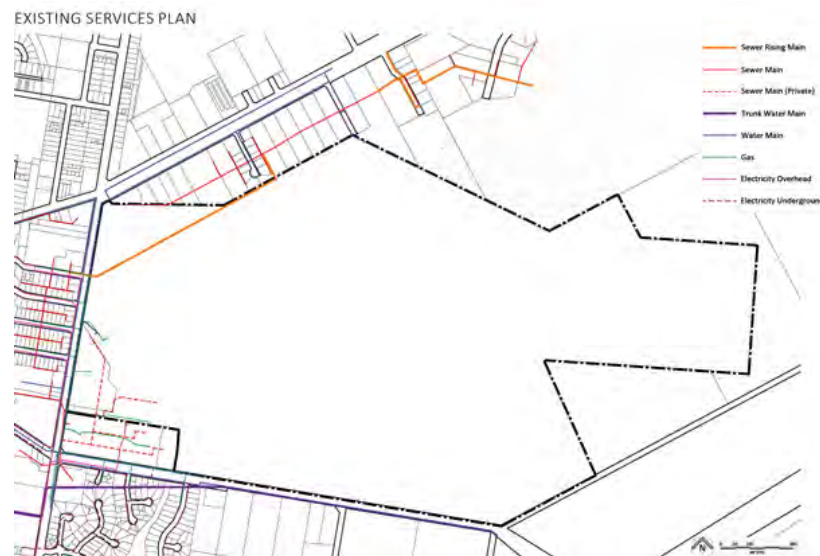


Figure 3.14 Benalla Airport Services

The following Strength, Weaknesses, Opportunities and Threats were identified from the comments received from the consultation phases .

4.1 Strengths and Weaknesses

<i>Strengths (Internal)</i>	<i>Weaknesses (Internal)</i>
Sufficient airport land for aviation and non-aviation development/expansion	Operational airside infrastructure needs maintenance/improvement.
Airport adjacent to town	Some potential expansion areas subject to flooding.
Sealed runway, taxiway and apron	Utilities and services are not in place or inadequate.
Stable meteorological conditions - few fogs	Limited revenue activity.
Base for two significant aviation activities - gliding & ballooning	Lack of serviced land for commercial development.
Runway can be extended	Limited amenities for visiting pilots.
On site accommodation	Poor signage on & approaching airport.
Club facilities that welcome visitors	Length of leases.
No airspace restrictions	Standard of on-airport accommodation.
	Current management approach and resourcing.
	Lack of a strong Fixed Base Operator at the airport.

Table 4.1 Benalla Airport – Strengths and Weaknesses

Strengths, Weaknesses, Opportunities and Threats

4.2 Opportunities and Threats

Opportunities (External)	Threats (External)
Development of an aviation activity cluster comprising training and recreational flying for gliders, GA, ultra lights, rotor craft & ballooning.	Competition for aviation activity (market share) from other regional airports.
Development of a static and dynamic quality aviation museum enhancing history of the airport and aviation in the region.	Emergence of community noise/safety complaints in regard to its operations.
Establishment of an educative & entertainment theme park in association with the museum and aviation activity cluster.	Inappropriate land use under runway/strip approaches.
Facilitation and expansion of commercial historic aircraft joy flights – complementing the Museum and aviation cluster.	Lack of support/ownership of airport by community.
Increased development of hangar sites for sale or lease.	Changed airport regulatory requirements.
Development of a residential airpark.	Decline in market for active participation in aviation sport and recreation flying.
Rationalisation/integration of airport land with adjoining industrial areas.	Lack of co-ordinated approach to value and role of airport in driving and supporting economic and tourism development.
Establishing well positioned tourist/public viewing areas for aviation activity.	
Develop aviation specialist support services connected to the aviation activity cluster.	
Pursue non-aviation revenue producing developments such as expanded retirement villages, accommodation and commerce, business and retail developments.	
Regional infrastructure grants from the Victorian Government to support strategic priorities.	

Table 4.2 Benalla Airport – Opportunities and Threats

5. Community Vision and Guiding Principles

5.1 Community Engagement Approach

The purpose of consultation during the development of the Benalla Airport Master Plan was to:

- Maximise the engagement of key stakeholders and user groups in the development of the Master Plan, the development of a shared vision, and the prioritisation of key works within the Master Plan
- Consult those who are may be affected, directly or indirectly, to understand their interests, issues, constraints and opportunities and proposed ways forward
- Inform the overall development of the Master Plan
- Provide feedback on the Draft Master Plan

Community Engagement was essential to ensure that the Master Plan clearly identified opportunities, constraints and preferences from the input of stakeholders, and for the benefit of stakeholders.

Two rounds of consultation were conducted:

- Round One – key stakeholder consultation (May-July 2014)
- Round Two – validation and feedback on Draft Master Plan (current)

The purpose of Round 1 was to develop a Vision for the airport, understand issues, strengths and constraints, and potential opportunities (aviation and non-aviation).

The purpose of Round 2 is to ask: *This is what we have heard, this is what we have done with it – have we got it right?*

5.2 Community Engagement Report

A full report of the consultations has been prepared as a separate volume to accompany the Master Plan.

The report outlines the stakeholders, key feedback received, and how that feedback was used in the Master Plan development.

This report will be finalised once the second round of consultation is complete.

5.3 List of Stakeholders

The stakeholders contacted included, but was not limited to, those listed in Table 5.1

BRCC nominated Council representative;	Airport Master Plan Project Steering Committee	Councillors
Regulatory authorities	State Government	Local Government
Airlines	Airport tenants	Benalla Airport Advisory Committee
Airservices Australia	Civil Aviation Safety Authority	Community stakeholder groups
Community	Benalla Aviation Museum	Marc Carr Military Air Training Heritage Pty Ltd
The World Gliding Championship Steering Committee	The Gliding Club of Victoria	Benalla Migrant Museum
GOTAFE	Benalla Performing Arts and Convention Centre	Private lessees
Benalla Business Network	User groups such as the Benalla Theatre Company and the Benalla Potters group	SES
Ultralight Operators	Australian Quarantine Inspection Service	Benalla & District Memorial Hospital
Victorian Air Ambulance	Rotary Club of Benalla	BRC Tourism Advisory Committee
Hotel and Motel operators	Enterprise Park Developers/Facilitators	Vicroads
Gliding Federation of Australia	Recreational Aviation Australia (RAA)	State Government of Victoria Aviation Unit
Balloon Association of Victoria	SAAA	Australian Sports Rotorcraft Association Inc (ASRA)
DEPI	Fixed Base Operators	Adjacent land owners and their representatives (C);
Benalla Health	Cooida (Retirement Village) Board of Management	Winton Motor Raceway
Winton Wetlands Committee of Management	Others to be discussed and confirmed	

Table 5.1 Benalla Airport Master Plan List of Stakeholders

5.4 Key Meetings

- Benalla Council Steering Committees (3)
- Benalla Airport Advisory Community (2)
- Focus group meetings:
 - BARC hut users - community groups
 - (8 attendees)
 - Benalla businesses, neighbours, user groups (12 attendees)
- Coinda Board and management (5 attendees)
- Open House meeting (over 600 invitations sent to Benalla residents) (approximately 50 attendees)
- Stakeholder planning workshop over 1.5 days (35 attendees)
- Presentation to Benalla Rotary Club (70 attendees)
- Key stakeholder and government agency interviews (30)
- Stakeholder consultation – feedback on Master Plan directions (38 attendees)

The consultation was targeted to Airport User groups (including aviation and non-aviation users), community user groups, neighbours, related tourism operations, Benalla business community, government agencies and aviation authorities.

The Benalla Airport Advisory Committee helped inform the consultation approach and identify key stakeholders. They were consulted on their views and ideas, and contributed to refining the first draft of the Master Plan. Benalla Rural Councillors and officers were involved in many of the consultation meetings.

5.5 Vision Statement

Benalla Airport:

A vibrant recreational aviation and historic airport that honours its heritage and has strong community and cultural connections with locals and visitors.

This means that Benalla Airport will be:

- self-supporting and well maintained
- An attractive, well run, year round tourism destination for aviation, gliding, ballooning, as well as the ‘keeper’ of its past aviation and immigration history
- A welcoming place for locals as well as regional, national and international visitors whose experience on-site makes them want to come back time and again

5.6 Master Plan Guiding Principles

During the consultation, the following principles were established to underpin decisions for the Master Plan:

- Current operations should not be compromised
- The Master Plan should enable enhanced capacity and safe activities
- Don't limit opportunities for future development, with short term options
- Safety compliance
- Commercial reality
- Respect for the site history, using this as a base for enhanced visitor experiences and opportunities
- Opportunity and innovation driven



5.7 Key Feedback

There is a high degree of pride in the Benalla Airport as a key piece of infrastructure, located close to town, providing meeting and community spaces for locals and attractions and activities from regional, state, national and international visitors. There is a strong sense that the World Gliding Championships provide a real catalyst for future aviation and non-aviation opportunities.

Stakeholders do not want to see any loss of amenity, and would like to see:

- Increased compatible aviation use – recreation and sports aviation, gliding, ballooning
- Greater attraction of more visitors through the Aviation Museum, the further development of the Benalla Migrant Museum and the development of significant and regular events
- Better linkages between the airport and other facilities and services offered in Benalla including BPACC and the CBD
- A welcoming entrance way with a real sense of arrival and place – well signed and clear directions for activities, facilities and services
- Well laid out, planned look and feel with safe pedestrian and traffic movement
- That the airport is a 'good neighbour' and that planning and zoning is done compatibly
- Opportunities for further compatible investment on-site and commercial "best use" should be enabled through good planning and investment attraction

From the community engagement, there was also strong feedback that the Master Plan is the opportunity to address some current issues:

- Drainage
- Site layout
- Runway extension - with a move towards all weather runway
- Facilities upgrades

Drainage was by far the most identified issue for the site and affected all users through issues such as airfield drainage, impeded access to hangars, access for community members through mud/water to BARC huts, and use of the Aeropark accommodation area.

The current site layout is the result of development over time. Those consulted felt that this could be addressed by better delineating areas for specific use, ensuring better and safer flow of pedestrians, finding ways to enhance viewing of gliding and ballooning activities, and better defining entries and traffic flow (including restricted access to airside).

Feedback from the consultation on the runway design and facilities upgrades has been used to shape this Master Plan. In particular, aviation users did not want any reduction in the number and orientation of runways, but did want to see extensions, better drainage and all weather use. The Fokker F50 was suggested (and agreed) as a design aircraft.

6.1 Aviation Activity

Airport master Plans include an aviation activity forecast so that future infrastructure requirements can be determined. Benalla is one of those unique airports that have a high level of gliding activity when compared to powered aircraft. For the aviation forecast, airport capacity is one issue in which the gliders will have an impact on, however, when the forecast is translated for the input into the noise modeling, glides have no impact due to the fact that they have noise output for landing. It is however acknowledged that for a typical glider operation under a tug launch, there is one movement for take-off (tug and glider launch together) but two movements for landing (tug lands before the glider). Due to the very low movement numbers overall at Benalla, self-launch gliders and off airport landings have been ignored.

Benalla airport has no historical static data for non-gliding operations. The gliding club has kept an accurate record of all glider/tug operations for the past 2.5 years. For non gliding operations anecdotal evidence has been obtained during the public consultation phase of the Airport Master Plan.

The above figures in Table 6.1 represent a base case in which the forecast figures are based on.

The glider tows in 2013 saw a 14% growth when compared to that of 2012, however for the start of 2014 year for the same period as 2013 saw a 28% decline in glider tug movements.

Activity	Movements per annum	Comment
Gliders (includes tows)	7286 (3643 Tows 2012)	1 movement for take-off and 2 movements for landing, e.g. Landing 1 Tug and 1 Glider
Gliders (includes tows)	8306 (4153 Tows 2013)	
Gliders (includes tows)	3968 (1984 Tows Jan-May 2014)	
General Aviation	1040	Assume 20 movements per week
Light Sport Aviation	2080	Assume 40 movements per week
War Birds	208	Assume average of 2 flights per weekend
Air Ambulance	520	3 – 4 flights per month can vary up to 8 – 10 per month. Assume 5 per month
Charter	416	Assume 4 flights per week
Fire Bombers (Helicopters)	100	Varies season to season. Assume 100 movements per year
Balloons	216	Assume 4 flights per week*
Helicopters (non-fire fighting)	104	Assume 2 flights per week

Note: 1. Tugs movements are counted for input into the noise modeling.
2. Note balloons depart from the airport but undertake off airport landings

Table 6.1 Summary of Historical Activity

General aviation trends as published by Department of Infrastructure and Transport in 2010 (latest publically available figures) show that total hours flown by VH registered aircraft increased by 2.2% when compared to the previous year and landing increased by 8.3%. This clearly indicates a higher percentage of aircraft undertaking pilot training and is a good guide as to the growth in pilot training.

General Aviation is defined as “all non-scheduled (non RPT) flying activities other than flying activities performed by major Australian airlines.

Forecast Demand

Sport Aviation saw the greatest growth when compared with General Aviation. Table 6.2 shows the growth by sector.

There was no detailed broken down figures provided by the Department, however the graph representing all aviation activities indicated no significant growth for this sector.

Using the above data a compound growth was applied to the respective market sectors and an event factor applied to both the glider and light sport aviation sector for major events such as the Glider World and Pre World Championships, nationals and national fly-in (NAT FLY) for the LSA sector.

After applying the respective growth rates, the forecast movements for the 20 year planning horizon indicates approximately 44,000 movements per annum, or 122 movements per day

The capacity of the current runway configuration and taxiway enhancements would provide a far greater number of aircraft movements than that forecasted. The configuration proposed would support aircraft movements in excess 75,000 movements per annum.

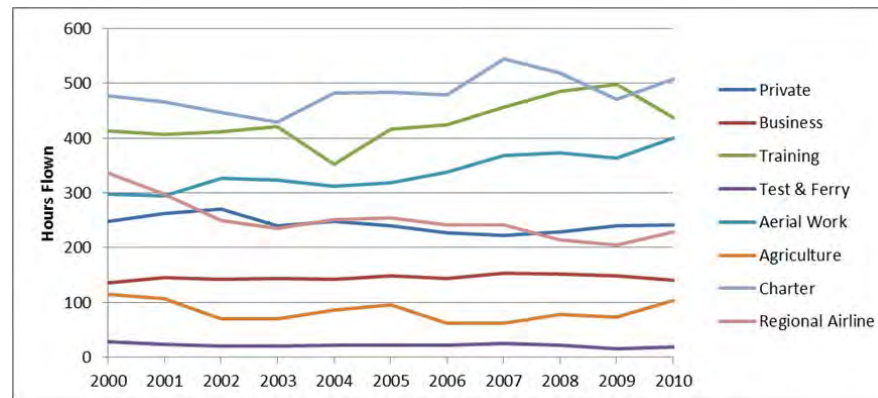


Figure 6.1 General Aviation Hours Flown - Year 2000 to Year 2010

Sports Aviation Sector	Total Hours Flown	Increase in Hours Flown	No on Register	Increase on Register
Light Sport Aviation	141,900	18.6%	3,266	9.4%
Gliders	228,700	15.3%	1,177	2.3%
Hang Gliding	88,300	2.1%	2,577	4.5%
Gyroplanes	44,400	24.6%	435	Not disclosed

Table 6.2 Sport Aviation Activity

6.2 Forecasts

6.2.1 Regional Air Transport Services

Experience in developing business cases for sustainable regional airline services to regional destinations in Australia shows that air transport services can be viable where the private vehicle travel time is some 4 hours or greater. The demand is also influenced by the availability of alternative transport modes such as train services.

Benalla, with low population, vehicle travel times of some 2 – 2.5 hours to Melbourne Airport on a good freeway and with alternative lower cost public transport options will not be of interest to the air transport subsector of the aviation market.

6.2.2 General Aviation

General Aviation (GA) growth for the private sector had a low growth of 1% nationally for the reported period. With the low number of GA aircraft based at Benalla and given that the most are hangared (only one aircraft was observed tied down outside), it would be fair to assume that until more hangar spaces are made available, growth for GA aircraft will be low, certainly in the short term. This is also compounded by the large increase in light sport aircraft. For future growth we have assumed 0.5% for the first 5 years, 1.0% for next five years then a growth of 2.0% for the remaining of the planning horizon. See Figure 6.2 and 6.3.

6.2.3 Charter

Charter had an overall growth of 8.0%. Given the low base on which to work from, we have assumed charter services would grow at 4.0% for the five years, 6% for the next 5 years and 8.0% for the remainder of the planning period. See Figure 6.2 and 6.3.

6.3.4 Gliding

Gliding nationally grew by 15.3% overall with a 2.3% increase in the number of glider airframes on the register. Locally there was a significant increase in 2013 by 14%, however for the start of 2014 when compared to the same time last year, there was a significant drop of glider movements by 28%.

With the world championship and the pre world championships scheduled for 2017 and 2016 respectively, this is expected to stimulate some long term gliding interest for Benalla.

He have assumed that 2014 will finish with the same number of movements as 2012 and then increase by 7.5 to the pre-world with a growth of 10% for 2016 and 2017. The world titles is expected to add an additional 2,000 additional movements over each event period. From 2018 to 2024, a growth of 4.5% is applied followed by a 0% growth for the planning period. See Figure 6.2.

6.2.5 Light Sport Aviation

Light Sport Aviation (LSA) formerly Recreational Aviation is the fastest growing sector within the aviation industry. The LSA provides low cost entry, owner maintenance in some cases and lower medical standard compared to that of the private pilot requirements.

LSA covers both owner builder kit type construction and factory manufactured aircraft. Hours flown in and LSA sector rose by 18.6% with an additional 9.4% airframes on the register.

Given the small number of aircraft based at Benalla, and like the GA market growth is expected to be slowed due the lack of available hangar space. LSA's are typically hangared due to the light construction and construction materials. We have assumed a growth rate of 5% per annum for the first 5 years, 12.5% for the next five years following some hangar availability and 15% for the remainder of the planning period. See Figure 6.2 and 6.3.

Forecast Demand**6.2.6 Ballooning**

Statistically ballooning has a very flat growth rate and of all the sectors is highly reliant of very light winds, which severely restricts their operation. Typically balloons fly in the cooler months and generally in the mornings and late afternoon in the colder temperatures of the day.

We have assumed a 0.5% growth for the first 5 years, 1% for the next 3 years in which it would hope that a commercial balloon operator could be established at Benalla and 2% growth thereafter. See Figure 6.2 and 6.4

6.2.7 Rotorcraft and Helicopters

Rotorcrafts and Gyrocopters is another form of recreational flying. While the growth rate nationally has been high, there are only 435 craft on the register. Helicopter operations are increasing for both private flying and charter operations. Range and endurance is the limiting factor for most helicopters. Fuel supply and type of fuel typically dictates where they fly to. We have assumed a slow growth rate of 1% for the first five years followed by a 5% per annum assuming that Avtur (jet A1) is provided. See Figure 6.3 and 6.4

6.2.8 Emergency Services**6.2.8.1 Air Ambulance**

The Air Ambulance (fixed wing) operates into Benalla for both routine and emergency operations. Benalla is just on the limit for rotary wing air ambulance services due to time taken to return back to Melbourne, range and fuel requirements, hence fixed wing is the preferred mode of operation.

Growth is planned to be relatively flat and we have assumed a growth rate of 0.5% per annum based on population growth, increased traffic growth on the highways which will inherently bring an increase in the number of motor vehicle accidents requiring Air Ambulance services. See Figure 6.3 and 6.4

6.2.8.2 Police Air Wing

Benalla is not the preferred location of operation due to the lack of Avtur (Jet A1) fuel that is required for the turbine helicopters operated by the Police Air Wing. Consultation with the Air Wing indicated Mangalore, Wangaratta and some Department Environment Planning and Industry (DEPI) fire sties in hills are preferred due to the availability of fuel

We have allowed some increase in Police Air Wing Traffic following the installation of Avtur (Jet A1) fuel.

6.2.8.3 Fire Fighting

During the bush fire season , DEPI base fire fighting helicopters on an as needs basis. For the forecast period we have assumed the same numbers of movements on a three year cycle. See Figure 6.4.

6.2.7 Parachuting

Parachuting is not compatible with the operations at Benalla Airport and therefore no forecasts have been prepared.



Forecast Demand

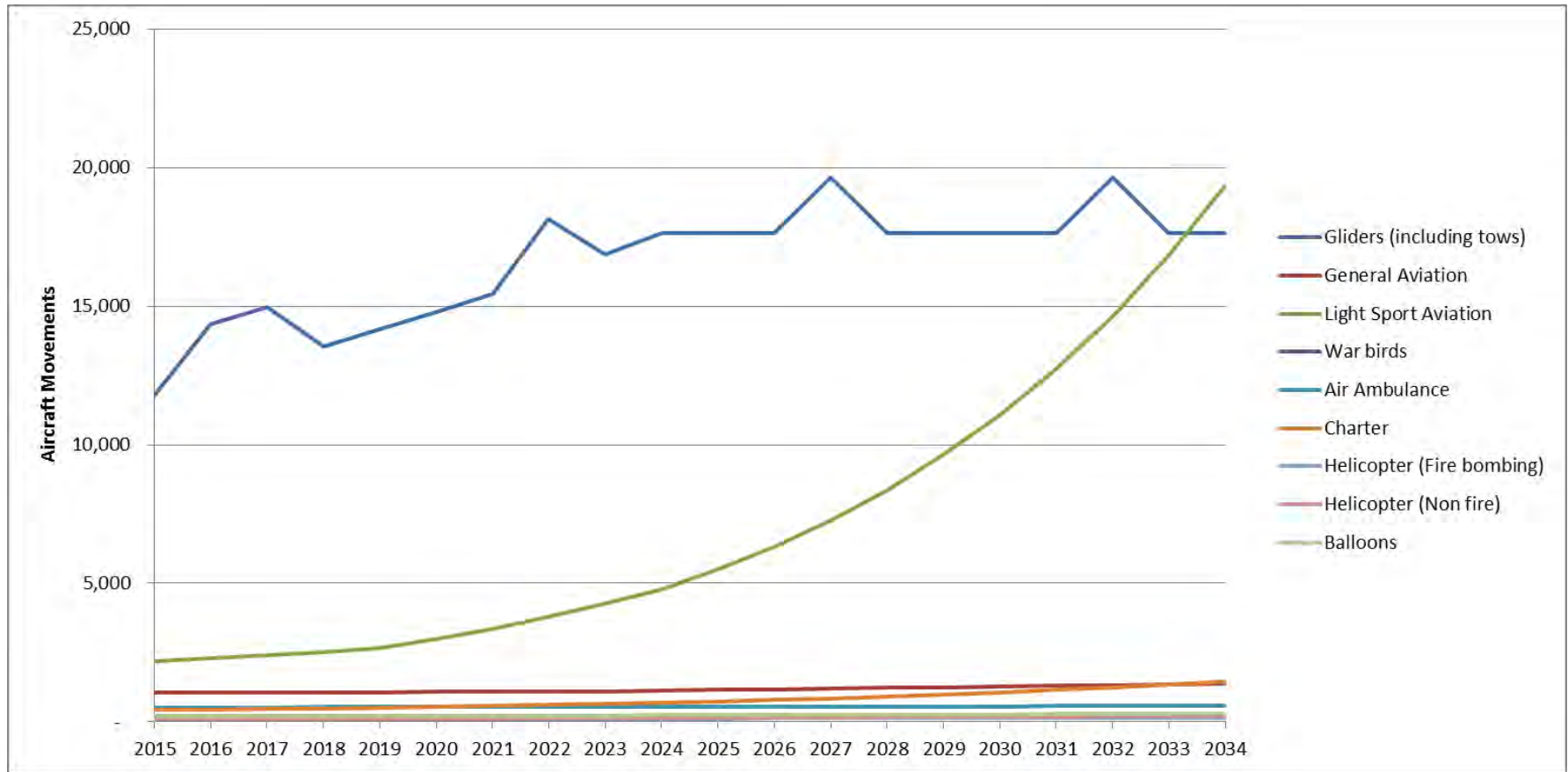


Figure 6.2 Twenty Year Total Combined Movement Forecasts

Forecast Demand

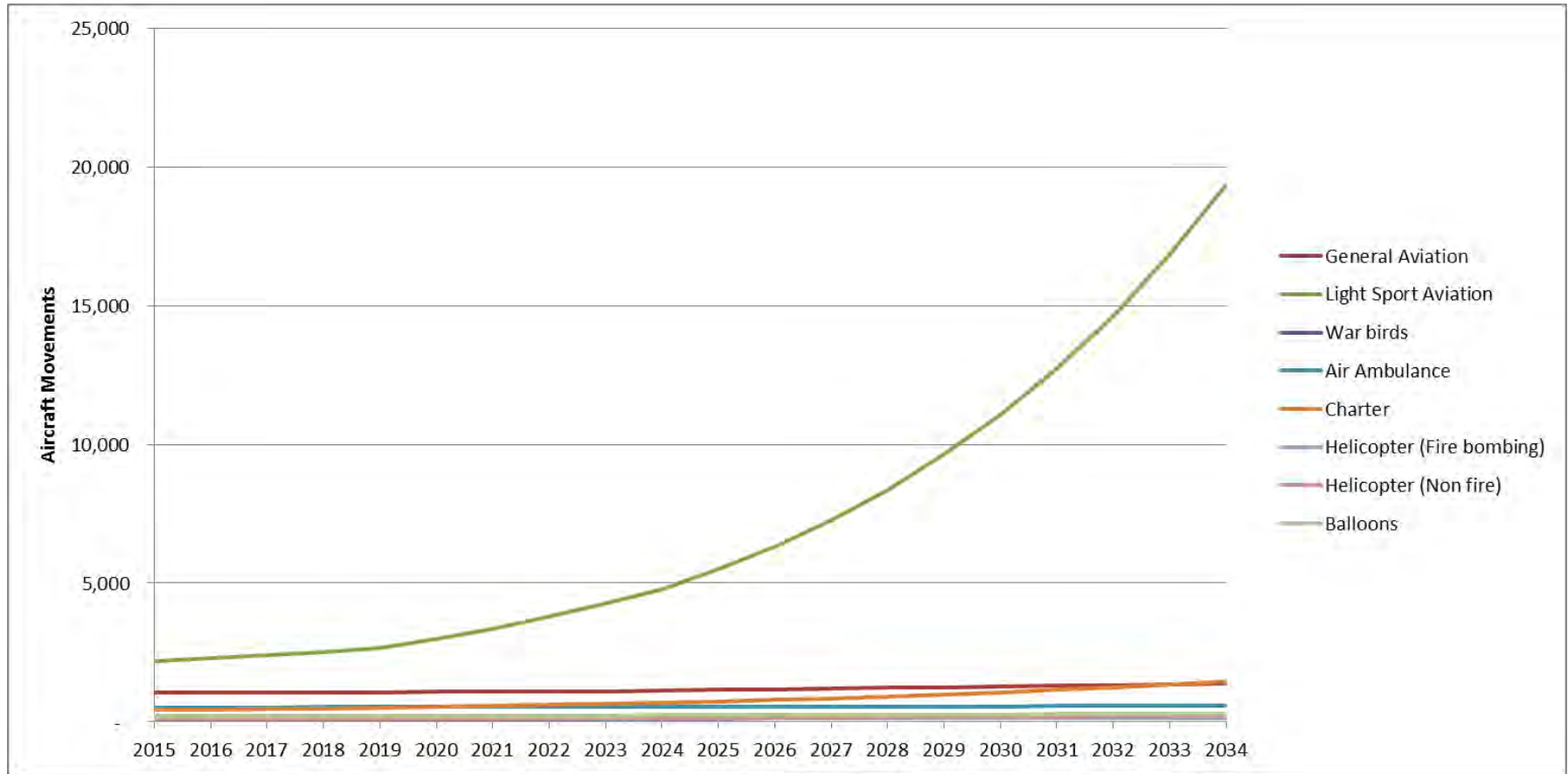


Figure 6.3 Twenty Year Movement Forecasts without Gliders

Forecast Demand

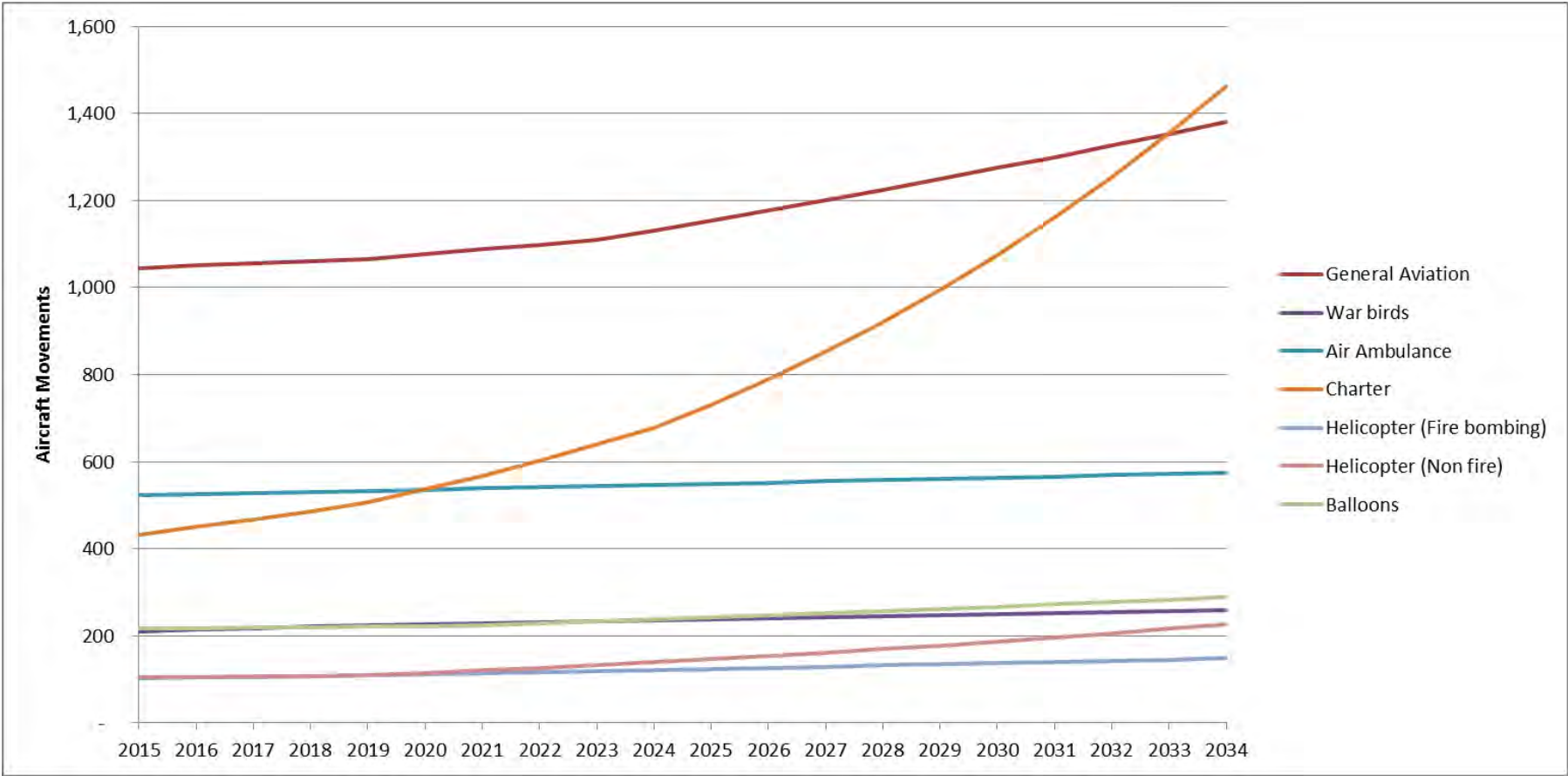


Figure 6.4 Twenty Year Movement Forecasts without Gliders and Light Sport Aircraft

7.1 Current Situation

The largest aircraft type currently using Benalla Airport is the Air Ambulance King Air 350, which is a Code 2B aircraft type. The existing infrastructure is currently the limiting factor that prevents larger aircraft using Benalla.

7.2 Forecasting, Stakeholder & Community Inputs

The forecasts show growth in charter aircraft, fire fighting personnel transfers and larger visiting warbird activity at Benalla Airport.

During the public consultation phase it was identified that the long-term plan should adopt the capability of accepting the Fokker F50 as the design aircraft which is a Code 3C aircraft type.

7.3 Design Aircraft Selection

By adopting the F50 as the design aircraft type, this will allow the airport to be capable of handling Dash 8, SAAB SF340 and a range of corporate jets. The F50, Dash 8's and SAAB SF340 aircraft are the typical aircraft being chartered during the fire season for the replenishment of fire fighting resources.

The F50 design aircraft would also allow a much larger selection of war birds and visiting aircraft to visit the air museum on selected event days.

7.4 Aircraft Performance and Specifications

Specification	F50	Dash- 8- 200	SAAB 340
Take-off Runway Length (AUW)	1760	1122m	1220m
Number of Passengers	50	40	37
Max Take-off Weight	19,950 kg	16,465 kg	13.155 kg

Fokker F50



Dash 8 - 200

SAAB 340



8.1 introduction

While the focus of the Benalla Airport Master Plan should be prioritised on supporting aviation-related activities and opportunities, leveraging the airport's existing non-aviation uses should also be explored and encouraged, particularly in view of the cluster of heritage and cultural assets located on the site and the large amount of land available.

An expansion of non-aviation uses has the potential to significantly enhance the visitor experience to the airport, increasing visitor numbers and on-site activity, while providing important revenue streams to support new infrastructure and services across the site.

The following factors should be considered when assessing non-aviation land uses:

- Impact on core aviation uses
- Synergies with existing land uses, assets and activities
- Demand levels for the particular use
- Highest and best use of land compared to other opportunities
- Appropriateness of proposed use in an airport setting
- Revenue raising potential

8.2 Commercial/ Industrial

From an economic development and strategic planning perspective, the utilisation of vacant industrial land, such as at Enterprise Park (see figure 8.1) and within other established or planned industrial estates, should take precedence over the creation of new industrial sites such as through the development of an industrial estate at Benalla Airport. Industrial development is unlikely to provide a 'highest and best use' outcome compared to alternative land use opportunities at the airport. However, providing appropriate direct access point (s) to the airfield site from adjoining industrial areas will enable potential aviation-related businesses efficient access to aviation services should they wish to set up in the area.

On-site aircraft maintenance from existing or new hangars should be encouraged as this will directly support aviation users and contribute to retaining maintenance expenditures in Benalla, rather than 'leaking' to external locations.



Figure 8.1 Enterprise Park Industrial Estate

8.3 Tourism

Existing and future on-site activity (aviation, cultural, entertainment), coupled with stronger linkages with local and regional tourism assets (such as Winton Wetlands and Winton Raceway) provides for strong tourism driven development on the site.

Potential development opportunities include commercial accommodation, restaurant/cafes, and new recreational activities. Each of these opportunities are explored separately below.

8.4 Accommodation

The airport site has the potential to deliver commercial accommodation to cater for a range of potential market segments and provide new supply in a market that requires additional stock. The priority however must be to ensure sufficient accommodation is available to cater for aviation users. The type of product delivered needs to be reflective of user types and price points, and in this regard a mix of low cost cabins/huts, caravan sites and powered sites for motorhomes would be suitable for this location, which could be supplemented by a higher quality motel-type facility with associated amenities to cater for higher end users on another part of the site (noting the nearby Glider City and Golden Chain facilities).

The location of new/upgraded facilities should be close to the existing Aeropark site, given its centrality to aviation user groups, interface with residential areas and walkability to CBD. Other site locations should be explored with regard to a higher end commercial accommodation facility, noting major road frontage (Samaria Road) would be a key requirement for any operator.

A temporary camping ground site should be identified which would provide low cost and accessible accommodation for those attending major events at the Airfield (e.g. World Gliding Championships).

Importantly, catering for the future needs of aviation users will need to

be fundamental to any accommodation strategy, and this includes ensuring sufficient long-term capacity and affordability.

8.5 Food and Beverage

Demand for food and beverage services comes from a number of sources including existing on-site workers, students and visitors and potentially residents and workers from surrounding area (e.g. Hospital, Retirement Village, local businesses). Major events attendees (both aviation and non-aviation) present a further opportunity noting few alternative options in the immediate area. The delivery of expanded food and beverage services (café, restaurant) could be through the use/refurbishment of existing on-site facilities at GOTAFE and the Glider Club, and/or the development of a new facility.

8.6 Conference Facilities

The main constraint to the development of conference/function facilities at the airport site is the presence of extensive and well established conferencing and events capabilities at the BPACC facility. However, potential exists to enhance the viability of the BPACC conference facility through the provision of on-site support services such as high quality accommodation and expanded food and beverage services that can cater for large conference events.

8.7 Arts and Culture

In view of the history of the site (aviation and migrant) and strong synergies with BPACC, an expansion of arts and cultural facilities would be viable and represent a good use of land. New activities might include facilities for film, community radio etc., as well as outdoor festivals, events and a migrant memorial wall. Increased arts and cultural activity would generate new employment and volunteerism on the site, and also increase the 'tourism offer' and associated on-site visitor spending benefits.



Non-Aviation Demand

Examples of these types of concepts include the Bonegilla Migrant Centre and the Abbotsford Convent (where artists/craftsperson's can be viewed undertaking their daily activities). These facilities attract strong non-local visitation.

8.8 Recreational

A range of recreational opportunities may be viable on the site, including passive activities through the development of walking trails/picnic areas with other possibilities including cycle paths and outdoor markets/exhibitions linking with on-site activities.

8.9 Government/Community Facilities

Attraction of government and community groups to the airport site, while not a top priority, would bring more activity and employment to the precinct which would support other commercial activities. Organisations with a relationship to existing site uses (emergency services, cadets etc.) provide the most likely possibilities; however, this does not preclude suitable government agencies locating to the site. It is noted however that there are a number of vacant former council/agency sites located in the Central Business District (CBD) which would generally be more suitable for these types of activities.

8.10 Retail

The Benalla CBD Retail Development Strategy (2009), confirms Benalla CBD as the focus for retail and commercial development from a strategic policy position. Four CBD sub-precincts are identified with the boundary of the East Precinct abutting the south side of Samaria Road, but lying well outside the Airport Precinct boundary (see Figure 8.2). The East Precinct is considered to be a peripheral area with lower levels of customer traffic, exposure and limited pedestrian activity compared to the other CBD.

Retail activity (shops, supermarket, convenience services etc.) would not be supportable either in terms of retail fundamentals (poor locational attributes) or strategic planning policy

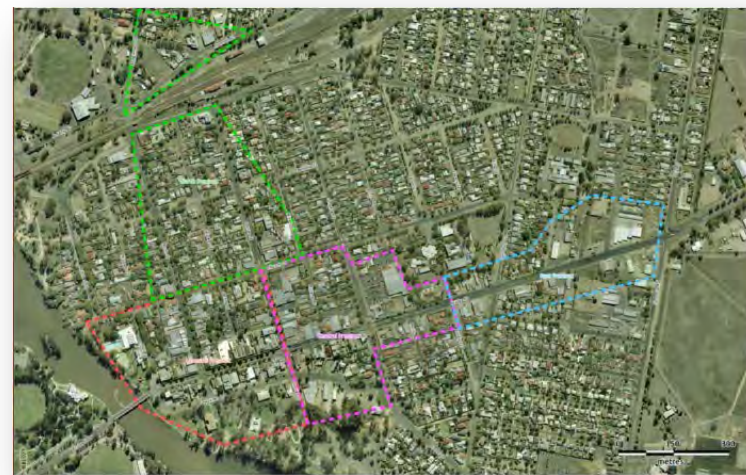


Figure 8.2 Benalla Retail Precincts

8.11 Education

The presence of GOTAFE should be used to leverage further education and training facilities to be site.

In particular aviation-related education/training opportunities should be explored including aircraft maintenance, flight training etc.

8.12 Retirement / Aged Care

While the sector has strong demand fundamentals such as an ageing community and more retirees seeking to 'age in place', the expansion of the neighbouring Cooina retirement and aged care facility onto the airfield site is not desirable for a number of reasons.

These include potential conflicts between residential living and aviation uses and higher priority uses that might be located on this key part of the site (aviation, arts and heritage, accommodation etc.). This recognises that Cooina are only interested in a continuous expansion of their existing facility which would have to utilise this important on-site area.

8.13 Priorities

Based on the above analysis, the following priorities have been identified in relation to non-aviation uses:

- Upgrade and expand existing on-site accommodation to ensure adequate low cost capacity for aviation users, students, RV travellers, backpackers and other groups.
- Explore the feasibility of higher quality visitor accommodation and an expanded food and beverage offer to support existing onsite operators (e.g. BPACC, TAFE) and attract a broader tourism and corporate traveller market.
- Explore partnerships to deliver on-site aviation-related training and education (e.g. TAFE or the attraction of a specialist provider).
- Upgrade infrastructure and buildings and provide adequate space and connectivity to enable the development of a highly visible and accessible integrated arts and heritage precinct.

The following uses are not recommended for the site:

- Retail
- Retirement/aged care
- Industrial (although on-site aircraft maintenance should be permitted)
- Government departments/agencies (although emergency services and community groups with a relationship to aviation and other on-site uses should be considered)

Table 8.1 provides a summary of non-aviation land use options and priorities.

Non-Aviation Demand

Recommended		
Accommodation	High	<ul style="list-style-type: none"> Accommodation park (mainly for aviation users) including refurbished huts, cabins, caravan sites and powered RV sites 4-star commercial motel / cabin park with associated amenities Camping ground to support major events
Arts and Cultural	High	<ul style="list-style-type: none"> Further development of migrant camp experience, including migrant wall New artist and dance studios Introduction of film and other media Community radio Festivals and events Outdoor exhibition space Events plaza
Education	High	<ul style="list-style-type: none"> Expanded GOTAFE activities Aviation-related training and education
Food and beverage	Medium/High	<ul style="list-style-type: none"> Reuse and refurbishment of State Gliding Centre building Reuse and refurbishment of TAFE catering facilities New purpose build strategically located café/restaurant facility (s) Larger restaurant facility to support major conferences
Recreation	Medium	<ul style="list-style-type: none"> Interpretive walking trails, BBQ and picnic areas Bike paths Markets/outdoor exhibitions
Not Recommended / Low Priority		
Retirement /Aged Care	Low	<ul style="list-style-type: none"> Expansion of Cooinda Residential Living Village (not recommended) Provision of extended aged care facilities (not recommended)
Government/Community	Low	<ul style="list-style-type: none"> Emergency services Community groups Government agencies (not recommended)
Industrial	Low	<ul style="list-style-type: none"> General industrial activities (not recommended), but on-site aviation maintenance supported
Conference / functions	Low	<ul style="list-style-type: none"> Small-scale venue co-located with on-site commercial accommodation facility
Retail	Low	<ul style="list-style-type: none"> Supermarket, speciality shops etc (not recommended)

Table 8.1 Non-Aviation Opportunity Assessment

9.1 Airside

9.1.1 Runways

An extension to the sealed runway is required to allow for all up weight take-offs by the master plan design aircraft, the Fokker F50 aircraft. A sealed and strengthened runway length of 1760m and runway width of 30m is necessary to meet the aircraft performance and airport standards.

Increased glider strip lengths in the east-west direction has also been determined from consultations as necessary to increase safe operations and provide for increased operational efficiency during major events.

9.1.2 Taxiways

A parallel sealed taxiway of 18m width is required to facilitate the introduction of the F50 design aircraft and as powered aircraft movements increase to avoid the occasional conflict through aircraft needing to backtrack on the runway.

Passing loops will also be needed near the main apron to provide separation for aircraft taxiing in and taxiing out.

A grass north-south taxiway has also been identified as needed to provide better access for tugs and gliders when operating in that direction.

9.1.3 Aprons

An extended main apron is also needed to provide for the expansion areas for outdoor aircraft displays for the Aviation museum as well as the future parking of visiting warbirds and the parking of charter aircraft up to the design aircraft type.

A grass apron with tie-down points has also been determined as needed as visitation to Benalla by light aircraft increases during the planning period.

Grass aprons, or broad areas, are also required in new extended strip areas for glider gridding. Similarly the Balloon Club also requires two areas for balloon assembly and preparation.

9.1.4 Passenger Facilities

As it has been determined that Benalla cannot attract scheduled transport services, a regional airport terminal building is not planned for the future development of Benalla Airport.

Nonetheless, Benalla could see increased charter services and itinerant aircraft attracted to the airport due to events and the development of the historic precinct. The design aircraft, the Fokker 50, carries 50 passengers and options need to be considered for what facilities should be developed to allow shelter and accommodation for these passenger loads after arrival and before departure.

It is considered that the gliding club would be used in the short to midterm before an independent passenger transfer lounge was built.

Future Needs to Meet Forecast Demand

9.1.5 Hangars

9.1.5.1 Heritage/Gliding Precinct

The GCV gliding storage hangars and the glider maintenance hangar are expected to remain for this use into the longer term. But a new “Bellman type” hangar has been identified as needed from consultations with the Aviation Museum management. With or without gaining access to the remainder of the existing Bellman hangar, this additional weather proof hangar will be needed to house exhibits.

9.1.5.2 Eastern Hangar Park

The forecast demand noted that increases in Benalla based aircraft will be strongly associated with ability to hangar such aircraft. An additional 50 to 75 percent of private hangar floor space has been estimated to be needed in the existing eastern hangar park to meet the 20 year demand.

9.1.6 Aircraft Maintenance

As the critical mass of aircraft activity builds at Benalla Airport it is likely that some modest maintenance, repair and overhaul shops will be established. This could cater for sport aviation aircraft through to light twin aircraft, avionics or specialty fabric and aircraft upholstery work.

Two hangar sites of a size for a light twin aircraft, with apron frontage, should be allowed for in the master plan.

9.1.7 Air Freight

The need for dedicated air freight facilities has not been identified through stakeholder consultations or known industry enquiries. Demand for aircraft bank runs or itinerant parcel and light freight can be met operating off the existing and extended main apron.

9.1.8 Fuel Precinct

A modern above ground fuel facility, airside away from the public, operated by swipe credit cards is required. This facility should provide Avtur, Avgas, Mogas and propane for the balloons. The availability of Avtur will be attractive for the Police Air wing, fire fighting helicopters and turboprop fixed wing charter aircraft.

9.1.9 Patient Transfer

The current facility, although upgraded with a carport, is poorly located for the future development of the main apron and is too public. A new facility should be developed away from the public when the existing area is to be resumed.

9.1.10 Navigational Aids

No ground based navigational aids are required. An additional GPS approach may be designed and promulgated for the opposite runway direction (08L) in the future.

9.1.11 Meteorology

An automatic weather station should be installed for operational efficiency for major gliding events and to support increased powered aircraft operations.

9.2 Landside

9.2.1 Administration

In Stage 1, particularly with the emphasis on the Gliding World Championships, the current arrangement whereby airport management is undertaken from the Sate Gliding Centre should remain.

Beyond Stage 1, a new airport management structure should be established in line with the recommendations in Section 13, Implementation.

See Figure 9.1 for an overview of the following landside site analysis.

9.2.2 Tourism

Enhance the tourism role of the airport in the following ways:

- Promotion of aviation related events (Airshows, etc.);
- Interpretation of the site's aviation activities and heritage via interpretive signage, artworks etc.;
- Upgrading the quality of public spaces so that they provide an attractive setting for visitors, with a focus of the visitor experience being oriented towards the airport core and aviation activities;
- Promotion of the site's aviation heritage (via the aircraft museum, upgrading of hangars, interpretive signage, etc.);
- Promotion of the site's past use as a migrant centre (via upgrading/enhancement of the existing BARC huts and surrounding area);

- Use of the site for a range of arts and cultural activities/events using the existing BPAC facility and upgrading other buildings and outdoor spaces ;
- Upgrading of accommodation facilities to cater for visitors to the airport and Benalla region (e.g. glider club patrons, students, workers, 'grey nomads', backpackers, etc.).
- Upgrading of food and beverage options;
- Creation of new recreation facilities such as large children's playground waking/cycling circuits.

9.2.3 Education

Work with the existing GoTAFE facility facilitate delivery of further education/training activities that are related to the airport itself (e.g. aircraft maintenance) and to heritage, arts & cultural activities on the site. The critical infrastructure is already in place to enable this to occur, and sufficient land exists on the GoTAFE land title to enable expansion of education facilities should this be required in future.

Opportunities exist to restore existing BARC huts and create new buildings in this precinct for use both as classrooms and also affordable accommodation for students.

9.2.4 Accommodation

Expand the accommodation capacity (beds) by at least 50% from the existing situation. Accommodation on the site should include a mix of affordable and mid-priced accommodation options ranging from camping sites, on-site cabins (bunk-style dormitories with kitchenettes as well as self-contained rooms), powered caravan/campervan site, and motel accommodation.

Future Needs to Meet Forecast Demand

The following accommodation provision is recommended:

- Provision of a contemporary cabin/caravan/camping site (including toilet, shower, kitchen and outdoor BBQ/dining facilities) equal in area to the existing Aeropark site;
- Provision of high exposure site capable of delivering a quality accommodation facility (motel or resort-style cabins) to cater for 50 persons (say 30 rooms) with associated car parking and outdoor recreation spaces. Allow for 5,000m² - including 1,500m² in building area (50m²/unit), plus a further 3,500m² for supporting facilities.
- Provision of an area to accommodate 500 temporary campers and associated services, including car parking. Allow for 2.0ha – including 1.0ha for camping (40m² per 2 person tent site) plus 1.0ha for temporary amenities and car parking. Expansion of accommodation capacity (beds) by 50%.

9.2.5 Food and Beveridge

Set aside a site suitable for a new restaurant/café standalone 200 seat restaurant/café facility including outdoor dining areas. A land area of circa 1,000m² should be set aside for this purpose.

9.2.6 Conference Facilities

Work with the existing BARC facility to create an enhanced product offering for conferences and major events. The BARC facility provides the basic infrastructure required for medium sized events/conferences including meeting rooms, dining facilities and car parking.

However, the events/conference offering of the site can be enhanced by providing additional meeting spaces, food & beverage facilities, visitor accommodation and quality outdoor recreation facilities.

9.2.7 Heritage, Arts & Culture

Work with existing and potential future user groups to expand the range of heritage, arts and cultural activities/events on the site. Further investigation is required in relation to the range of possible heritage, arts and cultural activities and organisations that might operate from this site, although there is already a strong nucleus of organisations operating from the site from which to build on.

A committee of management or similar structure should be established to prepare an operations and facilities plan. This committee should be responsible for promoting heritage, arts & cultural activities, programming events, securing funding for capital works and activities and undertaking maintenance of public space & buildings.

The overall floorspace for such activities should be expanded by 50% from existing levels. This can be enhanced by renovating the existing building on the site, and constructing new facilities as required.

In addition, at least one outdoor events/exhibition area (for example, an 'events courtyard') of approximately 500m² should be created. Opportunities exist to create two such spaces – one for larger events associated with aviation related events adjacent to the main airport core, and the other focussing on community, arts & cultural activities on the south side of the airport.

Future Needs to Meet Forecast Demand

9.2.8 Recreation

The airport is located close to the town centre and opportunities exist to better connect the facility to the township via walking and cycling trails. Existing walking and cycling links (together with directional signage) between the town and airport should be upgraded. A new walking and cycling look through the airport should be created.

Opportunities also exist to use the airport for larger community and recreational events. Community markets and festivals could occur either on the forecourt area adjacent to the airport core, or on grassed areas adjacent to Samaria road. Each of these areas should be suitably landscaped and developed with access to power and water supply.

9.2.9 Utilities

Extension of power, water and sewerage are required into the areas nominated for development, including:

- The expanded low cost accommodation areas
- To new BARC huts
- The eastern hangar development area
- The new Bellman hangar site
- Future ambulance transfer area
- Future Charter Lounge (Terminal Building), and
- Glider launch areas

9.2.10 Site Access and Internal Road Network

A new site entry should be created along Samaria road. This entry will be the primary entry to the airport for visitors, and should be designed as a 7.0m wide two-way pavement with footpaths and landscape treatments on each side.

A new roundabout should be constructed along this entry road to allow for vehicles to drop visitors off and exit the site from Samaria road rather than having to circulate through the precinct to Aircraft Lane.

A new emergency vehicle access should be created between this entry road and the Hangar apron.

The existing Aircraft lane entry road and BARC Avenue should be upgraded to improve their drainage, landscaping and presentation. This entry will be the primary entry to the Heritage/Community/Arts Precinct and should be designed as a 7.0m wide two-way pavement with footpaths and landscape treatments on each side. A bus pullover /drop-off lane should be accommodated along the BARC Avenue frontage road length.

The central link between the Samaria Road and the Lane/BARC Avenue link should be upgraded to as a 4.5m wide sealed local road link, with a pedestrian pavement and landscaping on one side. This road should be signposted as a 'shared zone' and should include threshold treatments in sections so as to control vehicle speeds. A bus pullover /drop-off lane should be accommodated along this road length.

The design should include removable bollards at either end, so that this area can be kept free of vehicles during major events.

Future Needs to Meet Forecast Demand

The eastern portion of the lane beside Cooida and road behind the hangars should be upgraded as 4.5m wide loop road, connecting the Heritage/Community/Arts Precinct, Accommodation and Hangars. This road should be signposted as a 'shared zone' and should include threshold treatments in sections so as to control vehicle speeds. The design should include removable bollards at either end of Hangar Lane end, so that this area can be kept free of vehicles during major events.

A new gravel access road should be provided at the northern edge of the airport site, for access from Samaria road to a new aircraft viewing area. The detailed design of this access should take account of its proximity to the Sydney Road roundabout and to the existing emergency services site.

New access points should be created from the adjoining Enterprise Park. These access points could be controlled via locked gates and fencing, so as to be useable by authorised vehicles only.

A new airport access should be created along Kilfeera Road. This access point will be the primary access for users of the airport hangars, as well as for emergency vehicles and fuel deliveries. Access to the Hangars and airfield will be controlled by locked gates and fencing, so as to be useable by authorised vehicles only.

A new gravel access road should be provided from this access point to the vacant land east of the north-south runways. This access would be used to enable this land to be used for aircraft viewing, car parking and camping during major events.

New pedestrian and bicycle paths should be constructed along the Samaria Road frontage, extending diagonally across to western site boundary to the Airport Core and heritage precincts.

A new pedestrian link should also be created from the Airport core

to the proposed new aircraft viewing platform on the northern boundary of the airport.

Wide landscaped pedestrian plazas should be created along the western edge of the main hangar precinct and along Hangar Lane, so as to enable these spaces to be used for community festivals and events. These areas could comprise a bitumen or crushed rock surfaces, together with trees and basic street furniture such as seating bins and lighting.

9.2.11 Car Parking

The following new/upgraded car parking arrangements are recommended:

- Rationalisation of the car parking in front of the glider club building, as part of a landscape master plan for this area*.
- Creation of a new car park along the Samaria road frontage, adjacent to the Glider club building*
- Extension of the existing BPAC/GoTAFE car park*.
- Creation of a new car park off BARC Avenue to cater for GoTAFE Students and staff.
- Creation of a new car park off the lane beside Cooida to cater for visitors to the Heritage/Community/Arts precinct*.
- Creation of a new car park off Kilfeera Road for visitors to the airfield and Hangars
- Creation of a new car park adjacent to the proposed aircraft viewing platform on the northern boundary of the airfield.
- Creation of a temporary car park (as required) along the Samaria Road frontage for major events

*(*these car parks should include sealed surfaces, linemarking and lighting. The remaining car parks can be constructed with basic drainage and crushed rock surfaces)*



Future Needs to Meet Forecast Demand

SITE ANALYSIS



Figure 9.1 Benalla Airport Landside Site Analysis

10.1 Master Plan Principles and Objectives

The purposes 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 the 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 2034, but needs to consider the developments staging of the various facilities to be constructed over the life of the airport.

The principal objectives in undertaking the master planning process 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.

To achieve this objective the following 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; and
- Providing for the integration of the airport system with other airports and with the surface transport system.

The detailed description that follows provides information on the facilities adopted for the master plan which have emanated from:

- Consideration of the guiding principles and objectives;
- Stakeholder consultations;
- Future forecast demand, and
- Commensurate needs to meet this forecast demand

The Airport Master Plan

MASTER PLAN



Figure 10.1 Proposed Master Plan Layout

10.2 Movement Area

10.2.1 Runways

10.2.1.1 Runways 08/26

The existing runway alignment for RWY 08/26 is retained. The current length of the main runway, designated RWY 08R/26L is to be extended in both the east and west directions to an overall length of 1750 m. In addition to the runway extension and in order to comply with MOS Part 139, the 08R/26L Runway is to be provided with a 60m x 60m wide Runway End Safety Areas (RESAs) at each end. The RESAs now will commence from the runway strip end, whereas previously it commenced from the runway end.

The existing 08R/26L Runway strip width of 90m is suitable for non-precision instrument runway for Code 3C aircraft. In order to make the runway operations safer and more operationally efficient, it is proposed that RWY 08R/26L be served with a Code C parallel field taxiway.

The current length of the glider runway designated RWY 08L/26R is to be extended in both east and west directions to an overall length of xxxx m. There are no requirements for glider runway strips to be provided with a RESA, however for safety reasons we have shown RESAs at each end of the runway, should the glider strips be used by war birds or other historic aircraft types such as a DC3 or Caribou.

The separation between the powered runway and the glider runway centreline exceeds the requirements with MOS Part 139. The current runway spacing is to be retained.

The runway pavement strength for RWY 08R/26L, is suitable for current operations however, it will need to be upgraded in the longer term in order to cater for design aircraft (F50).

10.2.1.2 Runways 17/35

The existing runway alignment for RWY 17/35 is retained. The current length of both runways is also retained. The current length permits both glider operation and powered aircraft to safely operate when the wind is from the north or south directions.

In order to make RWY 17R/35L (the runway designated for powered aircraft) operation safer and more operationally efficient, it is proposed that RWY 17R/35L be provided with a Code A parallel field taxiway (grass).

The separation between the powered runway and the glider runway centre line is compliant with MOS Part 139. Refer to Figure 10.1 and 10.2.

10.2.2 Taxiways

10.2.2.1 Sealed Taxiways

The master plan provides for a parallel field taxiway RWY 08R/26L in the short and long term planning horizon. In the short to medium term, a parallel field taxiway for Code B standard (10.5 m wide) aircraft is provided with the runway to taxiway centreline spacing set for Code C standard. In the longer term, the parallel field taxiway will need to be widened to 18m to accommodate the Code C aircraft type.

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10.2.2.2 Grass Taxiways

The master plan provides for a full length parallel Code A (typical single engine aircraft) grass taxiway for RWY 17R/35L (grass powered aircraft runway). Refer to Figure 10.1. The parallel taxiway will enhance safety, reduce runway occupancy/congestion.

10.2.3 Aprons

10.2.3.1 Main Aprons areas

The existing main apron area is proposed to be extended to the east to allow for additional aircraft parking in the longer term and to accommodate the proposed of the design aircraft type (F50).

The master plan allows for an area for both visiting and Benalla based aircraft. In the longer term, one parking position is provided for the design aircraft type (F50). Refer to Figure 10.1.

10.2.3.2 Glider Marshalling (Grass)

The glider marshalling area is proposed at the side of and outside the runway strip area. The gridding for large scale events is at the end of the runways as currently is the practice. The additional runway length provided to RWY 08L/26R which is main glider runway is three fold:

- To provide additional runway length
- To provide a larger gridding are for events
- To bring the western end of RWY 08L/28R closer to the public for more public exposure to gliding

10.2.3.3 Balloon Launch Areas (Grass)

Two purpose built balloon launch areas for hot air balloons, one North and one South of the existing runway have been provided as shown in Figure 10.1.

10.2.3.4 Helicopter Parking Area

Helicopter parking for both itinerant and fire fighting helicopters is provided just north of the main apron area. Refer to Figure 10.1.

10.3 Airspace and Air Traffic Control

10.3.1 Airspace

10.3.1.1 OLS

The protection of airspace in the vicinity of Benalla Airport is important to ensure that safety of aircraft and the surrounding community by eliminating obstacles in the airspace that may pose a hazard to airborne aircraft. The existing obstacle limitation surface (OLS) for Benalla Airport is based on a Code 2 runway for Runway 08/26 and a Code 1 Runway for 17/35. The OLS for Runway 26 is based on a non precision instrument approach runway, while all other runways are based on a non instrument approach runway. The existing OLS is provided on the designated powered runways only. There is no OLS protection for the glider runway strips. The Benalla planning airport overlay provides height protection to the take off and approach surfaces.

In order to protect the airport for safe aviation activities an OLS has been developed based on the proposed runway lengths as developed during the airport master plan process.

Both parallel Runways for 08/26 are extended in the east and west directions to accommodate the forecast traffic and glider operations. There is no change to the parallel runway lengths for Runway 17/35.

The approach to Runway 26 maintains the non precision instrument approach while all other runways are non instrument approach runways.

The Airport Master Plan

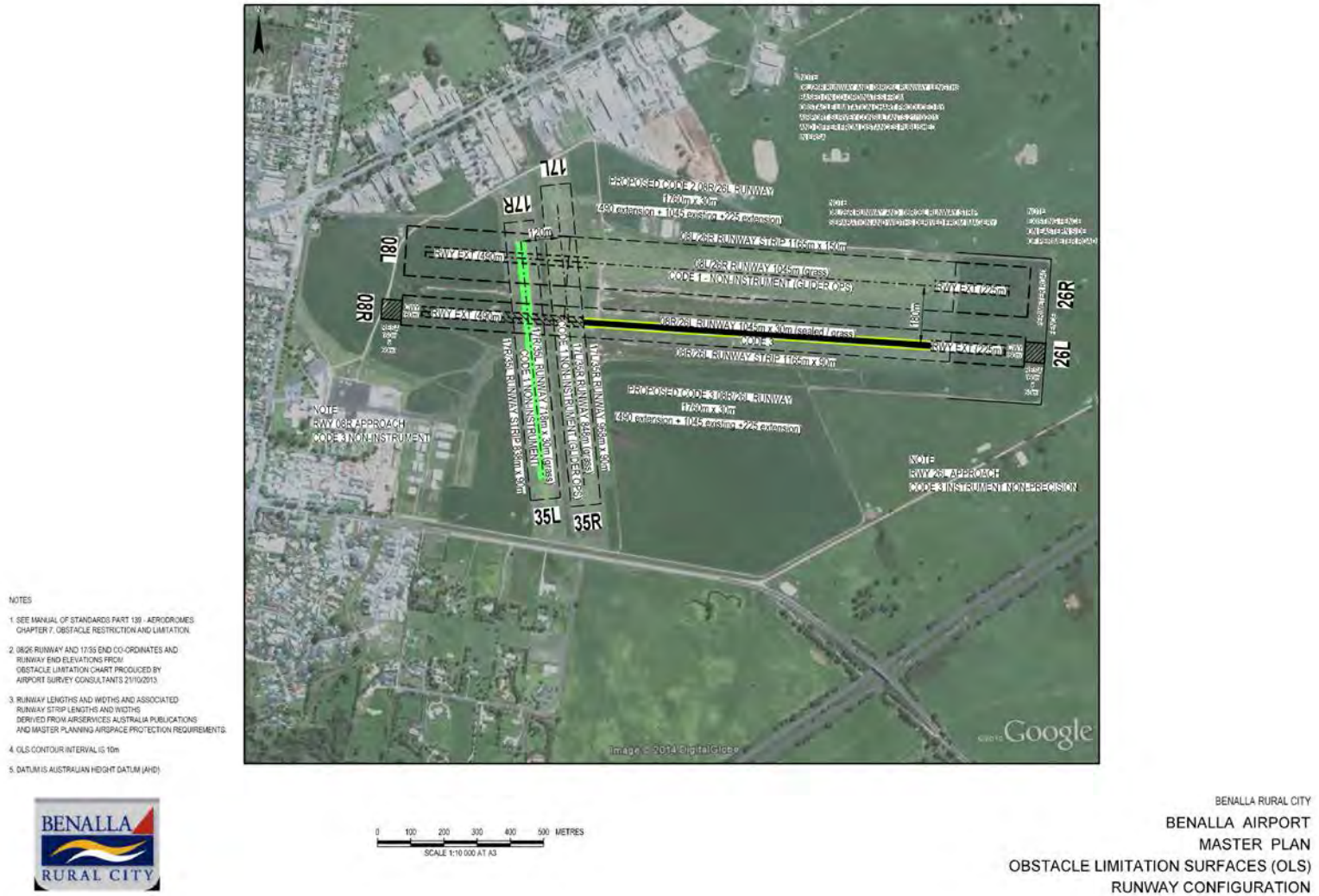


Figure 10.2 Benalla Airport Proposed Runway Configurations

The Airport Master Plan

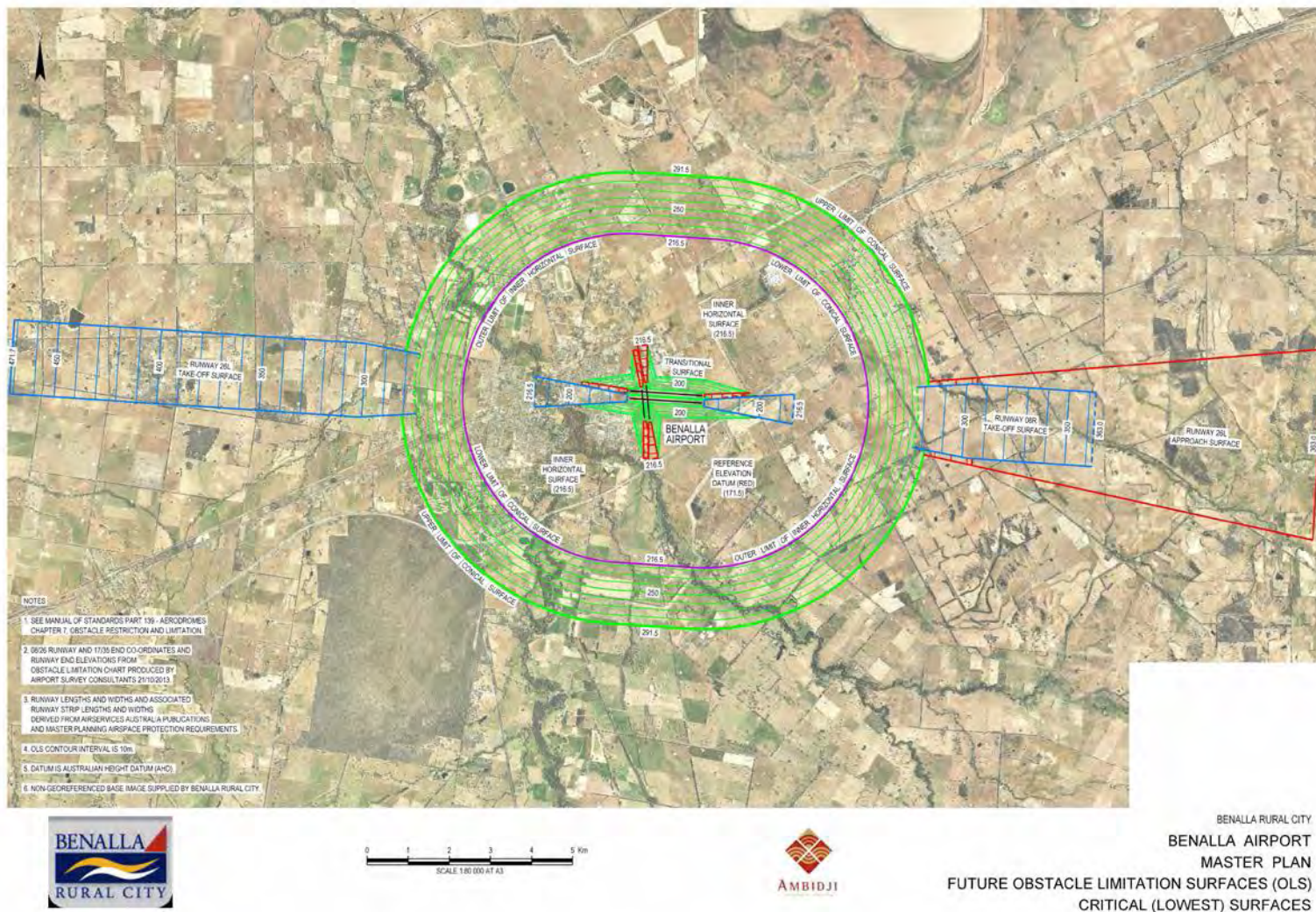


Figure 10.3 Benalla Airport OLS

The Airport Master Plan

The OLS is based on the existing airport reference point (airport elevation) and indicative runway thresholds for the proposed runway extensions. The proposed OLS is applied to both powered and glider runways to ensure future protection of all runways at Benalla Airport.

Benalla Regional City Council will need to update the planning airport overlay in order to provide future protection to the airport by providing a height overlay over the airports surrounding area.

Where existing structures penetrate the proposed OLS, these structures will become obstacles and supplementary take off distances will need to be applied when the runways are extended. See Figure 10.3. The OLS dimensions are contained in CASA, MOS 139 – Aerodromes.

10.3.1.2 PANS-OPS

Benalla Airport has a GPS instrument non-precision approach to RWY 28L. There is no PANs Ops surface drawing to protect the instrument approach from obstacles. The Pans OPS surface is similar to an OLS where by it provides surfaces that must not be penetrated.

It is recommended that council has a PANs OPS surface prepared to ensure protection of the instrument approach. This will form part of the airport overlay.

10.3.2 Air Traffic Control

As indicated in Section 9, the nature and frequency of future aircraft activity at Benalla Airport does not trigger the requirement for air traffic control and therefore the master plan does not provide any site for this.

10.4 Passenger Facilities

As charter services grow, a proposed passenger facility is proposed in the longer term to facility the ease of handling passengers. The exact size will be determined based on demand and frequency at the time. Figure 10.4, item 2 shows the location on northern edge of the main apron area.

10.5 Hangars

9.4.1 Heritage/Gliding Precinct

Provision has been made to provide additional hangar space for the growth of the aviation museum and war bird adventure flights. A size similar to the existing historic Bellman is provided. Figure 10.4, item 1 shows the location on the existing Heritage/Gliding Precinct.

9.3.1 Eastern Hangar Park

The Eastern Hangar Park provides for additional hangars to be developed in line with the demand requirements. Refer to Figure 10.5.



Figure 10.4 Benalla Airport Heritage/Gliding Precinct Hangars

The Airport Master Plan



Figure 10.5 Benalla Airport Eastern Hangar Park

10.6 Aircraft Maintenance

As more and more aircraft are based at Benalla there is an opportunity to develop an aircraft maintenance repair and overhaul facility (MRO). As a general rule of thumb, 30 aircraft provide enough work for a Licenced Aircraft Maintenance Engineer (LAME). Many Moro's have customers who are not based at the MRO airport.

Refer to Figure 10.5, which shows the aircraft maintenance locations (number 1) at the southern end of the Eastern Hangar Park.

10.7 Fuel Precinct

As traffic increases it is important to relocate the fuel facility away from the public area and onto a much larger apron area that handle aircraft requiring both Avgas and Avtur (Jet A1) fuel. The new location will provide fuel for visiting charter aircraft without the need to taxi into the historic apron area. The fuel tanks should be above ground of self-bunded type. Refer to Figure 10.8.

10.8 Patient Transfer

As traffic increase it is proposed to relocate the patient transfer facility away for the historic apron area and into a more private area for patient transfer. Refer to Figure 10.8.

10.9 Navigational Aids

With the advent of GPS and the continued development of that technology along with more and more aircraft being fitted with on-board GPS receiving equipment, there is no plans for any ground based navigational aids.

10.10 Meteorology

It is recommended that a ground base Automatic Weather Indicator Station (AWIS) be installed at Benalla Airport to provide real time weather information to pilots.

10.11 Airport Development Precincts Plan

To assist the Council in planning future use and development of the airport site, a Land Use Precinct Plan has been prepared. This plan shows three categories of land use precinct –

- Aviation precincts (4 precincts);
- Land-side airport precincts (2 precincts, plus the Benalla Performing Arts Centre/Goulburn Ovens Institute of TAFE precinct;
- Open space precinct (1 precinct).

Each of the land use precincts shown on the plan has different characteristics and objectives. The future use and development of the airport should be undertaken so as to be consistent with (and give effect to) the objectives identified for each of these precincts.

10.11.1 Landside Airport Precincts

10.11.1.1 Precinct 1 - Airport Core and Runways Precinct

The aviation precincts contain the existing aviation/airfield facilities, including the runways, taxiways aprons, navigational aids, hangars, maintenance and passenger facilities. These precincts must be retained and protected for future airport operations and facilities. See Figures 10.6 , 10.7 and 10.8.

10.11.1.2 Precinct 2 – Recreational Hangars

This precinct is currently occupied by a number of relatively new recreational aircraft hangars. This precinct has direct access to the runway and taxiways and is well located for future expansion and upgrade of aircraft hangar facilities. This precinct will also benefit in future from a new airport entry and car parking area off Kilfeera Road, as well as controlled access via security fencing and security gates, and close proximity of new aircraft fuelling point.

The new airport entry at this point will include fencing, access gates, signage and landscaping.

The tarmac access to existing hangars requires upgrading, both to address site drainage issues, but to also re-profile the width and camber of the tarmac so as to better cater for the safe movement of light recreation aircraft in and out of these hangars.

Opportunities exist to expand the number of recreational hangars in this precinct, depending on demand and funding. It is expected that this precinct will be sufficient to cater for hangar demand for the next 10-15 years. A concept plan for the future development of this precinct is shown in Figure 10.9.

10.11.1.3 Precinct 3 – Recreation and Events

This precinct is currently not used for aviation activities and has been used for cropping for a number of years. It will be set aside for a range of aviation related activities including;

- Major ballooning events – set off point, viewing;
- Other major aviation events – a viewing point, overflow car parking and camping for major events;
- Informal passive recreation and community events.

Temporary access to this precinct for major events and activities will be via the new entry to the Hangar precinct via Kilfeera Road. No direct access to Kilfeera road is proposed. See Figure 10.6.

The Airport Master Plan

PRECINCT PLAN

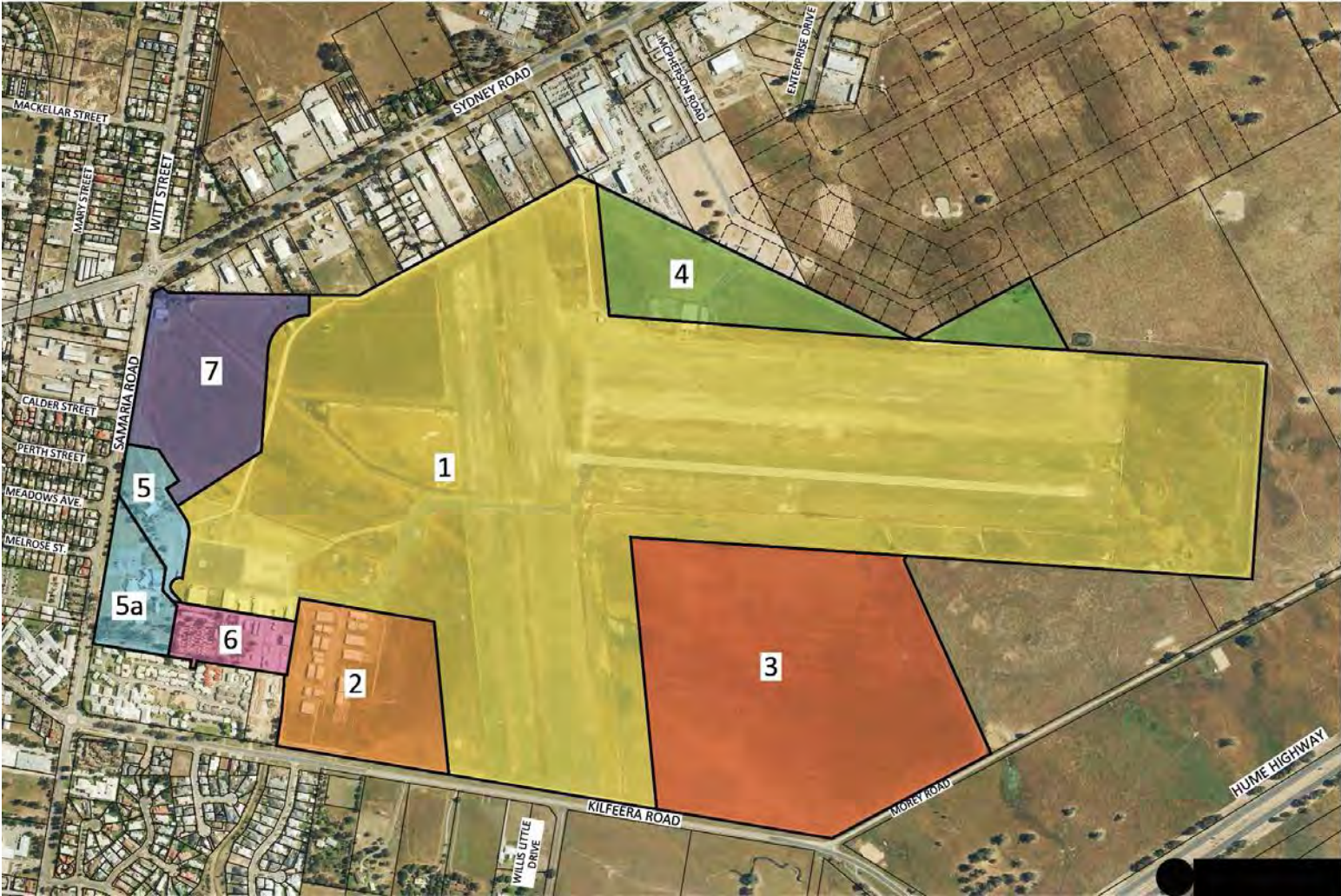


Figure 10.6 Benalla Airport Precinct Plan

AIR-SIDE STAGING PLAN

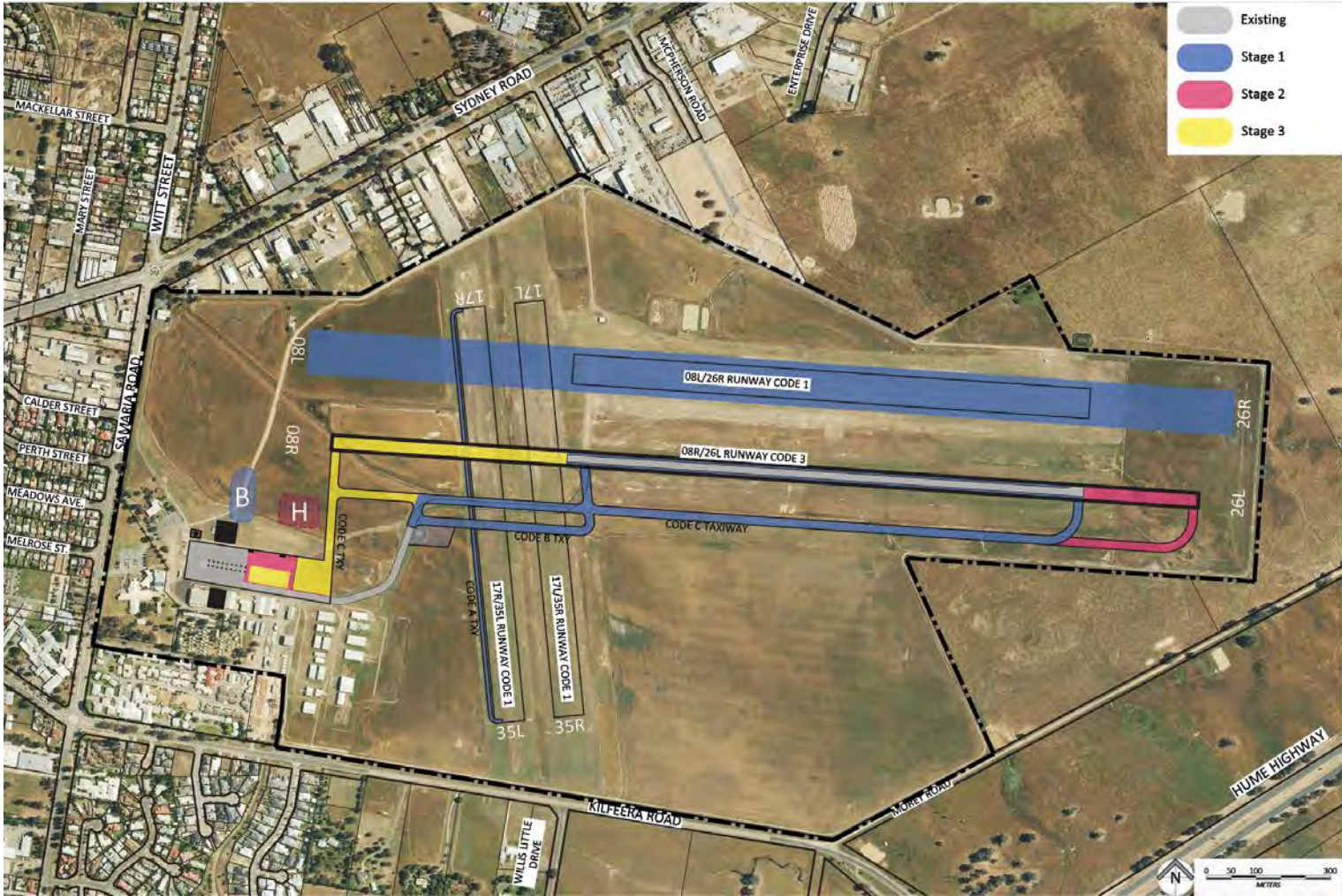


Figure 10.7 Benalla Airport Airside Development Staging Plan

The Airport Master Plan

DESIGN - PRECINCT 1

- ① Museum Hangar Expansion
- ② Transfer Lounge

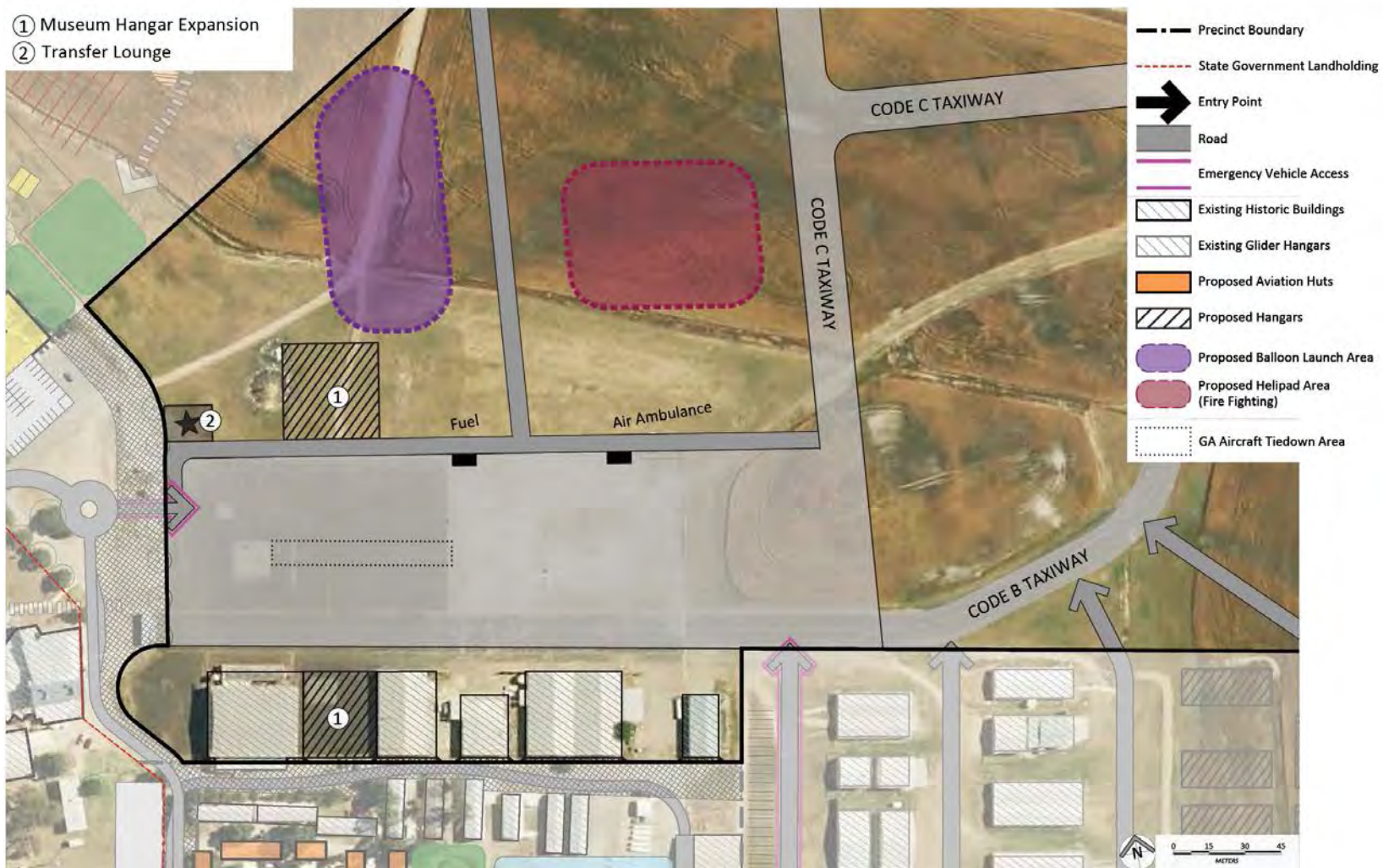


Figure 10.8 Benalla Airport Precinct 1 – Main Apron Area, Gliding and GA Hangars and Aviation Museum

The Airport Master Plan

DESIGN - PRECINCT 2

① Maintenance and Repair Operations (MRO)

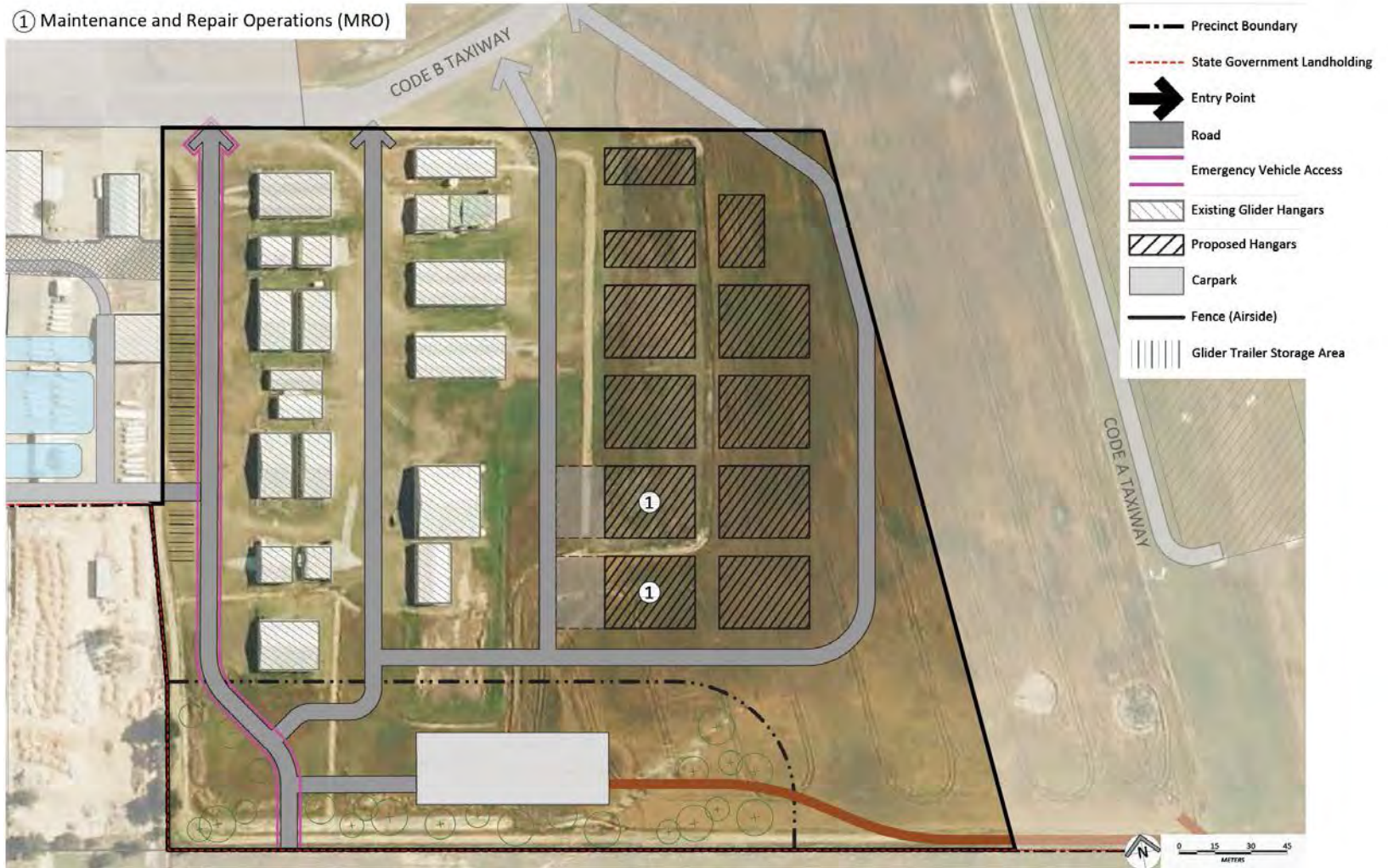


Figure 10.9 Benalla Airport Precinct 2

The Airport Master Plan

10.11.1.4 Precinct 4 – Airfield Access

This precinct will primarily be used for the staging and launching of gliders.

Opportunities also exist to provide future access to this precinct from the adjacent Enterprise Park estate. It is not intended to develop this precinct for industrial or commercial uses but rather ensure that any aviation related businesses within Enterprise Park can benefit from having relatively direct access to the runways.

Such access can also be used to provide additional access and viewing points for major aviation events. See Figure 10.6.

10.11.2 Landside Airport Precincts

10.11.2.1 Precinct 5 – Visitors and Events

This precinct will be upgraded to substantially enhance the visitor experience of the airport and its associated, community, recreational, educational and cultural activities.

A new tree-lined entry boulevard will be created off Samaria Road, which will deliver visitors to an attractive landscaped space, which celebrates the site's past and current aviation activity, as well as providing a high amenity space for a wide range of community arts and cultural events.

The boulevard road will terminate at a new roundabout and a new shared pedestrian/vehicle zone opposite the heritage hangars and apron. The existing fuel point will be relocated along the northern edge of the main apron in Precinct 1. The open space and car parking areas along the eastern side of the State Gliding Centre facility will be upgraded to rationalise car parking and significantly enhance the landscape/open space value of this area. See Figure 10.10.

The shared pedestrian/vehicle zone will stretch from the existing Glider Club building across the hangar and apron area, along rear of the BPAC/GoTAFE, the Aviation Museum and Heritage/Community/Arts precinct. It will be trafficable by vehicles at slow speed, and can also be closed off for major events, markets and festivals.

This precinct presents opportunities to expand the range of conference, seminar, training and other events offered by the BPAC/GoTAFE facility. Achieving this outcome will require that the various activities across this part of the airport are carefully programmed to work together, and that upgraded/new infrastructure and facilities are added to improve the offering of the BPAC/GoTAFE facility.

For example, opportunities exist to upgrade and expand the State Gliding Centre building as a complementary meeting space, food and beverage offering to BPAC/GoTAFE, capitalising on its uninterrupted outlook to the hangars, apron and runways.

In the longer term, opportunities also exist to deliver on-site tourist accommodation, which would significantly improve the attractiveness of the BPAC as a conference venue. Such accommodation could share kitchen/dining/administration facilities with an upgraded State Gliding Centre facility.

New and upgraded car parking facilities will be provided off the new main entry Boulevard, servicing the BPAC/GoTAFE facility, the State Gliding Centre facility and potentially new accommodation services.

The Airport Master Plan

DESIGN - PRECINCT 5 & 5a

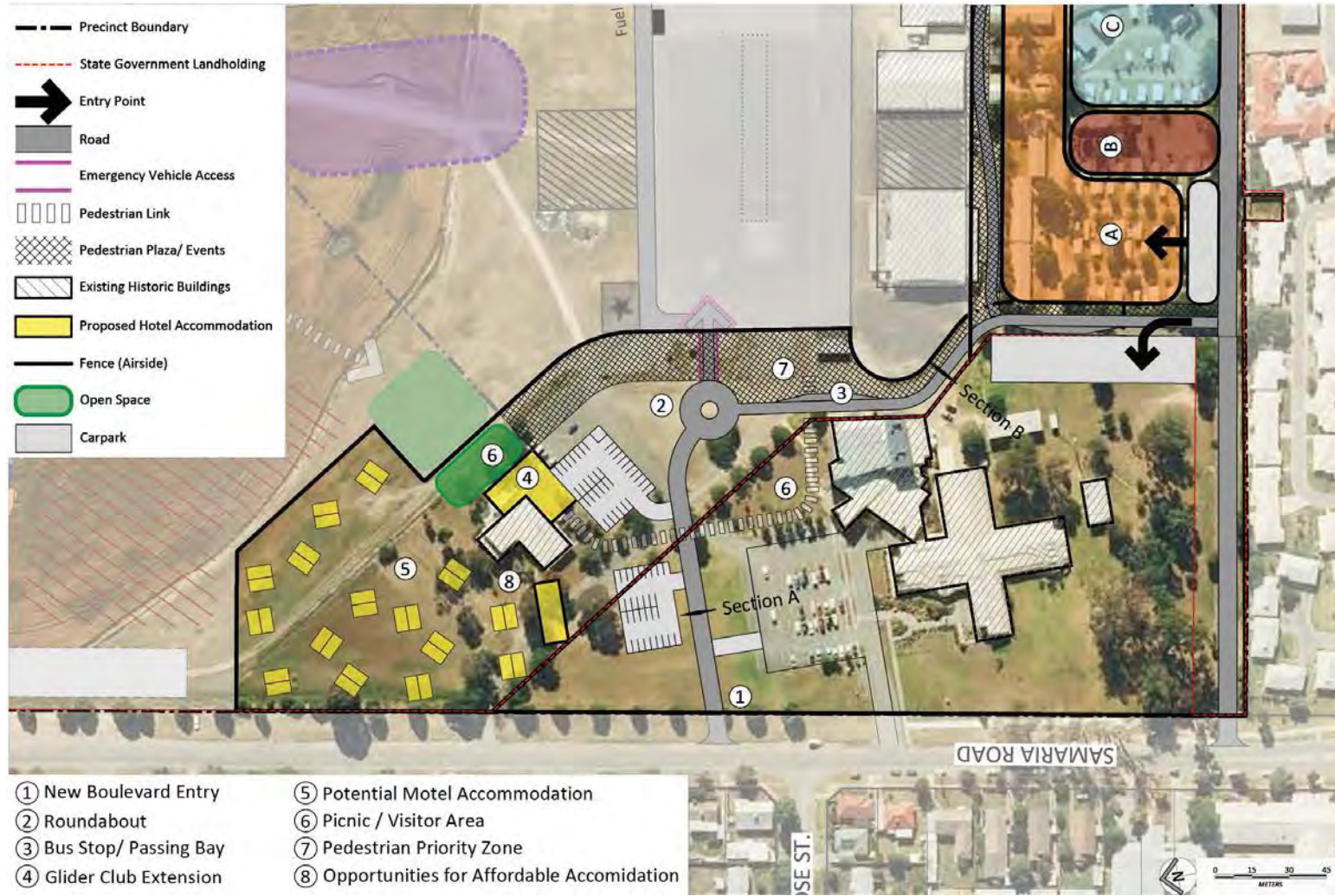


Figure 10.10 Benalla Airport Precinct 5 and 5a

10.11.2.2 Precinct 5a –Benalla Performing Arts Centre/Goulburn Ovens Institute of TAFE.

Whilst the BPAC/GoTAFE precinct is under separate ownership and management to the Benalla Airport, it has strong functional and activity links to the airport. The future of both the airport and BPAC/GoTAFE can be mutually enhanced if the two areas are master planned together.

The BPAC/GoTAFE offering can be considerably enhanced by the future development of both the Airport Visitor Precinct and Heritage/Community/Cultural/Art Precinct. Each of these precincts has the potential to enrich the student/visitor experience, by providing additional accommodation, food/dining, training and recreational opportunities.

This Masterplan envisages that the BPAC/GoTAFE precinct will continue to be used as a performing arts, conferencing and education facility, but that its future development will be undertaken in such a way as to complement the future development of the airport site. Examples of how such integration can occur include:

- Integrate the courses and activities of GoTAFE and BPAC respectively so as to capitalise on the aviation, heritage and community/arts activities on the airport site;
- Integrated signage, landscape and building design;
- Reconfiguration of access arrangements off Samaria road in order to facilitate a new boulevard entry across the BPAC/GoTAFE land title;
- Creation of a new car parking and arrangements off the lane beside Coinda for BPAC/GoTAFE visitors and employees;
- Improvement in how the western side of BPAC/GoTAFE buildings address (and integrate with) the Heritage/Community/Arts Precinct.

10.11.2.3 Precinct 6 – Heritage/Community/Arts and Visitor Accommodation

This precinct will cater for the following activities:

- a. Heritage/Community/Arts Activities;
- b. Open space and visitor Amenities;
- c. Visitor Accommodation.

This precinct is currently used for a combination of visitor accommodation, heritage and community uses. The existing aircraft museum can be accessed from this precinct, as can the existing BARC huts and aviation hangars.

Some of the existing BARC huts are used for short term affordable accommodation for airport visitors and users, whilst others are used by community and arts groups. These huts and the areas around them are in poor to average condition, and require ongoing maintenance and renovation. The existing toilet block between the BARC huts is in very poor condition.

Whilst the existing ‘aeropark’ provides important affordable accommodation for airport visitors, the amenity of these facilities warrants improvement. This precinct also has considerable potential to be enhanced for heritage, community and arts purposes. The airport has a fascinating history both as an airfield and as a migrant camp, and the community has enthusiastic heritage groups who are keen to improve the way that these histories are communicated to visitors. In addition, there are a number of active arts, cultural and community groups who are keen to undertake their activities from within this precinct. See Figure 10.11.

Area 6A – Heritage/Community/Arts

It is proposed that land and buildings within Precinct 6a (Heritage/Community/Arts) be upgraded to substantially enhance the visitor experience of the BARC huts and aviation hangars, and the heritage, community, recreational, educational and cultural activities associated with them. It will have a focus on the site's heritage (both as an airfield and also as a migrant camp), and on arts, community and cultural activities.

The assemblage of large hangars and BARC huts along the east-west lane present opportunities to create a unique visitor experience, blending together the aviation and migrant heritage, arts and community activities. The opportunity also exists to construct a new Migrant Exhibition Centre within this precinct. In order to facilitate this, the following actions are recommended:

- Upgrading entry to the precinct along the lane beside the Coinda nursing home;
- Refurbishing the existing BARC huts and hangars;
- Upgrading the public space between the BARC huts and hangars as a 'heritage walk';
- Creating a new arrival point to the precinct, including a new car park, themed signage and landscaping;
- Enhancing the use of the BARC huts along the heritage walk for heritage, community arts & cultural activities;
- Potentially re-creating elements of the migrant camp by constructing new buildings in the BARC hut style and installing original/recreated Nissan huts on the site. These buildings could serve a number of purposes including for community and arts activities, as well as supplementing the supply of affordable temporary accommodation for students and airport visitors;
- Creating a committee of management for the precinct with the responsibility for promoting the precinct, programming activities and

events, securing funding for capital works and activities and undertaking maintenance of public space and buildings.

Area 6B – Open Space Amenities

It is proposed that new open space and visitor amenity facilities be created in Precinct 6B (Open Space and Amenities). The new amenities would comprise new toilet and shower facilities. The open space area would provide a high quality outdoor space for visitors of both the accommodation and Heritage/Community Arts precinct to use. The open space would include a large grassed and treed area, designed so as to be suitable for conducting smaller-scale outdoor events and festivals (potentially for use in conjunction with use of the pedestrian plaza space). It would also incorporate a barbeque/outdoor kitchen facility and picnic shelters for use by visitors of the accommodation precinct and other user groups.

Area 6C – Accommodation

Access to low-cost accommodation for glider users and other aviation groups is an important offering that must be maintained at the airport. It is proposed that land within Precinct 6c be redeveloped over time, to provide affordable temporary accommodation for airport visitors and others. The accommodation offer will include a mix of existing and new huts, powered sites for permanent and temporary caravans, as well as sites for campervans and camping.

It is proposed to stage the creation of this precinct over time:

- Initial preparation of the area, including provision of electricity, water supply, landscaping, etc.;
- Relocate caravans and cabins into this precinct over time;

The accommodation currently provided by the BARC huts in Precinct 6A can be replaced by either relocating existing BARC huts into precinct 6C, or constructing new BARC huts in precinct 6C.

Extra accommodation would be provided on the site by constructing additional cabins (in a style sympathetic to the BARC hut architecture) within this precinct over the longer term.



The Airport Master Plan...

This approach would be a highly efficient use of the existing building infrastructure on the site, as well as allowing some of the existing planting and landscaping on the site to be retained. It provides flexibility to either retain existing BARC hut buildings where they are, or relocate them, depending on the nature and timing of constructing other buildings. The accommodation precinct could be managed by council or sub-let to commercial or other operators.



The Airport Master Plan

DESIGN - PRECINCT 6



Figure 10.11 Benalla Airport Precinct 6

The Airport Master Plan

10.11.2.4 Precinct 7 - Open Space & Passive Recreation:

This precinct will be used for passive open space, including picnic spaces, a new children playground, walking and cycling trails. It will also include aircraft viewing decks on its north and south edges. See Figure 10.12.

The northern viewing platform would be accessible from Samaria road and also via a new walking trail from the Visitor precinct.

A large portion of this precinct will be set aside to cater for the retardation of stormwater in lag storm events. The retarding basin proposed for this location will be profiled so as to make it useable for passive/informal recreation activities – the gradients of the basin edges and the overall shape of the basin will be designed so as to blend into the open landscape across the remainder of the airfield. The basin will be landscaped with plant species which assist in treating and disposing of stormwater. However it is important that the basin be designed so as to not hold permanent water, and for temporary stormwater to be released into the downstream drainage system as quickly as possible, so as to minimise the likelihood of water birds occupying the precinct.

The proposed walking trail will be landscaped with water sensitive urban design features (such as a 'dry creeked' features which provide visual interest without becoming an attractor of waterbirds. Limited trees and shrubs will be placed on the north and south side of the precinct (to frame the views across to the airfield) but the main area under the flight path will be kept free of trees.

10.12 Other Precinct Issues

10.12.1 Residential Airpark Developments

Other aviation related opportunities that may, subject to demand, be developed on or immediately adjacent to the airport with good airside access is the potential to develop an airpark precinct. Airparks which originated in America are now being developed in Australia. Airparks provide aircraft owners with the opportunity to build a residence and an aircraft accommodation hangar on the same parcel of land either within a building or in separate buildings.

Traditional landside access (vehicle and pedestrian) is provided on one side and airside access from the hangar to a taxiway is provided on the other. Airparks are now becoming established in Australia with Temora and Narromine which are both in NSW, surviving as examples. Tocumwal has commenced their subdivision for their airpark development.

While Benalla Airport Master Plan did not identify any on airport land for the development of an airpark, a parcel of land immediately adjacent to the south east boundary was identified by a private owner for the potential development of an airpark.

The identified area has a number of advantages:

- Provides both good airside and landside access;
- Located in the south east sector of the airport which provides an opportunity to develop a self-contained airpark development outside the historic precinct area of the airport;
- Can be configured to maximise the development opportunities with good aesthetics; and
- Developed as a private commercial development that will enhance the aviation sector at Benalla.

The Airport Master Plan

DESIGN - PRECINCT 7



Figure 10.12 Benalla Airport Precinct 7

The Airport Master Plan...

A triangular piece of land abutting the south east corner of the airport has been purchased by a Benalla Airport aviation operator (Figure 10.13). The intention is to develop a residential-aviation subdivision on part of this land.

A potential land swap has been suggested for the owner to gain increased access to road frontage to expand the development. The master plan layout in Figure 10.1 shows the location of this land. The potential use is compatible with the Master Plan but the demand for this and its overall financial feasibility is for discussion between the proponent and Council.

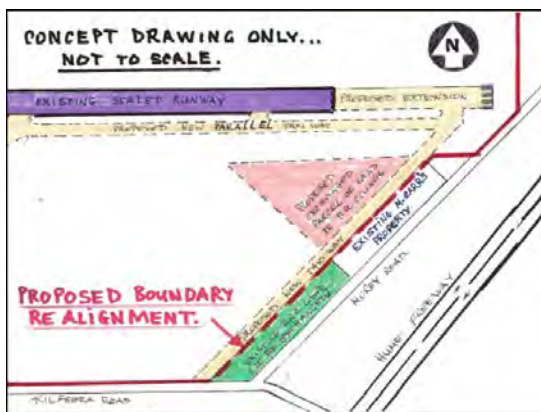


Figure 10.13 Benalla Airport Adjacent Development Proposal

The planning and business case for this development is outside of the Terms of Reference of the airport master planning consultants.

10.12 .2 RV Sewage Dump Point

Council is pursuing the installation of a Recreational Vehicle Dump Point at the rear of the pilot shelter off the main apron.

In the short term, the location of the facility may provide increased exposure to the airport's aviation, heritage, cultural and arts activities from RV itinerant visitors.

However in the mid to longer term, this facility will need to be moved once the full streetscape development commences to create the pedestrian and viewing areas along this landside section of the apron.

10.13 Access and Security

A function of creating a memorable visitor experience from the expansion and growth activities at the airport is efficient access, clearly accessible viewing points and attractive connections between precincts.

10.13.1 Roads and Pathways

New major and minor roads and footpaths within the site will be a combination of the cross sections shown in Figure 10.14. Other pathways will be a combination of pavers in key areas and gravel.

10.13.2 Security Access

Access to the airside through gates will be by an electronic security system.

New fencing with public signage will be provided to facilitate separating the public from the airside movement areas

The proposed future access points, internal roads and pathways are shown in Figure 10.15.

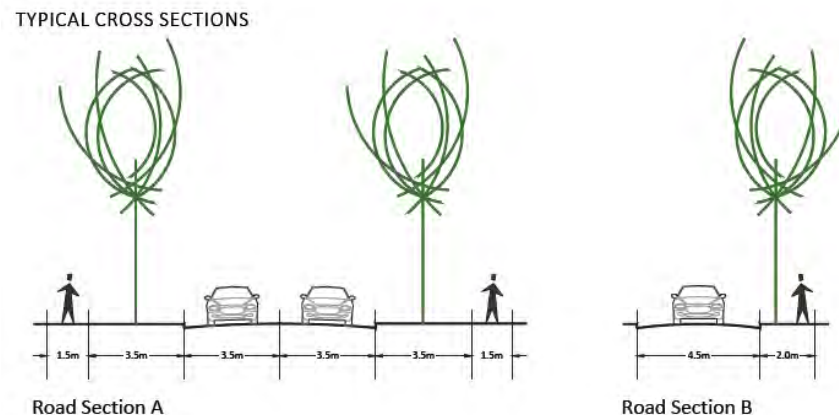


Figure 10.14 Benalla Airport Proposed Road Cross Sections

ACCESS AND CIRCULATION



Figure 10.15 Benalla Airport Access and Road Circulation Plan

10.14 Environmental and Social Actions

10.14.1 Retardation Basin

The proposed retardation basin is to be placed in the current open area between Samaria Road and the western extension of the glider strips. This basin is fundamentally to reduce flooding in the adjacent residential areas and as such is not to be funded by the airport.

10.14.2 Airport Drainage

Significant drainage works will be required as a prerequisite for many developments including:

- The upgraded glider strips
- The construction of a parallel taxiway
- Expansion of the eastern hangar park
- Relocation and development of accommodation
- Upgrading of aprons
- New and upgraded internal roads, and
- Pedestrian and Cycle pathways.

The existing airside open unlined drains will require rejuvenation to improve flows.

10.14.3 Existing Fuel Facility

Abandonment of the existing fuel facility will require the removal of the underground tank and a site investigation into any ground pollution through fuel leakage.

10.14.4 Building Heritage

The Council will need to consider an application to place a heritage overlay over the nominated buildings and airport areas of significant interest.

10.14.5 OLS

The Council will be required to review its land use planning (building height) overlay on the basis of the new OLS which takes into account powered take-offs from the glider strips.

10.14.6 Aircraft Noise

The Council will be required to review the current and future external land use planning surrounding the airport on the basis of the Year 2034 Australian Noise Exposure Concept (ANEC) contours. See Section 10.15.

10.14.6 Flora and Fauna and Aboriginal Heritage

No actions are required to facilitate the master plan proposed developments.

10.15 Aircraft Noise

10.15.1 Overview

An Australian Noise Exposure Concept (ANEC) is a mathematically calculated contour map showing the forecast of aircraft noise levels that are expected to exist around the airport in the future based on the airport demand forecast. The demand forecast is based on a 20 year planning horizon.

In developing the airport master plan, the assessment of aircraft noise effects is an important consideration in off airport development and land use planning. It aims to ensure that:

- Land is appropriately zoned by the Benalla Rural City Council;
- Sensitive land uses are not located in areas of unacceptable aircraft noise;
- The amenity of other surrounding developments is not adversely affected by aircraft noise; and
- The operations of the airport are protected long term from conflicts due to the encroachment of inappropriate development into aircraft affected areas.

The model used for the contours is the Federal Aviation Administration (FAA) Integrated Noise Model (INM) which is the approved model by Airservices Australia.

10.15.2 ANEC Contours

Based on the forecast traffic activity for the 20 year planning horizon, a contour map has been prepared for Benalla Airport, which includes the proposed runway extension to both the east and west directions for Runway 08/26. The resulting contour map is provided in Figure 10.16.

The ANEC has not been endorsed by Airservices Australia and it will be up to the Council if they wish to seek formal endorsement from Airservices Australia. Formal endorsement is not a legal requirement for non-commonwealth owned/leased sites. Note endorsed contours are known as Australian Noise Exposure Forecasts (ANEF).

10.15.3 Australian Standards AS2021 – 2000

Recommendations relating to land use within the ANEF contours are contained in Australian Standard AS2021-2000 “Acoustics – Aircraft Noise intrusion – Building Siting and Construction.” These recommendations are summarized in Table 10.1 below. This is a summary only, and council should consult the Australian Standards for full details of the land use recommendations, and associated notes and conditions.

Building Type	ANEC Zone		
	Acceptable	Conditional	Unacceptable
House, home, unit, flat, caravan park	Less than 20 ANEC	20 to 25 ANEC	Greater than 25 ANEC
Hotel, motel, hostel	Less than 25 ANEC	25 to 30 ANEC	Greater than 30 ANEC
School, university	Less than 20 ANEC	20 to 25 ANEC	Greater than 25 ANEC
Hospital	Less than 20 ANEC	20 to 25 ANEC	Greater than 25 ANEC
Public building	Less than 20 ANEC	20 to 30 ANEC	Greater than 30 ANEC
Commercial building	Less than 25 ANEC	25 to 35 ANEC	Greater than 35 ANEC
Light industrial	Less than 30 ANEC	30 to 40 ANEC	Greater than 40 ANEC

“Acceptable” means that special measures are usually not required to reduce aircraft noise.

“Conditional means that special measures (noise attenuation) are required to reduce aircraft noise.

“Unacceptable” means that the development should not normally be considered.

Table 10.1 Building Site Acceptability Based on ANEC Zones

10.15.4 Implications of the ANEC

In year 2034, the 20 to 25 ANEC overlies some residents to the west of Samaria Road. This is driven by increase in charter aircraft movements as well as power operation by tugs. This is, however, conditionally acceptable. It is recommended that once charter aircraft commence more frequent operations that an Australian Noise Exposure Index (ANEI) be prepared each year to track the movement or growth in contours.

11. Major Events

11.1 World Gliding Championships

The World Gliding Championships are to be held at Benalla Airport. The pre-Worlds are in January 2016 and the Worlds in January 2017.

The Gliding Club of Victoria (GCV) has suggested the scope of potential infrastructure upgrades and corresponding cost estimates to successfully hold the two events.

There is no information on the funds that GCV is able to commit to these work items and/or in-kind resources. Council does not have the budget to fund many of these works.

A proportion of the upgrade costs, in the form of a grant, are to be sought from the Victorian Government Regional Aviation fund (RAF) and "Putting Locals First". However, achieving sufficient government funding cannot be assumed.

Table 11.1 shows the GCV suggested list of works and some indicative master plan cost estimates in Stage 1 to meet the timing of the grant application and lead time to undertake the works prior to the pre-Worlds event.

This has now been upgraded by BRCC. The final project items pursued in the BRCC application for a RAF Grant, and their indicative costs, are contained in Section 13, Master Plan Implementation.

	Item	Request	Timing	Master Plan Allowance	Cost/Source	
					RAF	Other
OA-01	Watering Points for Gliders	Need 60 additional watering points	needed 2015	Inground plastic piping - Stage 1		18750
OA-02	Extend 08L by 250 metres	Allow larger grid for worlds and safer operation	Commence March 2014	Regrade, extend both ends and regrassincludes gridding areas	528000	
OA-03	Runway 08L, approach on RHS rough	remove ski-ramp, seal taxiway extension	Commence March 2014	Part of above	0	
OA-04	Regrass various worn areas on 08L and 17L	Drought conditions between 2000-2010 caused soil to be blown away.	Commence March 2014	Part of above	0	
OA-05	Temporary Runway in South East Paddock	For gliders returning to field during launch. Flatten a section 50mx60m	Commence March 2014	Prepare - Stage 1		13500
OA-06	Build second "BenBog" Shelter structure, at East end, Runway 26R launch point	similar functions to current BenBog at opposite end.	needed 2015	Stage 1. Otherwise reduce cost using portables	30000	
OA-07	Runway 26R&L08L&R smooth and groom area between E-W runways	Allows safe tug taxiing	Commence March 2014	Stage 1		2000
OA-08	Extend take-off strips on 08L/26R by 30m each	Provide all weather taxiing for tugs and gliders to reduce damage to the strip in wet conditions	needed 2014	Stage 1	20000	
OA-09	Runway ++ markers need to be removed & relocated	as they are proud of surface due to erosion	needed 2015	Stage 1		2000
OA-10	Runway 08L & 17L end fences need to be much safer	change to frangible design, safety for long landings & aborted take-offs	needed 2015	Renew all fences 1.2m high and vermin proof	125000	
OA-11	Runway watering system for Take-off pads only, Runway 08L	Remove dust hazard, reduces erosion, to cover area 300m x 50m only	needed 2014			5000
OA-12	Flush mounted runway side lights	Reduces collision risk for gliders using the grass verges. Easier maintenance re mowing.	needed late 2015	No, runway to be upgraded in Stage 2	0	
OH-01	AvGas Fuel Supply - replace main storage tank.	old system past useful operating period	needed 2014	Stage 1	100000	
OH-02	Club double Hangar - resurface floor	events space for WGC	needed 2014			50000
OH-03	Clubman Hangar - complete concrete Floor	for use during WGC as competitor glider repair area	needed 2016			50000
OH-04	BENALLA name to be painted on hard standing area large letters	10m tall 60m long, to maximise the value of all photography taken in conjunction with WGC	needed 2014			3000
OT-01	Sign on Freeway exits prior to Benalla	"Benalla - Home of World Gliding Competition January 2017. Pre-world competition January 2016"	ASAP			10000
AE-01	Glider Trailer Park improvements,	make new space and seal surface	needed 2016	Master Plan shows new position. Cost reduced.		75000
AE-02	AeroPark Casual Camping area - extend	refer Aeropark committee for their input	needed 2016	To be relocated. Master plan shows location and size		75000
AE-04	Proper Entrance gate to the BENALLA AIRPORT	off Samaria Rd where current cattle grid is opposite Perth St.	needed 2016	New entry with realigned entry road	107550	
AE-05	Glider on a Stick!	Put full sized Glider on a pole in prominent position. Visual promotion, painted up with WGC logo etc, near airfield entrance or SES crnr?	needed 2014			50000
AE-06	New Sign showing airfield layout at gate near fuel area	old sign faded and not up to date	needed 2014			5000
AE-07	Signs in town to show way to gliding club	Proper Blue tourist signs on Posts, ref. VicRoads guidance	needed 2014			20000
Total for Stage 1:					\$910,550.00	\$379,250.00

Table 11.1 World Gliding Championships Master Plan Indicative Provisions

11.2 Potential Ballooning Championships

The nationals were previously held every two years in the alternate year to the World Championships. It has now become Australian Balloon Federation (ABF) policy to hold an Australian National Championship every twelve months.

Timelines are established to call for expressions of interest from regional/State clubs to host the Nationals, EOIs then progress to bid stage and from bids to the chosen venue having the maximum possible time to organise an event.

The next Australian National Championships are:

2015	Northam WA
2016	Still to be determined
2017	BAV to potentially bid to host in Benalla on the back of the world gliding championships

To facilitate this potential opportunity and future growth in activity and/or the commencement of commercial ballooning at Benalla Airport, A north-westerly and southern area has been identified for balloon launching. In addition, the relocated fuel facility will include a propane dispenser operated by swipe card.

11.3 Air Pageants

Benalla is ideally placed given the existing airport infrastructure and that proposed under this airport master plan along with the excellent in town facilities to promote various air pageants. The World Glider Championships is an excellent example.

11.3.1 Warbirds

War Birds are becoming a great attraction either in their own right or along with a larger air show environment. Temora has built an excellent reputation with their large collection of flying war bird aircraft. Benalla has three classic flying Australian RAAF trainers and strong history of WWII training of pilots.

This should be promoted amongst the war bird community with the view of attracting fly-ins to Benalla.

11.3.2 General and Light Sport Aviation

The General Aviation community is always looking for a destination or an event to fly to. Clubs such as the Antique Aircraft Association, Women Pilots Federation, the Bonanza Society etc. should be made aware of the facilities at Benalla.

Light Sport Aviation have been very successful with their nation Fly In (Nat Fly) that moves around the country from year to year. Benalla would be an ideal location for such an event.

12.1 Development Priorities

The development priorities have been proposed on the basis of the aviation needs for known championships and the forecasts of growth in both aviation and non-aviation activities. The priorities have been tested in stakeholder consultations. The development plan allows for the upgrade of the Benalla Airport facilities as described in this Airport Master Plan.

12.2 Development Stages

There are three proposed development stages that are shown in Tables 12.1 and 12.2.

Stage 1 is 0-2 years to primarily meet the facility upgrades for the World Gliding championships.

Stages 2 and 3 are over 3–10 years and 11– 20 years commensurate with the possible growth in demand of airside and landside activity and required upgrading of the infrastructure.

As demand is confirmed or otherwise decisions can be made to bring forward or delay works in the proposed stages.

12.2.1 Stage 1

The triggers for Stage 1 investments are the imminent World Gliding Championships, continued issues with flooding of the site and non compliant or deteriorating airside infrastructure. However Stage 1 includes work items for the other precincts in line with starting to create the vision for Benalla Airport.

The stage 1 developments are shown in Table 12.1. Not all these developments are the prerogative of the airport or Council to fund with some of the infrastructure works to be funded by tenants and clubs. However, the drainage and airfield infrastructure are at a level that the airport and its tenants will likely require financial grants support.

12.2.2 Stage 2 and 3

The proposed developments for Stage 2 and 3 are shown in Table 12.2. Similarly, not all these developments are the prerogative of the airport or Council to fund; again with some of the developments to be funded by tenants and clubs. However, these longer term airfield infrastructure and landside works are at a level that the airport and its tenants will likely require financial grant support.



Airport Staged Development

Stage/Precinct	Action	0-2 years	3-10 years	11-20 years
Stage 1				
1	Extend glider strips to East and West			
3	Temporary runway in south east paddock			
1	Upgrade existing apron	Y		
1	Prepare and mark balloon launching area	e		
1	Prepare new glider gridding areas	a		
1	Install New Fuel Facility to the East	r		
1	Water reticulation to glider gridding			
1	Resurface GVC hangar floor			
1	Clubman hangar - complete concrete floor	2		
All	New Fencing	0		
All	New signage	1		
1	Toilet facilities in north east corner for ops off RWY 26R	5		
2	Upgrade existing hangar access tarmac			
5 & 5a	Create landscaped pedestrian plaza adjacent to airport core (initial upgrades)	to		
5 & 5a	Airport Improved drainage - Airside Channels			
8	Retarding basin	2		
8	Lookout/viewing platform	0		
8	Car park & access road	1		
8	WSUD landscaping works	6		
8	Walking/cycling trails			
8	Landscaping (stage 1)			
8	Construct car park (stage1) - Precinct 8			

Table 12.1 Benalla Airport - Proposed Stage 1 Developments

Airport Staged Development

Stage/Precinct		Action	0-2 years	3-10 years	11-20 years
Stage 2					
1		Parallel sealed taxiway		Y	
1		Upgrade existing sealed taxiway		e	
2		New entry		a	
5 & 5a		Carparks		r	
6		Construct new entry boulevard (Aviation land, BARC Avenue)		2	
7		Aeropark infrastructure - power, landscaping, toilet block		0	
1		Extend runway to the east		1	
1		Widen existing sealed runway width (18m to 30m)		7	
1		Extend taxiway to the east to extended runway threshold			
1		Build helicopter pad		t	
1		Extend Main Apron East - stage 1		o	
6		Renovate BARC Huts (stage 1)			
6		Construct new BARC Huts (Stage1)		2	
8		Landscaping (stage 2)		0	
2		New hangars (stage 1) Eastern Precinct 2		2	
7		Aeropark infrastructure - New cabins, BBQ & outdoor dining facilities		4	
Stage 3					
1		Extend runway to the west			Y
1		Extend taxiway to the west to extended runway threshold			e
1		Extend Main Apron East - stage 2			a
1		Construct charter passenger terminal			r
1		Bellman Hangar site servicing - Aviation Museum			2
2		New hangars (stage 2) - Eastern Precinct 2			0
5 & 5a		Extend Glider club – new restaurant/meeting facilities			2
5 & 5a		Create new visitor car parks (stage 2) - BARC Hut Area			5
5 & 5a		Construct new TAFE Car park			
5 & 5a		New motel			t
6		Heritage walk' pedestrian plaza			o
8		Construct car park (stage 2) - Precinct 8			
6		Renovate BARC Huts (stage 2)			2
6		Construct new BARC Huts (Stage 2)			0
6		Landscaping (stage 2)			3
7		Aeropark infrastructure - Additional new cabins			4

Table 12.2 Benalla Airport - Proposed Stage 2 and 3 Developments

The implementation of the master plan will require achieving increased revenue, capital grants for priority projects and the effective management of the development of all the proposed airport precincts.

This **Implementation Plan** provides the way forward to pursue the effective organisation of resources and priorities to develop the airport in accordance with the master plan recommendations.

13.1 Grants

The financial support of government Infrastructure and equipment grants will be needed to achieve many of the proposed master plan developments.

This is extremely important for Stage 1 projects that will support the World Gliding Championships. The key works of upgrading and lengthening the glider strips with associated infrastructure have a level of Capex beyond the budget of the Council.

In parallel with the preparation of the draft master plan and infrastructure and equipment costings for the stages of developments, BRCC has made an application to the Victorian Government for funding assistance. Two funding programs have been targeted, being the Regional Aviation Fund (RAF) and the FRIM for infrastructure and a new fuel facility, respectively.

Benalla Rural City Council's application for funding under the State Government Regional Aviation Fund is for substantial works at Benalla Airport in preparation for the World Gliding Championships 2016-2017.

The works listed in the application were carefully selected and prioritised following extensive consultation as part of developing the Benalla Airport Masterplan. The works constitute the commencement of Stage 1 of the Masterplan and once in place will not only enable the safe and high quality delivery of a world class sporting event, but also set Benalla up to capitalise on the economic benefit of its unique and iconic airport well beyond the Gliding Championships. Benalla's economy and employment has had a strong reliance on a few large manufacturing companies. The development at the airport will enable the rural city to pursue new businesses investment in the aviation industry and develop a strong tourism presence on the site.

The project items and estimated costs that are contained in the RAF funding application are shown in Table 13.1.

Precinct	Action	Cost	Funding Source
1	Exten glider strips to East and West	528,000	RAF
3	Emergency runway in south east paddock	13,500	RAF
1	Upgrade existing apron	210,000	RAF
1	Prepare and mark balloon launching area	3,000	Military Air Training Heritage Pty Ltd
1	Prepare new glider gridding areas	na	RAF
1	Install New Fuel Facility to the East	200,000	RAF
1	Water reticulation to glider gridding	18,750	RAF
	New Fencing	125,000	Council
	New signage	15,000	Council
1	Amenities in north east corner for ops off RWY 26R	45,000	Council
2	Upgrade existing hangar access tarmac	75,000	Council
5 & 5a	Airport Improved drainage - Airside Channels	110,000	RAF
8	Retarding basin	200,000	RAF
		\$1,543,250	

Table 13.1 World Gliding Championships RAF Funding Project Application

13.2 Airport Management

Implementation of the master plan and facilitating and managing the development of Benalla Airport will require an appropriate financially feasible management structure to be considered by Council. The following discussion canvasses the range of options that Council might consider with a recommendation for the most appropriate arrangement that balances facilitation, control and direction with available sustainable funding.

13.2.1 Council Owned Models

13.2.1.1 Integrated Council Departmental Option

One of the least optimised airport management solutions, primarily because it has the lowest impact on financial performance and access to finance yet presents the highest technical and commercial risk to Council. The departmental option does not provide any incentive for performance and aerodrome activity is generally driven by project budget considerations. However, the performance of this model can be improved through more extensive use of contracting or concessioning out to the private sector for part (e.g. property development) or all of the airport management.

For council consideration.

13.2.1.2 Council Business Unit

A more effective model than the typical “Council Department” airport management model due to its greater financial accountability. As a business unit, the day to day operations are much like a separate company with separate transparent financial reporting (albeit that the treatment of some matters such as finance, capital assets and taxation liability might be treated differently if the unit were a

corporation, or were reporting on a competitively neutral basis).

However, this model lacks the level of management incentive normally associated with the governance framework of a stand-alone company. This model is most accountable to ratepayers in that the operation falls under the normal business processes of Council. The business unit option is a low cost model but would need to contract an experienced aviation individual to lead and develop the airport.

For council consideration.

13.2.1.3 Council Owned Private Company

A number of local governments in Australia have chosen this model, with two relevant examples being Mildura and Gladstone Airports; which have a high revenue income from RPT operations. However, Benalla does not have the revenue flow to sustain the cost of establishing this structure in the short to medium term.

As a propriety company, Council is somewhat shielded from operational, legal and regulatory liability. Council retains influence on the directions of airport development through its membership of the Board and, subject to performance, receives an annual after-tax dividend from the airport company.

In many cases the company model produces increased motivation to identify new and improved revenue opportunities, as well as achieve efficiencies to reduce operating costs.

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The employment of staff outside of local government award structures and increased multi-skilling is one example of improved efficiencies under this model. Subject to its asset base and balance sheet, the airport company is better placed to approach the financial markets for capital funding and to form commercial arrangements with other airport stakeholders. Therefore, the airport does not need to compete for capital funds with other Council projects.

Whilst not eliminating the financial risk entirely, Council is less exposed than the Business Unit model discussed above if the airport is a good commercial performer. Of the other models the Council owned company provides a good compromise between the accountability offered by the public sector governance models, and the autonomy necessary to achieve the sustained financial performance expected of a full private sector model.

However, Benalla does not have the assets or projected revenue flow to sustain the cost of establishing this structure in the short to medium term.

Not recommended to be pursued.

13.1.1.4 Statutory Corporation

A statutory corporation offers a very similar model to the Council owned private company model in that it would operate as a for-profit company, which would have an independent board and governance, ownership of airport assets and access to financial markets.

Similarly this model is for larger airports generating significant revenues.

Not recommended to be pursued.

13.2.2 Private Sector Participation Models

Some of these models (such as partial contracting-out) can be used in addition to the above fully Council owned models, while others (e.g. full concession) can be a substitute for the Council model. Few of these models would be feasible for Benalla Airport.

13.2.2.1 Partial Airport Management Contract and Partial Concession

This model shows that the lesser performing Government ownership models, when combined with some element of outsourcing or concessioning out, can produce better outcomes mainly through the transfer of technical risk and the use of competitive bidding for contracts or concessions to reduce input costs. A major property development, or large retail development and an advertising concession may be suitable for this framework, whereas maintenance and other services are more suited to the partial contracting model.

Not recommended to be pursued.

13.2.2.2 Commercial Whole-of-Airport Management Contract

The Whole of Airport Management Contract would offer Council an appropriate short to medium term outcome in terms of adding more technical and commercial capability at CHRA, thus minimising technical risk almost to the same level as the other models, as well as potentially shifting some of the commercial risk on to the airport operator, through an appropriate incentive framework. It is this performance incentive, and the cost and innovation advantage to be gained from the competitive bidding process, that scored this model significantly higher on the performance criteria than the Council business unit model.

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This contracting scenario also ensures Council can maintain strong control and transparency over the direction of the airport business, more so than any of the private sector models to follow. The primary drawback identified for this model is that the financing burden and most of the commercial risk remains with Council and is only alleviated by some of the other more radical models discussed below. Notwithstanding this, contracting out is a methodology that could be used as a transition with a view to considering a concession or joint venture model further down the track.

Not recommended to be pursued.

13.2.2.3 Whole of Airport Concession

A concession or lease achieved the highest relative score in the assessment matrix. It is, in addition, a delivery option that could be the extension of any of the Council ownership and governance options. However, the most likely Council governance framework for overseeing this model is either by the existing Business Unit or otherwise a department of Council. It is not seen as either necessary or cost effective to establish a separate Council owned company with a Board, and then let a concession or a lease for the airport's operation.

A concession or lease is highly suitable option for Council as it provides for incentivised management and development of the airport whilst limiting exposure to financial, legal and regulatory risks and liability. The Council's continuing influence in the development of the airport can be enshrined in the concession contract terms, as can the required checks and balances in regard to the performance of the concession holder. *Not recommended to be pursued.*

13.2.2.4 Council Joint Venture

This option is the creation of a joint venture with private enterprise that would typically be for the reasons of gaining access to capital for developing the airport and/or achieving additional commercial and management expertise at the airport.

Not recommended to be pursued.

13.2.2.5 Sale

The sale of the airport removes almost all of the risk to Council, stimulates investment, removes dependence on Council financially and provides a windfall in realising the asset value. However, control and influence is lost. It is unlikely that Council would attract a suitable price from the private sector for continuing as an airport.

Not recommended to be pursued.

13.2.2.6 Conclusion

The most likely sustainable options for the future management of Benalla Airport are:

- Integrated Council Departmental Option augmented by contracting or concessioning out to the private sector various selected functions;, including contract management;
- Council Business Unit augmented by contracting an experienced aviation individual to lead and develop the airport.

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13.3 Airport Precinct Development

The Benalla Airport Master Plan has defined a number of development precincts to be addressed over the 20 year period. The master plan has not been prescriptive in regard to the detailed timing and location of developments within each of the landside precincts. This is to provide flexibility to meet changed circumstances (a master plan is a living document) and provide for stakeholder inputs to the priority and funding and management of each precincts development.

A suggested airport precinct development organisational structure follows for Council and key airport stakeholder consideration. See Figure 13.1.



Figure 13.1 Suggested Airport Precinct Development Organisational Structure

13.3.1 Airport Manager Direct Precinct Responsibilities

The organisational chart depicted, shows an Airport Business Unit supported by a full time airport manager. This is interchangeable with a Council Department supported by airport contract management. The airport manager or contract airport management will take direct responsibility for the following precincts:

- Precinct 1 – Airside Development;
- Precinct 3 – Future development area in south east;
- Precinct 4 – Areas to immediate north of east–west gliding strips, and
- Precinct 7 – Western undershoot of east–west gliding strips.

13.3.2 Management Committee Precinct Responsibilities

Management Committees, reporting to the airport manager, will be established for the following precincts:

- Precinct 2 – Recreational Hangar Area;
- Precinct 5/5A – State Gliding Centre area and BPAC/GoTAFE area, and
- Precinct 6 – Aerodrome, Heritage and Community/Arts area.

The composition of these Precinct Management Committees will be determined by the airport manager in consultation with all airport stakeholders. The respective membership of each of the three precincts is shown below; as a guide only.

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13.3.2.1 Precinct Management Committee Membership**Precinct 2 - Recreational Hangar Area**

- Existing hangar area tenants
- GCV
- Aeroclub
- Commercial aircraft and training operators
- Airport Manager
- BRCC engineering

Precinct 5/5a - Gliding Clubhouse area and BPAC/GoTAFE area

- GCV
- Balloonists
- Airport Manager
- BRCC engineering
- BRCC economic and Tourism representatives

Precinct 6 - Aeropark, Heritage and Community/Arts area

- GCV
- Balloonists
- Potters

- Migration Museum
- Aeropark management
- Aviation Museum
- Other Tenants
- Airport Manager
- BRCC engineering
- BRCC economic and Tourism

13.3.2.2 Special Project Management Committees

In addition, Management Committees will be established for special projects such as Gliding Championships or Balloon championship, as and when required.

13.3.3 Revised Airport Advisory Committee

An Airport Advisory Committee and BRCC Departments will provide input and support as required to the airport manager. It is suggested that the Advisory Committee revised membership be a total of nine (9) comprising:

- The Airport Manager
- 2 x BRCC representatives, possibly
 - Infrastructure/Engineering, and
 - Economic and Tourism development
- 3 x nominated representatives of the Management Committees (see below)
- 3 x other elected members

13.4 Airport Revenue and Costs

13.4.1 Airport Revenue

13.4.1.1 Airport Aircraft Operational Charges

Benalla Airport currently has no landing charges for general aviation aircraft. This is consistent with many other regional/country airports who wish to attract aviation activity to their respective cities/towns. This is based on the fact that when pilots and passengers visit a city they provide some multiplying factor to the economy (i.e. buy fuel, spend money in the town or stay overnight etc.).

Large regional cities such as Bendigo, Latrobe Valley, removed landing fees many years ago. Airports in close proximity to Benalla such as Wangaratta, Shepparton, Yarrawonga, Echuca and Corowa have no landing fees; with the exception of Mangalore that has landing charges for all operations. It has also been demonstrated that some smaller airports that do impose a landing charge spend almost the same amount of money in administration costs trying to recover the landing fees.

A small charge for turbine (Jet A1) powered aircraft applies at Benalla airport. It is recommended that this be reviewed.

It is therefore recommended that the existing policy of no landing charges remain in place with the view to attracting aviation activity to Benalla

13.4.1.2 Airport Property Charges

Tenure is always an issue with any property development/leases. A significant amount of capital is required to develop facilities on airports and financial lenders seek to have long tenure periods with options. Typical council leases across regional council owned at airports have been in 5 years blocks which have proved over the years to a major constraint to development at many regional/country airports. Some councils have elected to move to a 25 year lease term with options which allows greater flexibility for the both the lessor and finance companies. This also provides better security and a longer term income for councils.

Site lease costs are outside the airport master planning process and it is recommended that a separate study on lease costs be undertaken with the view to adopt a lease strategy that meets council's requirements for both developed and undeveloped sites.

The strategy should seek a balance between encouraging investment, the long term sustainability of the tenant and reasonable returns to the airport entity.

Leases at Benalla should be reviewed with a plan to adopt a lease strategy that meets Council's requirements for both developed and undeveloped sites. The strategy should seek a balance between encouraging investment, the long term sustainability of the tenant and reasonable returns to the airport entity. A recommended lease period of 15 years with 5 plus 5 year options will provide a good balance for both Council and airport tenants.

Recommended lease charges for Benalla Airport would \$2 – 3 per M² per annum for unserviced lots, \$ 5.60 – 6.70 per M² for serviced lots and commercial property between \$18.40 – 67.25 per M².

13.4.2 Airport Cost Considerations

Airport costs comprise of management, maintenance and capital projects. In addition to the former costs there are also costs associated with events that may have and impact on either short or long term infrastructure requirements for airport operations.

Appendix A contains a list of indicative costs associated with each stage of development as provided in this Airport Master Plan.

13.5 Master Plan Cycle

Airport master plans typically have a 20 year planning horizon with a review period every 5 years. However, for most regional/country airports there is little change within a 5 year period.

Whilst the review period is flexible, it is recommended that the review period be based on the council election cycle (four year term) and that a review be undertaken every 8 years.

The master plan should be treated as a living document and is subject to change as circumstances change. That is to say, that if a significant opportunity arises that does not meet the current airport master plan recommendations, then it should be reviewed based on sound business cases practices and if deemed warranted, then a revision of the master plan should be undertaken.

13.6 Master Plan Adoption

Adoption of this master plan does not represent a commitment by Benalla Rural City Council 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.

Appendix A	Indicative Master Plan Development Costs
Appendix B	Acronyms and Abbreviations

Appendix A

Indicative Master Plan Development Costs

Appendix A Indicative Master Plan Development Costs

The indicative estimated project costs for Stage 1 are shown in detail in Figure 1.

Stage 1	2015	2016
Extend glider strips to East and West	316,800	211,200
Temporary runway in south east paddock		13,500
Upgrade existing apron		75,000
Prepare and mark balloon launching area		3,000
Prepare new glider gridding areas		0
Install New Fuel Facility to the East	60,000	40,000
Water reticulation to glider gridding		18,750
Resurface GVC hangar floor		60,000
Clubman hangar - complete concrete floor		50,000
New Fencing	50,000	75,000
New signage		15,000
Toilet facilities in north east corner for ops off RWY 26R		30,000
Upgrade existing hangar access tarmac	18,750	56,250
Landscaped pedestrian plaza adjacent to airport core (Stg 1)	18,750	56,250
Airport Improved drainage - Airside Channels	110,000	
Retarding basin	200,000	
Lookout/viewing platform		20,000
Car park & access road		20,000
WSUD landscaping works	20,000	30,000
Walking/cycling trails	61,250	183,750
Landscaping (stage 1)		20,000
Construct car park (stage1) - Precinct 8		28,000
Sub Total:	855,550	1,005,700

Figure 1 Benalla Airport Master Plan - Stage 1 Indicative Development Costs

Appendix A Indicative Master Plan Development Costs

The indicative estimated project costs for Stage 2 are shown in detail in Figure 2.

Stage 2	2017	2018	2019	2020	2021	2022	2023	2024
Extend runway to the east				420,000	630,000			
Widen existing sealed runway width (18m to 30m)							900,000	900,000
Extend taxiway to the east to extended runway threshold						270,000		
Build helicopter pad	3,000							
Extend Main Apron East - stage 1		240,000	360,000					
Renovate BARC Huts (stage 1)	150,000							
Construct new BARC Huts (Stage1)		200,000						
Landscaping (stage 2)			20,000					
New hangars (stage 1) Eastern Precinct 2	300,000	225,000	225,000					
Aeropark infrastructure - New cabins, BBQ & outdoor facilities						90,000	60,000	
Sub Total:	453,000	665,000	605,000	420,000	630,000	360,000	960,000	900,000

Figure 2 Benalla Airport Master Plan - Stage 2 Indicative Development Costs

Appendix A Indicative Master Plan Development Costs

The indicative estimated project costs for Stage 3 are shown in detail in Figure 3.

Stage 3	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Extend runway to the west			637,500	956,250						
Extend taxiway to the west to extended runway threshold							268,800	403,200		
Extend Main Apron East - stage 2									240,000	360,000
Construct charter passenger terminal	87,500									
Bellman Hangar site servicing - Aviation Museum		125,000								
New hangars (stage 2) - Eastern Precinct 2	300,000			225,000			225,000			
Extend Glider club – new restaurant/meeting facilities	175,000									
Create new visitor car parks (stage 2) - Barc Hut Area		61,950								
Construct new TAFE Car park	178,650									
New motel	125,000									
Heritage walk' pedestrian plaza		100,000			100,000					
Construct car park (stage 2) - Precinct 8		106,400								
Renovate BARC Huts (stage 2)		50,000								
Construct new BARC Huts (Stage 2)				60,000		90,000				
Landscaping (stage 2)	75,000									
Aeropark infrastructure - Additional new cabins		90,000			60,000					
Sub Total:	941,150	533,350	637,500	1,241,250	160,000	90,000	493,800	403,200	240,000	360,000

Figure 3 Benalla Airport Master Plan - Stage 3 Indicative Development Costs

Appendix A Indicative Master Plan Development Costs

The annual estimated capex for the 20 year planning period is summarised in Figure 4.

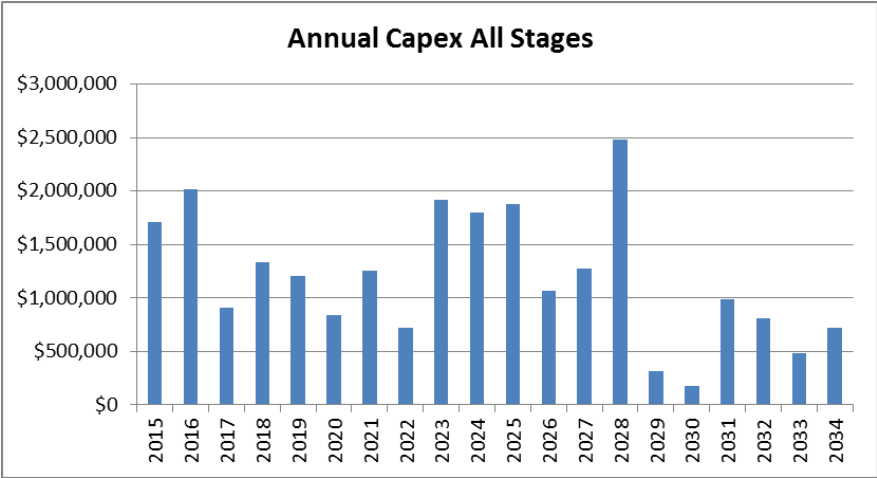


Figure 3 Benalla Airport Master Plan - Stage 3 Indicative Development Costs

The Figure shows a major Capex spike in Year -2028. In practice the future airport management would look to spread this into Year -2029 and 2030.

Appendix B

Acronyms and Abbreviations

Appendix B Acronyms and Abbreviations

ANEC	Australian Noise Exposure Concept	INM	Integrated Noise Model
ANEF	Australian Noise Exposure Forecast	IWDI	Illuminated Wind Direction Indicator
ANEI	Australian Noise Exposure Index	LAME	Licensed Aircraft Maintenance Engineer
ATIS	Automatic Terminal Information Service	LSA	Light Sport Aviation
AWIS	Automatic Weather Information Station	MOS	Manual of Standard
AMSL	Above Mean Sea Level	MRO	Maintenance Repair and Overhaul
BARC	Benalla Accommodation and Recreational Centre	OLS	Obstacle Limitation Surface
BITRE	Bureau of Infrastructure, Transport and Regional Economics	PAL	Pilot Activated Lighting
CASA	Civil Aviation Safety Authority	PANS-Ops	Procedures for Air Navigation Services – Operations
CBD	Central Business District	IRAF	Regional Airport Funds
ERSA	En-Route Supplement of Australia	RPT	Regular Public Transport
FAA	Federal Aviation Administration	RESA	Runway End Safety Area
GA	General Aviation	RWY	Runway
GCV	Gliding Club of Victoria	TWY	Taxiway
GPS	Global Positioning System		
ICAO	International Civil Aviation Organisation		