MILDURA AIRPORT **MASTER PLAN 2010**

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FOREWORD

MILDURA AIRPORT PTY LTD, IS PLEASED TO PRESENT ITS 2010 MASTER PLAN WHICH REVIEWS AND EXPANDS THE MASTER PLAN 2000 AND ITS REVIEW IN 2005, AS THE FRAME-WORK FOR ON-GOING DEVELOPMENT OF THE MILDURA AIRPORT.

The Master Plan 2010 is for the period 2010 to 2015 and the strategy for the period 2015 to 2030. It satisfies the requirements of Clause 8 of the Management agreement between the Mildura Rural City Council and the Mildura Airport Pty Ltd. Other than the time frame for delivery, it has been expanded to allow inclusion of information and knowledge vital to the strategic direction of the Airport without which this report would have little substance.

Mildura Airport is the principle RPT (Regular Public Transport), General Aviation and Pilot Training Airport in the Sunraysia Region of Victoria. It services not only the people of Victoria, but also South West New South Wales and North West South Australia. In this context it can be described as a truly Regional Airport. One of the few such Airports in Australia.

Accordingly, it is important that the potential of the Airport is fully realised to fulfil the expectations of the extended Community, for safe, effective and efficient Aviation related services by bringing together Airport Management expertise, skilled service providers and astute financial skills to ensure the Airport is developed in an effective and timely manner in concert with Stakeholders expectations.

The Master Plan represents the direction that Mildura Airport Pty Ltd will take in the future, recognising the strategic location of the Airport within an extended and expanding community.

The Master Plan has been developed using a technical review and consultative process with community and stakeholder input on issues the Airport needs to address. Consultants selected for their expertise and experience have been engaged to provide specialist skills, information and recommendation vital to the integrity of this Master Plan. The subject matter of these reports has been collated by the Mildura Airport Management team and used to prepare this Master Plan.

Significant time has been spent in assessing power demand implications of the Airport operations and the proposed industrial precinct adjacent. Such is the gravity of this issue that the plan for development of the Airport Park has been deferred to commence not before 2015, if then.

We encourage and invite all three tiers of Government to participate in consultation with the Airport and welcome relevant Government stakeholders input to this Master Plan review.

The Master Plan has been structured in 12 sections:

Volume 1 Master Plan

1. Introduction
2. Passenger Terminal
3. Aircraft Aprons
4. Runways & Taxiways
5. Aviation Support
6. Surface Access & Parking
7. Landside Development
8. Environment
9. Future Development
10. Policies & Procedures
11. Cost Projections
12. Executive Summary Mildura Airport Pty Ltd

Volume 2 Appendices

1. Terms & Conditions
2. Energy & Infrastructure Options Report
3. Bay Planning Policy
4. Traffic Report
5. Aircraft Performance Survey
6. Noise

We believe we have delivered a Master Plan that is both realistic and achievable in the current local, national and international Climate.

Please provide your feedback in the planning and development of your airport.

1 INTRODUCTION

MILDURA AIRPORT

Mildura Airport is strategically vital to the Region, serving not only the State of Victoria, but a large part of Rural New South Wales. South Australia as well as the very remote North West Region of Victoria.

Mildura Airport is the largest and busiest Regional airport in Victoria, based on the number of Regular Public Transport Services operating to and from the facility. 215,000 passengers from 3500 RPT services are projected to use Mildura for the 12 months ending December 2010. This number is further increased by passengers utilising the 6,200 charter and General Aviation movements each year. These movements include Charter, Flight Training, Air-freight, Air ambulance, Aerial agriculture, Parachuting, Military and V.I.P flights. It is also use for refuelling of transiting aircraft and a convenient calling point for diverting aircraft and those experiencing an on-board emergency.

MILDURA AIRPORT IS STRATEGICALLY LOCATED IN THE FAR NORTH WEST OF VICTORIA, SOME 650 KM NORTH NORTH-WEST FROM THE STATES CAPITAL, MELBOURNE. THE AIRPORT IS LOCATED 10 KM WEST FROM THE CENTRE OF THE CITY.

MILDURA REGION

Background and Purpose of Master Plan

The Master Plan is a strategic document intended to guide future development decisions to achieve the Mildura Airport strategic intent. Its purpose is to preserve land for future airport activities based on the forecast growth of the airport business at the time of writing.

The Master Plan is not intended to detail individual facilities or specific time frames for the implementation of the Plan; rather it sets the foundation upon which further analysis and planning is based. This Master Plan supersedes the current Mildura Airport Plan. This plan reflects the result of a critical review of earlier plans, particularly the Master Plan Review 2005.

This plan reflects the thinking and strategic direction of the Board of Mildura Airport Pty Ltd (M.A.P.L) which has been appointed along with a skilled Executive Management Team to facilitate the growth and direction of Mildura Airport for the Community. This plan sets the framework for detailed development of the concepts outlined for infrastructure, land use, environmental and energy concepts where final detail is not yet available.

This Master Plan began in February 2009, shortly after the receipt by MAPL of the Mandate to Manage on January 1st 2009. The plan has been prepared in-house by the Mildura Airport Management team, using their knowledge and experience and supported by input from a small team of specialist consultants who have provided technical input in the areas of architecture, and engineering.

The evolution of this plan and final presentation has been dependent on the receipt of critical data and advice, that were pivotal to the recommendation in this report. This document is prepared to advise future development directions of the Mildura Airport to support the development and growth of the Mildura and Sunraysia region.

It identifies elements critical to positioning the progression and development of the Airport as a strategic service for the greater Region. Supporting strategic thinking for the future direction. This document supports the considerable planning required to ensure the Airport development keeps pace with the demands of the community.

This plan is not intended to treat any single issue in detail but provide the framework for strategic thinking for the future. This Master Plan 2010 replaces earlier Master Plans.

Development Objectives

The long term strategic development objective for Mildura Airport is to stimulate and support the growing regional economy of Sunraysia and districts. The execution of this objective requires careful and considered planning, including the following key features discussed within the Plan:

- Enhancements to the existing taxiway and apron system to support the expected growth in aviation traffic over the short to medium term.
- Access to additional airside land to promote and grow the aviation industry in Mildura.
- Terminal development to provide for expected passenger growth, enhanced security requirements, additional commercial opportunities and enhanced passenger experiences.
- Development of a longer runway and associated infrastructure to facilitate busier routes and support long term aviation growth in Sunraysia.
- Long term protection of airspace associated with airport assets.
- Improvement of the current Town Planning provisions that restrict rapid and entrepreneurial actions due to the unnecessary and restrictive processes of the bureaucratic system.

It is envisaged that this plan will set the framework for a more detailed study of design, infrastructure planning, land use planning and environmental impacts required to achieve the long term objectives.

Land Use

The Airport is located approximately 10 Kilometres west of Mildura City Centre. The predominant land use surrounding the Airport in all directions is rural or undeveloped with some residential use associated with the occupation of the rural land. The density of dwellings is very low. Land use around the Airport and on Airport land is shown below.

Some land within the airport title has been released to community uses with insufficient consideration of the impact of those decisions on the future of the airport. In the longer term, those uses should be returned to the Airport for inclusion within its development master plan.

The Commonwealth Bureau of Meteorology has a lease over a substantial tract of land at the entry to the Airport.

When that lease expires, that land should be returned to airport use either in full or in part.

Location	Area (ha)
Airside Operations	77.85
Terminal Operations	7.2
Hangars/Tenants	8.44
Motorsports	5.625
Undeveloped	137.27
Museum	0.54
MET/ESS	2.3
Total	**239.225 ha**

The Consultation Process

Public comment has been received using the following vehicles:

- Passenger opinion survey 2007
- Feedback from users, Tenants, passengers, Airlines, Media and public at large 2008-2009
- Customer Service survey September 2009.

2. SIGNIFICANT EVENTS SINCE ADOPTION OF MASTER PLAN 2005

2005	May	Master Plan adopted.
2007	May	Survey of Customer preferences and priorities.
2008	July	Mildura Airport Pty Ltd incorporated. (M.A.P.L.)
	Jul	Independent Board of Directors appointed to M.A.P.L.
	Sept	New C.E.O. appointed to M.A.P.L.
	Sept	Passenger Security screening point established.
	Oct	Virgin Blue commences daily Jet services Melbourne –Mildura Return.
	Nov	Installation of check-bag screening equipment-x-ray machinery and baggage handling conveyors.
	Nov	Terms and Conditions of Use for users of Airport published.
	Dec	Passenger checked bag screening commenced.
	Dec	Victorian State Government announces $5.72 million grant to Mildura Airport.
	Dec	Time zones introduced to public Car park.
2009	March	Work commences on implementation of Apron and Taxiway upgrades. $7.9 million total spend.
	April	Consultants selected to review Traffic and parking needs.
	April	Consultant chosen to review special requirements of terminal for projected growth.
	May	Consultant selected to review energy requirements of Airport and development concepts of Master Plan.
	May	Water conservation strategy adopted and stage 1 committed to proceed.
	May	2009, Runway length reviewed and plan adopted to enable increase to 2100 metres within current airport boundaries.
	May	Old RAAF Sewerage Treatment Plant major over-hall and assessment of capability for the future use by airport.
	July	Landscape consultant selected to produce strategic plan for Airport Landscaping.
	Aug	Major Maintenance program completed on sewerage treatment plant.
	Sept	Customer Service and user Survey commenced.
	Oct	Stage 1 of water conservation program commissioned.
	Oct	Hangar 61 brought back in to Airport control and re-leased at commercial rates.
	Nov	Final recommendations received for Terminal upgrade and staging of car park re-development.
	Nov	Decision ratified to introduce paid parking at airport.
2010	Jan	Bellman Hangar commissioned as Security car park.
	Feb	Revised Master Plan presented to Board of MAPL.

3. REGIONAL ECONOMIC ACTIVITY

The city of Mildura is situated in North West Victoria at the junction of the Sturt and Calder Highways, en route to Melbourne or Adelaide. Being at the intersection of these major highways, Mildura has road access to state capitals and regional centres in Victoria, South Australia and New South Wales, and as such is the third largest transport distribution centre in the State of Victoria.

Mildura is a major freight gate for Freight Victoria and is linked by rail to the Ports of Melbourne, Geelong and Portland.

Mildura is the commercial hub of the Sunraysia region providing a major provincial centre surrounded by a belt of quality agricultural land. The Sunraysia region grows a diverse range of crops, with agriculture and horticulture activities having been the backbone of the regions' economic development. Tourism is another major industry in the district with ecotourism attractions becoming increasingly popular.

Relevant aspects of the key industries within the region are summarized in the following sections.

Agriculture: The Sunraysia Mallee Tri-State region includes two distinct agricultural areas, these being largely cereal crop farming in the south and fruit/vegetable crop farming in the north. The northern part of the region relies heavily on the Murray River for irrigation and produces wine, table grapes, dried fruits, nut crops, olives, citrus and vegetables for the domestic and export markets. Sunraysia produces approximately 69% of total Australian table grape production and more than 80% of the total (tonnes) exported. Sunraysia also produces some 27% of the Australian citrus crop.

Wine: The region is Australia's largest wine grape producing area (21% of the national crush) and largest export wine grape producing area. Some of the largest national winemakers are located in the region. The wine industry has experienced rapid expansion in wine exports in the past ten years. The region produces more than one third of the national wine production.

Future growth in this industry includes recent interest in establishing boutique wineries within the region, potentially promoting tourism for the region.

These figures will require reassessing as a result of the changes that have taken place with water licensing, sales and Buy-back programmes.

Mining (Mineral Sands)

Sunraysia is at the focus of a developing world class mineral sands industry based on the mining and processing of zircon, rutile, ilmenite and other rare metals.

Indications are that the Murray Basin area could produce significant volumes of rutile, zircon and ilmenite within the next ten years. These mines could continue production for the life of this Master Plan.

Manufacturing

Most businesses in the manufacturing sector of the region service the agriculture industry or are processors adding value to this industry.

The area has a major processing sector directed towards packing of premium fruit and vegetables and bottling plants servicing the local wineries and emerging opportunities to develop crushing operations.

Significant investment is occurring in the dried fruits industry including one plant producing 80% of Australia's dried fruit, for both the domestic and export markets. This has attracted investment from large-scale agribusiness resulting in current major new plantings in dried fruit.

Solar Infrastructure

Mildura has become the focus of several Australian first Solar Energy projects. Our climate is very conducive to Solar Energy production and the council is very active in driving the Region to as the Solar Industry Capital of Australia.

REGIONAL AIRPORT ACTIVITY IS COMMONLY AFFECTED BY LOCAL/ REGIONAL ECONOMIC ACTIVITY. TO ASSIST WITH REVIEW AND REVISION OF THE ACTIVITY FORECASTS, THIS SECTION SUMMARIZES THE RELEVANT ECONOMIC DATA AND FORECASTS OF ECONOMIC GROWTH FOR THE REGION REVIEWED AND CONSIDERED, AS PART OF THE REVIEW OF AVIATION ACTIVITY FORECASTS.

Tourism

Tourism is a major developing activity built around the Murray River, the Mallee Outback region, including the World Heritage listed Mungo National Park. Major events and festivals attract visitors throughout the year, with over 500,000 visitors to Sunraysia annually.

Introduction of a low cost air service has stimulated air travel to the Region and this is reflected in a higher rate of growth of passenger numbers over the past year.

FIGURE 1-2 EXISTING AIRPORT LAYOUT

FIGURE 1-3 LAND TENURE

4. OBJECTIVES

THE STRATEGIC DEVELOPMENT OBJECTIVE FOR MILDURA AIRPORT PTY LTD IS TO STIMULATE AND SUPPORT THE GROWING ECONOMY OF THE SUNRAYSIA REGION AND MILDURA DISTRICT. TO BESTOW CONFIDENCE IN THE MINDS OF CURRENT AND PROSPECTIVE BUSINESSES THAT MILDURA AND SUNRAYSIA REGION POSSESS A STRONG AERIAL LINK WITH THE BUSINESS CENTRES OF AUSTRALIA AND POTENTIALLY THE WORLD.

The execution of the objective will require considerable detailed planning and skilled management to develop the strategy and ensure appropriate treatment of the following matters:

- Rational and strategic development of the Mildura Airport, critical to support and stimulate the economy of Mildura and the Sunraysia District.
- Ensure that the Airports strategic significance is recognised adequately by the various levels of Government – Federal, State and Local.
- Ensure that adequate funding is available when required to maintain and expand the infrastructure at the level required to maintain the integrity of the services provided.
- Ensure that expansion of Airport infrastructure keeps pace with community needs and does not incur delay through political intervention. There will be a need for critical and detailed planning and projection of needs and commitment from all levels of Government to provide adequate funds to service the needs.
- Enhancement of the existing runway and taxiway system to remove weight limitations that currently exist and which are currently overcome by way of rolling concessions. Future expansion of the airport will be constrained if this item is not addressed in a timely manner.
- Terminal developments to accommodate the passenger traffic growth identified and comfortably accommodate the busy hour numbers projected.
- Projection for end 2010 is 215,000 passengers through the Airport.
- Recognition and development of commercial opportunities within the terminal inherent and implied by growth projections.
- Increase takeoff distance available on main runway when required within existing airport boundaries to increase range and payload of departing aircraft.
- Long term protection of airspace surrounding the region by ensuring adequate protection exists within the Mildura Rural City Council planning Scheme.
- Mildura Rural City Planning Scheme to provide for the Airport land to be adequately recognised as a Special Use Zone, and that as of right entitlements are conveyed on the land to ensure the development of the Airport and its infrastructure is free and unfettered by unnecessary political and bureaucratic process.
- To identify issues of energy supply and the influence of availability of energy in the development of the Airport.
- Develop land surplus to the Aviation need in a manner designed to generate funding to service the massive cost of maintaining the facilities and at the same time relieving the community of that cost in part or in total.

5. PASSENGER GROWTH AND PROJECTION

The growth of passenger numbers has projected Straight Line at 8% p.a. for the last 16 years. Growth for the year November 2008 to November 2009, was 15.6%. Terminal development is incremental to cope with this expansion. Apron parking layout designed was developed to accommodate four narrow body jets simultaneously, up to B737-900 or A320 – A 321 in size.

Busy hour maximum from that occupation, could be up to 840 passengers (4 by 210 seats). The Terminal would at that time be grossly inadequate and will require a complete replacement when busy times approaches 400 passengers. This will occur in approximately 20 years at currents rate of growth.

The reason for the increase is attributed to the entry of a low cost carriers to the route and the resultant depression of average fares and airline yields, creating a more favourable environment for the travelling public and a resultant increase of numbers through the terminal. The long and consistent growth pattern gives confidence in projecting forward passenger number predictions at a similar rate.

To ensure that growth is not exaggerated in projections, the rate of 5% p.a. has been adopted as the standard growth rate for planning purposes. At that rate, 500,000 passengers will be carried at Mildura Airport by 2021, and 1,000,000 passengers will be estimated to be carried by 2030. Peak hours numbers could be as much as 400 passengers per hour by 2021. Busy hours demands will be accommodated with permutations of the Terminal Master Plan.

Traditionally passenger numbers at the Airport were weighted heavily towards business services. Increasingly Tourism and Leisure now make up approximately fifty percent of passenger numbers. With increased development in the region, passenger numbers are predicted to overtake business services.

PASSENGER NUMBERS HAVE BEEN RESEARCHED BACK TO THE LAST POINT OF RELIABLE DATA IN 1993.

TO DECEMBER 2010, PASSENGER NUMBERS ARE PROJECTED TO BE APPROXIMATELY 215,000 PASSENGERS.

TOTAL PASSENGERS

FORECAST ANNUAL PASSENGER MOVEMENTS

6. AIR SERVICES HISTORY & TRENDS

After serving as a military training field, Mildura Airport operated for many years as a small rural airfield serviced by various operators, including Ansett and TAA.

It was not until the 1980's that demand stimulated competition and a number of new operators appeared, including Murray Valley Airlines, Southern Airlines, Kendall Airlines and O'Connor Airlines.

Time has rationalised the involvement and today we see a solid group of operators.

- Virgin Blue Airlines – being the first to operate regular jet services. Embraer 170 (78 seats)
- Qantaslink – operate Dash 8 Q 300 and Q 400 (50 & 74 seats)
- Regional Express (Rex) – operating Saab 340 (34 seats)
- Sharp Airlines – operate Metro liner (19 seats).

The trend is to larger equipment with greater seating capacity and reduced service frequency.

8 CONTROL & REGULATION

All **Certified Airport** Airports are heavily regulated by the Commonwealth government. Mildura Airport **is** a Certified Airport. Regulators are:

Civil Aviation Safety Authority (CASA) (Aviation safety)

- Regulates Mildura Airport with Civil Aviation Safety regulations (CASRs)
- We are required to produce an Airport Manual which determines how we run the aerodrome
- We are required to have a Safety Management System which interfaces with the Airport Manual and Civil Aviation Safety Regulations
- We are required to have a Drug and Alcohol management Plan (DAMPs)
- We are required to hold an Aerodrome Emergency Plan (AEP).

Office of Transport Security (OTS) (Security)

- Regulates Mildura Airport with the Aviation Transport Security Act and Regulations
- We are required to have a Transport Security Plan (TSP)
- We are a Screening Authority.

Mildura Rural City Council

Planning control of activities at Mildura Airport is vested in Mildura Rural City Council. The Planning consent process is considered inappropriate for the long term effective and efficient development of the Airport. There is a need to promulgate a Special Use Zone that will convey as of right an ability to treat development matters in-house at the Airport in line with a system of delegation agreed with Council and the Victorian State Government.

CURRENT POSITION

The terminal building Stage 1 was completed in 1995, and provided some 500 square metres of area for the combined functions of check-in, departure and arrival.

In February 2004 a further 500 square metres approximately was opened.

To accommodate RPT jet services in October 2008, and the accompanying requirements for passenger security and safety screening and bag check screening, significant modifications were undertaken, including:

- Creation of a sterile passenger boarding lounge complete with toilet facilities to accommodate up to 140 people
- Creation of a screening point and search area
- Creation of checked bag screening facilities. X-ray machinery, conveyors, covered loading loop and new check-in baggage handling equipment.

Scheduling decisions, along with aircraft mix has a significant impact on busy hour projections, often with no or minimal consultation with the airport owner. This is particularly the case with arrivals processing, especially baggage claim, but also impacts on security screening and departure hall capacity.

GOING FORWARD

The current terminal has been designed and developed at a time when the spatial needs and positioning of the structure were less critical than they are today.

With passenger numbers climbing rapidly, the building is under pressure to accommodate the demand. The critical measure of the terminals ability to cope is the number of passengers presenting for departure in a single hour period, known as the 'busy hour'. This has not been adequately addressed in the past.

Dimensions and spatial requirements revolve around this number, which requires adjusting to recognise the likely proportion of additional people attending to meet, greet and farewell travellers.

Aircraft movements and Type will dictate the busy hour science applied to the task of forecasting special requirements for the passenger loads envisage. It is currently at a critical point where demand is rapidly overtaking the area available to service that demand.

Planning for this next phase realistically should have been completed as part of the last master planning phase, but as it has not been, then it behoves current Management to fast track the process and determine the required foot print for the current situation and what is projected for the next 10 years, and ultimately 30 years.

PASSENGER DEMAND

Passenger demand and resultant floor space demand will be generated by the busy hour, determined by schedule and aircraft equipment chosen to operate the schedule.

WITH PASSENGER NUMBERS CLIMBING RAPIDLY, THE BUILDING IS UNDER PRESSURE TO ACCOMMODATE THE DEMAND. THE CRITICAL MEASURE OF THE TERMINALS ABILITY TO COPE IS THE NUMBER OF PASSENGERS PRESENTING FOR DEPARTURE IN A SINGLE HOUR PERIOD, KNOWN AS THE 'BUSY HOUR'. THIS HAS NOT BEEN ADEQUATELY ADDRESSED IN THE PAST.

PLANNING CRITERIA

Typical planning parameters for regional airports have been adopted for the purpose of determining required terminal infrastructure. These include consideration of:

- Processing times (seconds per passenger)
- Ratios of family and friends meeting arrivals and bags per passenger
- Acceptable level of service standards – typically IATA Level of Service C.

Adequate power supply to the main terminal, other buildings and facilities will be an important consideration for the immediate future. The Airport precinct is currently consuming up to the maximum power capacity available. Before any major future redevelopment or new development works occur, an electrical supply upgrade will be needed or an alternative reliable source provided for outage and high demand periods.

Busy hour projections are contained in the table below.

Aircraft Type	Aircraft Seating Capacity	December 2009	LIKELY TIMING OF CHANGE				
			Current Position	June 2011	June 2013	June 2015	June 2020
SAAB 340	34	34	34	34	34	34	34
Q 300	50	50					50
Q 400	74		74	74	74	74	
E 170	78	78	78		78	78	
E 190	108			108	108		
Metroliner	18	18	18	18	18	18	18
B 737 - 700	144					144	144
B 737 – 800	164/180						164
Total Pax in Busy Hour		180	204	234	312	348	410
80% factored load		144	164	188	250	279	328
Busy Hour with visitor factor		230	263	301	400	445	525

It can be seen from the table that operations have the potential to grow right through to 2020 by virtue of changes in equipment type and the potential for introduction of a new route.

From that point there will be little busy hour increase until a move is made to larger aircraft by both operators e.g. B 737 – 700 & 800 series. At that point there will be a quantum leap in passenger numbers. This is not envisaged before 2020.

Aircraft stands on the apron are adequate for all permutations.

Terminal capacity and Projections of Change

The current terminal is close to saturation and fails to deliver an acceptable level of service.

Check-in counters should be re-oriented for effective presentation and queue management. Dimensions available for passenger check-in, is insufficient to provide non congested queuing.

Security screened passengers are isolated from the café and the area currently available in the sterile zone is becoming cramped and may rapidly become unacceptable to passengers.

The café facility is inadequate now and will fail to provide appropriate service levels in the future. Toilet facilities are currently marginal in size and location and will require upgrade in near future.

TERMINAL EXPANSION OPPORTUNITIES AND TIMING

Phase #1

Timing – Immediate

Increase baggage collection area and introduce a baggage collection carousel.
Replace Arrivals door and reclaim area for terminal and café use.
Construct a non return turnstile to regulate and control arriving passengers.
Provide additional toilet facilities through minor refurbishment of facilities in old terminal building.
Provide solar protection over open courtyard area.

Phase #2

Timing – Immediate

Interim alterations to public areas of Café
Remove interior non structural in-fill walls and make good walls & floors.
Replace existing kitchen equipment and counters and extend serving area to north.

Phase # 3

Timing – Immediate

Adjust boundaries of sterile area to include Café
Increase dimension of sterile area and absorb café facility within.
Enclose perimeter of portico and relocate car rental counters.
Enclose passenger arrivals area.
Enclose verandas and create new façade.
Activate development plan SK 22 or derivative thereof.

Phase # 4

Timing – 2013-2015

Activate development concept plan SK 23 or its derivative.
Extend veranda perimeter walls to end and remove shop front windows.
Provide new flight information display system.

Terminal Requirement Analysis

The following diagrams and staging proposals provides an overview of the strategy to accommodate growth to 2020.

Long Term Terminal Perspective

Whilst the existing footprint can be manipulated to provide an acceptable level of service over the next 20 years, it is incumbent upon MAPL to plan for and protect future expansion options. Some of the inputs into future expansion options are apron capacity; car parking; access road development; fuel depot location; and Bellman Hangar. In addition to these considerations security requirements will continue to shape the functionality of the terminal operations.

It is assumed that the current Terminal asset will form the basis of the long term future. The logical plan is to develop the Terminal to the south progressively creating a deeper terminal.

The following concept diagrams show the stages proposed.

EXISTING TERMINAL BUILDING

Phase 1 Development Plan

Interim step to enlarge sterile area

The Phase One proposal is to immediately re-arrange the interior of the Terminal to capture the renovated café within the sterile area.

This proposal is contained fully within the perimeter of the existing terminal structure and is a cost effective solution to the immediate need to create additional space for the departing passengers.

POSSIBLE SHORT TERM SOLUTION

Above is a possible short term solution to reducing congestion and accommode between 180-200 passengers in the busy hour. This solution provides for the need up to a busy hour of approximately 200 passengers, which could occur as early as 2011 and could be achieved primarily through the re-arrangement of the existing building footprint.

Given the immediacy of this need, it is most likely that this will in fact be stage 1 of redevelopment and should be planned to proceed immediately

LAYOUT TO ACCOMMODATE IN EXCESS OF 400 PASSENGER BUSY HOUR

CONCEPT TO ACCOMMODATE 500 PASSENGER BUSY HOUR

PROPOSED ELEVATION TREATMENT

PROPOSED ALTERATIONS TO MILDURA AIRPORT TERMINAL

GSD
ARCHITECTS

At a point and probably post 2030, there may be a need to relocate and rebuild the terminal on a green fields site possibly north east of the intersection of the runways.

The expanded building envelope will be approaching its useful life and may need to be considered for replacement. The opportunity to redevelop the terminal at a more appropriate location should not be overlooked at the time that it becomes necessary to construct a fire station and/or control tower.

Access directly from Sturt Highway would add a convenience to the Airport that is greater than the current access off Walnut Avenue.

3 AIRCRAFT APRONS

THE REGULAR PUBLIC TRANSPORT (RPT) APRON WAS UPGRADED IN 2009 TO ACCOMMODATE SIMULTANEOUS OPERATIONS OF UP TO FOUR CODE C AIRCRAFT.

BOEING 737 – ALL TYPES & AIRBUS A 320-321 SERIES.

REGULAR PUBLIC TRANSPORT APRON

All RPT Apron bays provide for self powered operations.

Current aircraft types are within the capability of the pavement, but when regular services are established using B 737 or A320 types, a complete re-sheet of the runway and apron will be required to preserve the pavement from the heavier aircraft. A dispensation regime exists to allow limited operations of these aircraft on the current pavement.

Jets aircraft commenced operation of daily services in 2008. Current jet operations are at or below the existing pavement rating, however these operations will increase the rate of degradation of the pavement. With a move to regular B 737 or similar operations, the rate of degradation will further increase and prudent planning would provide for a significant upgrade of the main runway and apron, at about 5 years from introduction of a single daily service.

This apron will provide operational flexibility and capacity to at least 2030.

GENERAL AVIATION APRON

Southern GA Apron

Located south east of the main terminal building this area provides parking for aircraft, including rotary winged aircraft (Helicopters) involved in flying training, charter and aerial work of all kind and private use. Itinerant aircraft are accommodated on bays, some of which have 'Tie down' capability in this area.

Western General Aviation Apron

Located to the west of the main terminal, this area accommodates airfreight and air ambulance operations providing a discreet location for the Ambulance services and convenient airside access for both.

Future General Aviation Apron

Future GA development is seen to be in the Walnut Avenue precinct.

GA Aprons

The airport is seeing a significant increase in the operation of helicopters, both commercial and military and at present they are required to mix in with other GA aircraft.

As there is no dedicated heliport, the mix of rotary and fixed wing GA operations requires review to determine the best method of handling rotary wing operations. It is normal to provide a dedicated area for rotary wing aircraft due in part to the unique nature of this type of aircraft. The development of apron 4 and surrounds would relieve this issue greatly.

Aprons 2 and 4 should only be developed on a demand basis.

Apron 2 is the next target for Code A aircraft hangars, whilst Apron 4 could accommodate Code B aircraft and/or helicopter operations with a preference for Helicopter operations and is subject to the B.O.M. lease.

RPT Apron

The apron parking layout provides four bays to accommodate B737-800 (the design aircraft) and is shown below. The layout will allow Mildura Airport to operate well into the future and could accommodate up to 1 million passengers per year.

All bays can be accessed independently using aircraft power without the need for push back procedures, as the design is nose in power out.

Additional bays can be built and sited to the east or west to the existing bays. However this will require the relocation of the Bellman hangar and the fuel farm if the eastern direction is chosen and the removal of the two GA Hangars and GSE Park if the western direction is chosen.

FIGURE 1-1 RPT APRON LAYOUT

4 RUNWAYS AND TAXIWAYS

MILDURA AIRPORT CURRENTLY HAS TWO RUNWAYS:

RWY 09/27 – 1,830m LONG X 45m WIDE WITHIN A 300m STRIP

RWY 18/36 – 1,139m LONG X 30m WIDE WITHIN A 90m STRIP

4.1 EXISTING FACILITIES

The cross runway at 1,139m is sufficient for operations by smaller aircraft types used in the general aviation sector and occasional Turbo Prop RPT service aircraft with an appropriate ACN/PCN.

Runway Length Considerations

The length of runway to be provided is dependent on the field performance of the most critical aircraft to be operated at an airport. As the performance parameters of aircraft vary, even between models of the same aircraft series, the required runway length for an aircraft to take-off to reach a particular destination will depend on a specific combination of the following:

- Aircraft type
- Performance characteristics of the particular engines fitted to the aircraft
- Aircraft weight at take-off (empty weight plus payload and fuel)
- Ambient temperature
- Elevation of the airport
- Presence of head or tail winds
- Longitudinal gradient of the runway
- Whether the runway is dry or wet.

One of the principal determinants of the required runway length is the distance from the take-off airport to the expected destination. The route distance determines the amount of fuel necessary to be carried at take-off in order to allow the aircraft and payload to be flown to the destination airport. This allows the actual take-off weight of the aircraft to be calculated.

Great Circle (GC) distances, comprise the most direct distances from Mildura Airport to Brisbane, Sydney, Melbourne and Adelaide, are shown below:

Critical Aircraft

Currently there are nine main aircraft types used by Low Cost Carrier's (LCC) airlines within the Australian airline market:

- Boeing 737-800 (Virgin Blue)
- Boeing 737-700 (Virgin Blue)
- Embraer 170 E 170 (Virgin Blue)
- Embraer 190 E 190 (Virgin Blue)
- Airbus A320 (Jetstar)
- Dash 8 300 series
- Dash 8 400 series
- SAAB 340
- Fairchild Metrolinber.

Virgin Blue operates a number of variants of both Boeing and Embraer aircraft. The main runway 09/27 allows maximum weight departures for the E 170. All other aircraft may require reduced weight departures, however given the sector lengths of current operations a reduced weight departure will very rarely present a problem.

Runway strategy

Analysis of runway length requirements shows that jet services to the target destinations are feasible. Some services may be weight restricted during the hot summer period. Any restrictions would impact a small number of days annually dependent on the variant of each aircraft type operated on the day.

To facilitate operations of larger jet services and to ensure flexibility in aircraft operation by the airlines, it is desirable to increase the runway takeoff distance available (TODA) to 2,000m.

This move however will not be required until there are regular services of B 737 category aircraft. This matter should be reviewed when there are regular services of E 190 aircraft.

An alternative to increase takeoff distance available, is to strengthen the runway end and RESA at both ends of runway 09/27 and claim the increased takeoff distance. This would allow large aircraft to depart fully loaded during the few extremely hot weather days that would normally restrict operations on the shorter runway length. This proposal will be further explored.

Case 1 – Extend Runway 27 190m, RESA outside RWS, No stopways

Taxiway Strategy

All RPT operations are generally on the main Runway 09/27. This capacity assessment therefore concerns operations on Runway 09/27 only. Two taxiways, Taxiways C and D, link Runway 09/27 with the RPT and GA aprons. Cross runway (Runway 18/36) intersects Runway 09/27 some 375m from the Runway 27 threshold.

The existing runways can handle current operations in the busy hour. At 2 jet services in the busy hour, some minor delays may be experienced. It is prudent to preserve the option of ultimate provision of a full parallel taxiway for the 09/27 runway and indeed contemplate the staged development of such commensurate with the demands that emerge from both the mix of aircraft and operator schedules that use it.

Future Capacity Enhancement

This Master Plan projects for a full length parallel taxiway to Runway 09/27. This taxiway could be constructed in stages to overcome capacity shortfalls when and if required and it may be that this is initially a gravel taxiway to accommodate code A aircraft used by a flying school.

On the basis that Runway 27 is the predominantly used direction, a number of scenarios can be proposed for staged construction. These could include:

- Construct a section of parallel taxiway between Taxiway C and the cross runway to permit GA and turboprop RPT aircraft to execute intersection Runway 27 departures
- Extend the parallel taxiway to the Runway 27 threshold
- Partial construction of the parallel taxiway from Taxiway D to a point between Taxiway D and the Runway 09 threshold to permit jet aircraft landing on Runway 27 to turn off the runway (rather than turning and back-tracking along the runway) and to permit GA and turboprop RPT aircraft to execute intersection Runway 09 takeoffs
- The section between Taxiways C and D constructed so as to provide a passing loop for taxiing movements on the RPT apron.

Any parallel taxiway construction should only be considered when significant delays are experienced to aircraft operations.

Based on the current and projected busy hour aircraft movements, as well as the capacity of the current main runway and overall airfield, construction of all or part of a parallel taxiway to Runway 09/27 is not required within the life of this masterplan (5 years).

Apron Layout

The existing apron layout is unsuitable for provision of an apron edge taxiway at the required offset from the Runway 09/27 centreline to allow for provision of a 300m strip as required. Furthermore, the tails of B737 and A320 aircraft parked on the RPT apron in front of the terminal would penetrate the transitional surface associated with a future 300m strip.

Consequently, if a 300m strip were to be provided for Runway 09/27, B737/A320 aircraft parking would need to be provided on a new apron at a greater distance from the runway. This may, in turn, lead to the need to relocate the terminal. Prior to considering the implementation of a 300m strip, however, operations could continue as the Manual of Standards (MOS) Part 139 permits non-precision approaches on a runway with a minimum 150m wide graded strip, subject to landing minima adjustments.

Pavement Strength

Runway 09/27

Runway 09/27 was constructed to a design standard capable of 737-300 or equivalent aircraft in 1996 and is currently in good condition. Aircraft with an ACN which exceed the published PCN operate on a specific concession.

As the runway approaches the end of its notional design life of 20 years in 2016, there will be a requirement to either rejuvenate the surface if degradation becomes the overriding criteria or upgrade to a pavement design strength to accommodate the next generation of operating aircraft. An overlay at the earlier of the above would solve both issues.

It should be noted that the RPT Apron now matches the strength of the current 09/27 runway, and has the geometric capability of future generation aircraft such that it can be further upgraded for strength at the same time as any upgrade of the runway.

Runway 18/36

Runway 18/36 is adequate for the foreseeable future for GA operations only, subject to normal maintenance regime. The only RTP aircraft currently capable of using 18/36 on a regular basis are the Metroliner 10, SAAB A & B+ and Dash 8 300 series.

Apron Pavement Strength Zones

ACNs of typical aircraft based on operating at MTOW that currently operate to Mildura, or which may do so in the future, are provided in Table 3.

TABLE 3 - ACN'S FOR TYPICAL AIRCRAFT AT MILDURA

AIRCRAFT	MAXIMUM TAKE-OFF WEIGHT (MTOW) (Tonnes)	ACN (BASED ON MTOW)	
		Subgrade Category B	Subgrade Category C
B737-800	79.0	46	51
A320-200	73.5	42	47
B717-200	51.7	34	38
EMB 190	47.0	26	29
EMB 170	36.0	18	21
Dash 8-300	18.6	9	11
Dash 8-400	29.2	16	18
SAAB 340A/34	13.1	7	8

Aircraft Traffic Scenarios

The Pavement Strength Assessment Report (2007) proposed three scenarios as representative of the potential future aircraft traffic at Mildura Airport as follows:

Traffic Scenario A

- 6 x Q400 arrivals per day at Maximum Landing Weight (29 Tonnes)
- 6 x Q400 departures per day at Maximum Take-off Weight (29 Tonnes).

Traffic Scenario B

- 3 x EJ170 arrivals per day at maximum Landing Weight (39 Tonnes)
- 3 x EJ170 departures per day at maximum Take-off Weight (39 Tonnes)
- 6 x Q400 arrivals per day at Maximum Landing Weight (29 Tonnes)
- 6 x Q400 departures per day at Maximum Take-off Weight (29 Tonnes).

Traffic Scenario C

- 1 x B737-800 arrival per day at 63 Tonnes (Maximum Landing Weight on wet runway at Flaps 40)
- 1 x B737-800 departure per day at 68 Tonnes (Maximum Take-off Weight from 1 ,830m long runway)
- 6 x Q400 arrivals per day at Maximum Landing Weight (29 Tonnes)
- 6 x Q400 departures per day at Maximum Take-off Weight (29 Tonnes).

B737-800 and A320 aircraft are of similar size and accordingly for the purposes of pavement strength assessment may be considered interchangeable at the same masses. It is considered the most likely scenario for future aircraft traffic is scenario B.

Since that report was prepared, single daily jet services have commenced using Embraer EJ 170 of 39 tonnes MTOW.

Runway 09/27

The Runway 09/27 pavement is rated in the Airservices Australia publication En-Route Supplement Australia (ERSA) at PCN 32. The runway subgrade strength category is noted as C.

Aircraft capability of the runways for operations in excess of one per day, is for aircraft up to 57.0 Tonnes. The target aircraft in this analysis (B737-800 and A320-200) are both heavier aircraft. However, their operating weight on services to Brisbane/Sydney from Mildura would be in the order of 65 – 70 Tonnes with a full passenger load. Current RPT operations are based on EMB170 and Q400 as the largest aircraft.

As B737 and A320 aircraft are common types in the fleets of airlines that may operate to Mildura, to enable flexible airline scheduling requirements and/or to cater for peak periods and/or special events such as conferences, sporting and cultural events. Limited operations by these aircraft can be accommodated and should be provided for in planning airport infrastructure upgrades.

The Runway 09/27 pavement could accommodate limited operations by B737-800 and A320-200 aircraft at less than maximum weights, particularly at likely weights associated with operations to Sydney (68 Tonnes with full payload). Operations on the Runway 09/27 pavement for the EMB 170 and EMB190 aircraft is unrestricted.

Any runway extension should be constructed with pavement strength suitable to accommodate unrestricted operations by B737-800 and A320-200 aircraft at Maximum Takeoff Weight (MTOW).

RUNWAY PAVEMENTS

Aerodrome Rescue and Fire Fighting Services

CASA mandates that a permanent Aerodrome Rescue and Fire Fighting Service (ARFFS) is established for domestic aerodromes when more than 350,000 passengers pass through the facility during the previous financial year. On current projections this could occur in 2020.

Aircraft Refuelling

A fuel storage facility, is located south east of the main terminal and the Aviation gasoline (Avgas) facility is located airside, north of the Bellman hangar.

This is a relic of the past and less than ideal, however relocation of that facility is currently cost prohibitive.

Expansion of the passenger terminal and car parking could require the relocation of fuel facilities from the current fuel storage site to a site off Waddy Drive to the west of the Air Services Earth Station. A relocated Avgas self serve browser and airside access point for refuelling vehicles could be provided on the site within the current Southern GA facilities area.

The parking master plan does not provide for relocation of the fuel facility within the life of this Master Plan.

Air Cargo

Most air freight to/from the Sunraysia district is currently transported by road to Melbourne or SA; however a small quantity is handled at Mildura Airport. This mostly comprises express courier items, small quantities of parts and documents.

Air freight is currently handled as follows:

- **Stewart Aviation**
  Daily flight from and to Melbourne
- **RPT**
  Limited amounts with each flight mostly from Melbourne and distributed by Australia Air Express.

Ground Service Equipment

The range of Ground Service Equipment (GSE) based on the airport is sufficient for the handling and turnaround of aircraft operating currently.

GSE used by each of the ground handlers is generally stored on an opportunity basis around the edge of the RPT apron. With the increased numbers of larger aircraft, and particularly the E jet aircraft, the demand for increased storage areas has increased significantly.

Additional GSE storage areas have been established to accommodate this increase along with some enclosed and secure sheds. This will be sufficient while the current family of aircraft remain operational.

General Aviation Facilities

Existing general aviation facilities are located into two main areas which are linked by taxiway Alpha. These areas are detailed as follows:

- Main GA area is made up of the Bellman hangar and three GA parking boxes located north east of the Bellman hangar running south east to the Aero Club building. This area is the largest and receives the most use by visiting aircraft requiring overnight parking, fuel or a meal from the café.
- The second area which is still being developed is centred on GA apron number three, the Mildura Sport Aviation group and when developed, Apron number four. Apron three supports the larger GA hangars and could have GA commercial activities conducted from this area.
- RFDS and Air Ambulance Victoria currently use a dedicated apron which is located to the west from the main RPT apron and is accessed via taxiway Echo. It provides parking and handling area for hospital patients moving by air to and from capital city hospitals.
- Future development of further GA facilities will occur along the Walnut Avenue boundary. This area provides substantial opportunity for large developments and has the potential to house large business such as flying schools.

Commercial Sites

Commercial sites are located south west of the main terminal and along the '09 end of the main runway, which provide for commercial hangars and workshops. These sites can be linked to the Airside as well as the road network via Waddy Drive.

Office Space

Airport management and a car rental company are located in the old flight services building which is adequate arrangement at present. All airlines hold office space within the main terminal. Limited office space is available in the old terminal building.

A long term plan is required to address future office accommodation, Airport Management and requirements for aviation industry tenants. That plan should take into account that valuable space within the main terminal could be better suited to core terminal business and alternative arrangements for office space be provided elsewhere. This will be particularly relevant in the early stages of terminal expansion.

Airservices Australia

Airservices Australia operates a normal suite of aviation support systems on and off the airport. They own and operate the emergency generator that powers the aerodromes airside lighting. This is an unusual situation given that MAPL is responsible for a service that is provided by others. This situation will need to be addressed and it could be combined with the electrical upgrade.

Access

Access to Mildura Airport is by way of Alan Mathews Drive off Walnut Avenue.
The intersection with Walnut Avenue is less than ideal given the geometry and intersection of Walnut Avenue, Alan Mathews Drive and 19th Street. As airport traffic growth continues this issue will need to be addressed. The road reserve for Alan Mathews Drive provides for future duplication. Alan Mathews Drive is the only formal access to the Airport. This single point of access presents some risk should it become unserviceable.

Road Network

Alan Mathews Drive is constructed to a standard that is below contemporary standards being a rural cross section of notional 6.0m width. The road has significant drainage issues in the vicinity of the front entrance and will continue to suffer edge fretting due to its width limitations.

Its capacity has been adequate to date, largely due to the nature of traffic which is determined by airline schedules. However, with changes that are becoming apparent, the traffic patterns will change to the degree that capacity and hence safety of the asset will be tested. The road was gazette as a public road in 2008. It is envisaged that reconstruction of this vital link may be required within the life of this Master Plan.

Other sections of sealed road, principally across the front of the RAAF Museum, are totally inadequate being single lane seal with no formal drainage. More recent constructions, namely Caldwell Court and Fischer Crescent have been developed to contemporary standards.

Presently, street lighting is poor and will be addressed as elements of the Airport are developed. Future development of the roads and parking within the Airport precinct will be in accordance with a strategic plan that can be developed in stages. Refer to annexures.

Airport Entry

Walnut Avenue is currently the main road serving the Airport. At or near the entry to the 'Airport the road sweeps in to an 'S' bend. The pavement is constructed with a radius of curve that reduces progressively on entering the curve. There are sight distance issues for traffic approaching from the west.

The entry to the Airport requires re-design and re-construction to recognize the greater priority of traffic entering the Airport to traffic approaching from or departing to, the west.

Recent traffic counts (September/October 2009) have identified that Alan Mathews Drive has daily traffic of approximately 1,200 vpd. Data has not been collected for Nineteenth Street or Walnut Avenue. Traffic volumes on Nineteenth Street, west of Alan Mathews Drive, however, are very low and estimated to be less than 300 vpd, resulting in an estimated daily traffic volume on Walnut Avenue in the order of 1,500 vpd.

At present, drivers accessing the Airport from the Mildura township must turn right from Nineteenth Avenue to Alan Matthews Drive. There are several issues to be considered with this movement, namely:

- there is a horizontal bend in Nineteenth Street, east of Alan Mathews Drive
- Existing vegetation obstructs sight lines of vehicles negotiating the bend for drivers waiting to turn right to the Airport; and
- an intersection should be designed with priority for the higher traffic flow. In this case, the greater proportion of drivers (right in to the Airport/left out from the Airport) are required to give way to the lower traffic volume.

THE EXISTING ROAD NETWORK IS A MIXTURE OF WARTIME DEVELOPMENT AND RECENT DEVELOPMENT.

IT IS CONSTRUCTED TO A STANDARD THAT IS BELOW CONTEMPORARY STANDARDS, IS A RURAL CROSS SECTION WITH SIGNIFICANT ISSUES AND WILL CONTINUE TO SUFFER DUE TO ITS LIMITATIONS.

The above issues can result in potential safety concerns for the following reasons:

- drivers turning right may have inadequate view of an on-coming vehicle, resulting in potential conflict points; and
- drivers turning right may not anticipate an on-coming vehicle (due to the low volume), again resulting in potential conflict.

The above concerns could be easily addressed by changing the priority of the intersection or with the construction of a roundabout. MFY drawing no. 090218_01_SK01 (attached) illustrates a concept plan illustrating an amended intersection layout. Such a layout would provide for priority traffic movements between Nineteenth Street (east) and Alan Mathews Drive. Such a layout would also address the sight distance issue, albeit, the existing vegetation should be maintained to ensure that eastbound drivers have appropriate sight distance to the intersection, since they would be required to slow to give way at the intersection. The concept plan would be subject to detailed design but should not require substantial roadworks.

Reconstruction of the 'S' bend is more substantial.

AMENDED INTERSECTION LAYOUT

Car Parking

Concepts for development of upgraded access, circulation and provision for paid parking are currently being developed. This is not likely to compromise the timely introduction of paid parking but will allow orderly staged development without the need for significant reworking of roads and car parks. The current number of car parks is adequate but periodically is under pressure due in part to the historical use of long term parking.

Introduction of paid parking will see the longer term use reduced to more reasonable usage times and the full potential of the current facility realized.

Current provision

The current parking provision at Mildura Airport is as follows:

	Spaces
Taxis	9
Disabled	2
Private cars	290
Rental cars	62
Staff	24
Coaches/Bus	> 3
Total	390

Since introduction of a managed regime, car park rationalization and usage appears to have achieved significant customer satisfaction. However, the complete usefulness of available space will not be realized until paid parking is introduced.

Future Provision

It is noted that the growth in parking demand for the various vehicle categories will be dependent on the predominant traffic served. For example, private car parking is locally generated so demand will be proportional to locally generated air traffic. On the other hand car rental demand will be principally driven by growth in inbound passengers. Taxis and buses will be dependent on both locally generated traffic and inbound traffic.

TABLE 1 - PARKING DEMAND PROJECTIONS

VEHICLE TYPE	CURRENT		DEMAND		
	Number of Spaces	Peak Occupancy	2015	2020	2030
Private Cars	290	199	224	240	
Car Rental	62	62	91	116	
Staff	24	19	19	19	
Disabled	3	2	3	3	
Sub Total	335	280	334	375	
Taxis	9	9	13	24	
Buses	3	1	2	3	

Whilst we currently exceed the theoretical 2020 demand, continued fine tuning of categories of parking will be required to meet customer demand and maintain customer satisfaction.

The plan on the facing page represents the ultimate development concept for carparking in the life of this Master Plan. This plan can and will be implemented sequentially as required by demand. The timing of implementation will depend on the rate of growth of demand.

The plan does not provide for relocation of the aircraft fuel storage facility at this time and it is unlikely that this will occur in the life of this plan. Provisions has been made for access of fuel trucks to and from the Fuel Depot.

Conversion of the Bellman hangar to undercover secured car park is seen as the highest and best use of the facility and can be easily implemented.

The Master Plan provides for implementation of a pay to park scheme which can be initiated when required. It is anticipated that this will be implemented in the first half of 2010.

MASTER CAR PARKING PLAN WITH OPTIONS

The Master Plan layout assumes that established facilities including RAAF Museum, Airport Administrative offices, Water tower, Earth satellite station, Fuel farm, Meteorological facility, Kart club, Driver training facility and the Aero club, all remain in their existing location.

Provision is incorporated for a large car-parking area in front of the museum to provide for parking demand beyond the life of this plan. Provision is also made for extension of long term car parking to the south of the existing facility.

It is assumed that the land occupied by the Bureau of Meterology will not be available for use by the aerodrome within the Master Plan period. Roads within the site will be developed progressively as required and as funds become available.

The Fuel farm will remain where it is as there is no valid economic argument for relocation at this time or in the foreseeable future. At a time when demand dictates the need to acquire that space then the matter should be re-visited.

BUSINESS PARK

Progression of the Business Park is unlikely in the life of this Master Plan for commercial reasons and the fact that the site lacks adequate electrical power supply. The lead time in upgrading the power grid and costs associated precludes an early start.

The market and power position will be monitored through the life of this plan and the position will be reviewed at the time of the updating of this plan.

DEVELOPMENTS AREA SITES

8 ENVIRONMENT

PROTECTION BY THE PLANNING SCHEME MUST ENSURE THAT THE NOISE FOOTPRINT FOR AIRPORT CIRCUIT PATTERNS IS ADDED TO THE PLANNING SCHEME AS RESTRICTIVE ZONES FOR FUTURE DEVELOPMENT, THUS EXPANDING THE CURRENT POSITION THAT REFLECTS NOISE GENERATED BY ARRIVALS AND DEPARTURES ONLY.

AIRCRAFT NOISE

The Australian Noise Exposure Forecasts System

The Australian Noise Exposure Forecast (ANEF) system is the aircraft noise exposure index currently adopted in Australia. The aircraft Noise Exposure Forecast (NEF) technique was first developed in the United States in the late 1960's and is recognised internationally. It was subsequently modified in Australia in 1982 as the ANEF.

The Integrated Noise Model (INM) computer model used in the preparation of NEF and ANEF contours was developed by the US Federal Aviation Administration (FAA) and is the standard for noise modeling worldwide.

The ANEF system provides a scientific measure of noise exposure from aircraft operations around airports. It can also provide valuable guidance for land use planning in the vicinity of an airport, taking into account the following factors of aircraft noise:

- The intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft takeoffs, landings and reverse thrust after landing for jet aircraft types (the noise generated on airports from ground running of aircraft engines or taxiing movements is not included for practical reasons)
- The forecast frequency of aircraft types and movements on the various flight paths
- The average daily distribution of aircraft take-off and landing movements in both day time and night time hours.

Published ANEF and OLS charts have been incorporated into MRCC Planning documents (C20 Amendment) and protects Mildura Airport from development encroachment. See attached.

SUSTAINABLE ENVIRONMENT

Mildura Airport Pty Ltd will develop an operation that is sustainable whilst meeting the many legislative and legal requirements.

Key Objectives & Opportunities

Water Conservation and Harvesting

The Airport has potential to produce significant surface water run-off and in normal years, that run-off is considered sufficient to supply the Airports needs for irrigation and non potable water. Provided adequate storage is provided, the run off generated will increase as more paved areas are created.

The first part of a larger plan has been initiated and there is approximately 7 megacities of storage in place with a solar powered pump delivering to the existing system. Whilst there is evidence to indicate the Airport can collect in excess of 35 megacities from its current infrastructure, there is a need for a more detailed investigation in to the true potential and the likely results from the various stages of development.

There is also a need to develop a master water conservation policy and plan for implementation in stages. Pumping and transfer needs will be satisfied using solar and wind options.

Solar Initiatives

The hours of daylight in the Mildura Region presents a significant opportunity to utilize solar options for lighting and augmentation of the power supply.

New car parks have been equipped with solar powered lighting. We will continue this initiative where the option is viable. Some personal access gates in security fences are solar powered.

We intend to pursue options to utilise solar panel power grid inputs. Whilst we may not achieve self sufficiency, there may be opportunity to work in conjunction with other organisations to set up working demonstration satellite projects. Solar powered taxiway lights are approaching viability, and could be utilised on Taxiways A & B if and when upgrade is required.

Other Initiatives

Scrap metal is already recycled rather than being put to landfill. We are establishing a stockpile of concrete and masonry for crushing for future pavement material.

PLANNING OVERLAY BOUNDARIES & YEAR 2015 ANEF NOISE CONTOURS

9 FUTURE DEVELOPMENT

MILDURA AIRPORT DEVELOPMENT WILL FOLLOW THE ESTABLISHED STRATEGY OF SEPARATING DIFFERENT OPERATIONAL AREAS.

THIS HAS BEEN THE POLICY IN THE PAST AND WHERE PRACTICAL SHOULD CONTINUE INTO THE FUTURE.

AVIATION RELATED DEVELOPMENT

Development options available to MAPL to achieve optimum conditions and full potential are constrained by by existing base infrastructure, particularly runway 09/27 and its regulatory requirements and planning and land commitments of an earlier time.

The Main Terminal, building is the central point from which most developments radiate. The sector South East of the terminal is allocated to general aviation. When this zone is fully developed further general aviation development would extend along the Walnut Avenue boundary.

The area west of the main terminal is suitable for commercial development together with RPT uses extending into this area from Waddy Drive. This zone has the potential to provide for large General Aviation uses and Terminal building. It is located too close to the predominant Runway 09/27 and presents a problem of intrusion of Aircraft structure and essential infrastructure in to the Operating Limitation Surface.

Established infrastructure is substantial and to rectify the issues above would be cost prohibitive. It has been decided that future terminal developments will embrace the existing structure despite the problems identified

Uses of Airport land have been categorised in terms of Aviation and non aviation uses, and zones defined to reflect their potential. The area to the North of the terminal is established as the Regular Public Transport Apron, and whilst this could and should be relocated to remove the intrusions in to the O.L.S. it has been stated and it is fact that the value of the infrastructure in place precludes that action.

Land to the South East is set aside for general aviation use and is the site of current and planned hangar facilities and general aviation movements. Further development of general aviation activities will occur along the Walnut Avenue frontage and inland along the 18/36 runway on its Eastern side.

Land to the West of the Terminal Building is recognised as having potential to develop for Commercial uses. Its potential is constrained by the availability of essential services of electricity and gas.

The area north of Runway 09/27 is suitable for development; however, much of this zone is covered by the footprint of the VOR and until it is relocated or replaced by new equipment installed with a reduced footprint, and this zone will remain vacant. With time the VOR may be relocated to remove the influence, but at this time the cost is considered to be prohibitive.

Airside zone currently occupied may in the long term; need to be sacrificed to provide more appropriate conditions.

Pavement capacity is weight limited to 57 tonne and heavier aircraft are required to operate under dispensation.

Current thinking is to maximise the existing foot print in all zones and utilise and augment, infrastructure already in place until it is required to fully redevelop the terminal. At this point a detailed study will be undertaken to identify the most appropriate location for a future terminal and apron facility.

A location providing access directly to the Sturt Highway would be the best option with convenient direct access for patrons of the Airport and emergency services.

Mildura has been identified as an excellent environment for flying training and it is reasonable to believe that Mildura will be considered by current players and new entrants in to the rapidly expanding global market for pilot training. Preliminary discussions have been undertaken with potential operators but have been paused due to the current decline in demand. With a resurgence of interest and within the life of this plan it is expected that these negotiations will resume.

INFORMATION TECHNOLOGY

An effective Information Technology network is critical for the Airport operation and an integrated approach needs to be taken to achieve a capable, reliable and convenient service. I.T. has never been considered in an holistic fashion and for that reason there are a number of separate and independent systems operating throughout the terminal and Airport site that can be integrated and develop significant synergy from so doing.

Steps should be taken to prevent the system from power outages and surges.

With the implementation of mechanised parking controls the opportunity to address this matter is presented and must be taken. A centralised server location should be identified and a remote server back-up and support site identified. It is important that these sites should be convenient, central and easily accessible to electric power.

With the distance that exists between the points to be served, fibre optic trunk connections are required. To serve the needs of the future a significant redundancy factor should be introduced to all cabling to ensure adequate capacity for future needs.

While excavation work is underway, additional conduits should be installed to provide for future need. The incremental cost of so doing in minimal compared to the cost of excavation at a later time.

ENERGY MATTERS

The electrical power supply to Mildura Airport and the associated on site reticulation are both insufficient in capacity to reliably support current operations and further site development. There is insufficient emergency power backup capacity available to Mildura Airport.

As the Airport is continually expanding, a substantial future development concept plan that will significantly increase the sites energy demands will be therefore necessary. This Master Plan presents a series of options for consideration that will sustainably deliver sufficient power to Mildura Airport in light of current operational requirements and future development opportunities.

Having undergone several minor upgrades over the past decade, little consideration has been given to peak loads and the levels of installed electrical capacity on site. Similarly, segregation of essential services and periphery has not been adequately addressed throughout any of these upgrades.

The Terminal Building

Over 60% of the energy consumed at Mildura Airport is attributed to the operation of the Terminal building. As such, there exists a significant opportunities to reduce operational costs, associated environmental impact and freeing up existing infrastructure capacity by applying energy consumption reduction measures and energy efficiency measures.

The following graph represents a percentage breakdown of each major source of metered electricity consumption on site at Mildura Airport from January – July 2009.

MAJOR SOURCE OF METERED ELECTRICITY CONSUMPTION

The Terminal building currently represents over 60% of the electricity consumption associated with Mildura Airport and the energy performance of this building alone needs separate consideration in order to reduce energy consumption.

Gas

There is presently no natural gas supply available to Mildura Airport. A natural gas service is over one kilometre from Mildura Airport. The capital cost of connection would be high.

The expected natural gas demand for the Mildura Airport site with any form of significant gas fired site electricity generation, is too large for current gas availability to carry.

Renewable Energy Systems

The Terminal is ideally positioned to utilises solar radiation to generate electricity, and the power requirements of the new baggage claim carousel could thus be met.

The capturing the methane gas, generated by the sewerage treatment plant located on the southern edge of the site is a potential use of power as a primary (or secondary) fuel source to drive backup generation systems or even site electricity generation systems. These initiatives will reduce the site's reliance on utility provided power systems and provide a degree of future proofing against rising fuel costs and greenhouse gas emissions.

Future Site Expansion

Further development of the airport site could be met by the subdivision of vacant land adjacent to the Airport boundaries.

Consideration will be given to future peak loads and the levels of installed electrical capacity on site throughout each stage of expansion. This is to ensure that sufficient capacity is not only available for future end uses on site but that it is provided in an efficient and sustainable manner.

Significant capital expenditure over and above that required for internal infrastructure upgrades will be required.

An allowance for renewable energy systems should also be made for both peak load reduction and future adaptability to provide capacity for the development concept plan.

FUTURE DEVELOPMENT CONCEPT PLAN

OPERATIONAL IMPLICATIONS

Based on the current rate of site expansion and the electricity consumption profiles covering January 2009 – July 2009, the predicted electricity consumption of Mildura Airport (in kWh per annum) projected over the next ten years for the Airport in isolation is projected to increase to over 70,000kWh per annum, equating to a 20% increase in demand. An allowance for renewable energy systems should also be made for future adaptability and to provide capacity for the development concept plan.

As the site expands (and particularly if Mildura Airport elects to become a full time power provider serving tenants on site) significant capital cost recovery could be made through the on selling of electricity generated.

Program and Staging

A proposed staging methodology could be implemented and the appropriate energy efficiency opportunities implemented to provide relief to the existing site electrical reticulation.

Implemention and investigation of ways to segregate essential and non essential loads to provide an upgrade to the backup generator system could be developed.

Upgrades of the Airports electrical reticulation system can be aligned with the next major Terminal building upgrade and staged from then on. Natural gas supplied to site would ensure capital expenditure can be offset based on expected site demand. An LPG and/or diesel storage and reticulation systems could be installed ensuring continuous staged power.

THE INTERIM SOLUTION

Essential and non essential loads need to be defined and segregated and any associated on site infrastructure works need to be implemented. Existing backup power generator could be reused, a new larger capacity backup generator purchased and converted to dual fuel capability (diesel as the primary fuel source and then upgraded to operate on natural gas and/or biogas).

This new backup generator can then be run in parallel with the grid to provide peak load reduction, improved carbon emissions performance and lower operating costs. Only essential power backup will be provided by this generator. Consideration should also be given to operation under base load conditions in order to reduce grid network demand and carbon emissions.

Photovoltaic (PV) solar arrays and inclusion of a central single stage absorption chillers connected to a solar thermal array should be implemented.

The Carbon Picture

Aviation is considered to increasing the concentration of greenhouse gases (GHG's) in the atmosphere contributing to global warming. As such, a commitment to environmental sustainability in both design and operation should take into consideration GHG (carbon) emissions.

Carbon Targets

Benchmark carbon emissions targets can be used to track improvements.

Becoming a Sustainable Airport

Mildura Airport will be committed to sustainable master planning with a key component being 'Buildings' and the associated sustainable design initiatives and operations considered as site expansion plans are implemented.

Looking Forward

Increased public debate and the Australian Government's commitment to reducing carbon emissions as a nation will see a shift towards increasing the proportion of renewable and low carbon emitting forms of energy production approaching 2020 and beyond.

A carbon coefficient of grid connected electricity will reduce over time. This in turn will incrementally reduce the airport carbon footprint. However, this is no guarantee and supply tariffs are set to increase significantly exacerbating the fact that inefficient operation equates to expensive operation.

10 POLICIES & PROCEDURES MASTER PLAN 2010

Operations at Mildura Airport are governed by a suite of manuals and documents of both a regulatory and commercial nature. These manuals and documents are designed to clearly define the terms and conditions of operating, safe working practises and engagement that the Airport requires from all Tenants, users and operators.

'Terms and Conditions of Use' document is a most important document that clearly states the expectations of the airport and the manner of behaviour and actions required of all users and includes references to Aviation Charges, Common User Conditions, Airport Rules and Special Conditions that might apply.

Document available on web at **www.info@mildura.com.au** and included in Appendix Volume 2 of the Master Plan.

Leases and licences need to be 'State of the Art' and reviewed to ensure they are adequate for the time.

Operations on the ramp and airside generally need to be formalised as a Ramp and Bay use policy to ensure operations are standardised and clear to all. Policy document included in Appendix Volume 2 of the Master Plan.

Airside driving rules and regulations and licensing of airside driving entitlements requires regulation and introduction of a testing and renewal regime. Document included in Appendix Volume 2 of the Master Plan.

Major reporting requirements are defined in the Operations and Management Agreement document and Lease between Mildura Rural City Council and Mildura Airport Pty Ltd. requirements.

AGREED TERMS OF USE

DEFINITIONS AND ABBREVIATIONS

ABN means Australian Business Number in accordance with the definition located at s41 of the *A New Tax System (Australian Business Number) Act 1999*.

Aerobridge means the aerobridge or aerobridges located at the Airport terminals and used by you for Embarking Passengers and Disembarking Passengers.

Aerodrome Manual means a manual required under the Civil Aviation Safety Regulations (CASR) as amended from time to time in respect of a licensed airport setting out in the approved form, particulars of and operating procedures for the airport. Those manuals are located in MAPL's Operations Office, and available to be viewed by users of the Airport on request.

Aeronautical Charge or Charges means amounts payable pursuant to these terms of use or otherwise notified to you in writing and includes all of those charges listed in Schedule 1 which are payable by you in consideration for your use of the Facilities and Services.

Aircraft includes fixed wing aircraft, helicopters, balloons-powered and unpowered and their parts and accessories, equipment and stores.

Aircraft Operator means the person whose name appears on the Aircraft register as the operator of the Aircraft, the holder of the Certificate of Registration with respect to the Aircraft or any person who with the authority of the holder of the Certificate of Registration for the Aircraft and the written authority of MAPL operates that Aircraft when it arrives or departs the Airport.

Aircraft Owner means that person named on the Certificate of Registration for the relevant Aircraft.

Air Operator's Certificate means the certificate of that name issued under Division 2 of Part III of the *Civil Aviation Act 1988.*

Aircraft Register means the register of Australian civil aircraft established pursuant to Regulation 47.025 of the *Civil Aviation Safety Regulations 1998* (CASR).

Air Traffic Control means any service provided by air traffic control which includes a traffic advisory service, traffic avoidance service, and traffic information.

Aircraft Parking Charges (APC) means Aircraft parking charges levied by the Airport which do not comprise General Landing Charges.

Airport means the physical site known as Mildura Airport, and includes all hangars, buildings, roads and other areas and facilities within the boundaries of the Airport and beyond as varied from time to time.

Airport Emergency Plan (AEP) means a plan developed by the Airport operator to co-ordinate all agencies and their individual Airport emergency procedures and State or area supporting plans for dealing with an Airport emergency.

Airport Environmental Strategy means those strategies implemented by us from time to time in relation to the protection and preservation of the environment.

Airport Exercises are mandatory exercises required to be done by the Airport operator from time to time to amongst other things test the ability of us, you, and any other parties to react to any emergency situation on the Airport.

Airport Facilities means the buildings and services (including water, electrical, sewerage, gas ramp areas, plant, fixed equipment and other fixed items) located at the Airport and leased, owned, operated and controlled by MAPL.

Airport General Access Charge means a fee charged for access to the airport and conduct of business thereon. This fee may be rebated in part or in full dependent upon the level of compliance with these terms and conditions of the operator, his staff, representatives, contractors or agents or any associated entity whether a corporation or real person.

Airport Services Charges (ASC) means the charges for the use of the Airport's runways, taxiways and apron areas.

Airport Security Committee means the committee convened for the purposes of administering Airport security.

Airside means the movement area of an aerodrome, adjacent terrain and buildings or portions thereof access to which is controlled as described in Annex 17 to the *Convention on International Civil Aviation*.

Airside Drivers Permit (ADP) is the permit issued by MAPL to allow driving Airside.

Airside Escort (AE) is the task of escorting personnel and equipment Airside.

Airside Vehicle Permit (AVP) is the permit issued by MAPL to operate a piece of mobile equipment Airside.

Airside Environmental Charges (AECS) means charges levied by MAPL for cleaning up fuel and hydraulic spills or other Airside equipment and infrastructure damage on the apron, taxiway and runways of the Airport.

Airside Escort Charges (AEC) means charges levied by MAPL for escorting vehicles and personnel Airside.

ASIC means Airport Security Identification Card.

Authorised Officer means an individual with the appropriate authorisation from a party to bind that party to agreed obligations.

Aviation Charges shall have the same meaning as the term 'Aeronautical Charges'.

Aviation Infrastructure and Facilities Investments means those projects at our Airport that we invest in to expand or improve aviation services including, but not limited to runways, taxiways and the apron; aerobridges; terminal and other buildings; or new developments (for example, new large aircraft (LA) works and major new ground transport infrastructure).

Aviation Services and Aeronautical Services means those Aircraft movement facilities and activities and passenger processing facilities and activities set out in Schedule 3 but excluding services provided by us to commercial ground transport operators, fuel companies and fuel suppliers; and includes those services set out in Condition 2 of these terms of use.

Baggage Handling System (BHS) means the physical baggage handling system which transports baggage from counters along conveyor belts to the laterals (as more particularly described in Schedule 4) but does not include the transport of baggage from the laterals to Aircraft.

Bank Guarantee means an unconditional undertaking by an Australian bank on terms acceptable to us to pay the amount of the bank guarantee on demand.

Bond means monetary security to be provided by you, if any.

CASA means the Civil Aviation Safety Authority.

Certificate of Registration means for an Aircraft the certificate of registration issued by the CASA under Regulation 47.090 of the CASR; or for Foreign Aircraft this means the registration of the Aircraft on a national register of Aircraft other than the Australian Civil Aircraft Register.

Charges means amounts payable by you pursuant to these terms of use.

Charter Operations means any charter operations for transporting people and/or goods which are not available to the general public without prior arrangement.

Claim means and includes any action, proceedings, demand, costs, charges and expenses of any kind or nature.

Common Traffic Advisory Frequency (CTAF) means an air traffic frequency at which a mandatory Aircraft radio call is made to pilots of other adjacent Aircraft in uncontrolled airspace advising of the pilot's intentions.

Common User Conditions means the conditions in Schedule 4.

Common User Facilities includes the Aerobridge, the BHS, the Counters, the Departure/Arrival Equipment, the FIDS, our equipment, and the PA system, and any other common user facilities listed in clause 2.10 which common user facilities form part of the Facilities and Services provided by us.

Confidential Information means all information relating to or developed in connection with or in support of either party's business disclosed or otherwise provided by one party to the other or otherwise obtained by either party which:

(a) is not trivial in character; or
(b) is not generally available to the public; or
(c) If generally available to the public, so became available to the public as a result of an unauthorised disclosure or otherwise by reason of a breach of confidence on the part of the other party.

Consequential Loss means:

(a) any indirect damages, costs or expenses;
(b) any damages arising directly or indirectly from any loss of use;
(c) any damages arising directly or indirectly from any loss of revenue, loss of profit, loss of opportunity to make a profit, loss of business, loss of business opportunity, loss of goodwill or loss of capital;
(d) any damages arising directly or indirectly from any data corruption, loss of data, recommission or reloading of computer hardware or software or any down-time costs;
(e) any other form of pure economic loss damages or consequential damages that are not referred to in paragraphs (a) to (d); or
(f) Any special, exemplary, punitive or incidental damages.

Counter means those counters in the Airport terminal used for but not limited to the check in, service and sale counters for use by your customers.

Counter Equipment means the equipment at each Counter which is not owned by us.

Departure / Arrival Equipment means the terminal, the Aerobridge, the nose-in guidance equipment and departure gate counters where applicable.

Disembarking Passengers means all passengers on board an arriving Aircraft. This includes Transit Passengers, transfer passengers, Infants, Domestic-On-Carriage and Positioning Crew, but excludes Operating Crew.

Domestic Operations means any Aircraft or passenger operations including travelling from an origin and travelling to a destination within Australia.

Domestic-On-Carriage means a passenger on an international Flight who travels from one Australian port to another.

Embarking Passengers means all passengers on board a departing Aircraft. This includes Transit Passenger, transfer passengers, Infants, Domestic-On-Carriage and Positioning Crew, but excludes Operating Crew.

ERSA means En Route Supplement Australia.

Facilities and Services means all or any part of our Aircraft landing, take-off, movement and parking facilities (including but not limited to the runways and taxi-ways), the passenger processing facilities and services, and includes the Aviation Services, Government Mandated Services, the Common User Facilities, the General Airport Services and any other part of our Airport generally.

FIDS mean Flight Information Display Systems.

Flight has the same meaning as is given to that term in s3 of the *Civil Aviation Act 1988*.

Foreign Aircraft means an Aircraft Registered on a national register of aircraft other than the Australian Civil Aircraft Register.

General Airport Services means those services and facilities that we provide to users of the Airport other than Aviation Services, Government Mandated Services and Common User Facilities, but include those services which are generally provided to airlines and Aircraft Operators at airports such as airline offices, passenger lounges, Landside storage areas within terminal areas, staff car parking and leased sites and buildings for office, freight, aircraft maintenance, catering and similar services.

General Aviation Operations means any Aircraft operations, other than RPT operations.

General Landing Charges (GLC) means charges for General Aviation Operations calculated by a dollar amount multiplied by Maximum Take-Off Weight (MTOW).

Glider means a non-power driven Aircraft or any Aircraft normally described as a powered glider.

Government Mandated Charges means those charges levied by us and payable by you in accordance with these terms of use, in accordance with Commonwealth government, Ministerial or OTS direction, and legislation.

Government Mandated Costs means those costs incurred by us for providing to you the Government Mandated Services which are permitted to be passed through to Airport users pursuant to a direction by the relevant Minister including MAPL's own cost in administering the Government Mandated Services.

Government Mandated Services means those services that we provide to you which are mandated by the Commonwealth government (in applicable legislation and Ministerial or OTS directions) or other lawful authority which includes, but is not limited to, the services set out at Condition 7 of these terms of use.

Ground Handling Services means the provision by an airport of all or some of the following services; passenger check-in, baggage handling, Aircraft cleaning, Aircraft catering, Aircraft maintenance and/or Aircraft engineering.

GST Act means the *A New Tax System (Goods and Services Tax) Act 1999* as amended from time to time.

GST means any tax imposed on a supply by or through the GST Act and any successor of the GST Act.

IATA means International Air Transport Association.

Infant means a child less than two (2) years of age who has not paid to occupy a seat on an Aircraft.

Interest Rate means a rate of interest per year, reasonably determined by the MAPL Board of Directors.

Key means any form of access control whether mechanical or electronic in nature.

Landside means that portion of the Airport not designated as Airside and to which the general public normally has access.

Legislation includes all Commonwealth and Victorian Acts of Parliament, regulations, rules, orders, by-laws, ordinances and any other orders or directions of any government or statutory body relevant generally or specifically to the Airport or any person or Aircraft using it, including but not limited to any air navigation, environmental, occupational health and safety or crimes Legislation.

Liquids, Aerosols And Gels Charge (LAGS) means Charges applied for the screening of liquids, aerosols and gels incurred in processing international Embarking Passengers (resulting from the Commonwealth government's requirements from 31 March 2007).

Loss means and includes direct loss, indirect loss, Consequential Loss, and any reference to the making of payment by MAPL and a reference to the incurring of any expense by MAPL.

MAPL means Mildura Airport Pty Ltd (ABN: 54131457700).

Major User means the airline or Aircraft Operators that are the major users of our Airport and together constitute at least 50 of the Aviation Charges revenue for our Airport.

Maximum Take-off Weight (MTOW) means the maximum take-off weight for an Aircraft as specified by the manufacturer.

Military Landing Charges (MLC) means Charges attracted by Military Operations of a commercial nature.

Military Operation means any operation the dominant purpose of which is military or defence related.

Minimum Cleaning Charges (MCC) means the minimum Charges applied for Airside cleanup which may include Airside Environmental Charges.

NOTAM means Notice to Airmen issued by Air Services Australia.

Operating Crew means your employees operating as flight or cabin crew on an arriving or departing Aircraft.

OTS means The Department of Infrastructure, Transport, Regional Development and Local Government, Office of Transport Security.

Our Equipment means any equipment (including without limitation the Counters) supplied by us under these terms of use but does not include any Counter Equipment or the terminal equipment supplied by the airline or Aircraft Operator.

PA system means our public address system throughout our Airport terminal buildings.

Passenger means all persons on board an Aircraft including persons travelling on point's redemption bookings through frequent flyer programmes, transit travellers, and airline staff travelling on concessional fares, but excludes non-revenue travellers such as crew and Infants.

Person includes a corporation or other organisation or enterprise.

Personal Information means information about an individual whose identity is apparent or can reasonably be ascertained from that information.

Positioning Crew means your flight and cabin crew, other than the Operating Crew, arriving into, or departing from the Airport on company duty travel for the purpose of positioning for, or returning from, crewing duties.

Regional Operations means any flying operations within the Northern Victorian, Sunraysia, Riverland, Riverina and Western New South Wales regions and may include RPT operations.

Registered means in relation to an Aircraft, that the Aircraft has a Certificate of Registration.

Regular Public Transport (RPT) Operations means air service operations where, for a fee, the Aircraft is operated according to fixed schedules over specific routes and is available to the general public on a regular basis, and includes any such services that may be diverted from another airport to our Airport.

Rotary Wing Charges (RWC) means landing charges for non-fixed wing Aircraft.

Rules mean the rules for operation at Mildura Airport promulgated by MAPL.

Safety and Security Charges (SSC) means Government Mandated Charges relating to aviation security arrangements.

Security Restricted Area (SRA) means all areas which are Airside of the security fences on the Airport.

Services mean collectively, Aeronautical Services and Government Mandated Services.

Supply is to be given the meaning it bears in the GST Act.

Tax Invoice shall mean such document as prescribed by the GST Act which contains the information relating to a taxable supply required by the GST Act.

Terms of use means these agreed terms of use (as amended from time to time).

Transit Passengers means a passenger who continues their journey on a Flight having the same Flight number as the Flight on which they arrived.

Transport Security Program (TSP) means that program in accordance with the Aviation Transport Security Act 2004 and is located at MAPL Operations Office, and available to OTS approved users of the Airport on request.

Ultra-light / Glider Charges (UGC) means landing Charges applicable to low weight Aircraft.

Use means use of any of our Facilities and Services including but not limited to Aircraft landing, taking off, taxiing or parking, or discharging or taking on Passengers or cargo.

We or **Us** or **Operator** or **Our** means MAPL and includes our officers, employees, agents and the operator for the time being of the Airport.

You or **your** means:

(a) in the case of RPT Aircraft, the holder of the Air Operator's Certificate at the time our Facilities and Services at the Airport/s are used;

(b) where the Aircraft is Registered, the holder of the Certificate of Registration at the time our Facilities and Services at the Airport/s are used;

(c) where the Aircraft is not Registered, the person who we reasonably believe is the owner or operator of the Aircraft; and

(d) where a liquidator, provisional liquidator, receiver, administrator, trustee in bankruptcy or executor (administrator) is appointed in respect of a person liable for Charges the administrator is jointly and individually liable with that person or that person's estate for all Charges in respect of each use which occurs during the period of the administrator's appointment.

MASTER PLAN 2010 COST PROJECTION

JANUARY 2010 – JUNE 2010

ITEM	NOTES	COST	FUNDING SOURCE
Rationalisation IT infrastructure	Stimulated by the proposed introduction of paid car parking	$30,000	Cash Reserves
Car parking civil works and control equipment	Required for car park management and control	$450,000	Cash Reserves/ Westpac Loan
	TOTAL 2009/2010	**$480,000**	

JULY 2010 – JUNE 2011

ITEM	NOTES	COST	FUNDING SOURCE
Changes to interior of Terminal in vicinity of café and upgrade refit Airport café facilities	Café is inadequate for the demand currently placed upon it. Layout of service area is cramped and has potential to compromise safety	$500,000	Council, grant funds, cash reserves
Extension of water harvesting programme	Part of ongoing programme to 'waterproof' the Airport. Target is 50 megalitres storage	$50,000	Cash Reserves
New Emergency Power Generator	Current generator is approx. 50% of required capacity. Requires immediate action to manually shed load in times of power outage	$400,000	Cash Reserves
Relocated existing emergency generator	New emergency power generator provides opportunity to relocate existing generator to provide increased capacity to essential power circuits and airside facilities.	$60,000	Cash Reserves
Consultancy Council Planning Scheme		$25,000	Cash Reserves
Shade sail over terminal open air area	To render this area more useable in periods of hot weather and intense sun	$20,000	Cash Reserves
General Aviation Upgrade	Repairs and partial rebuild of sections of the General Aviation Apron	$150,000	Council, grant funds
	TOTAL 2010/2011	**$1,205,000**	

JULY 2011 – JUNE 2012

ITEM	NOTES	COST	FUNDING SOURCE
Terminal Upgrade Stage # 1 - 'Holding Position'	Required to provide improved amenity in sterile area, boarding area and café precinct. Relocation of car rental counters and enclosure of perimeter of building	$1,000,000	Council, grant funds
Resheet decaying Runways	Critical work to preserve decaying runway 18/36	$1,000,000	Council, grant funds
Extension of water harvesting programme	Part of ongoing programme to 'waterproof' the Airport Target is 50 megalitres storage	$50,000	Cash Reserves
General Aviation Upgrade	Repairs and partial rebuild of sections of the General Aviation Apron	$150,000	Council, grant funds
Extend CCTV coverage	Required to provide extended security coverage	$50,000	Cash Reserves
Replace Flight Information Display System (FIDS)	Current system outdated and not able to provide service required	$150,000	Cash Reserves
New Perimeter Security Fence	Predicted compliance requirement to enhance security with increased traffic	$500,000	Grant Funds
	TOTAL 2011/2012	**$2,900,000**	

BEYOND JULY 2012 - YEAR 2020

ITEM	NOTES	COST	FUNDING SOURCE
Repairs to Overhead Water Storage Tank	To render this area more useable in periods of hot weather and intense sun	$200,000	Cash Reserves
Upgrade electrical grid capacity	Electrical grid is inadequate to supply required power to Airport assets and potential development areas	$3,000,000	Council, grant funds
New electrical substation	Required as part of capacity upgrade of grid, to supply the terminal building	$500,000	Council, grant funds
Terminal Upgrade Stage # 2	To 300 person busy hour	$7,000,000	Council, grant funds
Overlay Main Runway 9/27	Critical overlay to preserve runway and provide increased capacity	$20,000,000	Council, grant funds
Extend Main Runway 9/27	Activate opportunity identified to increase length of runway by increasing pavement strength of overrun areas to bring T.O.D.A. to in excess of 2,000 metres	$2,000,000	Council, grant funds
Install Turning Nodes on Main Runway 9/27	Required to allow aircraft to turn before reaching runway end. Essential as traffice increases	$1,000,000	Council, grant funds
Parallel Taxiway	Optimum solution to increased traffice. Can be done in lieu of turing nodes	$1,000,000	Council, grant funds
Complete Ring Road Concept	To improve flow in and around airport as traffic increases	$1,000,000	Council, grant funds
	TOTAL 2011/2012	**$35,700,000**	

POST YEAR 2020

ITEM	NOTES	COST	FUNDING SOURCE
Construct Fire Station	Required when annual passenger numbers reach 350,000 (estimated pre 2020)	$1,000,000	Council, grant funds
Construct Control Tower	May be provided by Air Services Australia when movements dictate	$1,000,000	Council, grant funds
Relocate Fuel Farm	Will be required when car park demand increases to a point where the site becomes more useful as car parking related use	$1,000,000	Council, grant funds
	TOTAL 2010/2011	**$3,000,000**	

MILDURA AIRPORT **MASTER PLAN 2010**

EXECUTIVE SUMMARY

CONTENTS

ACKNOWLEDGEMENT II

DISCLAIMER III

EXECUTIVE SUMMARY IV

1 INTRODUCTION

2 FUTURE DEVELOPMENT

3 AIRCRAFT APRONS

4 PASSENGER TERMINAL

5 SURFACE ACCESS AND PARKING

6 RUNWAYS AND TAXIWAYS

7 AVIATION SUPPORT

8 ENVIRONMENTAL IMPACTS

APPENDICES 1

Acknowledgement

This Master Plan has been prepared in consultation with the airline industry, airport tenants, Federal, State and Local Government agencies as well as the local community. Mildura Airport Pty Ltd gratefully acknowledges the cooperation and input from all organizations and individuals who participated in the preparation phase.

Disclaimer

Whilst every care has been taken in preparing this document, Mildura Airport Pty Ltd (MAPL) does not make any representation to any party and will not accept responsibility or liability to any person or corporation seeking to rely on any information, advice or opinion provided in this report or otherwise given in any manner by the officers, servants or agents of MAPL for any loss or damage of whatever nature suffered by any such person or corporation.

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EXECUTIVE SUMMARY

1.1 INTRODUCTION

This Master Plan is a document intended to guide future development decisions to achieve the Mildura Airport strategic intent. Its purpose to identify development requirements and to preserve options, including land, for future airport activities based on the forecast growth of the airport business at the time of writing. The Master Plan is not intended to detail individual facilities or specific time frames for the implementation of the Plan; rather it sets the foundation upon which further analysis and planning is based.

This Master Plan is the product of changes made to the Master Plan review dated 2005 and has been written to address feedback received from the public review of that plan. This Master Plan – May - Dec 2009 sets the direction for the development of Mildura Airport from 2009 through to 2030.

It is envisaged that this plan will set the framework for a more detailed study of design, infrastructure planning, land use planning and environmental impacts required to achieve the long term planning and growth objectives in a commercial environment.

1.2 AVIATION FORECASTS

1.2.1 Passenger Movements

With the introduction of regular Jet services (E Jets) and the introduction of the Q400 aircraft to Melbourne, passenger movements are set to increase. Fares could fall due to increased capacity and competition on the route which in turn could result in an increase in demand.

Historic and forecast annual passenger movements are shown at Figure 1-1 below.

Figure 1-1 shows base case forecasts of approximately 320,000 passenger movements by 2020, based on maintaining an average of 5% pa growth with high and low forecasts.

FIGURE 1-1 FORECAST ANNUAL PASSENGER MOVEMENTS

TOTAL PASSENGERS

1.3 Aircraft Movements

Historic and forecast total fixed wing (RPT) aircraft and movements are shown at Figure 1-2. The change to larger airframes occurred during late 2008 with the introduction of the E 170 & 190 aircraft and the introduction of the Q400 to supplement the Dash-8 300 series aircraft already in operation. This aircraft set is unlikely to alter greatly in the short term and it is highly likely to be in operation in 2020 with increased frequency.

FIGURE 1-2 HISTORIC AND FORECAST ANNUAL AIRCRAFT MOVEMENTS

1.4 Busy Hour Passengers

Busy hour passenger forecasts were prepared to allow sizing of the future passenger terminal and associated services facilities. The forecasts were based on modelling of possible airframe types and annual growth figures.

The busy hour passenger arrivals and departures are forecast to reach 180 by 2020.
In practice, it is likely Mildura Airport Pty Ltd would seek to negotiate with the airlines to encourage them to introduce new services outside the peak period, in order to minimise
the need for terminal and apron expansion facilities which would otherwise be underutilised much of the time.

			LIKELY TIMING OF CHANGE				
Aircraft Type	Passenger Numbers	December 2009	Current Position	June 2011	June 2013	June 2015	June 2020
SAAB 340	34	34	34	34	34	34	34
Q 300	50	50					50
Q 400	74		74	74	74	74	
E 170	78	78	78	78	78		
E 190	108	108	108				
Metroliner	18	18	18	18	18	18	18
B 737 -700	144					144	144
B 737 – 800	164/180	164					
Total Pax in Busy Hour		180	204	234	312	348	410
80% factored load		144	164	188	250	279	328
Busy Hour with visitor factor		230	263	301	400	445	525

1.5 Peak Stand Demand

Peak stand demand forecasts for RPT jet aircraft, using E170/E190 & Q400 as the design aircraft are provided below.

TABLE 1-1 PEAK STAND DEMAND

Year	Active Stand Demand	Buffer (1)	Total Stands
2009 (Current)	3	1	4
2010	3	1	4
2015	3	1	4
2020	3	1	4
2025	3	1	4
2030	4	0	4

Note 1: Makes provision for off-schedule and itinerant aircraft

1.6 RPT Apron

The current RPT apron can accommodate four aircraft with the geometric design centred on B737 – 800 and will allow all aircraft types to operate nose in power out configuration. This design allows for the best possible use of the apron area.

An apron parking layout with four bays to accommodate B737-800 (design aircraft) is shown in Figure 1-3 on the following page.

FIGURE 1-3 CONCEPT PLAN OF NOSE IN/POWER OUT PARKING BAYS

1.7 Passenger Terminal

A terminal concept to accommodate the projected 2020 busy hour passenger numbers, including accommodating busy hour traffic, is shown at Figure 1-5 below. Based on the revised 2m square area per passenger the planned terminal redevelopments could accommodate 320,000 passengers.

FIGURE 1-4 FUTURE PASSENGER TERMINAL LAYOUT

1.8 Parking

The existing car park has a total capacity 386 of paved spaces, which is considered adequate until 2020 under a user pay regime. However, at present the car park continues to be frequented by long term users which distort the actual day to day requirements. It is planned to introduce paid car parking early in 2010, the introduction of this measure will reduce this distortion and provide a more realistic use pattern along with a reduction in overall future demand. To provide a useful buffer a phased expansion of the public car park should be planned with the target of maintaining 40 additional spaces above the forecast requirements. Rental car demand has also altered with the introduction of 'rent-a-car court' (Caldwell Crescent) which has reduced the demand on this type of parking space.

TABLE 1-2 PARKING DEMAND FORECAST

Year	Private Cars	Taxis	Rental	Staff	Bus/Shuttles
Current	249	9	62	24	>3
2010	250	13	64	24	>3
2015	280	20	91	24	>3
2020	300	24	116	24	>4
2025					
2030					

A concept for layout of the future car park and terminal access road system to accommodate the 2020 demand is included along with provision for taxi parking and shuttle bus service. The increased need to address security around the terminal precinct will also impact heavily on any future concepts for parking.

CONCEPT TRAFFIC AND PARKING LAYOUT

1.9 Surface Access

Road access to the main terminal is along Alan Mathews Road which connects to Walnut Avenue. This system while adequate for now will need upgrading in the future to stay abreast of increased use. In the future the ring road concept will be implemented to assist in creating efficient traffic management. It is recommended that discussions with Mildura Rural City Council be opened to address this issue.

Walnut Avenue adjacent to 19th street and the Airport entry is poorly lit and requires reconstruction for reasons of safety.

1.10 Runway Requirements

The existing main Runway 09/27 is 1,830m long x 45m wide; operations are restricted to aircraft with maximum takeoff weight (MTOW) 57,000kg and greater with pavement concession. As the runway is in sound condition and the climate is normally dry, offering a pavement concession for B737-800 aircraft is commercially acceptable. However, the start up of a RPT 737-800 and/or A320 service could not be sustained in the longer term without significant upgrade of the entire RPT movement area this could be completed when the next overlay is due.

This plan recommends that extensions can be made to the existing runway 09/27 taking the runway up to 2,000m and increasing is strength to 80,000kg, and that detailed planning commences to confirm the construction triggers and impacts of the proposed runway. It is anticipated that this body of work may indicate the requirement for the runway construction towards the end of 2020 or shortly thereafter. Operations will be possible by a range of aircraft. Typical ranges from this runway are shown at Figure 1-5 below.

FIGURE 1-5 INDICATIVE RANGE CIRCLES

1.12 Aircraft Noise

Aircraft noise scenarios based on Runway 09/27 were conducted and an ANEF was prepared to allow external land use planning to protect for the existing Runway 09/27 & 18/36. The planning amendment is known as C20.

1.13 Obstacle Limitation Surfaces

An Obstacle limitation surface (OLS) drawing based on the existing Runway 18/36 and Runway 09/27 was prepared to protect airspace associated with the airport in the long term. The OLS has been incorporated into the town planning scheme for areas surrounding the airport, this is supported by MRCC planning amendment C20.

1.14 Staged Development

Operational requirements, funding limitations and other considerations usually dictate that provision of expanded or new facilities is undertaken in a staged manner. Development of facilities is driven by traffic conditions or other triggers that can be defined as part of the planning process ahead of the time the facilities are likely to be required.

Thus, the desired airport developments will be achieved in a series of stages that are tailored to match traffic growth and required service levels, with the basic philosophy being to ensure that maximum use is made of existing infrastructure in subsequent development stages.

Three development stages of ongoing development of the existing airport were prepared as follows:

Stage 1 (short term) **0 – 3 years**

Stage 2 (medium term) **4 - 7 years**

Stage 3 (long term) **7 – 15 years**

The above time periods are indicative and do not represent a commitment to undertake the developments.

Major work items within each development stage are as follows:

Stage 1

- Arrivals area and baggage claim belt
- RPT apron upgrade
- Upgrade café and departure lounge in passenger terminal
- Electrical supply upgrade
- Expand landside road system as required
- Expand car parking facilities as required
- Provide commercial and recreational hangar sites as demand requires.

Stage 2

- Construct partial parallel taxiway or turning nodes on Runway 09/27
- Expand passenger terminal
- Expand car parking facilities
- Expand GA aprons
- Review Runway 09/27 upgrade and extension triggers
- Reseal existing Runway 18/36
- Stage 3 Provide commercial and recreational hangar sites as demand requires.

Stage 3

- Expand car parking facilities
- Expand GA aprons
- Extend parallel taxiway
- Overlay Runway 09/27
- Provide commercial and recreational hangar sites as demand requires.

Arrivals

Master Plan Terminal Building
PROPOSED OVERALL PLAN
GSD

proposed verandah
kitchen
arrivals lounge
flexible barrier
store
bar
B.L.
W.C.
EXIT

MILDURA AIRPORT **MASTER PLAN 2010**