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Clarence Valley Regional Airport

Master Plan 2018-2033

Final Report

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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

The Airport Group (TAG) has been engaged by Clarence Valley Council (CVC) to prepare a Master Plan for Clarence Valley Regional Airport (CVRA) (IATA: GFN, ICAO YGFN). The Airport is operated by CVC and is located 16km south east of Grafton, in New South Wales. CVRA is an important gateway to the region.

CVRA facilitates Regular Public Transport (RPT) services to Sydney which are operated by Regional Express (Rex) and have been triangulated via Lismore since November 2014. These services were previously triangulated via Taree. Passenger numbers at CVRA have fluctuated over the years but most recently in Financial Year (FY) FY18, 18,003 passengers visited the Airport.

CVRA is an airbase and operational centre for the Clarence Valley Rural Fire Service and supports the operation of a variety of other aviation emergency services (e.g. aeromedical). In addition, the airport is frequented by aircraft from surrounding airports who use CVRA to perform training activities such as touch and go's and circuits.

This Master Plan is a guide for future development at the Airport within a 15-year planning period. The Master Plan will take into consideration the current and future scope of operations at the Airport. The objectives of this Master Plan are to:

- Identify future opportunities for future development at CVRA;
- Maintain the ongoing safe operation of regular aviation movements to/from CVRA;
- Produce passenger and aircraft movement forecasts for the 15-year planning period; and
- Provide CVC with two Master Plan options for the 15-year planning period at CVRA.

Aviation forecasting produced low, medium (most likely) and high scenarios of growth for passenger throughput and aircraft movement traffic at CVRA for the period until FY33. The forecasts indicate the medium scenario for passenger throughput in FY33 is 24,476 passengers. Whilst aircraft movements are anticipated to total 3,559 in FY33 which consists of 2,276 movements from RPT services and 1,283 movements from General Aviation (GA).

The Master Plan discusses future aviation and non aviation related opportunities for CVRA. The aviation related opportunities include facilitating the growth of General Aviation, emergency services, flight training and RPT operations. The non aviation opportunities for CVRA include the activities associated with the Clarence Correctional Centre and the proximity of the Airport to the Pacific Highway, which provides an opportunity for high levels of advertising exposure.

The Master Plan presents two options for the planning period at CVRA. The Master Plan options are designed to provide flexibility for CVC to accommodate future demand and development at the Airport. The plans are underpinned by consistent land use precincts and endeavour to complement the existing infrastructure through providing additional facilities for passengers (e.g. car parking and undercover walkway) as well as airport staff (e.g. additional office space) and provide the basis for future alternative development to stimulate ongoing operations at the Airport.

The point of difference in the two Master Plan Options is the role of the location of the Airport in future development. Master Plan Option One focuses on building the General Aviation operations at the Airport and Master Plan Option Two provides for more alternative uses of the land parcels at the aerodrome which can take advantage of proximity to the Pacific Highway corridor and utilise available land that is surplus to aviation operating requirements.

Proposed land uses and future development at the site are subject to planning regulations including any ecological, cultural and aviation related assessments prior to development (e.g. Obstacle Limitation Surfaces (OLS) and other airspace protection surfaces). In addition, there are environmental, planning and site servicing considerations that should be reviewed prior to any development in the south west corner of the site.

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Abbreviations

AWIS	Automatic Weather Information System
BoM	Bureau of Meteorology
CAGR	Compound Annual Growth Rate
CVC	Clarence Valley Council
CVRA	Clarence Valley Regional Airport
CVRFS	Clarence Valley Rural Fire Service
DCP	Development Control Plan
EPAA	Environmental Planning and Assessment Act
EPAR	Environmental Planning and Assessment Regulation
FY	Financial Year
GA	General Aviation
GRP	Gross Regional Product
GSP	Gross State Product
ICAO	International Civil Aviation Organisation
LEP	Local Environment Plan
LIRL	Low Intensity Runway Lighting
NDB	Non-Directional Beacon
NSW	New South Wales
PAPI	Precision Approach Path Indicator
PCN	Pavement Classification Number
REX	Regional Express Airlines
RFDS	Royal Flying Doctor Service

RPT	Regular Public Transport
SEPP	State Environmental Planning Policy
SES	State Emergency Service
TAG	The Airport Group

INTRODUCTION



1. INTRODUCTION

The Airport Group (TAG) has been engaged by Clarence Valley Council (CVC) to prepare a Master Plan for Clarence Valley Regional Airport (CVRA) (IATA: GFN, ICAO YGFN). This Master Plan will be based on a 15-year planning period and will take into consideration the current and future scope of operations at the Airport.

CVRA has been in operation since 1959 and was previously managed by the Ulmarra Shire Council prior to amalgamation into Pristine Waters Council. CVRA became part of CVC in 2004.

CVRA is a certified aerodrome, located 16km south east of Grafton in New South Wales (NSW). The Airport is serviced by daily Regular Public Transport (RPT) services to and from Sydney, operated by Regional Express (REX). In Financial Year (FY)18, the airport had a passenger throughput of 18,003 passengers. The services operated by REX were originally triangulated via Taree but in November 2014 were re-routed via Lismore. Since the change to services via Lismore in FY15, the airport has experienced an average 11% growth year on year. Although there was a -0.003% decrease in passenger throughput between FY17 and FY18.

The airport is also used on a regular basis by the Royal Flying Doctor Service (RFDS) and other aeromedical and emergency services operators. The Clarence Valley Rural Fire Service (CVRFS) uses the airport as a seasonal base and are also in the process of constructing a new operations facility at the airport.

1.1. Objectives

The objectives of this Master Plan are to:

- Identify future opportunities for future development at CVRA;
- Maintain the ongoing safe operation of regular aviation movements to/from CVRA;
- Produce passenger and aircraft movement forecasts for the 15-year planning period; and
- Provide CVC with two Master Plan options for the 15-year planning period at CVRA.

1.2. Methodology

This Master Plan has been produced based on a review of the legislative and existing operating contexts and a thorough analysis of planning and development opportunities for CVRA. Discussions with key airport stakeholders also informed the inputs of this master plan, including REX, Serco (the future operator of the Clarence Correctional Centre) and representatives from Clarence Valley Council.

1.3. Report Structure

This report has been structured in seven (7) key sections, as follows:

1. Introduction;
2. Legislative review;
3. Airport overview;
4. Aviation forecasts;
5. Potential development opportunities;
6. Master Plan 2018-2033; and
7. Appendices.

LEGISLATIVE REVIEW



2. LEGISLATIVE REVIEW

This section of the report outlines the legislative context for CVRA. Airports are sites that are bound by various legislative requirements, at Federal, State and Local government levels. Legislation can be attributed to both the operation, and the planning and land uses at the Airport.

For the purposes of this Master Plan the State and Local legislation relative to the site of CVRA have been taken into consideration. The legislative context for the site defines the permissible land uses for development at the site.

2.1. State context

2.1.1. Environmental Planning and Assessment Act 1979 & Environmental Planning and Assessment Regulation 2000

In the state of NSW, planning is governed by the Environmental Planning and Assessment Act (EPAA) and the Environmental Planning and Assessment Regulation (EPAR) which provide the overarching structure for planning. In addition to these two key pieces of legislation, the State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) must be considered as they underpin the implementation of the Act and the Regulation. The relevance of the SEPPs and LEP to CVRA are outlined below.

2.1.2. State Environmental Planning Policies

SEPPs outline the specific planning issues approaches of the NSW Government. There are approximately 66 SEPPs, of which the SEPP Infrastructure 2007 is particularly relevant for CVRA.

State Environmental Planning Policy (Infrastructure) 2007

The SEPP provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process.

The SEPP Infrastructure 2007 is relevant for CVRA, which is located in an SP 2 zone in the LEP as it outlines that development for the purpose of an airport may be carried out by or on behalf of a public authority without consent on land in SP 2 zoning.

2.2. Local context

2.2.1. CVC Local Environment Plan 2011

The CVC Local Environmental Plan came into effect in December 2011 aims to make local environmental planning provisions for land in Clarence Valley in accordance with the relevant standard environmental planning instrument.

As per the LEP, CVRA is zoned as **Special Purpose (SP) 2 – Infrastructure (Air transport facility)**. The LEP definitions are common to the terms used in Part 3, Division 1 Air transport facilities in the SEPP which are as follows.

“Air transport facility means an airport or a heliport that is not part of an airport, and includes associated communication and air traffic control facilities or structures.

Airport means a place that is used for the landing, taking off, parking, maintenance or repair of aeroplanes, and includes associated buildings, installations, facilities and movement areas and any heliport that is part of the airport.

Note.

Airports are a type of air transport facility.”

“The objectives of the zone are:

- to provide for infrastructure and related uses
- to prevent development that is not compatible with or that may detract from the provision of infrastructure.”

Permitted without consent in the SP2 zone are “extensive agriculture and roads.”

Permitted with consent in the SP2 zone are:

“the purpose shown on the land zoning map” (Air transport facility), including any development that is ordinarily incidental to development for that purpose; Advertising structures; Community facilities; Environmental protection works; Flood Mitigation works; Markets; and Recreation Areas.”

The definitions of the permitted with consent uses can be found in Appendix A: CVC Local Environmental Plan (LEP) definitions.

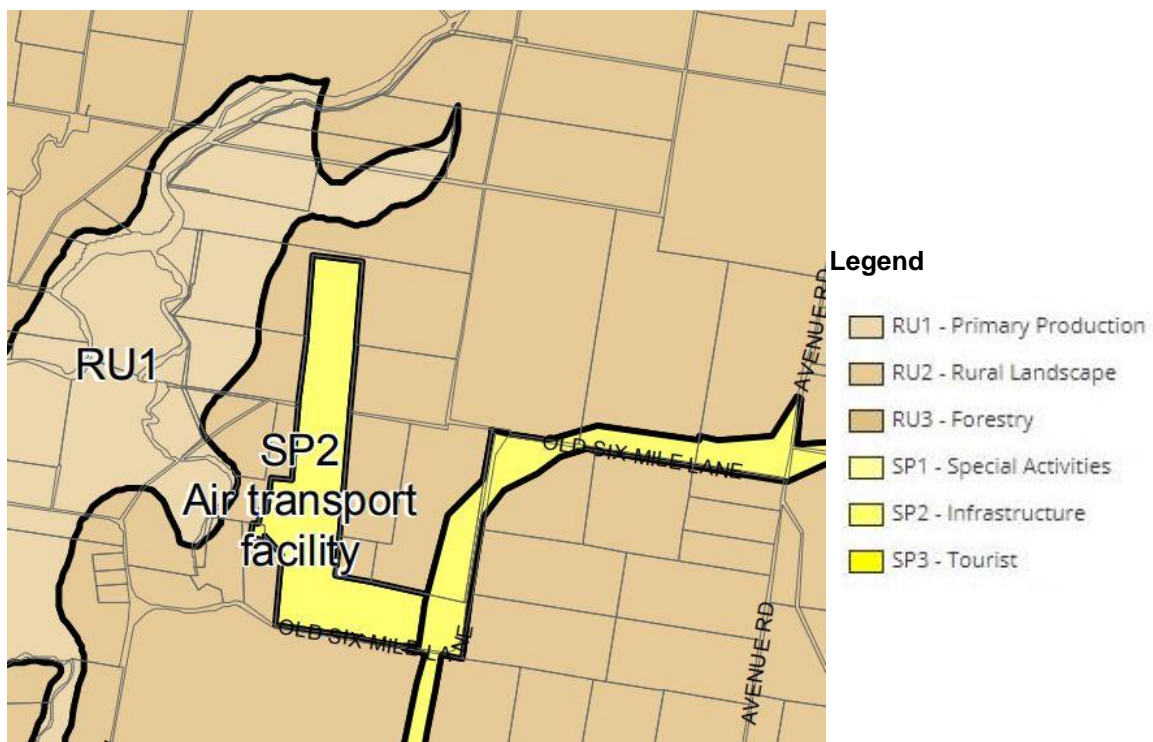


Figure 1: CVRA LEP Zoning

The land directly adjoining the airport is zoned as *RU2 – Rural Landscape*. Areas zoned as *RU1 – Primary production* are also in close proximity. The Pacific Highway which runs adjacent to the airport site is zoned as *SP2 - Classified road*

Additional context can be found in the layout plan from the CVRA LEP, provided in Appendix B: CVRA LEP Plan 1730_Com_LZN_012_160.

2.2.1.1. Acid Sulfate Soils

The LEP identifies that the CVRA site contains Class 5 Acid Sulfate Soils (Figure 2). As per the LEP, works must ensure that “development does not disturb, expose or drain acid sulphate soils and cause environmental damage.” More detail surrounding the classification of the CVRA land and requirements for future development are outlined in the CVC LEP and should be considered and managed appropriately prior to any development at CVRA.

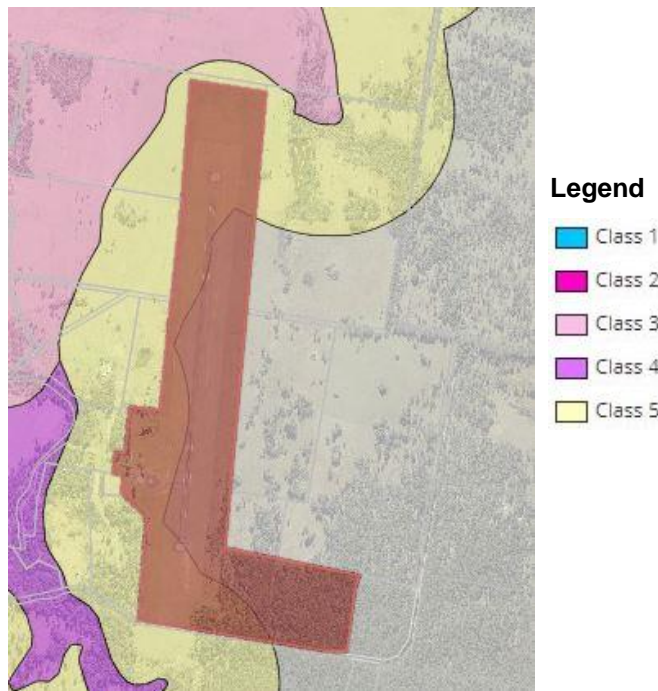


Figure 2: CVRA LEP Acid Sulfate Soils mapping

2.2.1.2. Bushfire hazard

The CVRA site is also located within the overlay for bushfire prone land for Pristine Waters in the CVC LEP. Category 1 affects an area in the south-east corner of the site, which is currently covered by thick vegetation. The Buffer area surrounding the Category 1 zones encroaches onto the airside area of CVRA. Awareness of this hazard and any influence on future operations at the Airport must be maintained in future. Future development should not increase bushfire hazards.

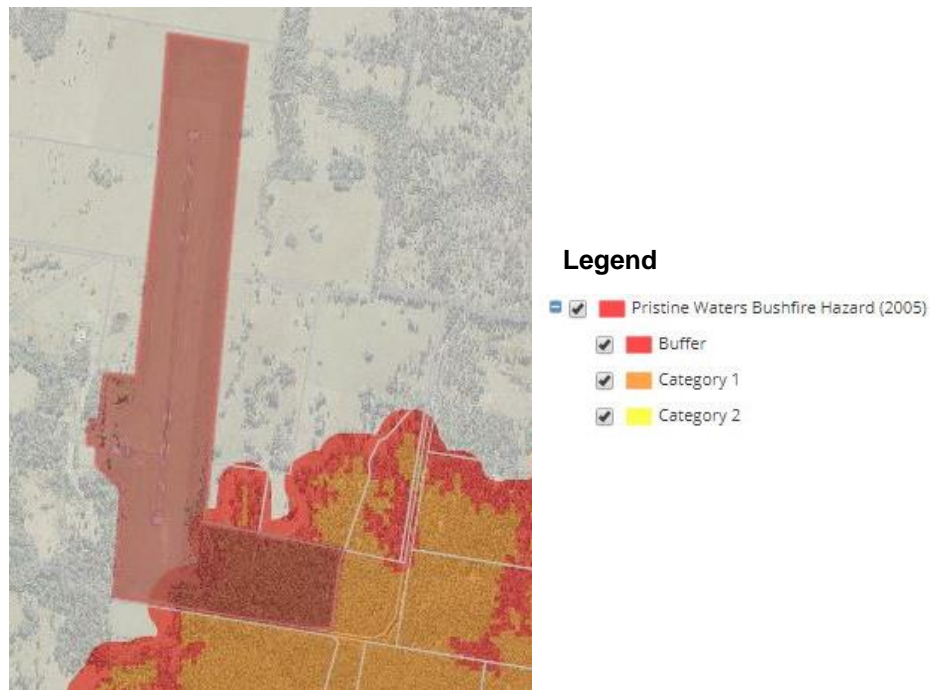


Figure 3: CVRA LEP bushfire hazard mapping



2.2.2. CVC Development Control Plan 2011

The zoning in which the airport is located *SP2 – Infrastructure (Air Transport Facility)*, is also subject to the CVC Development Control Plan (DCP) for Development in Environmental Protection, Recreation and Special Use Zones. The DCP applies to any development in the zone and has been in force since December 2011.

For SP2 – Infrastructure the DCP provides the notification and advertising requirements for development in this land use zone, Table B1 of the DCP indicates that all development in SP2 zones require notification and advertising with the exception of bushfire control and bushfire hazard reduction. The DCP also requires that alterations to existing buildings, sheds and other ancillary buildings require notification.

AIRPORT OVERVIEW



3. AIRPORT OVERVIEW

3.1. Airport site

CVRA is located on a 110ha site 16km south east of the town of Grafton. The site boundary can be seen in Figure 4, below. The southeast corner of the site is predominantly covered with vegetation. The land surrounding the airport is mostly used for agriculture purposes and the future alignment of the Pacific Highway (under construction at the time of writing) adjoins the Airport site in the south east corner. There are currently two roads which provide access to the Airport from the Pacific Highway (Six Mile Lane and Eight Mile Lane) which connect to Airport Road.



Figure 4: CVRA site boundary and aerial

Terrain

The airport site has varying terrain, which can be seen in the contour map in Figure 5, below. The south eastern component of the site is currently vegetation and is where the lie of the land reaches its highest point. A majority of the airport site is between 20m and 30m above sea level.

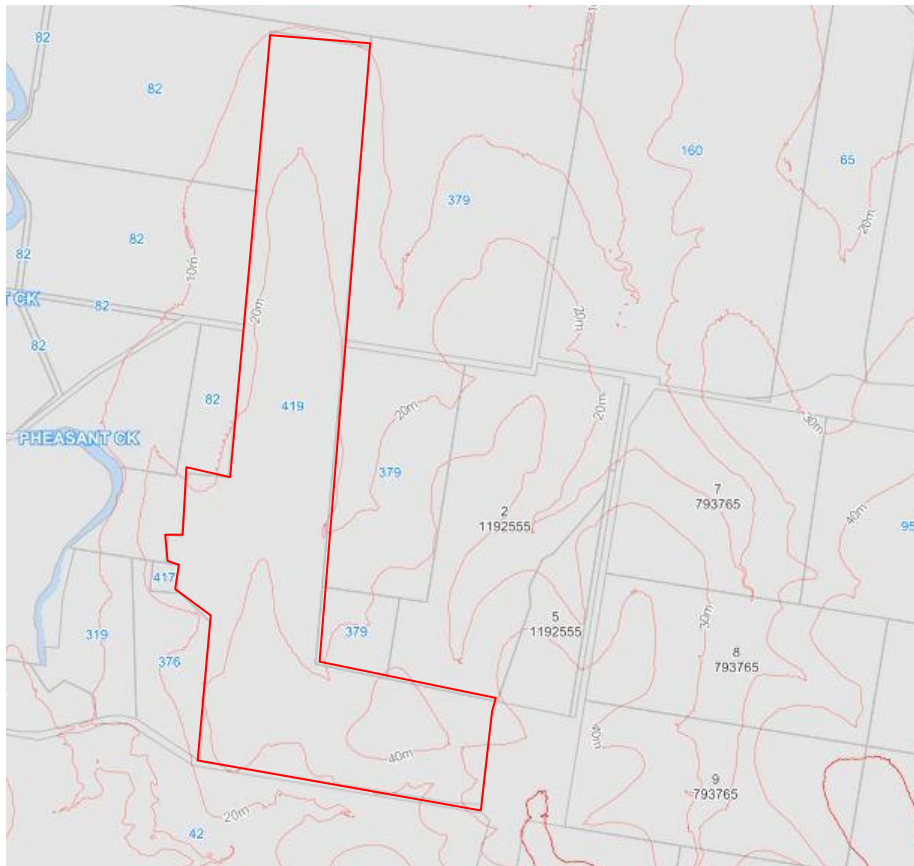


Figure 5: Contour map for CVRA

3.2. Airport users

CVRA is serviced by a variety of RPT, training and emergency services operators, which will be overviewed in this section.

RPT Services

CVRA's primary user is Rex, who operate RPT services to and from Sydney, which are triangulated via Lismore and are operated using a SAAB 340 aircraft which has 34 seats. These services operate three times daily on week days and 1.5 times daily over the weekends (morning schedule on a Saturday and evening schedule on a Sunday). Through these RPT services operated by Rex there is approximate capacity of 60,000 seats in the market on the combined Lismore and CVRA to Sydney route.

Flight training

Flight training aircraft from other airports and training schools sometimes use CVRA to perform circuits, touch and go's, and stop and go manoeuvres.

Emergency services

CVRA is also utilised by aeromedical emergency services, such as the RFDS and NSW Air Ambulance. In addition, CVRA is also an operations centre and airbase for the CVRFS and their aerial firefighting services. The State Emergency Service (SES) also utilise the airport in periods of emergency response operations, such as floods within the region.

The Australian and NSW Police Force aircraft also visit the Airport intermittently as part of the process of transferring correctional inmates to a large youth detention centre located in Grafton. This transfer is facilitated via an access gate located to the geographic north of the terminal.

3.3. Airport infrastructure

The following section provides an overview of airside, landside and other infrastructure at CVRA.

3.3.1. Airside infrastructure

Aircraft movement areas

CVRA maintains an International Civil Aviation Organisation (ICAO) Code 3C airport.

CVRA has one runway, 18/36 which is 1,709m in length and has a width of 30m. The runway has a Pavement Classification Number (PCN) of 12. There is a single taxiway which provides access between the apron and the runway. The apron area currently has aircraft parking bays for two 3C aircraft (e.g. SAAB340) as well as two helipads. The airfield layout diagram can be seen in Figure 6.

The runway and apron areas at CVRA were strengthened as part of an upgrade project at the Airport in 2016. This upgrade project also included the extension of the apron area to accommodate an additional aircraft parking bay that can accommodate a Code 3C aircraft (e.g. SAAB340).

3.3.1.1. Lighting

The runway is illuminated with Low Intensity Runway Lighting (LIRL) and a Precision Approach Path Indicator (PAPI), both of which are pilot activated. A standby power system is available for airfield lighting at CVRA.

3.3.1.2. Navigational aids

A Non-Directional Beacon (NDB) is located at CVRA, which is pilot monitored. The NDB is located to the west of the site, behind the airport residence. The NDB located at CVRA is not part of the Airservices Australia Navigation Rationalisation project¹. The NDB is unlikely to be decommissioned in the planning period.

3.3.1.3. Fencing

The perimeter of the aircraft movement area and the airside/landside boundary is secured by a wildlife proof electric fence that is located within the site boundary. This fence is switched on 24/7. The fence mitigates any cattle or other animals entering the airfield area. The fencing was implemented as part of the 2016 airport upgrade program.

3.3.2. Landside infrastructure

3.3.2.1. Terminal

The CVRA terminal is located between the car park and drop off areas and the airfield. The terminal has a footprint of approximately 550sqm, in addition to some outdoor areas which lead to the boarding gate and apron area. Access to the boarding gate is not covered and exposed to all weather conditions. At the terminal face, there is a 2-minute set down and drop off area for passengers (as can be seen in Image 1).

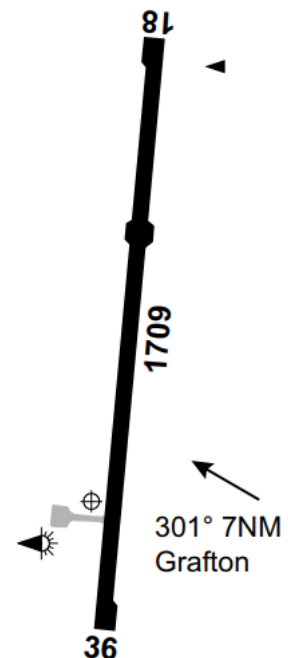


Figure 6: CVRA (GFN) Airservices Australia airfield diagram

¹ Source: <http://www.airservicesaustralia.com/wp-content/uploads/Navigation-Rationalisation-Project-Decommissioning-List-20160114.pdf>



Image 1: CVRA terminal face

The baggage handling area is at the northern end of the terminal and the baggage collection area is accessed via a roller door to the left of the terminal entrance as can be seen in the image above.

Within the terminal, there is one check in desk available for Rex and three hire car desks for Hertz, Avis and Thrifty (Image 2). The terminal has beverage and snack vending machines available. During morning peak times, a coffee van is also stationed outside the terminal entrance for passengers and visitors. The terminal building has wall mounted heaters available as well as ceiling fans but is not air conditioned.

On the eastern side of the terminal, there is an outdoor courtyard area which passengers walk across to access the apron and aircraft via the boarding gate in the airside fence.



Image 2: Counters at CVRA terminal

The terminal features a large seating area with multiple seating types (Image 3 and Image 4). A terminal upgrade at CVRA was completed in 2016, which included the expansion of the passenger seating area. The walls of the terminal include artwork pertaining to local tourism destinations.



Image 3: Seating area in CVRA terminal

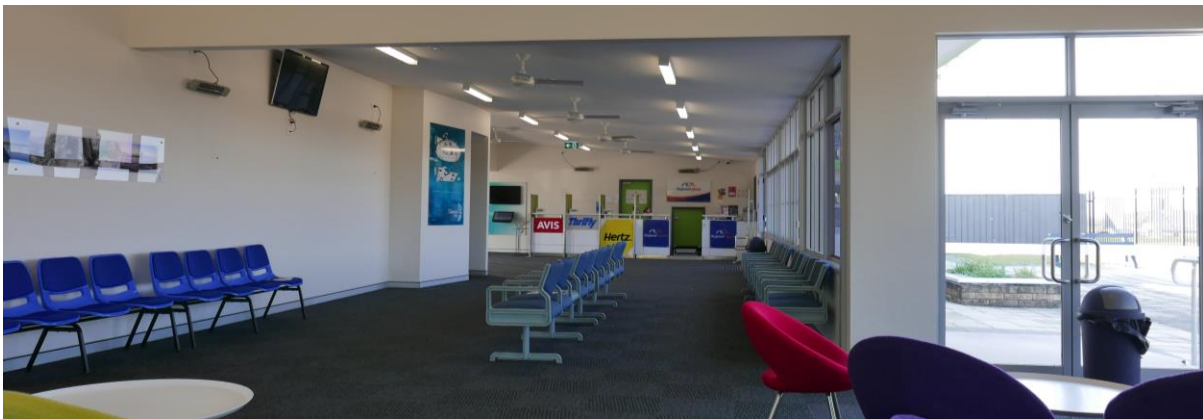


Image 4: Seating in the CVRA terminal

3.3.2.2. Car parking

Directly adjacent to the terminal face there is a small bitumen car parking area which has approximately 40 car parks. There is also some overflow parking on the grass areas parallel to the bitumen. The car parking at CVRA is free and is subject to space availability. Over weekends and other peak periods, the car park has high utilisation rates.

3.3.2.3. Other infrastructure at CVRA

Fuel

There is a fenced fuel compound located landside, adjacent to the vehicle parking area. A portable fuel truck facility is permanently parked within the compound when not in use. The fuel truck is able to travel airside to fuel aircraft directly on the apron.

Bureau of Meteorology

CVRA has a Bureau of Meteorology (BoM) Automatic Weather Information System (AWIS) based at the Airport. This is located to the north of the terminal building adjacent to the runway.

Rental property

There is a four bedroom rental property on the Airport site which is owned by CVC and is currently vacant. In the past this property has been offered at a discounted rate to Airport Managers.

Clarence Valley Rural Fire Service

The CVRFS is currently constructing a new airbase at CVRA. The new facility will replace the temporary shipping container facilities which they have been using for operations since 2015. The

new \$700,000 state of the art facility incorporates an operations building and a storage facility (pictured in Image 5 below). In addition to the existing water tanks and other facilities already located on site.

The CVRFS airbase has the potential to be a regional facility for quick responses to bushfires not just for the Clarence Valley but for the Northern Regions region more broadly.



Image 5: CVRFS base at CVRA under construction (2018)

Solar

CVRA also has a photovoltaic array system located on site. The solar system is located in the yard of the on airport property but faces away from the residence and to the geographic north



Image 6: Solar system at CVRA

Agriculture

Areas of the site which lie outside the Airports perimeter fence have been leased to a neighbouring property owner for cattle grazing purposes. This lease area is approximately 28ha.

AVIATION FORECASTS



4. AVIATION FORECASTS

This section provides an overview of the historical movements experienced by CVRA and the aviation forecasts which have been produced for CVRA to Financial Year (FY) FY33. The forecasts consider RPT passenger movements and movement numbers for the RPT and General Aviation (GA) aircraft at CVRA to FY33. This section will also outline the assumptions which have been taken into consideration when producing the forecasts.

Detailed year on year values for each of the forecast types and relevant Compound Annual Growth Rate (CAGR) for each sector can be found in Appendix C: CVRA RPT traffic and aircraft movement forecasts to FY33.

Additional detail regarding the aviation forecasting can be found in the CVRA forecasting report produced by three consulting. This report is available as a supplementary document to the Master Plan.

4.1. Historical movements

This section will provide an overview of the historical aviation operating context at CVRA, including both passenger and aircraft movements.

4.1.1. Historical passenger throughput

The historical passenger throughput experienced at CVRA represents the operations of a number of different carriers including Qantas, Macair and Big Sky Express between 2000 and 2017. Since February 2007, these services have been operated by Rex.

As can be seen in Figure 7 consistent traffic declines were experienced at CVRA between 2000 and 2007, these were most likely a function of airline capacity decisions based on the ongoing changes in operators entering and exiting the market. Since Rex has been in operation, the market has been more consistent overall but decreases in passenger numbers were experienced from 2009 to 2014 but have steadily risen in the years since.

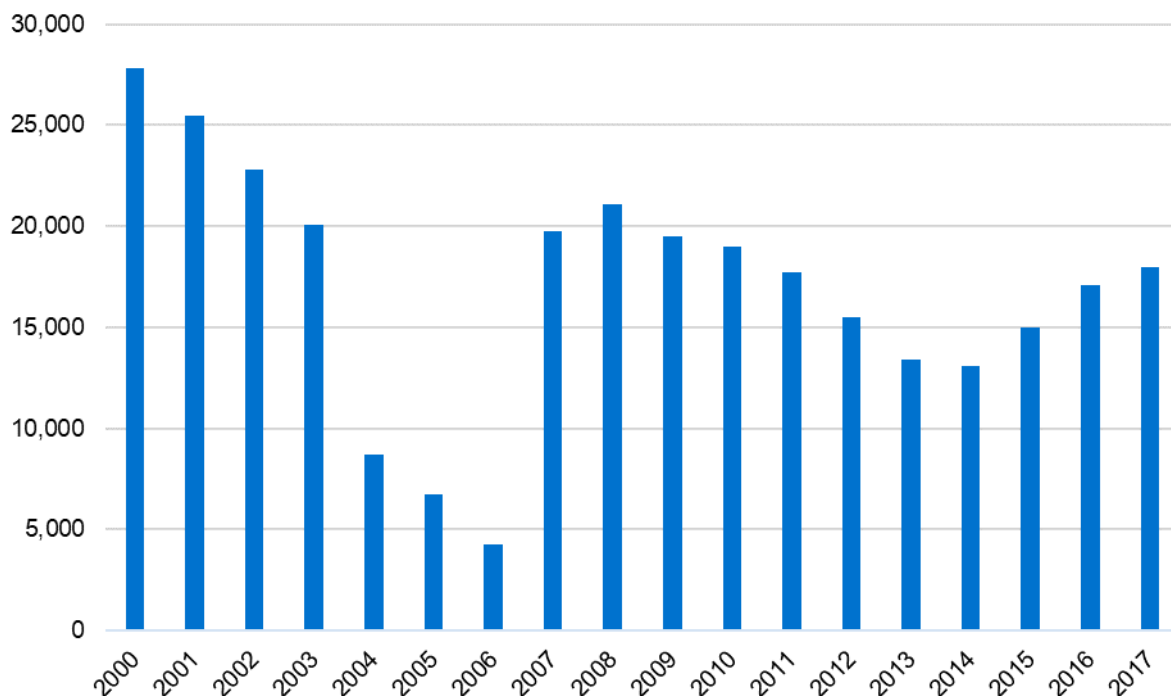


Figure 7: CVRA passenger throughput (Calendar Year 2000-2017)

4.1.2. Aircraft movements

A review has been undertaken of the Airport users at CVRA, this information is available for the period FY13-FY18. From this it is shown that a CAGR of 3.9% was experienced in this period (Figure 8).

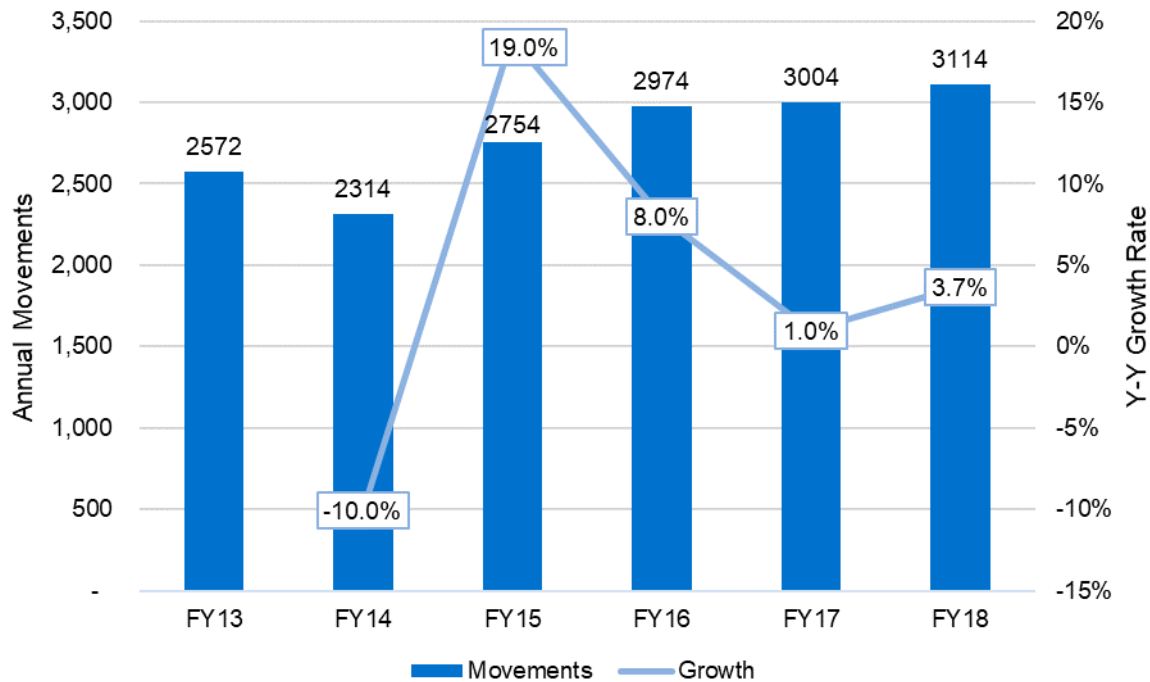


Figure 8: CVRA annual aircraft movements and growth rates (FY13-FY18)

4.1.3. Key users

A review of the key users operating to CVRA identified that the largest operator in the market is the RPT service provider, Rex, which represent 75% of all movements during the FY13-FY18 period as can be seen in Figure 9. During FY18 the largest movement drivers were Rex (73%), RFDS (7%), Australian Air Services (AAS) (2%), Air Gold Coast (8%), Australia Wings Academy (2%), leaving 9% for all other GA activity.

The variations in the movements undertaken at CVRA from the key users movements between FY13 and FY18 can be seen in Figure 10. The changes experienced during this period include the de-linking of CVRA from Taree on the RPT route from Sydney. With services now being triangulated via Lismore, an increase of 40% of movements has been experienced at CVRA. Air Gold Coast, AAS and RFDS show movement increases, whilst Australia Wings Academy as well as other GA movements are in decline.

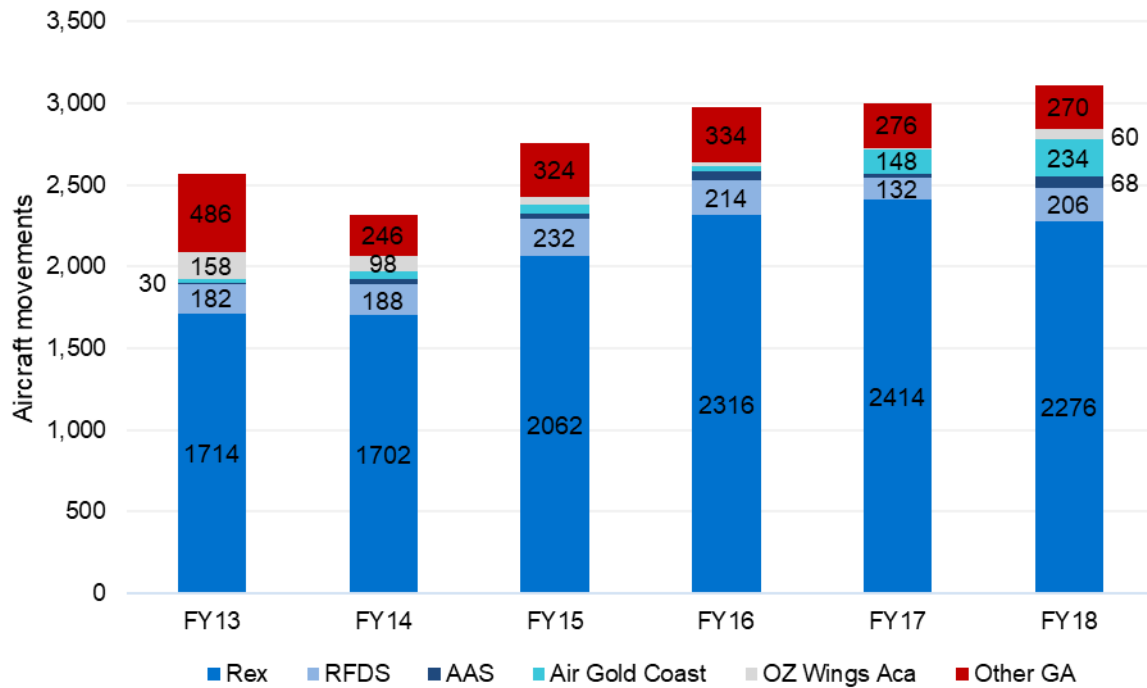


Figure 9: CVRA annual aircraft movements by key user (FY13-FY18)

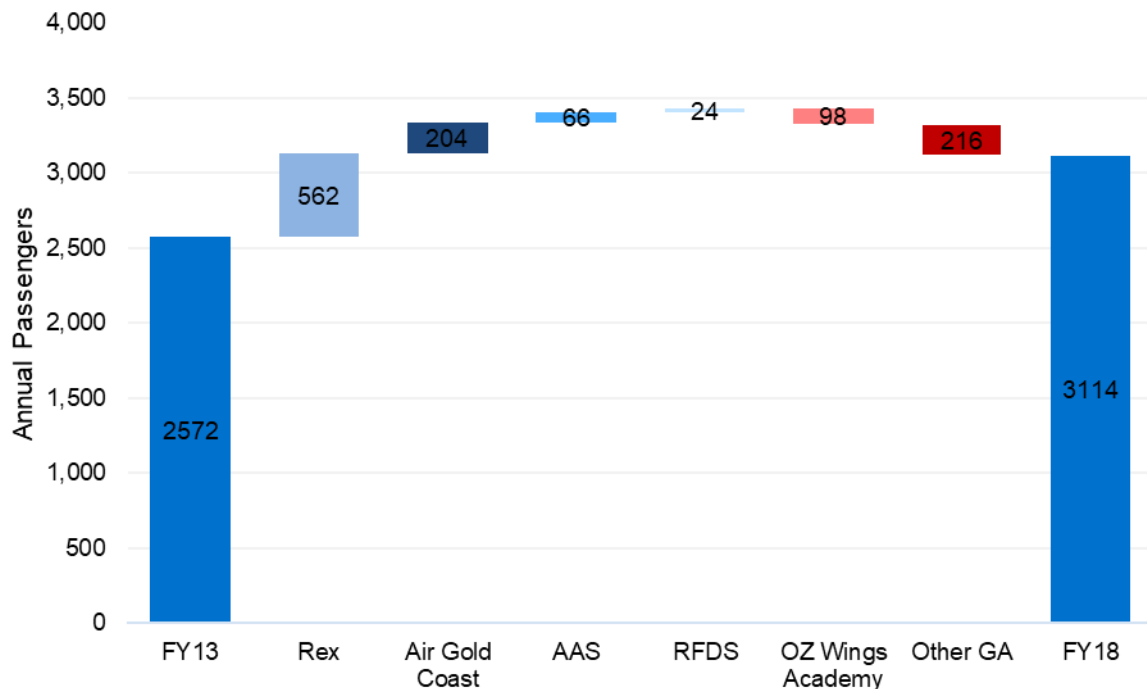


Figure 10: CVRA aircraft movement changes between key users between (FY13-FY18)

4.1.4. Aircraft movement trends

The month to month patterns of aircraft movements to CVRA have been reviewed for the period of FY13 to FY18. This suggests that the movement patterns experienced at CVRA are typical for a regional RPT airport with fewer movements during the summer holiday period (December and January) and limited variations across the other 10 months (Figure 11). Figure 12 highlights that the overall seasonal pattern is driven by REX, who routinely reduce flight frequencies across their entire



network when government and business travel requirements reduce between Christmas and the end of January.

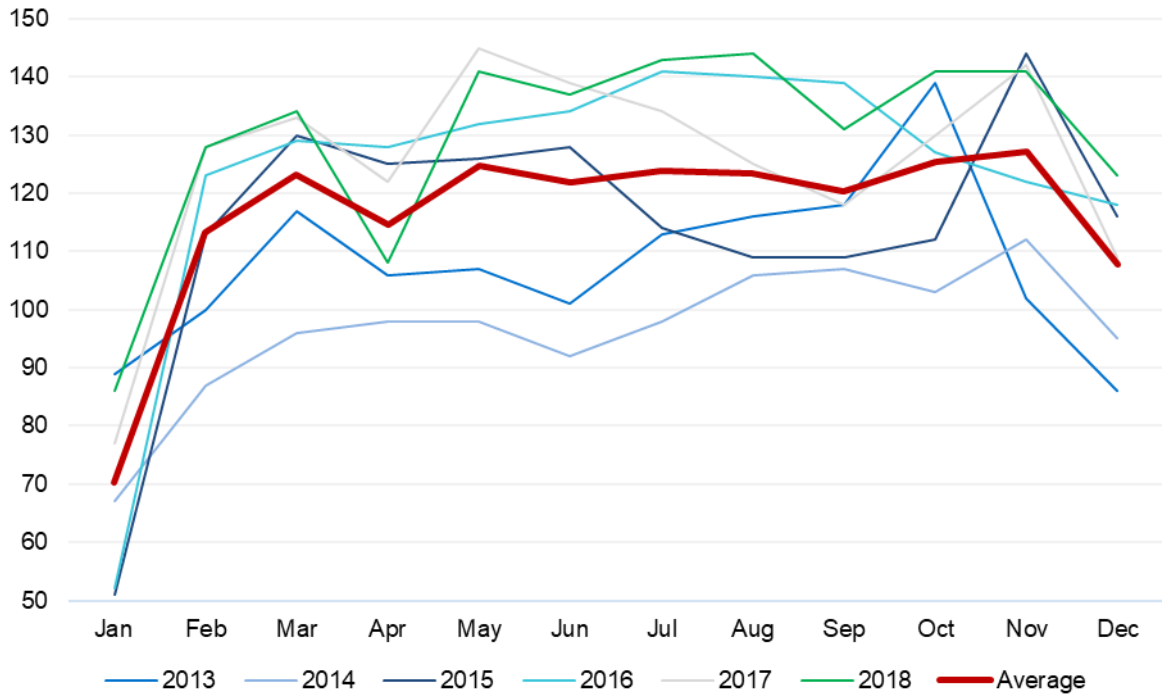


Figure 11: CVRA movements per month FY13-FY18 including monthly average (2013-2018)

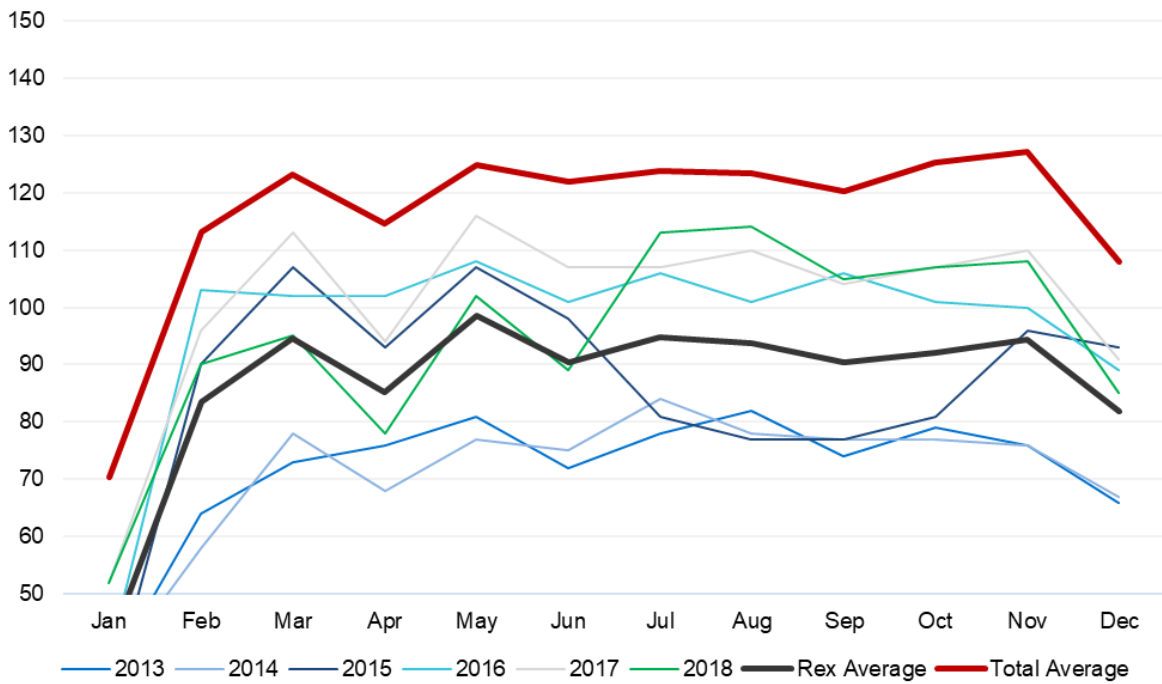


Figure 12: CVRA aircraft movements by month FY13-FY18 including Rex average (2013-2018)



4.1.5. RPT traffic history

The RPT airline route servicing CVRA is triangulated with services to Lismore, as such it is also important to consider Lismore when producing the forecasts. The change of triangulated port from Taree to Lismore in FY15 has stimulated improvements in passenger throughput at CVRA. On the other hand, Lismore traffic has been experiencing the opposite with significant decreases in passenger throughput. Lismore was around 46,000 passengers in FY00, reaching a high of almost 70,000 passengers in FY07, but reducing ever since to reach a low of less than 15,000 passengers in FY18 (Figure 13). It is thought that Lismore’s passenger decline is driven by the proximity of Ballina-Byron Gateway Airport, which is a 30-minute drive east of Lismore, offering competitive and low cost air services to east coast capital cities such as Sydney and Melbourne.

Given competition from nearby airports and the relatively small catchment areas covered by both CVRA and Lismore, Rex chooses to operate to the two Airports in combination. In FY18, the average load factor on these services was around 55% (Figure 13), slightly lower than Rex’s current network average at 59%. It is likely that CVRA will continue to experience on going passenger leakage to neighbouring ports such as Coffs Harbour during the planning period.

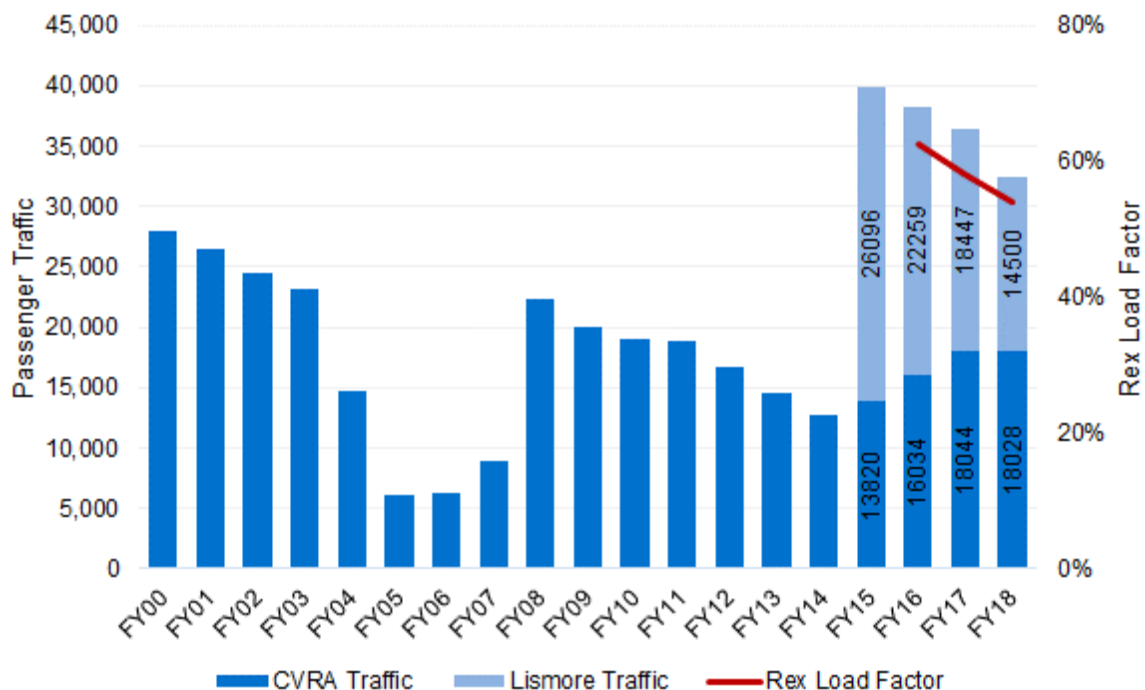


Figure 13: CVRA and Lismore passenger throughput and Rex load factors (FY00-FY18)

4.2. CVRA forecasts to FY33

Three different scenarios (low, medium and high) have been assessed in developing the air traffic and aircraft movement forecasts for CVRA. Examining activity levels through low, medium, and high scenarios allows for a suitable range of possible future volumes, meaning the ambiguity of future events that would affect traffic volumes can be countered through this approach.

The three movement scenario forecasts have incorporated external factors for correlation and identification of any trends that may contribute to the future operating context of CVRA, these other factors include:

- Gross Regional Product (GRP);
- Gross State Product (GSP);
- Regional job growth; and
- Population (Australian Bureau of Statistics Census Data: Clarence Valley SA3).

Low growth scenario

The low growth scenario represents a subdued aviation operating environment of the 15 year forecast horizon. Assumptions include:

- Lower than anticipated GSP Growth Rate for NSW; and
- Lower GRP rate for the Clarence Valley Region.

This scenario sees RPT traffic increases over the short term and traffic declines from FY25 onwards, in line with CVRAs long term historic results (Figure 14). The scenario produces modest outcomes for aircraft movements within the 15 year planning horizon, similar to what has been experienced at CVRA between 2013 and 2018

Medium (most likely) growth scenario

The medium (most likely) growth scenario represents a benign and better than historic aviation operating environment over the 15 year planning period. The assumptions for this scenario include:

- Solid GSP growth rates for NSW;
- Anticipation that Clarence Valley's GRP will continue to be closely linked to NSW's GSP.

This scenario sees short term RPT traffic growth to FY20 in line with the regional climate which normalises from FY21 to experience continuous growth to the end of the forecasting period (Figure 14). As the route network at CVRA is triangulated via Lismore, this has been considered in Figure 15, which anticipated that traffic volumes are not sufficient to justify an RPT frequency increase which is also reflected in the RPT aircraft movement forecast shown in Figure 18.

The aircraft movements experienced in this scenario are directly influenced by jobs growth as well as historical annual growth rates and represents a steady growth during the planning period as can be seen in Figure 16.

High growth scenario

The high growth scenario represents a reasonably optimistic aviation operating environment for the 15 year planning period. Key assumptions include:

- Solid GSP growth rates for NSW;
- Continuation of Clarence Valley's GRP development being closely linked to NSW GSP.

The increases in traffic volumes in the high growth scenario will stimulate load factor increases which are likely to cause a frequency increase around FY30 on the Sydney-CVRA-Lismore route as shown in Figure 15. The aircraft movements for this scenario experience healthy growth at the beginning of the period which gradually slow over time. Whilst this significantly better than historic growth rate seems unwarranted, a continuing growth of flown in (as opposed to based) flying school movements from training facilities at neighbouring airports could influence such increases to the general aviation aircraft movements (Figure 17).

4.2.1. Passenger traffic forecasts

The graph in Figure 14 represents the passenger traffic forecasts for CVRA to FY33. From this graph it can be seen that medium (most likely) scenario passenger throughput will reach at 24,476 passengers in FY33.

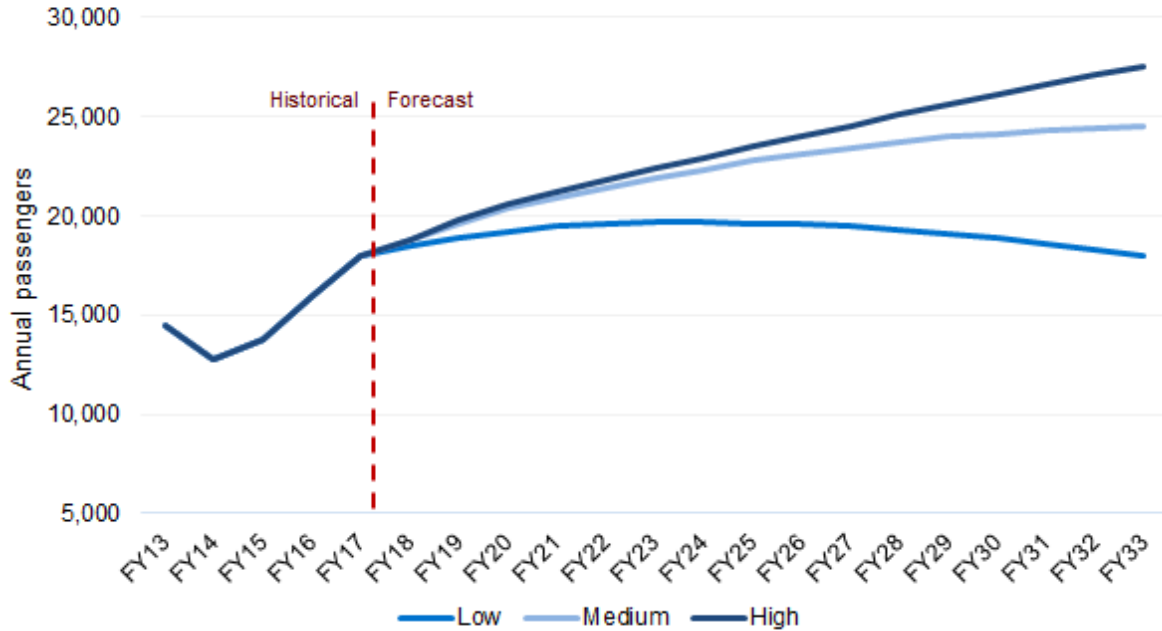


Figure 14 CVRA RPT passenger traffic forecast to FY33

4.2.1.1. CVRA and Lismore forecasts FY33

The services operating to and from CVRA are currently triangulated via Lismore. Passengers travelling to and from Lismore are an additional consideration for CVRA’s aircraft forecasts as they influence the load factors experienced on services to and from CVRA. This is considered in conjunction with the current capacity in the Rex services between Sydney and CVRA and Lismore indicated in Figure 15.

As can be seen in Figure 15 the combined medium (most likely) scenario for passenger throughput is anticipated to be in excess of 40,000 passengers per annum in FY33 of which 24,476 are from the CVRA route. As such, this is unlikely to trigger a frequency increase on the route.

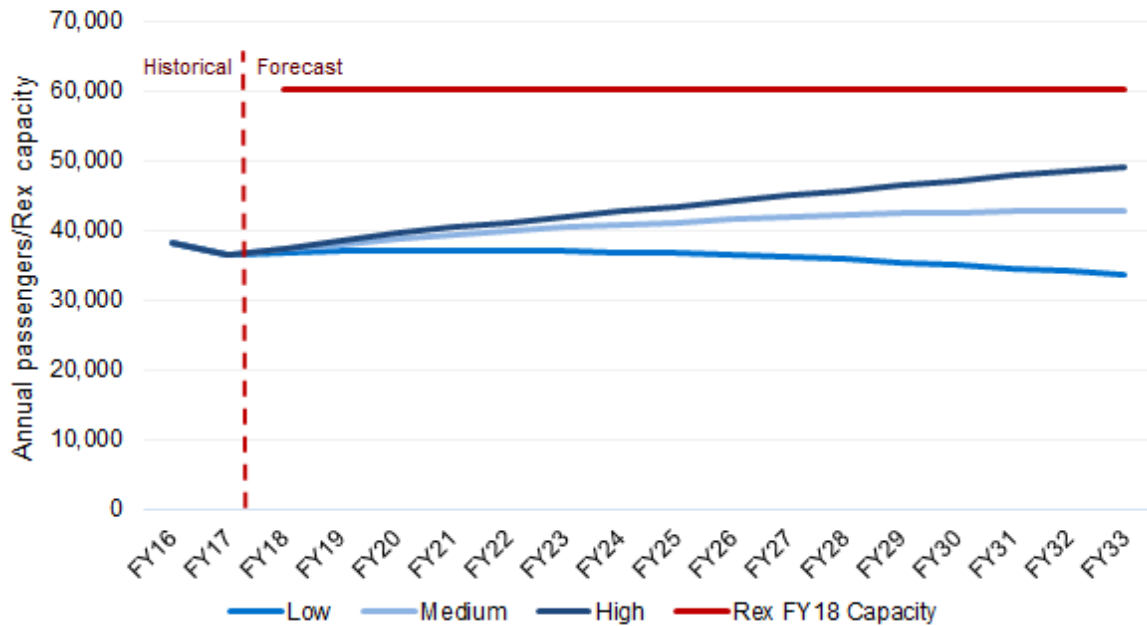


Figure 15: CVRA and Lismore forecast to 2033

4.2.2. Aircraft movements forecasts

The total aircraft movements (including both RPT and GA operations) for CVRA are expected to increase across the planning period. The medium growth scenario suggests in FY33 aircraft movements will exceed 3,500 per annum (Figure 16). Aircraft movements have also been considered by RPT aircraft and other GA aircraft segments in Section 4.2.2.1 and 4.2.2.2 respectively.

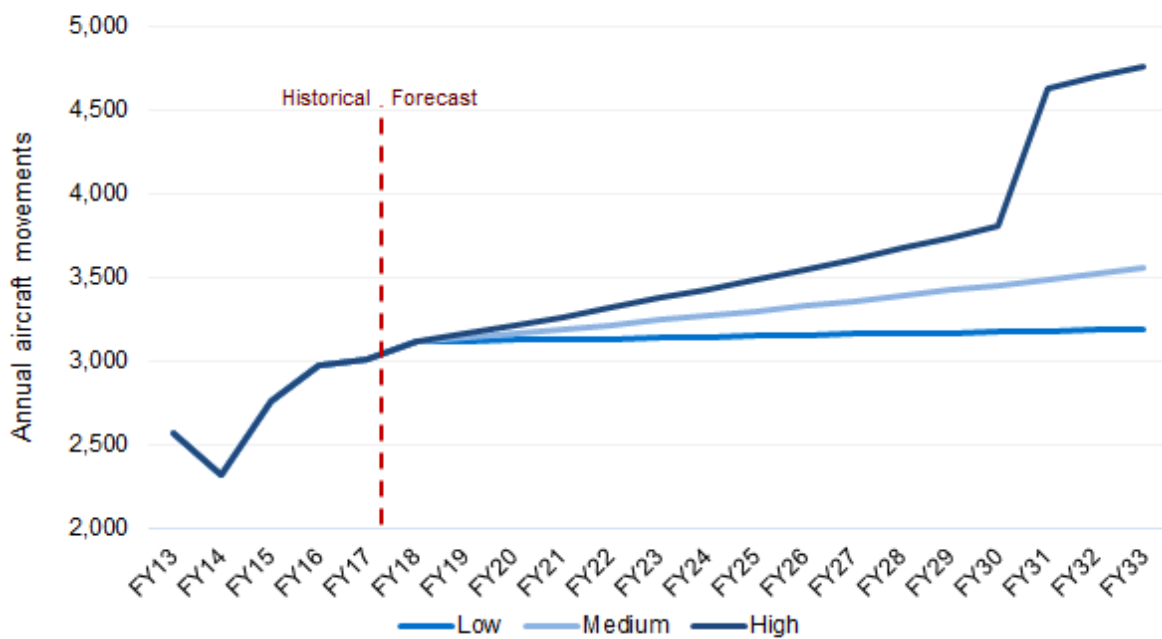


Figure 16: CVRA total aircraft movement forecast to FY33

4.2.2.1. General aviation aircraft movements

The graph in Figure 17 represents aircraft movement forecasts at CVRA that are not associated with RPT services. This includes general GA users, flight training and emergency services operations.

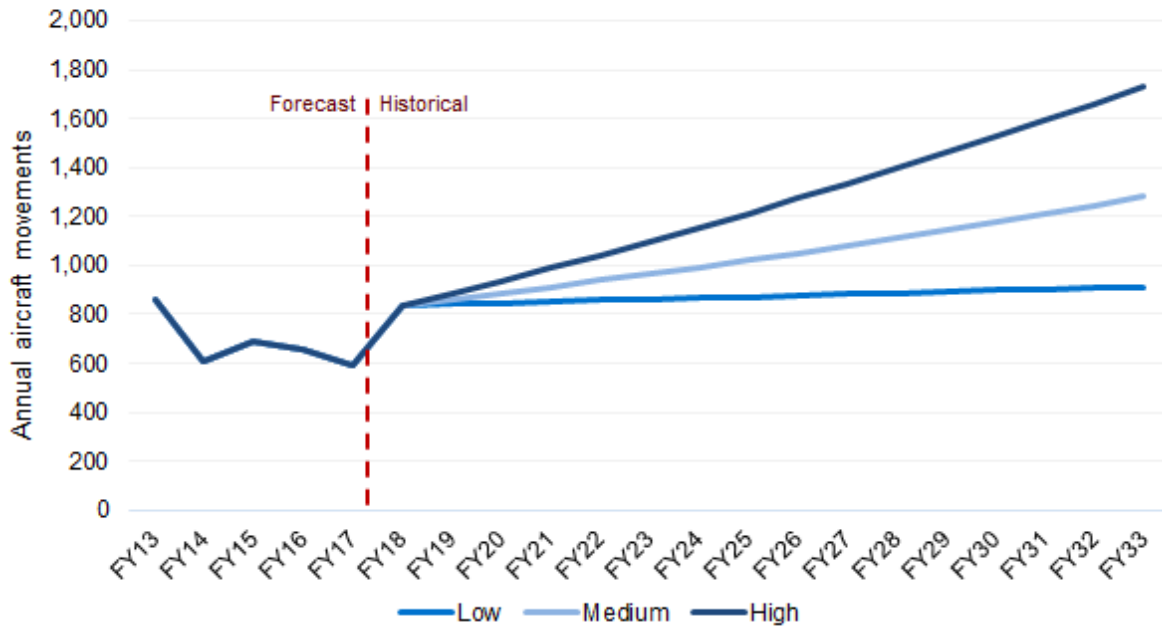


Figure 17: CVRA Non-RPT GA aircraft movement forecast to FY38

4.2.2.2. RPT aircraft movements FY33

Figure 18 provides an overview of the RPT aircraft movements to FY33. In this diagram, the low and medium RPT aircraft movement forecasts are the same as there are no anticipated increases in the frequency of RPT services and consequently the number of aircraft movements for RPT operations in either of these scenarios. Any growth would likely be because of load factor increases within the existing capacity of the market.

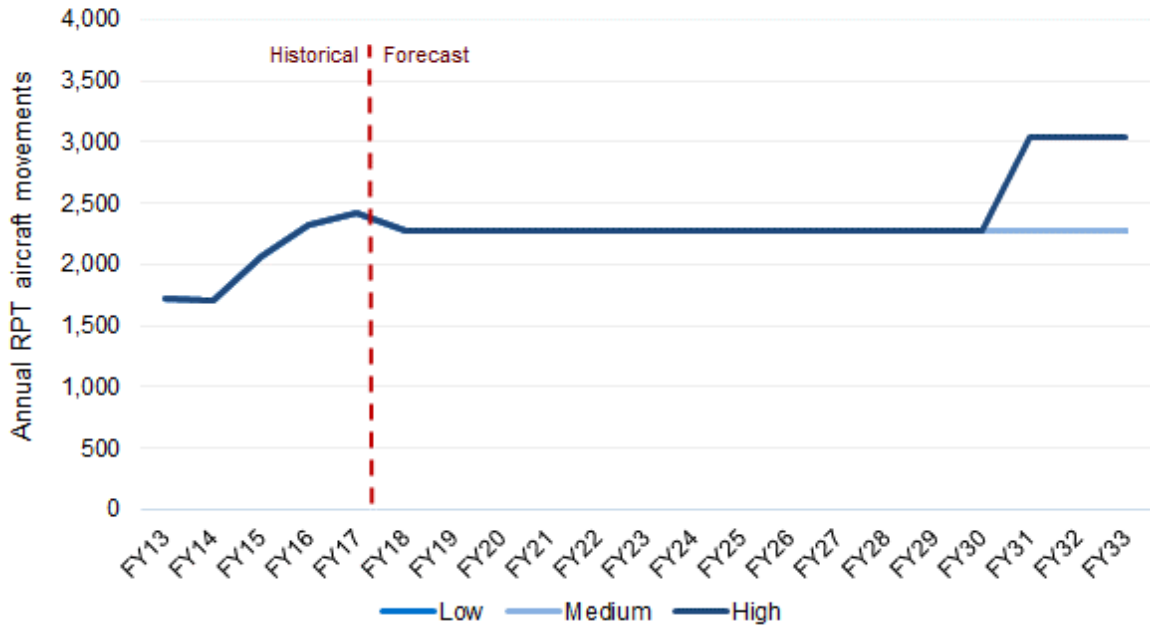


Figure 18: CVRA RPT aircraft movements to FY33

DEVELOPMENT OPPORTUNITIES



5. POTENTIAL DEVELOPMENT OPPORTUNITIES

A number of aviation and non-aviation related opportunities have been identified for CVRA, which have been considered when reviewing the future infrastructure requirements for the Airport. These are outlined below.

5.1. Non-aviation

Activities associated with Clarence Correctional Centre

The Airport site is in close proximity to the Clarence Correctional Centre, which is currently under development. The centre is slated for transition to the operational phase in 2020. When fully operational, the facility will hold 1,700 inmates and inject \$560m into the local economy. This project is creating an estimated 1,100 jobs in construction and 600 jobs when in operation. The construction and operation of this facility is an opportunity for future passenger throughput at CVRA.

Proximity to Pacific Highway

The Pacific Highway upgrade corridor runs adjacent to the south east corner of the Airport site. This area of land has direct frontage onto the Pacific Highway and may be ideal location to erect billboards for advertising. Billboards could be leased out for independent uses and also used to advertise the Airport to vehicles travelling along the Pacific Highway. In addition, this also presents an opportunity for regional tourism development and to support local businesses through advertising.

5.2. Aviation

General Aviation

At present, there is limited GA activity by private operators at CVRA. The Airport is in close proximity to the south Grafton airfield which is closer to town and is privately operated. The Airfield has a cluster of General Aviation hangars on site. The infrastructure including runway length and strength are optimal at CVRA and may be more appealing to General Aviation users with larger aircraft types.

Emergency services

As outlined in Section 3.2, CVRA is a base for the CVRFS. A permanent storage shed and operations facility has been recently constructed in 2018. In addition, the Rural Fire Service have indicated that they plan to relocate their full operational centre to the CVRA from Ulmarra, as well as the more permanent station under construction. There are also regular movements at CVRA by the RFDS and other aeromedical services. There is an opportunity for CVRA to foster the existing operations for emergency services.

Flight training

The flight training industry represents a significant opportunity for CVRA. At present, there is no flight school based at the Airport. The Airport is regularly used by flight training operators from other airports for training exercises. CVRA is ideally located to take advantage of this opportunity as it is located away from the urban area of Grafton and has minimal other movements at the Airport. Soft sounding with flight training operators may be conducted to identify if there is an opportunity for a flight training facility to be based at CVRA which can accommodate both training for both local and international aspiring pilots. In addition to growing the visitation and frequency of flight training aircraft from other airports to CVRA.

RPT operations

CVRA is fortunate to have operations provided by Rex and should continue to foster the ongoing operation and development of this service. It should be acknowledged that Rex has not experienced high passenger load factors or yields on this route. As such, there is an opportunity to support this service by providing an ideal operating scenario and endeavouring to support passenger number growth. This is of note as the flights are operated in triangulation with Lismore, who are experiencing decreases in their passenger throughput which may risk the viability of this route for Rex.

MASTER PLAN 2018-2033



6. MASTER PLAN 2018-2033

This section outlines the Master Plan for CVRA 2018-2033 which is underpinned by two concept plans. The plans have been produced based on the review of the existing infrastructure and CVRA operations as well as the outcomes from the aviation movement forecasting overviewed in Section 4.

The two Master Plan concepts endeavour to complement the existing infrastructure through providing additional facilities for passengers and future alternative development to stimulate ongoing operations at the Airport. The point of difference in the two Master Plan Options is the role of the location of the Airport in future development and the opportunities presented by the land in the south east corner of the site. Master Plan Option One focuses on building the General Aviation operations at the Airport and Master Plan Option Two provides for more alternative uses of the land parcels at the aerodrome which can take advantage of proximity to the Pacific Highway corridor and utilise available land that is surplus to aviation operating requirements.

Expansion in the south east corner of the site adjacent to the future Pacific Highway alignment may result in a loss of vegetation. As such, further study or review on this land should be undertaken prior to development of this area to identify potential offset planting requirements and other considerations that may influence the outcomes of the development. Services (e.g. water, sewer, electricity etc) connectivity and requirements should also be considered prior to development. Proposed land uses and future development at the site are subject to planning regulations including any ecological, cultural and aviation related assessments prior to development (e.g. Obstacle Limitation Surfaces (OLS) and other airspace protection surfaces).

At the time of production of this Master Plan the Manual of Standards (MOS) Part 139 – Aerodromes is under review. The drawings produced in this process are compliant based on the regulatory standards outlined in the current version of the MOS. The revised MOS is anticipated to be released in late 2018 or early 2019. Future development at the Airport should be reviewed with consideration of the revised MOS regulations.

6.1. Land use guidelines

Land use precincts have been produced to underpin both future Master Plan concept plans. The land use precincts are relevant for both options and guidelines to support development in these precincts have also been produced. The land use guidelines are outlined in this section.

Aviation precinct

The purpose of this precinct is to safeguard the aviation infrastructure at CVRA. This precinct incorporates the aircraft movement areas including the runway, taxiway and apron. The current quality of infrastructure is appropriate to support current and future aircraft type and forecast operations at the Airport within the planning period of this Master Plan. This precinct may also accommodate advertising materials as per the LEP provided they do not infringe on any aviation protection surfaces for CVRA, for example ground based advertising material that can be seen from the air.

Terminal precinct

The terminal precinct encompasses the CVRA terminal building and the car park. The future uses for this area include terminal operations and passenger services, staff offices and car parking. This precinct may also accommodate advertising structures.

Aviation support precinct

The aviation support precinct is proposed for navigational aids, on airport residence, fuel compound and solar panels. The future uses of this precinct is ideal for future expansion of the existing solar panels and fuel infrastructure.

Emergency services precinct

The emergency services precinct will safeguard the area currently occupied by the CVRFS and infrastructure required for their ongoing safe and efficient operations.

Hangar precinct

This precinct should be utilised for the future location of lease areas dedicated to aircraft hangars. This could accommodate various GA and private aircraft operators. This precinct would also be ideal to accommodate aviation related businesses, such as flight training and aircraft maintenance.

Fuel precinct

A fuel precinct has been proposed for the western side of the Airport. This will accommodate either fixed or transportable fuel services to cater for the hangar precinct.

Agriculture precinct

The agriculture precinct at CVRA is the strip inside the eastern boundary of the site aligned with the airside fence. This area allows for the use of this land for agricultural purposes such as cattle grazing for neighbouring property owners.

Future development precinct

This precinct consists of land which is currently vacant and would be ideal for the accommodation of future development opportunities, including community and commercial uses. This land only has small area which will have airside access and is otherwise not directly linked to the aviation areas of the Airport.

Advertising precinct

The advertising precinct is located adjacent to the Pacific Highway corridor with prime frontage. The future uses in this zone include advertising materials as per the LEP.

Solar expansion precinct

The solar expansion precinct safeguards a future area for the expansion for solar panels at CVRA. This precinct is designed to complement the existing solar infrastructure and expansion area which is allowed for in the aviation support precinct. Proposed future solar development in this precinct should include a reflectivity study to ensure that there are no impacts on aviation operations at the Airport.

6.2. Infrastructure overview**6.2.1. Airside**

This section details the proposed airside infrastructure at CVRA in the Master Plan 2018-2033.

Runway expansion

Within the existing site, the maximum runway extension of 400m is available which will support a total runway length of 2,109m. This is made up of 170m to the south and 230m to the north and accommodates the Runway End Safety Area (RESA) within the existing site.

To accommodate larger aircraft types (e.g. Code 3D), the runway and apron areas would also require strengthening to a minimum PCN of at least 16. This PCN can accommodate aircraft up to a Dash 8 Q-400.

It is unlikely that the size of aircraft servicing CVRA will increase during the planning period.

Parallel taxiway

The Master Plan safeguards the alignment for a Code C parallel taxiway if required in future. This would be located on the terminal side of the Airport and connect the apron and existing taxiway to both runway ends of runway 18/23.

Apron expansion

The proposed apron expansion allows for an additional aircraft parking bay to the south. This can accommodate a SAAB 340 or similar code 3C aircraft.

6.2.2. Landside

This section details the proposed landside infrastructure at CVRA in the Master Plan 2018-2033.

Fuel

A plot of land has been allowed for to accommodate a future fuel facility on the western side of the runway. This area can accommodate either a fixed or transportable fuel facility and would accommodate growth in aviation uses on the western side of the runway and in the hangar precinct.

Airport office

The Master Plan provides for an extension to the existing office area to provide dedicated space for an Airport Managers office. This will relieve the pressure of the current situation in sharing with REX staff and other Airfield Reporting Officers at CVRA.

Covered walkway

At present, the passengers lining up to board aircraft at the gate in the airside/landside fence are exposed to all weather conditions. The Master Plan provides for the implementation of a covered walkway from the terminal building to the airside gate.

Airport road network

The Master Plan drawing provides for an additional site access point from Airport Road which will support growth in the surrounding hangar and future development precincts.

Carpark

The Master Plan provides for the expansion of the car parking facility at CVRA. The proposed expansion can incorporate approximately 18 additional carparks.

Any proposed plans to expand the car parking allotment at CVRA which falls within the 60m radius of the NDB will require an assessment by the NDB technical authority at Airservices Australia.

CVRFS

The Master Plan also safeguards the location of the CVRFS operations facility at CVRA. This is accommodated within the Emergency Services Precinct. It is anticipated that this precinct will also support future facility expansion if required.

6.2.3. Aircraft hangars

The point of difference between the two Master Plans for CVRA are the scale of proposed hangar area versus land designated for other uses. The plan proposes indicative lot areas which provides flexibility for CVRA to respond and cater directly to future demand.

Master Plan Option One

The proposed hangar precinct plan in the Master Plan Option One (Section 6.3) allows for approximately 20 Code B (60m x 30m) aircraft hangar lots. This can accommodate aircraft up to Code B (e.g. Beechcraft KingAir 250). The lots face inwards towards a shared apron area and taxiway. This precinct would have access to the runway and proposed future fuel precinct via a set of taxiways.

This option provides for a greater area of the site to be dedicated to aviation uses as aircraft hangars whilst still allowing for other uses in the areas less accessible for aviation purposes.

Master Plan Option Two

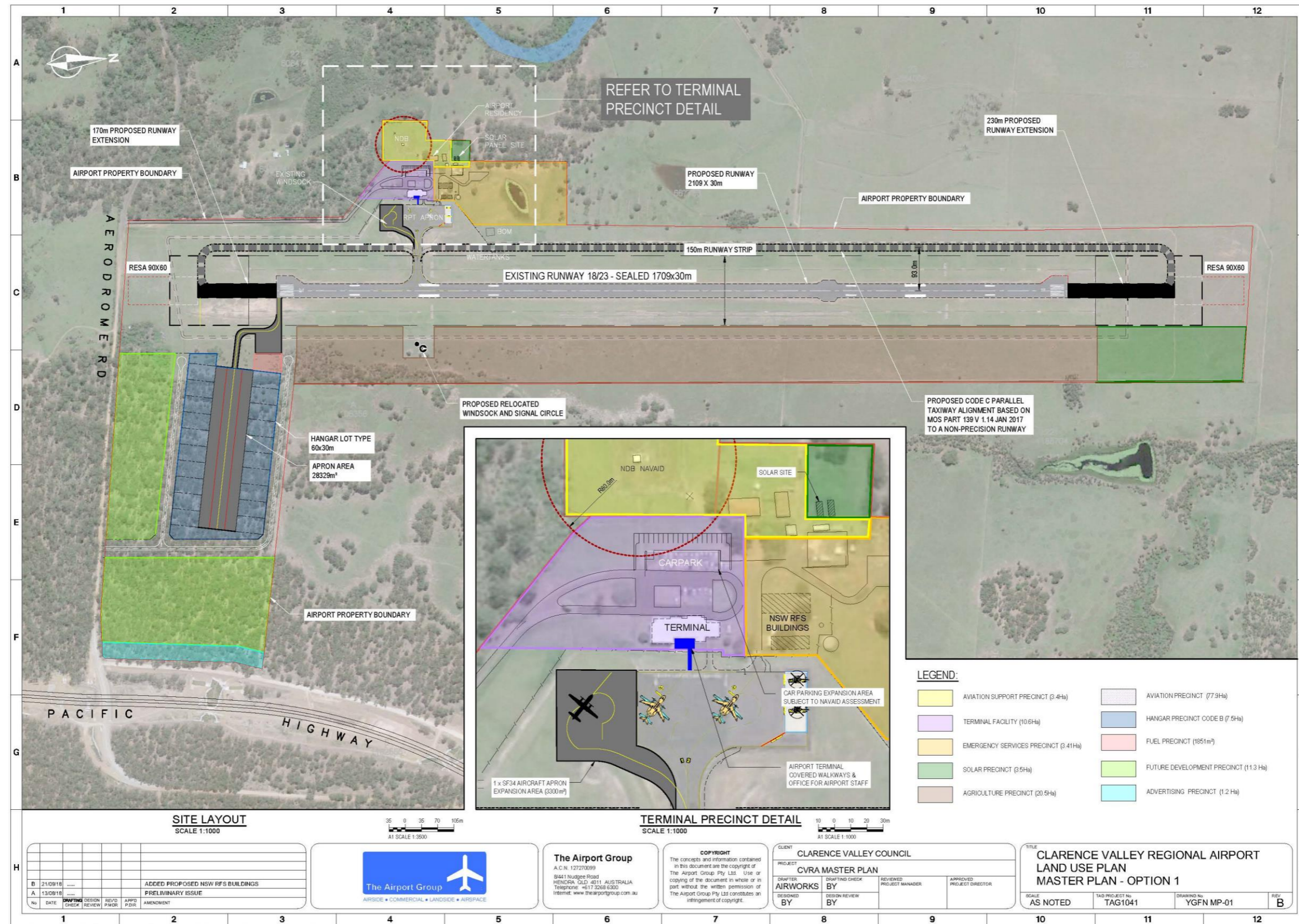
The proposed hangar precinct plan in the Master Plan Option Two (Section 6.4) allows for approximately 14 Code B (60m x 30m) hangar lots. The lots face inwards towards a shared apron area and taxiway. This precinct would have access to the runway and proposed future fuel precinct via a set of taxiways.

This option maximises land availability for the Future development precinct and still allows for a small portion of land for future aviation growth.

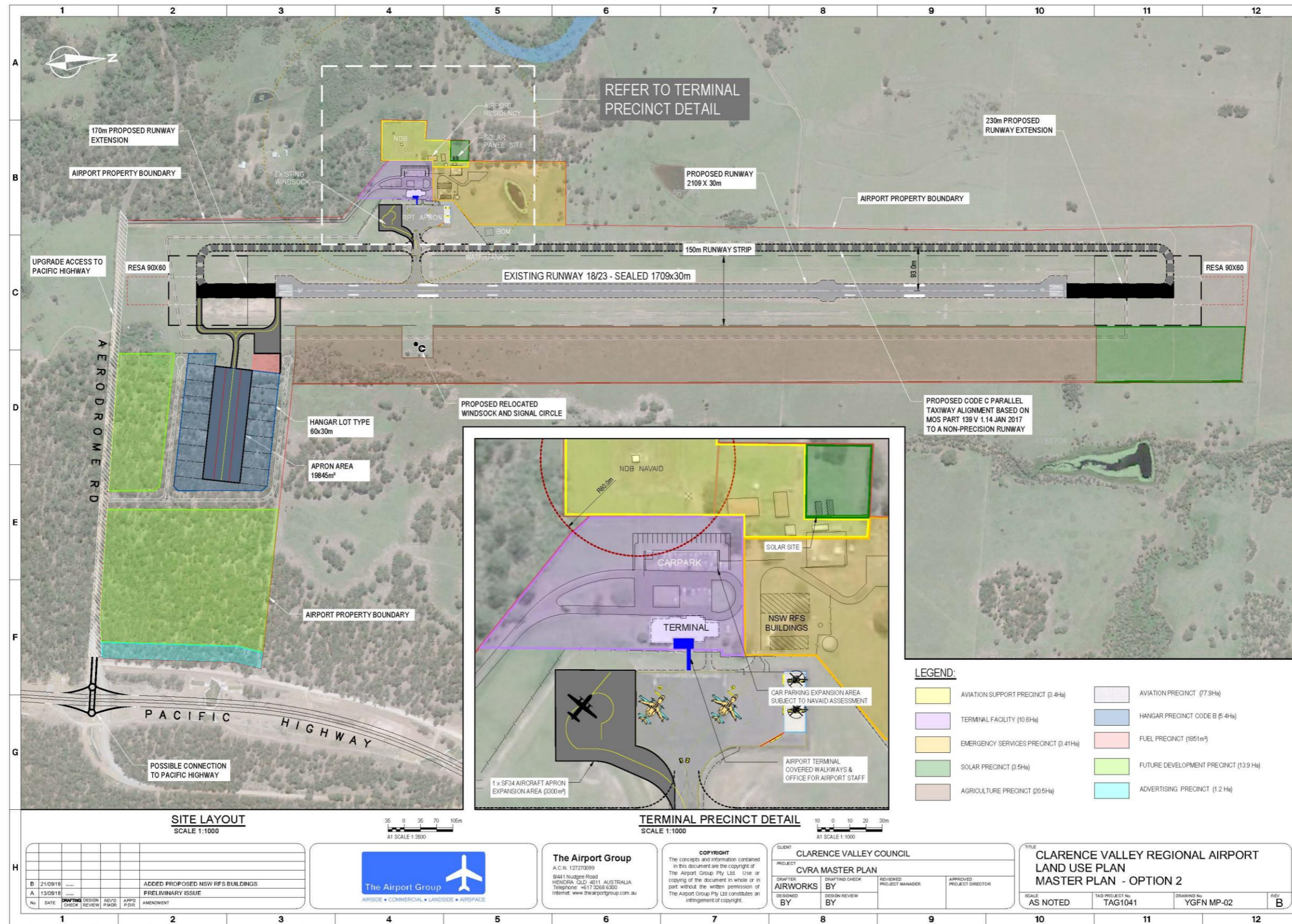
6.2.4. Site access

The Master Plan Option Two drawing provides for the proposed sealing of the Airport Road along the southern site boundary. This would be bolstered by the implementation of an interchange to the Pacific Highway alignment. This would further enable the opportunities available if the south east corner of the site were to be developed by activating ease of accessibility to the site.

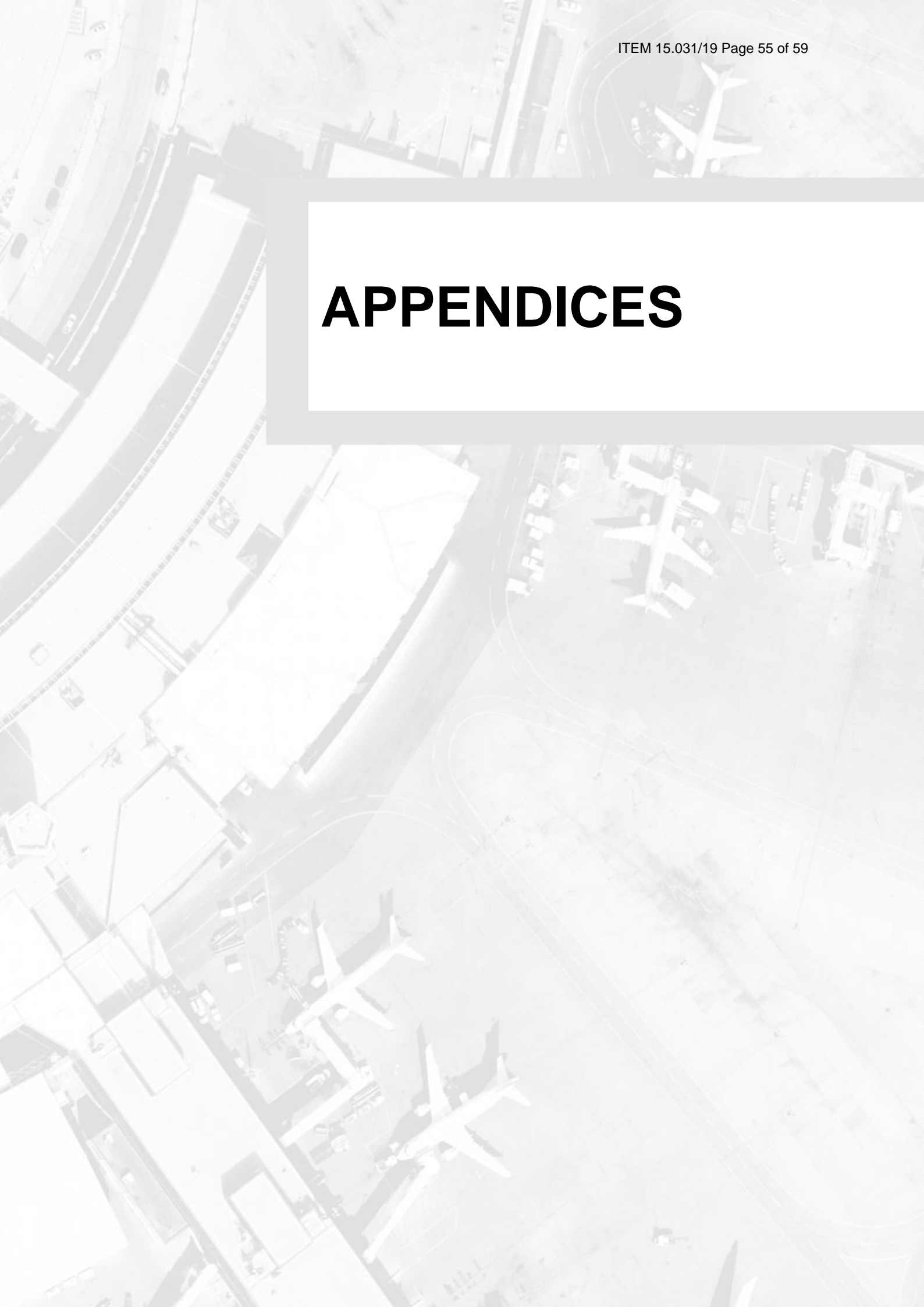
6.3.CVRA Master Plan Option One



6.4. CVRA Master Plan Option Two



APPENDICES



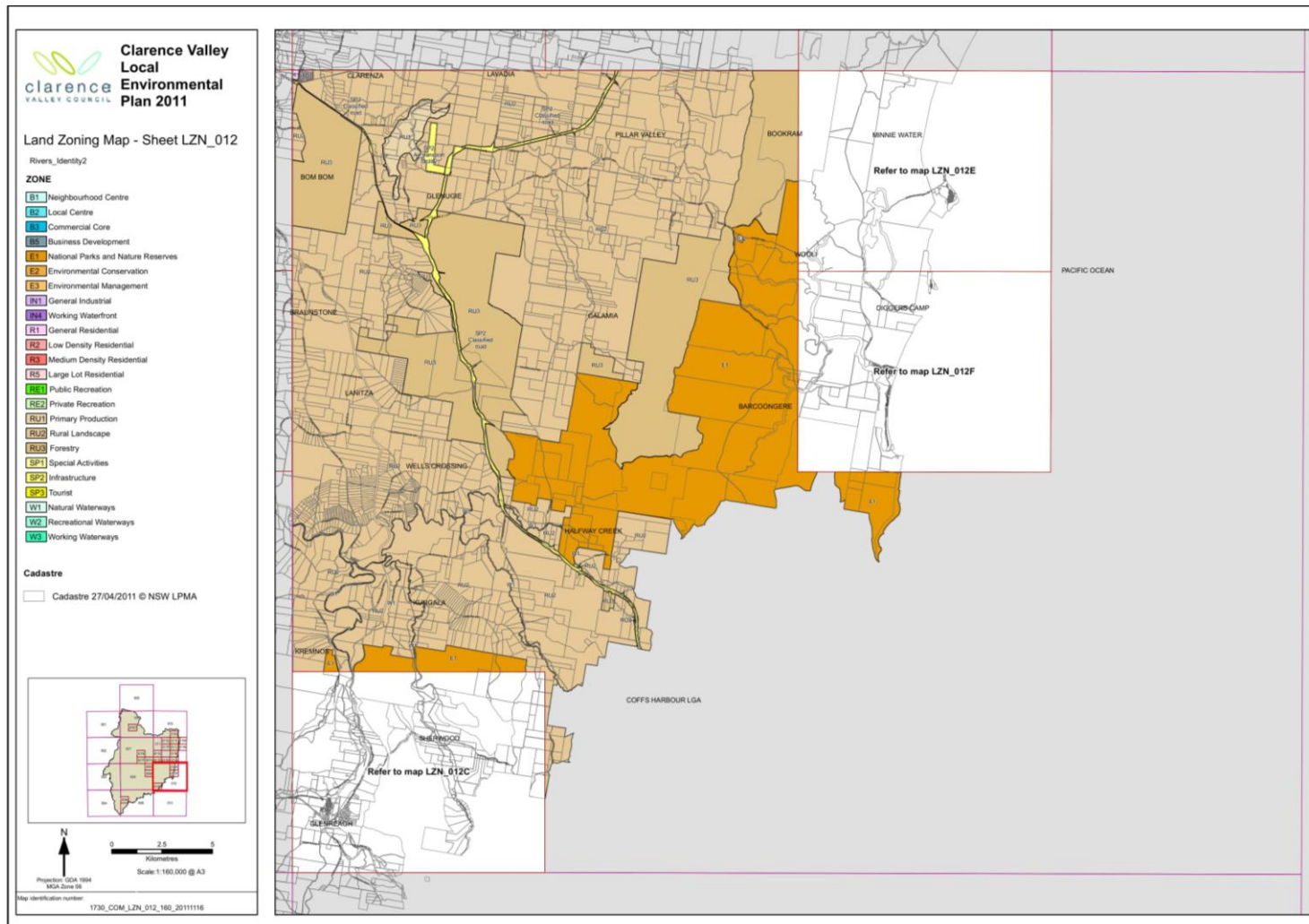
7. APPENDICES

Appendix A: CVC Local Environmental Plan (LEP) definitions

CVRA LEP SP2 Permitted land uses (with and without consent)	Definition as per CVRA LEP dictionary	*Meaning in the Environmental Planning and Assessment Act 1979 No 203 (if required)
Advertising structure	Has the same meaning as in the Act*	Means a structure used or to be used principally for the display of an advertisement.
Extensive agriculture	Extensive agriculture means any of the following: <ul style="list-style-type: none"> (a) the production of crops or fodder (including irrigated pasture and fodder crops) for commercial purposes, (b) the grazing of livestock for commercial purposes, (c) bee keeping, (d) a dairy (pasture-based). 	
Community facilities	Community facility means a building or place: <ul style="list-style-type: none"> (a) owned or controlled by a public authority or non-profit community organisation, and (b) used for the physical, social, cultural and intellectual development or welfare of the community But does not include an educational establishment, hospital, retail premises, place of public worship or residential accommodation.	
Environmental Protection works	Environmental protection works means works associated with the rehabilitation of land towards its natural state or any work to protect land from environmental degradation, and includes bush regeneration works, wetland protection works, erosion protection works, dune restoration works and the like, but does not include coastal protection works.	
Flood mitigation works	Flood mitigation work means work designed and constructed for the express purpose of mitigating flood impacts. It involves changing the characteristics of flood behaviour to alter the level, location, volume, speed or timing of flood waters to mitigate flood impacts. Types of works may include excavation, construction or enlargement of any fill, wall, or levee that will alter riverine flood behaviour, local overland flooding, or tidal action so as to mitigate flood	

	impacts.	
Markets	<p>Markets are a type of retail premises – see that definition of that term in this dictionary.</p> <p>Retail Premises: retail premises means a building or place used for the purpose of selling items by retail, or hiring or displaying items for the purpose of selling them or hiring them out, whether the items are goods or materials (or whether also sold by wholesale), and includes any of the following:</p> <ul style="list-style-type: none"> (a) bulky goods premises, (b) cellar door premises, (c) food and drink premises, (d) garden centres, (e) hardware and building supplies, (f) kiosks, (g) landscaping material supplies, (h) markets, (i) plant nurseries, (j) roadside stalls, (k) rural supplies, (l) shops, (m) timber yards, (n) vehicle sales or hire premises. <p>but does not include highway service centres, service stations, industrial retail outlets or restricted premises.</p>	
Recreation areas	<p>recreation area means a place used for outdoor recreation that is normally open to the public, and includes:</p> <ul style="list-style-type: none"> (a) a children’s playground, or (b) an area used for community sporting activities, or (c) a public park, reserve or garden or the like, <p>and any ancillary buildings, but does not include a recreation facility (indoor), recreation facility (major) or recreation facility (outdoor).</p>	
Roads	<p>road means a public road or a private road within the meaning of the Roads Act 1993, and includes a classified road.</p>	

Appendix B: CVRA LEP Plan 1730_Com_LZN_012_160



Appendix C: CVRA RPT traffic and aircraft movement forecasts to FY33

<u>Medium</u>	<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>FY24</u>	<u>FY25</u>	<u>FY26</u>	<u>FY27</u>	<u>FY28</u>	<u>FY29</u>	<u>FY30</u>	<u>FY31</u>	<u>FY32</u>	<u>FY33</u>	<u>CAGR 18-28</u>	<u>CAGR 18 -33</u>
RPT Traffic	18,044	18,798	19,598	20,433	20,942	21,446	21,926	22,363	22,771	23,132	23,460	23,737	23,980	24,168	24,320	24,417	24,476	2.4%	1.8%
<i>Growth</i>		4.2%	4.3%	4.3%	2.5%	2.4%	2.2%	2.0%	1.8%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%		
RPT Movements	2,414	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	0.0%	0.0%
GA Movements	590	838	862	887	913	939	966	994	1,022	1,052	1,082	1,113	1,145	1,178	1,212	1,247	1,283	2.9%	2.9%
Total Movements	3,004	3,114	3,138	3,163	3,189	3,215	3,242	3,270	3,298	3,328	3,358	3,389	3,421	3,454	3,488	3,523	3,559	0.9%	0.9%
<i>Growth</i>		3.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%	1.0%	1.0%		
Low	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	CAGR 18-28	CAGR 18 -33
RPT Traffic	18,044	18,493	18,938	19,221	19,494	19,599	19,659	19,675	19,648	19,578	19,466	19,314	19,123	18,895	18,632	18,336	18,009	0.4%	-0.2%
<i>Growth</i>		2.5%	2.4%	1.5%	1.4%	0.5%	0.3%	0.1%	-0.1%	-0.4%	-0.6%	-0.8%	-1.0%	-1.2%	-1.4%	-1.6%	-1.8%		
RPT Movements	2,414	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	0.0%	0.0%
GA Movements	590	838	843	848	853	857	862	867	872	877	882	888	893	898	903	908	913	0.6%	0.6%
Total Movements	3,004	3,114	3,119	3,124	3,129	3,133	3,138	3,143	3,148	3,153	3,158	3,164	3,169	3,174	3,179	3,184	3,189	0.2%	0.2%
<i>Growth</i>		3.7%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%		
High	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	CAGR 18-28	CAGR 18 -33
RPT Traffic	18,044	18,798	19,773	20,615	21,215	21,815	22,376	22,932	23,484	24,029	24,567	25,097	25,617	26,127	26,626	27,112	27,585	2.9%	2.6%
<i>Growth</i>		4.2%	5.2%	4.3%	2.9%	2.8%	2.6%	2.5%	2.4%	2.3%	2.2%	2.2%	2.1%	2.0%	1.9%	1.8%	1.7%		
RPT Movements	2,414	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	2,276	3,035	3,035	3,035	0.0%	1.9%
GA Movements	590	838	886	936	988	1,042	1,097	1,154	1,212	1,272	1,334	1,397	1,461	1,527	1,594	1,662	1,730	5.2%	5.0%
Total Movements	3,004	3,114	3,162	3,212	3,264	3,318	3,373	3,430	3,488	3,548	3,610	3,673	3,737	3,803	4,628	4,696	4,765	1.7%	2.9%
<i>Growth</i>		3.7%	1.6%	1.6%	1.6%	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.8%	1.8%	21.7%	1.5%		