



WHITSUNDAY
COAST AIRPORT

WHITSUNDAY COAST AIRPORT

Master Plan 2024

Prepared by

AIMS
AIRPORT INDUSTRY MANAGEMENT SUPPORT



THIS PAGE INTENTIONALLY BLANK



Acknowledgement of Country

We pay respect to Elders past, present and emerging and acknowledge their ongoing relationship and connection to Country.

To acknowledge and show respect for our traditional owner groups' history, culture and our shared future, the Welcome to Country is conducted at all significant events.

Whitsunday Regional Council endorses the vision of a nation which values Aboriginal and Torres Strait islander heritage, cultures and peoples and recognises their distinct position as the original custodians of Australia.

Council's Mission is to make a sustainable future possible by building stronger relationships, mutual respect and encouraging cultural practices that strengthen and support harmony between Aboriginal and Torres Strait Islander peoples and the broader community within the Whitsunday Region.

Council values input and active participation from Aboriginal and Torres Strait Islander peoples into decision making.

Key contact details:

WCA Airport Management

P: 07 4945-0480

E: airport@whitsundayrc.qld.gov.au

Copyright and Disclaimer Notice

This document and the information contained herein should be treated as commercial-in- confidence. No part of this work may be reproduced or copied in any form or by any means (graphic, electronic or mechanical, including photocopying, recording, taping or information retrieval system) or otherwise disclosed to any other party whatsoever, without the prior written consent of AIMS. All passenger forecasting was completed based on current information prepared in discussion with WCA and AIMS will not be held responsible if actual passenger numbers vary.

Executive Summary

At the time of the July 2015 Master Plan release, the Whitsunday Coast Airport (WCA) had just celebrated a new financial year (FY) record of 281,003 passenger movements. It had achieved this milestone in partnership with Virgin and Jetstar airlines who were collectively servicing the Brisbane, Sydney and Melbourne markets.

Since then, the airport has added Skytrans and Qantas mainline as airline partners and this FY will realise a new passenger numbers record, for the second consecutive year. Notably, this number will be almost double the passenger numbers celebrated in the corresponding period, 9 years earlier.

Due to commence in September, JetStar's inaugural Adelaide service will be a significant contributor to WCA's ongoing recovery from the unfortunate demise of Bonza. In this regard, it is expected that the operational data retained from the Bonza experience will be invaluable in attracting alternate airlines to reinstate their lost services. Additionally, WCA report that discussions with potential air service providers for two completely new domestic destinations continue to develop positively.

This strategy to actively pursue new markets and grow capacity on established routes, (either through attracting increased frequency, or aircraft up-gauging) has been successfully demonstrated by WCA over recent years, and its continued success is anticipated in the high growth passenger forecasts.

The primary issue identified within this Master Plan is that WCA's existing infrastructure cannot accommodate even the low growth passenger forecasts moving forward. Proposed solutions to these issues are provided in the Infrastructure Report that supplements this Master Plan.

WCA's infrastructure provision requirements have been categorised into Priority 1, 2 and 3 works within the Infrastructure Report. Priority 1 works are required urgently and include the need to expand the air transport operation (ATO) apron as well as a significant terminal extension. 'For Construction' tender documentation was prepared and costed for the ATO apron expansion as part of the master planning process. A concept design for the terminal expansion was prepared to allow a high-level cost estimate by a quantity surveyor. Within that estimate is a budget allowance to further refine and finalise the terminal design concept. The proposed concept can be seen in the Infrastructure Report but note that this layout may change with further engineering and architectural input.

Priority 2 and 3 Works provide conceptual solutions for emerging issues. Priority 2 Works are primarily focussed on the landside (public, staff and rental car parking etc) and baggage make up area. Priority 3 works are primarily triggered by a commitment to commence international operations utilising the original STEA Option 5 international terminal design concept. Where appropriate costings for Priority 2 and 3 Works are provided in the Infrastructure Report.

Aside from the issues associated with growth, this Master Plan and its' associated Infrastructure Report also explore a range of development opportunities.

As in the 2015 Master Plan the development of a multimodal freight hub is discussed in the context of a fully developed Freight Distribution Centre (FDC). A new Corporate Apron development concept is explored to cater for future vertical take-off and landing (VTOL) aircraft such as drone taxis, as well as handling corporate jet and dedicated freight aircraft.

Vehicle access, circulation and parking was closely reviewed with a new design concept provided that in time could be implemented to separate ground transport operations from public, increase the number of parking bays across the board and introduce premium parking options including rental car premium ready bays. A proposed new airport loop road will not only improve traffic circulation but will provide access to a newly identified accommodation precinct that if pursued, could become a solution to the decreasing bed night availability in the region.

Wherever possible the works proposed have been designed to reduce the airports carbon footprint through initiatives such as recycling the closed runway pavement to backfill for the new aprons, exclusive use of LED airfield ground lighting and allowing for solar panels on all the proposed covered walkways and new roof lines.

The WCA is in some ways a victim of its own success when it comes to having to deal with the significant growth of the last 3 years. However, the demise of Bonza does present an opportunity to take advantage of a temporary lull in aircraft operations and progress the infrastructure works required for the airport to maintain its capability for growing visitation to the region.

Table of Contents

1.	Overview.....	1
1.1	Purpose Of This Master Plan	1
1.2	Master Plan Objectives.....	1
1.3	Methodology And Consultation	1
1.4	Airport Vision And Objectives	2
1.4.1	Vision	2
1.4.2	Objectives	2
1.4.3	Implementation of the Master Plan	2
2.	Airport Context	3
2.1	Location	3
2.2	Regional Significance	4
2.2.1	Tourism	4
2.2.2	Agriculture	4
2.2.3	Natural Resources.....	5
2.3	Relationship To Other Airports In The Region	5
2.3.1	Air Transport Operation (ATO) Airports	5
2.3.2	Other WRC Airports	6
2.4	Ownership And Management	8
2.5	Airport Stakeholders	9
3.	Site Analysis	10
3.1	Airport Site	10
3.2	Existing Site Facilities Summary	11
3.3	Surrounding Land & Tenure	13
3.4	Contours And Topography	13
3.5	Existing Airside Infrastructure And Facilities.....	14
3.5.1	Pavements	14
3.5.2	Runway 11/29.....	15
3.5.3	Taxiways.....	15
3.5.4	Aprons.....	16
3.5.5	Airfield Ground Lighting.....	16
3.5.6	Illuminated Wind Indicators (IWI)	17
3.5.7	Markers and Markings.....	17
3.6	Summary Of Aviation Traffic	17
3.6.1	Airline Partners and Routes flown.....	17
3.6.2	Passenger numbers (Historical)	18
3.6.3	Other Aircraft Operations.....	19
3.7	Aviation Support Facilities.....	19
3.7.1	Aircraft Fuelling Facilities.....	19

3.7.2	Weather Information System	19
3.7.3	Aviation Rescue Fire Fighting Services (ARFFS)	19
3.7.4	Air Traffic Control and airspace.	20
3.7.5	Navigation, landing and approach aids.	20
3.7.6	Security Screening	20
3.8	Existing Landside Facilities	21
3.8.1	Terminal	21
3.8.2	Rental Car Operations.....	22
3.8.3	Car Parking.....	22
3.8.4	Ground Transport Operators.....	23
3.8.5	Freight Distribution Centre	24
3.8.6	Grounds Maintenance Shed	25
3.8.7	Access Roads.....	25
3.9	Utilities And Civil Infrastructure	26
3.9.1	Water	26
3.9.2	Electricity	26
3.9.3	Sewerage	27
3.9.4	Communications and internet.....	27
3.9.5	Stormwater	27
3.9.6	Perimeter fencing	27
3.9.7	Fire fighting.....	27
4.	Legislative Context	28
4.1	National Rules And Standards	28
4.1.1	National Airports Safeguarding Framework (NASF)	28
4.1.2	Environment Protection and Biodiversity Conservation Act.....	28
4.2	State Planning.....	29
4.2.1	State Planning Policy.....	29
4.2.2	The Whitsundays Tourism Destination Plan (2019-2024).....	29
4.3	Regional Planning	29
4.3.1	Mackay Isaac Whitsunday (MIW) Regional Plan	29
4.3.2	Mackay Isaac Whitsunday Regional Transport Plan 2018.....	30
4.3.3	Mackay Isaac Whitsunday Natural Resource Management Plan (2014-2024) 30	
4.4	Local Government Planning	30
4.4.1	WRC Community Plan.....	30
4.4.2	WRC Corporate Plan.	30
4.4.3	WRC Regional Economic Development Strategy 2022-2025	30
4.4.4	Whitsunday Planning Scheme 2017 (version 4.7).....	31
5.	Growth Forecasts	33
5.1	Background.....	33
5.2	Forecast Methodology	34
5.3	Supply Modelling Considerations.....	35

5.3.1	Growth Strategy.....	35
5.3.2	Fleet upgrades	35
5.3.3	International Operations	36
5.4	Historical WCA Traffic Drivers	37
5.5	Current Traffic Analysis	38
5.5.1	Busy Months Analysis	39
5.5.2	Busy Day Identification	39
5.5.3	Busy Hour Analysis.....	40
5.6	Forecasts.....	40
5.6.1	Low Growth Forecast Scenario.....	40
5.6.2	Medium Growth Forecast Scenario.....	41
5.6.3	High Growth Forecast Scenario	41
5.7	General Aviation.....	43
5.7.1	Historical GA Movement Numbers.....	43
5.7.2	GA Development Opportunities	44
5.8	Freight Operations.....	44
5.8.1	Historical Performance	45
5.8.2	Underbelly Freight Potential	46
5.8.3	Freight Infrastructure Requirements.....	46
6.	SCOT Analysis.....	47
6.1	Strengths	47
6.2	Challenges	47
6.3	Opportunities	48
6.4	Threats.....	48
7.	Planning Parameters	49
7.1	Design Aircraft	49
7.1.1	Background	49
7.1.2	The 2024 Design Aircraft	49
7.2	Peak Periods	50
7.2.1	Terminal peak hour capacity	50
7.2.2	Apron Capacity.....	52
7.3	Runway Parameters	52
7.3.1	Runway strength/condition.....	52
7.3.2	Critical RWY and surfaces data	53
7.4	TWY B Codes.....	54
7.5	Other	54

List of Figures

FIGURE 1:	LOCATION OF WHITSUNDAY COAST AIRPORT	3
FIGURE 2:	RELATIVE LOCATION OF OTHER ATO AIRPORTS IN THE REGION.....	6
FIGURE 3:	RELATIVE LOCATION OF THE FOUR WRC AIRPORTS	7
FIGURE 4:	AIRPORT SITE AND BOUNDARY (SUPPLIED BY WRC)	10
FIGURE 5:	AIRPORT SITE – LANDSIDE AND AIRSIDE (TAG).....	11
FIGURE 6:	EXISTING AIRPORT SITE FACILITIES (A3 SIZE)	12
FIGURE 7:	SITE CONTOURS	14
FIGURE 8:	WCA PASSENGER NUMBERS 2013/14 – 2022/23.....	18
FIGURE 9:	KEY WCA TERMINAL AREAS BY SQUARE METRE.....	21
FIGURE 10:	ACTUAL PASSENGER NUMBERS VS HIGH GROWTH FORECAST NUMBERS	33
FIGURE 11:	RANGE OF A321 XLR	37
FIGURE 12:	PASSENGER NUMBERS AND DRIVERS – 2001 – 2023 FY’S.....	38
FIGURE 13:	WEEKLY BUSY HOUR TREND (JAN 2024 0800-2300).....	40
FIGURE 14:	WCA TEN-YEAR PASSENGER FORECAST DATA SHOWING LOW MEDIUM AND HIGH SCENARIOS.	42
FIGURE 15:	GENERAL AVIATION LANDINGS AT WCA 2018-2023 FY’S.....	43
FIGURE 16:	OUTBOUND FREIGHT TOTALS BY MONTH APR – NOV 2023.	45
FIGURE 17:	OUTBOUND FREIGHT TOTALS BY MONTH APR – NOV 2023.	45

List of Tables

TABLE 1:	SITE SPECIFIC DETAIL FOR WCA.	10
TABLE 2:	AIRLINE PARTNERS AND ROUTES FLOWN	17
TABLE 3:	COMPARISON OF AIRCRAFT MOVEMENT NUMBERS	18
TABLE 4:	CURRENT WCA CAR PARKING FEES.	23
TABLE 5:	REGISTERED GTO VEHICLE TYPE AND NUMBERS.....	24
TABLE 6:	EXISTING PARKING BAY TYPE AND NUMBER	24
TABLE 7:	TABLE OF KNOWN FLEET UPGRADES IN NEAR FUTURE (SOURCE: JETSTAR AND QANTAS MEDIA CENTER’S).....	35
TABLE 8:	CITIES WITHIN THE NOMINATED 8,705KM RANGE OF THE A321XLR.....	36
TABLE 9:	CURRENT TRAFFIC DATA– INBOUND ONLY.	39
TABLE 10:	AIRCRAFT MOVEMENT FORECASTS STEP GROWTH (YEARS 1, 5 AND 10).....	43
TABLE 11:	EXISTING AND PROPOSED TERMINAL SQUARE METERAGE.	51
TABLE 12:	TEN-YEAR MAXIMUM FORECAST AIRCRAFT MOVEMENTS	52
TABLE 13:	TAKE OFF PARAMETERS (RWY 11 AND 29)	53
TABLE 14:	APPROACH PARAMETERS (RWY 11 AND 29)	53
TABLE 15:	TRANSITIONAL SURFACE PARAMETERS (RWY 11 & 29 TKOF BASED).....	54

VERSION CONTROL

No.	Description	Prepared by	Reviewed by	Date
1.0	Working Draft	Glenn Robinson	WCA Staff	31/01/2024
1.1	Working Draft Updated	Glenn Robinson	WRC (Internal)	16/02/2024
1.2	Working Draft Updated (Brue Hwy Lascelles Ave intersection)	Glenn Robinson		28/02/2024
1.3	Final Working Draft	Glenn Robinson	WCA	09/08/2024

1. Overview

The Whitsunday Coast Airport (IATA Code: PPP, ICAO Code: YBPN) is located approximately 15km southwest of Proserpine, in the Whitsundays Region of Queensland. The airport lies 4.5km west of the Bruce Highway and is accessed from Lascelles Avenue (Sir Reginald Ansett Drive). The airport is within the Whitsunday Regional Council area and is one of the main access points for the region.

The airport is currently serviced by up to 12 air transport operations (ATO) per day from its partner airlines Jetstar, Qantas, Skytrans and Virgin Australia to destinations including Brisbane, Melbourne, Sydney and Cairns, with direct Adelaide flights confirmed for commencement in September 2024.

Users of the facility include those flying for business and locals, but the significant majority are leisure travellers visiting this unique and inspirational tourism destination.

The airport established a new annual passenger number record in the 2022/23 financial year (FY) and since 2017 has received 10 aviation or tourism industry awards for its various contributions to the Whitsundays region.

1.1 Purpose Of This Master Plan

The purpose of this Master Plan is to provide a detailed planning framework for the long-term development of the airport required to accommodate its' future growth.

1.2 Master Plan Objectives

The objectives of this Master Plan are to:

- Undertake a site analysis of key land use and facility opportunities and constraints;
- Undertake thorough review of legislative context, including planning and environmental contexts in relation to the WCA.
- Undertake forecasts for passenger, aircraft, and freight up to 2034
- Present a preferred land use and precinct plan
- Identify strategies to encourage growth in passenger numbers;
- Present strategies to increase and diversify revenue for the airport;
- Develop the airport as an international gateway to the Whitsundays Region; and
- Identify strengths, weaknesses, constraints, and opportunities for the airport in the short, medium, and long term.

1.3 Methodology And Consultation

1.3.1.1 Methodology

As required by the scope, this review followed the methodology of the 2015 Master Plan which was based on the Australian Airport Associations Master Planning guidelines.

1.3.1.2 Consultation

This Master Plan review commenced with a significant stakeholder consultation process held between the 24th July to 3rd September 2023.

Interested parties were invited to complete a survey, provide written submissions, or meet with the master planning facilitators at one of the public information sessions conducted in Proserpine, Cannonvale and Bowen. The facilitators also met face to face with key stakeholders on site and by phone.

Communication tools to raise awareness of the consultation period included:

- Newspaper advertisement via newspaper public notices (2)
- Direct email to key stakeholders and Yoursay members
- Social media posts on WRC platforms (2)
- A3 Posters with QR code linking to survey at the Airport
- Project page and fact sheet on our Online Engagement Portal - Yoursay Whitsunday.

1.4 Airport Vision And Objectives

The adopted Vision and Objectives for the Whitsunday Coast Airport are as follows.

1.4.1 Vision

The Vision for the Whitsundays Coast Airport is to provide the residents of the Whitsunday region with a world class aviation facility focused on the future. With the key priority for long term growth of the airport into a commercial aviation precinct integrated into a road, rail and air transport and logistics hub. The Airport development will be built on the pillars of safety, sustainability and security.

1.4.2 Objectives

The objectives for the Whitsunday Coast Airport are to:

1. Be an airport with the capacity for increased tourism;
2. Have capacity to facilitate new routes for economic drivers of the area – tourism, natural resources, local business as well as accommodate the local regions needs for its own visitors;
3. Be at the forefront of future mining projects in the region;
4. Implement new freight services to increase export of local produce nationally/internationally; and
5. Establish a first class facility with a long term, sustainable future

1.4.3 Implementation of the Master Plan

The key attachment for this Master Plan is the accompanying Infrastructure Report.

The Infrastructure Report has been compiled to bring together all the infrastructure developments identified throughout this planning process and to discuss timing, design options and delivery.

2. Airport Context

2.1 Location

The Whitsunday Region has a population of around 36,000 residents spread across the four areas of Bowen, Collinsville, Proserpine and Airlie Beach – Cannonvale.

The Whitsunday Coast Airport (WCA) is located in Gunyarra, approximately 14km south of the Town of Proserpine, 30km southwest of Airlie Beach and 70km south of Bowen. The region is approximately 1,000km north of Brisbane and 600km south of Cairns.

It is owned and operated by the Whitsunday Regional Council as a prescribed business activity.

Figure 1: Location of Whitsunday Coast Airport



2.2 Regional Significance

The WCA is strategically located between Brisbane and Cairns and is a critical gateway to the Whitsunday region. This is most clearly demonstrated through the 477k passengers that passed through the WCA in the 2022/23 FY.

In recent years the airport has strategically adopted a proactive approach to driving the economic growth of the region, leveraging off strong airline relationships to open new destinations and increase capacity on existing routes. These efforts have been recognised through the awarding of no less than 10 major tourism and / or aviation awards since 2017.

The Queensland Department of Infrastructure has identified in the document, “Economic Directions Statement – Queensland Airports” that the WCA is an airport of economic significance to the state for reasons identified as passenger movements, tourism impacts and ongoing expansion plans, (the latter is discussed throughout this Master Plan).

The airport is committed through its Objectives to continue to drive economic growth in the Whitsundays region, supporting the key industries of tourism, agriculture and natural resources.

Adoption of additional concepts in this Master Plan, such as further development of the Freight Distribution Centre (FDC) and the introduction of a new accommodation precinct will ensure the airport continues to grow in significance for the region it serves.

2.2.1 Tourism

Tourism as a collective industry provides an estimated \$1.588B annually to the Whitsundays economy and is the largest employer in the region.

The WCA is primarily a leisure airport and is a significant contributor to tourism in the Whitsunday region. It does this not just through the facilitation of air services and the creation of supporting jobs, but also through its investment in marketing the region, providing representation at travel shows and industry gatherings and its active pursuit of new destination pairings.

These efforts led to the airports record-breaking passenger numbers last FY and the passenger forecasts within this master plan indicate that record will be broken again in the 2023/24 FY.

2.2.2 Agriculture

The Whitsunday Region is the largest winter growing region in Australia with 2.13m hectares allocated to agriculture.

Agricultural industry in the Whitsundays is estimated to be worth \$974M annually derived from:

- Grazing (\$130m)
- Horticulture (\$650m)
- Aquaculture (\$74m) and
- Sugar cane (\$120m)

The Whitsunday Coast Airport services the agriculture sector by facilitating reliable air access for business travellers; and for freight via the WCA Freight Distribution Centre.

2.2.3 Natural Resources

The QCOAL Group has a number of currently active hard coking and thermal coal mines just to the south of Collinsville and the North Queensland Export Terminal is located 25kms north of Bowen.

Collectively, mining in the Whitsundays region contributes an estimated \$1.3B to the region's economy through the production of c9m tonnes of coal.

The Whitsunday Coast Airport plays a critical role in facilitating reliable air access to and from the region for mining sector workers and freight.

2.3 Relationship To Other Airports In The Region

There are several airports in the region, and these are discussed following.

2.3.1 Air Transport Operation (ATO) Airports

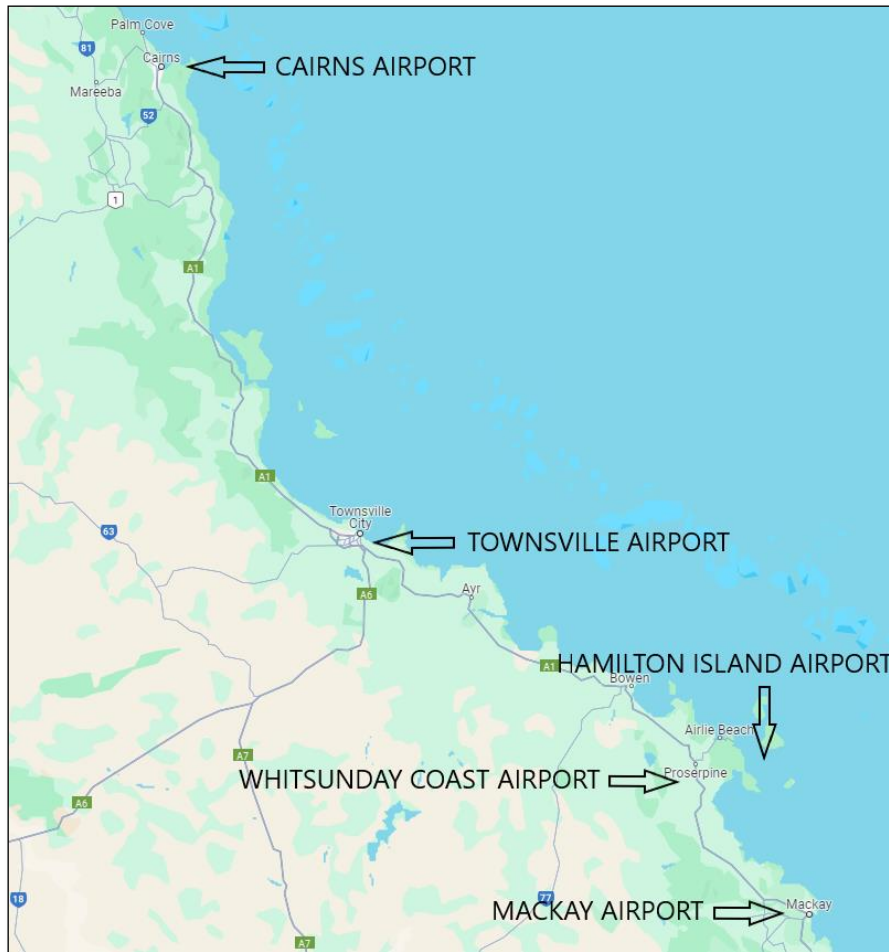
WCA is positioned in a highly competitive situation with three domestic airports, Mackay, Hamilton Island and WCA being located within 20 minutes flying time of each other.

All 3 airports have runways that are 45m wide and each currently accommodate Code 4C aircraft, including the Airbus A320 and Boeing 737 800 type aircraft. At 2,073 metres long WCA has a slight edge in length over Hamilton Island at 1,766m and Mackay at 1,981m.

From a perspective of competitive tensions, WCA and Hamilton Island Airport primarily compete for leisure travellers arriving by air into to the region, while Mackay and WCA both have plans for multi model freight hubs and accommodation precincts. The distinct advantage WCA has in the region is over 430 hectares of flat land suitable for development and with very few neighbours potentially subjected to the impacts of aircraft noise. WCA management maintain the stance that strong competition in aviation is beneficial to the entire region.

Townsville and Cairns Airports are 230kms and 490kms respectively, as the crow flies, to the north. At this point in time Cairns is the only relatively close airport with international ATO operations. Skytrans provide a direct air service from Cairns.

Figure 2: Relative location of other ATO airports in the region.



2.3.2 Other WRC Airports

WRC also owns or operates three other airports in the region at;

- Bowen (1hrs drive from WCA)
- Collinsville (2hrs drive from WCA) &
- Mount Coolon (3.25hrs drive from WCA) is owned by the State Government and currently maintained by WRC.

These are shown on the following map.

Figure 3: Relative location of the four WRC airports



The team based at WCA have overarching responsibility for the safe and compliant operations of all WRC airports and Mount Coolon Airstrip. WCA staff inspect, maintain and provide ARO and/or WSO services for these airports.

(i) Bowen Aerodrome

Bowen Aerodrome transitioned from registered to certified status in 2022. It has two lit runways, 04/22 (chip sealed) & 12/30 (gravel).

The airport predominately serves agricultural and aeromedevac flight operations with no air transport operations (ATO's) and none planned.

A Land Use and Development Plan was prepared for Bowen Airport in 2017. The plan recognises the airport's strengths as its location within the Whitsundays and relative to the township of Bowen. Its opportunities were identified as ideally positioned to support future resource related projects in the region and the development of its land for commercial use.

Where practical, any development proposed for Bowen Aerodrome should be considered to ensure it is complimentary to the commercial strategy and operational plan of the WCA.

Similarly, Bowen Aerodrome should always be considered as a possible alternative location when new general aviation related developments are proposed for WCA. Bowen Aerodrome has some aspects that could be considered benefits over WCA, such as a lack of air traffic (including air transport operations) and closer access to a larger town. Importantly, any further development at Bowen would assist in helping the aerodrome reach cost neutrality in its own right.

(ii) Collinsville Aerodrome

Collinsville is a non-certified aerodrome with a 1400m long gravel RWY, located 6km from the township of Collinsville. It services aeromedevac operations for the region and also caters for mining flight charters.

The installation of a new fauna proof fence early in 2024 has improved safety for nighttime operations (primarily aeromedevac) and removed the need for out of hours call outs for ad hoc night operations.

It is expected that an upgrade of the RWY to chip seal and aerodrome ground lighting will take place late in 2024.

(iii) Mount Coolon Aerodrome

Mount Coolon is a non-certified aerodrome located just west of the Mount Coolon Hotel. It is an invaluable facility for aeromedical evacuations for the local community. It is owned by the State Government and maintained by Whitsunday Regional Council through the WCA team.

2.4 Ownership And Management

The WCA is wholly owned by the Whitsunday Regional Council.

Additional sub-leaseholders are:

- Viva Fuel
- IOR (Fuel service provider)
- W & P Hinton
- Whitsunday Aero Club
- RSE Investments
- Heli-Engineering Pty Ltd
- BOM
- Taste of Whitsundays
- Gifts Whitsundays
- Optus
- Air Services Australia

2.5 Airport Stakeholders

The WCA maintains several Stakeholder contact lists that include:

- Aviation Industry Participants (AIPs)
- Regulatory Bodies
- Regional, State and Federal contacts and
- Leaseholders

The WCA Aviation Industry Participants (AIP's) group meets regularly to discuss airport-related matters. Details can be found in the Aerodrome Manual.

3. Site Analysis

3.1 Airport Site

The airport site is within the jurisdiction of the Whitsunday Regional Council (WRC). The site outlined in red in Figure 4 below, identifies the airport site boundaries.

Site specific details are provided in Table 1 following.

Table 1: Site specific detail for WCA.

Lot on Plan	Area (ha)	Road Details	Tenure
50 HR 808298	434.90	Lascelles Avenue	Reserve (for landing ground for aircraft)

Figure 4: Airport site and boundary (Supplied by WRC)



The following plan identifies the airside and landside boundaries within the airport site (the light green is airside, dark green landside).

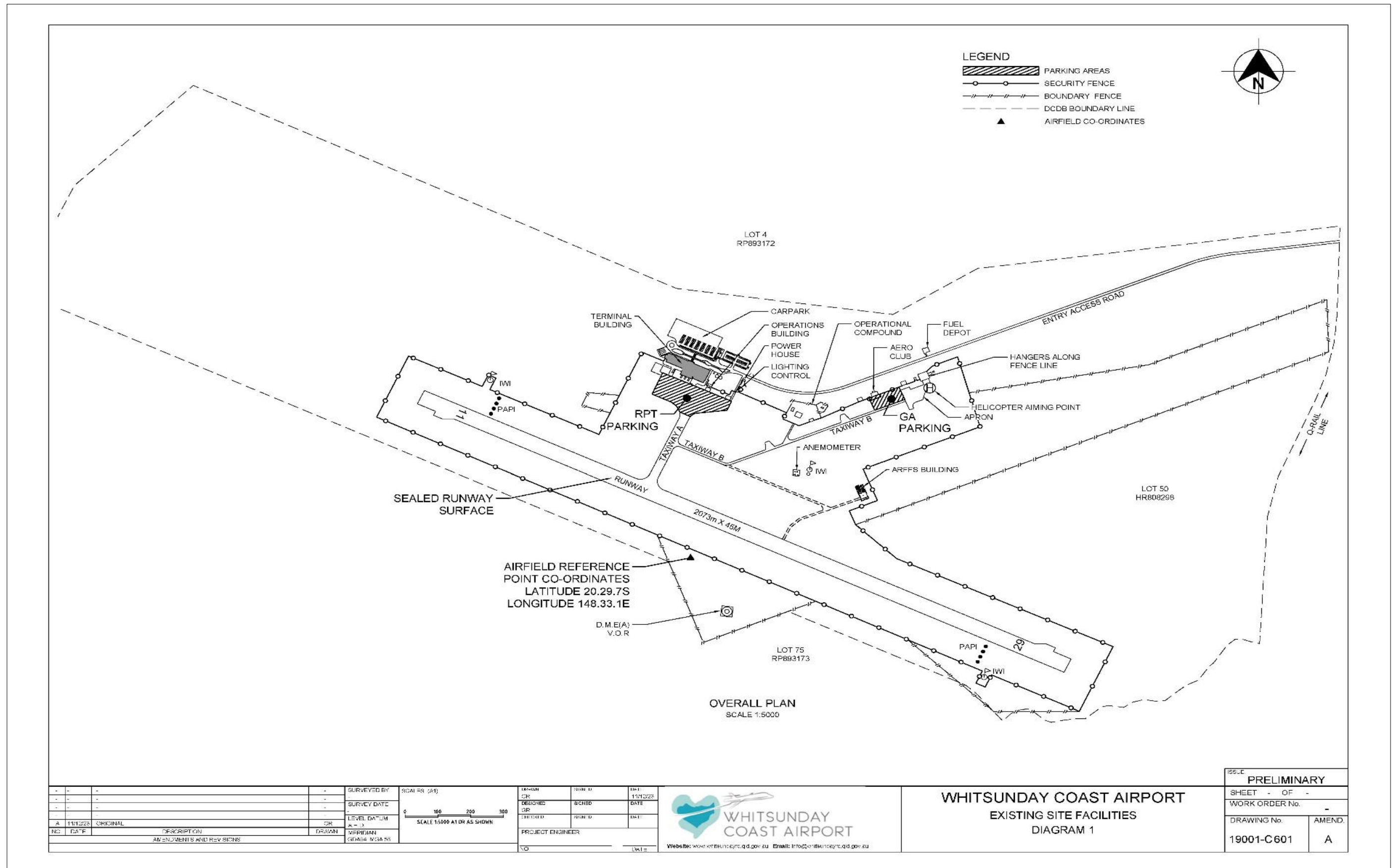
Figure 5: Airport Site – landside and airside (TAG)



3.2 Existing Site Facilities Summary

Existing site facilities at WCA are identified in Figure 6 that follows.

Figure 6: Existing airport site facilities (A3 size)



3.3 Surrounding Land & Tenure

Surrounding land.

The land surrounding the airport site is owned by a range of private and public stakeholders, including:

- Dray & Others (private);
- Cox (private);
- Willmar Sugar (company);
- Queensland Rail;
- Whitsunday Regional Council; and
- Crown land.

The location of the airport provides an ideal situation for possible future development. The site is surrounded by flat rural land which is undeveloped with very few neighbours in residence. The Bruce Highway and existing railway line located on the airport boundary provide excellent connectivity possibilities.

The land to the northeast between the airport and Bruce Highway is currently used by the Whitsunday Moto Sports Club at the Whitsunday Raceway and Dirt Riders Club operating Motocross racing from Dray's Park Racetrack. These are compatible use's that have no detrimental impact on airport operations.

Tenure.

The WCA surrounds are within a range of tenures. The airport site itself and a small parcel on the east of the site is a 'reserve' tenure. Land to the northeast and some land to the west is 'Lands lease'. There is a small parcel of land which is State Government owned, and the predominant tenure surrounding the airport is 'freehold'.

3.4 Contours And Topography

The airport site is generally very flat, grading down gently towards a creek along the southeast property boundary (Deadman Creek) and another small creek crossing the airport property beyond the north end of the runway. Contours of the site can be seen in Figure 7.

Figure 7: Site contours



With consideration of the significant rainfall experienced in the wet season, it is practical that before any significant civil works take place at WCA, a thorough investigation of the hydrology impacts be undertaken.

3.5 Existing Airside Infrastructure And Facilities

3.5.1 Pavements

With the single exception of TWY B and the GA apron it serves, all the pavements at WCA underwent major rehabilitation in 2017.

The design traffic loading adopted for the 2017 pavement design was assumed to be:

- B737/A320 at 4 flights per day
- A330/300 at 1 flight per week

The following pavement design was utilised.

- 100mm asphalt though the central 27 m of runway width, tapered to 60 mm at the shoulders.
- 250mm foamed bitumen stabilised base, assigned a modulus of 800 MPa.
- Residual (nominal 100-150 mm) of existing granular uncrushed aggregate.
- CBR 15, modelled as a modulus of 150 MPa.

Both the granular base course and the asphalt surfacing layers were refurbished with the resulting specifications now published in the ERSA; PCN 53/F/B/1400 (203PSI)/T Grooved. It is noted that with the change to ACR/PCR pavement strength rating system coming in in November 2024 the new ERSA entry will read PCR F/A/420/1575/T (assuming the proposed new design aircraft is adopted).

In a recent Pavement Inspection Report (15/08/2023), Kamen Engineering determined the pavements to be generally in very good condition. The report advises that there is an element of surface distress apparent (cracking) that requires ongoing monitoring and continued treatment with a bitumen-based sealant.

In addition, some deformation (wheel rutting) was apparent on the apron and as a result the Report supports WCA plans for an asphalt resurfacing treatment to take place in 2026FY.

With regards to TWY B, this Master Plan review investigated a variety of concepts that considered upgrading of TWY B from Code A to Code B or C. Regardless of these concepts a reseal of TWY B pavements should be planned for within the next two years (2027).

Pavements are discussed at length in the Infrastructure Report at Attachment A.

3.5.2 Runway 11/29

- RWY 11/29 at WCA is 2,073m long x 45m wide.
- It is a Code 4 instrument non-precision approach (INPA) RWY.
- A crown exists at the centre of the runway with a negative transverse slope to both edges.
- RWY 11/29 has 3 metre RWY shoulders provided.
- The runway strip (RWS) is 2193m long and maintained at 150m wide. (this non-conformance has been grandfathered in the Aerodrome Manual as the new MOS dimension requires 280m width)
- A 60m clearway is provided at each end within the RWY, as required
- 90m x 90m runway end safety areas (RESA) have been provided at both ends with insufficient space within the existing boundary fence to provide the MOS preferred length of 240m.

3.5.3 Taxiways

There are 2 existing taxiways (TWY's) at WCA.

(i) TWY A

TWY A is a perpendicular (to RWY 11/29) TWY linking the RWY to the ATO apron.

- TWY is 23m wide and is suitable for all aircraft with an OMGWS of 6m to <9m (this covers all existing aircraft types in service plus the A321 NEO).
- TWY A has 3.5m sealed shoulders which doesn't meet the total width requirement of 34m for Code D aircraft under the new MOS requirement and this has been grandfathered. Note: there are no longer Code D aircraft operating in Australia and TWY A meets all specifications for Code C aircraft.
- TWY A has a graded taxiway strip (TWS) of 37m and overall width of 74m

(ii) TWY B

TWY B exits off TWY A to provide access for general aviation aircraft to the general aviation (GA) aprons and lease hold areas.

- TWY B is a Code A TWY and is suitable for all aircraft with an OMGWS of up to 4.5m.
- Traffic is restricted to weight below 5700kg
- Its surface consists of coarse textured, aged and brittle bituminous spray chip seal.

- No shoulders are provided nor are they required.
- TWY B has a TWS of 31m and a graded width of 20.5m's as required for Code A.
- It is not lit.

3.5.4 Aprons

There are 3 existing aprons at WCA including the grass GA apron, the sealed GA apron (both at the northern end of TWY B) and the ATO apron.

(i) ATO Apron.

The ATO apron has 4 parking bays capable of accommodating Code C aircraft.

- Bay 1 use for aircraft parking is restricted due to its truncated design.
- This truncated design also impeded aircraft refueller vehicle access until a temporary concrete slab was recently laid.
- A situation where there are no aircraft parking bays available for arriving ATO aircraft is occurring regularly at WCA

This Master Plan proposes an expansion of the ATO apron as Priority 1 works in the Infrastructure Report.

(ii) GA Grass Apron

The GA grass apron is located off TWY B near the Aeroclub and is used by itinerant GA traffic as well as local users. There are no tie downs provided.

(iii) GA Sealed Apron

The sealed GA apron is located at the very northern end of TWY B.

- Its current location prevents the easy continuation of TWY B further to the north which would allow access to currently undeveloped land in that area
- Due to its limited size it is used almost exclusively by local operators and tenants.

3.5.5 Airfield Ground Lighting

The airfield ground lighting (AGL) and control systems at WCA were completely updated in 2015.

RWY 11/29, TWY A and the ATO apron are lit and the AGL lighting systems provided include:

- RWY edge lighting at 60m spacings
- Turning node
- Threshold / RWY end
- Precision approach path indicators (PAPI) single sided, both approaches
- RWY threshold identification lights (RTILS) on both approaches
- Green centreline TWY lighting
- Holding position

- Apron edge
- Apron lighting (4 poles, 8 LED lamps at terminal front) is connected to the PAL with manual switching possible from the lighting control room.
- A primary and two secondary wind indicators are illuminated.

Additionally,

- A pilot activated lighting (PAL) system is provided (located in the lighting control room) and operates on frequency 126.7 MHz.
- Standby power for the AGL is provided by a dedicated generator.
- No aerodrome beacon is provided (nor is one required) and no hazard lights are required.

3.5.6 Illuminated Wind Indicators (IWI)

The primary IWI and accompanying signal circle are located on the northern side of RWY 11/29.

Secondary windsocks are provided at each threshold and are illuminated for nighttime use.

3.5.7 Markers and Markings

The RWY, TWY's and ATO apron are all marked in accordance with the MOS.

- The grounds maintenance crew have an established maintenance program for refurbishment of markings

3.6 Summary Of Aviation Traffic

3.6.1 Airline Partners and Routes flown

WCA currently has four partner airlines servicing eight different routes.

Table 2: Airline partners and routes flown

No.	Airline Partner	Routes	Destination
1.	Jetstar	1. 2. 3. 4.	• Brisbane • Melbourne • Sydney • Adelaide (from September 2024)
2.	Qantas		• Brisbane
3.	Skytrans	5.	• Cairns
4.	Virgin Australia		• Brisbane

At the time of writing WCA are actively pursuing additional routes with potential airline partners.

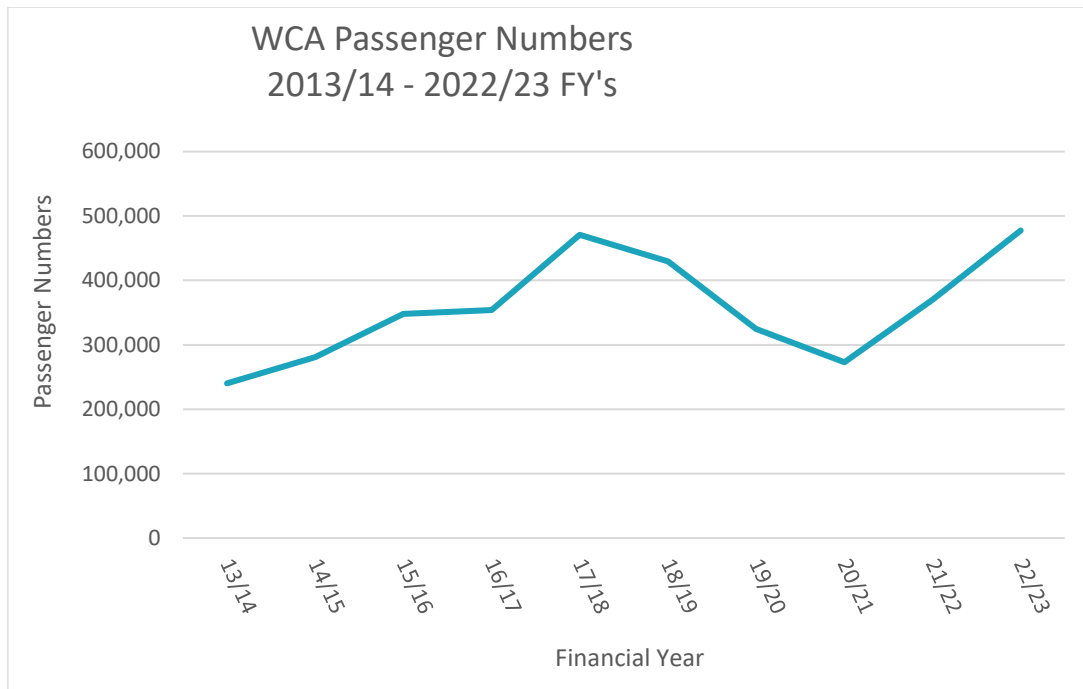
3.6.2 Passenger numbers (Historical)

WCA passenger numbers were comparatively strong (to other Australian airports) right through the COVID period and its recovery has been impressive.

2022/23 set all-time passenger numbers record for the airport at 477,490 and it is readily apparent that the 24FY will also hit a new record high.

The following chart shows passenger numbers from 2014FY to 2023FY.

Figure 8: WCA Passenger Numbers 2013/14 – 2022/23



Passenger forecasting over the next 10 years is provided at Section 5 – Forecasts.

3.6.2.1 ATO Aircraft Movements

For clarity, an aircraft movement is considered either a landing, or a departure.

The following table demonstrates the significant growth the airport has experienced in ATO movement numbers.

Table 3: Comparison of aircraft movement numbers

No	Aircraft Movements	Historical (2014)	Pre-COVID (2019)	Current
1.	Busiest day/s:	4	8	12 (Mon, Thurs, Sat and Sun's)
2.	Busiest week:	38	56	106 (Jan 24) confirmed sked
3.	Avg / month:	166	248	427 (Apr 23)
4.	Avg / annum:	1995	2978	4040 (Oct 23 YTD)

While this growth has brought with it significant economic benefits to the region, it is also responsible for the current congestion issues being experienced in the terminal and on the apron.

3.6.3 Other Aircraft Operations

The WCA plays a critical role in facilitating other aircraft movements. Having recently introduced Avgas the airport is now servicing itinerant aircraft than would have otherwise overflowed.

Other regular aircraft operations include,

- helicopter movements (both private and commercial operations)
- Aeromedical evacuations
- Scenic flights by local tenants
- Military operations
- Itinerant GA movements (light aircraft)
- Itinerant GA movements (corporate jet)

Figure 15 General Aviation Landings at WCA shows there were almost 4,500 GA landings in FY23.

3.7 Aviation Support Facilities

WCA has a number of facilities that are provided to enhance operations and safety at the airport.

3.7.1 Aircraft Fuelling Facilities

Avgas is provided by IOR in a self-contained, self-service unit located adjacent to the general aviation apron at the end of TWY B. The unit holds up to 40kl's of Avgas.

VIVA has a fuel depot which is located somewhat inefficiently on the north side of Lascelles Avenue. There is on-site storage for up to 85,000 litres of Jet A1 fuel delivered via a 27,000 litre capacity truck.

During the preparation of this plan IOR had also successfully tendered to provide JetA1 at WCA and were in the process of planning a new fuel depot and transfer point.

The new fuel depot site is identified in the Infrastructure Report at Attachment A.

3.7.2 Weather Information System

The Bureau of Meteorology provides an automated weather information service (AWIS) at WCA.

One-minute automated weather information is relayed via:

- VHF on frequency 126.25 MHz at WCA or
- phone on 07 3564 3732

The base station used for broadcasting on VHF is owned and maintained by WCA.

3.7.3 Aviation Rescue Fire Fighting Services (ARFFS)

A new ARFFS Station was established at the airport in 2020 providing invaluable first response capability for emergencies at the airport.

The station is crewed by a Fire Commander and 4x fire fighters utilising 2x Ultra Large Fire Vehicles (Mk8 Panthers).

3.7.4 Air Traffic Control and airspace.

The airspace at the WCA is not controlled at this time and no air traffic control (ATC) service is provided.

CASA conducted reviews of WCA airspace in July 2018 and again in 2023. While the results of the 2023 review are still to be published, discussions with the regulator indicate that while it is coming, there are no immediate plans to introduce ATC at the WCA.

While traditional air traffic control towers have been made from bricks and mortar there is a move happening towards remote towers (r-TWR) that are remotely controlled and operated. Adoption of this technology is happening faster in Europe and the USA than it is in Australia, but the benefits are significant, including reduced set up and maintenance costs with no apparent loss in safety outcomes. WCA have indicated that they would like to partner with Airservices Australia to become an early adopter of this technology, such as is planned at the new Western Sydney Airport

From WCA's perspective Airservices Australia have implied that WRC would need to provide the key internet and electrical feeds and redundancy. This Master Plan identifies land for both the traditional tower and remote tower location.

3.7.5 Navigation, landing and approach aids.

Navigation aids are provided and maintained by Airservices Australia under the Airservices Australia Act.

- The WCA has a VHF Omni-directional Range (VOR) radio navigation device which operates on VHF frequency 113.7. It is positioned on S 20 29.8 (Lat) E 148 33.2 (Long).
- Airservices Australia also maintain Distance Measuring Equipment (DME) at WCA. The DME operates on 113.5/84X and is co-located with the VOR.
- Airservices have published DME or GNSS, VOR and RNP approaches for both RWY thresholds at WCA.

Note: Airservices have de-commissioned their non-Directional Beacon (NDB) since the 2015 Master Plan was written.

There are no landing aids such as an Instrument Landing System (ILS), at the WCA. Any proposal to install an ILS would need to be assessed against the significant purchase and maintenance (flight testing) costs vs the number of actual flight cancellations attributed to weather. In anticipation of this WCA are recording all flight delay and cancellations for future referral and consideration.

3.7.6 Security Screening

Whitsunday Regional Council are the screening authority at the WCA with passenger and checked baggage screening contracted to a service provider, by tender.

There is a single screening lane for passengers and checked baggage is cleared via a multiview EDS x-ray integrated into the baggage conveyor system and overseen by a screening officer. Historically, the screening point can be afflicted by long queues although this has been improved with operational and layout changes.

Advice from Smiths Detection (provider of the screening point equipment) is that an efficient single lane screening point can service up to 1m passengers per annum before a second lane is required, noting that there is room for a second lane at the WCA screening point.

At a leisure port such as the WCA the decision to introduce a second lane would be made in consideration of the additional costs vs maintaining a positive passenger experience. The IATA level of service guidelines suggest the optimal wait time for screening is 5-10 minutes.

The WCA also has additional screening equipment utilised at the Freight Distribution Centre (FDC) for clearing cargo under their Regulated Air Cargo Agent (RACA). WCA provide their own screening service for cargo clearing.

Note that any proposed expansion of the terminal that includes the sterile area will have operational and cost impacts for the screening service provider. It is suggested that the screening service provider is included early in discussion of proposed departures hall expansion.

3.8 Existing Landside Facilities

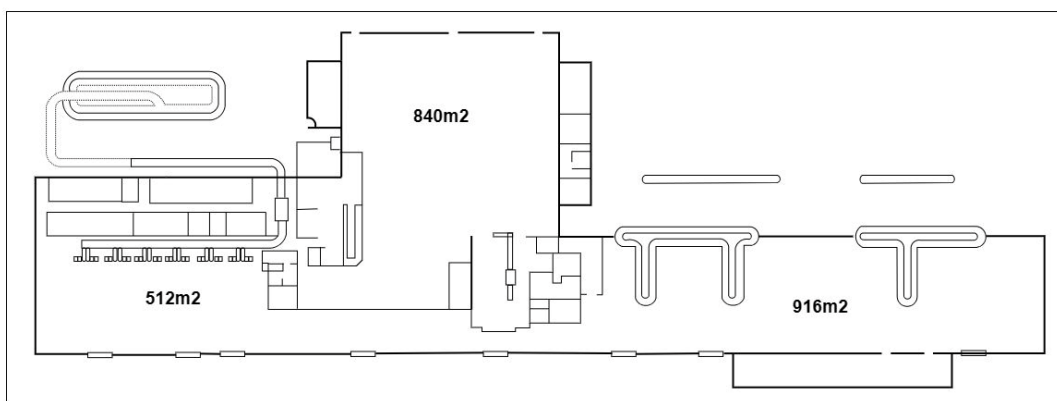
3.8.1 Terminal

A \$15m expansion of the WCA terminal was completed in late 2019. The terminal was essentially doubled in size to allow it to cater for 2x simultaneous Code C aircraft operations and a busy hour or peak hour passengers (PHP) number of 406.

Existing terminal dimensions include:

Departures Hall:	840m ²
Check in area:	512m ²
Baggage collection area:	916m ²

Figure 9: Key WCA Terminal areas by square metre



The terminal also provides other critical facilities required including:

- Passenger and checked baggage screening areas (single lane)
- Screening offices and private search facilities
- 12x check in counters

- Food and beverage restaurant
- 9x Arrivals area booths (three are vacant the rest leased to rental car and GTO operators).
- 3x airline offices (2 occupied)
- 1x retail outlet for local souvenirs

Despite the 2019 being anticipated as a 10-year build, given the recent significant growth in passenger numbers, the terminal is once again at maximum capacity and further expansion is required.

This is discussed in length in the Infrastructure Report.

3.8.2 Rental Car Operations

There are 5 rental car operators at WCA:

- Avis / Budget Group
- Hertz
- Thrifty
- Dollar
- Europcar

Each business operates under a lease agreement giving them access to one or all of:

- Parking bays
- Terminal booths
- Vehicle storage areas
- Maintenance sheds (located within the hire car park)

There is currently inadequate area formalised for use by rental car agencies and additional area/facilities have been proposed in the Infrastructure Report.

3.8.3 Car Parking

(i) Public parking

The public car park is currently adequate only ever approaching capacity over long weekends and school holidays.

It is approximately 11,000m² in size with approximately 350 parking bays (not all are marked). There is an electronic boom gate entry (single lane) and dual boom gate exits. The current fees for parking are as follows:

Table 4: *Current WCA car parking fees.*

Time	Parking Fee
0 - 30 Minute	Free
30 minutes – 2 hours	\$6.50
2 – 8 hours	\$13.00
8 - 30 hours	\$24.00
Each 24 hours thereafter	\$22.00
Annual Corporate Parking Card	\$2,040.00

No separate long-term or premium parking options are provided.

(ii) **Staff parking**

All airport staff currently park at the eastern end of the terminal. There are 20 sealed parking spots but room for approximately 80 more vehicles utilising the unmarked grass and gravel bays. Additional car parking will be required as the staff numbers continue to grow and it is anticipated that a new parking area will be required in the med term. This has been proposed as Priority 2 works, likely to be undertaken in the next 4 years.

Staff parking is currently free of charge, and this may lead to fringe benefit tax (FBT) implications. An alternative site with boom gate access is proposed in the Infrastructure Report.

(iii) **Rental Car parking**

The dedicated hire car parking area on the north side of Lascelles Avenue (opposite the staff parking area) has 99 bays, all of which are leased to the various hire car operators.

It has a boom gate entry and exit and there are 4 maintenance sheds on site.

The existing hire car park is inadequate in size to hold the existing number of rental cars, requiring excess vehicles to be parked in various grass areas around the airport. There have been concerns raised about the appropriateness of the grey water disposal methodology provided at the wash bay sheds. Alternative rental car parking arrangements are conceptualized in the Infrastructure Report.

3.8.4 Ground Transport Operators

As primarily a leisure destination, ground transport operators (GTO) play a critical role in the passenger's transition between air and road transport modes.

Following are the registered GTO number's for the 23/24 FY.

Table 5: *Registered GTO vehicle type and numbers*

GTO Type	Number
Maxi Taxi	9
Taxi	15
Mini-van	20
Mini bus and trailer	12
Vehicles	7
Coach	5
Total	68

There are currently available:

Table 6: *Existing parking bay type and number*

Parking bay type	Number
Taxi (shared)	6-8
Mini bus and trailer	3
Coach	4
Total:	13-15

It is acknowledged that not all GTO vehicles attend at the same time, however their parking bays are often at capacity during peak periods. Conceptual plans for expansion are provided in the Infrastructure Report.

3.8.5 Freight Distribution Centre

In alignment with both the WCA Objectives and the WRC Regional Economic Development Strategy (2022-2025), WCA opened its' Freight Distribution Centre (FDC) in 2022.

The stated objectives of the FDC are 3-fold.

1. Assist with increasing airline yields on existing air transport operations (ATO) services, improving sustainability.
2. Diversifying the airport's income stream and reducing reliance on passenger driven aeronautical revenues.
3. Providing air freight opportunities to the region in the form of:
 - The ability to get high yielding, perishable freight out to market sooner, providing local producers a competitive edge in quality.
 - Opening access to new export markets for local growers through the range of routes available out of WCA.
 - Providing greater options for sourcing food and beverage, retail, medical and resource goods/supplies through the range of existing inbound routes.
 - Providing delivery timing options through the high daily frequency of flights at WCA.

- Providing competition in freight carriage by working with all airlines.
- Facilitating faster delivery for internet shopping (ie Amazon) and Australia Post.

The FDC has been in operation for over 12 months now and is currently averaging 2.1 tonne of freight/month through the airport. 92% of outbound is high value perishable seafood product including fish, prawn and red claw lobster.

The FDC is co-located with the airport's grounds maintenance team in the old firefighting station. It is a landside building with direct airside access through Gate 6.

A dedicated tug and trailer is used to transport freight between the FDC and the ATO apron where goods are loaded or offloaded from commercial aircraft. TWY B is used for this access.

There are currently no dedicated air freighters operating at the WCA however, two specific areas are identified in the Infrastructure Report as options for the provision of aircraft parking bays for dedicated freight flights.

The existing freight service is growing and will likely require more space in the short term with the immediate solution being to remove the co-share arrangement with the airports grounds maintenance team as outlined in the Infrastructure Report.

In the longer term it is proposed that the FDC is moved to the extreme north of the airport property and expanded to include rail and road freight in a significantly redeveloped multimodal transport hub. Concept drawings can be seen in the Infrastructure Report.

3.8.6 Grounds Maintenance Shed

The grounds and maintenance shed is co-located with the FDC. It is used as a workshop and for storage of plant and equipment used for the upkeep of the airport. Having once had the benefit of sole occupancy of this building, there is now a growing shortage of storage space.

It is anticipated that the FDC building might be expanded in time to better accommodate all the necessary plant and equipment used by the airport.

3.8.7 Access Roads

WCA is accessed directly off the Bruce Highway via Lascelles Avenue which is the airport's only access road. This could be problematic following a required road closure however, at 4.3km's long it is difficult to imagine a business case that would support investing in an alternative access solution.

If the fully developed FDC outlined at Section 3.8.5 is pursued it is understood that an upgrade to the Lascelles Avenue & Bruce Highway intersection would require upgrading to facilitate heavy vehicle traffic such as B doubles. At the time of writing The Department of Transport and Main Roads (TMR) Mackay Branch, are working on the Goorganga Plains Plan and Preserve Corridor which is aimed at improving the flood immunity of the Bruce Highway in this area. An upgrade of the intersection to allow for the use of B-doubles formed part of the project considerations. Contact with TMR can be continued at: Mackay.Office@tmr.qld.gov.au.

Concern was raised during the public consultation period regarding the lack of boom gates at the railway line crossing. Despite being out of the airport's direct control, WRC may choose to champion that issue with the rail operator and other appropriate parties.

There are often congestion issues around the terminal and car parks during flight times and traffic circulation can be congested during typical peak hours. It was considered that a new loop road at the terminal would both improve traffic flow as well as open up new areas for public, coach and hire car parking, as well as access to the proposed new accommodation precinct. This is discussed in detail in the Infrastructure Report.

It was noted that the Whitsundays Tourism Destination Plan (2019-2024) calls for flood mitigation works to take place on the Bruce Highway to maintain access for visitors to the region, including the WCA. The WCA also supports any initiatives to facilitate flood proofing of the Bruce Highway in the Whitsunday Region.

3.9 Utilities And Civil Infrastructure

All utilities and civil infrastructure will require assessment for compatibility with proposed terminal upgrades.

3.9.1 Water

Water supply for the airport is provided from the mains line that runs from Mackay and terminates at WCA. During periods of high use water pressure drops significantly and it becomes necessary to boost pressure from the backup supply tank located at the Freight Distribution Centre.

With the forecast increase in passenger numbers and potential terminal expansion consideration should be given to ensuring the backup supply has sufficient storage capacity.

3.9.2 Electricity

Mains electricity is provided along with 2x backup generators, one for the terminal and ancillary buildings and another separate generator for the airfield lighting.

The terminal has 990 commercial grade solar electricity producing panels on the roof in a 400kW solar array providing up to 663,810 kWhs of clean renewable energy.

Where it is practical, all proposed development in the Infrastructure Report allows for solar panel installation.

Airservices Australia have advised that if new remote tower (r-TWR) technology is implemented (as opposed to a bricks and mortar tower) the necessary power feed will also require full redundancy.

As part of any proposed terminal expansions an assessment on power supply adequacy should be completed.

3.9.3 Sewerage

Sewerage is treated by an onsite treatment plant. This plant has already been identified as requiring significant upgrading to cater for current numbers. WCA continues to work in partnership with the Department of Environment and Science to resolve final design and compliance issues in this matter.

3.9.4 Communications and internet

Reliable internet access is critical for the ongoing operation of the airport as most airline systems and many of the WCA reporting systems, are now cloud based.

Of course, the users of the terminal also require a reliable and high-speed internet access for checking-in, ordering food and beverages, making bookings or simply browsing while waiting for flights.

With regards to the ability to charge personal mobile phones, the 2019 terminal upgrade provided a significant number of USB and power points for this purpose in the departures lounge.

Discussions with Airservices Australia have also identified the need for significant bandwidth, with full redundancy, if remote tower air traffic control (r-TWR) is to be introduced.

3.9.5 Stormwater

With an average annual rainfall of 1.43m, storm water management must always be a significant consideration when planning civil works at the WCA.

This applies particularly to the proposed new ATO apron expansions as all rainfall collected in the above-ground open drains in this vicinity flows towards and beyond the terminal on the eastern side of the rental vehicle's car park.

3.9.6 Perimeter fencing

An 1800mm high cyclone fence is provided around the perimeter of the airside to deter unauthorised access. It is maintained and fit for purpose.

It is suggested that for any future fence replacement along Lascelles Ave between the railway tracks and ARRFs road, the outer fence is positioned as close to the roadside as is practical. This will ensure that any future development in that area starts at the roadside edge of the block and can be uniformly positioned, allowing maximum utilisation of the land inside, as opposed to the layout of the existing GA area.

3.9.7 Fire fighting

There are four resupply hydrants on airport, one positioned airside outside the baggage break-down area and the other 3 at the ends and central to the terminal. They are fed from 2x dedicated 195,000 litre water tanks located adjacent to the Administration building and Pump sheds.

The Fire Control Panel is located just inside the main central doors of the terminal.

4. Legislative Context

The proposed development of WCA discussed in this Master Plan has been considered relative to Commonwealth, State, Regional and Local Government requirements including planning regimes, policies and applicable legislation and standards. This section has been consolidated (over the 2015 Plan) to include planning, environmental and economic considerations.

There are a number of strategic and statutory documents that either offer a planning perspective on WCA, or that require consideration during the assessment process of any proposed developments for on, or around, the WCA. The key documents are discussed in summary following.

4.1 National Rules And Standards

As the aerodrome certificate holder, WRC is by definition the aerodrome operator at WCA. The aerodrome operator is bound by legislation to ensure that the airport is maintained and operated in accordance with all applicable Commonwealth legislation including the Civil Aviation Act, Civil Aviation Safety Regulations (CASR's) and the Aviation Transport Security Act and Regulations.

The Part 139 Manual of Standards (the MOS) is made pursuant to CASR 139 and sets out the detailed standards and operating procedures for aerodromes used in air transport operations in Australia. This is the key reference document for all proposed infrastructure design and operations at the WCA.

4.1.1 National Airports Safeguarding Framework (NASF)

The NASF is a national land use planning tool developed with input from all levels of government and is focused on improving community amenity and safety incomes. It provides 6 guidelines for managing risk at airports including:

- Guideline A: Measures for Managing Impacts of Aircraft Noise
- Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports
- Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports
- Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
- Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
- Guideline F: Managing the Risk of Intrusions

The NASF is directly relevant to the WCA planning considerations for both airside and landside developments.

4.1.2 Environment Protection and Biodiversity Conservation Act

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and

manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the EPBC Act as matters of national environmental significance.

The EPBC Act comes into play when a proposal has the potential to have a significant impact on a matter of national environmental significance. This includes the adoption or implementation of a plan for aviation airspace management involving aircraft operations that have, will have or are likely to have a significant impact on the environment.

Delivery of the proposed developments in this Master Plan should include an assessment of the EPBC Act applicability.

4.2 State Planning

4.2.1 State Planning Policy

Queensland's State Planning Policy (SPP) July 2017 outlines the state Governments interests in land use planning and development for Queensland. It identifies and seeks to protect through the planning framework key state infrastructure, including strategic airports and aviation facilities.

The WCA has been declared within the SPP as an airport of strategic importance, ensuring that the state's interests are reflected in the WRC local government planning regime, specifically, within the Whitsunday Planning Scheme 2017.

4.2.2 The Whitsundays Tourism Destination Plan (2019-2024).

Jointly prepared by Tourism Whitsundays, Tourism and Events Queensland and WRC this Plan outlines the strategy for growing tourism in the region.

The plan recognises the WCA role as increasing frequency and flight sectors for domestic traveller's and improving connectivity to international gateways. It suggests the airport should be positioned to handle international charters.

This plan is in alignment with the WCA Vision and Objectives.

4.3 Regional Planning

The Whitsundays forms part of the Mackay, Isaac and Whitsundays region, an area of over 90,000 square kilometres with an estimated population of c181,000 people.

4.3.1 Mackay Isaac Whitsunday (MIW) Regional Plan

The MIW Regional Plan establishes a vision and direction for the region through 2031. Of particular significance to the WCA within this plan is the recognition that;

- The MIW region currently has limited capacity for air freight and
- The effective integration of roads with rail, ports and airports is essential for sustaining economic growth and strengthening the resilience and diversity of the region.

This Master Plan proposes the development of multi transport mode catering freight related infrastructure that supports the desired outcomes of the MIW Regional Plan.

4.3.2 Mackay Isaac Whitsunday Regional Transport Plan 2018

The MIW Transport Plan was prepared by the Department of Transport and Main Roads (TMR) to set out regional transport priorities and actions for the region.

- This plan discusses the need for a distribution hub connected to port and airport development opportunities as well as the need to improve air freight capacity.
- It goes on to discuss the opportunity to increase tourism and agricultural exports through direct international airport access.

This Master Plan proposes infrastructure that would support the desired outcomes of the MIW Regional Transport Plan.

4.3.3 Mackay Isaac Whitsunday Natural Resource Management Plan (2014-2024)

Prepared by the Mackay Isaac Whitsunday Communities the Natural Resource Management Plan (NRMP) is intended to guide investment and activity in natural resource management across the region.

The sustainable development elements within the Infrastructure Report supports the vision of the NRMP.

4.4 Local Government Planning

In the local context the Whitsundays region covers an area of 23,876 square kilometres with a population base of 38,506 residents. Whitsunday Regional Council provides a number of plans and policies relevant to the WCA.

4.4.1 WRC Community Plan

The WRC Community Plan was developed to ensure that Council has a clear appreciation of the needs and priorities of its residents with a shared vision for the future.

The WCA's contribution under this Plan is to Movement and Access as part of the interconnected and efficient transport services, supporting Councils undertaking to provide well maintained transport infrastructure and service industries.

4.4.2 WRC Corporate Plan.

The Corporate Plan recognises the WCA as one of its business activities and outlines the application of a quadruple bottom line methodology measured across the pillars of Financial, Environmental, Social and Governance performance.

The WCA is operated in this manner and held accountable through the use of performance indicators that are developed as part of the Annual Operational Plan and reviewed within the Annual Report.

4.4.3 WRC Regional Economic Development Strategy 2022-2025

This document formalises WRC's economic development strategy based on the delivery of more investment and more jobs as the pathway to the region's economic and environmental sustainability.

Specific reference to the WCA refers to its potential to contribute to the strategy as a freight handling facility. It is noted that the WCA role in this strategic plan to provide a Freight Distribution Centre (FDC) has already been achieved.

Moving forward this Master Plan outlines the infrastructure required to allow for the growth of the FDC as well as opportunities to cater for dedicated freight aircraft both at the FDC and in the proposed multimodal hub.

4.4.4 Whitsunday Planning Scheme 2017 (version 4.7)

Prepared in accordance with the Sustainable Planning Act 2009 and reviewed every 10 years, the Whitsunday Planning Scheme 2017 (the Scheme) sets WRC's policy direction for the future and appropriate development of the Whitsunday region over the next 20 years to 2036. Within the Strategic Framework, the policy intent of the Scheme is collectively represented by five themes:

1. Liveable communities and housing
2. Economic growth
3. Environment and heritage
4. Safety and resilience to hazards; and
5. infrastructure

Each theme is structured to include clarity on its strategic intent, proposes a strategic outcome and describes a land use strategy for achieving those outcomes.

While the Strategic Framework should be considered in its entirety to appreciate the full policy intent of the Scheme, the WCA features specifically within the themes of Economic Growth, Environment and heritage and Infrastructure.

Economic Growth

As part of Councils policy to protect the region's economic resilience, the WCA location is identified in this theme as an in area that could support new, major industrial expansion.

Environment and heritage

This theme focusses on the preservation of cultural heritage and the conservation and enhancement of ecological systems. As an urban gateway the WCA is identified in this theme as a core landscape value, each of which are nominated for protection and where possible, enhancement.

Infrastructure

The strategic outcome for this theme is that the service supporting capacities of WRC infrastructure are coordinated, efficient and orderly and that infrastructure provision and operation are financially sustainable.

As land use strategy it is proposed that within the vicinity of the WCA location, an international airport, remote mine operations centre, air freight and supporting education and industry activities are established.

The Airport Environs Overlay Code (SPP Mapping)

A key inclusion within the Scheme is the provision of the Airport Environs (AE) overlay which can be accessed at WCA Overlay map. The AE Map identifies critical aspects of the airport's operation that must be protected during any related development application assessment.

These aspects include:

- the obstacle limitation surface (OLS) including the approach surfaces which impacts on the potential height and locality of any proposed new developments,
- the Australian Noise Exposure Forecast (ANEF) which provides guidance on aircraft noise levels based on the vicinity of the runways and flight paths and
- buffer zones for wildlife and external lighting to ensure any air safety risks associated with proposed developments.

The mapping tool also provides useful overlays for acid sulphate salts, flood, heritage and bushfire threat assessment.

5. Growth Forecasts

This section is focused on air transport operations (ATO's) with general aviation (GA) and freight discussions following at Sections 5.7 & 5.8 respectively.

5.1 Background

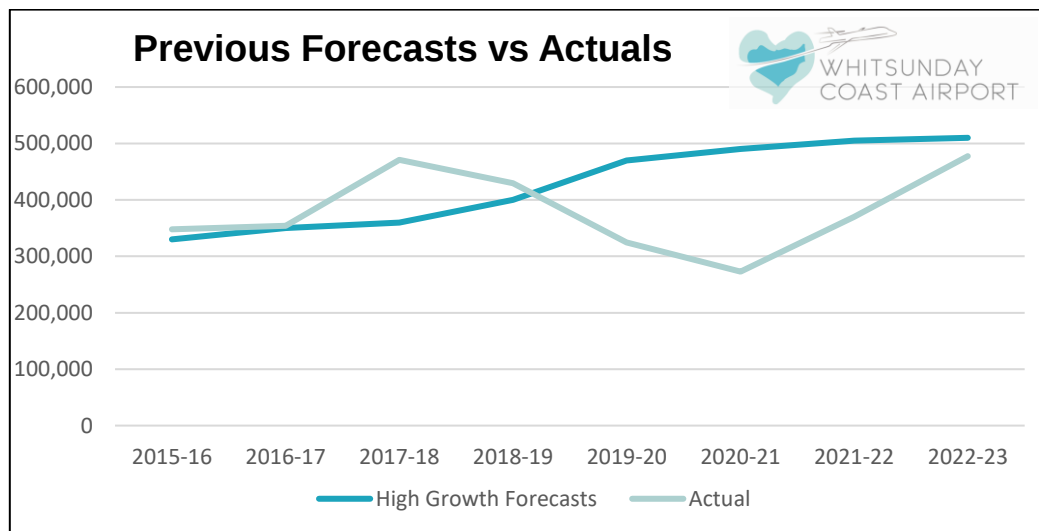
Forecast passenger numbers, freight and aircraft movements are used to ensure that appropriate airport infrastructure is provided, ideally on a just-in-time basis.

Forecasting is not an exact science, as is clearly demonstrated by the following unforeseeable events that significantly skewed WCA forecasts over the last 7 years.

1. 2017 - Cyclone Debbie hit and effectively shut the region down, the same week that Jetstar were scheduled to introduce additional MEL and SYD capacity.
2. 2020 - The withdrawal of Tiger Air services and Virgin Australia going into voluntary administration soon after.
3. 2019-22 - The COVID 19 pandemic.

Despite these negative impacts, passenger numbers at the WCA have proven resilient as demonstrated by the following data that shows the 2023/23 actual passenger numbers were almost back to the High Growth forecast levels of the 2015 Master Plan.

Figure 10: Actual passenger numbers vs high growth forecast numbers



Between September-2021 and December 2023, the airport successfully introduced 4 new routes and 3 new airline partners.

In April 2024, the untimely demise of Bonza Airlines took Sunshine Coast, Newcastle and Gold Coast connectivity temporarily off the table. However, the upside of this is that the WCA now has a significant amount of verified passenger load factor data that will be invaluable as future negotiations with replacement airlines progress. Cairns services (introduced Sept 2021) continue to operate with success and a new Adelaide service is already on sale for a September 2024 commencement. In keeping with

WCA's strategy of actively pursuing new city pairings, airport management has advised that further opportunities are also being pursued with various airlines.

The net result of this activity culminated in a new passenger number record through the airport in the 2022/23 FY and even with the loss of Bonza back in April, the 2023/24 FY will undoubtedly set another new record for the airport.

Importantly in addition to this domestic growth, international visitation (through existing capital city routes) will continue to grow with pre-COVID international passenger visitors not anticipated to fully return until FY2026¹.

Despite Australia's economic growth having slowed to below average rates and the succession of shocking global events in recent years, the outlook for the WCA remains extremely positive and this is shown in the forecasts that follow.

5.2 Forecast Methodology

Due to the airport's demonstrated success in driving growth, the supply model was selected as the most appropriate and accurate forecasting methodology.

To this end, current schedules were used to create a schedule baseline which was extrapolated within low, medium and high growth scenarios. In the high growth scenario, all opportunities currently under negotiation or consideration are realised over time. The low growth scenario best demonstrates growth left to its own devices with existing opportunities missed and generic growth based on CAGR. Within the medium growth forecasts some but not all new opportunities are realised.

The forecasts were prepared in consultation with WRC and its partner airlines, and also considered reviews of;

- historical traffic, including long-term patterns.
- existing infrastructure
- current schedules, aircraft mix and load factors.
- potential economic drivers and
- proposed capacity increases and
- new route development.

The aircraft movement forecasts should be reviewed with consideration that the high growth scenario anticipates the introduction of A321NEO, E190 and A220 aircraft resulting in increased seat capacity, from similar frequency.

All scenarios reflect that following the current period of accelerated growth from 2020/21, the numbers will reach a plateau and growth will become less significant.

¹ Airservices Australia – Aviation Network Overview FY2023 discussing Australian international inbound.

5.3 Supply Modelling Considerations

In preparing the ATO passenger and aircraft movement forecasts we have taken the following points into consideration.

5.3.1 Growth Strategy

The 2015 Master Plan correctly identifies that passenger growth at WCA has historically responded well to supply, i.e. in most cases the addition of aircraft capacity has had a sustainable impact on airline load factors and yield. The recent and successful introduction of 4 new routes driven by the WCA, supports this approach and the successful continuation of this strategy forms the basis of the high growth forecast modelling.

5.3.2 Fleet upgrades

There are some possible aircraft up-gauging and/or potential new route development opportunities for WCA with the Qantas Group currently embarking on their fleet renewal program.

The high growth scenario adopts WCA securing A321 NEO, E190 and A220 aircraft introductions on domestic routes, with the A321XLR pencilled in for international operations.

Table 7: Table of known fleet upgrades in near future (Source: Jetstar and QANTAS media center's).

Aircraft	Notes
E190	<u>QANTAS (mainline).</u> - Regional jet - up to 94 seats depending on configuration - Positioned by size between the B717 (125 economy seats) and B737 (174 seats) – both with alternate seating configurations available - Operated in partnership with Alliance Airlines - Including up to 10 business class seats - Range of 4537 km's
A220	<u>QANTAS (mainline).</u> - Replacing aging B 717 aircraft - Note the Q400 replaced 717's on the WCA BNE route 29 A220 aircraft are on order – 1 delivered to date - Has 137 Seats (55% more than the Q400) - Has a 6000km range 25% fewer carbon emissions and is significantly quieter than 717 Can operate now at the WCA
A321 NEO	<u>Jetstar.</u> - Replacing A320's 18 aircraft on order – first delivered mid 2022 232 seats (46 more seats than the A320) - Uses 15% less fuel and is 50% quieter than A320. - A Nov 2023 study completed by APES confirms the A321NEO can operate at its nominated operational weight of 85 tonne (equivalent of WCA to MEL) for 4,400 movements p/a without causing significant pavement damage. - Is the critical aircraft for this Master Plan – all new infrastructure proposed will accommodate the A321 NEO by design.

A321 XLR
Jetstar.

- 20 on order – first arrives mid 2024
- Can fly nonstop for 8,700kms (i.e. WCA to southeast Asia)
- Can operate on the existing RWY length but actual aircraft operating weights would be required to understand potential impacts on pavements. Should be considered for next pavement overlay design.
- Airfield will require some works including upgrade from single to double sided PAPIs (aircraft landing guidance lighting).

5.3.3 International Operations

As with the 2015 Master Plan, the high growth forecast reflects WRC’s long-term ambition to attract direct international operations. It allows for a potential start date in FY27 at a rate of 2 services week (destinations still to be evaluated).

The aircraft nominated for the purpose of forecasting is the A321XLR (See s.5.3.2 Fleet Upgrades above). This is a narrowbody Code C aircraft with a massive range of 8,705 km’s, with either a 175 or 200 seat configuration.

Selection of a specific destination will determine whether or not the performance of this aircraft would require additional runway length at WCA to accommodate the total departure weight, including fuel requirements for a mid-summers day, with no wind assistance. Regardless of the possibility that the runway may require extension, the costs of apron and international terminal expansions, plus fit out for Boarder Force attendance will be significant and would require partnership and support at both state and federal level.

Without any pre-emption, also supporting this aircraft selection is the fact it is Jetstar purchasing the A321XLR’s. Jetstar is a well-established WCA airline partner providing up to 62% of all passengers (as at May 2024). They currently fly into a range of southeast Asian destinations including Cambodia, Singapore, Phuket and Bangkok.

The following table provides examples of the long-haul destinations that an A321 XLR can, theoretically, fly from the WCA.

Table 8: Cities within the nominated 8,705km range of the A321XLR

Country	City	ICAO	NauticalMiles	KM’s	Est flight time
Singapore	Changi	SIN	2958	5423	6hrs 52 mins
Malaysia	Kuala Lumpur	KUL	2089	5720	7hrs 13 mins
Hong Kong	Hong Kong	HKG	3266	6049	7hrs 36 mins
Japan	Tokyo	HND	3400	6296	7hr 52 mins
China	Shanghai	PVG	3460	6408	8hrs
Thailand	Bangkok	BKK	3488	6460	8hrs 5 mins
South Korea	Seoul	ICN	3683	6821	8hrs 31 mins
China	Beijing	PEK	4040	7481	9hr 18 mins

Visually the potential international destinations present as follows.

Figure 11: Range of A321 XLR



The proposed FY27 introduction of WCA international flights is supported by Airservices Australia recent advice to industry (Aviation Network Overview FY23) that international operations will return to pre-covid numbers in FY 26. This timing is also supported by the intended pavement overlay budgeted for in the 2027FY.

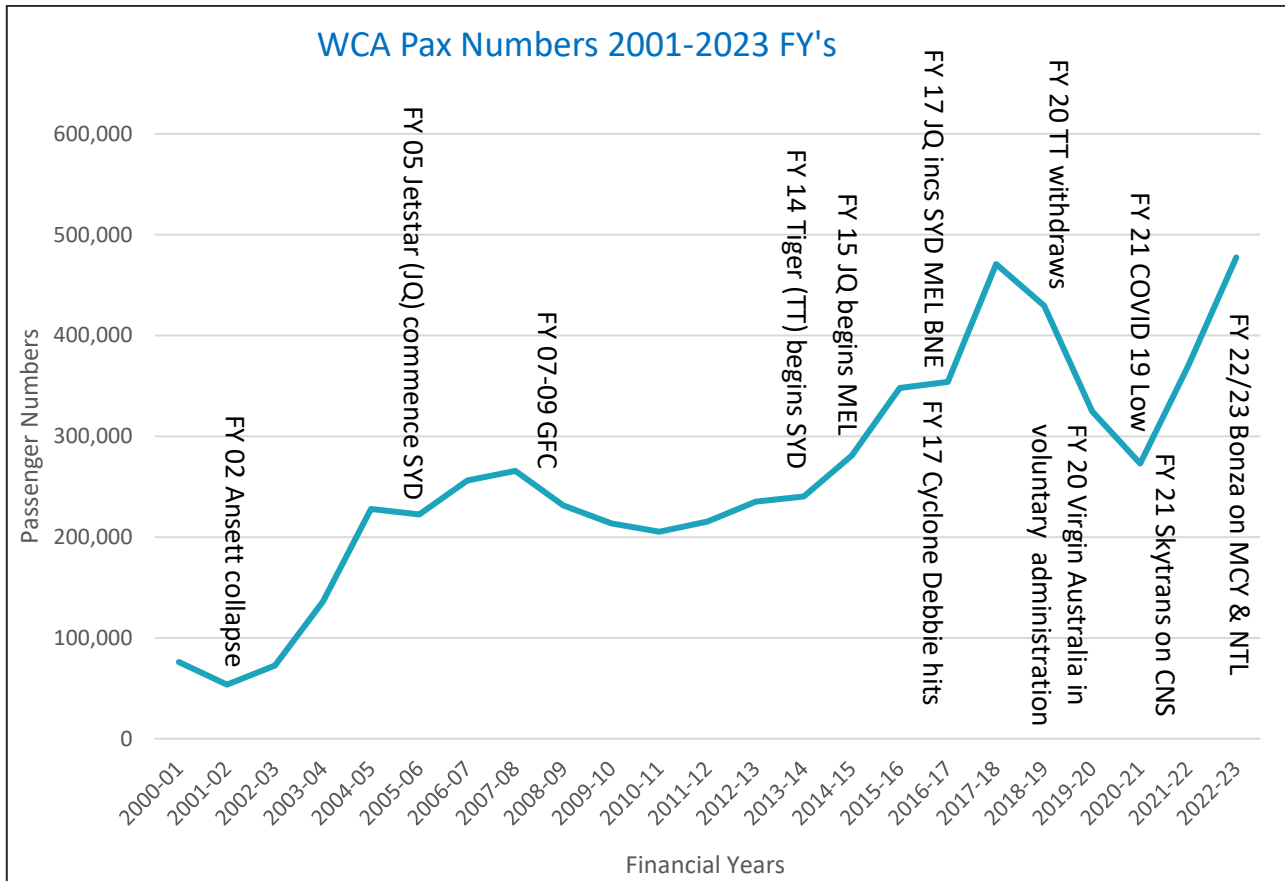
Until direct international flights to WCA commence there remains the ongoing opportunity to supplement domestic tourism by continuing to hub and spoke international visitors out of WCA's expanded number of capital and major city pairings. This approach is supported by the Whitsundays Tourist Destination Plan.

5.4 Historical WCA Traffic Drivers

To appreciate the many highs and lows of the WCA's historical passenger traffic it is of benefit to understand that a single 737 service, operating one day per week at an 80% load factor can gain or lose an airport c15,000 passengers per annum. In a regional airport these results are highly visible and have a significant impact both on the airport business and the region it serves.

The following graph shows the impacts on traffic outcomes resulting from various historical drivers at WCA, both positive and negative.

Figure 12: Passenger Numbers and Drivers – 2001 – 2023 FY's



While it is impossible to pre-empt and prepare for every possible negative traffic driver, the airport has done a good job of mitigating the potential impacts of the negative events by:

- creating new route pairings (opening new markets and fresh customer bases)
- increasing its number of airline partners (reducing the potential impacts of an individual airline collapse)
- Investing in the creation of the new WCA Freight Distribution Centre (to capitalise on underutilized aircraft hold space and reduce the airline's reliance on just pax revenues).

Whitsunday Regional Council has also recently adopted a new governance structure that ties Tourism and Aviation. This strategically positions the WCA to contribute to its sustainability through managing its own marketing partnerships and investment. This has already proven to be a winning approach for the WCA, most easily demonstrated by last FY's record passenger numbers and several industry awards over recent years.

Together these initiatives combined help to reduce the potential impacts of the negative drivers to as low as reasonably practical (ALARP).

5.5 Current Traffic Analysis

This section is focused on air transport operations (ATO). General aviation and freight are discussed separately following.

At the time of writing WCA had 4 ATO airline partners servicing 4 destinations. The WCA schedule is difficult to summarise given the large amount of additional capacity that is temporarily added during peak

periods. To combat this, aggregates taken over extended periods were used, but these also became problematic as new routes commenced operation and Bonza services withdrew.

The following data was compiled from the OAG database to provide an example of monthly traffic. Note the pre COVID numbers highlighted in yellow and provided for comparison.

Table 9: *Current traffic data– inbound only.*

(Taken from Jan 24 Schedule)

No.	Destination	Airline	Weekly Services Inbound	Monthly Services Inbound	Aircraft Type	No of Seats	Seats / month Inbound
1.	Brisbane	Jetstar	12	51	A320	186	9,486
	Brisbane	Qantas	5	20	Q400	74	1,480
	Brisbane	Virgin	11	38	737-800	176	6,688
2.	Cairns	Skytrans	4	16	Dash 8	36	576
3.	Melbourne	Jetstar	7	31	A320	186	6,882
4.	Sydney	Jetstar	6	28	A320	186	5,208
	Total		45	184*			30,320
	Pre COVID nos.		22	88			
*Additional flights were added during the month.							

5.5.1 Busy Months Analysis

As a leisure destination WCA is a seasonal port with the busy period usually at peak for the school holidays. The airport actively works with its tourism partners to reduce the fringe period troughs through collaborative marketing and supporting/promoting various regional events throughout the year.

Review of data from 1 Jul 2014 to 30 June 2023 has established that the following months are the busiest by aircraft movements:

1. December
2. January
3. October
4. April
5. November

Interestingly, post COVID (1 July 2022 to 30 June 2023) the top 5 remain, but in 2023, April became the busiest month on record with 427 movements. It is anticipated that this will change again following the summer school holiday period.

5.5.2 Busy Day Identification

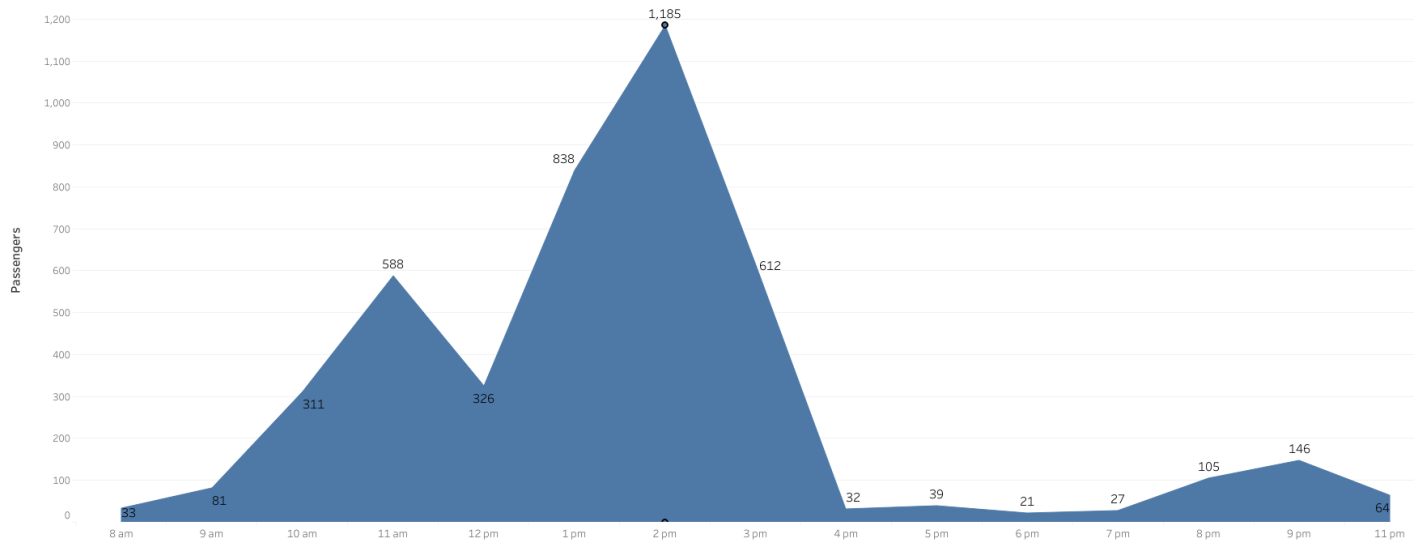
The busy days by average at WCA are currently Saturdays, Sundays, Mondays and Thursdays with 6 ATO arrivals each (12 movements) in the confirmed June 2024 schedule.

5.5.3 Busy Hour Analysis

The below chart shows that the most current data available (Jan 2024) weekly busy hour peak occurs at 1400 where an average of 1,185 passengers per week pass through the terminal.

At this time, it is common to have 3 aircraft operating simultaneously, noting that 2 simultaneous operations was the design ceiling of the terminal for the last upgrade development.

Figure 13: Weekly Busy Hour Trend (Jan 2024 0800-2300).



Note that the hours either side of 1400 are also comparatively busy. This condensed busy period (1300-1500) lends itself to severe congestion issues when there are even minor aircraft delays.

While the terminal becomes severely congested at this time, the most significant impact on operations can be seen on the apron as aircraft can be forced to circle while waiting for one of the 4 parking bays to free up. It is important to remember that this is double the planned capacity of the existing terminal which was designed for 2 simultaneous operations.

5.6 Forecasts

The following pax forecasts reflect the withdrawal of Bonza services and include the confirmed addition of the JQ Adelaide services commencing September 2024.

All forecasts demonstrate that in time growth will plateau, potentially as the region runs out of available bed nights. [This Master Plan introduces a new WCA accommodation precinct as a potential solution to this issue].

With the average load factor of all airlines, on all routes sitting strongly at 81% (May 2024) it is unlikely that the airport is in jeopardy of losing any of its' existing services.

It is recommended that these forecasts are reviewed and updated on an annual basis.

5.6.1 Low Growth Forecast Scenario

Disregarding any of the many potential traffic disrupters, this forecast is considered worst case and demonstrates a shift away from the airport's current strategy of pro-actively and successfully, pursuing

all potential aviation opportunities. It reflects the pending introduction of ADL flights and the recent up gauging from Q400 to E190 aircraft for QF on BNE.

With regards to the provision of infrastructure even the low growth forecast utilising the current schedule and minimal growth requires significant expansion of the terminal and an apron expansion.

5.6.2 Medium Growth Forecast Scenario

The medium growth forecasts reflect the pending introduction of ADL flights and the recent up gauging from Q400 to E190 aircraft for QF on BNE. It also includes incremental reinstatement of Gold Coast, Sunshine Coast and Newcastle routes. It includes the addition of two new domestic routes (but introduced later than the high growth forecasts) but disregards the potential for international operations. It reflects a minimal up gauging of A320 to A321NEO aircraft.

5.6.3 High Growth Forecast Scenario

Given the purpose of this forecasting exercise is to understand what future infrastructure may be required at the WCA, all known commercial aviation opportunities have been assumed to be successfully implemented in the high growth forecast scenario.

The high growth forecast estimates the WCA will be close to providing a million seats per annum in 10 years time (3033/34 FY) through realising the following opportunities:

- Going to regular daily MEL and SYD services
- Up gauging from A320 to A321NEO's on SYD, MEL and BNE
- Negotiating the introduction of A220 and further E190 aircraft.
- The reinstatement of Newcastle, Sunshine and Gold Coast routes
- The introduction of an additional 3 new domestic routes (including ADL in Sept 2024)
- The introduction of narrow body international operations from July 2029

The forecasts are provided as a graph following.

Figure 14: WCA ten-year Passenger Forecast data showing Low Medium and High scenarios.

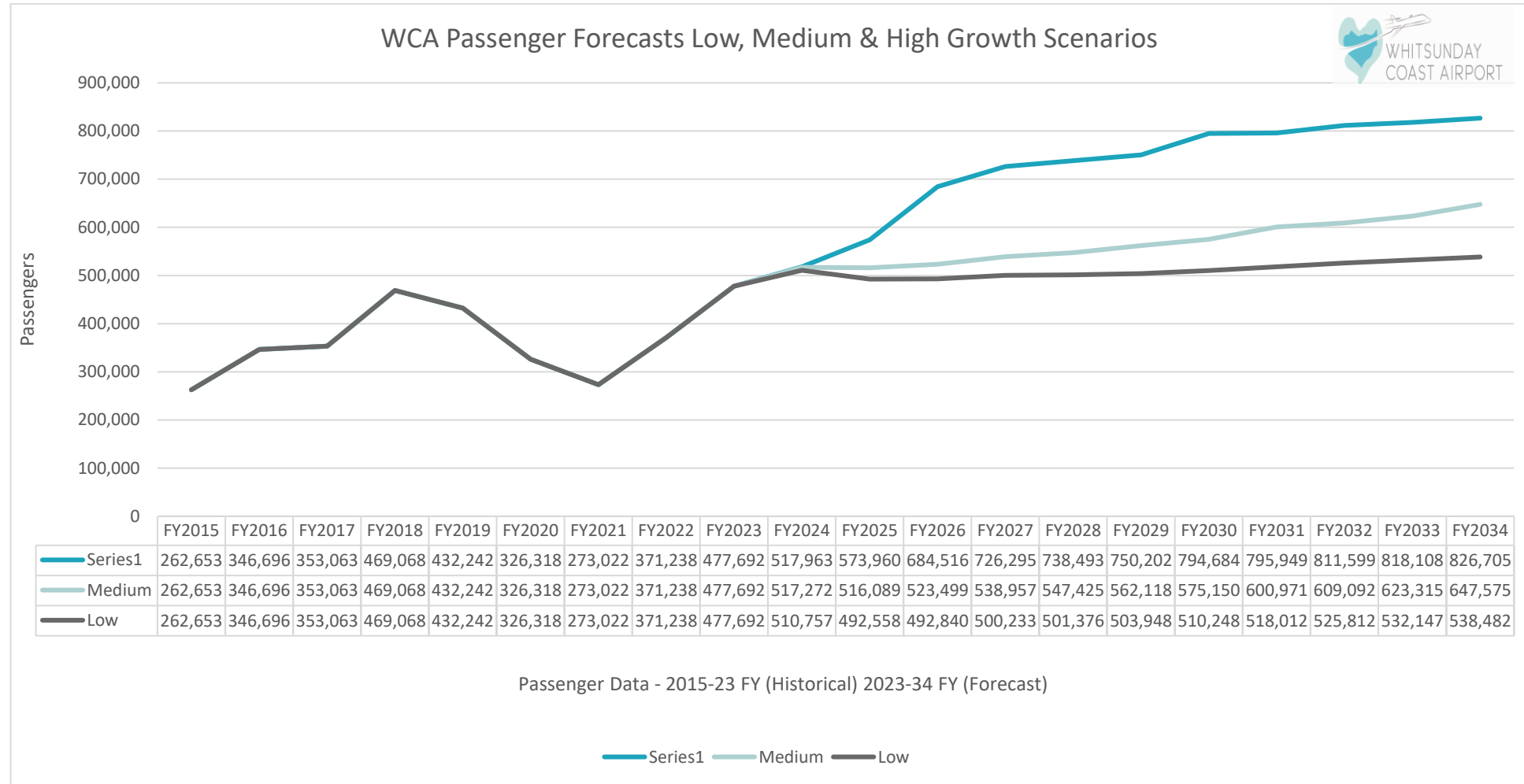


Table 10: Aircraft Movement Forecasts Step Growth (Years 1, 5 and 10).

Financial Year	Low Growth	Medium Growth	High Growth
2023/24 (This year)	4000 (estimated)	-	-
2027/28 (5yrs)	3958	4276	5404
2033/34 (10yrs)	3996	4936	5814

Note that the forecasts allow for the eventual replacement of the A320's with the A321 NEOs (186 seats vs 232) and the Q400 with the E190 (76 seats vs 97) bringing growth with no reflected increase in frequency.

5.7 General Aviation

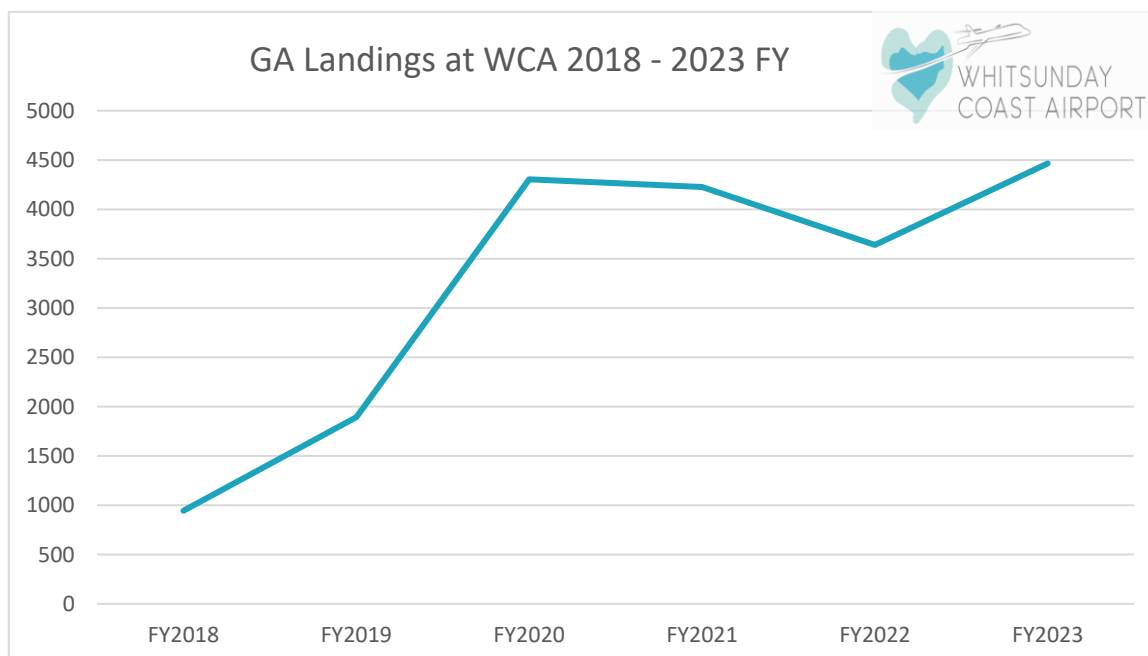
In this section the term general aviation (GA) is used generically to cover all aviation activity other than ATO. Specifically, that includes recreation, aeromedical, charter, military, and local based flights.

GA activity at the WCA primarily occurs at the northern end of the GA access taxiway, (TWY B) and is inclusive of the GA sealed and grass aprons, local operators and hangers, as well as the AVGAS refuelling facility.

5.7.1 Historical GA Movement Numbers

The following chart shows the total GA aircraft landings per annum at WCA through FY2017/18 to FY2022/23.

Figure 15: General Aviation Landings at WCA 2018-2023 FY's.



Close to 70% of the 2023 FY landings were made by just 3 local commercial aviation companies including the local scenic charter operator, LAME (aircraft engineering) service provider and flight training schools.

5.7.2 GA Development Opportunities

The future of GA at the WCA needs strategic consideration. GA generally is struggling to secure upgraded facilities at many Australian airports, simply because delivering new aviation infrastructure is expensive and GA commercial returns are comparatively (to ATO), low. Where grant money is available for development from time to time, few Councils are in a position to co-fund aviation infrastructure that isn't, at the least, operationally cost neutral.

There are also risks to consider relating to mixing ATO and GA traffic at a busy port where there is no air traffic control (ATC) provided. While this will change in the next few years as ATC is introduced, there are existing incident reports of operational conflicts between GA and ATO movements at WCA.

WRC owns and operates the certified airport at Bowen. While it would not likely suit existing commercial GA users of WCA, Bowen should always be considered as a viable alternative for private GA operators looking for a base in the region. It has excellent existing infrastructure, (including 4 RWY options), is ideally located near the township and has land suitable for both aviation and non-aeronautical development.

Having said that, WCA is in an enviable position with 10,000 m² of land already committed to GA with another massive c500,000 m² available for development, should appropriate opportunities materialise.

A range of GA development possibilities at WCA have been considered and these include:

- Upgrading TWY B to open the GA precinct to a greater variety of aircraft
- Provision of land for additional hangarage
- Additional itinerant and aeromedical aircraft parking
- Provision of a dedicated freight and FBO serviced apron
- Development of a vertiport to cater for vertical take-off and landing (VTOL) aircraft ie drones for personal taxis and or freight carriage.

To explore these possibilities further please refer to the accompanying Infrastructure Report.

5.8 Freight Operations

The expansion of air freight services at WCA is specifically recognized as required in each of the MIW Regional Plan, the MIW Regional Transport Plan and the WRC Regional Economic Development Strategy. It is inferred less directly in almost every other reviewed economic development strategy, at state or regional level, that speaks to the WCA.

Furthermore, the MIW Regional and Transport Plans outline the need for the integration of road, rail, airport (and seaport) and the Whitsundays Destination and MIW Transport Plans both outline the potential benefits to regional agriculture and tourism from direct international access.

These documents remain relevant and go a long way to crystallizing the potential for freight operations at WCA.

The WCA made significant progress in realising its freight ambitions with the successful creation and opening of the WCA Freight Distribution Centre in 2022.

5.8.1 Historical Performance

At Nov 2023 the FDC is facilitating an average of 2.1 tonne of freight per month, reflecting a seasonal peak of nearly 3.8 tonne in May 23. To maintain perspective, it should be acknowledged that up until recently, there was zero freight uplift at the WCA.

84% of freight moved is outbound and 92% of this to date has been seafood. At Nov 2023 the most common inbound freight is live animals.

The following charts show the volumes of moved freight since April 2023.

Figure 16: Outbound freight totals by month Apr – Nov 2023.

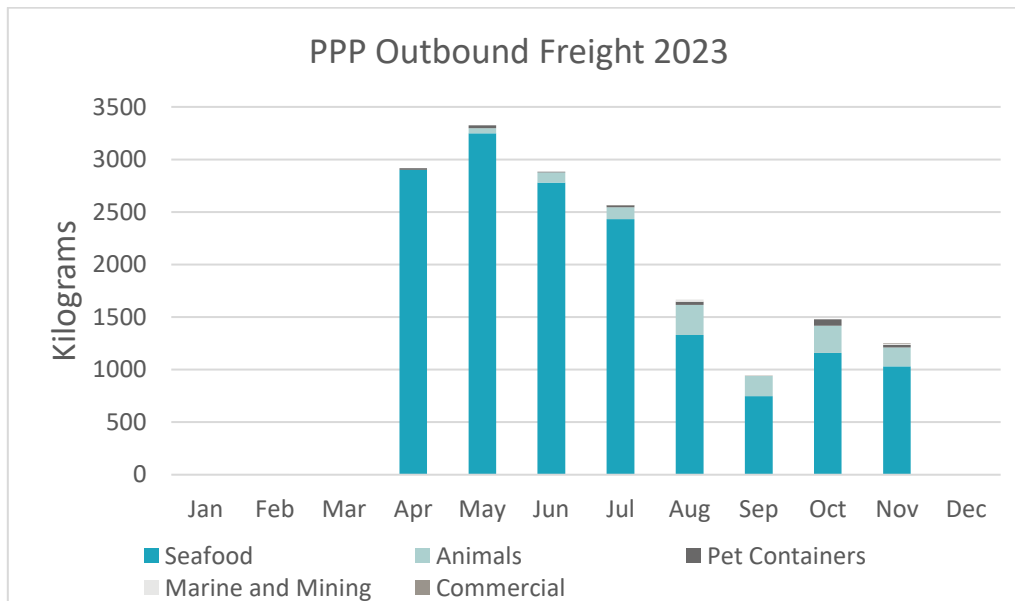
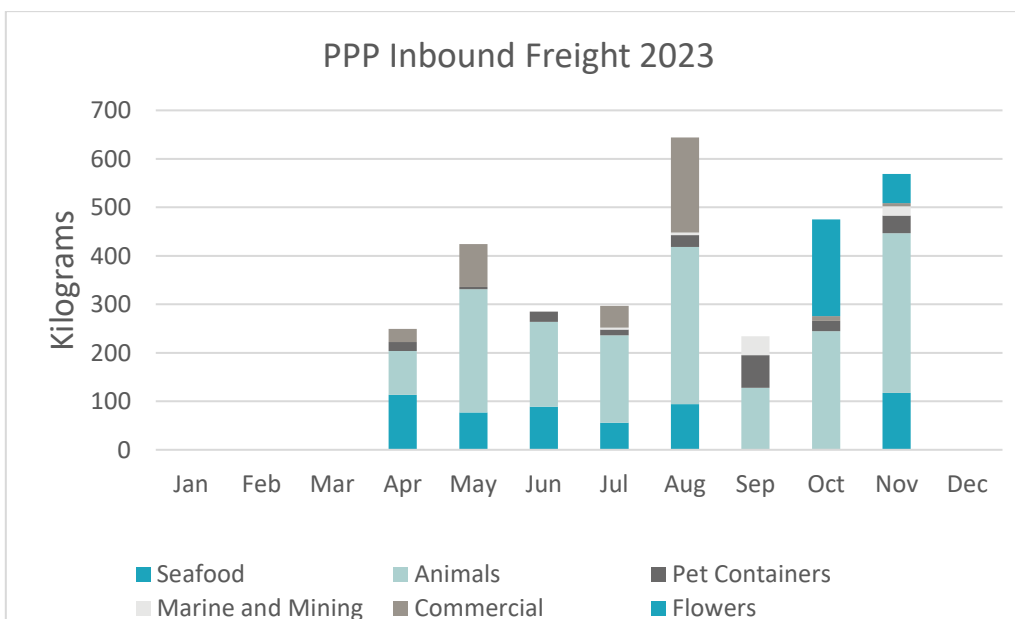


Figure 17: Outbound freight totals by month Apr – Nov 2023.



5.8.2 Underbelly Freight Potential

As a result of the FDC development two of the four airlines currently servicing WCA are now carrying freight in the hold of their ATO aircraft. Commercial negotiations with the other established airlines continue and at the time of writing are close to finalization.

With all its' commercial agreements in place the FDC will begin a targeted marketing campaign highlighting its point of difference from other airports in the region, the 4 destinations serviced directly.

In 2015 it was estimated by schedule and aircraft type that there was 4,483 tonnes of airfreight capacity per annum passing through WCA.

Using the same methodology but based on the November 2023 schedule (annualised), there is now an estimated 6,240 tonnes of underbelly capacity available.

There is clearly significant room for freight tonnage to grow on the back of further investment in the FDC, at the appropriate time.

5.8.3 Freight Infrastructure Requirements

With the development of the FDC in the existing grounds maintenance building, the airport has established itself cost effectively for this first stage in its development as a freight facility.

As freight numbers grow so will the spatial requirements of the FDC. At some future point it is anticipated that the grounds maintenance team, will be relocated out of the primary FDC building.

This Master Plan goes on to support the increase of freight movement by including in the Infrastructure Report the following conceptual infrastructure development:

- A new aircraft parking apron (servicing corporate charter, aeromedical and freight aircraft) efficiently positioned near the FDC
- Commercial development of the GA precinct to bring more potential aviation related freight opportunity (ie. customers) to the airport
- A massive redevelopment of the FDC to the north of the airfield bringing rail, air and road together (the existing satellite FDC terminal would remain to service ATO aircraft).
- Development of a significant new aircraft apron at the future FDC designed for large (up to A321) sized dedicated freighters.

It is anticipated that a fully developed FDC will encompass road, rail and air and be developed at the north end of the airport property.

Future freight development concepts can be viewed in the Infrastructure Report.

6. SCOT Analysis

SCOT

6.1 Strengths

- The Whitsunday region is recognized both nationally and internationally as an iconic tourist destination.
- Domestically the regions iconic status grew significantly over the COVID period.
- The airport has successfully adopted user pays principals and is commercially viable.
- The airport passenger numbers are strong with pre-COVID international visitation still returning.
- There are large amounts of land adjacent to the airport site that can be commercially developed.
- A growing population catchment from Townsville to Mackay
- The Terminal is designed to expand incrementally.
- There is no residential development nearby which minimises noise conflict.
- Strong industry relationships, broad networks, and significant in-house marketing and tourism knowledge

6.2 Challenges

- Increasing aircraft movements placing additional pressure on airport infrastructure.
- Apron expansion is required to cater appropriately for current schedules.
- The runway will need to be strengthened for long haul international flights.
- Direct international flights will require investment in terminal as well as Customs and Quarantine facilities.
- The existing schedule highlights weaknesses in the airport's infrastructure capacity.
- Car parking capacity and rental car availability will need increasing if full potential of airport is to be reached.
- Currently there is a lack of suitable and/or enough accommodation in the region to match demand.
- Airlines may utilise WCA as a domestic network airport rather than implement new international services due to existing links in Cairns and Brisbane.

SCOT

6.3 Opportunities

- Increased PAX volumes will continue to drive airport revenue providing funding for, among other critical expenses, attracting new routes and increased capacity.
- Becoming an overnight base for aircraft could bring additional revenue into the region (accommodation, food & transportation for flight crews) as well as provide an early morning departure.
- The amount of flat, underutilized WCA land lends itself to any amount of aviation and non-aeronautical development.
- A number of projects in the region have the potential to significantly increase passenger numbers.
- There is opportunity to leverage off strong established international flows with domestic connections.
- Opportunity to create an expanded Freight Distribution Centre taking advantage of existing rail spur, highway frontage, and airport.
- The upgrading of aircraft fleets could lead to increased capacity and new routes for the WCA.
- Direct international flights to Asia have the opportunity to create freight export opportunities for local agriculture and aquaculture producers.
- Rising income levels will likely stimulate travel.
- There is a shortage of commercial / industrial land in the region, which provides an opportunity for development at the airport.
- Aviation hub for region including servicing the island destinations.
- Given the volume of road traffic through the airport (hire cars, GTO and private pick up & drop off, staff etc) there may be an opportunity to attract a refueling service provider.

6.4 Threats

- Current world conflicts could escalate further impacting the global economy.
- Natural disasters such as Cyclone Debbie
- A repeat similar to the COVID pandemic.
- The collapse of a partner airline, such as Tiger in 2020
- Delays to the proposed airport upgrades lead to missing out on new or losing existing services.
- Attracting and keeping high quality staff
- Other airports in and around region diversifying their business operations reflecting WCA's intentions
- Increased competition from similar domestic destinations.
- Increased competition from a growing international market.
- Any decrease in the airports' ability to respond nimbly to opportunities as they present.

7. Planning Parameters

The key planning parameters adopted for the preparation of the Infrastructure Report that accompanies this Master Plan are as follows.

7.1 Design Aircraft

Selection of the design aircraft is vital to understanding infrastructure requirements.

7.1.1 Background

The design aircraft for both the 2015 Master Plan and the 2017 pavement rehabilitation works included a combination of the Code C Boeing 738 aircraft and the Airbus A330-300, a Code E widebody aircraft.

The A330 was selected as, at that time, it was considered the most likely aircraft to enable direct flights from Asia return. These aircraft are now near the end of their serviceable life and are being replaced with new, more fuel-efficient Code E widebody aircraft such as the 787 Dreamliner or A350. The smaller Code-C Airbus A321 XLR, is an exciting prospect for the WCA as it can also reach Southeast Asia from the WCA (see Section 5.3.3).

7.1.2 The 2024 Design Aircraft

For the purpose of this planning review the A321 Neo was selected as the critical design aircraft based on the following considerations:

- The much larger A321 only weighs 15.5 tonne more and is 6.9m longer than the A320 aircraft currently used.
- The A321 holds 232 passengers, c 50 more than current Code C aircraft (depending on configuration).
- Jetstar (JQ) have recently acquired a fleet of 18x new A321 aircraft.
- JQ currently provide 60% of all ATO aircrafts movements at WCA (the remaining 40% is spread across 3 other airlines).
- JQ have indicated its desire to utilise A321's at the WCA.
- The A321 is the largest available ATO aircraft type that can use the WCA RWY without an extension.
- An engineering pavement assessment has confirmed the A321 can operate at 85 tonnes at the WCA for the 20 year planning horizon without any significant negative impact on the existing pavements.
- The A321NEO is part of the same aircraft family as the A321XLR that has been identified as the most suitable aircraft to commence international operations at the WCA.

At this time the WCA pavement movement areas are A321 NEO ready but as identified in the Infrastructure Report, many known and potential operational pinch points require addressing prior to the introduction of regular and concurrent A321NEO operations.

7.2 Peak Periods

Understanding the WCA future peak hour traffic is critical to informing both airside and landside infrastructure design.

To assist with this we have used the IATA Level of Service Guidelines focused on Optimum design which is midway between Sub-Optimum and Over-Design specifications.

For design purposes we have adopted a typical future peak hour from the high growth forecast (see Section 5.6.3), catering for 4x simultaneous operations of the design aircraft.

The reasoning behind this is:

- The planning parameters are aligned with the Airports vision to be a world class facility focused on the future.
- WCA's demonstrated success in and current pursuit of, securing new routes and airline partners.
- Most airlines operate their business services before turning to leisure markets causing the schedules to congest early to mid-afternoon. Without the possibility of slot time arrangements, the airlines dictate when they want to operate and often, all want access at similar times.
- The 2017-18 terminal upgrade took an extremely conservative approach to development (i.e. 2x simultaneous aircraft operations) which has lasted just over half its expected capacity life (5 out of 10 years).
- The planning parameters take into consideration the likelihood and impacts of aircraft operational delays and ensures these passengers will be as comfortable as is realistically possible.
- There is not much difference between the low passenger growth infrastructure requirements and high growth, with the notable exception being the allowance for future international operations.

Discussion of terminal and apron peak hour capacity follows.

7.2.1 Terminal peak hour capacity

Expanding the terminal to comfortably cater for 4x simultaneous A321 NEO aircraft operations is realistic and will meet the airport's requirements into the long term.

In calculating the size of the terminal expansion required we have utilised the IATA Airport Design Reference Manual (ADRM) with the Optimum Design requirement of 2.0 - 2.3m² per person for public spaces.

Based on the A321NEO operating at 85% load factors and including all staff, meeters and greeters etc. it is estimated that the terminal will accommodate 1,834 people during the future busy hour and based on the Optimum Design require some 3668m² of public area to comfortably accommodate them.

The current public area provided is 2,266m², a shortfall of around 1,402m².

The proposed terminal expansion is based on the Option 5 International swing gate concept prepared by STEA architects that designed the original terminal and last upgrade.

The departure halls are planned on two levels providing significant additional room for passengers as well as further food and beverage (F&B) and retail opportunity's, including a possible common use lounge facility, as well as supporting future aerobridge installation.

The resulting increases in public area capacity are in the following table. *Note that the proposed 2 staged baggage make up area (BMA) expansions are not public areas and therefore excluded in the calculations for the public area requirements.

Table 11: Existing and proposed terminal square meterage.

Terminal Square meterage	Existing M ²	PRIORITY 1 M ²	PRIORITY 2 M ²	PRIORITY 3 M ²	TOTALS	NOTES
BMA expansion *[Not a public area]		*336				
BMA duplication *[Not a public area]			*504			
Departure Hall expansion - 2 Levels	840	1,977				
Check in expansion	510	192				
Baggage collection area expansion	916			480		
International arrivals hall expansion - 2 Levels				1080		
International Dept processing				85		
Walkways				40		
Sub-totals	2,266m ²	+2,169m ²		+1,685m ²	3,854m ²	=Additional public m ²
Total (existing 2,266m ² + proposed)		4,435m²		6,120m²		
Desired square meterage:	3,668m ²	+767m ² or 21% over	*[Not a public area]	+2,452m ² or 67% over		

The terminal design and a breakdown of the high-level costings are provided at the Infrastructure Report that accompanies this Master Plan.

7.2.2 Apron Capacity

The high growth forecasts for aircraft movements suggests an estimated increase to 5,764 movements per annum in the 10-year time frame.

Table 12: Ten-year maximum forecast aircraft movements

Aircraft movements	No.
2033/34 FY	5,814
Averaged per week	112
Average daily	16

Despite using a 4 simultaneous aircraft operation planning parameter, the apron expansion proposed in the Infrastructure Report will simultaneously accommodate 6x A321 aircraft, or 7 if 2x smaller aircraft are on the alternative markings on bay 6.

It is anticipated that this will be adequate to handle the high growth forecast aircraft movements.

The ATO apron expansion is discussed in depth in the Infrastructure Report.

7.3 Runway Parameters

RWY 11/29 is a Code 4 instrument non precision approach (INPA) runway. The RWY TWY A and the ATO apron were rehabilitated in 2017 resulting in the following pavement strength rating PCN 53/B/1400/T and with current RWY dimensions of 2073m x 45m and a RWS of 150m.

7.3.1 Runway strength/condition.

Selection of the A321 NEO introduced a new design aircraft type for the WCA. Being heavier and longer than aircraft currently operating at the airport, AIMS commissioned Airport Pavement Engineering Specialists (APES) to undertake an engineering assessment to better understand the potential pavement impacts from regular use of the A321.

The APES assessment used the following parameters:

- An indicated maximum aircraft departure weight of 85 tonnes as identified by Jetstar and based on the existing MEL-WCA route.
- Consideration of up to 4,500 annual departures over a 20-year structural pavement design life.
- A CBR of 15% (As was adopted for the 2017 pavement rehabilitation).

In short, the APES review determined that the A321 NEO could be used for up to 4,500 departures p/a, as long as it remained at, or under, the proposed 85 tonne maximum departure mass. More than this weight may see the pavements exhibit accelerated distress, over time.

There are some existing longitudinal cracks in the runway pavements which are continuously monitored, and bitumen sealed against moisture by the ARO's as part of ongoing maintenance.

At some point in the short term (currently budgeted for 2027) it is anticipated that a pavement overlay will be required as part of the pavement maintenance program. Actual timing will depend on influences

such as weather, aircraft frequency and type. This scheduled maintenance is the only foreseeable RWY related works for WCA in the short term.

In the mid to longer term, should WCA wish to introduce the utilisation of Code E aircraft, significant additional infrastructure works are required including a 327m extension to the west. The full scope of these works has been provided previously in separate presentations by Airwork's and APES and these documents remain available for review.

7.3.2 Critical RWY and surfaces data

The following 4 tables provide the current data on takeoff and approach parameters, and transitional surfaces.

Table 13: Take off parameters (RWY 11 and 29)

RWY 11/29 Take off		Take Off Parameters	
RWY Code	Code 4	Inner edge width	180m
RWY Length	2073m	Inner edge elevation RWY 11	16.12m
Clearway (CWY)	60m	Inner edge elevation RWY 29	18.59m
Stopway (SWY)	60m	Splay angle	12.5%
TODA	2133m	Final width	1800m
TORA	2073m	Final length	15000m
		Desired gradient	2.00%

Table 14: Approach parameters (RWY 11 and 29)

RWY 11 Approach Data		Approach Parameters		
RWY Code	Code 4	Inner edge width		300m
Instrument Procedures	INPA*	Inner edge elevation (AHD)		16.12m
RWY Length	2073m	Distance from THR		60m
Clearway (CWY)	60m	Divergence		15%
Stepway (SWY)	n/a	First segment	Length	3000m
TODA	2133m		Slope	2.00%
LDA	2073m	Second segment	Length	3600m
			Slope	2.50%
		Third segment	Length	8400m
			Slope	0%
		Total length		15000m
		Max permitted slope		2.00%
		* Instrument non-precision approach		

Table 15: Transitional surface parameters (RWY 11 & 29 TKOF based)

Transitional surface parameters	
Slope	1:7 or 14.3%
Height	45m
Overall RWS width	150m

Inner horizontal surface Parameters	
Height	45m
Radius	4000m
Reference elevation (RWY 11 TKOF)	16.00m
Reference elevation (RWY 29 TKOF)	17.00m

Conical surface parameters	
Slope	5% or 1:20
Height	100m

7.4 TWY B Codes

Two design aircraft were chosen to demonstrate the upgrades that might be considered for TWY B. For the initial 300m's of TWY B heading away from TWY A, the Gulfstream 8 corporate jet was selected. Beyond the c300m intersection, the King Air B360 used by RFDS was selected as the critical aircraft.

7.5 Other

There are some quite significant concepts presented in the Infrastructure Report that involve infrastructure development. With regards to the planning parameters for these they are based primarily on guidance taken from CASR Part 139 Manual of Standards Aerodromes and Australian Standards where applicable.

END MASTER PLAN.