Rockhampton Airport

ROCKHAMPTON AIRPORT MASTER PLAN

2017 to 2037

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ROCKHAMPTON REGIONAL COUNCIL

ROCKHAMPTON AIRPORT

AIRPORT MASTER PLAN 2017 TO 2037

SUBMITTED BY
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Rockhampton
Airport

Acknowledgment of Country

Rockhampton Regional Council respectfully acknowledges the Traditional Owners of the cultural landscape on which Rockhampton Airport is situated, and pays respect to their elders past and present.

Notice

The 2017 Rockhampton Airport Master Plan is available to the public:

»» For inspection and purchase by the public during normal business hours at the Rockhampton Regional Council Customer Service Offices:
Rockhampton | City Hall - 232 Bolsover Street | 8.00am to 5.00pm
Gracemere | 1 Ranger Street | 9.00am to 5.00pm
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»» By visiting www.rockhamptonregion.qld.gov.au (free download)

Key Contacts

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Rockhampton Airport

AIRPORT FOREWORD

INTRODUCTION FROM ROCKHAMPTON REGIONAL COUNCIL

It is with great pleasure that Council presents the Rockhampton Airport Master Plan 2017-2037; Gateway to Northern Australia.

The Master Plan has been compiled by Leading Edge Aviation Planning Professionals (LEAPP) in consultation with Council and introduces the future Rockhampton Airport as the Gateway to Northern Australia. The Gateway project encapsulates the next steps to deliver the growth and development of the Rockhampton Airport through this Masterplan. However, while the Masterplan is focused on the future it must be noted that the history of the Rockhampton Airport commenced in the 1930's as "Connor Park Airport" and was vested to the Rockhampton City Council in 1989 from the Commonwealth Government.

Today the Rockhampton Airport is a commercialised business unit of the Rockhampton Regional Council turning over in excess of $15M per annum, supporting the region's broader economy and community as a substantial regional Gateway airport. As the largest local government owned and operated airport in the Nation by way of passenger numbers and aircraft movements as well as being ranked by the Bureau of Infrastructure Transport and Regional Economics as Australia's 9th busiest regional airport, the Rockhampton Airport has a strong, established, leadership presence within the Australia Aviation Industry.

Previous City and current Regional Councils have worked closely with all levels of Government to develop the facility to a standard that allows the Rockhampton Airport to receive all Aircraft types.

This Masterplan is the culmination and consolidation of all of the plans throughout the past near 90 years of the airport's history. As a result of projected growth and future major projects planned within the region Council has taken the necessary steps to plan for future access to the region. This planning aims to take advantage of the positioning of the airport and the future Rockhampton bypass allowing access to the North Coast Railway line and the Bruce Highway, providing the ability to create a true multi modal road, rail, air transport and logistics hub.

This masterplan delivers a roadmap for development of the entire site over the next 20 years; positively affecting our Defence, Tourism, Agricultural and Resources sector. While also diversifying our economy to enhance our emerging Aviation, Transport and Logistics specific industries, creating jobs and prosperity for the region.

Rockhampton Regional Council's commitment to the growth and development of the Rockhampton Airport through the Gateway Project is demonstrated via the continual investment and vision to forward plan for our future. Coupled with the desire to provide clarity and communicate the future vision to our stakeholders via the Master Plan.

The Gateway Project will not only deliver catalytic growth benefits for the entire region underpinning the future of our regional economy, but also ensure that our Tourism, Defence, Resources and Agricultural sectors have access to new and emerging markets.

ROCKHAMPTON REGIONAL COUNCIL

NOVEMBER 2017

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DOCUMENT CONTROL SHEET

REPORT TITLE	**ROCKHAMPTON AIRPORT MASTER PLAN**
FILE REFERENCE	**15276SCAMPROCKHAMPTONFINAL 300617**
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ISSUED DATE	**17 NOVEMBER 2017**

**THE PURPOSE OF THIS FORM IS TO ENSURE THAT DOCUMENTS ARE REVIEWED AND APPROVED PRIOR TO ISSUE. THE FORM IS TO BE BOUND INTO THE FRONT OF ALL DOCUMENTS RELEASED FOR THE PROJECT.*

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04

1.0 INTRODUCTION

1.1 BACKGROUND TO THE AIRPORT MASTER PLAN

This Airport Master Plan was commissioned by the Rockhampton Regional Council in late 2015 with the intention to create a formal plan to update a previous Master Plan prepared in 2008. The very first Airport Master Plan for the Rockhampton Airport had been prepared in 1987 by the firm of GHD at the time that the airport was being taken over by the Rockhampton City Council under the Aerodrome Local Ownership Programme. The subsequent Airport Master Plan prepared in 2008 was crafted in the form of an Airport Strategic Development Plan, and although it was not high level in character, it focused very much on the development of the airport infrastructure.

The 2008 Airport Strategic Development Plan was based on addressing several critical issues that were identified as facing the development of the airport. These were:

- How best to accommodate the CASA requirement for a 90m RESA at both ends of the main Runway 15/33 and a possible future 240m requirement;
- What lengths the runways should provide to accommodate present and likely future aircraft based on aircraft performance requirements;
- Whether the site could accommodate a runway parallel to, and west of, the main runway for use by GA aircraft, segregating GA activity and potentially allowing relocation of GA to the south west precinct;
- Rationalisation of the taxiway system development to provide for the most efficient use of the runway system as it is progressively developed;
- Whether the existing crosswind runway (04/22) could be reduced in length and cater primarily for GA; and
- Where to relocate the aircraft fuel storage facilities and joint user hydrant installation (JUHI).

Specific recommendations of the 2008 Airport Strategic Development Plan covered the airside facilities, the aprons, terminal and airside frontage buildings, and the landside facilities. These recommendations are listed in Exhibit 1-1.

EXHIBIT 1-1
MASTER PLAN RECOMMENDATIONS FROM 2008 AIRPORT STRATEGIC DEVELOPMENT PLAN

AREA	FEATURE	DESCRIPTION
Airside	RESAs	Provide RESAs for Runways 15/33 & 04/22
	Runway 04/22	Reduce runway length for Code 2 aircraft
	General Aviation	Expand GA area
	Taxiway System	Extend Taxiway J as Code E to runway end
		Construct Code E taxiway to north runway end on west side of Runway 15/33
		Create Code C taxiway on reduced length of Runway 04/22
		Construct Code B taxiway from proposed satellite GA area to Runway 15/33 & parallel taxiway system
	DVOR/DME	Replacement in same location on airport
	NDB, MET, RFFS, WDI	All locations unchanged
Aprons / Terminals & airside Frontage Buildings	Main Apron	Reserve for apron expansion to south
	Military Facilities	Located to south of terminal building
	Freight Apron	Reserve for Heavy Freight Apron
	ATC Tower	Relocate adjacent to present site
	RFFS	Reserve adjacent to ATC Tower
	FBO Facilities	Locate north of ATC Tower
	GA Facilities	Expand GA facilities including apron and terminal reserve
	Freight Facility	Reserve for code C freight facility
	Commercial	Reserve for commercial aeronautical uses facing Runway 04/22
Landside	Car Parking	Additional car parking capacity
	Commercial	Reserve for commercial uses – eg. hotel
	Fuel Facilities	Relocate adjacent to military area
	Road Access	Provide road access across building area, and additional road access by extension of West St. to military / heavy freight area

Subsequent to completion of the 2008 Airport Strategic Development Plan, there has been no further official master plan, however a number of strategic and detailed planning studies have been prepared. These are listed in the table in Exhibit 1-2.

EXHIBIT 1-2
AIRPORT DEVELOPMENT REPORTS PREPARED SINCE 2008

DATE	REPORT/PLAN NAME
04/2008	Rockhampton Airport Strategic Development Plan (2008) & Draft (Nov 2007)
07/2008	New PANS OPS
06/2009	Apron Lighting Report - RPT & GA
10/2009	Economic Impact of Rockhampton Airport and Development Options
10/2009	Airport Commercial Strategic Planning Information
11/2009	Design Review Report Rockhampton
02/2010	Rockhampton Airport 2029/30 ANEF
03/2010	Rockhampton Region Towards 2050 – Strategic Framework
04/2010	Rockhampton Airport Strategic Land Use
05/2010	Rockhampton Airport Potential International Markets
07/2011	Defence Investment Brief for Rockhampton Regional Council
05/2012	Water Mains Supply Report to Council
07/2012	Proposed Military Defence Precinct
07/2012	Airport Land Use Plan and Strategic Development
08/2012	Current state of proposed new Airport Land Use Plan and Future Airport Development Options
11/2012	Rockhampton Airport Development Opportunities
06/2013	Air Conditioning Assessment Report
08/2013	Rockhampton Airport Master Plan New Road Access Intersection Study
03/2014	Apron Flood Lighting Report
06/2014	Passenger Mix and Behavioural Study Rockhampton Airport
06/2014	Rockhampton Airport Business Development Business Survey
06/2014	HV Transformers Condition and Capacity Report
08/2014	Airline Business Case
10/2014	Rockhampton Airport Master Plan Runway 04/22 Supporting information - Rockhampton Airport Master Plan Runway 04/22
10/2014	Roads Assessment and Maintenance Plan
11/2014	Airport Terminal Redevelopment
01/2015	Rockhampton Region Draft Planning Scheme
2015	10 Year CAPEX Program
WIP	Flood Modelling of Land in the Airport Precinct
11/2015	Runway Resurfacing Project – Preliminary viability Assessment
WIP	HV Demand Report

The above-listed reports and documents, prepared from 2008 onwards, essentially build upon the 2008 Airport Strategic Development Plan and supplement that work. All of the reports and documents prepared since 2008 are focused on specific issues and needs and, in essence, cover the master plan needs, although not in the form of a formalised report. The current situation is that many of the 2008 Master Plan requirements and recommendations have been implemented, although not all, while some are in the process of implementation.

1.2 PURPOSE OF THE MASTER PLAN

This Airport Master Plan is required to take stock of the current situation for the airport, identify current needs and those for the foreseeable future, and plan for accommodation of those needs over the longer term. The Master Plan will also address many of those earlier recommendations from 2008, and from subsequent reports and studies, and establish which are still valid and necessary, and incorporate those into a revised plan for development of the airport over the long term. In addition, the Airport Master Plan will incorporate additional safety and capacity requirements identified during preparation of the Master Plan work and from the air traffic forecasting done to identify future air traffic levels. The resulting Airport Master Plan should provide long term guidance for the Rockhampton Council for development of the site. Specific arrangements and layouts of future facilities identified as being required are suggestions and recommendations, and are designed to safeguard future options and the capability to develop the site. When facility development is to take place, the specific size, location and arrangement of the facility, would be coordinated between the stakeholders involved, the Council and any specialist engineers, architects or planners needed to develop detailed plans at the time. Thus, the Master Plan provides a framework for future detail to be overlaid on the plan as and when needed.

1.3 AIRPORT ROLE & REGIONAL CONTEXT

The Rockhampton Airport was opened in 1930 as the Connor Park Aerodrome, which became Rockhampton Aerodrome later that year. Since opening, the airport has expanded its site area and infrastructure upgrades have been made over the years, including extensions to the two runways in 2000, and a major refurbishment of the passenger terminal completed in 2008.

The airport functions as a mainline regional airport for Queensland, offering Regular Passenger Transport (RPT) jet services to Brisbane and the Gold Coast and, regionally, to Mackay and Townsville. Besides providing this level of air transport connectivity for the town of Rockhampton and its dependent hinterland, the airport functions in a significant way to support the Australian Defence Forces, particularly in supporting military training activities at the Shoalwater Bay Military Training Area, and serving as a training base for the Singapore Armed Forces. The airport is also an important regional base for commercial general aviation operators based on the airport and a service centre for general aviation users resident in the region surrounding Rockhampton.

The airport is an important element of the regional transport system, through its air service connections to relatively nearby regional locations, as well as through its longer–haul connections to southeast Queensland. In addition, the airport facilitates other transportation services through its home-based 'general aviation' operators, which include charter flights, patient transfer, MEDEVAC and rescue services, the regional operations of the Royal Flying Doctor Service, and support to general aviation through provision of aircraft maintenance and flying training.

The Rockhampton Airport, and its future development, features as an economic enabler in the Rockhampton Region Economic Development Strategy due to its existing and potential future role in providing essential infrastructure to enable, support and enhance regional transport connectivity. This applies in a number of key areas of potential strategic economic development, including opportunities in providing essential air transport connectivity for the resource sector (due to its proximity to resource extraction activities as well as known mineral, gas and coal resources), for regional health care and social assistance for which new and expanded east-west air routes and seat capacity have been identified as being strategic development opportunities, for supporting education and training, for enabling improved access to regional tourism opportunities and international trade, and for facilitating defence training through the nearby Shoalwater Bay Military Training Area.

An essential element of the Rockhampton Region Economic Development Strategy is the recognition by the regional government of the role played by transport services and linkages, and its commitment to prioritise investment in transport infrastructure to support and enhance the economic development opportunities of the region. An important feature of this commitment by the Rockhampton Regional Council to develop the regional transport infrastructure is its commitment to:

- Deliver an updated Master Plan for development of the Rockhampton Airport;
- Work with the Airport Management and users to develop new and expanded air routes and increase seat capacity on flights;
- Assess the opportunity to create air freight handling facilities and national and international air freight connections; and,
- Assign airport strategic lands for future defence logistics purposes.

The Airport Master Plan has taken account of the above regional economic opportunities and the need to ensure that facilities and infrastructure planned for the airport support the aims of the Rockhampton Region Economic Development Strategy.

1.4 AIRPORT SITE CONDITIONS & CONSTRAINTS

The Rockhampton Airport is located to the west of the town of Rockhampton and currently occupies a site of 578.36ha, which is owned by the Rockhampton Regional Council. The airport is situated west of the Fitzroy River which flows through the town to outflow into the sea some 40km southeast of the town centre. The airport property effectively creates the western boundary of the developed part of West Rockhampton situated on the western side of the Fitzroy River. A tributary of the Fitzroy River, Lion Creek, flows from west to east through the northern part of the airport property and under the primary runway. Other bodies of water lie to the west, to the north, and to the south of the airport and show evidence of a former meandering river alignment. The Lotus Lagoon to the north of the northern end of Runway 15/33, and the Murray Lagoon immediately south of the southern end of the runway both limit development of the airport to the north and south. An illustration of the airport site and its location is provided in Exhibit 1-3.

The airport site itself is flat and low-lying and situated in the floodplain of the Fitzroy River. Major flooding of the airport site has occurred in the past in the December-February period and this has, at times resulted in closure of the airport, with the runways under water and unusable. In recent years, the airport has been closed due to flooding in 2010/2011 and again in 2013 for periods of a few days to up to 3 weeks. A flood mitigation plan has been prepared by Regional Council in order to attempt to prevent flooding in the future.

Nevertheless, flooding presently remains a significant issue for the airport and represents a high risk for disruption to airport operations and to airport tenants and users. While considerable work has been done to address the flooding issues at and around the airport, the western side of the airport property remains prone to flooding and would be very expensive to develop for airport uses. Any development of the western side of the airport would have a flood water impact on other lands in the area, as water would be displaced by development and would therefore affect other lands. Therefore, any development on the western side of the airport, if contemplated, would need to be designed carefully and in consideration for other land owners. For the Airport Master Plan, aside from use of a small area of land west of the primary runway for the airport's VHF Omnirange and Distance Measuring Equipment (VOR/DME) equipment, it is assumed that the lands on the western side of the runway are constrained by the floodplain and flood implications, and that it would not be practical or cost-effective to develop these lands for airport development.

The airport is subject to winds that are primarily from the SE and SSE and favouring the airport's primary runway (Runway 15/33). The strongest winds occur from these two directions, as well as from the east for a lesser proportion of time. Generally, though, the winds encountered at the airport are below 15.9kts for most of the time with stronger winds recorded for only a small proportion of the time.

Operationally, the overall wind coverage for Runway 15/33 is 99.6% which means that Runway 15/33 provides almost total wind coverage and is available for aircraft operations virtually all of the time under limiting crosswind conditions of 15.9kts. From a wind perspective, winds would require that Runway 15 be used for 46.2% of the time, and for Runway 33 to be used for 13.1% of the time, while either runway could be used under calm conditions and direct crosswinds of less than 15.9kts for almost 40% of the time.

For the secondary runway, Runway 04/22, this also provides a very high degree of wind coverage of 99.2%, with Runway 04 favoured for almost 43% of the time and Runway 22 for only 8.4% of the time. For this secondary runway the easterly wind component establishes Runway 04 as the primary operational runway direction. When the effect of winds for both runways is considered together, the overall wind coverage is 100%.

In summary, both of the airport runways offer a high degree of wind coverage and flexibility for operations. The runways are also properly aligned with respect to local wind conditions. The effect of these wind conditions is demonstrated in the airport's Wind Rose, which is provided as Exhibit 1-4 and wind strength diagram provided in Exhibit 1-5.

1.5 AIRLINE & AVIATION OPERATIONS AT THE AIRPORT

Rockhampton Airport has two asphalt-paved runways. The primary runway, Runway 15/33, is 2568m long and 45m wide (with 7.5m shoulders) and the crosswind runway, Runway 04/22, is 1645m long and 30m wide (also with 7.5m shoulders). This runway is in the process of being reduced in length to 1200m, with the reduction in length occurring at its eastern end. Operationally, the reduction in runway length is aimed at relegating the runway for use by general aviation traffic that would be more susceptible to crosswind conditions above 10kts, such as under an easterly wind, with the benefit from this measure being to release land for development of expanded general aviation facilities at the east end of the runway.

The airport currently receives commercial RPT services by Qantas, Virgin and JetGo serving direct passenger flights to Brisbane, the Gold Coast, Mackay and Townsville.

Due to its proximity to the Shoalwater Bay Military Training Area, Rockhampton Airport experiences considerable military logistics movements and military aviation related to activities taking place at the Shoalwater Bay training grounds. Currently the Singapore Military conduct annual exercises at the Shoalwater Bay training grounds which involves logistics exercises to bring all the military equipment to Rockhampton Airport where it is then taken by road to the training area. Military personnel arrive into Rockhampton via a number of closed charter flights direct from Singapore. During the arrival and subsequent departure operations, at the conclusion of the exercises, the Rockhampton Airport passenger terminal employs a number of mobile desks and movable partitions in order to provide full international processing facilities as needed. During the exercises, both fixed and rotary wing military aircraft, are stationed at Rockhampton Airport. The Singapore Armed Forces have announced further activity at Rockhampton Airport which will put more strain on current infrastructure to accommodate further military activity alongside civilian activity.

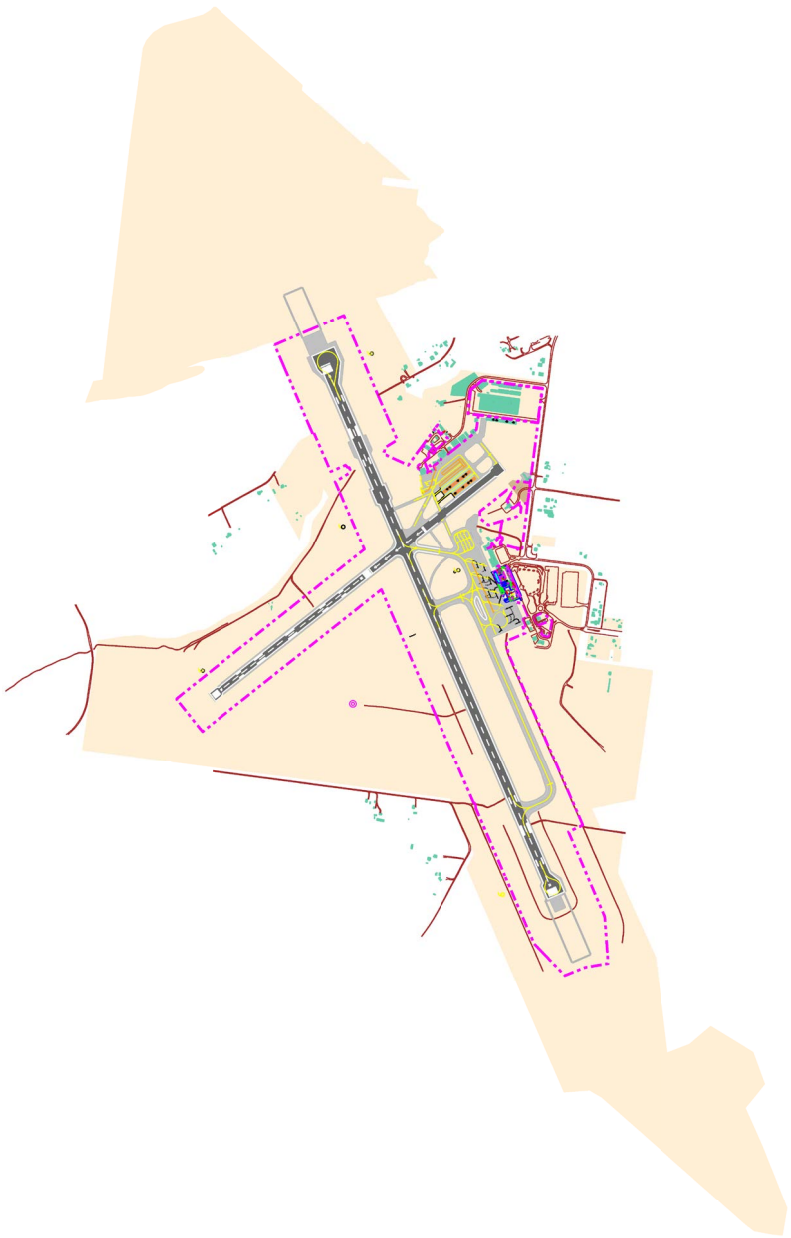
In addition to the Singaporean annual exercises, a number of international military exercises are conducted at the Shoalwater Bay training grounds. These result in personnel, vehicles and aircraft from a number of countries using the Rockhampton Airport.

In addition to its role in serving military activities, the Rockhampton Airport is home to a number of general aviation businesses. These provide services such as flight training, charter services, patient transfer, and aircraft maintenance, and operate from the General Aviation Precinct on the North East side of Runway 04/22. One operator however, Capricorn Helicopter Rescue Services (CHRS), is located to the South East of the old threshold for Runway 04/22. CHRS is in the process of expanding its operation and will be constructing a larger facility in the near future.

1.6 AIRPORT ADMINISTRATION, MANAGEMENT & OPERATIONS

The Rockhampton Airport is owned and operated by the Rockhampton Regional Council, and the airport forms a business unit of the RRC. The airport is managed by a General Manager, who reports to the Council. Regional Council staff assigned to the airport number 23.

The reporting relationship of the airport and its own organisation structure is provided in Exhibit 1-6.



Scale

0 0.25km 0.5km 1km

Rockhampton Regional Council

Legend:

Airport Security Fence

RRC Owned/Leased Land

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 1-3
Rockhampton Regional Council
Owned / Leased Land Area

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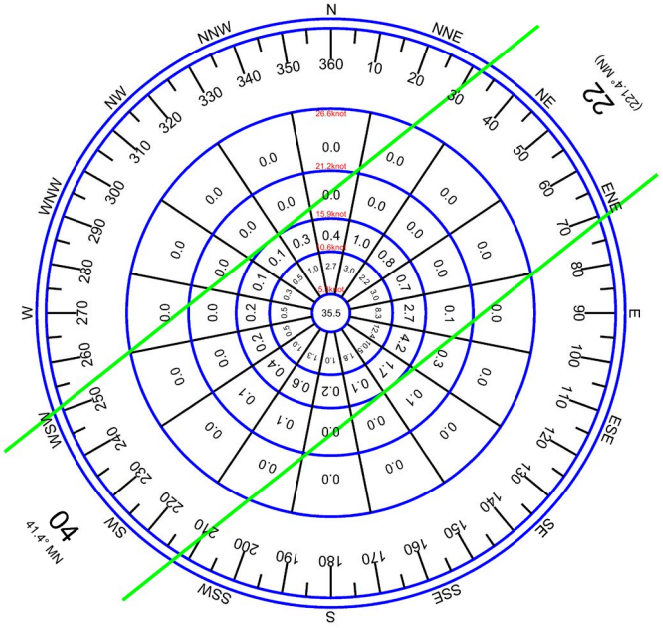

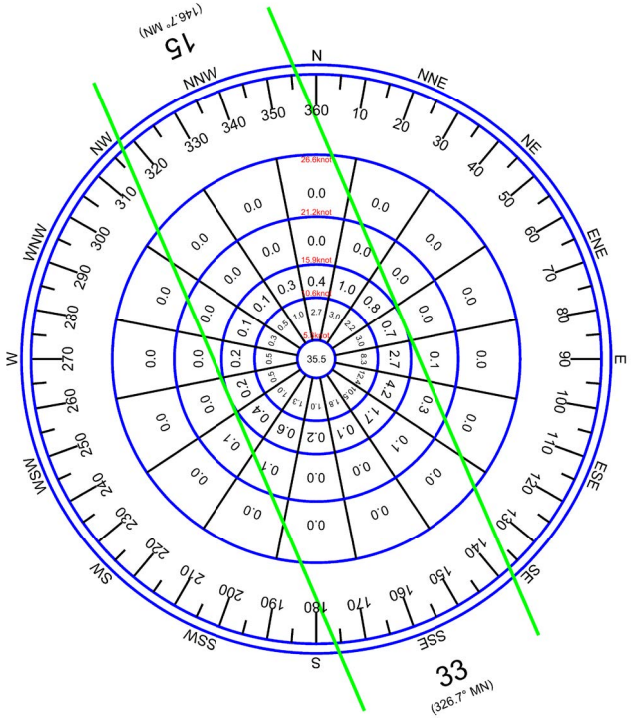

Frequency of Winds by Wind Strength & Direction (%)

Analysis of Wind Coverage for Runway 04/22

Wind Coverage Condition	Frequency %
Wind Coverage for Runway 04/22 at 15.9kts limiting crosswind	99.6
Frequency of Winds > 5.3kts requiring use of Runway 04	55.2
Frequency of Winds > 5.3kts requiring use of Runway 22	9.0
Frequency of Calm Winds <5.3kts permitting use of either Runway 04 or 22	35.5
Frequency of Crosswinds greater than 15.9kts	0.3

Above analysis based on 15.9kts as limiting crosswind condition

Analysis of Wind Coverage for Runway 15/33

Wind Coverage Condition	Frequency %
Wind Coverage for Runway 15/33 at 15.9kts limiting crosswind	99.6
Frequency of Winds > 5.3kts requiring use of Runway 15	50.0
Frequency of Winds > 5.3kts requiring use of Runway 33	13.8
Frequency of Calm Winds <5.3kts permitting use of either Runway 15 or 33	35.5
Frequency of Crosswinds greater than 15.9kts	0.3

Above analysis based on 15.9kts as limiting crosswind condition

Source : Demeyne Aviation Wind Data for Rockhamptom Airport August 2007

Rockhampton Regional Council

Legend:

Runway Alignment

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 1-4
Runway 15/33 and Runway 04/22
Wind Rose Analysis

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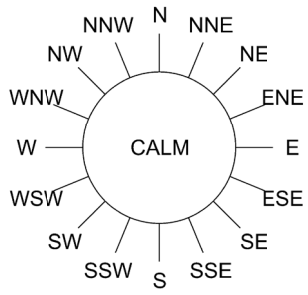

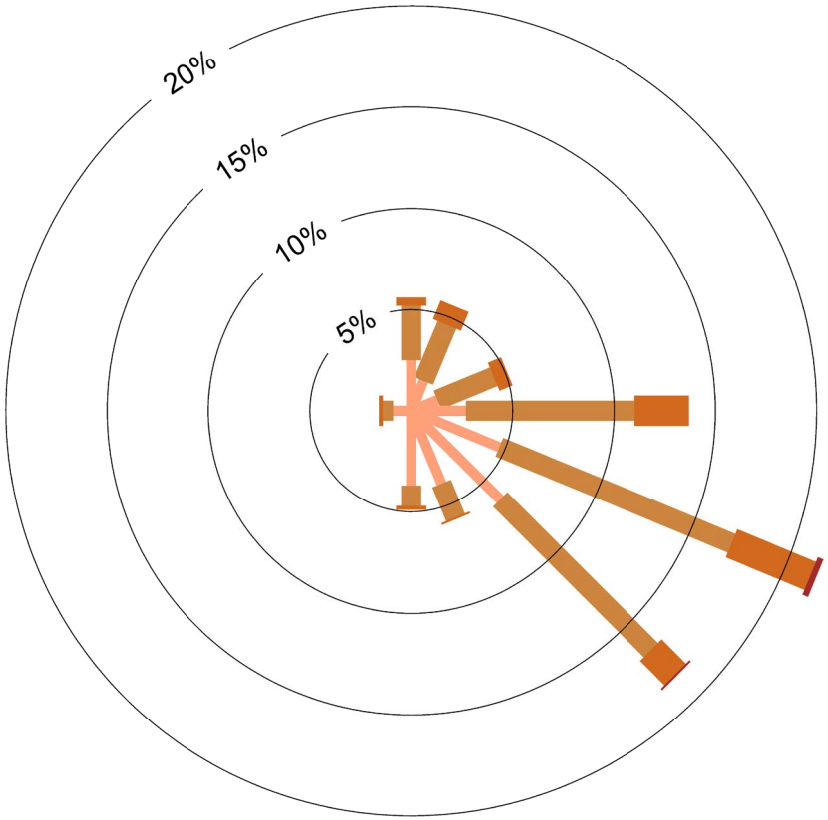

Rockhampton Regional Council

Legend:

- > 0 km/h and ≤ 10 km/h
- > 10 km/h and ≤ 20 km/h
- > 20 km/h and ≤ 30 km/h
- > 30 km/h and ≤ 40 km/h

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 1-5
Wind Direction vs Wind Speed in km/h
for Rockhampton Airport

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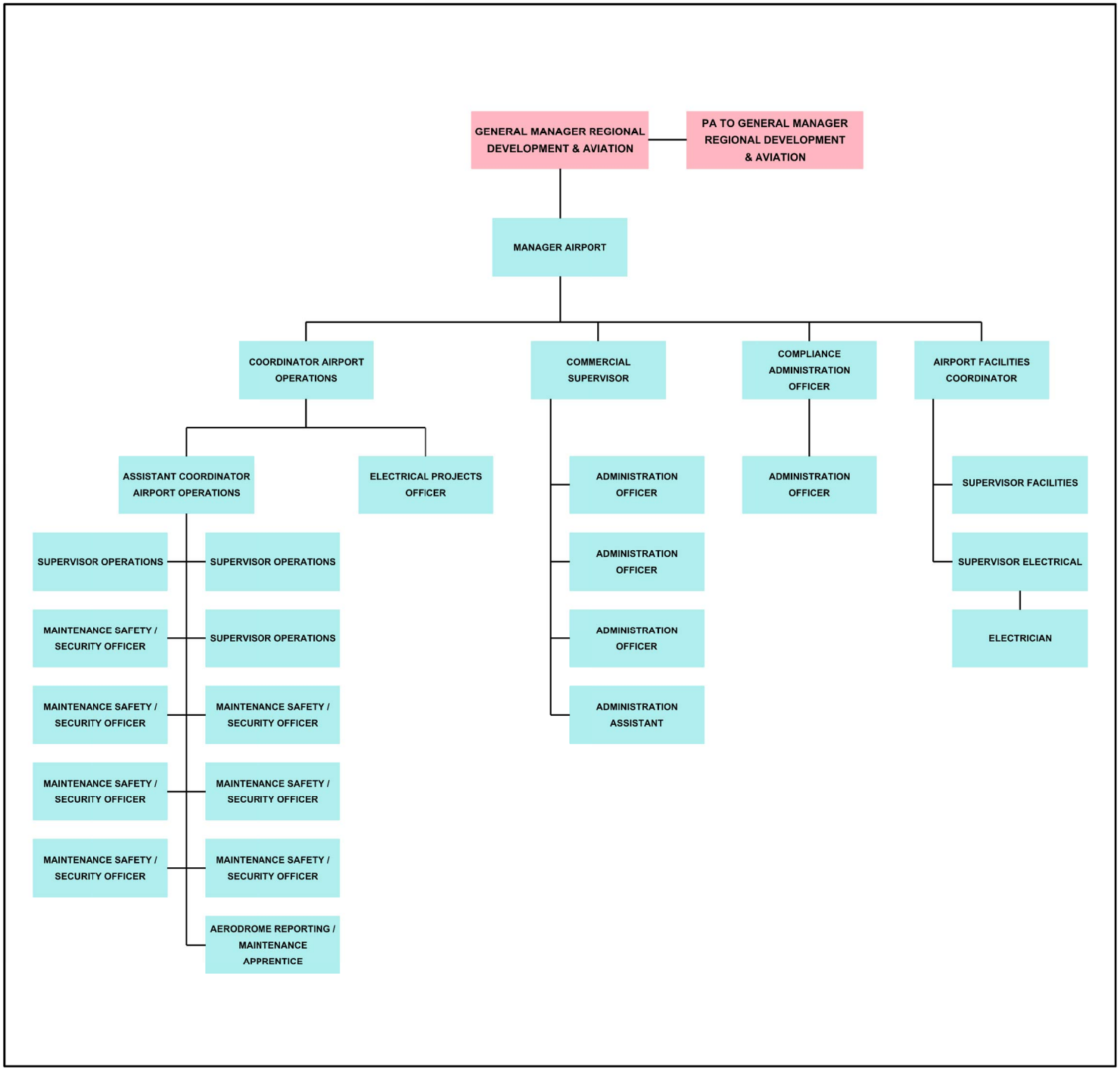

Rockhampton Regional Council

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 1-6
Airport Organisation Chart
(2017)

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AIRPORT INFRASTRUCTURE 2.0

2.0 AIRPORT INFRASTRUCTURE

2.1 AIRSIDE FACILITIES

The primary runway at Rockhampton Airport is Runway 15/33 which is 2568m long and 45m wide, on an alignment of 148/328°. This was originally constructed in 1946 as a gravel runway with a length of 1250m. The present runway, now 2568m long, is a grooved flexible pavement, surfaced with asphalt, with a reported pavement strength of PCN 72/F/C/1400/T. At this strength the runway strength exceeds current requirements for the RPT services and is capable of carrying substantially heavier aircraft.

The secondary runway (Runway 04/22) is 1645m long and 30m wide on an alignment of 043/223°. It has a reported pavement strength of PCN 20/F/C/1000/T. It is proposed that Runway 04/22 be reduced in length from 1645m to 1200m with the reduction occurring at the east end so as to enable lands east of the runway to be opened up for aviation development.

The condition of the primary runway is good, although a pavement testing report prepared in 2014 suggests that the surface condition is coarse towards the northern end where there are several mill and fill repairs done in the past. At the southern end of the runway there are signs of weathered aggregate, but no secondary ravelling and an essentially similar condition to the north end of the runway. Flood damage is evident in the form of localised surface delamination and bitumen stripping. A very course surface texture was also noted in one localised area and this needs to be made waterproof.

Taking the above four items into consideration shows that there are problems, some small, some more significant, over almost the whole length of the runway. The PCN of 72 is appropriate for the existing pavement, and the pavement testing consultants have suggested that the B777-200ER should be considered in the future as the design aircraft (although the larger, heavier B777-300ER had been used in the tabulation in the report. It is noted that the ACNs for the B737-800 and B777-200ER are 51 and 67 respectively on the particular "C" subgrade, so with a tested PCN of 72, the runway offers a sufficient strength for the future. Interest in accommodating the B787-9 operated by carriers such as Air New Zealand, would require an increased pavement strength as the ACN on a C subgrade for the B787-9 is 88.

Pavement testing was carried out for the primary runway and various taxiways and a report on this was published in 2015. This proposed two main options for resurfacing the runway and taxiways, from which a later third option was developed as a hybrid of the first two. The two primary options for resurfacing of Runway 15/33 and its taxiway connections had the following features:

a. Option 1 – Asphalt Overlay

Option 1 proposed a 65mm asphalt overlay applied over the runway pavement after the existing surface has been milled off. This overlay option took into account the need for some re-shaping of the runway surface, although due to milling Option 1 did not add to the structural value of the pavement. The construction cost for Option 1, as proposed, was $11.7M.

b. Option 2 – Surface Treatment followed by Overlay

> **Option 2 proposed an initial Surface Enrichment Spray Treatment (SEST) with bituminous emulsion, followed by an asphalt overlay some three years following the SEST application. The pavement resurfacing report advised that the efficacy of the SEST would have to be tested and that this treatment it does not provide a panacea on its own. Construction cost for Option 2 was proposed as $13.8M, with the immediate cost for the SEST element being $1.1M and the remainder of the cost being incurred for the overlay component some 3 years later.**

Of the above two initial approaches, Option 1 offered a better and more robust solution, and an early opportunity to correct any surface shape issues and create a superior drainage condition, despite there being no added structural value from this due to the extensive milling proposed for the existing surface. This is of no consequence if the PCN of the pavement is 72 as tested. The approach suggested as Option 2, to apply a SEST, provides a more cosmetic response to immediate surface problems, and may provide an increase in skid resistance if the correct sand material is chosen. However, it is noted that the SEST option also involves an overlay to be applied some three years later, and as that overlay will also involve milling the runway surface, the benefit of the initial SEST (applied at an initial cost of $1.1M) would be entirely lost, as that would also be milled off along with the underlying asphalt wearing surface in preparation for application of the later overlay. Effectively, the SEST option could defer the Option 1 overlay by up to 3 years, but would not obviate the need for the proper solution which is to apply an asphalt overlay.

However, following surface enrichment trails carried out in August 2015, a lower cost hybrid option was developed which comprised elements of Option 1 (asphalt overlay) and Option 2 (SEST followed by asphalt overlay), and this was finally put forward as "Option 3". Under this approach, Option 3 offered an asphalt overlay only over the central 22.5m section of the full 45m wide runway. Outboard of this overlay and on both sides of the central section of the runway, Option 3 also proposed applying the SEST treatment only to the two sides of the runway on either side of the central section, since these areas are outside that part of the runway pavement that is normally travelled by aircraft using the runway. The construction cost for the hybrid Option 3 was proposed as $5.3M as an initial cost. This third option represented a sensible approach to the issue of resurfacing Runway 15/33 and one that carried an initial cost that would be considerably lower than applying a full asphalt overlay.

In November of 2017 the Rockhampton Regional Council was successful in receiving grant funding via the Federal Government's Building Better Regions Fund, this funding now allows for the delivery of an asphalt overlay for the main runway; surface enrichment of the taxiways, runway shoulders and both the military and regular public transport aprons. The funding received totals $5M, with the overall project cost between $10-12M, the project will commence in June of 2018, addressing the current runway operational maintenance requirements while also providing faster turn around times in re-opening the runway should the airport be flood affected.

The airport's taxiway system comprises four taxiway connections from the primary runway to the general aviation apron (Taxiway F), to the main apron at the Passenger Terminal (Taxiways A and B), and to the main apron via a partial parallel taxiway (Taxiway J). Taxiway J also provides a parallel taxiway to the primary runway over a distance of 1000m on the east side of Runway 15/33 enabling larger aircraft landing on Runway 15 to exit the runway without back-tracking. The pavement testing report of 2015 advised that Taxiway J showed high deflections and was therefore in need of some rehabilitation improvements.

In addition to these taxiways, there are three taxiways (Taxiways E, G and C) that lead from Runway 04/22 to the general aviation apron, and a further taxiway leading to general aviation hangars in the northeast of the general aviation area. There is no parallel taxiway system serving Runway 04/22 and taxiing on the runway is required for most operations.

2.2 PASSENGER TERMINAL COMPLEX

The Passenger Terminal Building at Rockhampton Airport caters to passenger traffic generated by regional domestic RPT flights that connect Rockhampton to Brisbane, the Gold Coast, Mackay and Townsville. There are some limited international aviation operations that are primarily charter flights or ferry flights operated by or in support of the New Zealand, Singapore and Australian Defence forces. With increases in military activity, and more training conducted with the US military as well as the Japanese Marines, there will be further increases in international military flights and passenger processing.

The Passenger Terminal is located approximately opposite the centre point of primary runway on the north eastern side of the airfield. It was originally designed by Bligh Voller Architects and had a major redevelopment undertaken in 2007 to designs prepared by STEA Architects. The building is approximately 7,150m^2, and although designed for vertical separation of arriving and departing passengers it currently operates as a single level terminal with a small mezzanine level above the ground floor that contains the Airport Operations offices and plant equipment. All passenger processing functions, airline offices, baggage handling areas, lounges and concessions are undertaken on the ground floor. There are currently no passenger boarding bridges serving the terminal so all apron operations are conducted in a remote stand format requiring passengers to walk across the apron to/from their aircraft. The Terminal Building is a modern steel, glass and concrete construction, with a clay brick theme running through much of the ground floor elements. It appears to be clean, well maintained and in good condition with a pleasant atmosphere.

The Passenger Terminal is currently operating within its capacity for domestic passenger movements. Based on current passenger traffic demand, the building size necessary to accommodate the current passenger demand is 3640m^2. As the passenger terminal has a floor area of 7150m^2, there is adequate space to accommodate increased passenger demand in the future. However, the allocation of the space does not provide capacity in all areas and therefore, there is a need for a reconfiguration of some parts of the terminal as identified in this report.

The check-in facilities are more than adequate in size to handle the current number of peak hour passengers. The current area of the check-in hall is 633m^2 compared to the current demand for space of 140m^2. Although there are no plans to have self-service kiosks installed, there is available space to accommodate such future implementation if desired by either of the main airline operators. Similarly, the baggage claim area, which contains two bag claim devices and provides 530m^2 of waiting space and 65m of bag claim device frontage, is sufficient to cater for the present level of peak hour passengers. Current demand for baggage claim frontage is 19m of bag claim frontage and 132m^2 of waiting area space. There are occasions when the larger of the two baggage claim devices, is cordoned off to facilitate separation of arriving international passengers with the use of an operable wall. During these occasions the remaining, smaller, baggage claim device is capable of catering to the current level of peak hour arriving passengers.

The departure lounge has an area of 615m^2 and is used entirely for domestic passengers most of the time. However, the room has an operable wall to allow separation of the lounge for separated processing of international departure passengers. When this operable wall is in place, the room is split into a domestic lounge of 375m^2 and an international lounge of 240m^2. The departure lounge can accommodate its current level of peak hour passengers comfortably, at an acceptable level of service. The level of service is diminished, however, by a lack of toilet amenities and concessions available to passengers inside the departure lounge. Currently, only 2 singular unisex disabled toilets are provided, and vending machines form the only available food and beverage option.

Analysis of the security screening process indicates that there is adequate physical space to allow for processing of passengers. However, acceptable queuing times and distances depend on operational procedures, in-particular a need to ensure security screening processing times are less than 13 seconds with 1 lane open, or less than 26 seconds with 2 lanes open. If these rates cannot be achieved then the maximum wait time for passengers when queuing for security will exceed 10 minutes, which is deemed necessary to maintain an optimum level of service, and as a result additional queuing space will be required. Current passenger demand should not exceed the capacity of 1 security screening check point. However, reports suggest that there are occasional flight delays due to delays at the security processing point. A lack of airside concessions and amenities has resulted in passengers staying on landside for longer before proceeding to pass through security into the departure lounge. Passengers tend to wait on landside until their flight is called before proceeding through security to the departure lounge, and this creates an unconventional surge at the security screening checkpoint putting unnecessary pressure on staff, systems and space. Clearly, the lack of airside amenities in the departure lounge, and the practice of passengers to wait on landside until flights are called is creating delays for the airlines and excessive congestion at the security screening point, and this situation is of major concern for the smooth operation of the terminal within acceptable levels of service.

As outlined in the 2014 Passenger Mix and Behavioural Study a large proportion of passengers travel for business purposes. Qantas is the only airline to operate a members' lounge at the terminal. This lounge is unstaffed and located on the landside, which is not ideal for the timely facilitation of passenger flow through to the airside departure lounge. Consideration should be given to removing landside access and providing direct access airside access to/from the departure lounge pending adequate staff monitoring of the lounge. The Qantas staffing area adjacent to the lounge is excessive and may provide future expansion opportunities. Under current economic conditions it is understood not to be feasible for an additional members' lounge to be developed, however this should remain an option for future revenue generation when the level of passenger traffic warrants this.

There are various areas within the Passenger Terminal that are under-utilized and this may be rectified by re-locating some existing uses, or introducing new uses, to these areas. The ends of the terminal in the check-in and baggage claim may accommodate re-located rental car kiosks and internet and mobile device charging stations. This may help to disperse passengers within the terminal, reducing congestion in the circulation corridors and reducing spatial pressure on key holding points.

A room at the south end of the Passenger Terminal has been set up and dedicated to Eddie Hudson, a World War II pilot who hailed from Rockhampton. Eddie Hudson was a notable pilot during WWII and received the Distinguished Flying Cross flying "G for George"; an Avro Lancaster MK I Bomber, and held a reputation for bringing its crews home alive. The Eddie Hudson Room is adorned with photographs and memorabilia related to Eddie Hudson, G For George, and the contributions made by the people of Rockhampton to the war effort. This room and its memorabilia, is important to the community and therefore, important to maintain. It is open to the public only on special occasions and therefore it is not available to the public on a general basis. This room is also used to process International Arrivals from the closed charter flights operated during foreign military exercises. The Eddie Hudson memorial room could be used in the future when passenger demand increases to a point where expansion is required. The memorabilia within this room may be more appreciated in a more accessible and visible part of the terminal.

2.3 GENERAL AVIATION FACILITIES & ACTIVITIES

Several general aviation activities are hosted at the airport. These are described in the following paragraphs:

CAPRICORN HELICOPTER RESCUE SERVICE

The Capricorn Helicopter Rescue Service (CHRS) operates from a facility next to the Bureau of Meteorology on Canoona Road. CHRS provides medical evacuation services and search and rescue services, operating under the RACQ banner. CHRS covers a region that extends north to St Lawrence, west as far as Emerald, south to Gladstone and 1770, and east along the Capricorn Coast.

ROYAL FLYING DOCTOR SERVICE

The Royal Flying Doctor Service (RFDS) provides essential medical and evacuation services to rural and remote communities. The RFDS Base at the Rockhampton Airport commenced operations in 1995. This now has a new passenger transfer facility which opened in April 2015.

ROCKHAMPTON AERO CLUB

The Rockhampton Aero Club operates from a building located in the middle of the General Aviation Precinct and provides flight training, charter services and facilitation for private recreational flying. The Aero Club has a history that goes back to the establishment of the original Conner Park Aerodrome in 1946. Currently the Rockhampton Aero Club owns several single and twin engine piston aircraft that are based at the airport.

PEACE AVIATION

The Peace Aviation facilities are located in the General Aviation Precinct. The company offers flight training, charter services, aircraft rentals, and flight tours of the region.

ROSE AIRCRAFT ENGINEERS

Rose Aircraft Engineers (RAE) offers aircraft maintenance services for aircraft up to 5700kg. RAE operates from 2 Council-owned buildings in the General Aviation Precinct. The buildings are approximately 40 years old.

MIGJET ADVENTURES (RICHARD MCDONALD)

MigJet Adventures operates charter and hire aircraft. The company used to operate a Mig 15 fighter jet and intend to find another high performance ex-military aircraft to provide adventure flights after the retirement of the Mig 15. The owner, Richard McDonald, also operates a crop spraying and water bombing business from the hangar at Rockhampton Airport.

JM KELLY

JM Kelly Pty Ltd is a construction-contracting firm that owns a hangar on the airport that is approximately 30m x 30m. The company stores its business jet in the hangar.

JIM GORMAN

Jim Gorman is in the process of constructing a new hangar at Rockhampton Airport. This hangar is located between the PIQ facility and Rose Aircraft Engineering.

2.4 OTHER AVIATION SUPPORT FACILITIES & SERVICES

PRIMARY INDUSTRIES QUEENSLAND

Primary Industries Queensland is an organisation providing logistical support to the Singapore Armed Force during their training activities in the Shoal Water Bay training area. As the SAF training activities are limited to specific times of the year, PIQ stores and maintains the SAF equipment at the PIQ facility in between SAF exercises. PIQ has a large facility located on Canoona Road at the North East corner of the General Aviation Precinct.

AUSTRALIAN DEFENCE FORCE

The Australian Defence Force (ADF) maintains a large logistics 'camp' off Canoona Road next to the airport. Rockhampton Airport is an important logistics facility for the ADF during joint military exercises such as the semi-annual Talisman Sabre joint military exercise. During such exercises, the ADF and the US Military, occupy the land between Runway 04/22 and the RFFS facility. In addition, ADF and US Military aircraft use the airport during the exercises.

AIR SERVICES AUSTRALIA

Air Services Australia provides two distinct services at Rockhampton Airport. It is responsible for the critical functions of providing Air Traffic Management for the airport and its approach airspace, the operation and maintenance of the airport's fixed navigation aids, and for providing the Airport Rescue and Firefighting Services (RFFS).

Air Services currently operates from a new building completed in 2012 that contains the Air Services ATM functions along with an integrated Air Traffic Control Tower. This facility is located north of the old terminal building, beside the main apron.

The navigation aids located at the airport, and owned and operated by Air Services, comprise a VOR/DME and an NDB. Although, satellite-based (GNSS) approaches are published for Rockhampton Airport, the VOR/DME and NDB located at Rockhampton Airport have been identified as forming part of the Air Services Backup Navigational Network (BNN). This network of conventional terrestrial-based navigation aids will remain in place while navigational aids that are not part of the BNN begin to be phased out, starting in May 2016. Air Services has not identified how long the BNN navaid facilities are to remain active and, as such, they are assumed to remain active through the Master Plan period. The VOR/DME installation is in the floodplain lands west of Runway 15/33, while the NDB is located in the northeast part of the airport site.

The Airport Rescue and Firefighting Services provided by Air Services at Rockhampton Airport operate from an RFFS facility immediately adjacent to the Air Services ATM building at the north end of the passenger apron. This places the RFFS facility near to the middle of the main runway, giving nearly equal distance between the two thresholds of Runway 15/33. The RFFS facility is also near the intersection of Runways 04/22 and 15/33 and, therefore, is located so as to provide the shortest distance to the thresholds of Runway 04/22. As most of the traffic at Rockhampton Airport is Code C or smaller, Air Services maintains a permanent Category 6 fire-fighting capability at all times. However, the RFFS at Rockhampton Airport does have the facilities and equipment to operate a Category 8 fire cover if necessary. During the Singapore Armed Forces exercises, Rockhampton Airport receives a number of Code E wide-body jet aircraft, and when these are operating at the airport, Air Services is able to provide an appropriate Category 8 RFFS cover during those operations.

BUREAU OF METEOROLOGY

The Bureau of Meteorology (BOM) operates a weather station at Rockhampton Airport. The facility is located beside the CHRS facility, and behind the Air Services facilities. BOM has identified a programme for automating its facilities across the country. The MET station at Rockhampton Airport has been identified to be fully automated between 2018 and 2021. Some new automated equipment will be installed at the airport as part of this programme. As the site of the MET facilities occupies an area more appropriate for other aviation uses under the Master Plan, relocation of the MET service should be considered especially as the operation will become automated at some date within the Master Plan period and its location is therefore less critical. Any new installations of MET equipment under the automation programme should therefore be done at a new site, so as to reduce the impact of moving the MET facilities later. As the process of installation and calibration of new MET equipment takes considerable time, relocation of the MET facilities should be initiated to coincide with the automation project to ensure adequate calibration of new equipment with existing facilities.

VIRGIN AUSTRALIA

Virgin Australia operates flights between Rockhampton and Brisbane on a daily basis using Boeing 737, Airbus A320 and Embraer E190 aircraft. Within the passenger terminal, Virgin Australia operates a number of check-in counters and a station office.

QANTAS LINK

Qantas Link is a regional subsidiary of Qantas Airlines. Qantas Link operates flights from Rockhampton to Brisbane, as well as a service connecting Rockhampton to Mackay, Townsville and Cairns. These services are operated using Bombardier Dash-8 Q400, and Boeing 717 aircraft. Qantas Link operates four check-in counters in the Passenger Terminal building. However, the airline usually opens two counters which is sufficient to accommodate demand. On occasion they open an additional counter as demand dictates.

QANTAS FREIGHT

Qantas Freight provides a freight and logistics service for Qantas Link operations. This is provided from their freight facility located near the Passenger Terminal Building.

VIRGIN FREIGHT

Virgin Freight operates from a building at the airport and provide freight and logistics services for Virgin operations. This is provided from their freight facility located near the Passenger Terminal Building.

JETGO

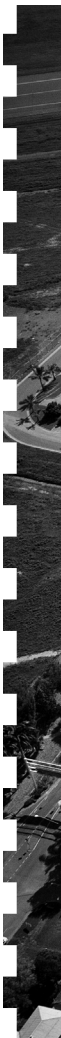
JetGo is a regional airline that started operations at Rockhampton in late 2015. It currently provides passenger services from Rockhampton to Townsville and to the Gold Coast. JetGo currently operates Embraer 135, and 145 aircraft on these routes.

AEROCARE

Aerocare provides ground handling and freight services for all Virgin Australia and QantasLink flights at the Rockhampton Airport. Aerocare operates from a building next to the Qantas Freight facility near the Passenger Terminal Building.

AVIATION FUELLING SERVICES

Aviation fuelling services are provided by Shell and Caltex. Shell provides AVGAS to light aircraft operators from a self-service pump and dispenser. Caltex provides a fuelling service for turbine aircraft supplying Jet-A1 on the airport. Caltex operates a bowser tanker unit and also operates a fuel hydrant system. Both fuel suppliers operate both a fuel tanker and the hydrant fuel facilities on the main apron.



2.5 LANDSIDE FACILITIES

AIRPORT ACCESS

The primary road access to the airport is via Hunter Street. As Hunter Street leads towards Rockhampton, it turns into North Street. Both Hunter Street and North Street are residential streets and the Rockhampton Base Hospital is also located on North Street. A secondary access to the airport is from Canoona Road.

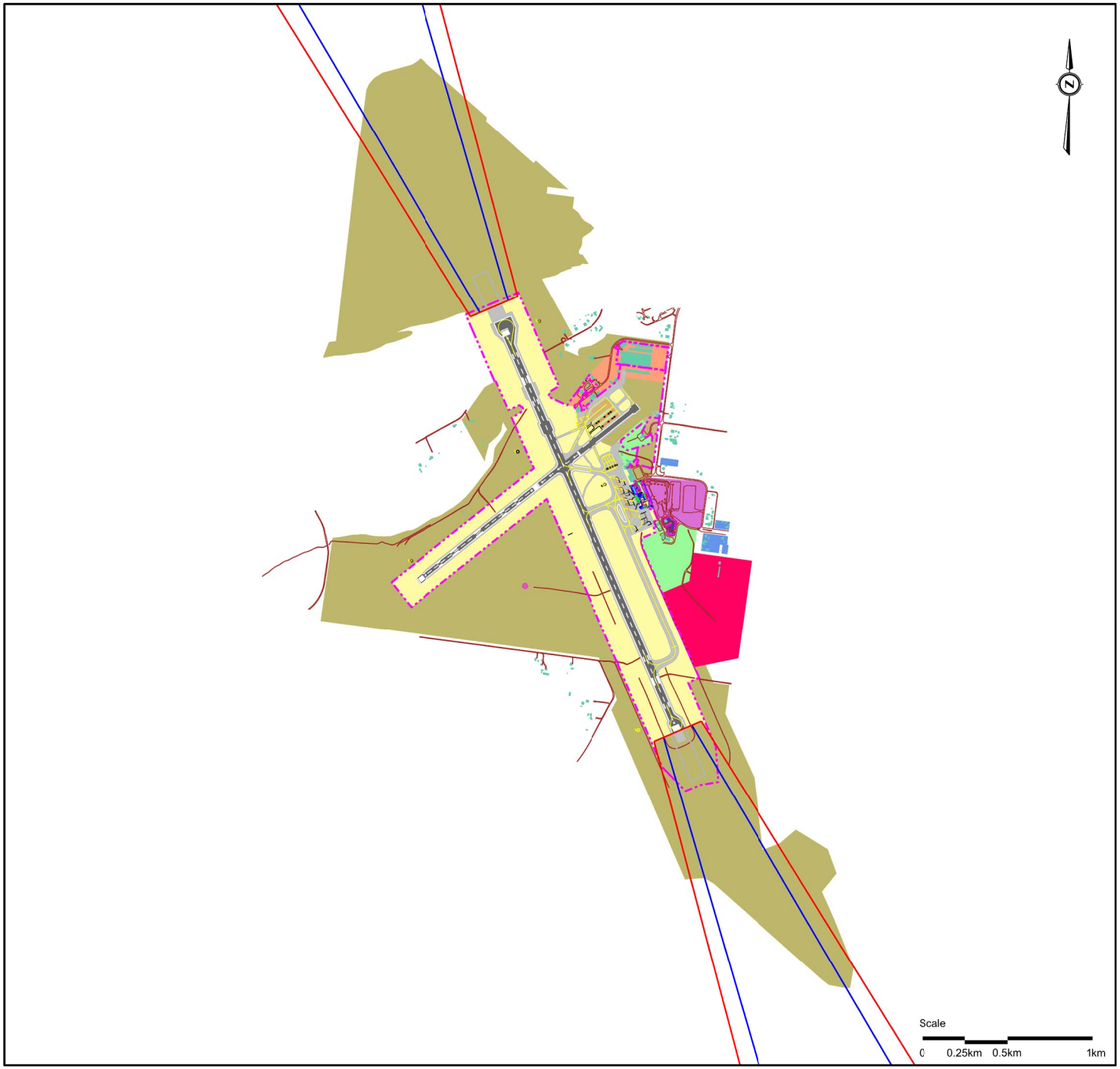
The Department of Infrastructure and Regional Development is currently planning a bypass road to take traffic off the A1 Bruce Highway at the Burnett Highway intersection, and divert traffic to the West of Rockhampton. The Bypass will reconnect with the Bruce Highway at Glenlee and is expected to reduce the amount of traffic passing through the centre of Rockhampton. As part of this bypass road system, access from the Bruce Highway to the Airport would be from the north where an interchange would be created at Ridgelands Road, connecting to Canoona Road. Regional Council would like the primary access route to the airport to be from Canoona Road, rather than from Hunter Street.

AIRPORT CAR PARKING

The airport provides a long term car park with 332 parking spaces and is accessed from Canoona Road. The car parking within the airport comprises 231 short term parking spaces, 143 rental car spaces, and a 2 minute drop off/pickup zone, 194 premium long term parking spaces, and 72 covered premium car parking spaces.

LANDSIDE COMMERCIAL SPACE

The Council owns a number of parcels of land surrounding the airport. These can be seen in the land use diagram provided in Exhibit 2-1. The parcels of land owned by the Council, and available for use, are located on the north and south side of Hunter Street just prior to the entrance to the airport, and on the east side of Canoona Road next to the Budget Car Rental lot.



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Airport Operational Area
- Airport Support Facilities
- Car Park
- Fuel Storage
- General Aviation
- Future Landside Commercial Development
- Proposed Military Precinct
- Miscellaneous

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 2-1
Land Use Plan

L • E • A • P • P

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FUTURE DEVELOPMENT OF THE AIRPORT 3.0


QANTAS

3.0 FUTURE DEVELOPMENT OF THE AIRPORT

3.1 CRITICAL ISSUES FOR CONSIDERATION

FLOODING

The Rockhampton region is prone to flooding due to water in the Fitzroy River overflowing its banks as a result of severe weather events or heavy rainfall, generally in the period from November to April. Historically, the area has experienced many recorded major flood events with the latest being in March and April 2017 when the water levels rose to 8.8m above the Bureau's flood gauge height. During this and previous floods, the western part of town of Rockhampton, including the airport, experienced significant flooding. During the March and April 2017 flood, the airport was closed to all commercial traffic.

In 2015, extensive flood modelling was conducted by Cardno on behalf of the Rockhampton Council to determine the volumes and runoff of flood waters. This modelling was completed in late 2015. From this work, it is apparent that the western side of the airport will be prone to flooding unless the platforms for facilities are raised above the critical flood levels, and this will influence and constrain development of the western side of the airport property. Development in the Terminal, Freight, General Aviation, and Military precincts, will act to displace floodwaters, and this will have an effect on flooding of neighbouring lands.

AIR CARGO

Considerable effort is being put forward to develop the agriculture and horticulture industries in the Rockhampton Region and the wider Fitzroy and Central Queensland Region. Recognition has been given to the importance of the region to agriculture and the supply of agricultural products for the country, as well as the potential for these regions to export agricultural and horticulture products internationally. Under the Rockhampton Region Economic Development Strategy, the Regional Council has committed to explore the opportunity to develop air freight facilities, and is therefore keen to ensure that facilities are available for local industries to take advantage of export opportunities, and is working to develop these opportunities. The Rockhampton Region has, historically, been a large beef producer for the State and for the nation. The other top agricultural and horticulture industries in the region are:

- Fruit and Nut production
- Feed-grain production
- Horse breeding

Currently, the road transport network in the State provides the necessary logistical support to the agricultural industry for interstate and intra-state transport. It also provides the means by which agricultural and horticulture products are transported for onward shipment to international destinations. Agricultural and horticulture freight is currently transported by road to Brisbane, where it is consolidated for onward transport, or else is subjected to further processing, before delivery to its final destination in Australia or

overseas. From Brisbane, the seaport, airport, rail and road network provides access to markets across the country as well as to several international destinations. While road transport adequately serves the main freight destinations for products of the Rockhampton Region, the Regional Council would like to divert some of that freight traffic to the air mode and ship agricultural and horticulture freight by air, particularly to international destinations, in accordance with the Economic Development Strategy. The Council has 3 primary challenges in being able to divert freight traffic from road transport to air, and these are:

- Transport costs;
- Journey time; and
- Available air network and aircraft serving that network.

The primary flows of road freight in Queensland are outbound from Brisbane. As a result, there is very little backhaul freight and therefore trucks are travelling back to Brisbane empty, or with less than full loads. Road transport companies therefore are able to offer very attractive rates for road transport on the network on the backhaul back to Brisbane. This tends to work against the development of direct air freight links from Rockhampton.

Freight transported by road from Rockhampton takes approximately 8 hours to reach Brisbane. This travel time places Rockhampton in a good position to supply Brisbane on a 'next day' basis using well organised logistics on the road network. For an air freight alternative, freight carried by air from Rockhampton would have to initiate its journey by road to the Rockhampton Airport, then be consolidated at the airport before being loaded onto an aircraft. Once the freight arrives by air into Brisbane, it would then need to be transported to its destination, once again by road. This change of mode at each end of the journey introduces delays and, as a result, the total journey time to Brisbane would not be much less than if consignments were transported by road. If markets for air freight from Rockhampton were developed in sufficient volumes to justify direct air services (rather than via Brisbane), then the Rockhampton Airport could support this air freight opportunity in keeping with the economic development strategy of the Region.

Current passenger flight operations from Rockhampton primarily serve Brisbane, with JetGo serving Gold Coast and Townsville. All flights are being operated with narrow-bodied aircraft which do not have much capacity for freight as would be the case if wide-bodied aircraft were serving the airport. Aircraft such as the Embraer 135 operated by JetGo and the DHC-8 Q400 operated by QantasLink, have very little airfreight capacity in both volume and weight above the space and weight allocated for passengers and baggage. Therefore, the present airfreight network currently has to rely on the spare capacity available on passenger flights to Brisbane. The viability of airfreight only arises when wide-bodied aircraft, or dedicated freighter aircraft, are operated on a route. Due to the volume available in the cargo hold and the lifting capacity of a wide-bodied aircraft, the viability of freight transport becomes attractive, provided that there is sufficiently large freight loads to be shipped by air from Rockhampton to justify use of a dedicated widebody freighter aircraft, and provided that there are markets for this traffic. Although Rockhampton does receive some wide-bodied aircraft, these tend to be charter operations in support of the military exercises and therefore are not consistent or regular services that could be relied upon to establish a viable international freight network. As a result, any freight destined for international markets, currently has to travel via Brisbane.

TERMINAL SECURITY CONGESTION

The passenger terminal at Rockhampton has capacity available in the present building to accommodate future growth, as identified elsewhere in this report. However, due to the location of the commercial concessions in landside spaces, in particular the food and beverage concessions, passengers availing of these concessions often create congestion at the security screening point when a flight is called. This congestion is entirely due to passengers remaining in the comfortable concession spaces on landside for as long as possible, while waiting for a flight boarding announcement to be made. Once a flight has been called, large numbers of passengers then proceed to the security screening point all at once. This practice overloads the security screening point and results in delays to departing flights.

MILITARY OPERATIONS

During the biennial Joint Military Exercises (Talisman Sabre) and during the regular Singapore Defence exercises, considerable numbers of military aircraft occupy the aprons and the airport lands behind the ATC facility. These operations occupy valuable airport lands for short periods of time and require a considerable effort on the part of the military to mobilise and demobilise for these operations. Rockhampton Airport has put forward a proposal to develop a Military Precinct that would cater to the needs of the transient military operations that visit Rockhampton. This facility would enable the military organisations to stage, train and demobilise their troop and equipment with minimal interaction with civilian operations. The Military Precinct has been detailed in Section 5 of this report.

GENERAL AVIATION BUSINESSES

Rockhampton Airport lies in the flood plain for the Fitzroy River which, on a number of occasions in the past, has overflowed its banks and flooded the surrounding lands, sometimes very seriously. The propensity for flooding to occur reduces the land available for General Aviation businesses on the airport to occupy, as much of the airport lands in the area of the General Aviation precinct are susceptible to flooding. GA businesses are also in competition with other airport development facilities such as freight and therefore land available for general aviation development that is free from flooding is limited.

As discussed later under the Air Traffic Forecasts, there has been a drop in commodity prices, which in turn has reduced the demand for GA operations with fewer charter services required to ferry staff, equipment and spare parts for the resource industries. A knock-on effect of this has also been a reduced demand for pilot training.

Consequently, Rockhampton Airport has experienced a reduction in the requirement for GA aircraft parking on the aprons, which together with the impact of introduction of aircraft parking charges for GA activities, has attributed to a decline in GA activities. The effect of aircraft parking charges and increased difficulties of operating GA aircraft at a busy Regional Airport is reported to have particularly affected individuals operating private aircraft at the airport.

INTERNATIONAL AIRPORT STATUS

Rockhampton Airport conducts a number of Restricted Use International Operations per year. These are currently a result of charter flights for the military training exercises. These operations are typically conducted using Code 4E aircraft such as B747, B777, A340, etc. To accommodate these operations, the airport has the ability to implement segregated operations to ensure passengers undergo appropriate Immigration and Border Protection screening. This is achieved through a series of operable partitions as detailed in Section 2.2. The Department of Immigration and Border Protection supply staff sourced primarily from Gladstone with additional support from Brisbane, Gold Coast and Sydney.

The process for implementation of the temporary Border Protection services is initiated by the carriers through the National Processing Committee (NCCP) with individual flight approval sought. Airports that have permanent International Airport status, have more freedom to schedule flights as individual flight authorisation from the NCCP is not required. Rockhampton Airport is seeking full International Status to ensure access to the airport is improved for the existing international charters with military passengers as well as future international operations targeted around tourist flights.

3.2 AIR TRAFFIC FORECAST

ROCKHAMPTON ECONOMIC BACKGROUND

Rockhampton, and its Local Government Area (LGA), is located mid-way along the East Coast of Queensland, in an area commonly referred to as the Fitzroy Region, approximately 600km North of Brisbane and 1,000km South of Cairns. In more immediate proximity, Rockhampton is situated to the North of Gladstone (110km) and South of Mackay (330km). Importantly, the city is situated to the immediate East of the Bowen Basin which, along with the Surat and Galilee Basins, is one of Australia's most active and productive coal fields. Rockhampton is the largest city in the Fitzroy region which also encompasses the major towns of Emerald and Gladstone. The Rockhampton LGA is home to approximately 110,000[1] residents with a significant portion, estimated at over 80,000 residents, living in the city itself. This comprises approximately half of the resident population of the greater region (defined by the ABS as Fitzroy Statistical Level 4), estimated at over 210,000 residents.

KEY INDUSTRIES OF THE REGION

According to the National Institute of Economic and Industry Research, the Rockhampton economy is dominated by the Health Care industry (11.7%) followed closely by Utilities (10.0%) and Construction (8.5%).. The remaining economic activity is spread across traditional sectors of a large urban area such as manufacturing, education, retail, and professional services. Importantly, mining, which dominates the economies of a significant number of Queensland regions, accounts for only 4.1% of activity. Exhibit 3-1 below summarizes the various sectors that comprise the region's economy. For FY2016, it was estimated that the Rockhampton Region generated $4.5b in value added activity.

EXHIBIT 3-1
ROCKHAMPTON ECONOMIC SECTORS BY VALUE

INDUSTRY	$M	%
Health Care and Social Assistance	532.2	11.7
Electricity, Gas, Water and Waste Services	455.6	10.0
Construction	386.2	8.5
Transport, Postal and Warehousing	384.5	8.5
Education and Training	369.0	8.1
Manufacturing	366.6	8.1
Public Administration and Safety	338.4	7.4
Retail Trade	260.6	5.7
Financial and Insurance Services	254.7	5.6
Wholesale Trade	242.6	5.3
Mining	185.9	4.1
Professional, Scientific and Technical Services	130.1	2.9
Accommodation and Food Services	128.1	2.8
Rental, Hiring and Real Estate Services	108.7	2.4
Agriculture, Forestry and Fishing	102.7	2.3
Administrative and Support Services	94.2	2.1
Information Media and Telecommunications	55.6	1.2
Arts and Recreation Services	17.9	0.4
Other Services	130.0	2.9
Total Industries	4,544	100.0

Source: National Institute of Economic and Industry Research (NIEIR)

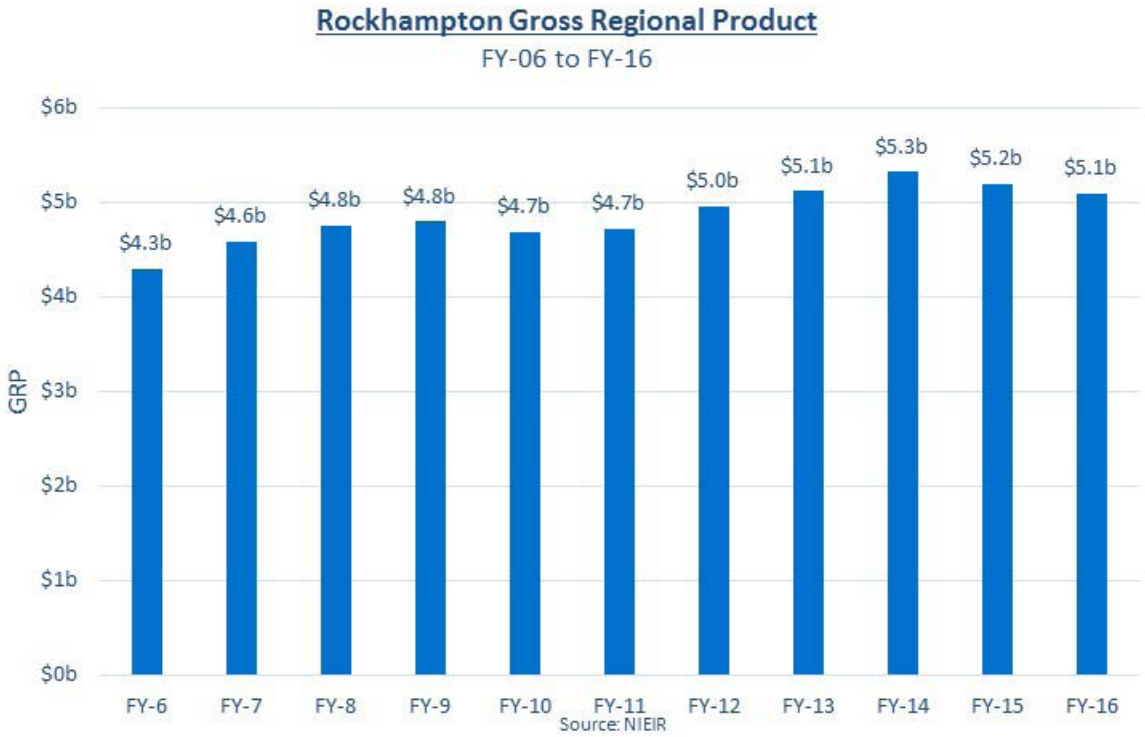
1 Australian Bureau of Statistics (ABS) Census Data

The lack of a dominant manufacturing and/or primary production sector suggests that the economic role of Rockhampton is defined as a service centre for the greater region. In fact, out of the top ten sectors, accounting for approximately 80% of all activity, six may be defined as service industries and account for approximately 51% of economic value.

GROSS REGIONAL PRODUCT

Rockhampton generated $5.1b in Gross Regional Product in FY2016 which represents a 1.9% decrease from FY2015 levels and a 4% decrease from the peak in FY-14. Exhibit 3-2 illustrates the long term Gross Regional Product (GRP) development for Rockhampton.

EXHIBIT 3-2
ROCKHAMPTON GROSS REGIONAL PRODUCT



Over the period shown, GRP has grown at a Compound Annual Growth Rate (CAGR) of 1.7% with the highest year-on-year change recorded in FY2007 with a 8.4% growth over FY2006.

3.3 ROCKHAMPTON AIRPORT TRAFFIC

ROCKHAMPTON AIRPORT CATCHMENT AREA

A two-hour driving time, or a 200km distance radius, is often used as a guide for defining an airport's catchment area. However, the location and size of competitor airports affect this rule. Competitor airports that may impact the size and shape of the catchment area for Rockhampton Airport are identified in Exhibit 3-3.

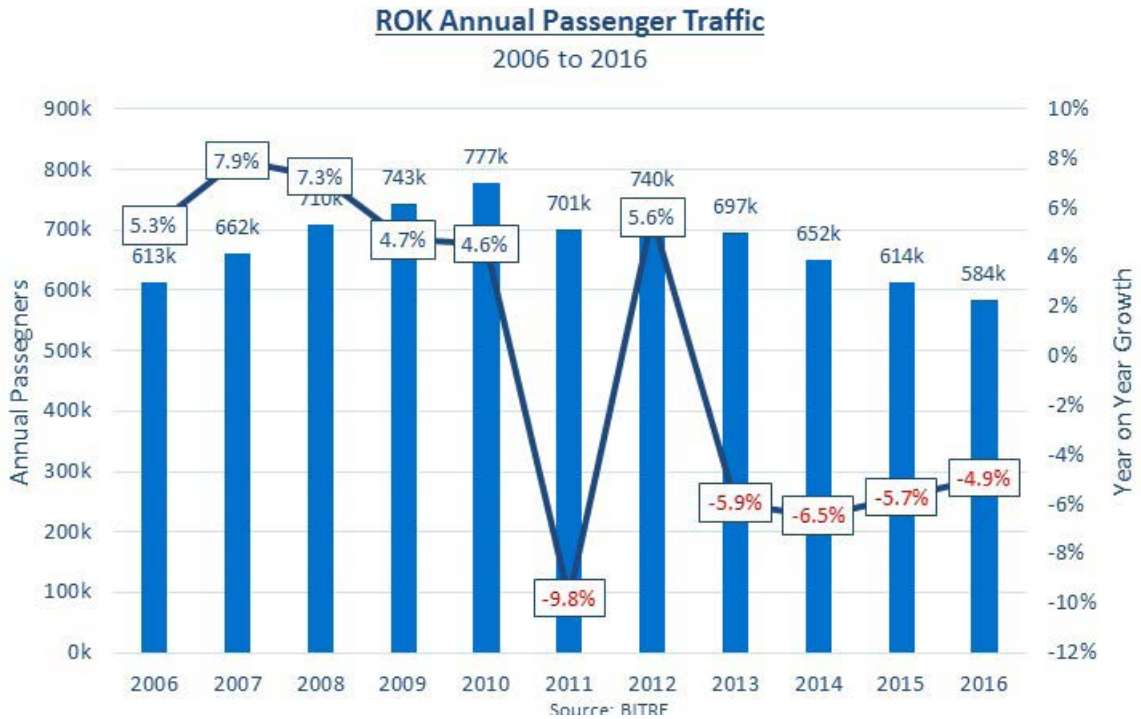
EXHIBIT 3-3
COMPETITOR AIRPORTS TO ROCKHAMPTON AIRPORT

AIRPORT	DISTANCE (KM)	DRIVE TIME	CATCHMENT AREA IMPLICATION
Gladstone (GLT)	115	1:25	Gladstone Airport has limited services to Brisbane on Qantas and Virgin Australia making the mid-way point between the two airports the likely catchment boundary
Thangool (THG)	169	2:00	Thangool Airport is primarily a Fly-In/Fly-Out (FIFO) airport with Qantas services to Brisbane only. Due to the lack of available capacity for resident traffic, the Rockhampton Airport catchment is considered to extend towards the airport.
Emerald (EMD)	270	2:55	Emerald Airport is primarily a FIFO airport with services to Brisbane on Qantas and Virgin Australia. With both major airlines operating at the airport, Emerald Airport would act as a Western border for the Rockhampton catchment area with the mid-way point between the two airports the likely catchment boundary.
Mackay (MKY)	336	3:45	Mackay Airport is the largest airport in proximity to Rockhampton. With significant route network depth and breadth, Mackay Airport would likely attract traffic from Rockhampton past the mid-way point between the two airports
Moranbah (MOV)	417	4:30	Moranbah Airport is primarily a FIFO airport with services to Brisbane on Qantas and Virgin Australia. The airport would likely act as a North-Eastern catchment border for Rockhampton with a mid-way point between the two airports as a likely boundary

The catchment area for Rockhampton Airport has therefore been estimated as illustrated in Exhibit 3-4. The population of the catchment area has been estimated, using the ABS Census, at 125,000.

AIRPORT TRAFFIC

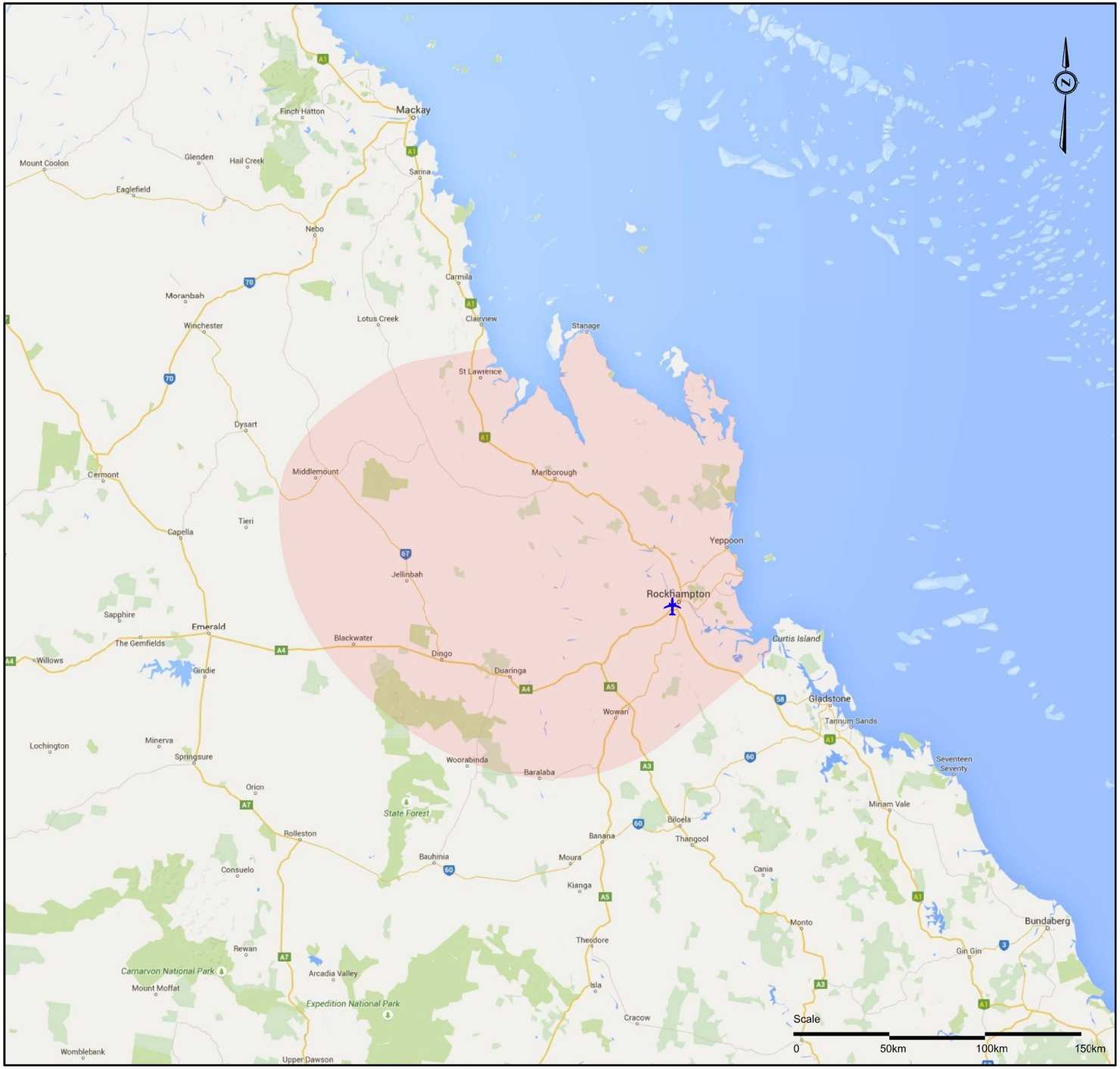
In 2016 Rockhampton Airport handled 584,247[2] passengers, a decline of 4.9% from traffic levels of 614,465 in calendar year 2015. Traffic at the airport peaked in 2010 at 777,212 and could possibly have experienced a similar result in 2011 had the airport not been closed in January of that year due to widespread flooding. Since 2010, traffic has declined at the airport every year, barring 2012, to the current levels. Exhibit 3-5 summarizes Rockhampton Airport annual traffic levels.



Following a similar pattern to passenger traffic, the airport handled a peak of 14,602 aircraft movements in 2010, with the most recent period experiencing 12,507 operations. The aircraft movement declines recorded in 2006 and 2007 are of note considering the increases in passenger traffic during those years. This suggests a significant increase in aircraft size operating to/from the airport in those and the following years.

During 2016 the airport has experienced a 5.4% decline in aircraft movements over 2015 levels, which is in line with the changes in passenger traffic. Exhibit 3-6 charts the aircraft movements to/from Rockhampton Airport and their associated year-on-year growth rates. Note that the aircraft movements shown are for Regular Passenger Transport (RPT) flights only.

2 BITRE



Rockhampton Regional Council

Legend:

Catchment Area

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 3-4
Catchment Area

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EXHIBIT 3-6
ROCKHAMPTON AIRPORT ANNUAL AIRCRAFT MOVEMENTS

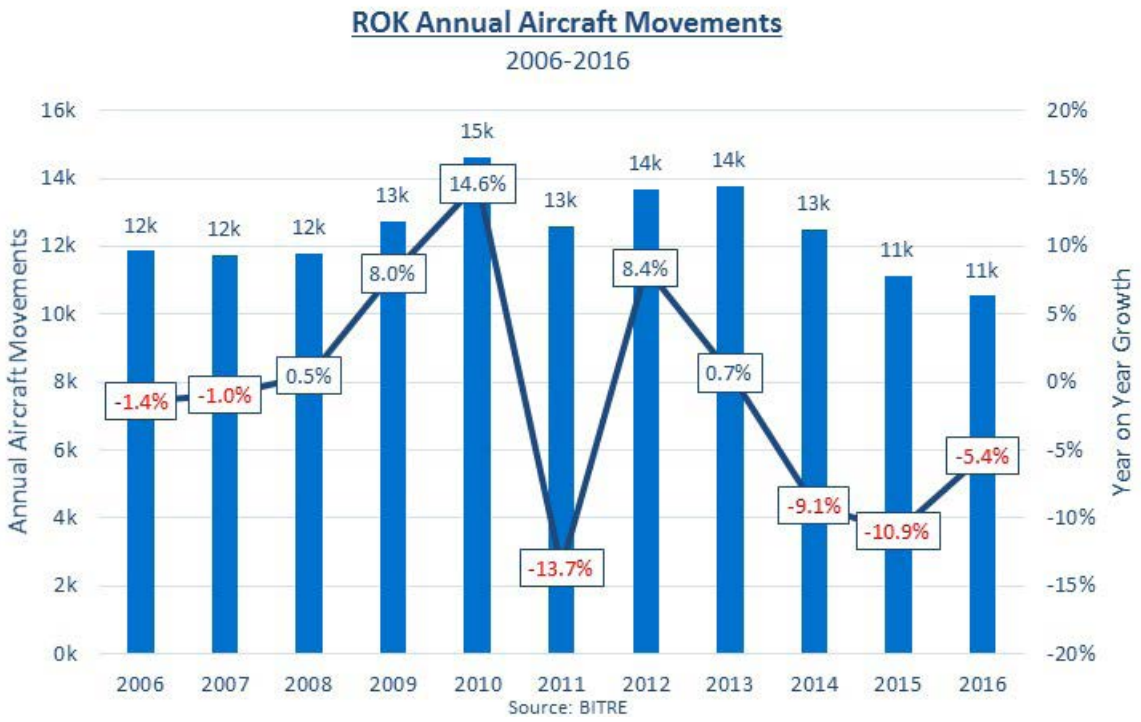


Exhibit 3-7 compares annual aircraft movements with average aircraft size. Average aircraft size peaked in 2014 at 83.5 seats per movement. This has declined over the past two years to settle at 79.5 seats/ aircraft movement in 2016. Exhibit 3-8 demonstrates this effect as it relates to passenger load factors. While experiencing load factors in excess of 77% in 2012, this has dropped to 70.4% in 2016. The 2016 figures are an increase from the low experienced in 2014 of 62.4%.

The increasing aircraft size, and drop in load factor, while logical from a strictly mathematical standpoint, is notable from an airline commercial standpoint. Airlines will typically seek to adjust capacity to maintain healthy load factors to optimize route profitability. One possible explanation for this is the re-deployment of smaller turboprop aircraft to other routes in the country, leaving the routes to/from Rockhampton Airport to be operated by larger aircraft. Furthermore, Qantas has in recent years been retiring 36 and 50 seat Dash-8-200/300 aircraft from its fleet, leaving the 70-seat Dash-8-Q400 to operate as a replacement. In this case, the increase in average aircraft size is the result of airline network decisions not necessarily directly related to the port itself.

It should be stated, though, that this is unlikely to continue in the future as airlines will eventually seek to rationalise capacity over the short to medium term. This could come in the form of a reduction of frequencies to/from the port. Such a change may already begin to take shape in light of Virgin Airline's recent decision to retire several ATR-72 aircraft from its fleet and subsequent closure of its ATR base in Brisbane. In addition, the airline is also retiring its 98 seat Embraer 190 aircraft. Backfilling this capacity is being undertaken though a commercial agreement with Alliance Airlines for Fokker 70 and 100 aircraft with 80 and 100 seats respectively, however it must be noted that all flights are Virgin Australia flights and are supplemented with Virgin 737-800 aircraft as required. The exact long term scheduling details are not yet known at this time, however these aircraft sizes offer a greater than current capacity mid-point between the two retired aircraft types.

EXHIBIT 3-7
ROCKHAMPTON AIRPORT AVERAGE AIRCRAFT SIZE

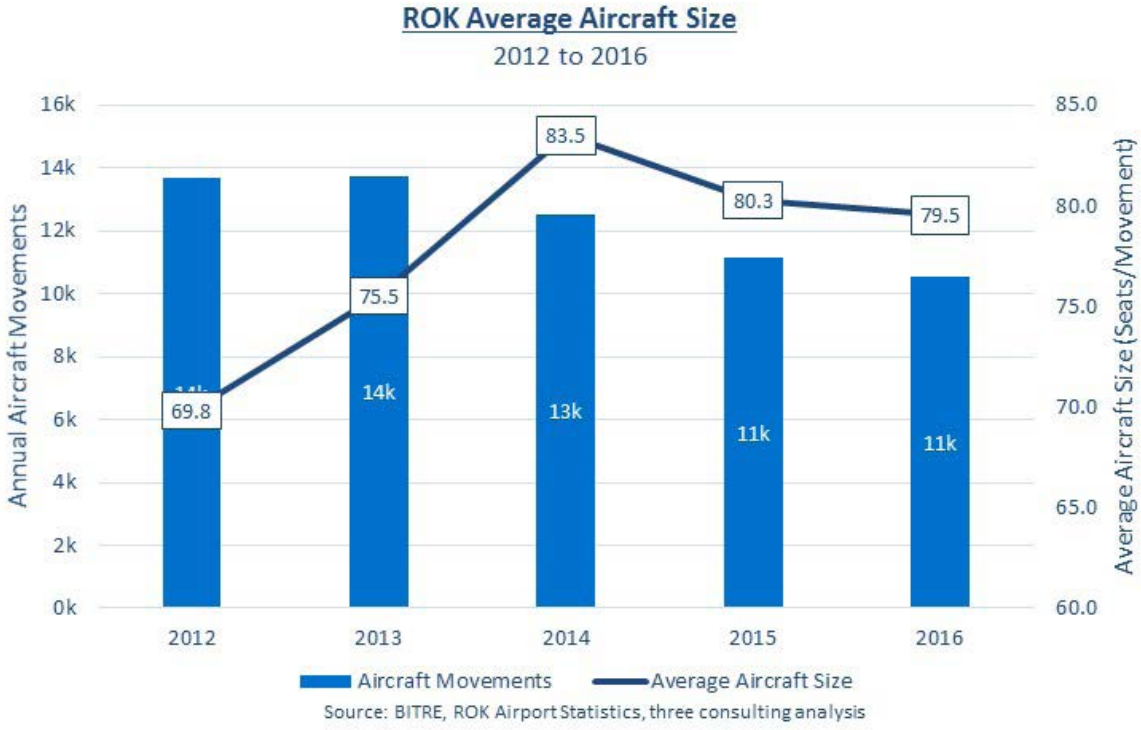
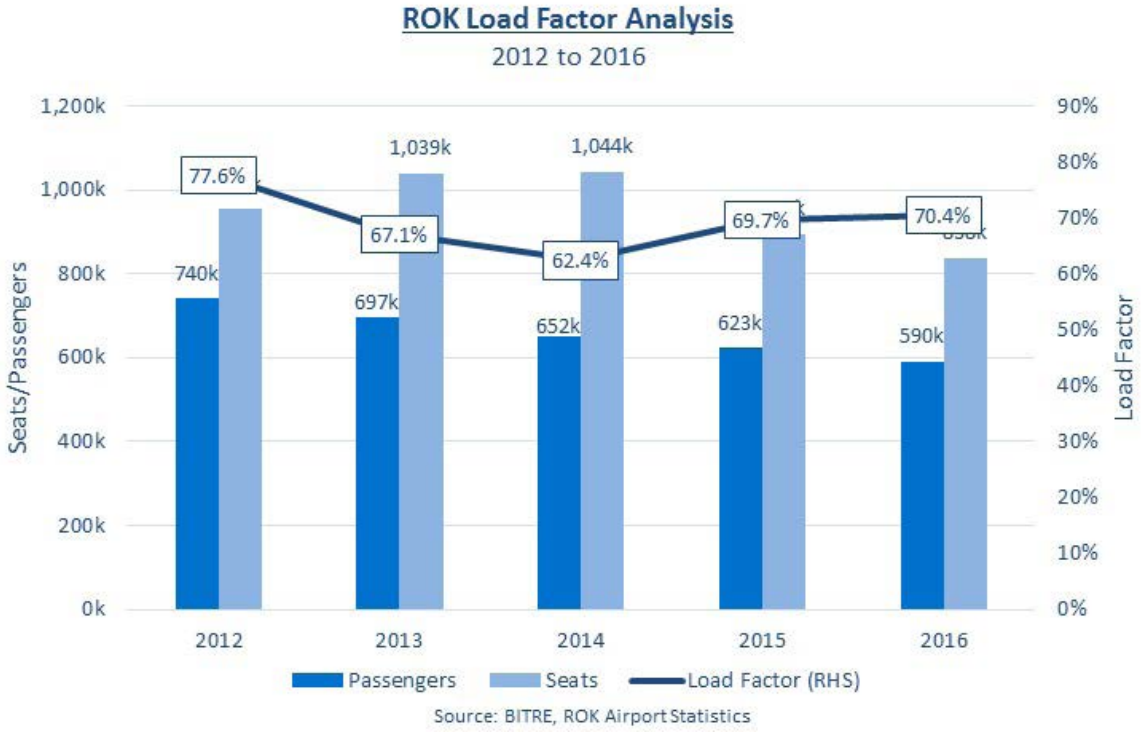


EXHIBIT 3-8
ROCKHAMPTON AIRPORT AIRCRAFT LOAD FACTOR ANALYSIS



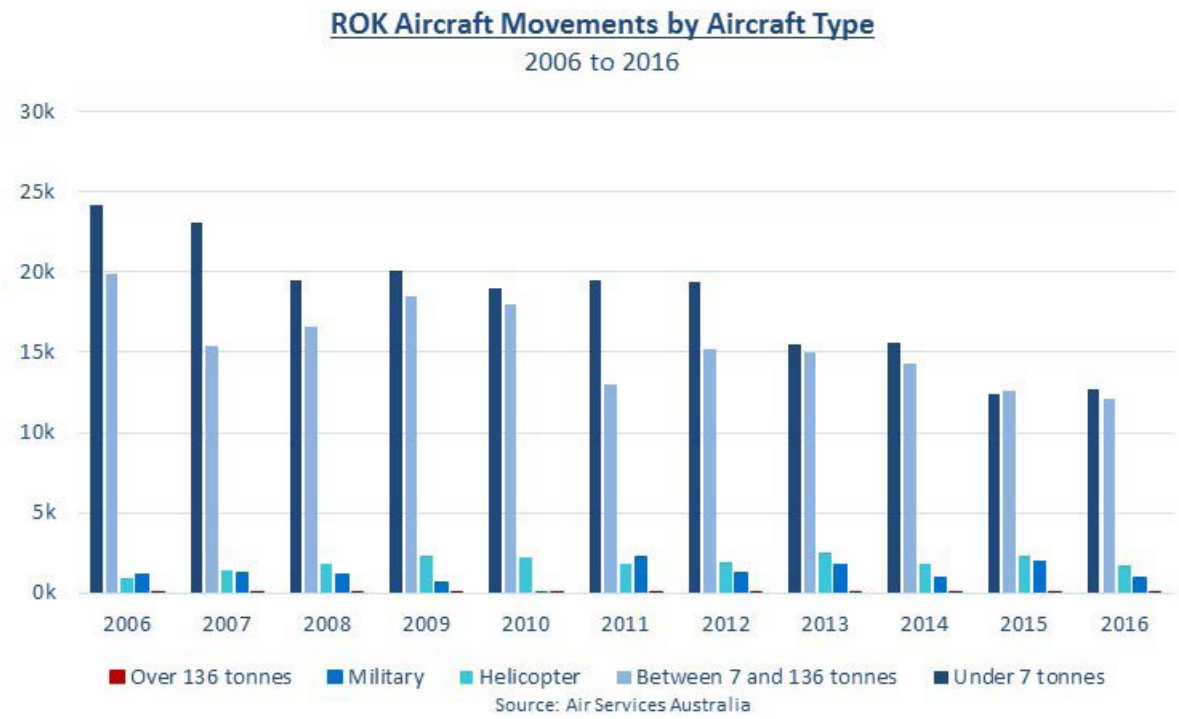
ROCKHAMPTON AIRPORT AIRCRAFT MOVEMENTS – ALL OPERATIONS

A review and analysis has been carried out on aircraft movements for all types of operations to and from Rockhampton Airport. Using the Air Services Australia (ASA) breakdown of aircraft types, Exhibit 3-9 illustrates the aircraft mix using the airport from 2006 to 2016. Due to lack of precision in the data, it is assumed that movements under the "Between 7 and 136 tonnes" category are RPT operations, and "Under 7 tonnes" are general aviation operations.

The key trend in the data is the decreasing number of operations of general aviation aircraft activity, which peaked in 2006 at approximately 25,000 movements to slightly over 15,000 in 2016. A significant drop in aircraft movements under this category occurred between 2013 and 2016. Research into this feature has not yielded a key reason for this drop, and a single reason may not exist given the range of operations this category covers (business aircraft, flight training, charters, etc.). The susceptibility of general aviation to a slowing economy may be a likely culprit given the "luxury" nature of this type of activity, as is the introduction of parking charges for GA activities and the number of competing GA airfields in the area.

Helicopter operations have trended upwards over the data period with current annual movements at around 2,000. Military operations appear to be limited. Aircraft weighing over 136 tonnes are not a significant type operating at the airport and appear to fill a specialised ad-hoc role.

EXHIBIT 3-9
ROCKHAMPTON AIRPORT AIRCRAFT MOVEMENTS BY AIRCRAFT TYPE



AIR TRAFFIC DEMAND FORECAST

Drivers of Air Traffic Demand

Airport traffic demand is in essence a by-product of underlying economic activity that induces a need for travel. As such, when developing a view of how future traffic may develop at an airport, it is critical to understand the effects that different parts of the economy have on airport traffic. Ultimately, due to the varied composition of every economic system, the traffic forecast will seek out a limited number of key drivers from which to derive future activity.

Demand drivers may take the form of overall economic activity (i.e. Gross Regional Product) increasing or decreasing, or may be more fine-grained in nature and specific to key industries. Research into the Rockhampton economy has yielded three areas that warrant detailed examination into their effects on demand. These are:

- **Gross Regional Product:**

  A measure of economic activity, GRP is a widely used metric in aviation to estimate air traffic demand. The logic being, the more prosperous a region, the more disposable income for spending on items such as travel. Air travel growth is generally defined as a multiple of GDP growth where, for example, a 1% GDP growth rate might give rise to a 2% growth rate in air travel; the multiplier in this case being 2. This will be investigated further in this section to establish an appropriate economic multiplier for Rockhampton Airport;

- **Mining and mining related activity:**

  Rockhampton Airport's proximity to the Bowen Basin coal fields, and to a larger extent to the Galilee Basin, suggests that a detailed look into the effects of mining and related activities on air travel is prudent; and

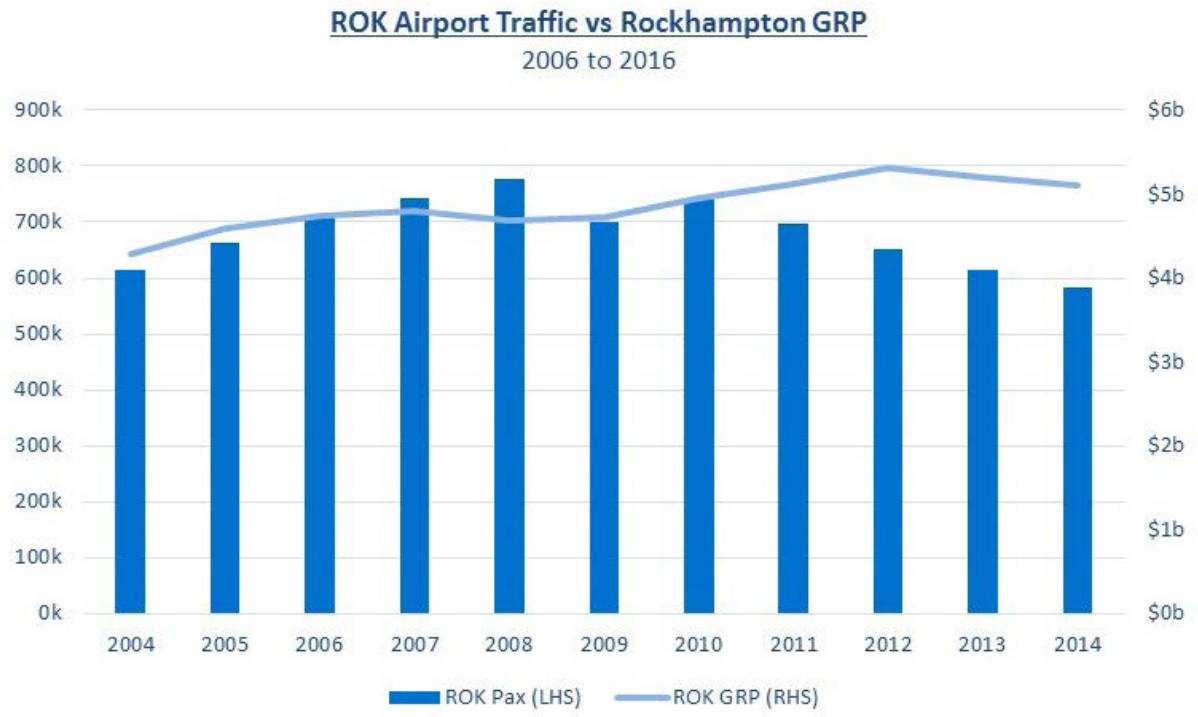
- **Tourism and other drivers:**

  Depending on an airport's location, leisure travel is traditionally a significant component of demand for travel. It is important to understand the effects that tourism development has on travel to the region and identify any significant developments in this industry over the forecast horizon.

GRP and Traffic Analysis

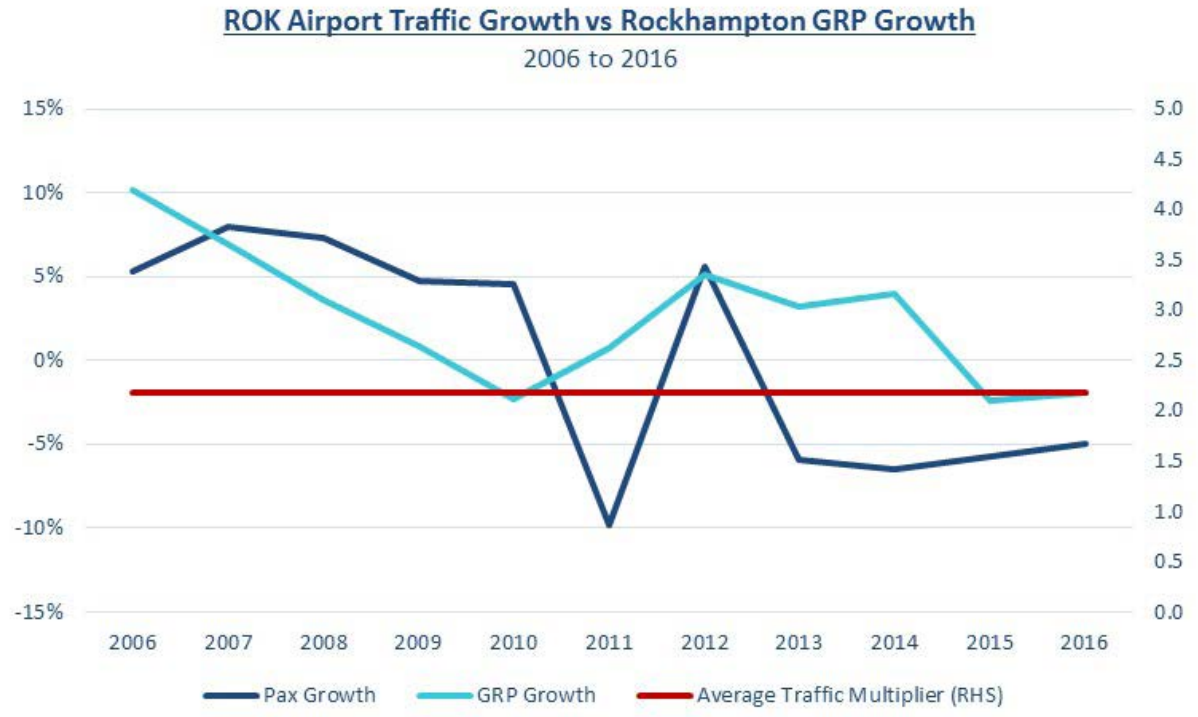
Exhibit 3-10 overlays historic GRP data for the region with Rockhampton Airport passenger statistics in order to understand the effects of changes in GRP on travel demand at the airport.

EXHIBIT 3-10
ROCKHAMPTON AIRPORT TRAFFIC VS ROCKHAMPTON GRP



The close relationship in changes in the two variables in the analysis suggests that a significant relationship exists between the two. Exhibit 3-11 assesses this relationship further by comparing the respective growth rates of each variable.

EXHIBIT 3-11
ROCKHAMPTON AIRPORT TRAFFIC GROWTH VS ROCKHAMPTON GRP GROWTH



The significant growth rate swings in air traffic at the beginning of the analysis period is likely a result of the relatively low traffic base that Rockhampton Airport experienced at that time, with a small absolute increase in passenger traffic having a large relative growth effect. The decrease in 2011 is a result of the floods that closed the airport in January of that year. Overall, excluding the outliers relating to 2004, 2011, and 2012, historical traffic at the airport grew at an average multiplier of 2.2 over GRP growth.

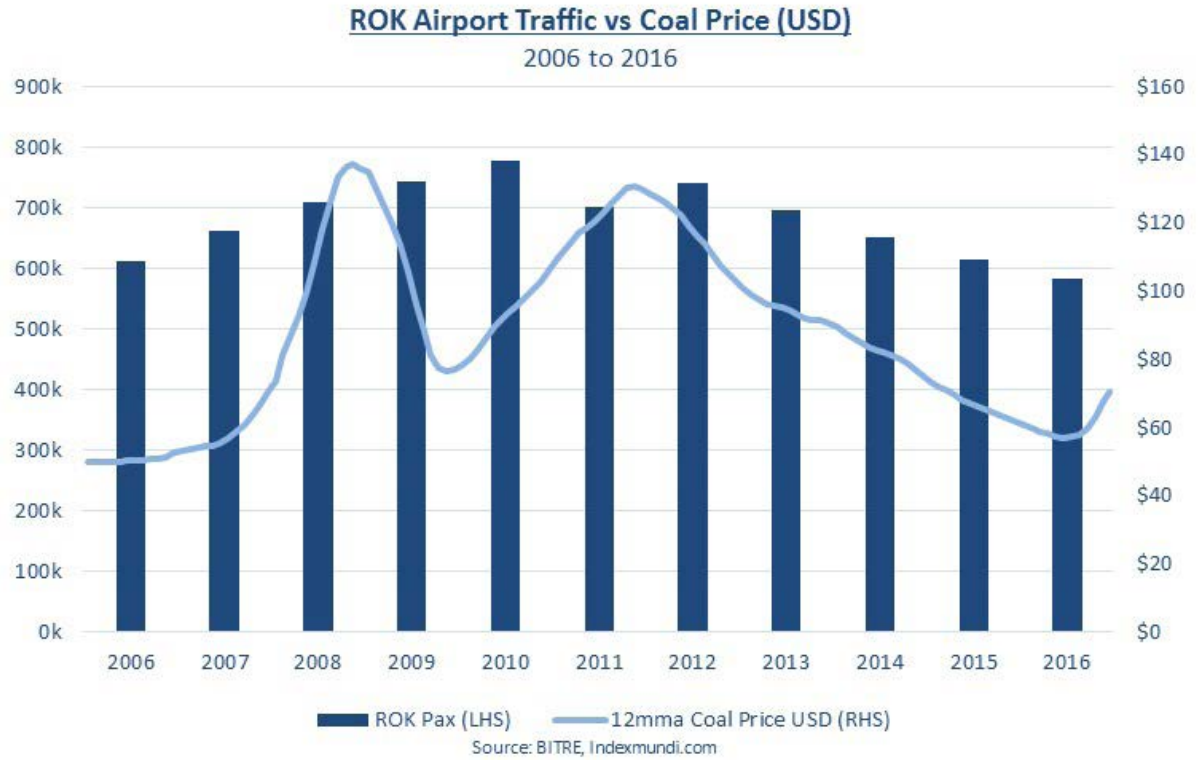
Comparing Rockhampton Airport to Australia as a whole in this context indicates an above average multiplier for the airport over the last 10 years. Australian domestic travel over the same time period experienced an average multiplier of 1.4 over GDP levels, as seen in Exhibit 3-12. The lower average multiplier is a result of the diversity of the economy as a whole, with mining-related activity having less of an effect in other parts of Australia. The Compound Annual Growth Rate (CAGR) for air traffic in Australia over this time period was 3.2%, with GDP experiencing a CAGR of approximately 3.2%.

EXHIBIT 3-12
AUSTRALIA DOMESTIC AIR TRAFFIC GROWTH VS GDP GROWTH

Mining

Whilst it has been established that the role of Rockhampton in the region is that of a service centre, its proximity to the major Queensland coal fields suggests that mining activity in those areas would have an impact on traffic at the airport. Exhibit 3-13, illustrates Rockhampton Airport traffic levels against the spot price of coal in USD over a 10-year period. The price of coal is used here as a proxy for the activity of the coal sector, with the assumption being that airport activity and the price of coal are aligned. Exhibit 3-13 Rockhampton Airport Traffic vs Coal Price (USD).

EXHIBIT 3-13
ROCKHAMPTON AIRPORT TRAFFIC VS COAL PRICE (USD)



Interestingly, the relationship between the price of coal and airport traffic, while following a loose trend over the time period, do not appear to be closely related. Sharp changes in the coal price in the 2008-2012 period are not reflected in traffic movements at the airport. The 12 month moving average in coal prices during 2008 shows an increase of 93% over the previous corresponding period. Airport traffic over the same period increased only 7%. In fact, air traffic continued to increase in 2009 when the coal price suffered a dramatic fall.

The analysis suggests that direct mining activity, in this case exemplified by the price of coal, is not a reliable indicator of airport traffic, nor is a causal relationship apparent. The analysis supports the premise that Rockhampton's economy is more diverse and not reliant on a single industry, giving evidence to the city acting as a service centre for the region. Results of an on-site airport survey undertaken in 2014 supports this, with only 14% of all departing traffic composed of FIFO workers[3].

Research into capital expenditure patterns in the Queensland mining industry was also undertaken, which revealed an approximate eightfold increase in spending from 2011 to 2013[4]. This is in contrast to the peak in passenger traffic at Rockhampton Airport, which occurred in 2010 and has stabilised and declined through this boom period. It stands to reason therefore that, as far as mining is concerned, Rockhampton Airport may have been a launch point for early exploration activities, with major construction and transport of the operating work force by-passing the airport, now that local airports closer to the mines have taken over that role.

The most significant recent development in the mining industry that directly affects Rockhampton Airport is the Adani lead Carmichael Mine initiative. Located approximately 450km northwest of the city, the mine will be a major coal producer in the region once complete and is valued at $16.5b in current dollars. The mine is expected to generate 10,000 direct and in-direct jobs during its construction and operational

3 2014 passenger mix and behavioural study (Proof Research)

4 $5625M Private New Capital Expenditure and Expected Expenditure, Australia, ABS

phase[5]. Discussion with airport management indicated Adani is interested in keeping the workforce largely local and consequently has sought to develop a FIFO base in one of the major centres along the coast. Rockhampton, whilst not confirmed at this stage, is expected to be awarded this contract. Explored further in the forecast scenario sections, this would have a major impact on traffic figures at the airport, in the short term, upwards of 200,000 additional passenger movements a year during the construction phase of the project. This is expected to diminish to a steady state of 100,000 once in operation. Initial predictions are for traffic to be carried on a double daily A320 aircraft to/from the mine site, depending on labour demand.

Tourism and Other Drivers

Airport traffic is typically composed of three types of travellers:

- Visiting Friends and Relatives (VFR);
- Leisure/Holiday; and
- Business

Using the results of the aforementioned on-site survey, the breakdown of travellers using Rockhampton Airport in 2014 is shown in Exhibit 3-14.

EXHIBIT 3-14
PASSENGER PURPOSE OF TRAVEL

VISITOR LEISURE	VISITOR VFR	VISITOR BUSINESS	LOCAL LEISURE	LOCAL VFR	LOCAL BUSINESS	TOTAL
57	141	360	123	104	199	1,058
5.4%	13.3%	34.0%	11.6%	9.8%	18.8%	100%

From the survey, the dominant passenger travel class is Visitor – Business (34% of all respondents) with the lowest being Visitor –Leisure (5% of all respondents). In fact, at 53%, Business across both Local and Visitors was the single most important reason for travel.

The key insight from this part of the analysis is the lack of a significant tourism market as a demand driver. While Local-Leisure accounts for 12% of the total traffic, this is traffic travelling outbound from Rockhampton. Inbound tourism to the area, at least by travellers using the airport to reach their destination in the region, appears to be muted given the low portion of traffic they represent.

It would appear, therefore, that unless a significant shift in tourism appeal of the region occurs, inbound leisure demand may remain a small component of the traffic composition for some time. The large amount of business traffic for both inbound outbound travellers appears to be a more reliable indicator for traffic demand at the airport.

5 http://www.townsvillebulletin.com.au/news/government-leaders-gather-forannouncement/news-story/dad0d937720f3ceb31b4a39ae34aac50

3.4 AIR TRAFFIC FORECAST SCENARIOS

Analysis of the general economic composition and development of the Rockhampton Region, historic traffic at the airport, and the associated demand drivers has led to the development of three forecast scenarios for the traffic at the airport over a 20 year period. The two key assumptions used in the development of scenarios are:

- Airport passenger traffic will continue to decline over the short term as economic activity is assumed to remain subdued over this period. Also, it is likely that airlines will seek to reduce capacity to/from Rockhampton Airport to improve load factors but, by doing so, may price cost-sensitive passengers out of the market. It is estimated that traffic throughput will decline to approximately 580,000 passengers per annum.

- Normalised air traffic growth is assumed at 4% per annum, which is the long term Australian average. The long term average growth for Rockhampton Airport is approximately 6%, however this was recorded over a period of accelerated economic growth that is not deemed sustainable over the 20 year forecast horizon.

Furthermore, an additional layer was added, thereby creating three more forecast scenarios, that considered the development of the Adani Carmichael Mine and its impacts on Rockhampton Airport traffic. This is presented as a "bolt-on" to each of the 3 base scenarios. Slight adjustments have been made to the base scenarios to account for potentially increased underlying traffic to/from the port due to the increase in economic activity.

The details of the air traffic scenarios developed for air traffic forecasting purposes are described below:

Low Growth Scenario:

A low growth scenario has been defined as being characterised by an initial period of decreasing passenger traffic, followed by a no-growth period as the air travel market continues to rationalise. The decrease is predicted based on the potential capacity reductions from Virgin Airlines as Alliance Airlines taking over the flying duties. The airline may take advantage of this shift to reduce capacity at the airport. The remaining years see traffic grow at a muted CAGR of 2.5%. This reflects an economic scenario where GRP remains subdued over the long term.

Medium Growth Scenario (Most Likely):

Traffic is stable for a one year period with traffic increasing at a CAGR of between 2.0 and 4.0% for the remaining years of the forecast. This is based on no capacity reductions/additions from Virgin Airlines, or any other airlines, which results in no traffic growth for the first year. Traffic growth returns after this period.

High Growth Scenario:

Traffic grows in the short term at 1.0% and then subsequently growing at a CAGR of between 2.0 and 4.0%. This scenario also sees a period of increased economic activity in the region causing above average growth (6.0%) for a 5 year period until traffic growth normalises to 4.0%. The accelerated growth scenario illustrates a sustained recovery in commodity prices and therefore mining activity and/or a major economic development occurring in the region, e.g. a significant gas or coal exploration project. This is over and above the Adani Carmichael Mine development.

Exhibit 3-15 demonstrates the different air traffic forecast scenarios for Rockhampton Airport over the 20 year period. For reference, the historical peak in passenger traffic is shown. The High Growth scenario will achieve an historical peak traffic level in 2023, the Medium traffic growth scenario a peak traffic level in 2025, and the Low Growth scenario in 2030.

EXHIBIT 3-15
ROCKHAMPTON AIRPORT PASSENGER TRAFFIC FORECASTS FOR 3 GROWTH SCENARIOS

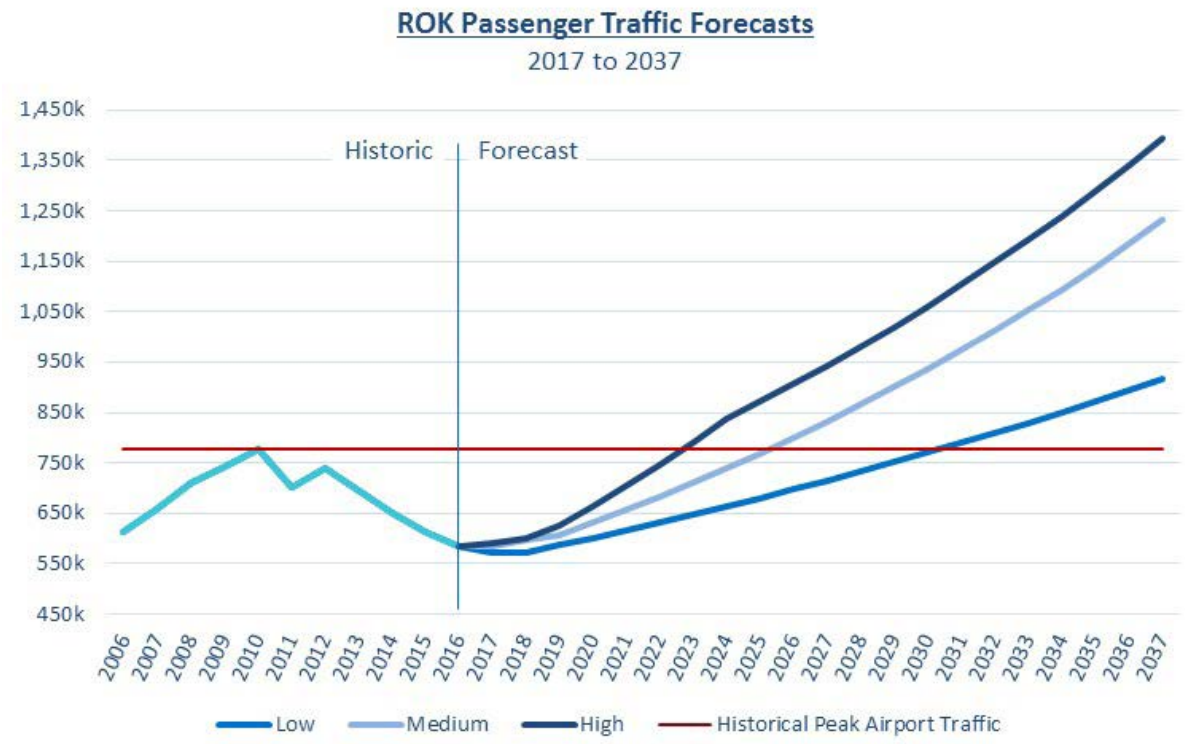


Exhibit 3-16 provides the same forecast air traffic in tabular format.

EXHIBIT 3-16
ROCKHAMPTON AIRPORT PASSENGER TRAFFIC FORECAST BY GROWTH SCENARIO

YEAR	LOW GROWTH	MEDIUM GROWTH	HIGH GROWTH
2017	572,562	584,247	590,089
2018	572,562	595,932	601,891
2019	586,876	607,851	625,967
2020	601,548	632,165	663,525
2021	616,587	657,451	703,336
2022	632,001	683,749	745,537
2023	647,801	711,099	790,269
2024	663,996	739,543	837,685
2025	680,596	769,125	871,192
2026	697,611	799,890	906,040
2027	715,052	831,885	942,282
2028	732,928	865,161	979,973
2029	751,251	899,767	1,019,172
2030	770,032	935,758	1,059,939
2031	789,283	973,188	1,102,336
2032	809,015	1,012,116	1,146,430
2033	829,241	1,052,601	1,192,287
2034	849,972	1,094,705	1,239,978
2035	871,221	1,138,493	1,289,577
2036	893,001	1,184,032	1,341,161
2037	915,326	1,231,394	1,394,807

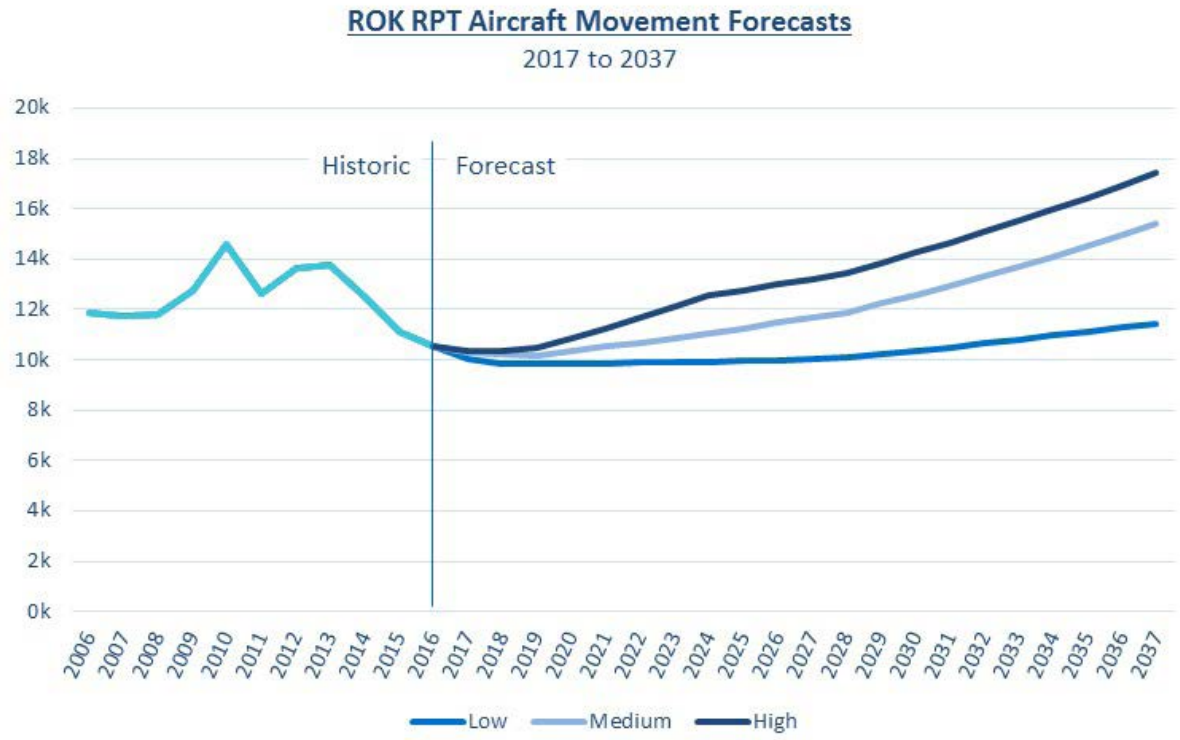
RPT aircraft movements were forecast in a similar manner to passengers, with three growth scenarios developed to illustrate potential future outcomes. The three scenarios were developed using the passenger forecasts as a key input. Aircraft movements were then calculated using an estimate of passenger load factors and average aircraft sizes for the forecast period. The primary assumptions for the forecast of aircraft movements at Rockhampton Airport are:

- Average aircraft size measured as seats available per movement increases from the current 80 to 100 over the forecast horizon. The target aircraft size was established by historical analysis for 4 airports of similar size and scope to Rockhampton Airport. These were, Mackay, Gladstone, Newcastle, and Maroochydore (Sunshine Coast Airport). Of these airports, Mackay represented a suitable datum. Mackay Airport is largely exposed to the same regional economics as Rockhampton Airport, and handles a similar, albeit slightly larger, aircraft mix. In 2016, the average aircraft size was calculated at 96, with the data stable around the 100 mark for 3-4 years prior.

- Aircraft load factors, calculated at approximately 70% in 2016, are assumed to increase to a stable 80% over the forecast period. Load factors of 80% were achieved at Rockhampton Airport during peak periods in 2010-2012, and this level is consequently assumed to be appropriate as a long term target.

Exhibit 3-17 illustrates the forecast growth in aircraft movements for each of the three scenarios of air traffic growth in the forecast.

EXHIBIT 3-17
ROCKHAMPTON AIRPORT RPT AIRCRAFT MOVEMENTS FORECAST



As shown in the Exhibit 3-17, aircraft movements are forecast to decline along with passenger traffic over the short term, in line with the passenger forecast scenarios. Exhibit 3-18 provides the aircraft movement forecast data for each of the three traffic growth scenarios

EXHIBIT 3-18
ROCKHAMPTON AIRPORT RPT AIRCRAFT MOVEMENTS BY GROWTH SCENARIO

YEAR	LOW GROWTH	MEDIUM GROWTH	HIGH GROWTH
2017	10,052	10,257	10,360
2018	9,818	10,218	10,320
2019	9,831	10,182	10,486
2020	9,847	10,348	10,862
2021	9,866	10,520	11,254
2022	9,887	10,697	11,664
2023	9,911	10,880	12,091
2024	9,938	11,068	12,537
2025	9,967	11,263	12,758
2026	9,998	11,464	12,985
2027	10,032	11,671	13,219
2028	10,068	11,884	13,461
2029	10,207	12,225	13,847
2030	10,350	12,577	14,246
2031	10,496	12,941	14,659
2032	10,645	13,317	15,085
2033	10,797	13,706	15,525
2034	10,953	14,107	15,979
2035	11,113	14,522	16,449
2036	11,275	14,950	16,934
2037	11,442	15,392	17,435

3.5 ADANI FORECAST SCENARIOS

Cited above, Adani's development of the Carmichael coal mine may have a significant impact on Rockhampton Airport's passenger traffic. Discussion with airport management has confirmed the forecast of probable operating assumptions for FIFO workers accessing the mine site. These are:

- **A ramp up period commencing in CY 2018 and peaking 3 years later**
  Traffic is anticipated to peak at 200,000 passengers per annum during the construction phase
- **Steady state traffic is estimated at 100,000 passengers per annum**
  Steady state is defined as the level of traffic required once the mine is operational
- **Traffic is anticipated to be carried on A320 aircraft (180 seats)**
  The aircraft type appears economically sub-optimal for the sector distance of approximately 400km suggesting a smaller regional aircraft may operate the route in the future albeit with higher frequencies

The passenger forecasts based on these assumptions are illustrated below in Exhibit 3-19. Should Adani commence as planned, Rockhampton Airport will return to its historical peak traffic in CY 2019/20.

EXHIBIT 3-19
ROCKHAMPTON AIRPORT PASSENGER TRAFFIC FORECAST CHART - ADANI FORECAST

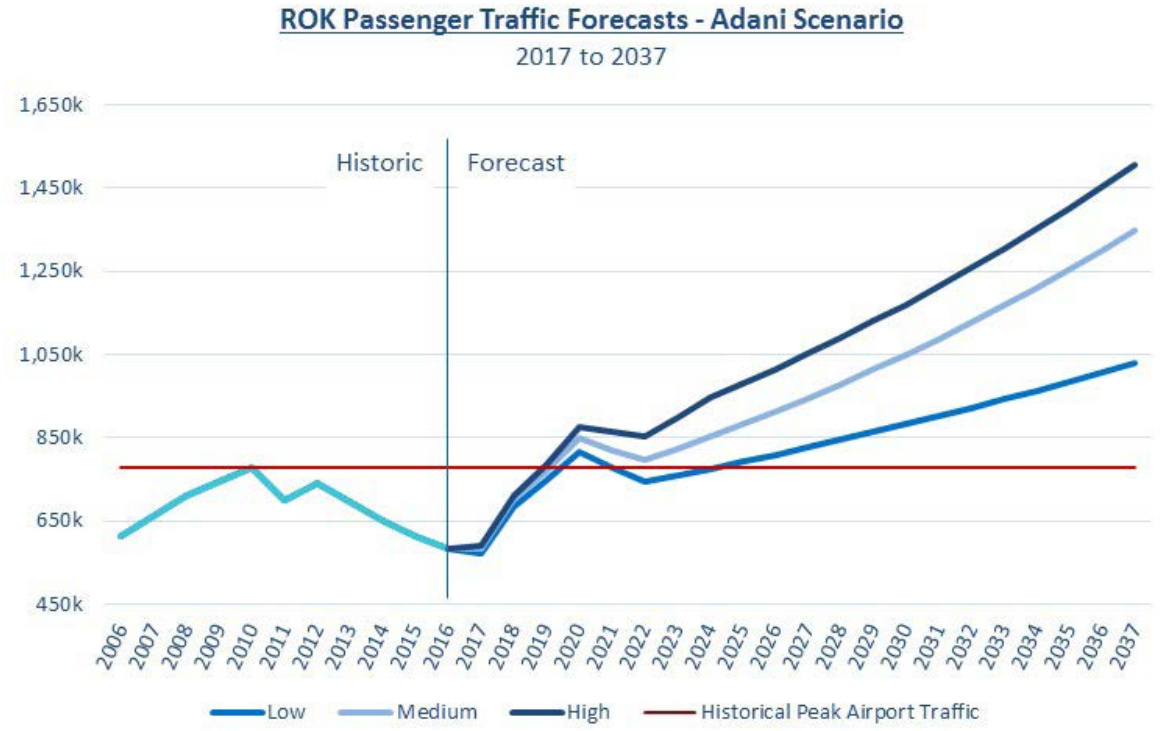
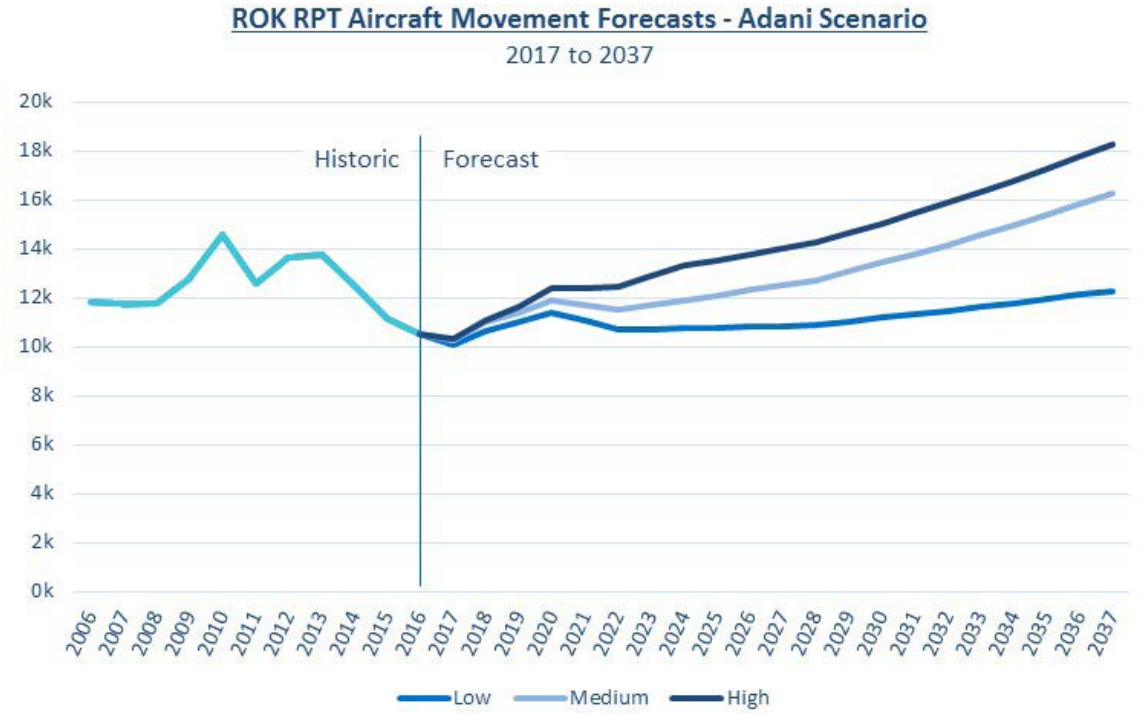


Exhibit 3-20 illustrates the aircraft movement forecast under the Adani Scenario. The expected A320 operations would be able to cater for the forecasted annual traffic with a double daily schedule to the mine site and back. Consequently, the number of annual aircraft movements generated is relatively low in comparison to the increases in passenger traffic.

EXHIBIT 3-20
ROCKHAMPTON AIRPORT RPT AIRCRAFT MOVEMENTS FORECAST- ADANI FORECAST



The following Exhibit 3-21 and 3-22 provide annual levels for both passenger and aircraft movements.

EXHIBIT 3-21
ROCKHAMPTON AIRPORT RPT PASSENGER MOVEMENTS FORECAST TABLE- ADANI SCENARIO

YEAR	LOW GROWTH	MEDIUM GROWTH	HIGH GROWTH
2017	572,562	584,247	590,089
2018	683,120	703,685	709,674
2019	749,993	771,073	786,283
2020	817,227	848,041	876,441
2021	780,001	821,161	864,032
2022	743,153	795,301	854,023
2023	759,111	822,920	898,975
2024	775,468	851,643	946,623
2025	792,234	881,516	980,295
2026	809,419	912,583	1,015,313
2027	827,034	944,893	1,051,733
2028	845,089	978,496	1,089,609
2029	863,596	1,013,442	1,129,000
2030	882,565	1,049,787	1,169,966
2031	902,008	1,087,585	1,212,572
2032	921,937	1,126,895	1,256,881
2033	942,365	1,167,777	1,302,963
2034	963,303	1,210,295	1,350,889
2035	984,765	1,254,514	1,400,731
2036	1,006,763	1,300,501	1,452,567
2037	1,029,312	1,348,328	1,506,476

EXHIBIT 3-22
ROCKHAMPTON AIRPORT RPT AIRCRAFT MOVEMENTS FORECAST TABLE- ADANI SCENARIO

YEAR	LOW GROWTH	MEDIUM GROWTH	HIGH GROWTH
2017	10,052	10,257	10,360
2018	10,644	10,996	11,099
2019	11,021	11,375	11,629
2020	11,402	11,906	12,371
2021	11,057	11,715	12,401
2022	10,714	11,530	12,449
2023	10,738	11,715	12,878
2024	10,765	11,905	13,327
2025	10,794	12,102	13,548
2026	10,826	12,304	13,777
2027	10,860	12,513	14,012

2028	10,896	12,729	14,255
2029	11,037	13,073	14,643
2030	11,181	13,429	15,044
2031	11,329	13,797	15,459
2032	11,479	14,176	15,887
2033	11,633	14,568	16,329
2034	11,791	14,974	16,785
2035	11,952	15,392	17,257
2036	12,116	15,825	17,745
2037	12,284	16,272	18,249

3.6 PEAK HOUR FORECASTS (MEDIUM SCENARIO)

Peak hour passenger forecasts have been developed by examining the current RPT schedule at Rockhampton Airport to ascertain a suitable ratio of the peak hour passengers to annual passengers, and by applying this ratio to the levels of forecast annual traffic, the future peak hour demand can be determined.

The current small scale of operations at the airport, characterised by aircraft movements spread throughout the day to/from Brisbane, suggests that there are several peak hour periods in a day. This is generally when Qantas and Virgin offer parallel schedules, either as a result of natural commercially attractive flight times or in a competitive move to protect market share. However, the additional daily Mackay operation by Qantas during the midday time period, which is coupled with a dual parallel service to Brisbane, points to a distinct peak period. It assumed that the schedule proposition offered by Virgin will continue in the future by the Alliance Airlines cooperation.

It is important to also consider the single Virgin B737 operation currently scheduled on the Rockhampton-Brisbane route that arrives at 10:10 and departs at 10:40 as published in the August 2015 station schedule. Depending on load factors achieved for this rotation, this too could be considered as a peak period for the airport. For example, the aircraft generates 176 seats for each movement, and at an assumed load factor of 80%, would generate 141 passengers each way for the airport. This is in contrast to the estimated peak hour for departing passengers defined below, however there are several reasons as to why the Virgin flight was not selected as the design peak hour.

1. The assumed load factor required to achieve this figure is above the calculated load factor that the airport experiences at the present time. As a result, if the average load factor of 70% is applied, the peak passenger number reduces to 123. While there would be occasions when this figure may be higher, the frequency of this occurring may be outside the parameters for a design peak hour.

2. The announcement by Virgin to outsource flying operation to Alliance Airlines at Rockhampton Airport, and amongst other regional destinations along the Queensland coast, suggests the B737 will cease to operate at the airport. It is believed that Alliance Airlines will be deploying the 80-seat F70 aircraft to the port which will then reduce the super-peak phenomenon.

Reverting to the estimated peak hour referred to above, assuming a load factor for the seats generated during these times allows for the calculation of peak departing and arriving passenger traffic. Furthermore, the peak-to-annual passengers for the base year have been determined. These are as follows:

- Current Estimated Peak Hour Arriving Passengers – 166
- Current Estimated Peak Hour Departing Passengers – 110
- Current Arriving Peak Hour to Annual Ratio – 0.051%
- Current Departing Peak Hour to Annual Ratio – 0.034%

Applying these ratios to the annual passenger forecast yields the peak hour passenger flows for those years. Exhibit 3-23 provides this with the forecast displayed in 5 year increments.

EXHIBIT 3-23
ROCKHAMPTON AIRPORT PEAK HOUR PASSENGER FORECASTS

PASSENGER FLOWS	2017	2022	2027	2032	2037
Arrivals	159	185	226	275	334
Departures	107	125	153	186	226

Peak hour aircraft movements were developed by assessing the seat capacity needed to accommodate peak hour passengers, and dividing that by an average aircraft size. While the average aircraft size is forecast to increase over the forecast periods, the peak hour aircraft size is forecast to remain stable over the forecast period. When larger jet aircraft have operated to/from the airport in the past, they were scheduled at different times to the current peak hour, and it is likely this trend may continue in the future should these services return. This primarily focuses on the deployment of low cost leisure capacity at less commercially attractive timings. The peak business patterns will likely experience airlines offering frequency over capacity, leveraging the benefits of smaller aircraft to do so. Additionally, the Adani operations will more likely occur in the very early morning and late evening, which are outside of the current peak hour timing and therefore will have no effect on the peak hour figures presented.

Exhibit 3-24 displays the forecast results for three categories of aircraft operations, arriving movements, departing movements, as well as aircraft stand requirements. The peak hour arriving and departing movements are for aircraft that arrive or depart in the peak hour, whereas the listed stand requirements refer to the number of aircraft on the ground over the peak hour and the number of aircraft parking positions required to accommodate those aircraft.

EXHIBIT 3-24
ROCKHAMPTON AIRPORT PEAK HOUR AIRCRAFT MOVEMENTS

AIRCRAFT MOVEMENT TYPE	2017	2022	2027	2032	2037
Arrivals	3	3	4	5	6
Departures	2	2	3	3	4
Stand Requirements	3	3	4	5	6

3.7 RPT PASSENGER & AIRCRAFT FORECAST SUMMARY

Exhibit 3-25 provides details for the 'Most Likely Scenario' forecast, covering Arrivals and Departures for both passengers and aircraft movements in 5 year increments. Exhibit 3-26 provides a detailed summary for the Most Likely - Adani Scenario.

EXHIBIT 3-25
DETAILED PASSENGER AND AIRCRAFT MOVEMENTS FORECAST TABLE

		2017	2022	2027	2032	2037
PASSENGERS	Arrivals	291,994	341,723	415,758	505,834	615,424
	Departures	292,253	342,026	416,127	506,282	615,970
	Total	**584,247**	**683,749**	**831,885**	**1,012,116**	**1,231,394**
	CAGR between intervals	0% (yoy)	3%	4%	4%	4%
	Peak Hour Arriving	159	185	226	275	334
	Peak Hour Departing	107	125	153	186	226
AIRCRAFT MOVEMENTS	Arrivals	5,126	5,346	5,833	6,656	7,693
	Departures	5,131	5,351	5,838	6,662	7,700
	Total	**10,257**	**10,697**	**11,671**	**13,317**	**15,392**
	CAGR between intervals	-3% (yoy)	1%	2%	3%	3%
	Peak Hour Arriving	3	3	4	5	6
	Peak Hour Departing	2	2	3	3	4
	Stand Requirements	3	3	4	5	6

EXHIBIT 3-26
DETAILED PASSENGER AND AIRCRAFT MOVEMENTS FORECAST TABLE-ADANI SCENARIO

		2017	2022	2027	2032	2037
PASSENGERS	Arrivals	291,994	410,601	485,364	576,325	686,992
	Departures	292,253	410,908	485,737	576,778	687,544
	Total	**584,247**	**821,509**	**971,101**	**1,153,103**	**1,374,536**
	CAGR between intervals	0% (yoy)	7%	3%	3%	4%
	Peak Hour Arriving	159	185	226	275	334
	Peak Hour Departing	107	125	153	186	226
AIRCRAFT MOVEMENTS	Arrivals	5,126	5,763	6,254	7,085	8,132
	Departures	5,131	5,767	6,259	7,091	8,139
	Total	**10,257**	**11,530**	**12,513**	**14,176**	**16,272**
	CAGR between intervals	-3% (yoy)	2%	2%	3%	3%
	Peak Hour Arriving	3	3	4	5	6
	Peak Hour Departing	2	2	3	3	4
	Stand Requirements	3	3	4	5	6

3.8 GENERAL AVIATION AIRCRAFT MOVEMENT FORECAST

Forecasts of general aviation traffic development over the forecasting period for the airport have been developed by using the breakdown of aircraft groups obtained from Air Services Australia. General aviation (GA) and RPT aircraft movements are unfortunately not broken out in the dataset, with aircraft

types for those that are "Under 7 tonnes", "Between 7 and 136 tonnes", and "Over 136 tonnes" being used to classify aircraft. As a result, larger GA aircraft are essentially combined with RPT movements in the "Between 7 and 136 tonnes" category. To compensate for this, both of the categories for aircraft under 136 tonnes have been combined, and the BITRE RPT aircraft movements have been deducted from the total. All other aircraft categories remain as stated.

Historical analysis of aircraft movements revealed several different growth rates across the categories that often work in opposition to each other. Military movements, for example, have been stimulated over recent years by the biennial military exercise Talisman Sabre, a joint exercise between the Australian and US Armed Forces. This has caused spikes in aircraft movement activity during the years it is operated, with significant declines for intervening years. Another inconsistency noted is that whereas helicopter operations generally increased between 2009 and 2010, other aircraft movements declined.

These variations, coupled with general aviation movements that are unaffected by the drivers of RPT traffic, can create difficulty in finding appropriate growth rates for a forecast of general aviation traffic. Assessment of historical trends in traffic development, coupled with top-down indicators, have led to the following assumptions being used in the forecast of general aviation activity for Rockhampton Airport:

- Growth for all aircraft and helicopter movements remain is assumed to be subdued for the first year of the forecast period, with growth for the remaining period occurring at a CAGR of 2.8%, which is the long term growth rate for the Rockhampton GRP;
- Military operations are assumed to grow at 6% per annum, which is the historical 10 year CAGR for this category of traffic. The relatively high year-on-year growth rate is used to compensate for the extreme peaks and valleys expected over the forecast horizon.

Exhibit 3-27 illustrates the general aviation forecast movements in chart format and Exhibit 3-28 in tabular format.

EXHIBIT 3-27
ROCKHAMPTON AIRPORT GENERAL AVIATION MOVEMENTS FORECAST

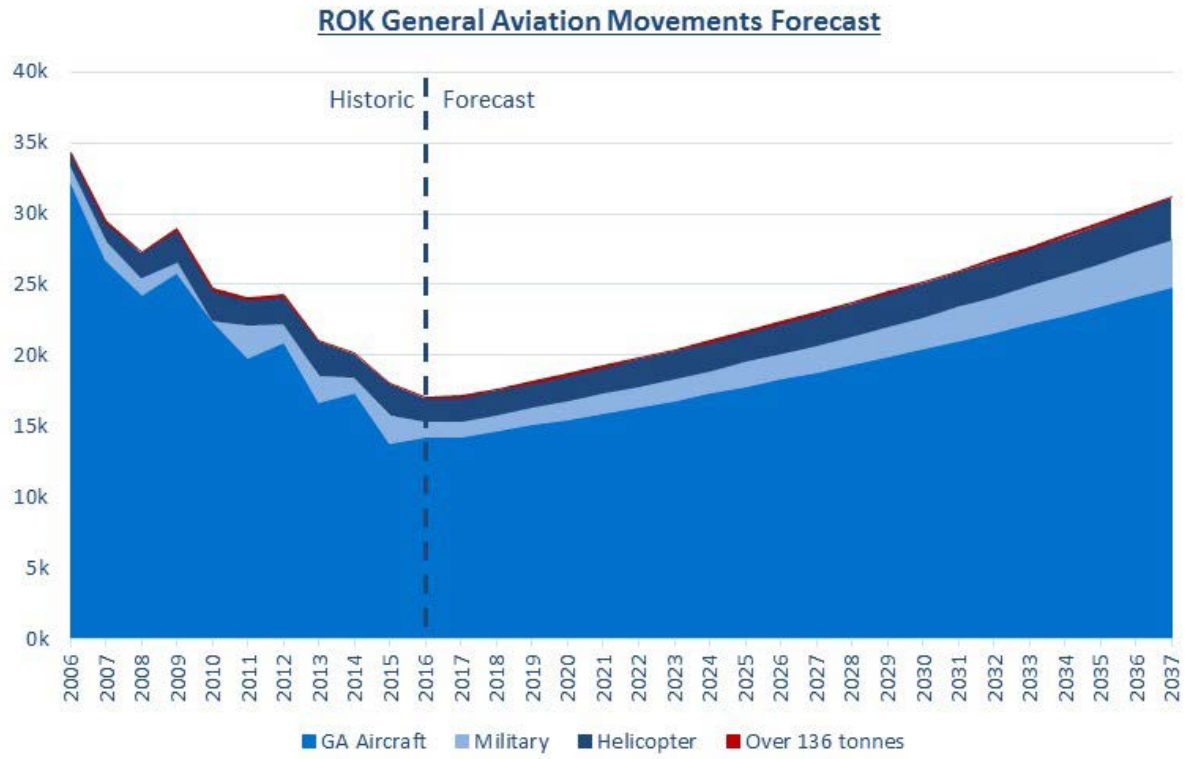
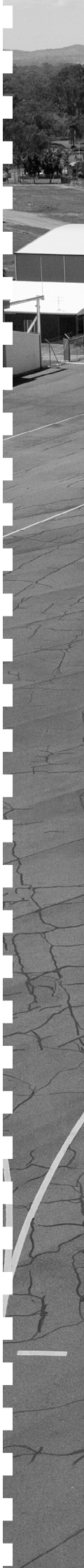


EXHIBIT 3-28
ROCKHAMPTON AIRPORT GENERAL AVIATION MOVEMENTS FORECAST TABLE

AIRCRAFT CATEGORY				
YEAR	OVER 136 TONNES	GA AIRCRAFT	HELICOPTER	MILITARY
2017	44	17,407	1,766	1,171
2018	45	17,894	1,815	1,240
2019	46	18,395	1,866	1,313
2020	48	18,911	1,919	1,391
2021	49	19,440	1,972	1,473
2022	51	19,984	2,027	1,560
2023	52	20,544	2,084	1,652
2024	53	21,119	2,143	1,749
2025	55	21,710	2,203	1,852
2026	56	22,318	2,264	1,962
2027	58	22,943	2,328	2,077
2028	60	23,586	2,393	2,200
2029	61	24,246	2,460	2,330
2030	63	24,925	2,529	2,467
2031	65	25,623	2,600	2,613
2032	67	26,340	2,672	2,767
2033	68	27,078	2,747	2,930
2034	70	27,836	2,824	3,103
2035	72	28,615	2,903	3,286
2036	84	24,163	2,893	3,122
2037	87	24,839	2,974	3,306




MAX – 12 MT
WING SPAN
PARKING CLEARANCE

FUTURE AIRPORT DEVELOPMENT REQUIREMENTS

4.0

4.0 FUTURE AIRPORT DEVELOPMENT REQUIREMENTS

4.1 IMPLICATIONS OF THE AIR TRAFFIC FORECAST

RUNWAY CAPACITY

Runway capacity is governed by the delay experienced by aircraft as a result of increased demand for runway movements. This delay can be caused by departing aircraft having to wait for arriving aircraft on approach, aircraft backtracking on the runway, or to allow for adequate separations between departing aircraft.

Typically, optimised single runway operations can achieve aircraft movement rates in the order of 44 movements per hour under IFR conditions. However, Runway 15/33 at Rockhampton Airport is not optimised with either a full length parallel taxiway or high speed runway exits (such as the standard ICAO 30° runway exits) and, therefore, would not be able to achieve an optimum runway throughput. However, the demand for runway operations as shown in the forecasts is for a peak hour demand of 9 aircraft movements and, therefore, the long-term peak hour demand remains very low, and within the expected capacity of Runway 15/33. As such, there is currently no need to enhance the runway infrastructure to accommodate high volumes of peak hour aircraft demand throughout the forecasting period.

AIRCRAFT PARKING STAND CAPACITY

The air traffic forecast identifies a peak demand for RPT aircraft parking stands of 6 aircraft stands. The current apron can accommodate 5 Code C aircraft. As such, the apron at Rockhampton Airport is needs to expand to accommodate the peak hour aircraft parking demand.

GENERAL AVIATION CAPACITY

Despite a decline in GA traffic over the last 10 years, the air traffic forecast anticipates that GA traffic would increase, returning to 2006 levels over the course of the forecast period. However, the growth in GA traffic is likely to be more pronounced in increased business aircraft activity, increased need for on-site facilities for GA business users, and an increase in helicopter operations, rather than any increased use of the airport by small private single engine aircraft. If GA traffic demand had been forecast to return to 2006 levels with a similar mix of aircraft types, then there would not be a need for additional facilities, however, with increases in GA business activities, there is likely to be demand for additional hangar space as a result of the increased forecast GA traffic.

AIR CARGO CAPACITY

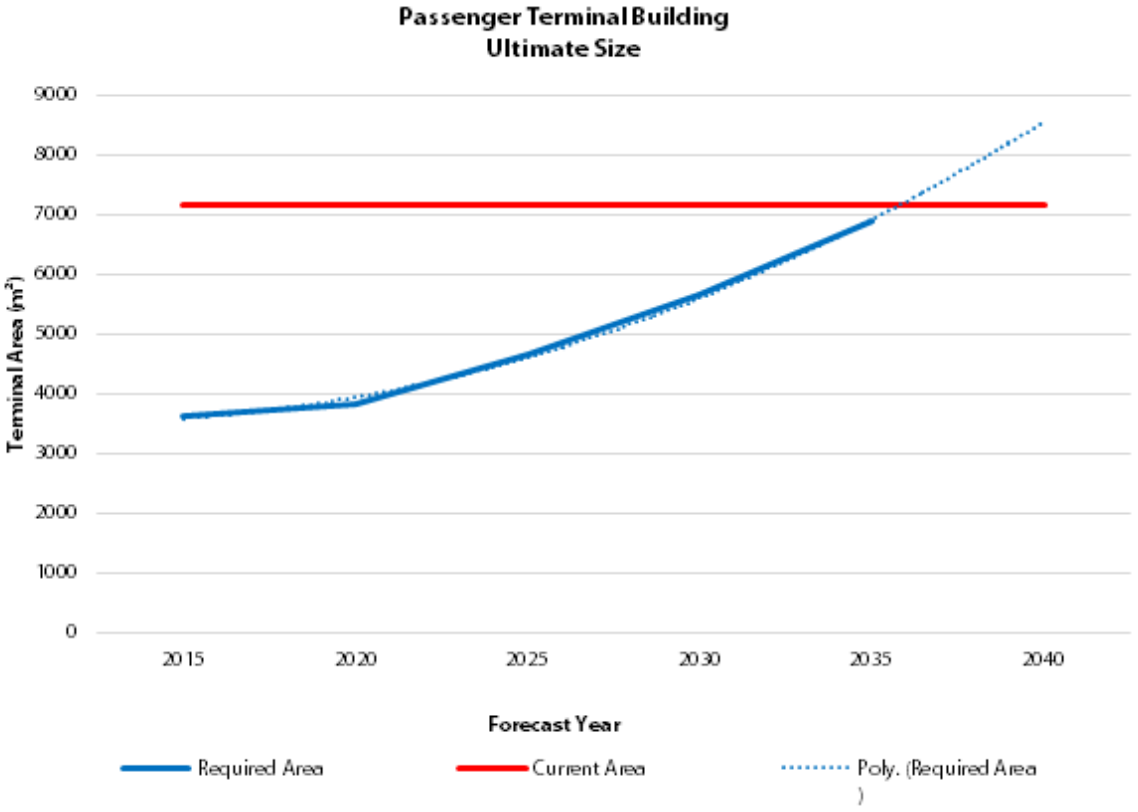
Insufficient data is retained by the present air cargo operators at the Rockhampton Airport and therefore it has not been possible to assess a basis for developing airfreight forecasts. It is recommended that the airport initiate a programme of collecting data related to airfreight operations and air cargo consignments,

so as to ensure they can monitor the growth of air cargo and better understand how air cargo might develop in line with the plans for industrial and agricultural exports from the Fitzroy and Central Queensland region. There appears to be a considerable effort by Regional Council to establish Rockhampton Airport as an air cargo hub for the Fitzroy and Central Queensland region, through developing of export markets for agricultural products. As yet, the export market for these products is unknown. If Council is able to establish the markets, and attract the suitable aircraft operators, additional air cargo facilities would certainly be required. As the size and type of the cargo market is currently unknown, the best the Master Plan can do to accommodate any future demand for air cargo is to make reservation of lands for future cargo facilities in the Master Plan.

PASSENGER TERMINAL CAPACITY

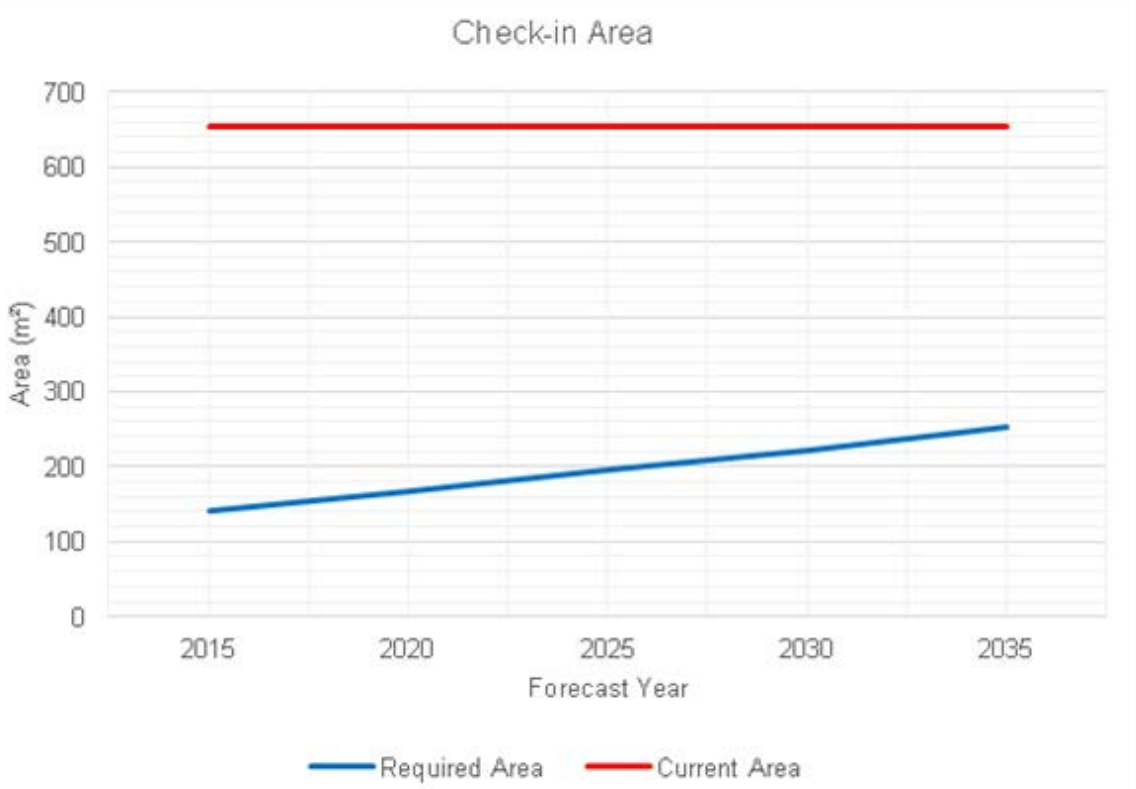
The passenger demand forecast has identified that the passenger terminal has adequate space to accommodate passenger demand through the forecast period. Some parts of the terminal have more than adequate space for demand well beyond the Master Plan period while others will need expansion soon after the Master Plan. Overall, the passenger terminal has a floor area of 7150m^2. To accommodate the forecast demand in 2035, the passenger demand would require a total of 6888m^2. Exhibit 4-1 below identifies that the passenger terminal building should have adequate space to accommodate passenger growth until approximately 2036.

EXHIBIT 4-1
ROCKHAMPTON AIRPORT PASSENGER TERMINAL DEMAND & CAPACITY



The check-in facility in the Passenger Terminal is currently 655m^2. Forecast demand in 2035 is for a check-in facility of 253m^2. Therefore, the check-in hall has ample capacity to accommodate the long-term forecast peak hour passenger demand as illustrated in Exhibit 4-2 below.

EXHIBIT 4-2
ROCKHAMPTON AIRPORT PASSENGER TERMINAL – CHECK-IN AREA DEMAND & CAPACITY



There are currently two baggage claim devices in the Passenger Terminal. The smaller of the two has 28m of bag claim frontage and the larger has 37m of claim frontage. The total area for the baggage claim hall is 530m². Forecast demand for baggage claim area is forecast to increase over the forecast period to 257m² in the forecast year requiring a total claim frontage of 35m. Therefore, the terminal has adequate baggage claim area and frontage to accommodate the long-term passenger demand as illustrated in Exhibit 4-3 and Exhibit 4-4. However, due to flight schedules and the number of flights and number of carriers comprising the future peak hour passenger demand, it may be necessary to provide 3 baggage belts. Although not necessary at this point, expanding to 3 baggage claim devices would necessitate expanding the terminal building as discussed earlier in this document.

EXHIBIT 4-3
ROCKHAMPTON AIRPORT PASSENGER TERMINAL – BAG CLAIM AREA CAPACITY

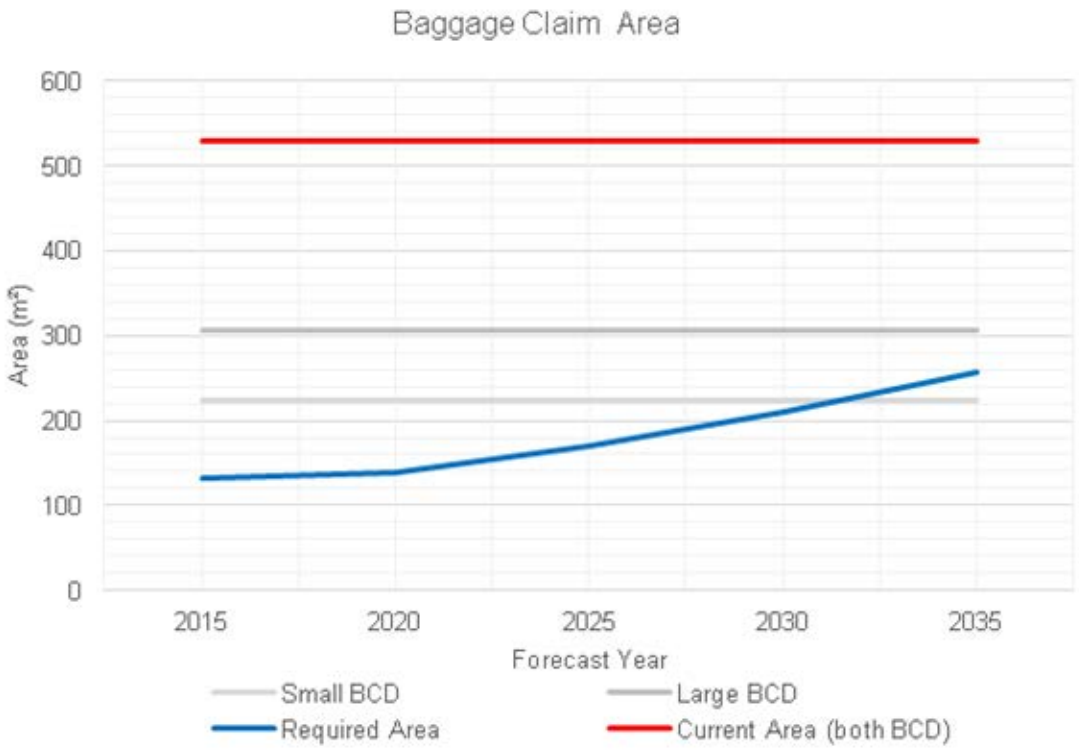
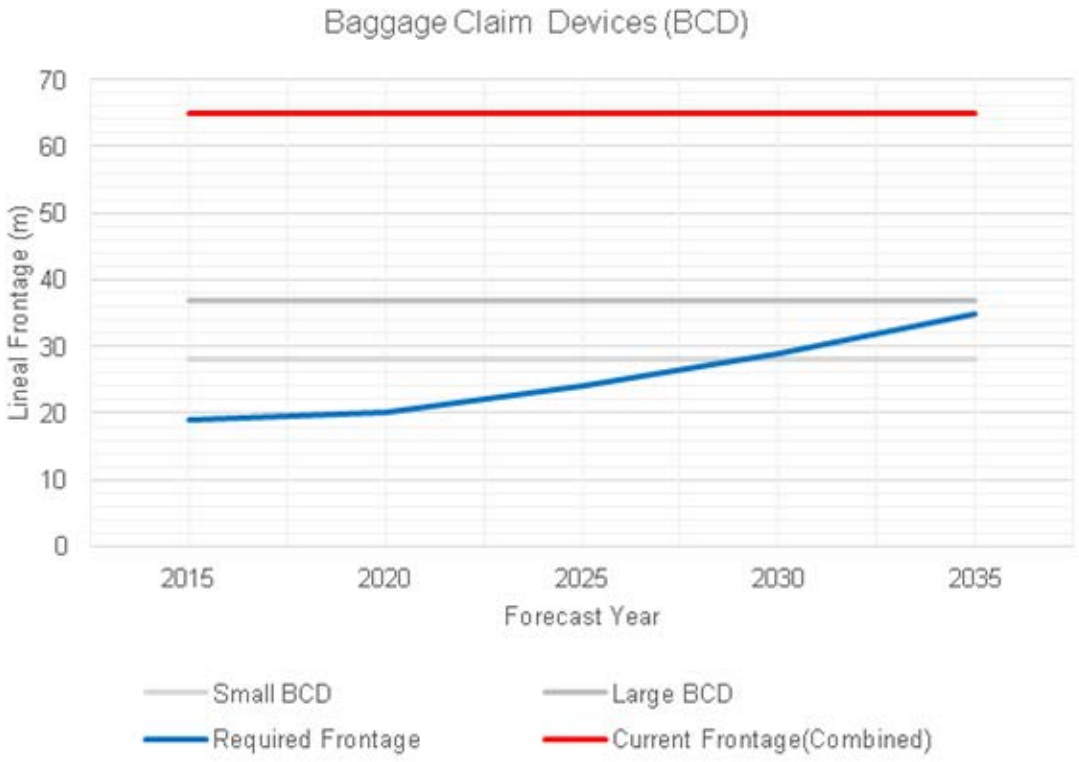
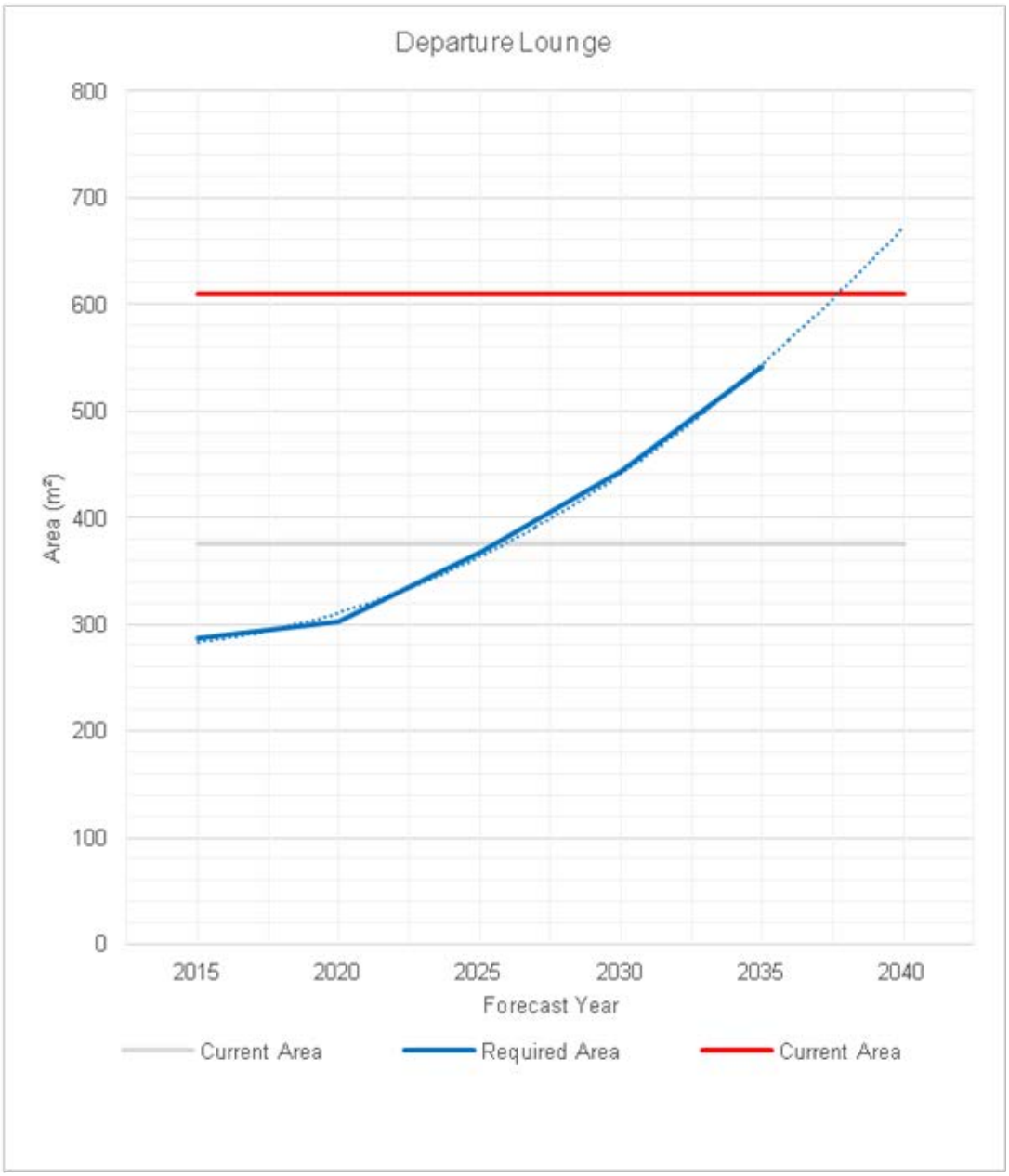


EXHIBIT 4-4
ROCKHAMPTON AIRPORT PASSENGER TERMINAL – BAG CLAIM FRONTAGE CAPACITY



As discussed previously, the departure lounge area of 615m², is adequate to accommodate the needs of current passenger volumes. The current peak hour demand is for 287m². The peak hour demand is forecast to increase to 542m² in 2035. This is close to the capacity limit of the lounge space and therefore additional space will be needed soon after the Master Plan period. Exhibit 4-5 shows the increase in demand for departure lounge space over the forecast period. The lounge however, lacks access to concessions and sufficient hygiene amenities and therefore offers a reduced level of service.

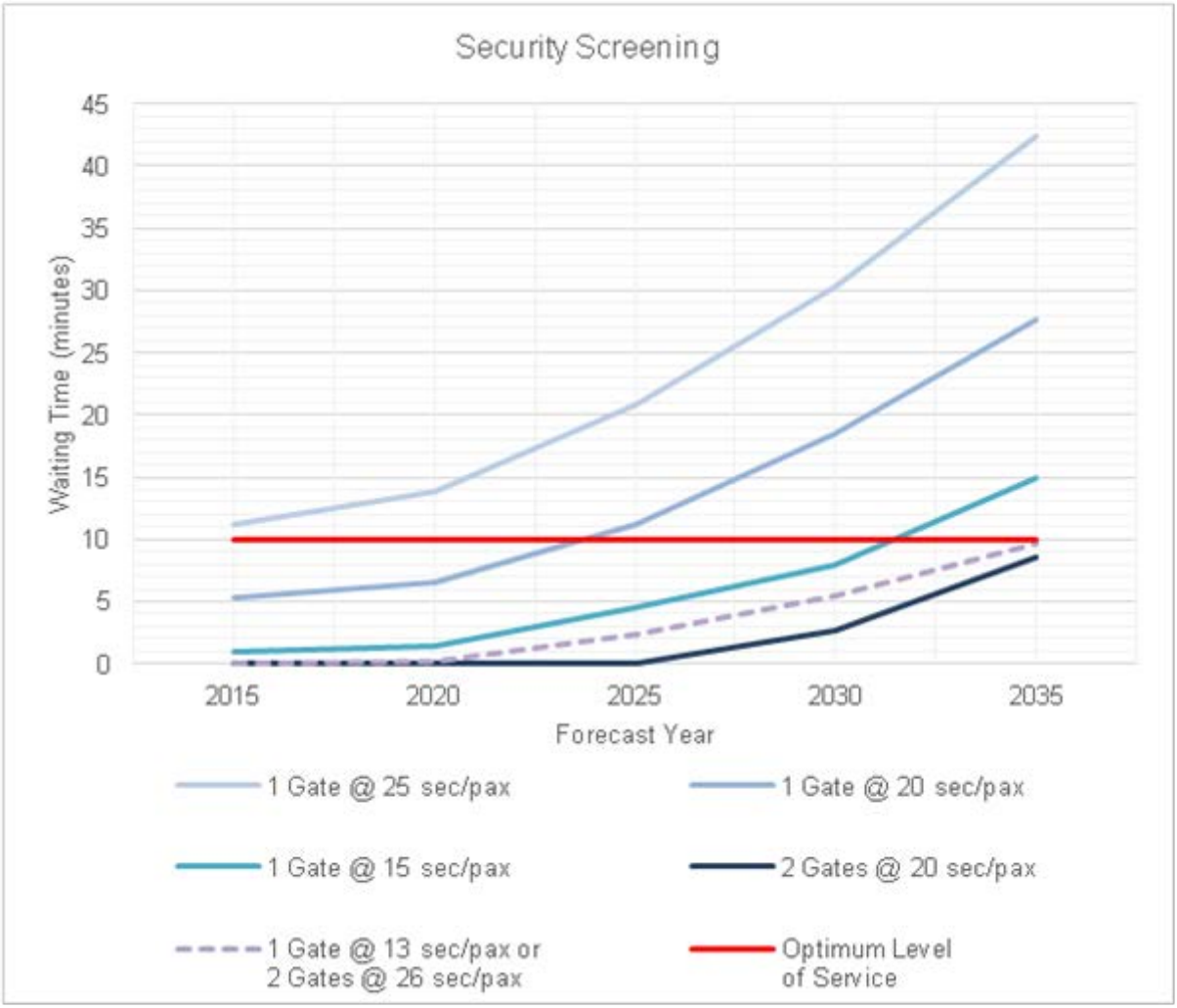
EXHIBIT 4-5
ROCKHAMPTON AIRPORT PASSENGER TERMINAL – DEPARTURE LOUNGE CAPACITY



Forecast peak hour passenger demand for security screening is shown in Exhibit 4-6. There are currently two security screening lanes but only one is currently used. As can be seen from the Exhibit 4-6, one security screening lane should be adequate until approximately 2032. From then on, peak hour forecast

demand would necessitate two security screening points to be in operations with the additional screening point to be introduced soon after the forecast planning horizon. Due to the low level of service offered in the departure lounge, compared to the facilities provided on landside prior to security, passengers tend to delay going through security and therefore wait until their flight is called before entering the security area. This causes a surge of demand at the security screening point. As a result, flights are delayed and the level of service drops at security.

EXHIBIT 4-6
ROCKHAMPTON AIRPORT PASSENGER TERMINAL – SECURITY SCREENING CAPACITY



AUSTRALIAN NOISE EXPOSURE FORECASTS

With a forecast increase in air traffic at the airport, there will be an increase in the overall noise exposure around the airport. In an attempt to quantify the noise that surrounding residents are exposed to, the ANEF system of noise measurement and assessment is used. This analysis calculates the anticipated level of noise complaints due to noise generated by aircraft using the airport at different times of the day or night. In 2015, ANEF contours were developed for the Rockhampton Airport by Rehbein Consultants, and these were submitted to Air Services Australia. These noise contours were developed prior to the forecasting work for the Master Plan, but were only approved by Air Services Australia on14th December 2015. As such, the ANEF contours and the Air Services approval of those contours, produced in 2015, have been included in the Appendix to this report.

4.2 AIRSIDE DEVELOPMENT REQUIREMENTS

As a result of the forecast growth in traffic, the airside development requirements during the Master Plan period to 2037 are as follows:

- Aircraft Parking Stands – One additional stand is required to accommodate peak period demand in 2037. Depending on the development option chosen, pavement strengthening, or new pavement, may be required for this additional stand.
- Taxiways – no additional taxiways required
- Runways – no additional runways

4.3 PASSENGER TERMINAL AREA REQUIREMENTS

- Overall size of Passenger Terminal – no additional space required
- Check-in Area – no additional space required
- Security Screening – use of both screening points required towards the end of the forecast period. A means to reduce surges of passengers arriving at security upon flight boarding announcement is required due to the low level of amenities offered in Departure Lounge.
- Departure Lounge – additional toilets and concessions required
- Baggage Hall – no additional space or baggage belts required
- FIFO processing facilities required

4.4 AIR CARGO AREA REQUIREMENTS

As previously identified, insufficient data is retained by the present air cargo operators at the Rockhampton Airport and therefore it has not been possible to assess a basis for developing air freight forecasts. Nevertheless, the Master Plan has identified provision for growth of the air cargo industry at Rockhampton Airport with a dedicated airfreight precinct. The new precinct, provides room for more and larger airfreight processing facilities as well as space for freight forwarders facilities. This is in keeping with the Rockhampton Region Economic Development Strategy.

4.5 GENERAL AVIATION AREA REQUIREMENTS

- GA Stands – no additional stands required
- GA hangar lease areas – likely to require additional lease areas

4.6 REQUIREMENTS FOR OTHER AVIATION SUPPORT ACTIVITIES

MET Facility – a new location is required in the near term to enable airfreight and GA developments on the site presently occupied by the Bureau of Meteorology (BOM) for MET station facilities.

AIRPORT SITE DEVELOPMENT CONCEPTS

5.0

5.0 AIRPORT SITE DEVELOPMENT CONCEPTS

5.1 OPTIONS CONSIDERED

AIRCRAFT PARKING STANDS

The main RPT apron has 4 primary Code C stands (Stands 1, 2, 3, and 4) that can accommodate A320/B737 sized aircraft, one stand that can accommodate a single Code E aircraft (Stand 6) or two Code C aircraft (Stands 5A and 5B). The apron also has an occasional use stand that can accommodate one Code C aircraft (A320/B737) if needed (Stand 1D). Forecast demand for peak hour stand use is a total of 5 stands to accommodate B373/A320 sized aircraft. Additional stands would be required to ensure adequate stands are available in the event of an aircraft being delayed for any reason. Therefore, long term expansion of the apron is necessary by 2030. Accommodating future stand demand has been illustrated in 2 options. Option 1 shown in Exhibit 5-1, expands the apron to the north where the military jet stands are presently located. With the creation of the Military Precinct, these stands will no longer be required for the military. The pavement strength would need to be addressed before larger aircraft could use the stands that are currently used as military jet stands. This would create a stand capable of accommodating an aircraft up to B737/A320. The second option illustrated in Exhibit 5-2, expands the apron to the south, with one additional stand added. As the current southernmost stand is the stand used for large Code E aircraft such as B747, and B777 as well as occasional use by C17 and AN124 aircraft, the ability to continue to support this size of aircraft is required. Future expansion beyond the master-planning horizon, would expand the terminal to the south and therefore restrict the ability of the stand to accommodate these large aircraft. The second option proposes to expand the apron to the south with a new stand capable of accommodating the current mix of aircraft. The current large aircraft stand (Bay 6) would be downgraded to serving B747, B777, A330 or smaller aircraft while the new stand would be able to accommodate larger Code F aircraft should this be required. Further expansion of the main apron can occur to the south as aircraft traffic and aircraft parking demand increases beyond the forecast period.

BUREAU OF METEOROLOGY

With the automation programme underway for the regional BOM facilities, and a target of 2018 to 2021 established by the BOM for full automation of the MET facility at Rockhampton Airport, the BOM will be installing and upgrading its MET facilities. As the current BOM facility is located on lands that are ideal for further airfreight or general aviation development, moving the BOM facility to another part of the airport would be beneficial. As installation of new and upgraded equipment for the automation programme will be taking place over the next 6 years, initiating relocation of the BOM facility to an alternative site should be planned, so that new MET equipment is installed at a new location during the automation programme period, while existing equipment is also relocated. This would provide time for calibration of equipment. As installation of meteorology equipment is very specific, and has unique requirements, it is important that the Bureau of Meteorology is fully involved in any investigation of future potential sites for their long-term future MET facility. Initial investigation identified that BOM frequently collocate MET equipment alongside air navigation equipment operated by Air Services Australia, as the infrastructure and clearance requirements are similar. As such, the initial location for investigation of a future location

or MET equipment would be at the elevated DVOR site on the western side of the runway. BOM identified that their MET equipment requires power, communications and water utilities. The Air Services DVOR site has power and communications capabilities however it does not have a water supply. If mains water infrastructure is necessary, another site would therefore need to be identified. One option for another possible site is alongside the future Military Precinct area. This location would be above the floodplain, close to utilities and in a location near the Military Precinct. Exhibit 5-3 illustrates the two sites initially identified as alternative sites for relocation of the BOM MET facilities and identifies them as Proposed Locations 'A' and 'B'. Reuse of the BOM site may be allocated to GA development, Air Cargo, or a future relocation of the Airport Management facilities to free up space within the Passenger Terminal for airline lounge development.

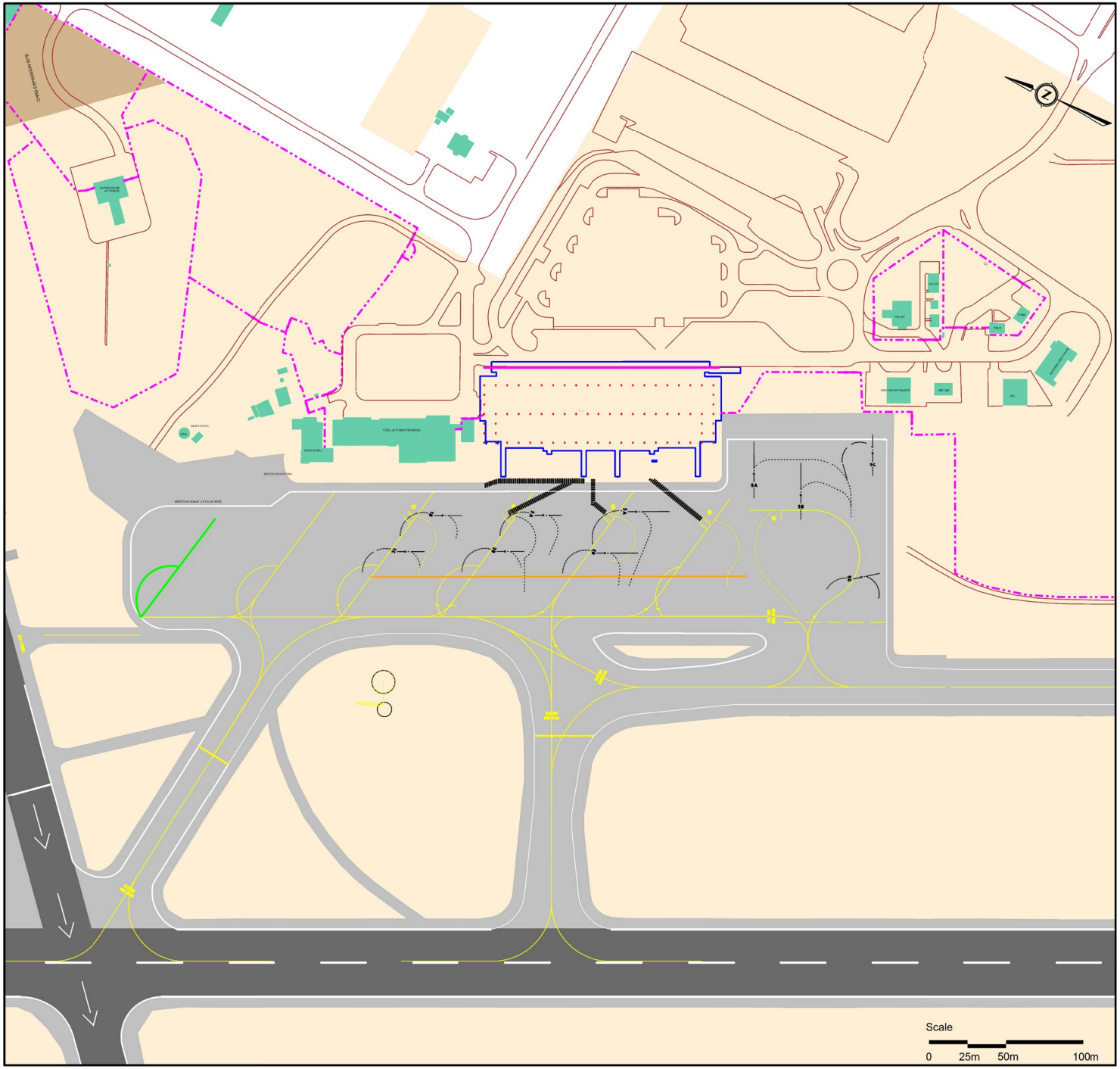
GENERAL AVIATION

The forecast demand for General Aviation aircraft operations is expected to reach the 2006 historic peak by the end of the forecast period. Therefore, throughout the forecast, additional GA facilities would not be necessary to accommodate increases in aircraft operations. If it is found that GA does grow faster than forecast, and there is a need to accommodate small aircraft, provision has been made in the Master Plan for such developments. With the displacement of the Runway 22 threshold and downgrading of the eastern part of the runway to taxiway status, the main GA apron can be expanded. This expansion of 11,393m^2 of apron increases the available aircraft parking for Code A aircraft. The GA Code A aircraft parking area is therefore increased by 3,240m^2 in the Master Plan. In addition, space is reserved for another set of light GA hangars beside Taxiway C.

Although the forecasts do not identify GA growth in excess of the 2006 historic level, the expectation is for the type of GA operations to change, and therefore facilities will be needed in the future to accommodate the changing nature of GA at Rockhampton Airport. The growth in GA operations at Rockhampton is expected to be in the form of businesses operating at the airport serving business aviation, maintenance and repair and commercial charter flights and requiring hangar facilities, rather than private individuals needing aircraft tie-down and parking space for light aircraft. Expansion options for GA facilities have been identified to be located either alongside Taxiway C, or on the site of the existing Bureau of Meteorology MET facilities.

Option 1 for General Aviation development, illustrated in Exhibit 5-4, proposes development of the land beside Taxiway C for GA facilities. This area can accommodate a number of large GA hangars or can be configured to accommodate a number of smaller hangars as well as additional hangars for small aircraft, depending on demand. Although this area was identified in the flood modelling as being flood-prone, the incidence of flooding is low and flooding is dispersed. Examples of possible layout of this area have been provided in Appendix A.

Option 2 for General Aviation development redevelops the site occupied by the BOM as the airport MET facility. This land in this area is able to accommodate up to a number of large hangars along the side of the downgraded portion of Runway 22. This option is illustrated in Exhibit 5-5. Some of this land has potential flooding issues, and full development of the hangar sites and associated aprons, would displace potential flood waters elsewhere. Aprons in front of the hangar area would be subject to flood issues unless elevated to ensure they are above the design flood levels. Examples of potential layout for this area has been provided in Appendix A.



Rockhampton Regional Council

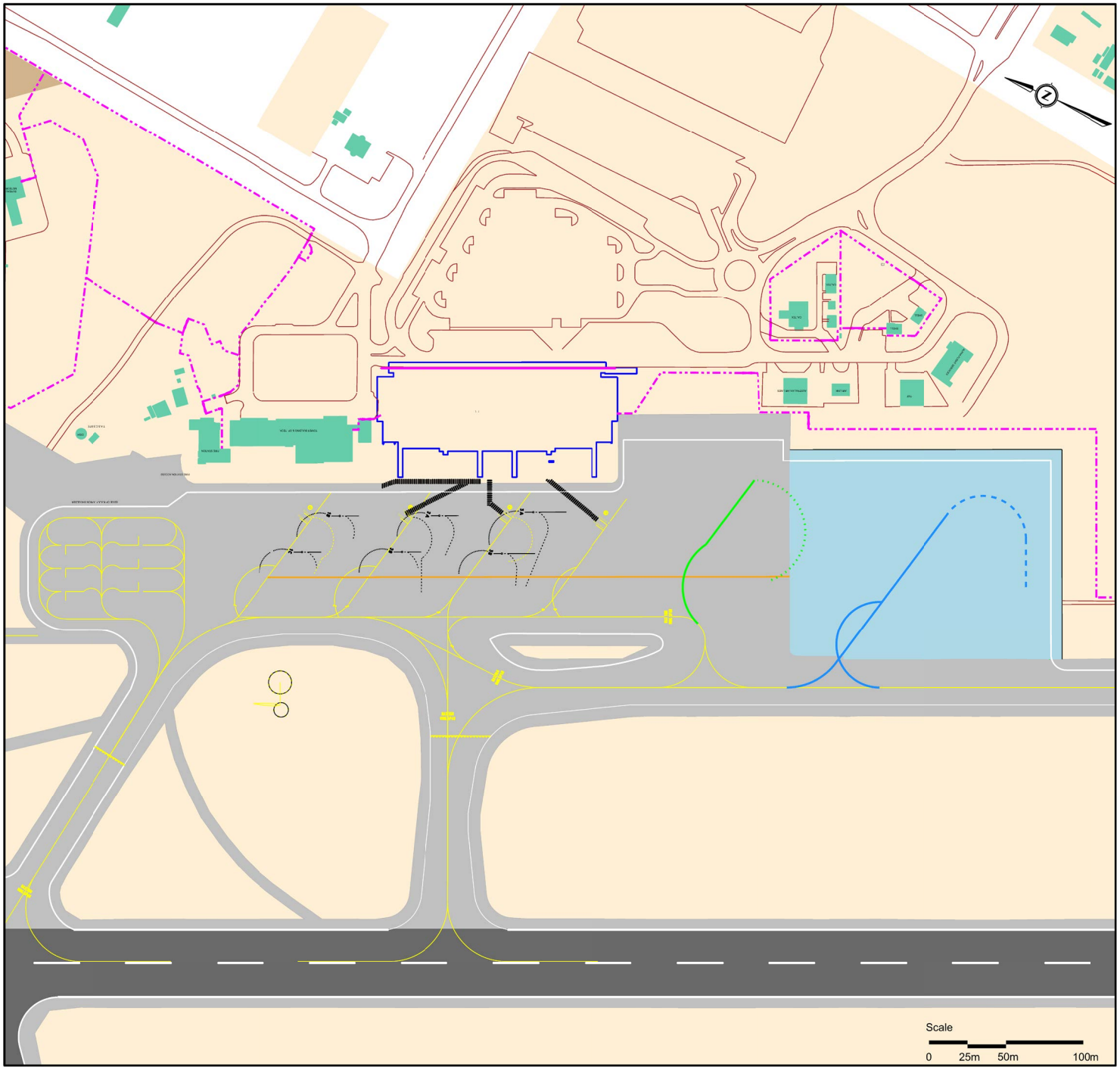
Legend:

- Airport Security Fence
- Proposed Code C Aircraft Parking Stand
- RRC Cwned/Leased Land

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-1
Aircraft Parking Positions - Option 1

L • E • A • P • P



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Proposed Code E Aircraft Parking Stand
- Proposed Code F Aircraft Parking Stand
- RRC Cwned/Leased Land
- Proposed Pavement

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-2
Aircraft Parking Positions - Option 2

L · E · A · P · P

AIR CARGO

In accordance with its Economic Development Strategy, the Regional Council is seeking to maximise the potential for an enhanced air cargo business at the airport, in particular the development of air cargo transport for agricultural products. Future air cargo volumes for agricultural products have not been identified in the forecast as no data exists for air cargo volumes passing through the airport and, consequently, no clear case can presently be demonstrated for this type of air activity. Nevertheless, in the event that the Regional Council is successful in promoting an air cargo business in agricultural products for Rockhampton Airport, the Master Plan safeguards land for such development in the form of a future air cargo precinct. In developing the Airport Master Plan, five possible locations for an air cargo precinct have been considered:

1. East of the end of Runway 22 / Taxiway C;
2. On land presently used by the BOM as the airport MET station;
3. On land along Canoona Road close to the long term car park area;
4. In the GA and Freight Hybrid east of the end of Runway 22 / Taxiway C; or
5. North of the Military Precinct.

With the displacement of the threshold for Runway 22, and the downgrading of part of the displaced portion of the runway to a taxiway, the height restrictions along Canoona Road will be lessened, allowing for higher structures to be erected in this area. Therefore, there is an ability to use the space northeast of the end of the former Runway 22 threshold for air cargo purposes. An area of 4.7 acres has been identified for the Cargo Precinct in Option 1, shown in Exhibit 5-6, for development of an Air Cargo Precinct. The existing two airfreight operators would be relocated to this site, which would also be able to accommodate additional cargo operators and freight forwarders who would develop their own facilities behind the main cargo buildings. Access to this Air Cargo Precinct, would be off Canoona Road. Unutilised land between the Air Cargo Precinct and the CHRS facility would be available for additional GA development. An example of what could be developed in Option 1 has been provided in Appendix A.

The second option for development of the Air Cargo Precinct would be on the site of the present Bureau of Meteorology MET facilities, as shown in Exhibit 5-7. As the MET facilities are designated to become fully automated over the next 6 years, as discussed earlier, there is an opportunity to relocate the MET facilities and reuse the current MET site for airfreight. Air Cargo Option 2 proposes development of the current BOM MET site as the future Air Cargo Precinct. This site would be able to accommodate the 2 existing airfreight operators with expanded facilities, as well as an additional Cargo Operator with added space for freight forwarders. The area identified for the Cargo Precinct in Option 2 is 2.9 acres. Access to this site would be from Canoona Road. An example of what could be developed in Option 2 has been provided in Appendix A.

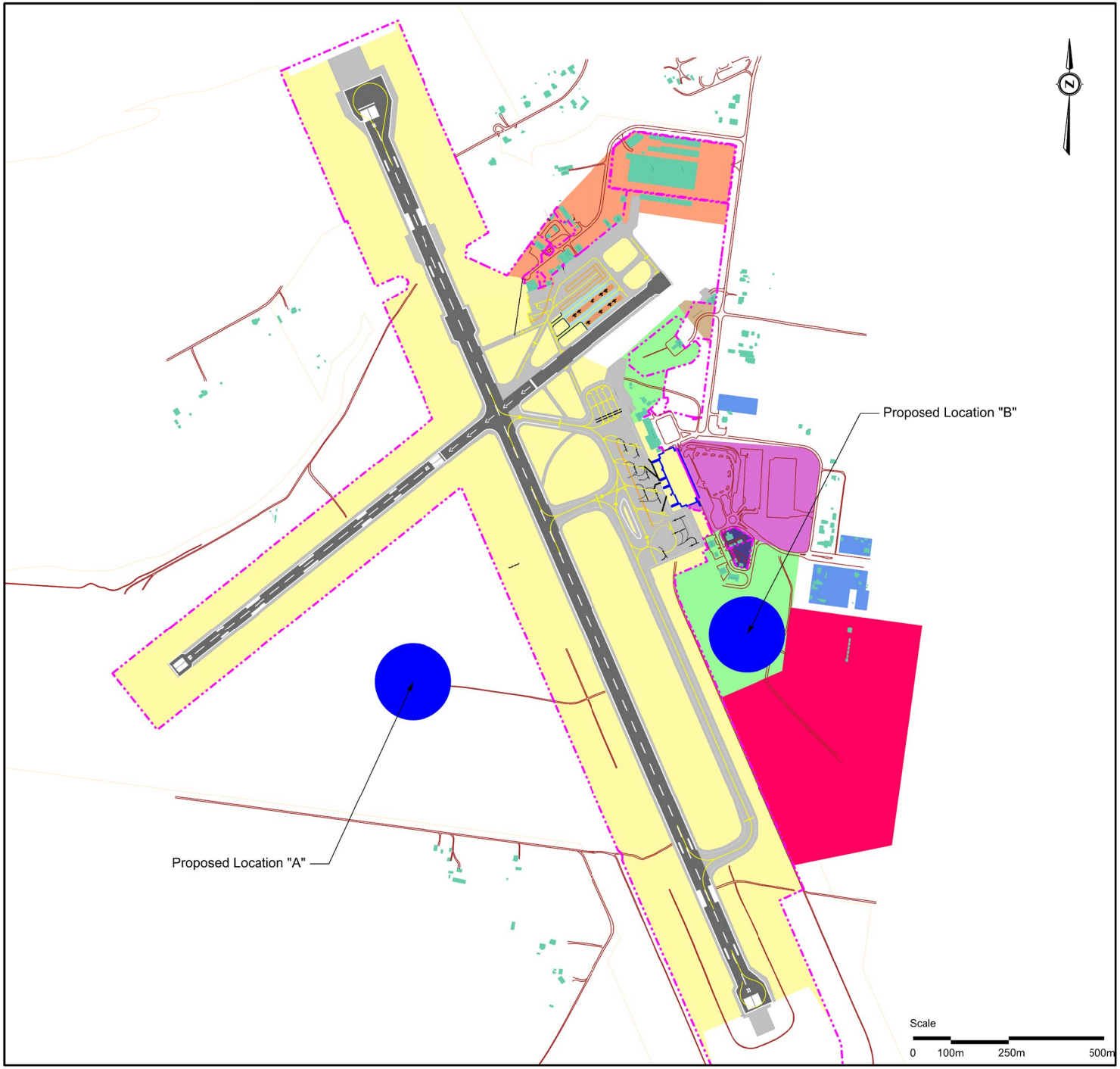
If it transpires that relocation of the BOM facilities is not possible, and therefore the BOM site may not be available for future development of either GA or Airfreight, there is a possibility of allocating an alternative site for air freight purposes. For instance, in Option 3, some 5282m^2 along Canoona Road has been allocated for freight development, as shown in Exhibit 5-8. This site would be able to accommodate the existing expanded airfreight operators as well as additional airfreight facilities. As this site does not have direct airside access, all freight would have to be towed on dollies to the aircraft stands, and then loaded onto aircraft. The security fencing would need to be adjusted to ensure the secure airport boundary remains while minimising the impact on this type of freight operation.

A fourth option for airfreight development has been explored whereby the area to the east of the Runway 22 / Taxiway C is used for both GA and air freight. This option has been illustrated in Exhibit 5-9 and places the freight facility along Canoona Road and beside the PIQ facility. The rest of the area has been reserved for GA development. Although, Option 4 provides convenient access to Canoona Road for freight logistics, it does not:

1. Provide direct airside access; and
2. Requires a rescreening of freight when entering airside.

The final option for the future development of an airfreight precinct is to move the airfreight facilities to the south of their current position. The future airfreight facilities would be located to the north of the Military Precinct discussed in Section . This would permit considerable expansion capability for airfreight operations and moving the airfreight facilities would not need to occur until the expansion of the passenger terminal to the south in the longer term. The location for this airfreight development option has been illustrated in Exhibit 5-10.

The existing air freight operators have facilities that are approximately 247.5m^2 each. To accommodate traffic growth in the existing operators operations, their buildings have been sized at 20m x 20m (400m^2 each) providing a 61% increase in floor area. The total floor area for 3 airfreight processing facilities (existing operators plus one additional) in the 5 options identified above would be 1200m^2. The freight forwarding buildings have been sized at 12m x 7m or 84m^2 each. Examples of possible layouts within the airfreight zones presented for the 5 options have been provided in Appendix A.



Rockhampton Regional Council

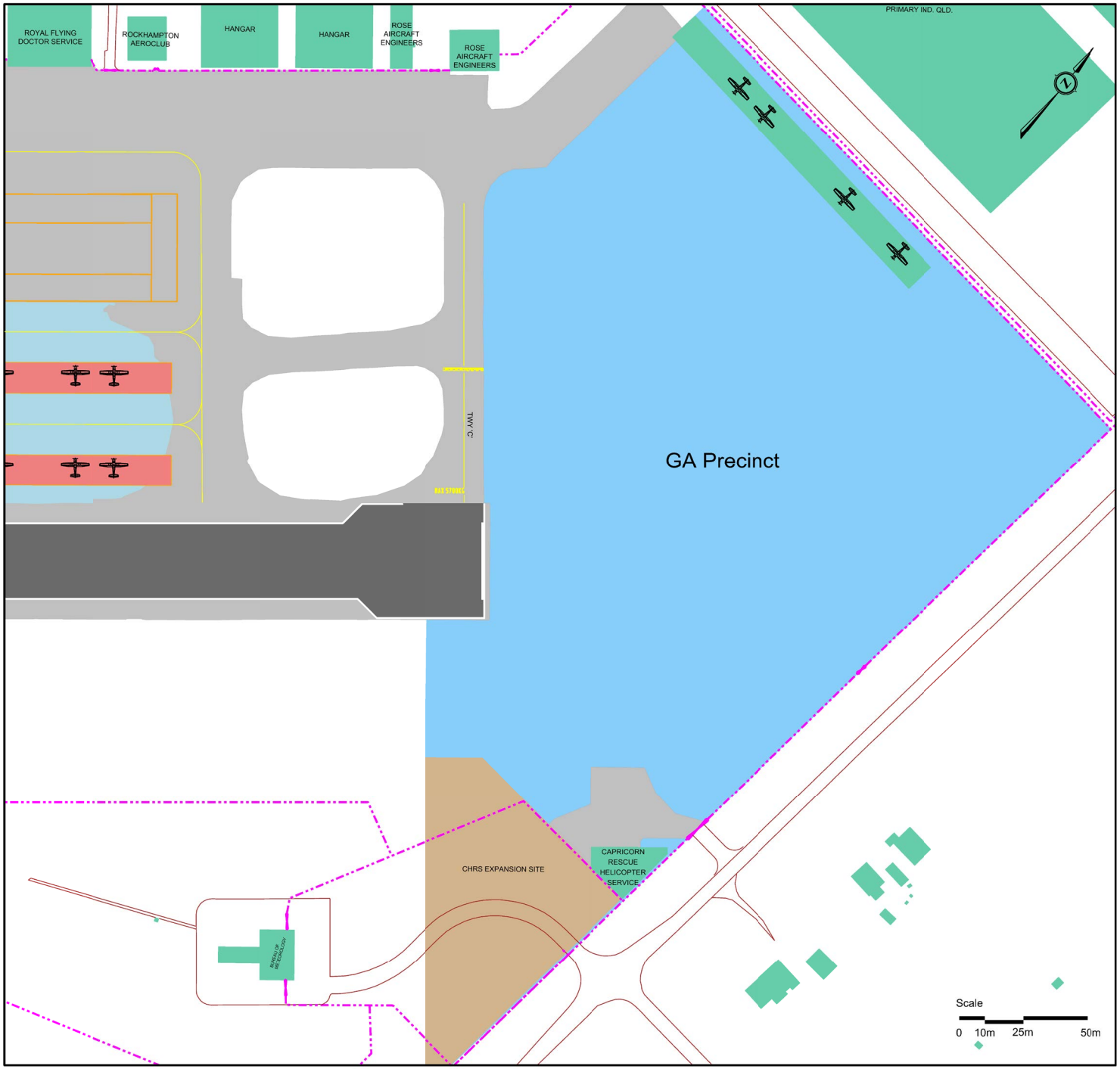
Legend:

- Airport Security Fence
- Airport Operational Area
- Airport Support Facilities
- Car Park
- Fuel Storage
- General Aviation
- Future Landside Commercial Development
- Proposed Military Precinct

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-3
Proposed MET Farm Locations

L • E • A • P • P



Rockhampton Regional Council

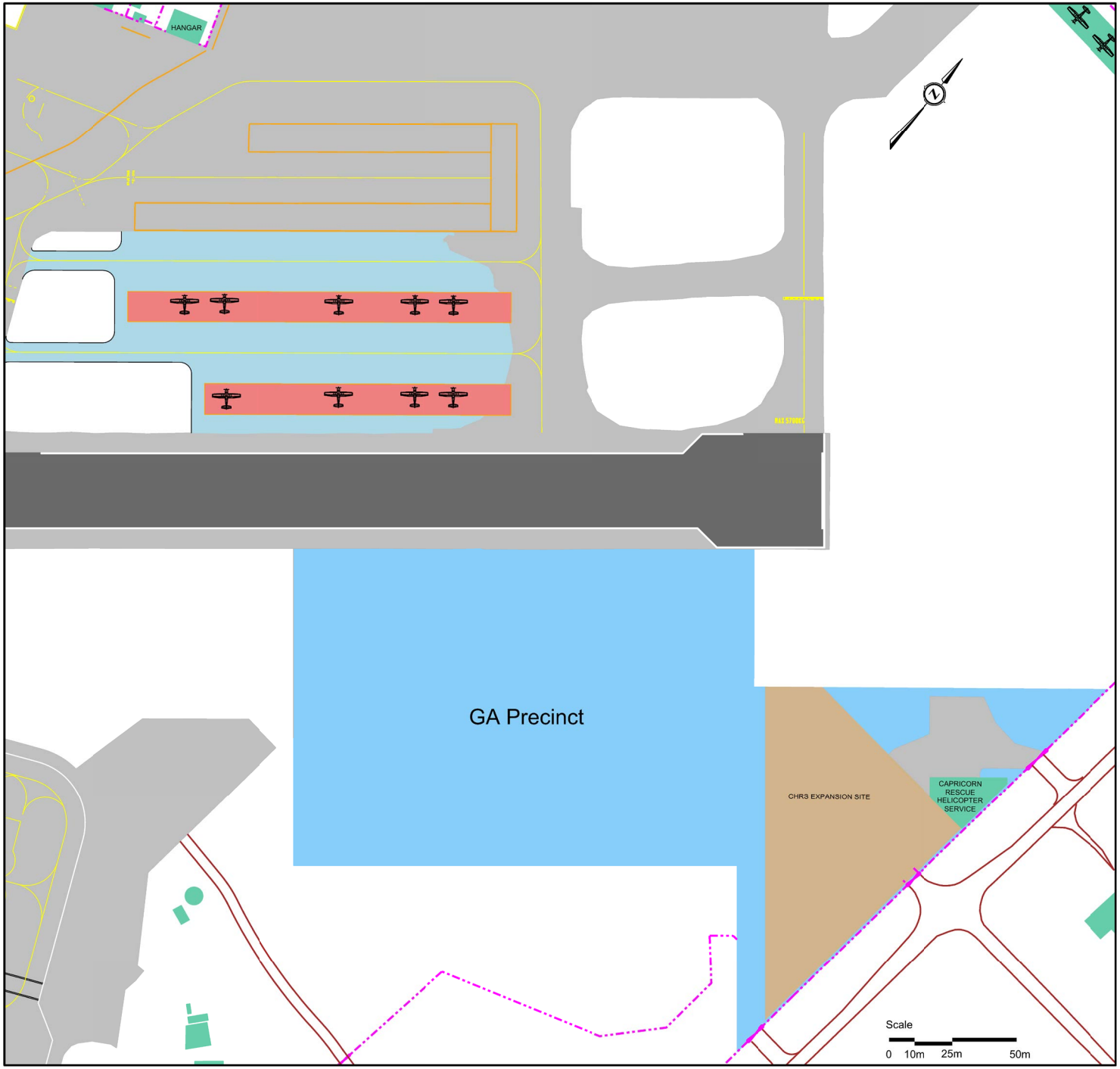
Legend:

- Airport Security Fence
- Proposed GA Area
- Proposed Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-4
GA Precinct - Option 1

L • E • A • P • P



Rockhampton Regional Council

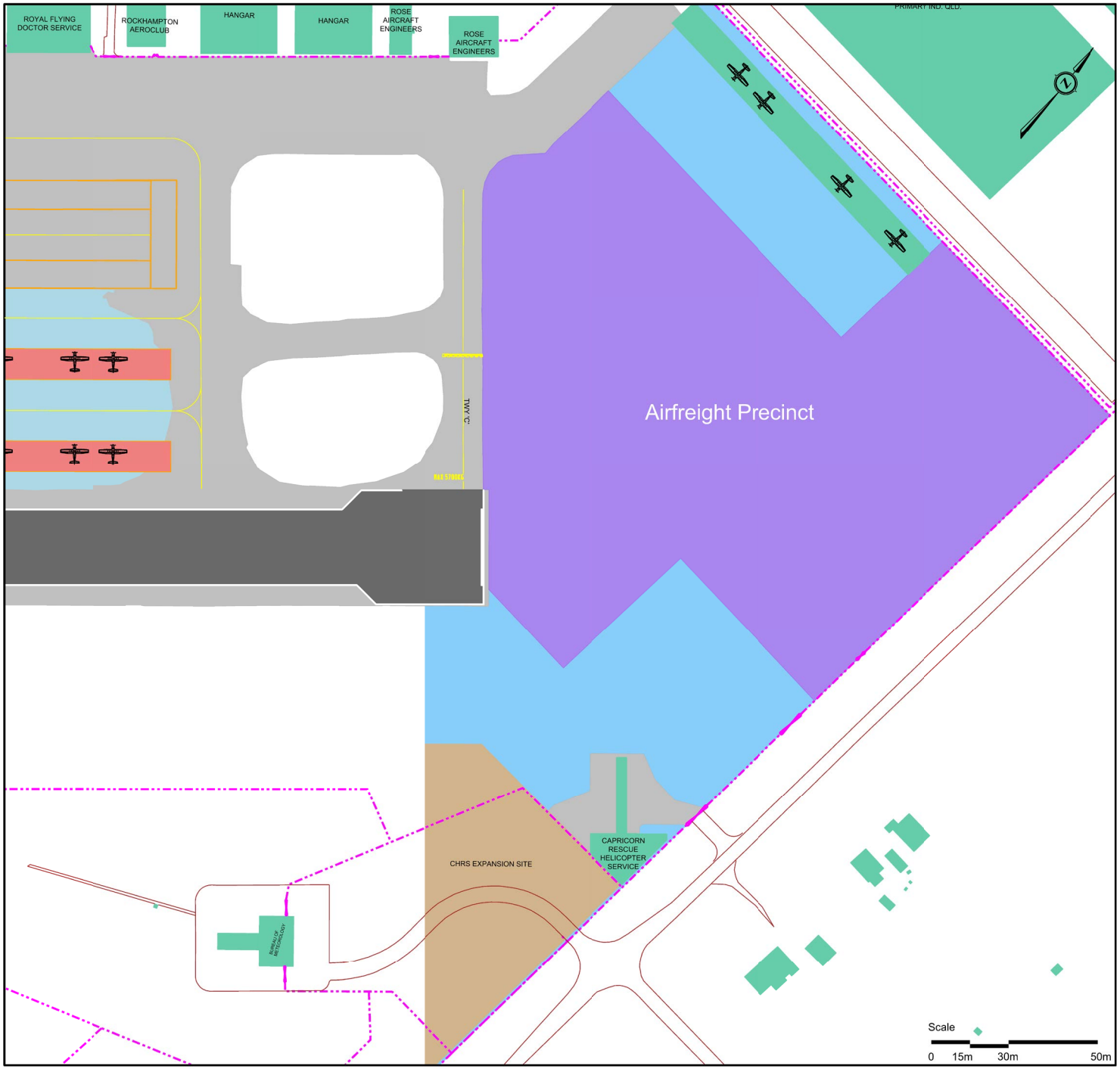
Legend:

- Airport Security Fence
- Proposed GA Area
- Proposed Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-5
GA Precinct - Option 2

L • E • A • P • P



Rockhampton Regional Council

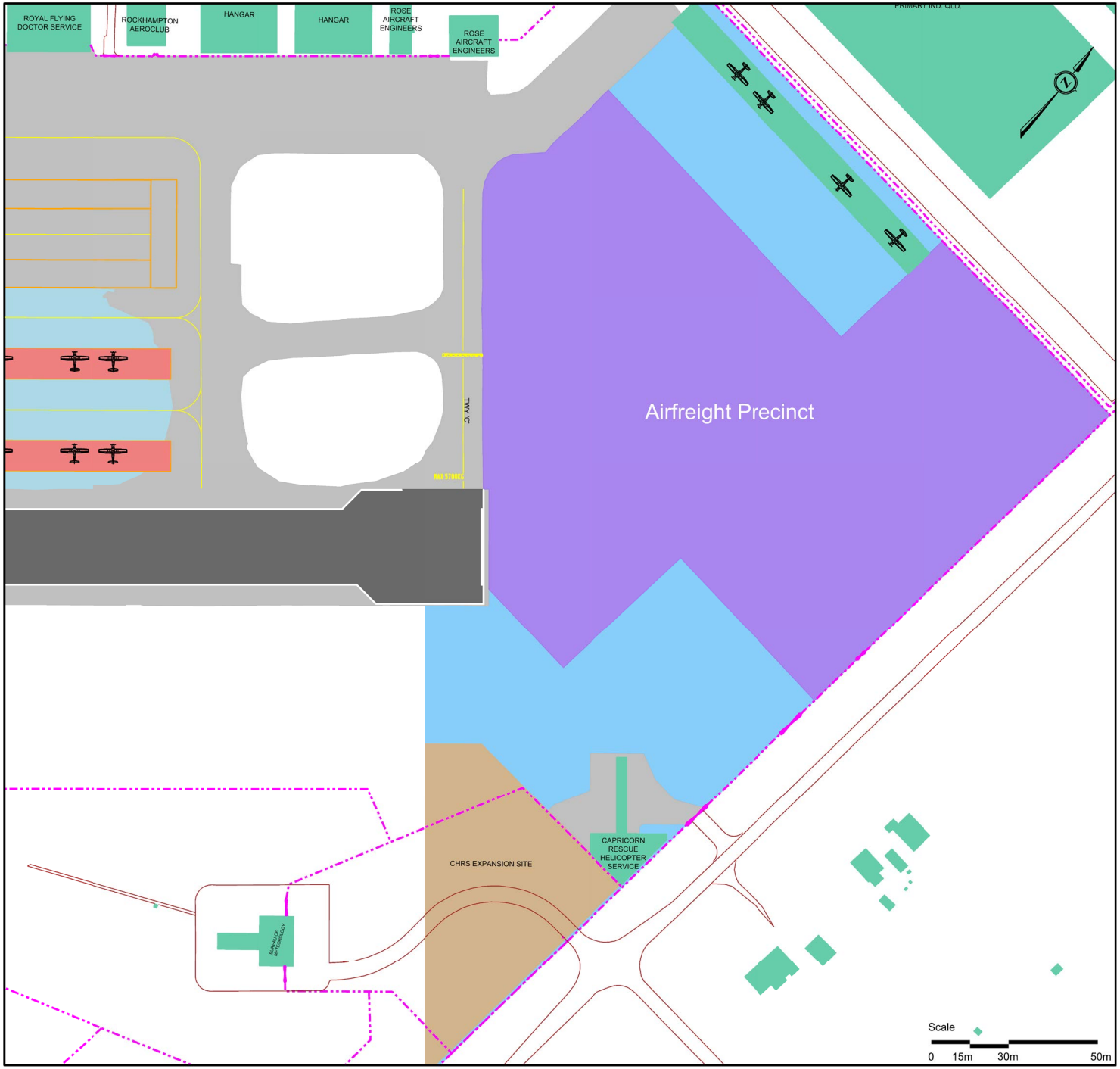
Legend:

- Airport Security Fence
- New Code A Aircraft Tie Down Areas
- Proposed Airfreight Precinct
- Proposed GA Area
- Proposed Pavement

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-6
Airfreight Precinct - Option 1

L · E · A · P · P



Rockhampton Regional Council

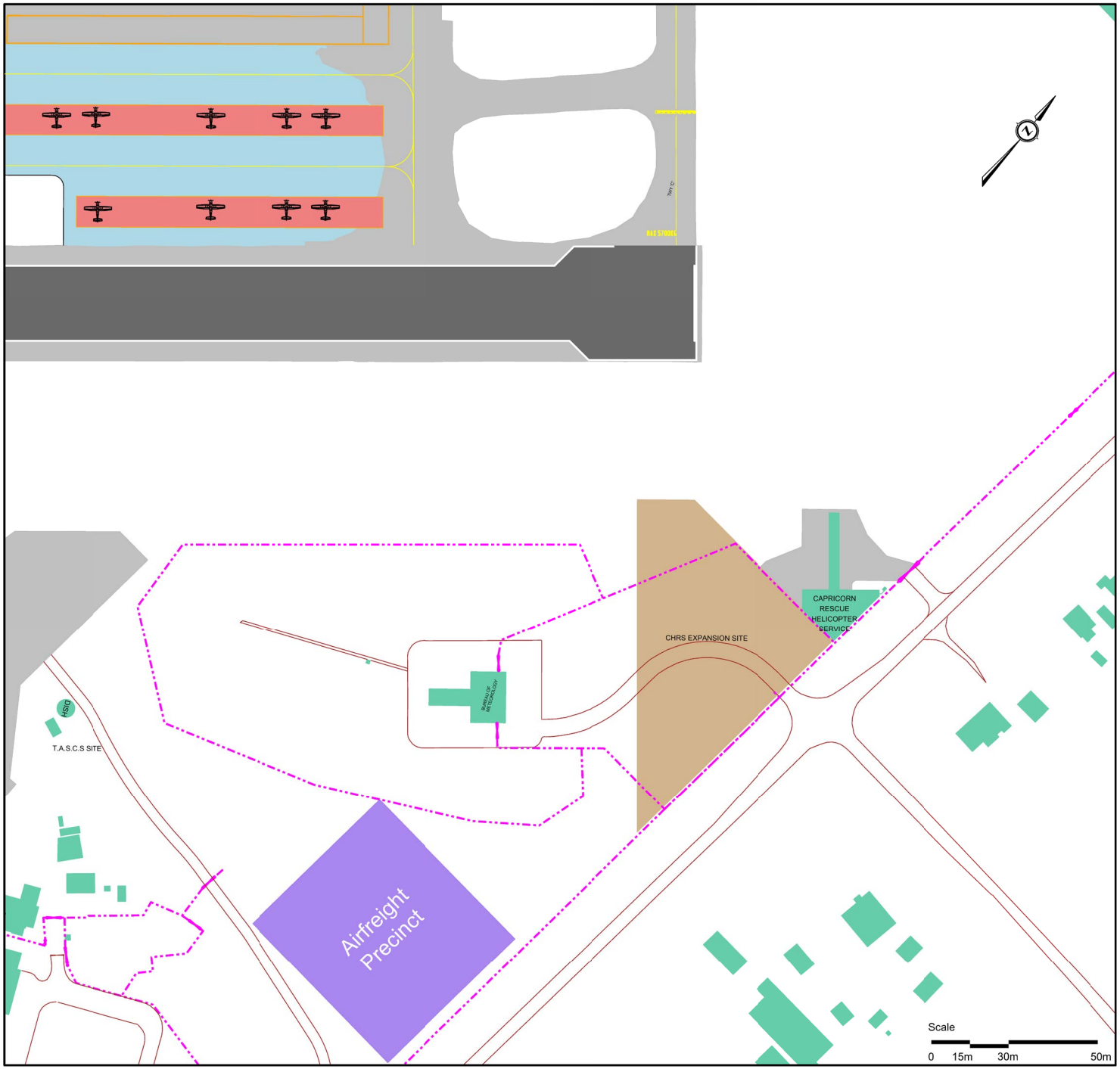
Legend:

- Airport Security Fence
- New Code A Aircraft Tie Down Areas
- Proposed Airfreight Precinct
- Proposed GA Area
- Proposed Pavement

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-6
Airfreight Precinct - Option 1

L • E • A • P • P



Rockhampton Regional Council

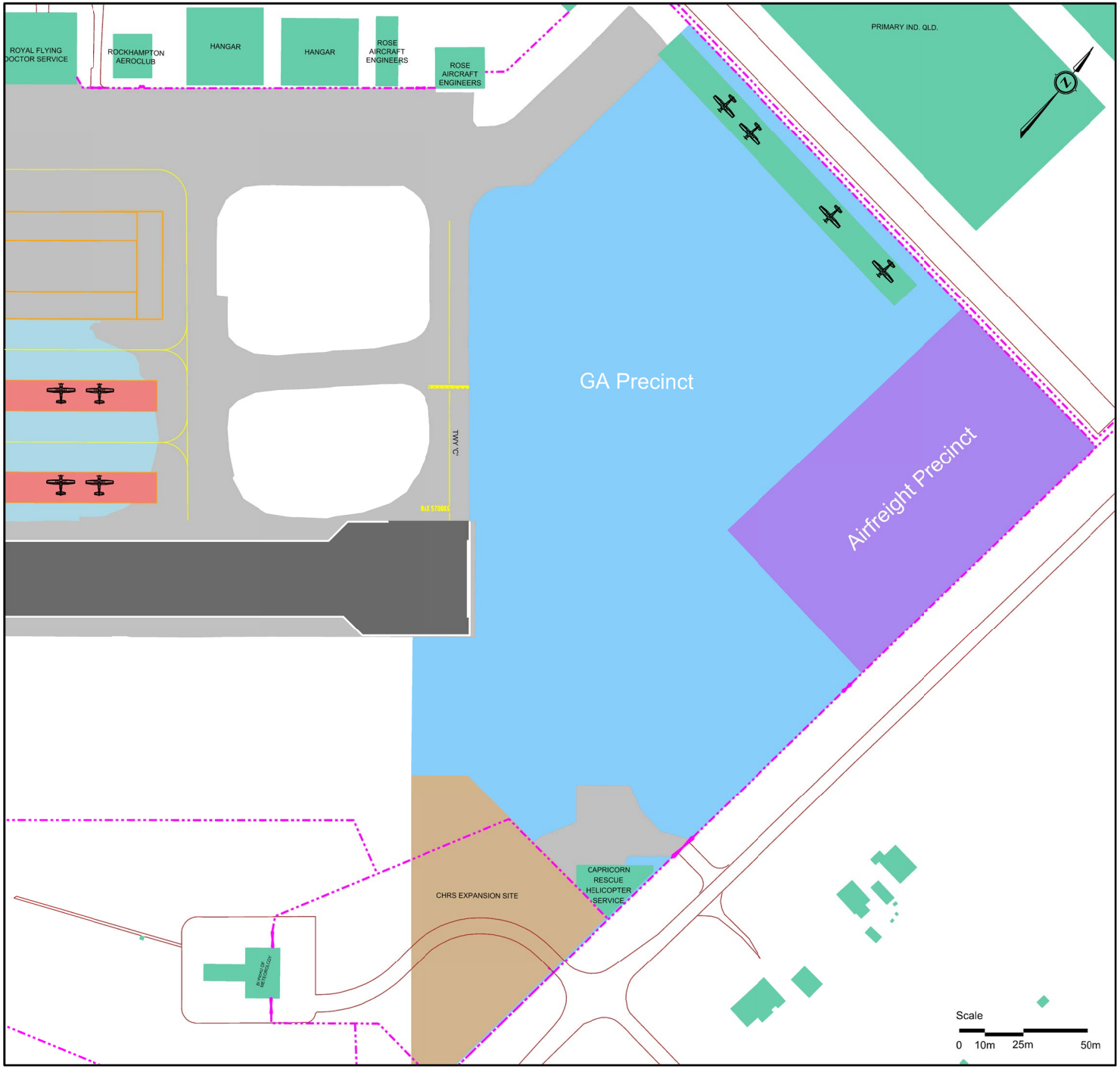
Legend:

- Airport Security Fence
- Proposed Airfreight Precinct
- Proposed Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-8
Airfreight Precinct - Option 3

L · E · A · P · P



Rockhampton Regional Council

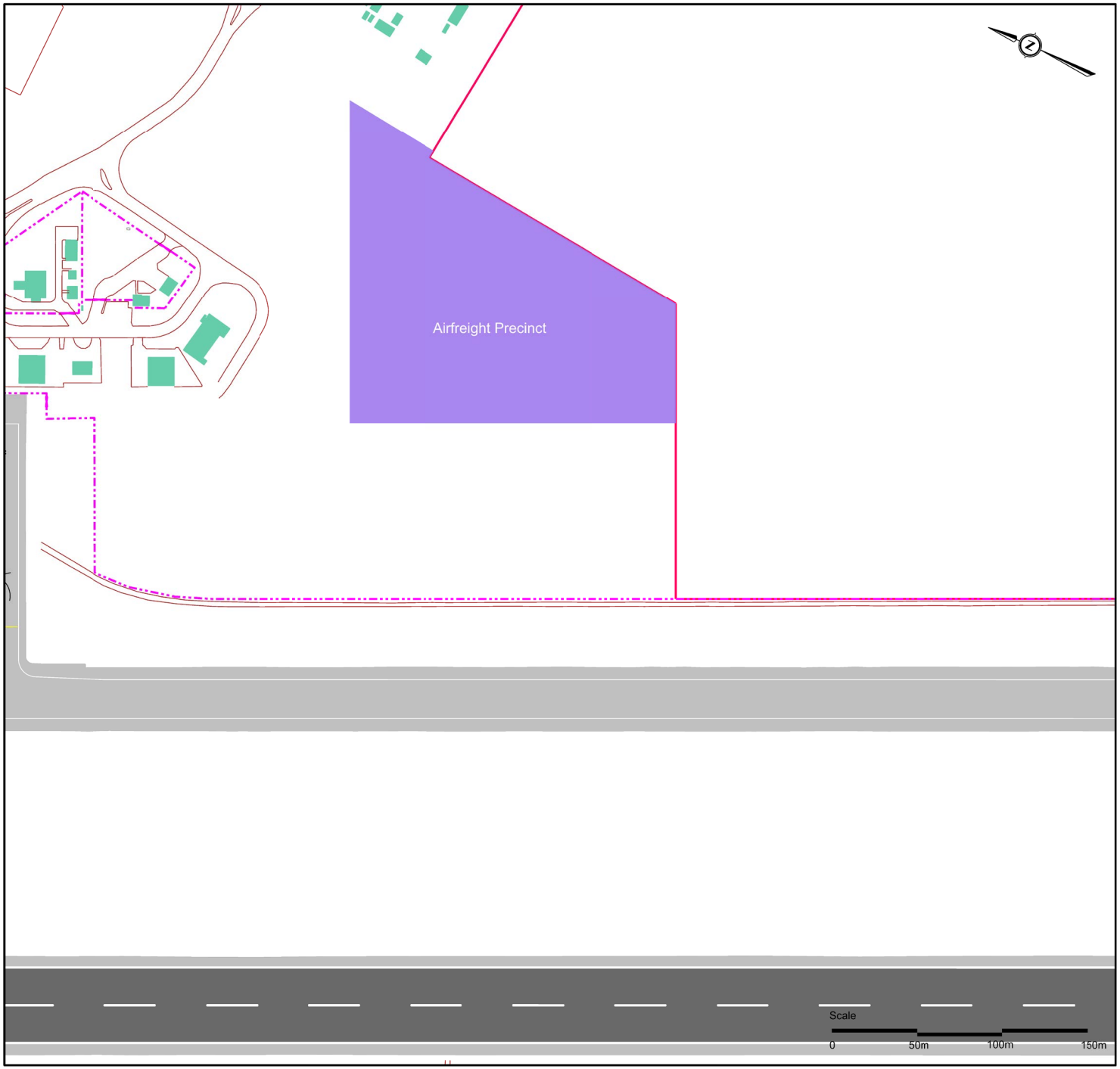
Legend:

- Airport Security Fence
- Proposed GA Area
- Proposed Airfreight Precinct
- Proposed Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-9
GA Airfreight Hybrid Precinct - Option 4

L • E • A • P • P



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Proposed Airfreight Precinct
- Proposed Military Precinct

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-10
Airfreight Precint - Option 5

L · E · A · P · P

PASSENGER TERMINAL

There are 2 issues to address concerning the future development of the Passenger Terminal. Firstly, there is a serious short term issue concerning congestion at the Security Screening point, and the poor level of service in the Departure Lounge. Secondly, there is a question as to the ultimate long term development of the Passenger Terminal beyond the Master Plan period.

Passenger Terminal Short-term Option 1

As previously discussed, the lack of toilet amenities and concessions in the Departure Lounge discourages passengers from undergoing security screening until their particular flight is called. This causes a surge of passengers at the Security Screening point and overloads the facility, causing a drop in level of service and in some cases, delays to flights.

A design solution had previously been prepared to address the lack of airside concessions and amenities, and to facilitate the timely processing of passengers through to airside. As shown in Exhibit 5-11, the design proposed construction of two airside / landside barriers on the check-in and baggage claim sides of the existing concourse. This will incorporate the 'in-between' space into the existing secure departure lounge. The Security Screening equipment would be reversed to allow access from a new queuing area immediately adjacent to the check-in area. Toilet amenities will be retrofitted to the under-utilised curved bays of the terminal frontage, and the existing food concession would be incorporated into, and consequently service, the secure departure lounge. Minimal disruption to airport operations and alleviating the costly re-location of the food concession and its services are justifications for this proposal. While the design adequately addresses these constraints, it will inhibit movement within the Terminal Building by removing the direct internal link between the check-in and baggage claim areas, forcing passengers and airport personnel to exit the building in order to access other internal spaces of the building. While such an option is not unprecedented, it is not common due to the fact that it is generally not good practice for a public building and is assumed to be a last resort option. The success in removing the internal link relies on consolidating the two pedestrian crossings from the parking area to a single centralized pedestrian crossing. Although the proposed design option provides a solution in the short term, it will pose restrictions to the ultimate terminal expansion if, and when, required after the Master Plan period. Careful evaluation is recommended to ensure that short term benefits do not hinder future options and longer term gains under this Option.

Passenger Terminal Short-term Option 2

The design principle of Option 2 is understood to be generally appropriate and the available space within the terminal allows for various alternative solutions that warrant consideration. Shown in Exhibit 5-12, one such alternative may include cordoning off the concessions currently located in the arrivals area, by constructing a separation wall in line with the security screening (item 1). This will house the relocated Relay and Tech2Go concessions that will have a ceiling installed. A mesh may then be installed between structural columns at a higher level to enclose the sterile area after security screening. The security screening equipment will need to be reversed to allow for a change in passenger flow. This will allow a new security queue to be located and make use of an under-utilized part of the terminal next to the check-in area, as per the previously proposed design solution (Item 1 in Exhibit 5-12).

An additional commercial kitchen would need to be installed to cater for meal preparation for airside passengers. This would best be located to the airside end of the departure lounge where direct access to the outside is available for mechanical exhaust and installation of other required service (Item 2). Upgrading the existing amenities within the existing departure lounge are best located next to the existing accessible toilet, where existing services may be utilized (Item 4). In this location, the amenities can be divided into 2 parts so that during international operations, amenities can be provided exclusively for both the international and domestic departure lounges. The car rental kiosks can be relocated to the outer curved bays of the terminal frontage to allow easier key drop off on departure and also help to maintain an adequate circulation width that will be decreased with the proposed separation wall (Item 5).

It is acknowledged that this proposal may create considerable disruption during construction and a higher cost as a result of installing new and retrofit infrastructure. It will retain the internal link within

the Terminal Building for the remainder of the master plan period and therefore provide a framework for unimpeded expansion options beyond the master plan period.

As outlined in the 2014 Passenger Mix and Behavioural Study a large proportion of passengers travel for business purposes. Qantas is the only airline to operate a members' lounge at the terminal. The lounge is unstaffed and located on the landside, which is not ideal for the timely facilitation of passengers through Security Screening to the airside. Consideration should be given to removing landside access and providing direct access to/from the departure lounge pending adequate staff monitoring of the lounge. The Qantas staffing area adjacent to the lounge is excessive and may provide future expansion opportunities. Current economic conditions are not conducive for an additional members' lounge, however it should remain an option for future revenue generation when the passenger numbers generate viability.

A future option is to convert a portion of the existing airline offices and Qantas member lounge into additional departure lounge space (Item 5). This will not only increase the overall departure lounge area but allow access to the existing toilet amenities located within this area. The area of 230m^2 of mezzanine level offices can be converted into a members' lounge with the installation of a new lift and staircase providing access from within the secure departure lounge (item 6) as shown in Exhibit 5-13. The Airport Administration office currently accommodated in this location could be re-located outside of the PTB to an area such as the old passenger terminal building or a new dedicated facility.

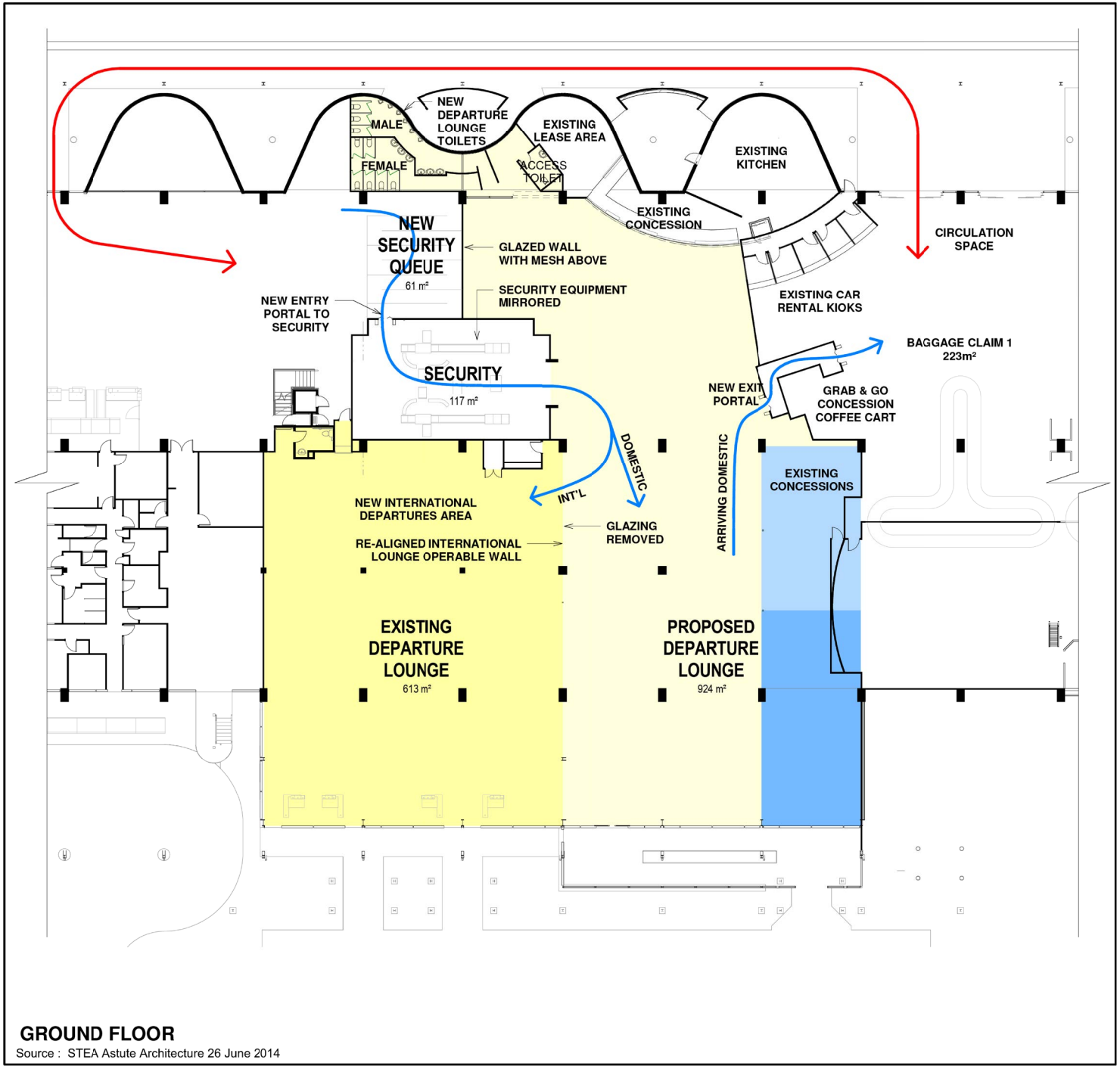
There are various areas within the PTB that remain under-utilized and may be better used by re-locating existing uses, or introducing new uses, to these areas. The ends of the terminal in the check-in and baggage claim may accommodate re-located rental car kiosks and internet and mobile device charging stations. This may help disperse passengers within the terminal, reducing congestion in circulation corridors and reduce spatial pressure on key hold points. The Eddie Hudson Memorial Room, which also accommodates international arrivals and processing, could be used in the future when passenger demand increases to a point where expansion is required. The memorabilia within this room may be more appreciated in a more accessible and visible part of the terminal.

Passenger Terminal Short-term Option 3

Feedback was provided on Option 3 above by the Regional Council and presented in Exhibit 5-14. The amendments outlined decreasing the width of the internal link and subsequently increasing the size of the departure lounge and security screening area (item 1). The curved bays at the terminal frontage may be converted to concessions or amalgamated to form an alternative internal link (item 2). The width of the internal link could therefore be reduced, further adding area to the departure lounge. Relocating the food and beverage concession (item 3) and introducing a grab and go stand nearby, on the landside, that may be attended to by the food and beverage staff when required. The Relay and Tech2Go concessions will remain in their existing locations.

The existing stairs and elevator providing access to the mezzanine floor will be enclosed (item 4) as found in Exhibit 5-15, so that access will be redirected from the landside check-in area to the airside departure lounge, allowing passenger access to the converted mezzanine lounge This will be in lieu of providing access via a new stair and elevator within the newly enclosed departure lounge next to the Relay concession. The purpose of this is to retain the visual openness of the space. A new staircase and platform, accessible from the landside check-in area, will need to be installed over the security screening area in order to provide direct access to the plant room on the mezzanine floor (item 5)

The implications of moving the food and beverage concession to an area that is not adjacent to an external wall has been discussed previously. The addition of the new staircase and platform for the mezzanine plant room will also create similar disturbances to the visual openness, albeit in a different location. It should be noted that the suitability of using the existing stair and elevator for passenger purposes will need to be determined in accordance with the relevant statutory requirements relevant to the number of people being proposed to access the mezzanine floor.

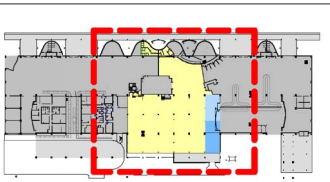


GROUND FLOOR

Source : STEA Astute Architecture 26 June 2014

Rockhampton Regional Council

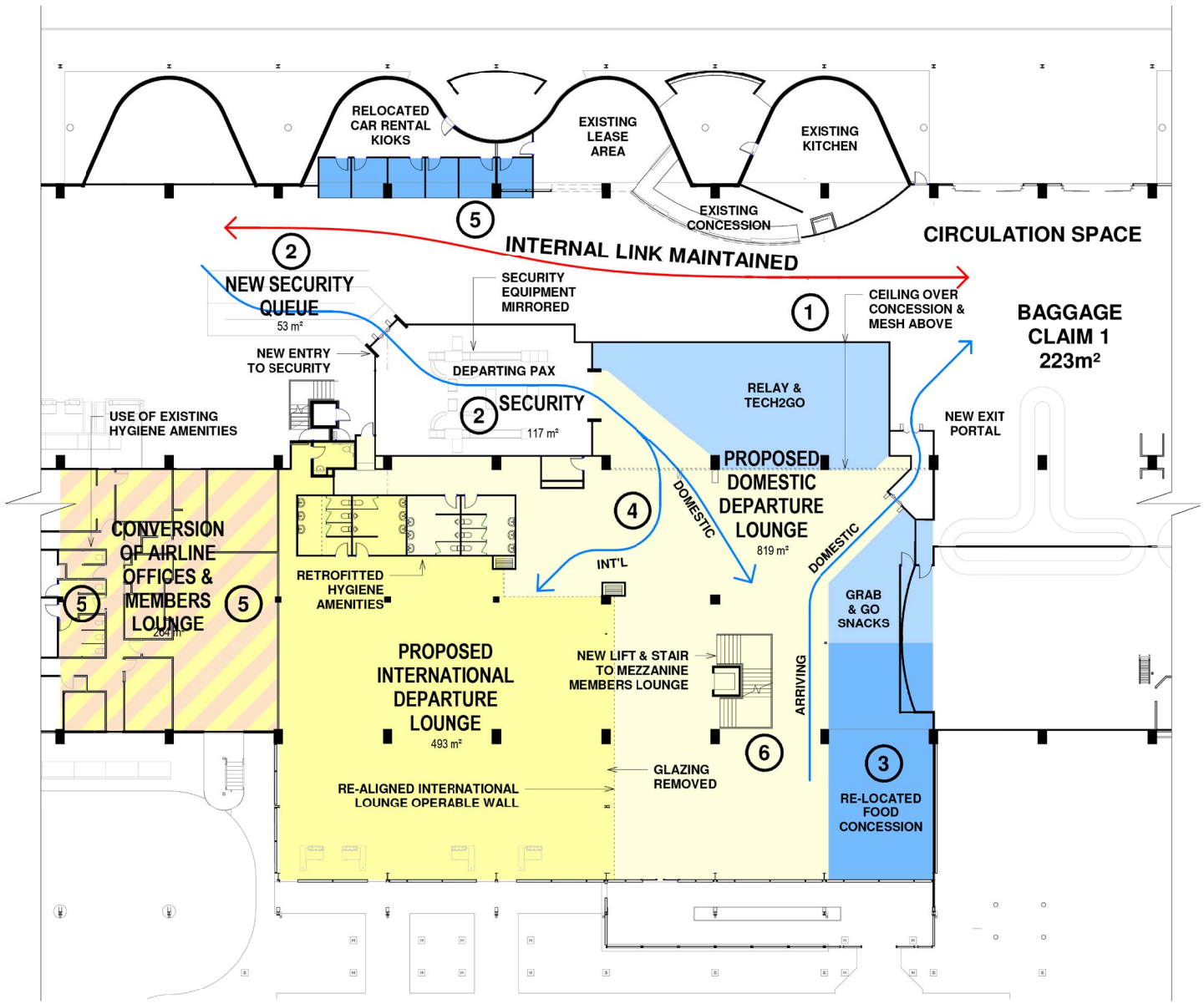
Location Plan



DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-11
Passenger Terminal Layout
Option 1

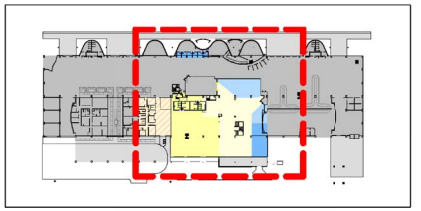
L · E · A · P · P



GROUND FLOOR

Rockhampton Regional Council

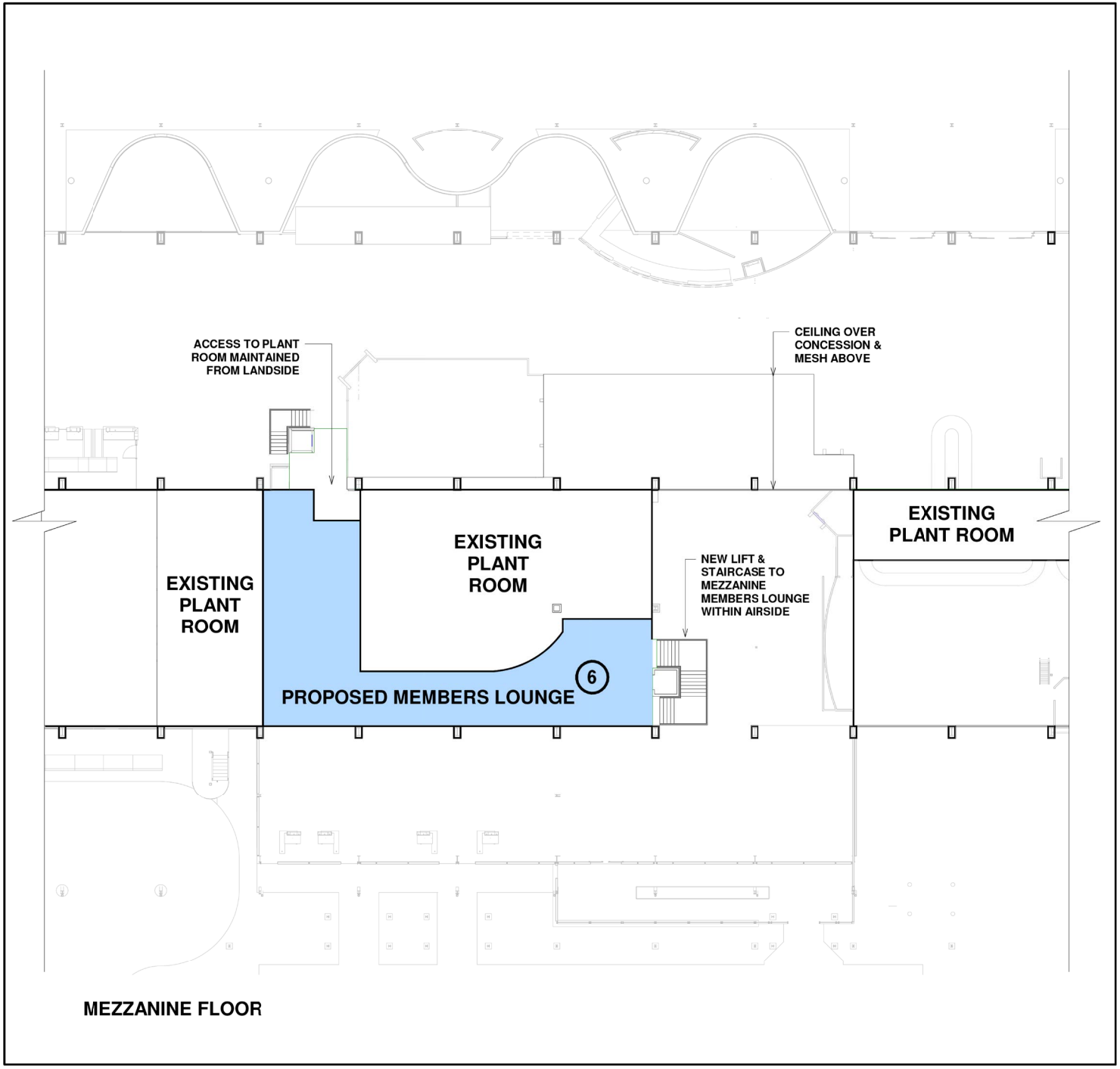
Location Plan



DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-12
Passenger Terminal Layout
Option 2 - Ground Floor

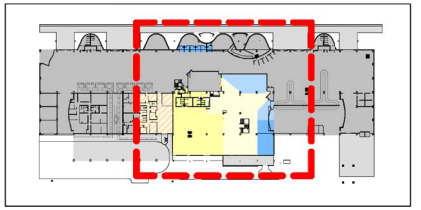
L · E · A · P · P



MEZZANINE FLOOR

Rockhampton Regional Council

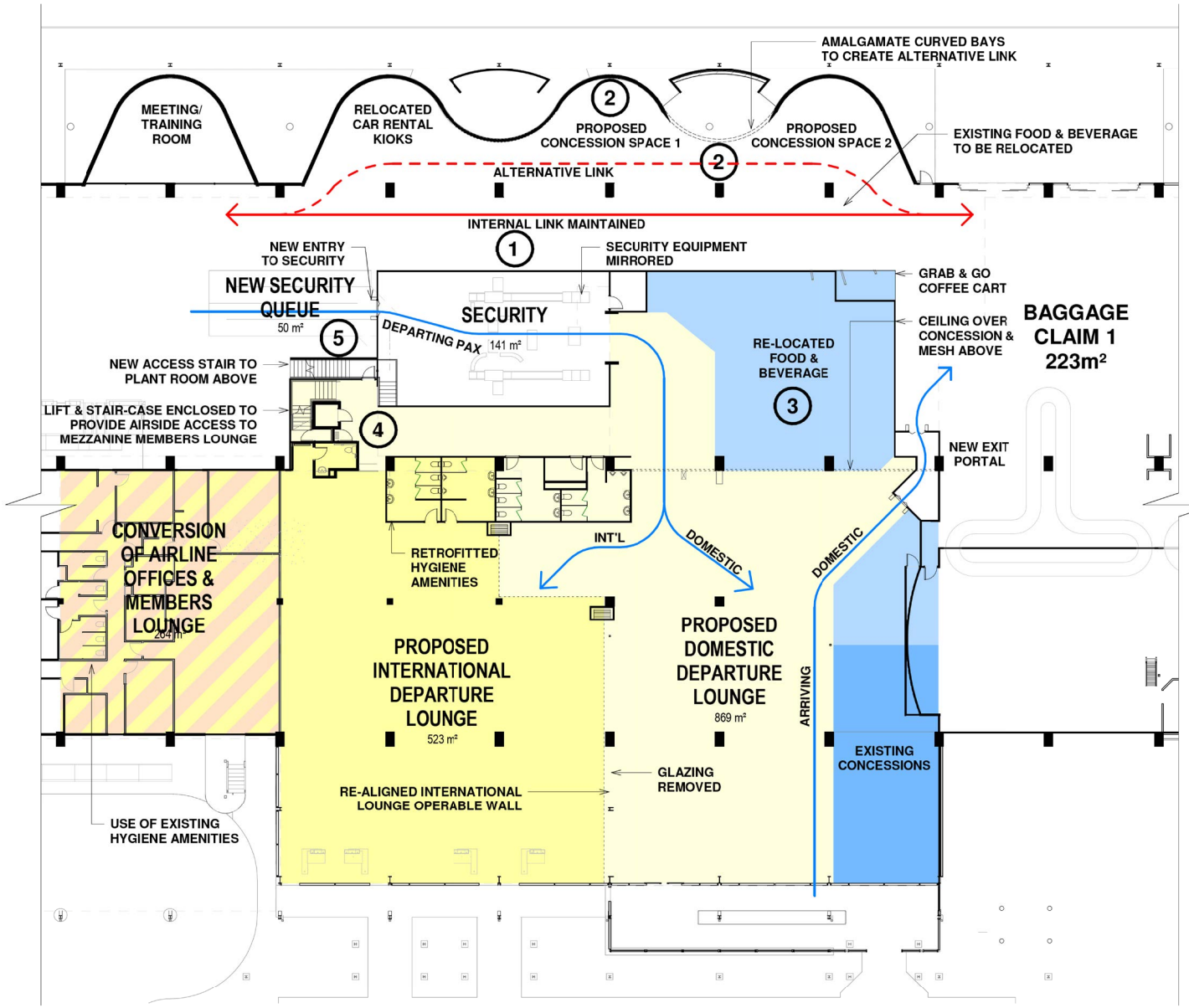
Location Plan



DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-13
Passenger Terminal Layout
Option 2 - Mezzanine

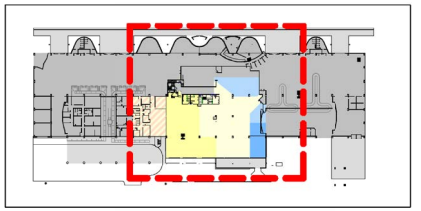
L • E • A • P • P



GROUND FLOOR

Rockhampton Regional Council

Location Plan



DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-14
Passenger Terminal Layout
Option 3 - Ground Floor

L · E · A · P · P

Passenger Terminal Short-term Option 4

As the Departure Lounge is large enough to accommodate long term demand, and the security screening should accommodate long term demand provided passengers can proceed to the departure lounge at a normal rate, the Regional Council has identified a fourth option for addressing the short term issue. The solution identified by Council is to improve the condition of the seating and carpet within the departure lounge in order to improve the comfort level. The Council expects the improved seating and carpet, would entice passengers into the lounge and therefore alleviate the congestion currently experienced at Security Screening. This option does not address the lack of concessions or lack of toilet facilities which are understood to be the main reasons for passengers to delay their processing through Security Screening until the last possible moment.

Long-Term Passenger Terminal Expansion

The air traffic forecasts confirm that the passenger terminal is large enough to accommodate the future forecast traffic until soon after the planning horizon of the Master Plan. Therefore, no expansion of the terminal building is necessary at this time. However, close to the end of the planning horizon, the Regional Council will need to embark on a process of planning and design of the expansion of the Passenger Terminal so that it will be able to accommodate increased air traffic in the future, beyond the Master Plan period. To accommodate such future passenger growth, the passenger terminal can be expanded either to the north, or to the south. Initial expansion beyond the Master Plan period would entail moving the outbound baggage sortation/makeup area and constraining it in the northern portion of the current baggage makeup area. Alternatively, it could be moved further north by renovating the old passenger terminal building. Part of the area previously occupied by the baggage makeup area and some of the airline offices, would be glazed in and become part of the Departure Lounge space. The new departure lounge space would have an operable wall to enable a separate International Lounge that could be used for domestic operations when there are no International flights departing. To address increased arrival traffic, the baggage hall could be expanded to the south, by expanding the terminal and adding in a 3rd baggage reclaim belt. The 3rd baggage belt would be primarily to accommodate the international inbound baggage demand with associated facilities for the Department of Immigration and Boarder Protection. However, as far as the schedules are able to accommodate, the 3rd baggage reclaim belt could augment increases in Domestic baggage reclaim requirements as a result of forecast growth. Further use of technology and smart passenger processes would be leveraged with increased bag drop facilities and self check-in. The future terminal expansion would enable the terminal to accommodate forecast increases in passenger traffic as well as providing a high level of service and increases in concession, food and beverage as well as retail opportunities. Exhibit 5-16 illustrates the initial expansion of the passenger terminal and Exhibit 5-17 provides a longer term reservation of space for further future expansion of the terminal. If the FIFO processing facility is developed as identified in Section 5.1.6 below, the baggage makeup area would need to be constrained or the system would need to feed baggage to a new baggage makeup facility in/or replacing the old passenger terminal. This would entail bringing the outbound baggage flow up and over the FIFO passenger flow as they exit the FIFO facility. Even further development of the Passenger Terminal to the North and South are also possible and space should be reserved for any such further long term development beyond the Master Plan period. In the much longer term, a larger Passenger Terminal Processing complex could be developed immediately to the south of the existing terminal. The present terminal would be incorporated into the development as would a pier extending further south.

FIFO Operations

Rockhampton has been appointed as one of the Fly-in-Fly-Out (FIFO) locations for the new Adani Carmichael Mine. With the likelihood of a large number of FIFO workers using the airport, it is appropriate to explore providing a dedicated facility for their use. Furthermore, having a dedicated FIFO facility would help Rockhampton promote itself as a FIFO base for other mining activity in the State.

Typical shift patterns at mine sites result in off-peak travel for FIFO workers. Flights are usually closed charter operations organised by the mine operator and would operate at Rockhampton Airport in the

early morning and afternoon. FIFO workers typically work a week long shift before returning to the FIFO base. As such, ticketing and baggage arrangements can be organised in conjunction with the mine and charter operators to facilitate simple and efficient processing of passengers. To facilitate the creation of a dedicated FIFO processing facility, the north end of the passenger terminal would be converted into a lounge and processing facility. FIFO passengers would utilise the existing check-in counters for those with baggage or needing to check-in. However, it is expected that the one week shift duration would reduce the number of FIFO workers needing to check-in luggage in favour of carry-on baggage. As these operations are closed charter and the passengers are to be kept segregated from the public commercial operations in the terminal, there would be no security screening conducted. The northern end of the terminal, with its own dedicated entrance away from the main commercial lounge, will provide an ideal location that separates, and subsequently simplifies, the processing requirements of the two different types of passengers.

A modification similar in size and nature to that completed at the southern end of the terminal to process international arrivals could be replicated at the northern end of the terminal. This would allow for a dedicated FIFO departure lounge with a capacity of approximately 192 seated passengers. As there is no requirement for security screening, the 'open' lounge can utilize existing toilets and concessions located within the land-side concourse, thereby alleviating the need to install dedicated facilities.

On the basis that only 50% of FIFO passengers use traditional check-in facilities with an average processing time of 30 seconds, a single dedicated common use check-in counter should be sufficient to handle a single closed charter operation of up to 200 passengers. Similarly, existing baggage claim facilities should be sufficient to cater for the same number of arriving passengers. As these operations are likely to occur outside of the peak period, additional check-in counters, queuing space and baggage claim devices are likely to be available to handle any excess requirements if they develop. It is important to note that processing rates are difficult to determine for closed charter flights as it is dependent on the operator's own processes and requirements. The operator may implement processes that lengthen or shorten the check-in time such as mobile check-in and boarding apps, group check-in or baggage size restrictions.

The mining sector often undertakes fit-for-work testing of its employees before commencement of shifts. A FIFO worker that fails a fit-for-work test would be stood down while an investigation takes place. Such test are typically conducted at the mine site and therefore, the worker is required to remain onsite during the investigation. In response to these requirements, a dedicated fit-for-work and analysis facility could be positioned adjacent to the dedicated FIFO entrance that would allow random testing of passengers on entry into the departure lounge. Positioning the facility upon entry to the lounge would ensure that all passengers have the chance to be screened and reduces the potential for delay to aircraft as a result of screening immediately prior to boarding. This would enable an individual who fails a test to be refused boarding of the aircraft and therefore, reduced expense at the mine site during the further investigation. In addition to this, small induction and training offices could be accommodated near the entrance to the lounge as well as larger rooms accommodating up to 20 people could be located in the near vicinity, making use of currently vacant conference rooms. These facilities would provide a beneficial service to the mining sector companies, allowing their employees to arrive at the destination ready to commence their shift. Depending on the sector's requirements, additional features such as exit portals could be installed to facilitate efficient flows of passengers, or increase fit-for-work screening requirements by separating departing and arriving passengers.

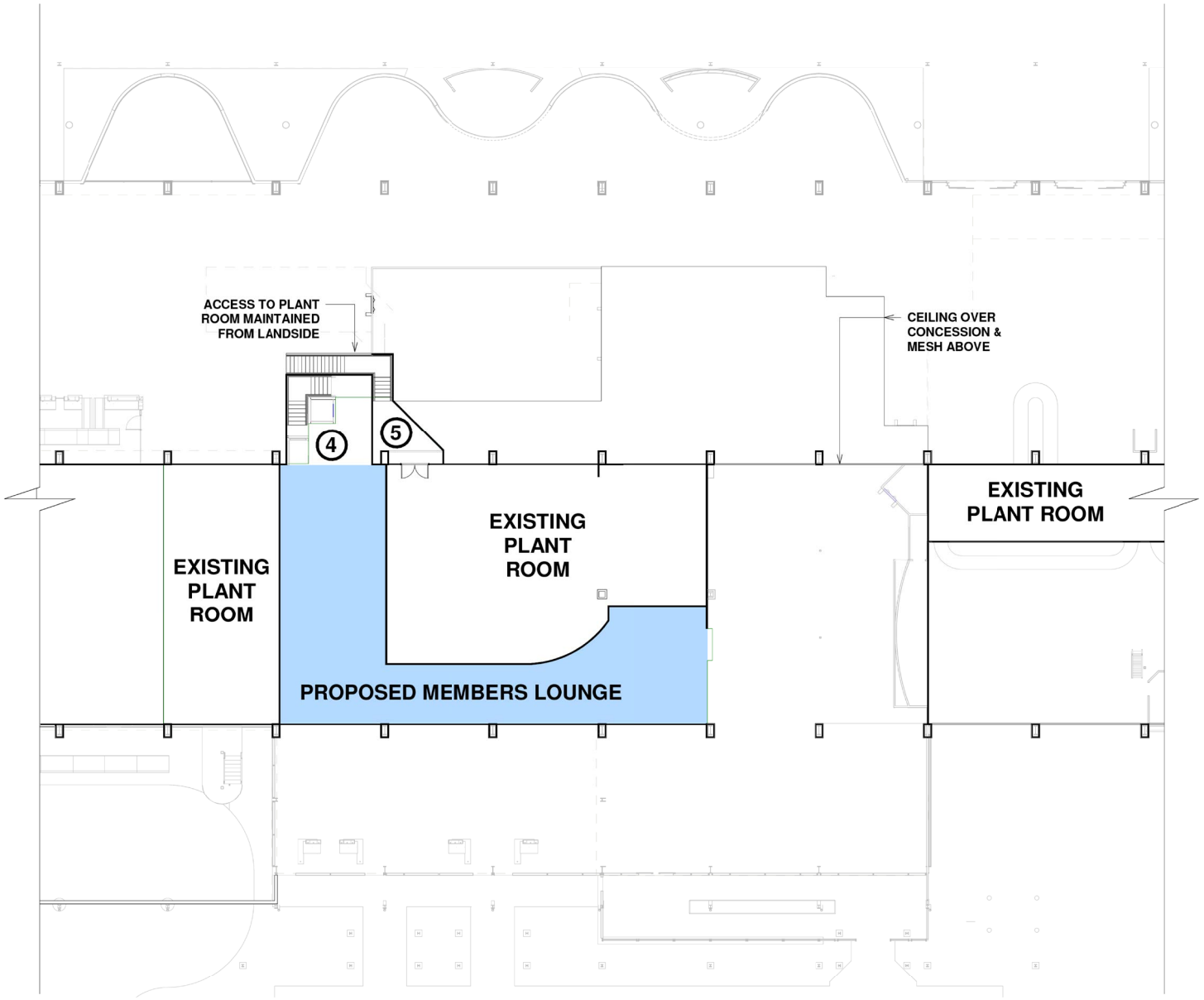
Accommodating Mine Operator or Charter Airline office space requirement at the terminal can be accommodated as there is additional space available in the terminal.

If the resource sector grows significantly and greater demand requires increased processing and lounge space then a dedicated FIFO terminal could be considered at some point in the future. Currently, the old terminal to the north of the existing terminal may provide an option for a ready-made terminal structure or as a site for a new FIFO terminal.

The dedicated FIFO facility is illustrated in Exhibit 5-18.

Military Precinct

A Military Precinct for the airport has been identified by the Council as being required and a layout of this has been completed under Council direction. This layout has been included in the Master Plan, in the form proposed by Council, and is expected to be part of the formal Master Plan for Rockhampton Airport. The Military Precinct would relocate all military activity, including the Singapore Armed Forces operations, to the new precinct, thereby freeing up the lands around the old terminal building and MET facility for other permanent uses. The current concept being evaluated by the Council is shown in Exhibit 5-19.



MEZZANINE FLOOR

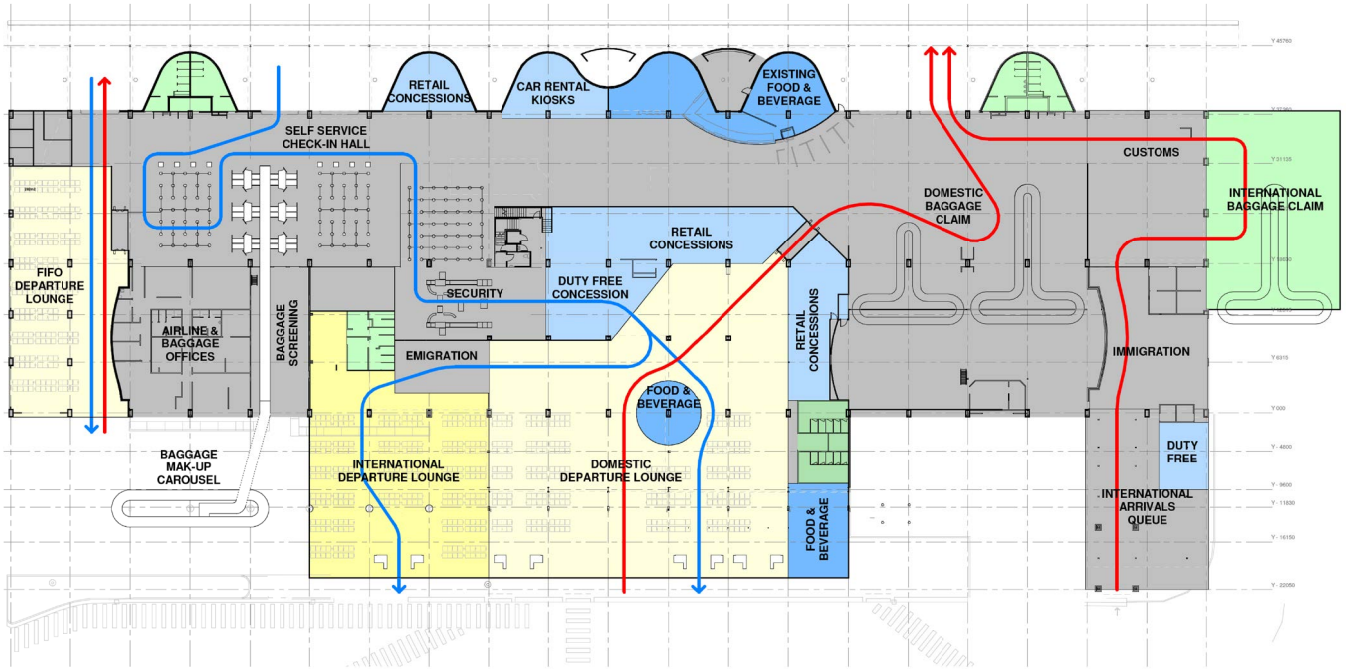
Rockhampton Regional Council

Location Plan

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-15
Passenger Terminal Layout
Option 3 - Mezzanine

L · E · A · P · P



Rockhampton Regional Council

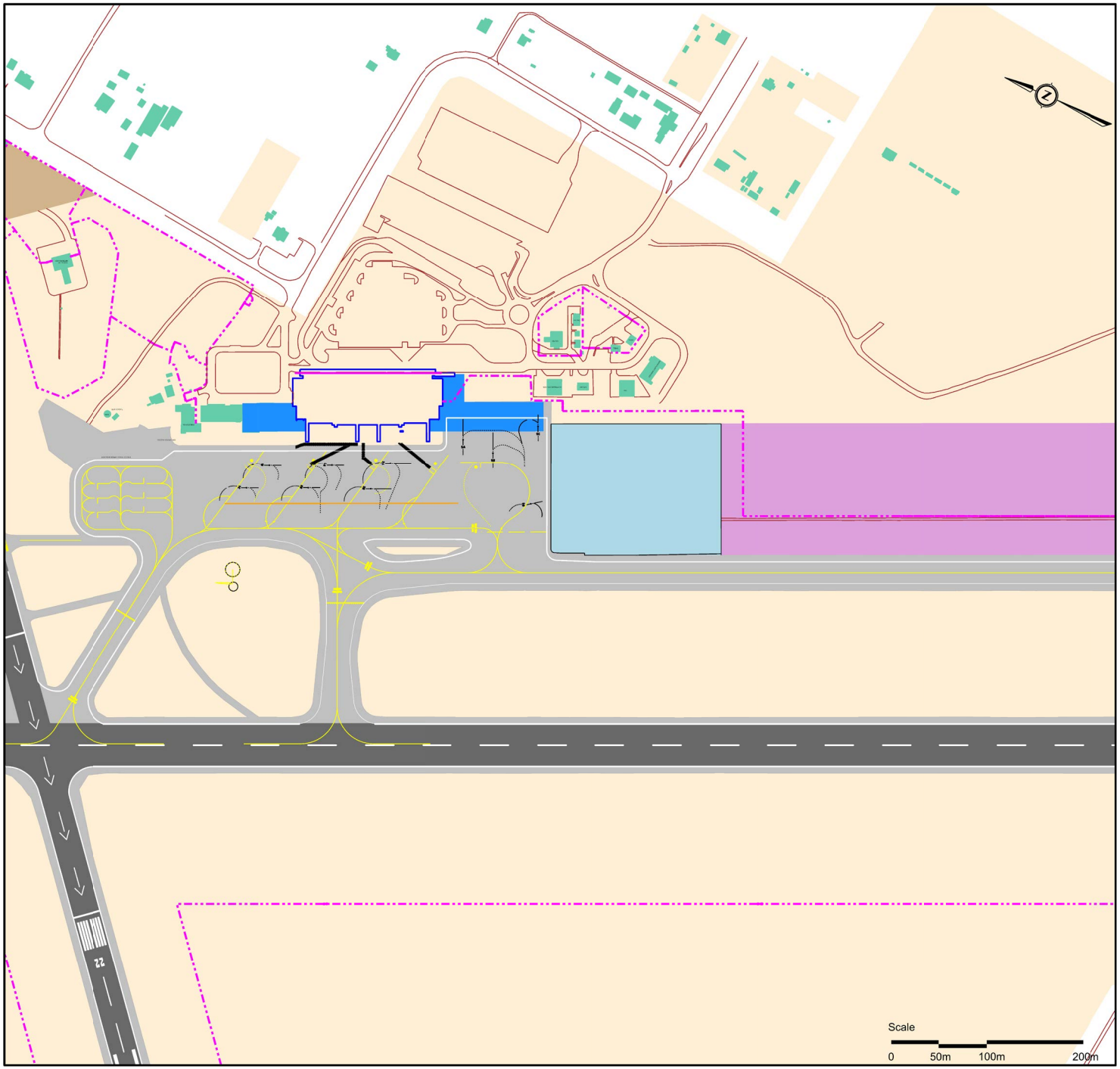
Legend:

Existing Terminal

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-16
Long Term Passenger Terminal Expansion

L • E • A • P • P



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Proposed Pavement
- RRC Owned/Leased Land
- Apron Expansion
- Apron Expansion Reserve

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-17
Rockhampton Passenger Terminal
Long Term - Reservation

L • E • A • P • P

5.2 AIRPORT MASTER PLAN PREFERENCE

Future development of the Rockhampton Airport is to proceed in-line with the development options identified in this report. For each of the areas where future land reservation of activity is needed, options have been identified and developed. The development for each of the specific areas is as follows:

AIRCRAFT PARKING STANDS

Forecast air traffic has identified a need for an additional aircraft parking stand. Future stand development for Rockhampton Airport examined strengthening the pavement at the north end of the apron to support Code C aircraft, or else to add additional bays to the south of the current stands. The preferred option for additional stands was to construct an additional stand to the south as per Option 2 shown in Exhibit 5-2. Future stand development beyond the Master Plan period would continue in the southerly direction.

METEOROLOGICAL EQUIPMENT LOCATION

The Bureau of Meteorology is embarking on a process of automating MET facilities and the Bureau facilities in Rockhampton has been identified for full automation over a period of a few years. As this process involves replacement of some equipment, it is recommended that the new equipment be located elsewhere on the airport so that eventually, the lands occupied by the MET facility can be used for airport or commercial land uses, such as a long term expansion of the General Aviation Precinct. Exhibit 5-3 identifies two possible locations for new equipment installation with Option A being the preferred location for the eventual shift of the fully automated MET facilities.

GENERAL AVIATION PRECINCT

The current General Aviation development has been concentrated on the north side of the decommissioned section of Runway 22. With the reduction in the length of Runway 04/22, the land off the east end of the runway no longer has the same height restrictions and can therefore be developed for General Aviation use. The area identified as General Aviation development area Option 1 in Exhibit 5-4 is to be reserved for future General Aviation development.

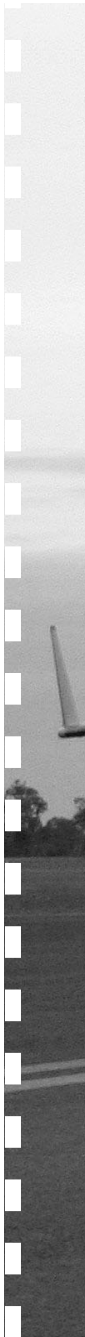
AIR CARGO

The current Airfreight zone is next to the passenger terminal and the aviation fuel farm. There is additional space to expand the airfreight facilities, however the longer term passenger terminal expansion will conflict with this location and, therefore, future airfreight facilities should be moved to a new location. Section discusses the 5 options for development of the future airfreight precinct. Option 5 has been identified as the preferred location for future airfreight facilities. This option has been illustrated in Exhibit 5-10. The future Airfreight Precinct is to be located south of the present location, next to the Military precinct.

Passenger Terminal

The current size of the Passenger Terminal is adequate for the forecast demand over the Master Planning period. However, there are some deficiencies in specific processes and in particular the way passengers congregate and proceed through security into the departure lounge. These issues have been discussed in Section . To address the need to move passengers through security as soon as possible but still provide the amenities and commercial concession opportunities, a number of options for internal reconfiguring of the terminal spaces was developed. The preferred approach to reconfiguring the passenger terminal is Option 2. This Option has been illustrated in Exhibit 5-12.

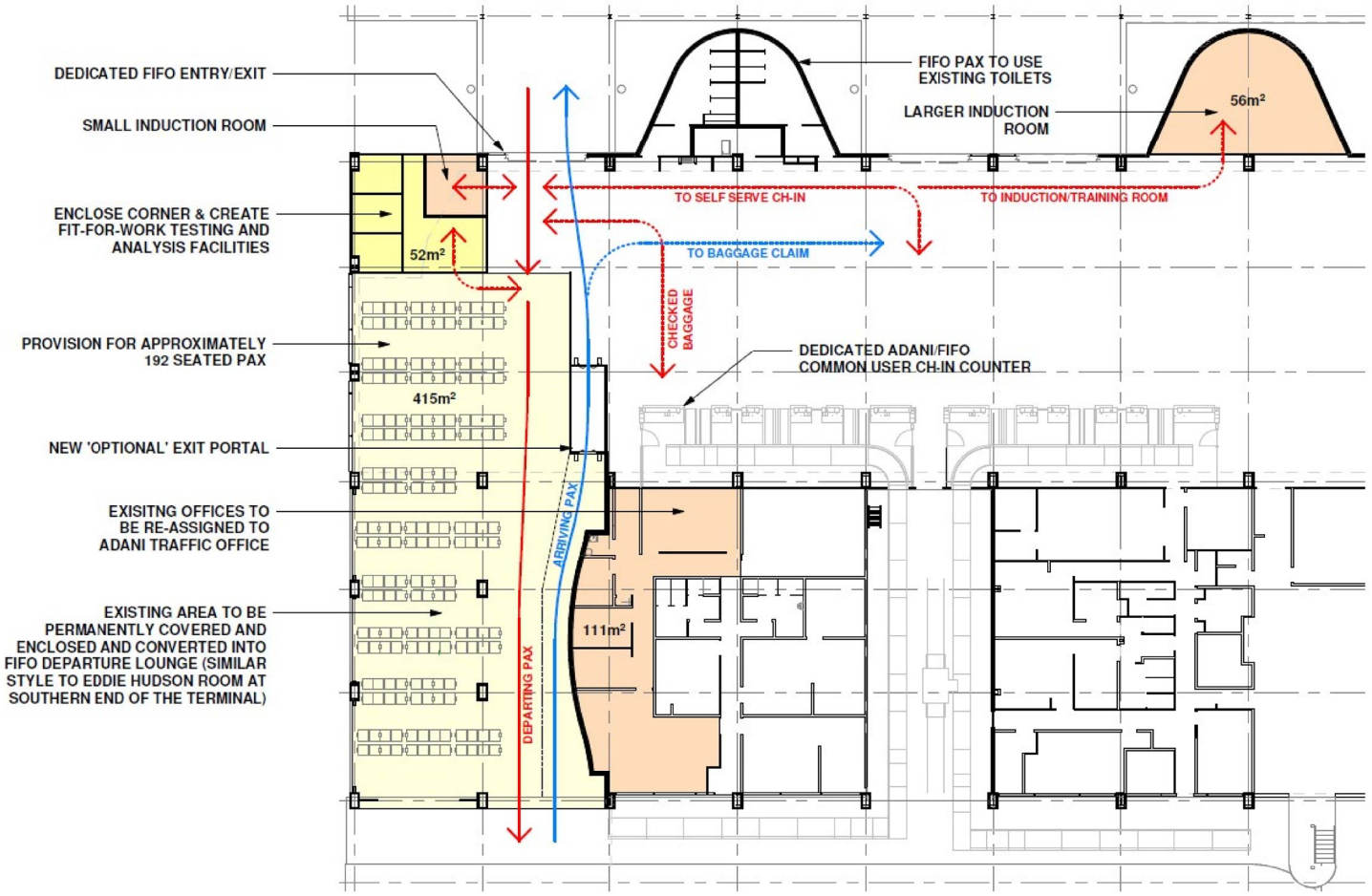
FIFO



With the approval of the Carmichael Mine, Adani is looking to identify a location for a FIFO workforce base. Rockhampton is a strong contender to be selected as the location for the Adani FIFO workforce base. This will increase the traffic at the airport and introduce a different type of passenger to the Passenger Terminal. Separating those passengers would enable a more efficient processing of FIFO passengers enroute to the Carmichael Mine. The North end of the Passenger Terminal will therefore be reconfigured as shown in Exhibit 5-18. This will address the needs of the Carmichael Mine FIFO workforce but also enable the airport to market itself and Rockhampton as the FIFO base for other mining activity in the State.

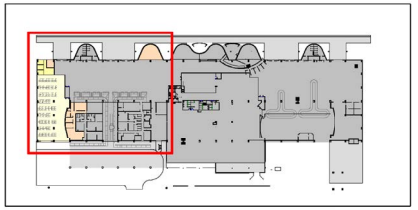
Military Precinct

The Military Precinct, discussed in Section 5.1.7 and illustrated in Exhibit 5-19 is to be developed to provide a dedicated permanent area for military activity. As there is substantial periodic military activity at Rockhampton Airport, this new dedicated Military Precinct will enable the military to operate while ensuring that the logistics and military hardware to not restrict the civilian activates at the airport.



Rockhampton Regional Council

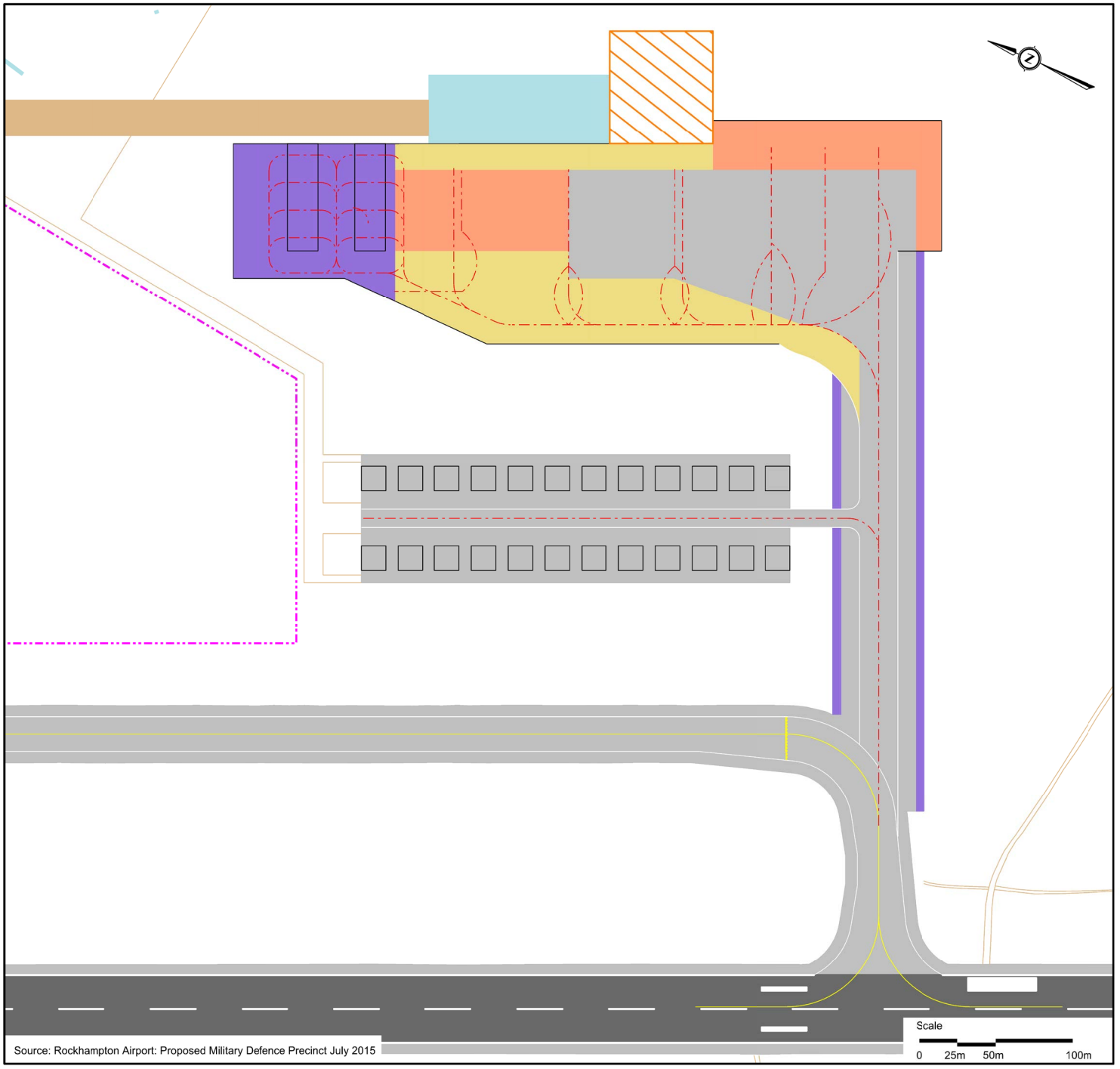
Location Plan



DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-18
Passenger Terminal Layout
FIFO Operations

L · E · A · P · P



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Full Strength Rigid (Fixed Wing) Pavement
- Full Strength Flexible (Fixed Wing) Pavement
- Shoulder Strength (Fixed Wing) Flexible Pavement
- Operations Building
- Access Road
- Hangar

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 5-19
Military Precinct

L · E · A · P · P

AIRPORT MASTER PLAN

6.0


Virgin
VH-ZP

6.0 AIRPORT MASTER PLAN

6.1 AIRPORT SITE DEVELOPMENT FOR THE MASTER PLAN PERIOD

Forecast traffic at Rockhampton Airport is expected to reach a low in the 2017 to 2018 period before beginning to build once again. Growth through to 2075, growing at a CAGR of between 2 and 4%, is expected to result in an annual passenger volume of 1.23 million annual passengers by 2037. However, while significant growth in passenger volumes is forecast over the this period, for the initial 10 years of the forecast air traffic is only expected to recover from past declines in traffic levels. For the overall Master Plan, this forecast pattern of air traffic recovery, followed by growth, translates into very little need for any additional facilities throughout the Master Plan period. Development activities identified for the Master Plan are therefore primarily related to responding to opportunities for adding to commercial activity, rather than accommodating additional traffic growth.

With the potential for being selected as the FIFO base for the Carmichael Mine, Rockhampton Airport may have a boost in air traffic that would occur quickly while the construction of the mine occurs. This boost to the air traffic demand could add up to 200,000 passengers per annum to the traffic forecasts during the construction period of the mine. Subsequently, traffic levels are forecast to return to a similar growth rate as forecast without the additional Adani traffic. If awarded the FIFO base, Rockhampton Airport could experience traffic levels of 1.35 million annual passengers by 2037, with significant growth in the first 5 years of the forecast period.

Due to the flooding hazard, and the low lying nature of the land on the western side of the runway, in the Master Plan period this area has been left undeveloped, as it is presently judged to be too difficult and too costly to rehabilitate these lands, and to service them, so as to make them useful for accommodating airport activities, in the near term. There is a priority for addressing the flood prone nature of the airport lands which would open the western side of Runway 15/33 to potential development. These lands should be safeguarded for future commercial development to address very long term General Aviation and Commercial Aviation needs.

Pavement testing in 2014, has led to proposals for a number of treatments to improve the condition and strength of the pavements over the course of the coming 9 years. A programme adopted by the Regional Council to achieve this through a combination of surface enrichments and asphalt overlay should ensure that the airside pavements continue to function to an acceptable level, and to be available to accommodate future traffic growth.
To accommodate increased air traffic during the peak periods, an additional aircraft parking stand will be required on the main passenger terminal apron. This will mean expanding the passenger terminal apron to the south in order to accommodate this need. As far as when apron expansion will be needed, this is estimated to occur towards the end of the forecast period, likely around 2030.

The near-term automation programme of the MET facility by the Bureau of Meteorology, provides an opportunity for the airport to reassign the present site used by the BOM for other uses, and to shift the automated MET equipment and facilities elsewhere on the airport. Siting of the new automated MET

facility would need to be done in conjunction with the BOM and a reasonably long period of calibration of equipment will be necessary. Preference for siting the new MET station is given to a site identified to the South of the present passenger terminal and apron.

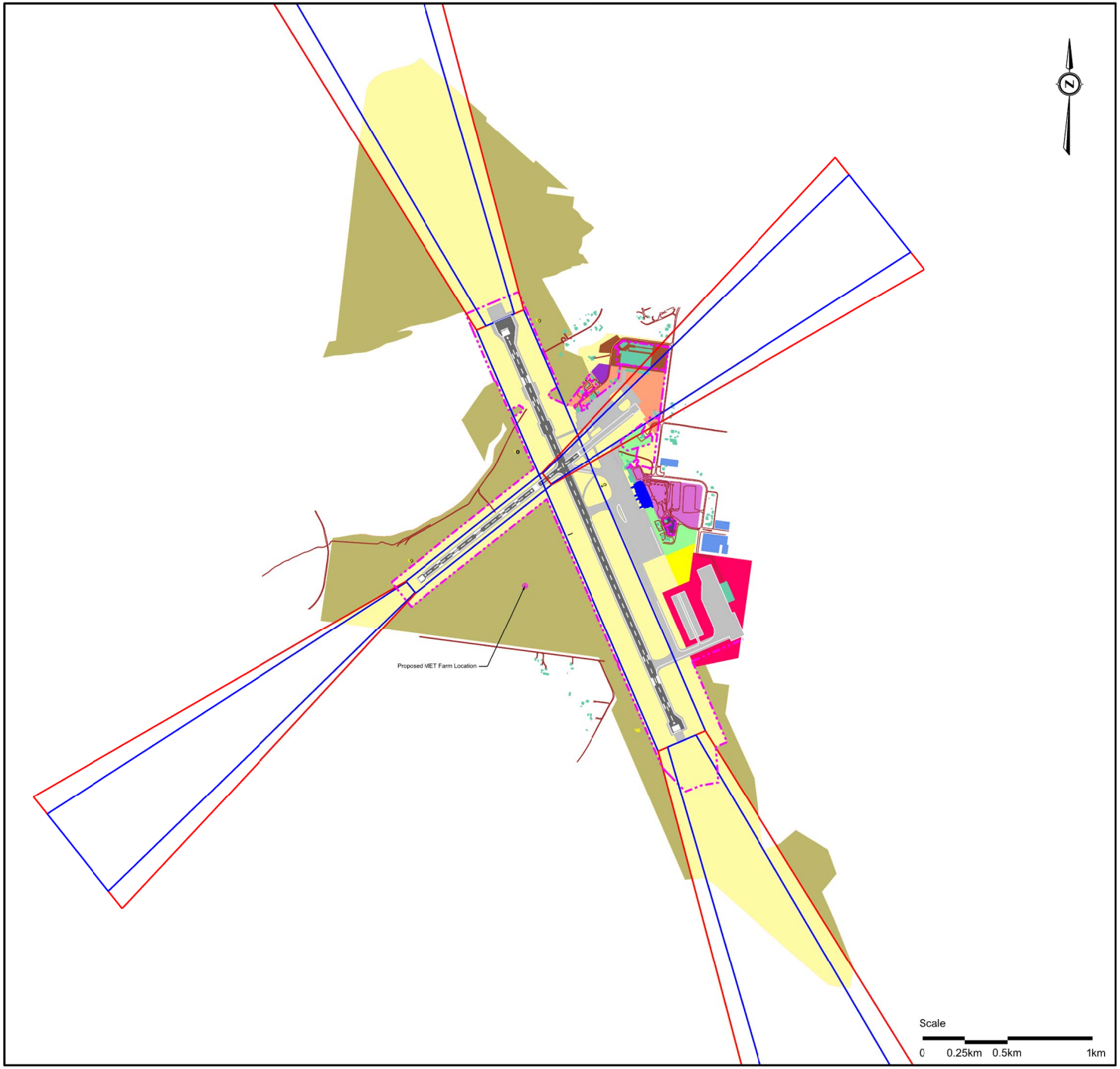
Expansion of air cargo has been identified by the Regional Council as a component of development for the Region. To accommodate growth in airfreight traffic arising potentially from the Council's strategy for airfreight development, a new freight precinct has been identified in the Master Plan south of the existing airfreight facilities. This will enable a long-term development of 5 large cargo facilities, and 7 smaller freight forwarder buildings, in this area.

Changes in the development of General Aviation traffic at the airport will increase demand for GA Hangars and lease areas. To accommodate the changes, the lands at the end of the decommissioned portion of Runway 04/22 should be reserved for future GA lease areas. This will permit the airport to add approximately 19 new hangars in the new GA development zone. If demand for smaller hangars develops, rather than for the identified large hangars, lot sizes can be reduced to accommodate demand and therefore provide for a greater number of smaller hangars. It is important that development of hangars in this area follows a planned approach such as identified in Appendix A. Release of lands for private or commercial development, should not restrict future hangar development. Once the GA Precinct is fully developed, and the MET facilities are fully moved, the former MET location can be used for long term expansion of the GA facilities.

The current passenger terminal is adequate to accommodate the long-term passenger demand through to the end of the Master Plan period. Initial expansion beyond the Master Plan would be as small incremental additions to the Departure Lounge and an additional Baggage Reclaim device. This expansion would need to be initiated towards the end of the forecast period in order to ensure there is no decline in level of service. Further long term development of the passenger terminal, to handle passenger demand volumes well beyond the Master Plan period, should involve a land reservation for expansion of the passenger terminal to the south. Because of the location of underground fuel hydrant system supply lines, this would extend to the limit of the edge of the current apron. Northerly expansion of the Passenger Terminal Building would ultimately be needed, along with removal of the old passenger terminal.

In the near term, the airport should address the problem of congestion created by passengers heading into security screening as a surge after their flight is called, due to the better amenities available on landside and lack of amenities airside. Option 2 suggested as a modification to the Passenger Terminal offers the best approach to improve the level of service throughout the terminal building, but does isolate one large existing concession on landside. Overall concession space is increased under Option 2, with the addition of a food concession and relocation of the Relay and Tech2Go concessions.

The Airport Master Plan for the period up to 2037 is provided in Exhibit 6-1. The development necessary to accommodate the air traffic demand up to 2037, does not fully build out the airport lands and therefore, there is future development potential beyond the Master Plan.



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Airport Operational Area
- Airport Support Facilities
- Passenger Terminal Area
- Car Park
- Fuel Storage
- General Aviation
- Future Landside Commercial Development
- Proposed Military Precinct
- Air Freight
- NDB Back-up System
- Primary Industries Queensland (PIQ)
- Reserved Airport Lands

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 6-1
Airport Master Plan

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6.2 PHASING OF MASTER PLAN DEVELOPMENT

Much of the development demands for Rockhampton Airport fall into 4 phases. Consequently, the phasing of improvements proposed under the Master Plan has been divided into four 5-year phases covering the 20 year planning horizon. In addition to the 4 phases that coincide with stages of traffic development, there is a need to apply a measure of reaction to market demand as far as development of General Aviation and Freight facilities are concerned. The phasing of projects has been illustrated in Exhibit 6-2. The following projects are assigned to the development phases of the Master Plan:

Phase 1 – 2017 to 2022

The improvements identified for development within the initial phase are:

- Reconfiguration of the Passenger Terminal
- Development of a FIFO Processing facility for mine workers
- Initial relocation of the BOM's MET Equipment
- Flood Mitigation projects (yet to be determined)
- Creation of the Military Precinct

Phase 2 – 2022 to 2027

- Completion of the relocation of MET Equipment to the west side of Runway 15/33

Phase 3 – 2027 to 2032

- Development of an additional Aircraft Parking Stand

Phase 4 – 2032 to 2037

- Initial Preparation for Expansion of the Passenger Terminal Building

Market Driven Activities

- Creation of additional GA Lease Lots to keep pace with demand
- Development of a New Cargo Precinct in response to demand

PHASE 1

The processing constraints identified with processing passengers through Security in Section are existing, and implementation of the solution should begin as soon as funding can be organised. This development would ensure passengers proceed through security screening earlier. With concessions available on airside, they will be able to enjoy the commercial offerings for a longer period before boarding their flights. In addition, as the concession space is to be created on airside, there is more capacity in the airside part of the terminal, alleviating the need to expand the lounge space throughout the Master Plan period.

Adani is expected to appoint its FIFO base imminently and therefore, if successful, Rockhampton Airport needs to reconfigure and renovate the north end of the passenger terminal to create a facility for FIFO passengers. The new FIFO facility would provide a dedicated space for processing FIFO workers that would separate them from commercial passengers. As the FIFO flights are closed charter operations, there is no requirement for additional security screening. However, if the FIFO passengers were to be mixed with other commercial passengers, then the FIFO passengers would be required to undergo security screening along with other commercial passengers. Keeping FIFO passengers separated from commercial passengers would enable the FIFO charter operator to implement its own processing standards and procedures to speed up passenger processing.

In early 2016, the Bureau of Meteorology announced that the MET facilities at Rockhampton Airport as well as many other sites across the country, would be fully automated. Some of the facilities are already fully or partially automated however, others are still manual. The shift to automation requires new equipment to be installed and where it does, there is to be a transition period used for calibration with both the older systems and the new systems operating in parallel. It is recommended that any new equipment to be installed at the airport, be located as proposed in the Master Plan, to the west of Runway 15/33. In addition, relocation of MET equipment from the current location to the new location should occur over a transition period, as a calibration period needs to be applied and equipment may not all be replaced immediately. The relocation of the MET equipment to the proposed new site is therefore expected to commence in Phase 1 but extend into Phase 2.

The proposal for the new dedicated Military Precinct has been pending for quite some time. Development of the Military Precinct will, however, be dependent on flood mitigation to ensure the new facility is not prone to flooding. Flood mitigation for the airport is expected to be initiated as a result of the funding allocation made in the 2017 Queensland State budget. The precise measures proposed for flood mitigation are not fully defined, however once the threat of flooding is removed, construction of the Military Precinct can be initiated.

PHASE 2

The shift of MET equipment initiated in Phase 1 is likely to continue through Phase 2 as current equipment reaches its end-of-service life and new equipment is replaced in the new location and calibrated.

PHASE 3

The air traffic forecasts identify a need for an additional aircraft parking stand by 2032. As such, Rockhampton Airport should initiate Engineering Design in Phase 3 for development of the additional parking stand, for completion towards the end of Phase 3 to accommodate forecast increased air carrier schedules.

PHASE 4

The initial expansion of the Passenger Terminal is not identified within the Master Plan planning horizon as the forecast traffic is not expected to bring the building to capacity during the Master Plan period. However, as the terminal capacity is likely to be reached soon after 2037, initial planning for expansion of the passenger terminal should take place before the end of the Master Plan period.

MARKET DRIVEN ACTIVITIES

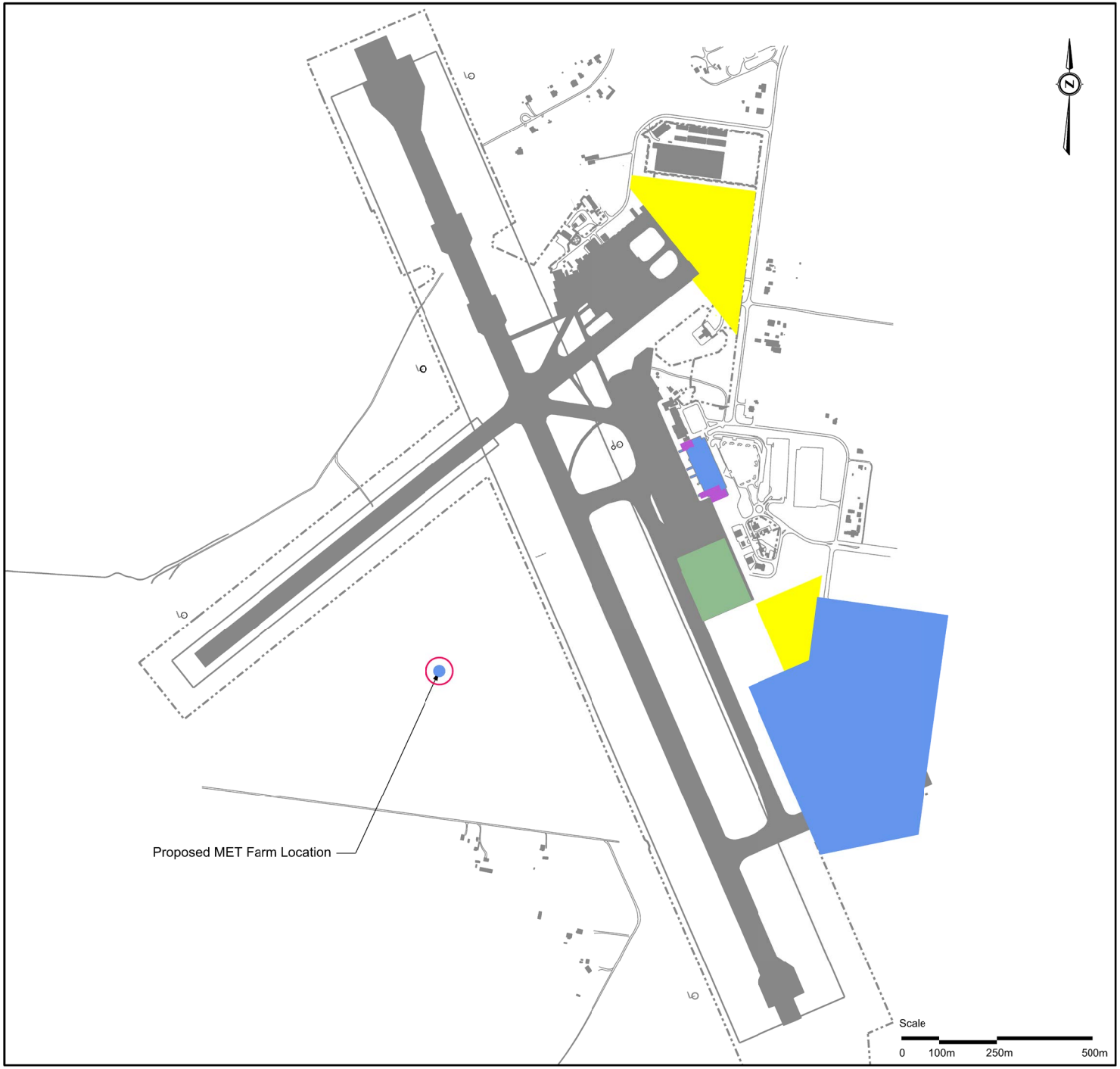
The General Aviation Precinct has been identified for expansion as defined under Option 1. Increased demand for GA lease areas may follow increases in GA flight activity, however a growth in GA flying activities may not necessarily generate growth in demand for GA lease lots. This is because the demand for additional GA lease lots is expected to be generated by general aviation businesses catering to commercial general aviation users rather than private recreational general aviation users. The airport therefore needs to react to the requirements of the General Aviation Community and make lease site available to accommodate the need for hangars for general aviation businesses. In this respect, the airport management should also be proactive and market the GA opportunities so as to attract businesses to the airport. This should commence in Phase 1 and proceed continuously throughout the Master Plan period.

During stakeholder consultations, it was found that very little information was available to provide an understanding of the historical development or current demand for air freight at Rockhampton Airport. It is recommended that the airport management work with the air cargo operators and establish a means by which to record and track inbound and outbound airfreight activity. As airfreight volumes increase, it will be possible to identify when each operator will need to expand their airfreight handling facilities. When any such expansion is found to be required, these operators should then be required to take up a lease area in the new Airfreight Precinct of the airport. This will result in a gradual shift of air freight operators

to the new southern site designated in the Master Plan for air freight development. It would be possible to shift all operators to the new site on completion of their lease agreements, however the future passenger terminal development will not be required for some time and, therefore, a shift of air freight operators to the Airfreight Precinct based on increases in freight volumes may suit the business operations of the air freight operators. New air freight operators showing an interest in developing facilities at the airport should be directed to take up a lease in the new precinct.

ULTIMATE AIRPORT DEVELOPMENT

The Airport Master Plan identifies the development of the airport over a 20 year planning timeframe. However, fully developing the airport lands during the planning horizon would either result in under-utilised infrastructure or a waste of valuable lands that preclude other opportunities in the future. The Airport Master Plan has therefore identified how the airport could develop, beyond the present planning horizon, to an Ultimate Airport Development. An Ultimate Airport Development scheme should therefore set the land reservations, and guide future Airport Master Plans, to ensure that a consistent long term plan for development of the site can be established, thereby enabling coordinated orderly development in years to come. The suggested Ultimate Airport Master Plan has been presented in Exhibit 6-3.



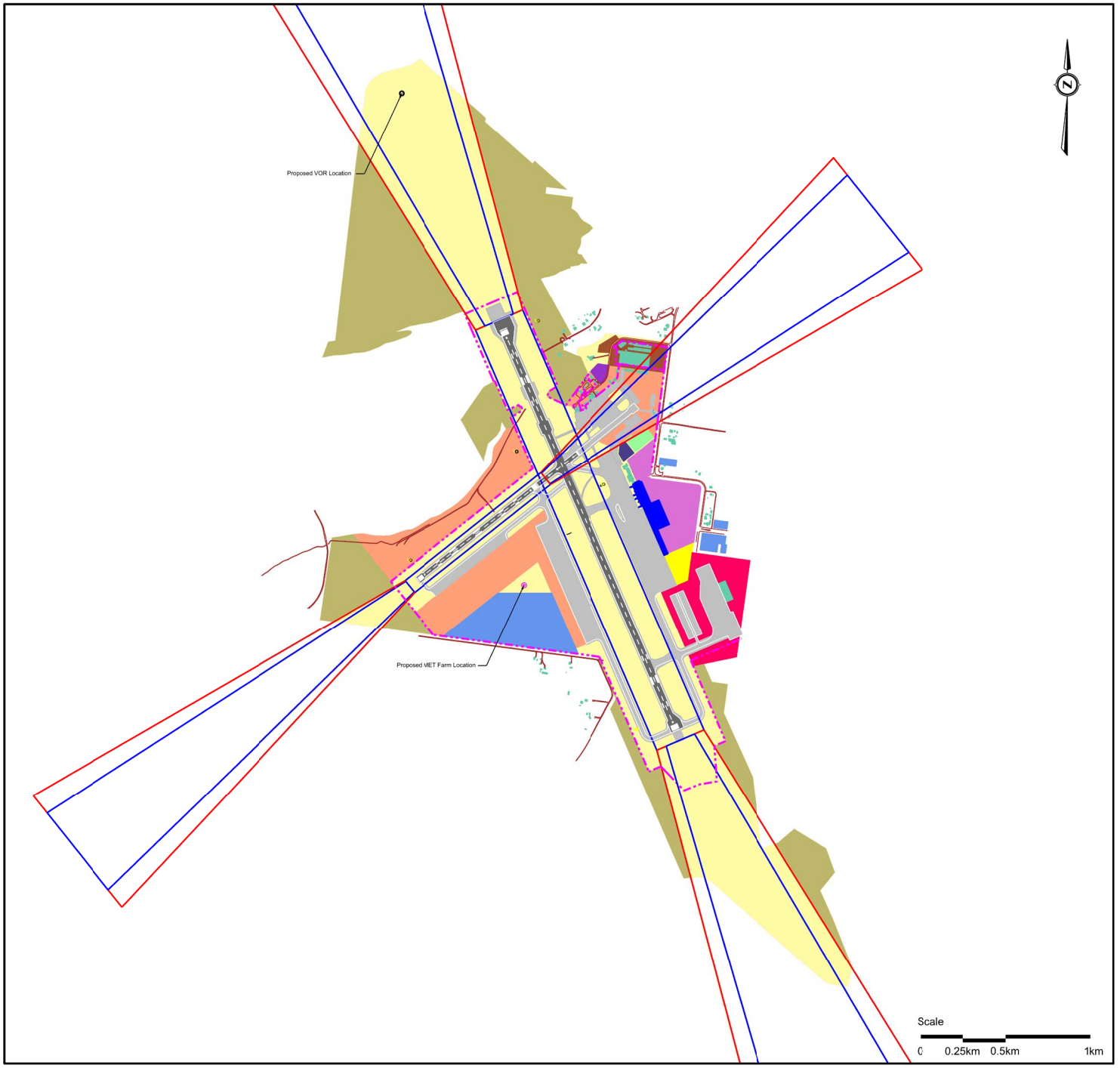
Rockhampton Regional Council

Legends

- Phase 1 Development
- Phase 2 Development
- Phase 3 Development
- Phase 4 Development
- Market Driven Activities

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 6-2
Phasing of Airport Master Plan Development



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Airport Operational Area
- Airport Support Facilities
- Passenger Terminal Area
- Car Park
- Fuel Storage
- General Aviation
- Future Landside Commercial Development
- Proposed Military Precinct
- Air Freight
- NDB Back-up System
- Primary Industries Queensland (PIQ)
- Reserved Airport Lands

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 6-3
Ultimate Airport Master Plan
Development

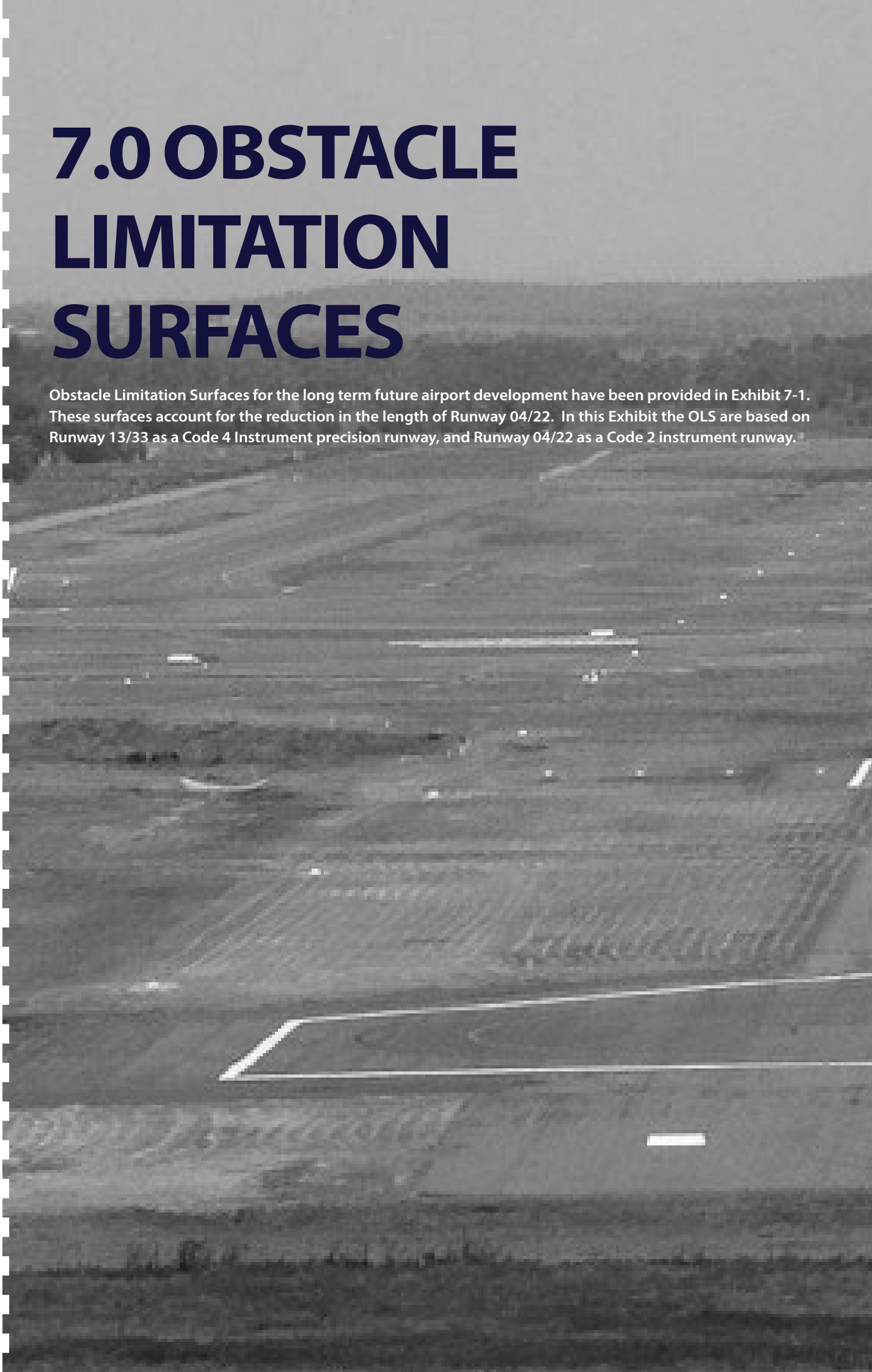
OBSTACLE LIMITATION SURFACES

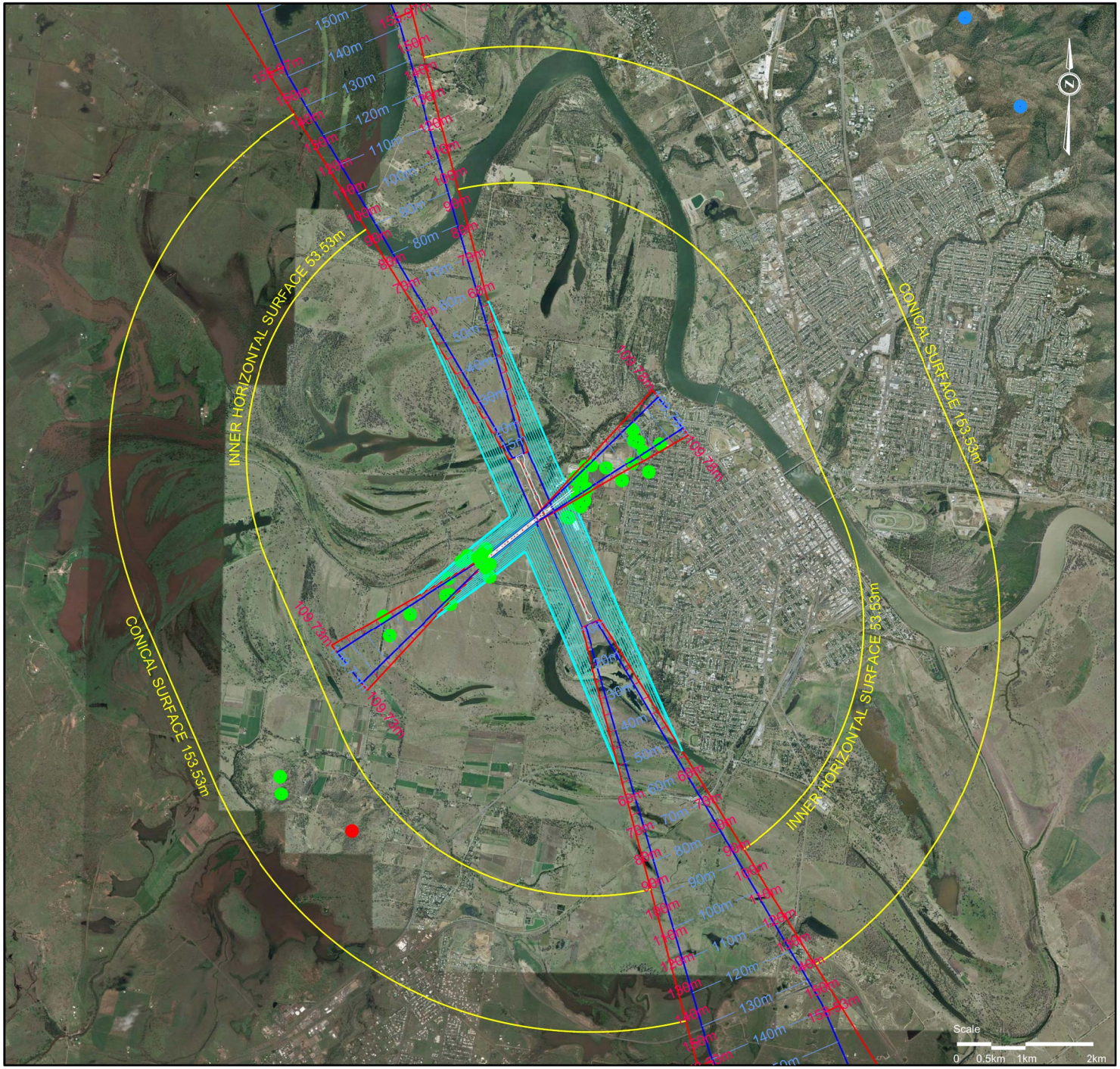
7.0


RA-82081
Volga-Dnepr
Volga-Dnepr

7.0 OBSTACLE LIMITATION SURFACES

Obstacle Limitation Surfaces for the long term future airport development have been provided in Exhibit 7-1. These surfaces account for the reduction in the length of Runway 04/22. In this Exhibit the OLS are based on Runway 13/33 as a Code 4 Instrument precision runway, and Runway 04/22 as a Code 2 instrument runway.





Rockhampton Regional Council

Legend:

- Approach Surface
- Departure Surface
- Transitional Surface
- Former Obstacles within OLS
- Obstacle Penetrates OLS
- Former Obstacles outside OLS

RWY 04 / 22 and RWY 15 / 33 Declared Distances

Runway Designator	TORA	TODA	ASDA	LDA
04	900m	960m	900m	1200m
22	1200m	1260m	1200m	900m
15	2628m	2928m	2628m	2568m
33	2568m	2688m	2568m	2568m

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Exhibit 7-1
Rockhampton
Obstacle Limitation Surface
(Runway 04/22 - Reduced Length)

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VH-OJC

RECENT ACTIVITIES 8.0

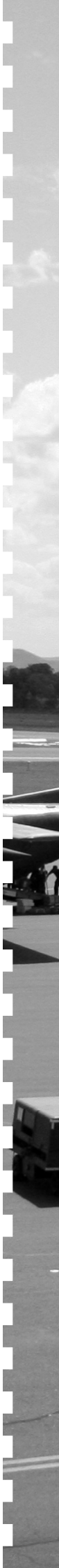
8.0 RECENT ACTIVITIES

8.1 SINGAPORE ARMED FORCES

On May 6th 2016, the Singapore and Australian Governments announced a new agreement concerning military training activity and investment. Singapore plans to invest $2.25 billion in Queensland to upgrade facilities at 2 military training grounds. Approximately $1 billion of that investment will be in the Shoalwater Bay training area. Along with the direct foreign investment, Singapore intends to increase training operations to twice a year, going from 9 weeks to 18 weeks a year, and increase troop deployment for those exercises from 6000 troops per annum to 18,000 troops per annum. This will have a significant impact on local businesses that currently experience a positive boost to business as a result of current Singapore Armed Force activities in the region. However, this will extend the period of time that military activity takes place at Rockhampton Airport. For the short duration of current military activity experienced, the military presence is accommodated, however with a greater level of military activity over a longer period of time, there will be an impact on civilian aviation operations at Rockhampton Airport. Developing the Military Precinct would ensure a separation between civilian and military activities and permit the SAF to operate with minimal impact on the rest of the airport, while enabling the civilian operations at the airport to grow as needed in the best possible way on the site.

8.2 ADANI MINE APPROVAL

In February 2016, the Adani Corporation received the State Environmental approval for their planned coalmine in the Isaac Regional area in the northern part of the Galilee Basin. Financing approval was reached in mid- 2017 with the pre-construction works expected to start in the 3rd quarter of 2017. The Mine is estimated to have a 60 year productive life and support up to 10,000 jobs. Adani has announced Rockhampton as a Fly-In-Fly-Out hub. Rockhampton's existing infrastructure and economy position the region as a strong contender for FIFO opportunities as well as many ancillary opportunities. As a FIFO base, the airport would therefore experience aircraft activity associated with the FIFO operations as well as parts delivery, maintenance etc. and therefore contribute to the growth of traffic at the airport.



ROCKHAMPTON AIRPORT

AIRPORT MASTER PLAN 2017 TO 2037

APPENDIX A

EXAMPLES OF POSSIBLE GA AND AIR FREIGHT DEVELOPMENTS FOR ROCKHAMPTON AIRPORT

A1.0 EXAMPLE LAYOUTS FOR GA AND AIR FREIGHT DEVELOPMENT

Section 5 of the Rockhampton Master Plan identifies areas for safeguarding for future development. The safeguarding shown in Section 5 is general and does not define how the configuration of the areas should be designed to accommodate the type of growth expected or desired for the airport. Therefore, further detail showing how these areas might be developed has been provided in this Appendix.

A1.1 GENERAL AVIATION PRECINCT

The existing General Aviation Precinct will not be able to support much more development. Consequently, a new GA development area is needed to accommodate any future GA facilities. The Master Plan identifies two possible areas in which an additional GA Precinct might develop. These are:

1. Option 1 – Locates all future new GA facilities in between Canoona Road and Taxiway C.
2. Option 2 – Locates a new GA development area in the location presently occupied by the Bureau of Meteorology facility.

A1.1.1 OPTION 1

There are several ways in which GA development might be configured, however one possible arrangement is shown in Exhibit A-1. This divides the area into 3 sub-areas devoted to:

- Light aircraft hangars,
- Mid-sized aircraft hangars, and
- Large aircraft hangars.

Light Aircraft Hangars

With the changes to the declared distances for Runway 04/22, the existing GA apron area can be expanded as demand dictates, however there is limited light aircraft hangarage at the airport. To address this deficiencies, Option 1 would enable an additional row of light aircraft open hangars to be developed opposite the existing light aircraft open hangars, and using the same access taxiway.

Mid-sized Aircraft Hangars

Most GA facilities at the airport would be of a similar size to the mid-sized hangars. The example in Exhibit A-1 shows 14 mid-sized hangars. This would cater to private aircraft owners that wish to hangar twin engine aircraft or light jet aircraft. Similar-sized hangars could also accommodate an additional AMO business catering to light and medium sized GA aircraft should there be interest from such a business in locating at the Rockhampton Airport.

Large Aircraft Hangars

Currently, there appears to be no demand for larger aircraft hangars at Rockhampton Airport. However, longer term demand for hangar facilities and for larger and more comprehensive AMO operations, could require larger facilities. The example in Exhibit A-1 identifies a provision for 3 hangars that could accommodate larger aircraft and an AMO operation that could service turbine aircraft up to Q400/ATR72 sized aircraft. If demand developed for an even larger facility, the space identified for two of the large hangars could be developed for a single large hangar facility to accommodate maintenance activity for much larger aircraft, or a much larger maintenance operation.

OPTION 2

The second option for future expansion of GA facilities is to use the existing BOM site for GA development. This is possible, since the BOM will be automating their MET facility and, as a result, the automated BOM operation could be accommodated in an alternative location on the airport site. This would enable the existing BOM site to be made available for other airside uses, and particularly for development of future GA facilities. This possibility has been discussed in Section 2.4 of the Master Plan report. The existing BOM site provides an area that is alongside the former extended portion of Runway 04/22 and therefore offers good airside access. The site itself is relatively free of flooding, however any apron constructed in front of the site would need to be carefully developed as the land in front of the BOM site, next to the former extended runway, is prone to flooding. In addition, the new OLS surfaces for the new Runway 22 threshold would restrict parts of the apron from parking larger aircraft such as the Dash 8 Q400. As in Option 1, the size and arrangement of hangars would depend on the demand that develops over time, and the needs of the operators that may wish to take up space at the airport. The example shown in Exhibit A-2 shows a variety of hangar sizes on the site in order to illustrate how the site might accommodate additional medium-sized hangars, as well as larger hangars for larger AMO operators. The area for Light Aircraft hangars identified in Option 1, should be retained and reserved in Option 2 as well.

A1.2 AIR FREIGHT

Land reservations for future air freight development have been identified in the Master Plan report. These have been designated for air freight without any specific forecast of growth in air cargo, as the current level of air freight traffic is unknown as the air freight operators presently handling freight traffic at the airport do not retain data on their current cargo activity. The Rockhampton Regional Council has expressed a wish to develop an air freight business at the airport and, therefore, wishes to have a zone identified on the airport that could accommodate any future development of air freight activity. The Master Plan report has identified four possible options for reservation of lands at the airport on which to accommodate future air freight operations. These are:

1. To the East of the end of Runway 22 / Taxiway C;
2. On the lands presently used by the BOM for the airport MET station;
3. On land along Canoona Road close to the long term car park area; or
4. In a combined GA / Freight zone to the east of the end of Runway 22 / Taxiway C; and
5. South of the Passenger Terminal area, north of the Military Precinct.

A1.2.1 OPTION 1

The first option for air freight might use the land at the end of the extended Runway 22 and Taxiway C. This area has airside access along Taxiway C, as well as road access along Canoona Road. The importance of the airside and road access is that it provides an ability to develop an air freight business as well as other potential logistics businesses. Currently, the pavement strength along Runway 22 and Taxiway C would not support dedicated freighter aircraft, and therefore if the Regional Council were to favour this option the full benefit of the good airside access could not be fully exploited, unless the strength of the pavement were increased to support heavy freighter aircraft.

An example of how the Air Freight Option 1 could be configured is provided in Exhibit A-3. This shows an initial three air freight processing facilities but the Option could accommodate a further two additional freight facilities along Taxiway C if necessary. Behind the air freight facilities, on landside, additional freight forwarding facilities are depicted in Exhibit A-3. To facilitate any further air freight and forwarding operations, including other non-freight activities, an area containing warehouses or freight logistics buildings could be located along Canoona Road as shown in the Exhibit.

In addition to the air freight development suggested, Option 2 also identifies additional large GA facilities to accommodate future expansion of organisations such as the Royal Flying Doctor Service or similar. The example shown as Option 1 in Exhibit A-3 also includes a duplication of light GA hangars beside the PIQ facility to accommodate future demand for light aircraft hangarage.

A1.2.2 OPTION 2

The second option for air freight development suggests use of the existing BOM site for air freight activities. This site was also suggested as a candidate for GA development under the GA Option 2 and illustrated in Exhibit A-2. One of the disadvantages of using the BOM site for GA development is that the apron that would be along the former extended Runway 22/04 has been modelled for flood impacts and it was found to be flood prone. As such any pavement constructed for aprons in this area may become unusable during flood events. As the air freight business at Regional Airports such as Rockhampton is generally characterised as being 'belly cargo' and carried on regular passenger aircraft, there is little need for dedicated air freight aircraft parking stands in front of the air freight facilities. Without a demand for dedicated stands, the air freight facilities can be located on the higher ground of the BOM site, which is relatively free from flood issues. The example of possible development of the present BOM site for air freight, as defined under Option 2, is illustrated in Exhibit A-4, which shows three such air freight businesses. This arrangement allows for development of larger freight handling facilities for the current operators, as well as an additional facility to accommodate future growth in air freight traffic. The area of the BOM site can also accommodate further air freight operators along with a number of freight forwarders. Access to the air freight facility would be from Canoona Road. The area behind the freight zone in Option 2 could accommodate further freight development, or be reserved for additional long stay car parking. This area, has been modelled and represents an area reasonably free from flooding.

A1.2.3 OPTION 3

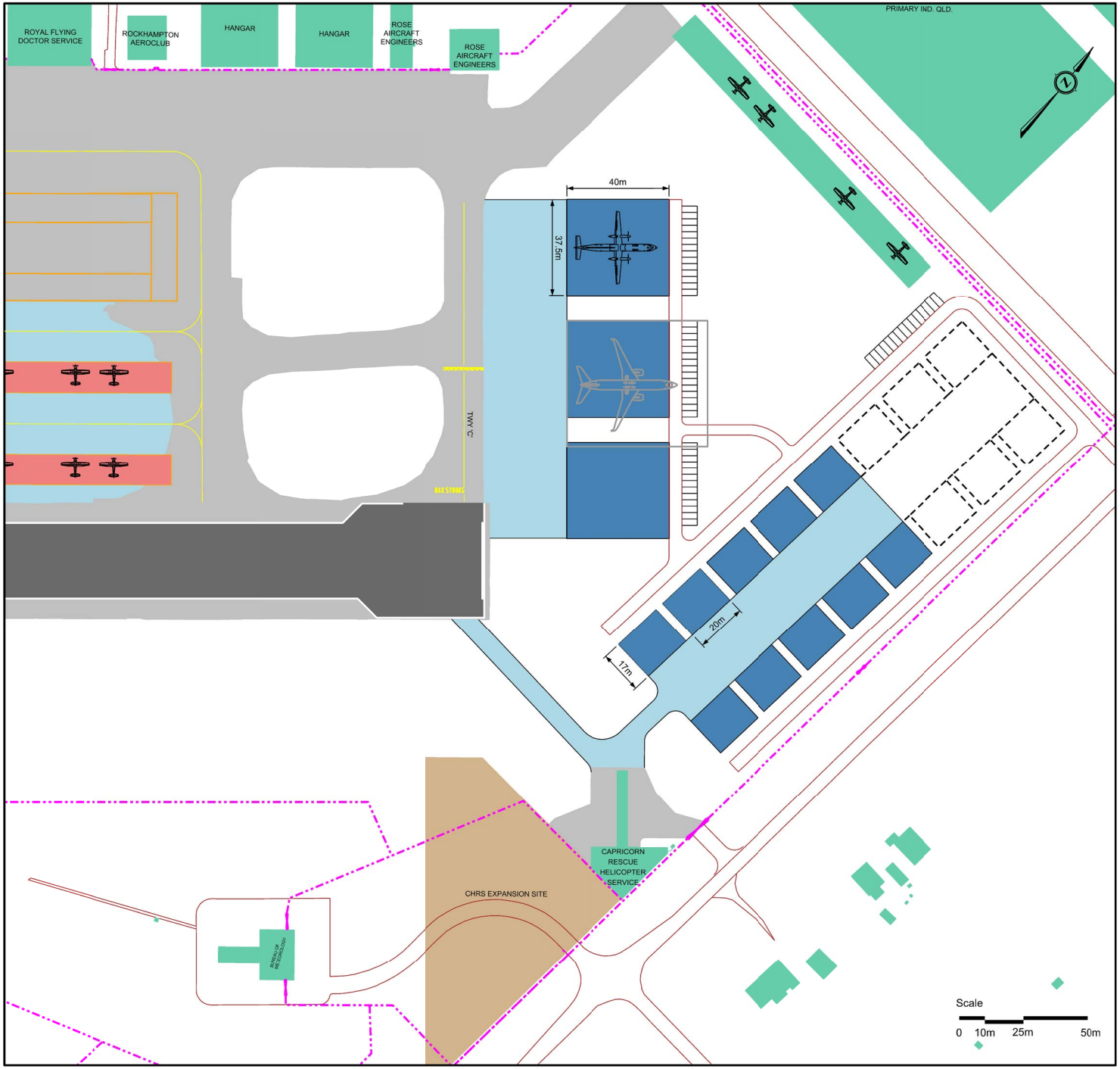
The third option developed as an example for an air freight zone at the airport suggests locating the air freight facility on Canoona Road, in between the passenger terminal and car parking areas and the CHRS facility. The sizing of this zone, as shown in Exhibit A-5, is consistent with the other three air freight options. Two large air freight facilities are depicted as a new location for the current air freight operators, with a third being for cargo requiring cold storage. Future expansion of the air freight facilities has also been identified in this example to accommodate long term development, should this be required.

A1.2.4 OPTION 4

As has been noted in the Master Plan report, the BOM will be automating its MET facility at the airport. The Air Freight Option 2, as well as the GA Option 2, both assume that the new automated BOM equipment would be located elsewhere on the airport, thereby freeing up the present BOM site for alternate airport uses, such as for cargo or GA development. Currently, no discussion has taken place with BOM to identify alternative locations for the automated MET facilities, nor have the complexities of moving or calibrating MET equipment at a new site been addressed. Consequently, airport development options that do not rely on relocation of the BOM operations should be explored. Air Freight Option 4, therefore, assumes that BOM does not relocate, and therefore assigns the area between Taxiway C and Canoona Road for both further expansion of GA facilities as well as a site for new air freight facilities. This option provides a similar area to that suggested under Option 2 for air freight, and locates this function to a site on Canoona Road, beside the PIQ facility. The rest of the area, up as far as the CHRS facility, is zoned for future expansion and development of GA facilities. Exhibit A-6 illustrates a possible example of how this area might be arranged to accommodate existing air freight activities and future air freight development. This shows that three large freight processing facilities, larger than any current facilities at the airport, could be accommodated and this approach therefore represents an ability to provide for expansion of the current freight businesses, as well as additional facilities such as a Cold Storage and processing facility. In addition, a number of freight forwarder facilities can also be accommodated and these are also depicted in the Exhibit. The GA facilities shown are similar to those suggested in GA Option 1, however the area available for medium-sized hangars is less and would restrict the number of such hangers that could be developed.

A1.2.5 OPTION 5

In the event that the MET facilities either are not moved or take a very long time to move to the new site, airfreight facilities need to be able to develop unhindered. The location further south from the present location ensures that development can occur gradually as demand dictates and keeps airfreight activity close to the developing Passenger Terminal Apron. Development of the area in Option 5 permits considerable opportunity for development of airfreight with little restriction. Exhibit A-7 illustrates how this area could be developed with larger airfreight processing facilities and a number of freight forwarders.



Rockhampton Regional Council

Legend:

- Airport Security Fence
- Future Hangar Expansion
- Possible A320 / B737-800 Hangar
- GA Hangar
- Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-1
GA Precinct - Example Option 1

L • E • A • P • P

Rockhampton Regional Council

Note :

1. Apron in front of GA Hangar has restricted 7.72m tail height and not useable for parking aircraft

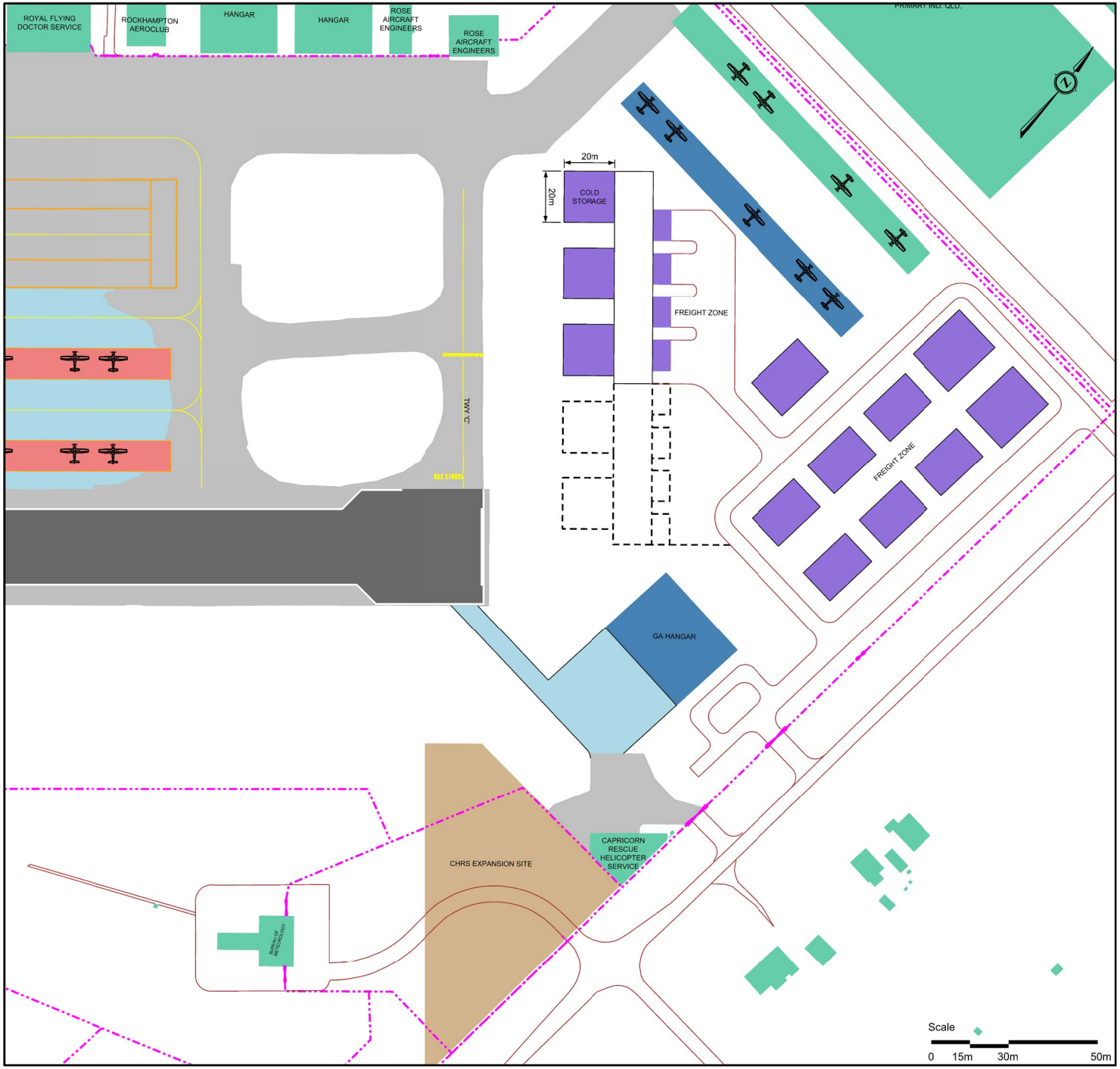
Legend:

- Airport Security Fence
- GA Hangar
- Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-2
GA Precinct - Example Option 2

L • E • A • P • P



Rockhampton Regional Council

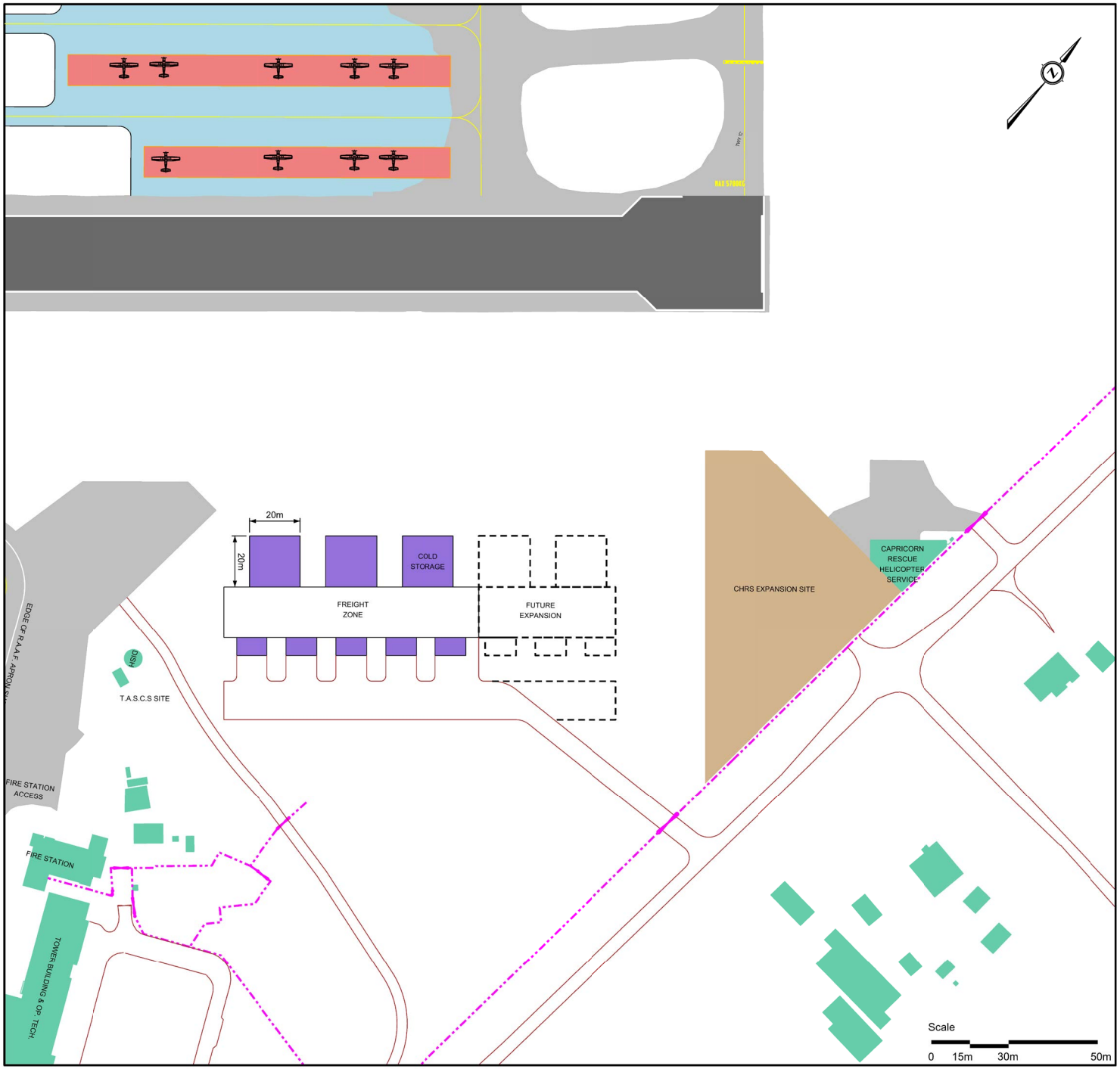
Legend:

- Airport Security Fence
- Future Expansion
- Freight Building
- GA Hangar
- Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-3
Airfreight Precinct - Example Option 1

L • E • A • P • P



Rockhampton Regional Council

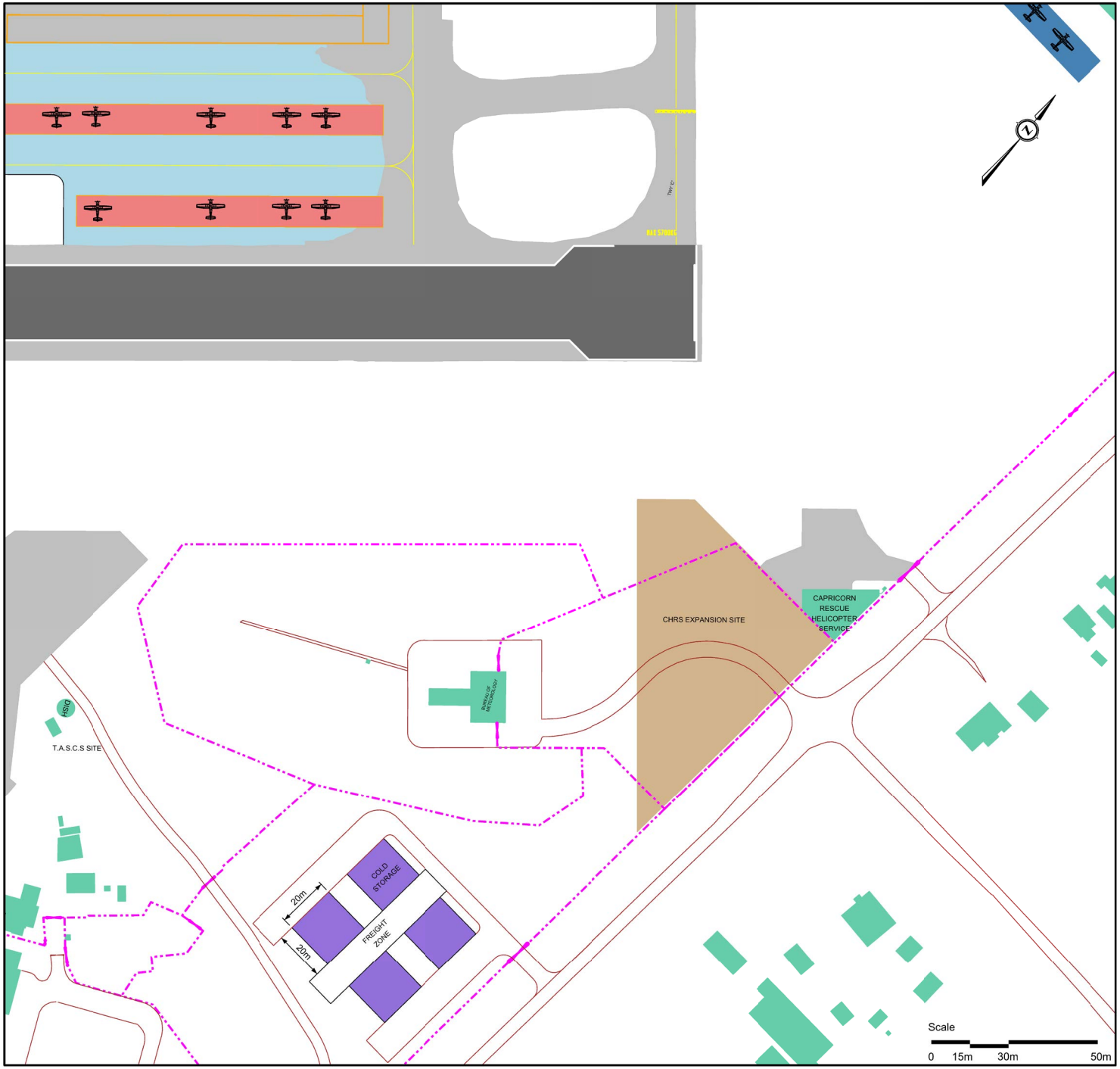
Legend:

- Airport Security Fence
- Future Expansion
- Freight Building
- Pavement
- New Code A Aircraft Tie Down Areas

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-4
Airfreight Precinct - Example Option 2

L · E · A · P · P



Rockhampton Regional Council

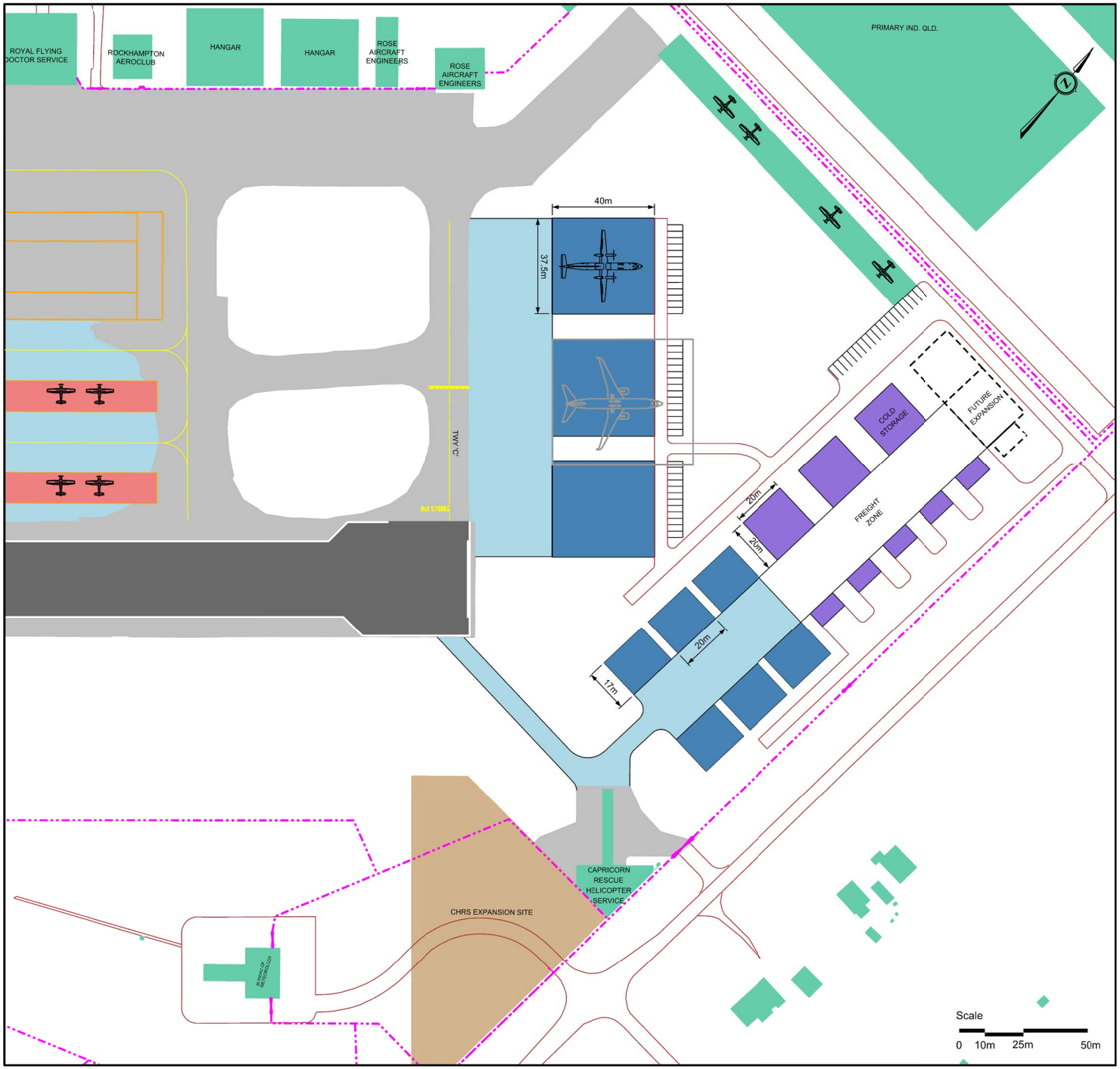
Legend:

- Airport Security Fence
- Freight Building
- Pavement
- New Code A Aircraft Tie Down Areas
- GA Hangar

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-5
Airfreight Precinct - Example Option 3

L • E • A • P • P



Rockhampton Regional Council

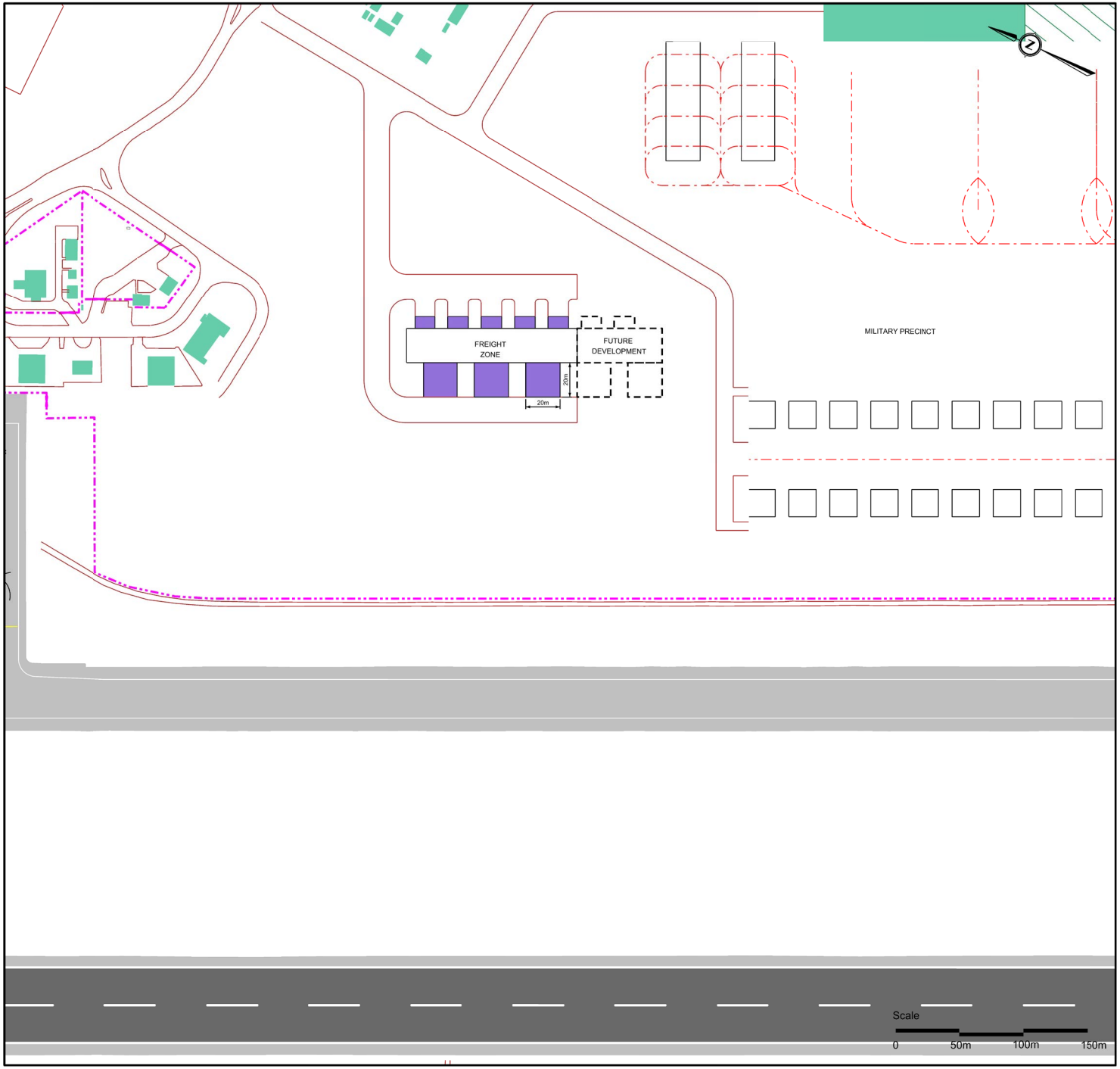
Legend:

- Airport Security Fence
- Future Expansion
- Possible A320 / B737-800 Hangar
- GA Hangar
- Pavement
- New Code A Aircraft Tie Down Areas
- Freight Building

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-6
GA Precinct - Example Option 4

L · E · A · P · P



Rockhampton Regional Council

Legend:

Airport Security Fence

DEVELOPMENT OF ROCKHAMPTON AIRPORT MASTER PLAN

Appendix A-7
Airfreight Precinct - Example Option 5

L • E • A • P • P

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ROCKHAMPTON AIRPORT

AIRPORT MASTER PLAN 2017 TO 2037

APPENDIX B

AUSTRALIAN NOISE EXPOSURE FORECASTS FOR ROCKHAMPTON AIRPORT

Rockhampton
Airport

airservices

Environment
25 Constitution Ave
(GPO Box 367)
Canberra ACT 2601

t 02 6268 4785
f 02 6268 5477

www.airservicesaustralia.com

ABN 59 698 720 886

Mr Trevor Heard
Manager Airport
Rockhampton Airport
PO Box 1860
Rockhampton QLD 4700

Dear Mr Heard

Rockhampton Airport Standard (2035) Australian Noise Exposure Forecast

The Rockhampton Airport Standard (2035) Australian Noise Exposure Forecast (ANEF) has been endorsed for technical accuracy by Airservices Australia on 11 December 2015.

Yours sincerely

Paula Murray
Manager
Environmental Services

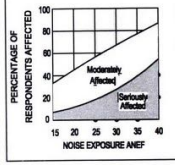
14 December 2015

LAND USE COMPATIBILITY ADVICE FOR AREAS IN THE VICINITY OF AUSTRALIAN AIRPORTS

Shall be read in conjunction with AS2021:2015
Acoustics - Aircraft noise intrusion - Building siting and construction

Building Type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
Home, home unit, flat, caravan park	Less than 20 ANEF (note 1)	20 to 25 ANEF (note 2)	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF (note 1)	20 to 25 ANEF (note 2)	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF (note 1)	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF (note 1)	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF Zones		

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 of the Standard may be followed for building sites outside but near to the 20 ANEF contour.
2. Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate. (See Exposure - Response graph below)
3. There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 2.1 of the Standard should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3 of the Standard.
4. The Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2 of the Standard. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.
5. In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.



PERCENTAGE OF PEOPLE SERIOUSLY & MODERATELY AFFECTED BY AIRCRAFT NOISE

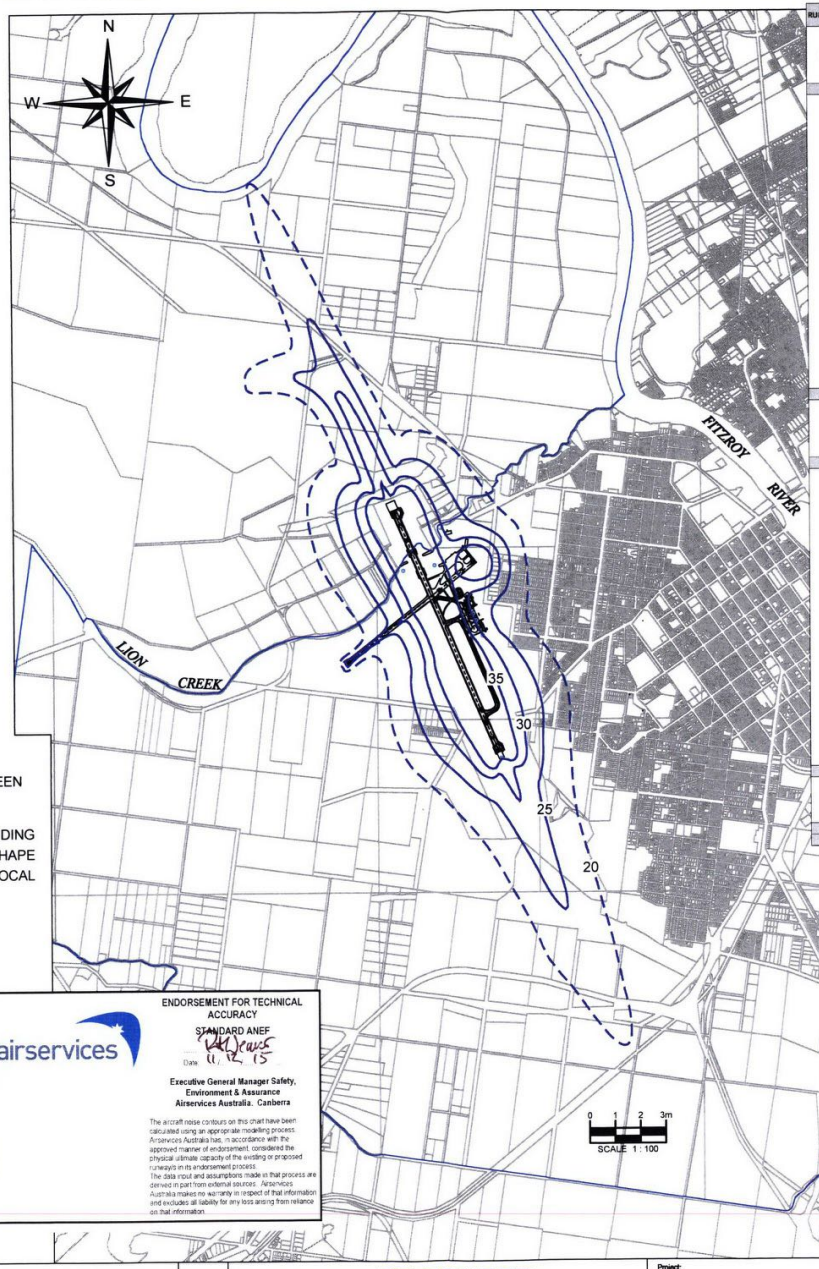
This graph shows that a proportion of the community will still be SERIOUSLY and MODERATELY affected by aircraft noise when the noise exposure is below 20 ANEF

Over flight of aircraft will still occur in areas outside the 20 ANEF

Source: Australian Standard AS2021:2015

GENERAL NOTE:
1. WHERE FIGURES HAVE BEEN ROUNDED DISCREPENCIES MAY OCCUR BETWEEN TOTALS AND THE SUMS OF COMPONENT ITEMS.

2. AFTER EXAMINATION IT WAS DETERMINED THAT THE TERRAIN SURROUNDING ROCKHAMPTON AIRPORT COULD HAVE AN INFLUENCE OVER THE SIZE AND SHAPE OF THE NOISE CONTOURS AND THEREFORE THE INCLUSION OF LOCAL TOPOGRAPHY IN THE MODEL WAS WARRANTED.



RUNWAY	AIRCRAFT	ARRIVALS DAY	ARRIVALS NIGHT	DEPARTURES DAY	DEPARTURES NIGHT	TRAINING DAY	TRAINING NIGHT	GRAND TOTAL
04	BEC58P	0.03433	0.00468	0.03433	0.00468	0.068652	0.009368	0.156040
	CNA206	0.01415	0.00193	0.01415	0.00193	0.028308	0.003856	0.064324
	DO228	1.31916	0.17885	1.31916	0.17885			2.998090
	GASEPF	0.02213	0.00302	0.02213	0.00302	0.132792	0.018108	0.201200
	GASEPV	0.00653	0.00089	0.00653	0.00089	0.039168	0.005344	0.059352
	04 Total	**1.396300**	**0.190405**	**1.396300**	**0.190405**	**0.268920**	**0.036676**	**3.479006**
15	19000	0.62254	0.084892	0.62254	0.084892			1.414864
	717200	0.73656	0.10044	0.73656	0.10044			1.674000
	737800	5.180294	0.706404	5.180294	0.706404			11.773396
	747208	0.011122	0.001517	0.011122	0.001517			0.025278
	747400	0.012109	0.001651	0.012109	0.001651			0.027520
	777200	0.208869	0.028519	0.208869	0.028519			0.479976
	A320-232	2.20968	0.30132	2.20968	0.30132			5.022000
	A330-301	0.016272	0.002219	0.016272	0.002219			0.036982
	BEC58P	1.83265	0.24991	1.832652	0.249909	3.665296	0.499812	8.330029
	C130	0.421893	0.057463	0.421393	0.057463			0.957712
	C17	0.073424	0.010012	0.073424	0.010012			0.166872
	CIT3	0.025191	0.003435	0.025191	0.003435			0.057252
	CL601	0.007071	0.000964	0.007071	0.000964			0.016070
	CNA206	1.51109	0.20606	1.51109	0.20606	3.555526	0.484850	7.474676
	CNA750	0.400142	0.054565	0.400142	0.054565			0.909414
	DHC830	5.013617	0.683675	5.013617	0.683675			11.394564
	DO228	2.678134	0.365206	2.678134	0.3652			6.086664
	DO328	6.78764	0.65286	6.78764	0.65286			10.881000
	EMB120	0.062534	0.008527	0.062534	0.008527			0.142122
	F-18	0.346349	0.047236	0.345622	0.047131			0.785338
	GASEPF	1.18137	0.1611	1.181371	0.161099	7.088222	0.966576	10.739738
	GASEPV	0.451428	0.061572	0.451428	0.061563	2.091440	0.285288	3.402632
	GV	1.546568	0.210895	1.54657	0.210895			3.514928
	HAWK	0.01089	0.001494	0.010916	0.001488			0.024788
	P3A	0.008136	0.00111	0.008136	0.00111			0.018492
	SF340	1.453969	0.198269	1.453969	0.198269			3.304476
	15 Total	**30.819090**	**4.201415**	**30.809361**	**4.201287**	**16.400484**	**2.236426**	**88.659003**
22	BEC58P	0.0016	0.00218	0.01601	0.00218	0.032008	0.004356	0.072738
	CNA206	0.0066	0.000896	0.0066	0.0009	0.013196	0.001808	0.030000
	DO228	0.615095	0.083875	0.615095	0.083875			1.397940
	GASEPF	0.009279	0.001269	0.011341	0.001551	0.061924	0.008444	0.093808
	GASEPV	0.002736	0.000378	0.003344	0.000462	0.018276	0.002496	0.027692
	22 Total	**0.649730**	**0.088602**	**0.657390**	**0.089908**	**0.125404**	**0.017104**	**1.622178**
33	19000	0.121236	0.016532	0.121236	0.016532			0.275536
	717200	0.14344	0.01956	0.14344	0.01956			0.326000
	737800	1.008828	0.137567	1.008828	0.137567			2.292790
	747208	0.002166	0.000295	0.002166	0.000295			0.004922
	747400	0.002358	0.000321	0.002358	0.000321			0.005358
	777200	0.040857	0.005573	0.040857	0.005573			0.092886
	A320-232	0.43032	0.05868	0.43032	0.05868			0.978000
	A330-301	0.00317	0.000432	0.00317	0.000432			0.007204
	BEC58P	0.40502	0.05523	0.405013	0.055231	0.810034	0.110462	1.840990
	C130	0.082064	0.01119	0.082064	0.011195			0.186508
	C17	0.014299	0.00195	0.014299	0.00195			0.032498
	CIT3	0.004936	0.000669	0.004936	0.000669			0.011150
	CL601	0.001377	0.000188	0.001377	0.000188			0.003130
	CNA206	0.33956	0.04554	0.339556	0.04564	0.692422	0.094426	1.545844
	CNA750	0.077925	0.010626	0.077925	0.010626			0.177102
	DHC830	0.976368	0.133141	0.976368	0.133141			2.219018
	DO228	0.521547	0.071121	0.521543	0.071121			1.185333
	DO328	0.93236	0.12714	0.93236	0.12714			2.119000
	EMB120	0.012178	0.001661	0.012178	0.001661			0.027678
	F-18	0.071807	0.009793	0.071083	0.009693			0.162374
	GASEPF	0.26109	0.0356	0.261082	0.035604	1.566510	0.213606	2.373402
	GASEPV	0.097067	0.013239	0.097078	0.013235	0.462208	0.063024	0.745851
	GV	0.301186	0.041071	0.301183	0.041071			0.684509
	HAWK	0.002126	0.00029	0.002125	0.00029			0.004831
	P3A	0.001586	0.000216	0.001585	0.000216			0.003603
	SF340	0.28316	0.03861	0.28315	0.03861			0.643530
	33 Total	**6.132412**	**0.836234**	**6.131663**	**0.836136**	**3.531174**	**0.481518**	**17.949137**
H1	BZ12	0.687944	0.05178	0.687944	0.05178			1.479448
	EC130	0.956752	0.072012	0.956752	0.072012			2.057528
	R44	0.687944	0.05178	0.687944	0.05178			1.479448
	S70	0.856112	0.06444	0.856112	0.06444			1.841104
	H1 Total	**3.188752**	**0.240012**	**3.188752**	**0.240012**	**0.000000**	**0.000000**	**6.857528**
	Grand Total	**42.177204**	**5.556668**	**42.178466**	**5.556808**	**20.325982**	**2.771724**	**118.566852**

AERODROME DATA

LOCATION IDENTIFIER - YBRK
(WAC 4024)
Magnetic Variation - 9° EAST

ELEVATION - 36 FEET

Aerodrome Reference Point - ARP
(WGS 84)
Latitude - 22° 22.9'
Longitude - 150° 28.5'

INM SOFTWARE:
VERSION: FAA INM v7.0d
DATE OF RUN:
28 OCTOBER 2015

airservices

ENDORSEMENT FOR TECHNICAL ACCURACY
STANDARD ANEF
Date 11.12.15

Executive General Manager Safety, Environment & Assurance
Airservices Australia, Canberra

The aircraft noise contours on this chart have been calculated using an appropriate modelling process. Airservices Australia has, in accordance with the approved manner of endorsement, considered the physical ultimate capacity of the existing or proposed runway/s in its endorsement process.
The data input and assumptions made in that process are derived in part from external sources. Airservices Australia makes no warranty in respect of that information and excludes all liability for any loss arising from reliance on that information.

No.	Date	By	Amendment	Checked
4	17/11/15	ND	FINAL	BJH
3	28/10/15	ND	DRAFT	BJH
2	29/09/15	ND	DRAFT	BJH
1	31/08/15	ND	DRAFT	BJH
0	14/08/15	ND	DRAFT	BJH

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The Association of Consulting Engineers Australia

Project: ROCKHAMPTON AIRPORT STANDARD 2035 ANEF

Title: 2035 STANDARD AUSTRALIAN NOISE EXPOSURE FORECAST - NOISE CONTOURS

Client: ROCKHAMPTON REGIONAL COUNCIL

Draftsperson:	Checked:	Sheet Size	Drawing No.
ND	BJH	A3	B15283A016
Designer: ND	Approved: BJH		
Scale: 1:50,000 @ A3	Date: 12/06/15	0 1 2 3 4	

ROCKHAMPTON AIRPORT MASTER PLAN

2017 to 2037

ROCKHAMPTON REGIONAL COUNCIL
ROCKHAMPTON AIRPORT

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AUSTRALIA

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