Fraser Coast Airports

MASTER PLAN 2011-2031

V2 - AMENDED JULY 2014

Fraser Coast
REGIONAL COUNCIL

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PART 1:
FRASER COAST AIRPORTS MASTER PLAN OVERVIEW

Executive Summary

The aviation industry is a major contributor towards growing prosperity, expanding opportunity and building communities. The industry supports business, tourism, exporters and creates jobs, reduces the cost of trade and opens up new market opportunities.

Aviation in general continues to face a variety of challenges, with all levels of Government involved to an extent with industry protection and control. From the recently released National Aviation Policy White Paper "Flight Path to the Future", to the Queensland Aviation Sector Plan, it is evident that the drive for economic growth within the industry is tempered by the need to protect the community in order to achieve sustainable, positive environments.

With support from industry stakeholders, the Fraser Coast Regional Council will facilitate ongoing development of the Aviation Industry to drive and guide the growth in air services and to establish a more buoyant aviation industry leading to new and increased jobs and investment.

The aviation industry includes many facets such as air transport, aircraft maintenance, aviation education and airport infrastructure. The Fraser Coast is ideally suited to accommodate an expanding aviation industry with an anticipated dramatic increase in population, a robust tourism industry, good weather and low terrain and two existing airports. The existing aviation industry also provides the foundation for, and access to, a skilled workforce which greatly enhances the potential for the industry's expansion and future employment growth in coming years.

Objective

The Fraser Coast Airport Master Plan seeks to provide a clear, easily understood planning framework for the next 20 years, within the context of maximising both the aviation and non aviation development of Fraser Coast Airports.

The key objectives in the long-term development of the Fraser Coast Airports are to:

- ensure the continued safe, secure and efficient operation of aircraft from the airports;
- develop the airports in a manner that is acceptable to regulators, airport users and the surrounding community;
- maximise commercial opportunities on the airports that are compatible and complimentary with long term aviation requirements and surrounding land use planning;
- enhance, promote and support the aviation industry by attracting significant commercial developments within defined precincts;
- increase market awareness of development opportunities at the airports; and
- support General Aviation and enhance recreational based aviation tourism.

The Master Plan provides the basis for the development of aviation facilities and infrastructure, co-ordination of aviation and non aviation land use planning and management of the Airports.

History

Fraser Coast Regional Council owns and operates two Airports:

Hervey Bay Airport

The current site of the Hervey Bay Airport was gazetted as a Reserve for Aerodrome purposes in 1963 and has been used for commercial purposes for over 30 years. Hervey Bay has been linked by flights from Brisbane by a number of airlines over these years, including Sunstate, Qantaslink, Flight West and Sunshine Express.

In addition to the Brisbane link, the airport is the headquarters for flights to World Heritage listed Fraser Island and Lady Elliot Island on the Southern Barrier Reef.

In 2005, the Airport underwent a multi-million dollar upgrade to accommodate the introduction of jet services, with Virgin Australia and Jetstar commencing direct flights between Hervey Bay and Sydney, on 29 July 2005.

In February 2006, the Department Natural Resources & Mines issued a Deed of Grant, proclaiming the land in freehold title to the Hervey Bay City Council.

Maryborough Airport

The current site of the Maryborough Airport appeared for the first time in the Civil Aviation list as a "projected municipal aerodrome" in 1930 and within a few months the first commercial airline had made its first flight to Maryborough.

In 1941 the RAAF Maryborough was formed at the airfield and continued operations until 1947 when control of the airfield was transferred to the Department of Civil Aviation. Commercial operations commenced soon afterwards and the management of the airport was handed over to the Maryborough City Council. The ownership of the land was transferred to Maryborough City Council in 1982.

The airport offered commercial flights to Brisbane through Sunshine Express and Rex Airlines up until late 2007, and currently caters for recreational flying, medical air services and freight transport.

Intent

The Master Plan identifies key projects planned to improve the operation of the Airports over the next 20 years, however this does not commit Fraser Coast Regional Council (FCRC) to implementing and funding all of these projects.

The purpose of the Master Plan is to set out the future investment requirements based on current aviation and non-aviation use, intended future uses and emerging trends which may impact on the operation of the Airports. In some instances the investment in a project will be dependant on achieving a positive commercial return and may require third-party partnerships.

The Master Plan has been structured in three (3) Parts:

Part 1 - Overview	Part 2 – Hervey Bay Airport Master Plan Part 3 – Maryborough Airport Master Plan
1. Executive Summary	1. History
2. Objective	2. Existing Airport Facilities and Capabilities
3. History	3. Passenger Movements and Flights
4. Intent	4. Analysis of Existing Infrastructure Capacity
5. Legislative Relevance	5. Services and Utilities
6. Strategic Planning Context	6. Assessment of Future Requirements and Land Use
7. Regional Profile and Statistics	7. Visual and Non Visual Navigational Aids
8. Consultation	8. Assessment of Environmental Issues
9. Implementation	9. Implementation

Legislative Relevance

Airports Act 1996

All leased federal airports (except for Tennant Creek and Mount Isa) are subject to a planning framework in the Airports Act 1996 (the Airports Act). While the Fraser Coast Airports are not covered by the Airports Act 1996, this Master Plan has been developed based on the principles outlined in the Act.

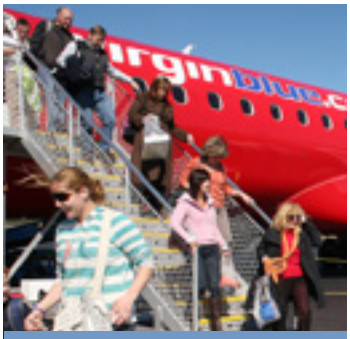
As part of the planning framework, airports are required to prepare the following:

- **Master Plan:** This is a 20 year strategic vision for the airport site which is renewed every five years. The Master Plan includes future land uses, types of permitted development, and noise and environmental impacts.
- **Airport Environment Strategy:** This sets out the airport's strategy to manage environmental issues within a 5 year period and beyond. It is the basis on which the Commonwealth measures the environmental performance of airports and the document by which airport tenants will determine their environmental responsibilities.

Other Legislation and Key Documents

The Aviation Transport Security Act 2004 and Aviation Transport Security Regulations 2005 regulates aviation security and requires all aviation industry participants to operate an approved Transport Security Program.

Transport Security Program The Aviation Transport Security Act 2004 and Aviation Transport Security Regulations 2005 requires all aviation industry participants to operate an approved Transport Security Program (TSP) detailing how the participants will manage security for their operations.



Key Agencies and Stakeholders

Civil Aviation Safety Authority (CASA) An independent statutory authority since 1995, CASA is responsible for the safety regulation of civil aviation operations in Australia, and Australian aircraft operating outside Australian territory. It also provides safety education and training programs.

Australian Transport Safety Bureau (ATSB) is Australia's prime agency for the independent investigation of civil aviation accidents, incidents and safety deficiencies.

Department of Infrastructure and Transport (DoIT) Federal department and overarching department for OTS and BITRE.

Airservices Australia (AA) is the Australian Government agency providing air traffic control management and related airside services to the aviation industry.

Office of Transport Security (OTS) is the primary agency for regulating aviation security.

Bureau of Infrastructure, Transport and Regional Economics (BITRE) provides economic analysis, research and statistics on infrastructure, transport, regional development and local government issues to inform both Australian Government policy development and wider community understanding.

Strategic Planning Context

Aviation Strategy 2031

The Fraser Coast Regional Council adopted the "Fraser Coast 2031 Aviation Strategy" in 2010. The Strategy articulates the vision, themes and strategies for the Fraser Coast Airports towards 2031.

"To provide safe, secure and efficient airports which support the quality of life, sustainability and economic development of our region."

Key Themes

The 2031 Aviation Strategy leverages and focuses the Council's resources on the following broad themes drawn from the Fraser Coast Regional Council Economic Development Strategy 2009-2013:

1. Tourism and Marketing
2. Plan, Create and Foster Precincts
3. Business Attraction and Retention
4. Infrastructure
5. Lifestyle, Health and Recreation
6. Knowledge Management and Education

Council will work in partnership with key stakeholders, industry partners and agencies to achieve the objectives of the strategy.

Key Strategies/Actions

The following are key actions within the strategy pertaining to Airport Master Plans:

Objective 2.1 - Undertake a review and update of previous master plans. Within the existing airport sites at Maryborough and Hervey Bay, precincts will be identified in the updated master plans based on maximising economic value and creating a beneficial resource mix. Such precincts may include aviation and non-aviation business activity, freight, charter, airpark and aero-medical services.

The Fraser Coast Regional Council will identify areas (within the master planning precincts) for hangar development at each site to support existing businesses and aircraft owners, and to assist in accommodating expected future demand.

In defining precincts available for the establishment of private hangarage however, there is a recognised need to be conscious of the cost associated with constraining land to enable individual aircraft owner's convenient storage and access to their aircraft, where the public will forgo future employment opportunities and increased transportation options. This will be reflected in the mix of precincts adopted in the Master Plans for both sites.

National Aviation Policy White Paper "Flight Path to the Future"

On 16 December 2009 the Australian Government released the National Aviation Policy White Paper. This represents the first ever comprehensive aviation policy statement issued by an Australian government, bringing together all strands of aviation policy into a single, forward-looking document providing planning, regulatory and investment certainty for the aviation industry out to 2020 and beyond.

The White Paper sets out the Government's commitment to a continuation of Australia's excellent aviation safety record and to strengthen aviation security systems, while providing a policy framework for the development of the aviation industry at all levels - international, domestic, regional and general aviation including through skills and productivity improvements. It sets out initiatives to ensure better planning and integrated development on and around airports and to lessen the adverse effects of aviation activity on the environment and communities.

Regional Profile and Statistics

The Fraser Coast region covers an area of 7,125 km from the Gunalda Range to the south, past Howard on the Bruce Highway to the north, east to World Heritage listed Fraser Island and west to Brooweena.

Location		Economy	
Land Size	7,125 km	Gross regional product	$3.3 Billion
Distance from Brisbane	Approx. 300km	Total visitors per annum (2010)	933,000
		Labour force	36,903
Demographics		Unemployment rate	5.9%
Population as at 2007	92,458		
Avg. annual growth 2001 to 2007	3.7%	Major Industries	
Estimated Population 2031	149,800	Manufacturing	17.40%
Est. annual growth to 2031	2.3%	Construction	12.40%
Average age	41.2 yrs	Tourism & Retail	11.00%
Household size	2.44 persons	Education	8.20%
Avg. annual household income (2006)	39,112		

Visitors and Market Growth

The region is a major tourist destination and the Fraser Coast's brand equity continues to grow. As the gateway to Fraser Island, there were 933,000 (total domestic and international) overnight visitors to Fraser Coast in the year ended June 2010.

Fraser Coast Domestic and International Visitors – 30 June 2010				
	Visitors	**Holiday**	**VFR**	**Business**
Domestic	752,000	355,000	250,000	105,000
International	181,000	171,000	10,000	
	933,000	**526,000**	**260,000**	**105,000**

Bundaberg Domestic and International Visitors – 30 June 2010				
	Visitors	**Holiday**	**VFR**	**Business**
Domestic	524,000	167,000	202,000	79,000
International	42,000	35,000	6,000	
	566,000	**202,000**	**208,000**	**79,000**

Note: Figures as provided by Tourism Queensland June 2010

The Fraser Coast Region continues to experience rapid population growth as one of the fastest growing areas in Australia. The Wide Bay Burnett Regional Plan 2010 predicts an increase of an additional 50,300 residents on the Fraser Coast by the year 2031.

Fraser Coast – Population Growth Projections	
2009	99,500
2031	149,800

Note: Figures as provided by Department Draft Wide Bay Burnett Regional Plan 2010

Consultation

Consultation on the Master Plan included the following:

- Newspaper advertisements;
- Circulation of Draft Plan to peak organisations, government agencies, industry partners, airport users and community groups;
- Publication of the Draft Plan on web-site seeking community feedback; and
- 60 day exhibition period.
- A small number of submissions were received during the public consultation. These were reviewed and where applicable have been incorporated into this approved Plan.

Implementation

Monitoring and Review

The 2031 Aviation Strategy provides a broad framework for the implementation of key deliverables over the life of this plan.

Monitoring and evaluation are important in ensuring that Council is sustaining its competitive advantages for existing aviation businesses, while attracting new aviation related businesses.

The Chief Executive Officer is responsible for the overall implementation of this plan and will monitor and report on progress with annual reviews of strategies and actions reported to Council.

The key expected outcomes on which the plan will be assessed are:

- Effective delivery of projects outlined in the plan in delivering safe, secure and efficient airports;
- An increase in aviation industry development and related employment opportunities within the industry; and
- Retention and support of existing businesses at the airports.

Hervey Bay Airport

MASTER PLAN 2011-2031

PART 2

PART 2:
HERVEY BAY AIRPORT MASTER PLAN

History

The current site of the Hervey Bay Airport was gazetted as a Reserve for Aerodrome purposes in 1963 and has been used for commercial purposes for 30 or more years. Hervey Bay has been linked by flights from Brisbane by a number of airlines over these years, including Sunstate, Qantaslink, Flight West and Sunshine Express.

In addition to the Brisbane link, the airport is the headquarters for flights to World Heritage listed Fraser Island and Lady Elliot Island on the Southern Barrier Reef.

In 2005, the Airport underwent a multi-million dollar upgrade to accommodate the introduction of jet services, with Virgin Australia and Jetstar commencing direct flights between Hervey Bay and Sydney, on 29 July 2005.

In February 2006, the Department Natural Resources & Mines issued a Deed of Grant, proclaiming the land in freehold title to the Hervey Bay City Council.

Land Tenure

The Hervey Bay Airport is located approximately 10 kms South/East of the main business district. The airport site has a land area of 142.4 hectares and is owned freehold by the Fraser Coast Regional Council. The surrounding land uses are a mix of low density residential, commercial and rural residential. Nominated areas within the airport have been leased primarily for General Aviation purposes. The Aero Club and Air League are the only community leases on the Hervey Bay airport land.

Airport Statistics and Operations

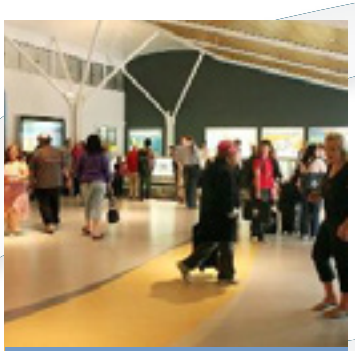
Runway Length	2000m x 30m
Pavement Classification Number (PCN)	26
Critical Aircraft	A320/B737
Airport Rating Code	3C
Airport Certificate	1-C2ZDE
Aircraft Parking	10,125m2
Navigational Aids	PAPI & GPS
No. Aviation Hangars	19
Air Traffic Management	Nil
Passenger Movements as at June 2010	155,959
Aircraft Movements as at June 2010	22,630
Security Screening	Yes
Security Controlled Airport	Yes
Terminal	2210m2
Public Carparking	198 spaces
Long Term Secure Parking	28 spaces

Existing Airport Facilities and Capabilities

Airport Services and Capabilities

Terminal Facilities:

- The Hervey Bay Airport terminal footprint is approximately 2,210m2, incorporating an arrivals foyer, departure lounge, retail concourse (including café, boutique retail and tourist information centre), check-in area, meeting rooms, checked baggage screening (CBS) monitoring & interview areas, airline offices, ATM, wireless Internet, car hire and shuttle bus precinct.
- During 2008, the terminal building underwent substantial expansion to cater for the introduction, in December of that year, of CBS. The extension also created additional office and meeting room facilities, as well as storage and freight handling areas.
- The terminal is currently open from 6.00am and closes around 30 minutes following the last scheduled daily aircraft movement (typically around 8.45pm). There are no curfews in place at the Airport.



Runway and Aircraft Parking

- The Airport has a 2,000 metre long x 30 metre wide sealed runway aligned in the 11 / 29 direction. The runway has a Pavement Classification Number (PCN) of 26 and has 45 metre turning nodes established at the runway ends.
- The runway is capable of supporting A320 and B737 aircraft operations. The runway surface is grooved asphalt.
- The runway is currently equipped with pilot activated low intensity runway edge lighting (PAL). A Precision Approach Path Indicator (PAPI) system is provided at both ends of the runway to provide slope guidance to aircraft on approach. Non-precision instrument Global Positioning System (GPS) approach procedures are provided to assist pilots landing in poor weather conditions.
- The Regular Public Transport (RPT) apron has capacity to park 3 aircraft simultaneously, with stand-off gates in operation and no aerobridges. All RPT bays are configured to enable aircraft to power-in & power-out.

Other Airport-related services:

- There are two ground handling agencies currently operating at Hervey Bay Airport – Oceania Aviation (servicing Virgin Australia) and Fraser Coast Air Services (servicing QantasLink).
- Fraser Coast Regional Council does not currently charge fees to the ground handling agents. Their licensing agreements are tied to the respective airline agreement.
- Ground Servicing Equipment (GSE) areas are provided for all operators with plenty of capacity to increase.
- All current aircraft cleaning services are performed by the abovementioned ground handling agents.
- Fraser Coast Air Services currently provide catering uplift for QantasLink services.
- Fraser Coast Aviation Refuelling Pty Ltd provides aircraft fuel at the Airport via fuel tankers. Fraser Coast Regional Council does not charge any throughput fee.

Security and safety:

- Qantas Airways Limited is the screening authority at Hervey Bay Airport.
- Any costs associated with passenger and checked baggage screening are via agreement with the screening authority. FCRC does not charge fees in relation to the infrastructure or services it provides in this regard.
- While there are no Fire and Rescue services based at the Airport, the Queensland Fire & Rescue Service attends the Airport in the event of emergencies / incidents / exercises.

Airport Passenger Facilities

Hervey Bay Airport is open daily from 6.00am and closes approximately half an hour following the last scheduled aircraft movement of the day (Diagram 1 - Existing Airport Terminal Layout). The following facilities are available for passenger comfort and assistance:

The Hervey Bay Airport Café offers coffee, light meals and also operates a licensed bar from 10.00am daily offering a range of premium and boutique beers, wine and spirits. **Vending machines** throughout the terminal provide hot and cold beverages, as well as light snacks.

Quintessential Fraser Coast is a unique gift and keepsake shop, which also incorporates a Visitor Information Centre (VIC).

Quintessential Fraser Coast gives incoming air travellers the opportunity to see samples of the fantastic food and souvenir products available on the Fraser Coast, while for departing passengers and visitors it provides a last-minute opportunity to buy keepsakes to take home.

Meeting Rooms There are two rooms available for hire within the terminal at Hervey Bay Airport. The Hinkler Room - set up in boardroom style, seating up to 12 people and the Earhart Room - also set up in boardroom style, seating up to 8 people. Both rooms are well equipped and catering packages are available.

Baggage Trolleys are provided for passenger convenience free of charge.
Wheelchairs are provided within the airport terminal

Baby Change Facilities and Parents Room equipped with a change table and nappy bin are located adjacent to the Departure Lounge and behind the retail concourse.

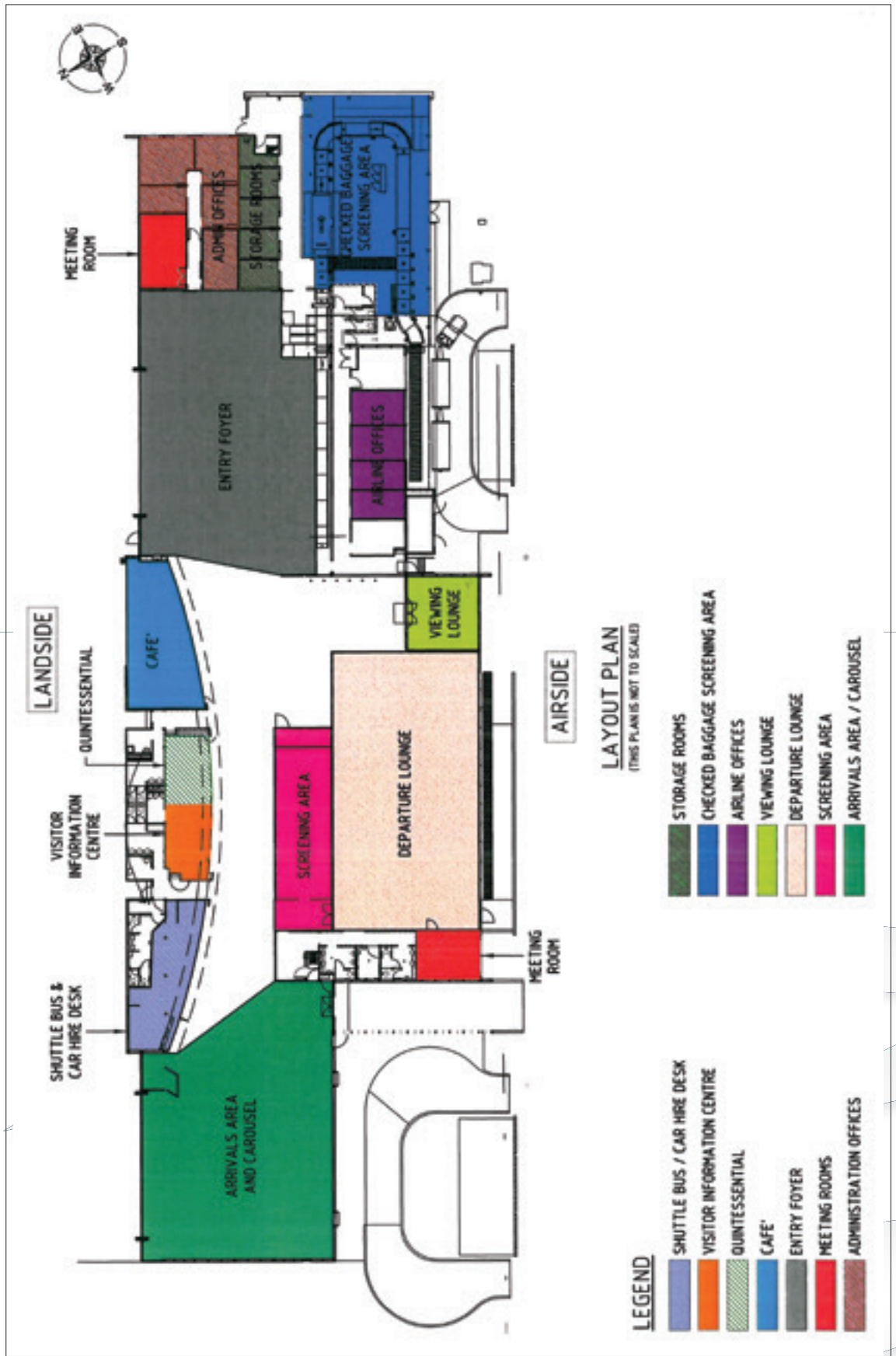
ATM Facilities An ATM is located within the airport terminal.

Public Telephones are located within the airport terminal.

Tourist Information Desk provides information and assistance with regional accommodation providers, attractions, tour bookings and general enquiries. A full range of brochures for regional locations/attractions are available.

Wireless Internet Access is available via a Free Wi-Fi Hot spot.

DIAGRAM 1 – EXISTING AIRPORT TERMINAL LAYOUT



Parking Facilities

Hervey Bay Airport currently provides 198 short term public car parking spaces, located in front of the terminal building, and 28 long term car parking spaces located adjacent to the rental car area at the arrivals end of the terminal. Parking for taxis, shuttle buses, limousines and resort buses is also provided as are disabled car parking spaces. (Diagram 2 - Existing Car Park Layout).

The Airport also provides separate drop off zones for authorised vehicles and the general public. To meet aviation security requirements, strict timeframes apply within the drop off zones, and vehicles are not to be left unattended at any time.

Passengers and visitors enter the short term or long term car parks via boom gates and are issued with a ticket for the purpose of paying car parking fees, when applicable. The tickets also provide discounted pricing within the terminal retail shop, Quintessential Fraser Coast.

Short Term Public Car park

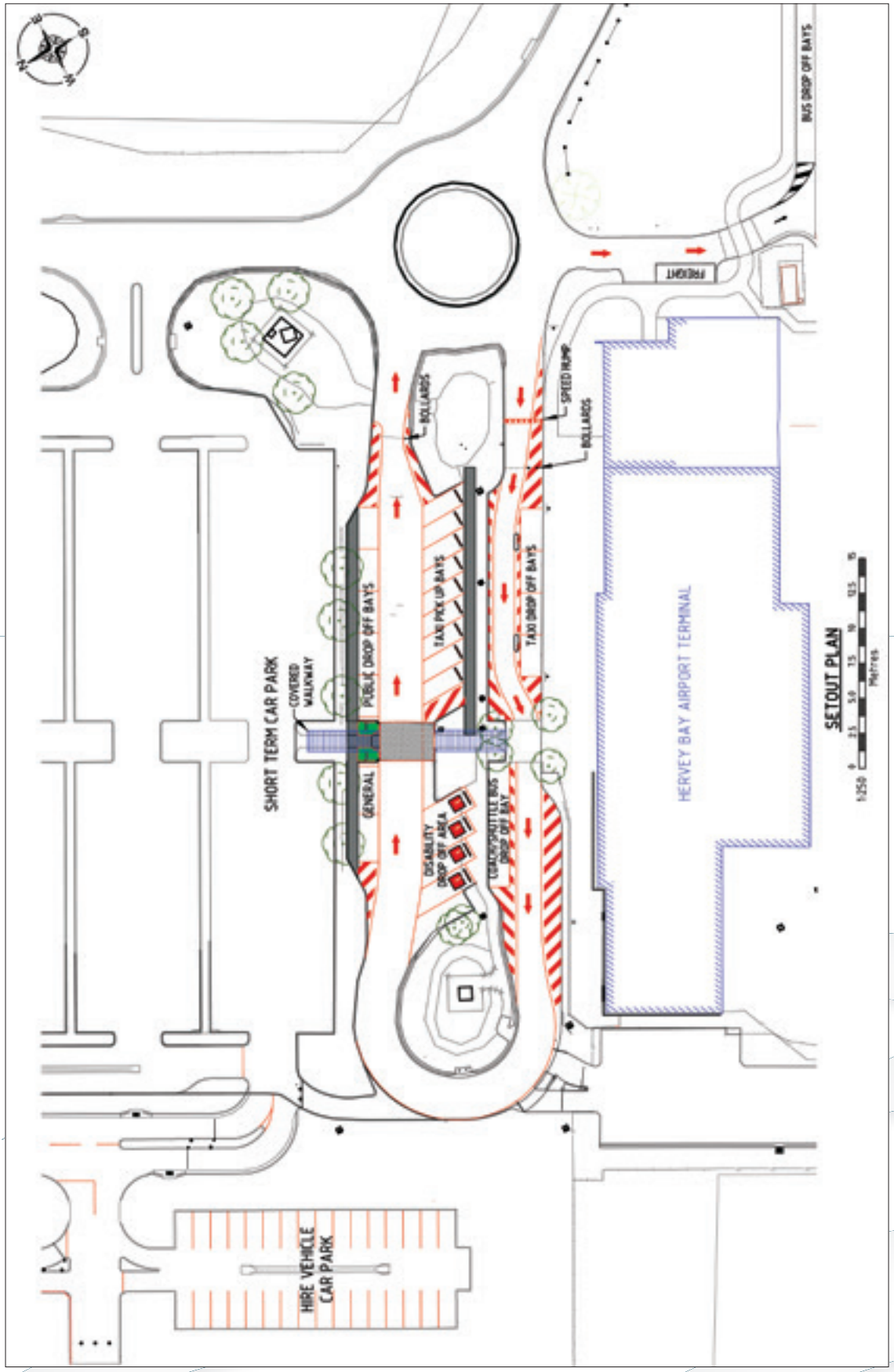
Use of the short term public car park is currently FREE OF CHARGE for the first 2 hours. Located directly in front of the terminal building, the short term public car park provides quick, easy access to the terminal, with disabled car parking located at the front of the short term car park.

Long Term Public Car park

There are currently 28 long term car parking spaces, including long term disabled car parking spaces, adjacent to the rental car area at the arrivals end of the terminal.

To access the long term car park, enter via the boom gates to the short term public car park and follow the signage. The area is fenced, access controlled and surveillance monitored, with a lock-down operating outside of main terminal hours.

DIAGRAM 2 - EXISTING CAR PARK LAYOUT



Hervey Bay Airport Industrial Park

The Hervey Bay Airport is complemented by the strategically situated Hervey Bay Airport Industrial Park.

The Hervey Bay Airport Industrial Park is a Master Planned joint venture development between Fraser Coast Regional Council and Seashift Properties Pty Ltd. On completion the modern $100 million industrial park will comprise 78 lots over a 42 hectare area.

It incorporates important infrastructure features for the convenience of owners and tenants including broadband access and industrial water recycling, proximity to a major jet airport, local shops, service station, childcare and other support services.

The Industrial Park has been carefully designed to establish precincts with individual characteristics, each enhancing the overall aesthetics of the development whilst optimising the opportunities for businesses with similar industry requirements.

This Master Planned Industrial Park provides a significant opportunity to attract Aviation related support industries with large airside allotments available in the development.

Passenger Movements and Flights

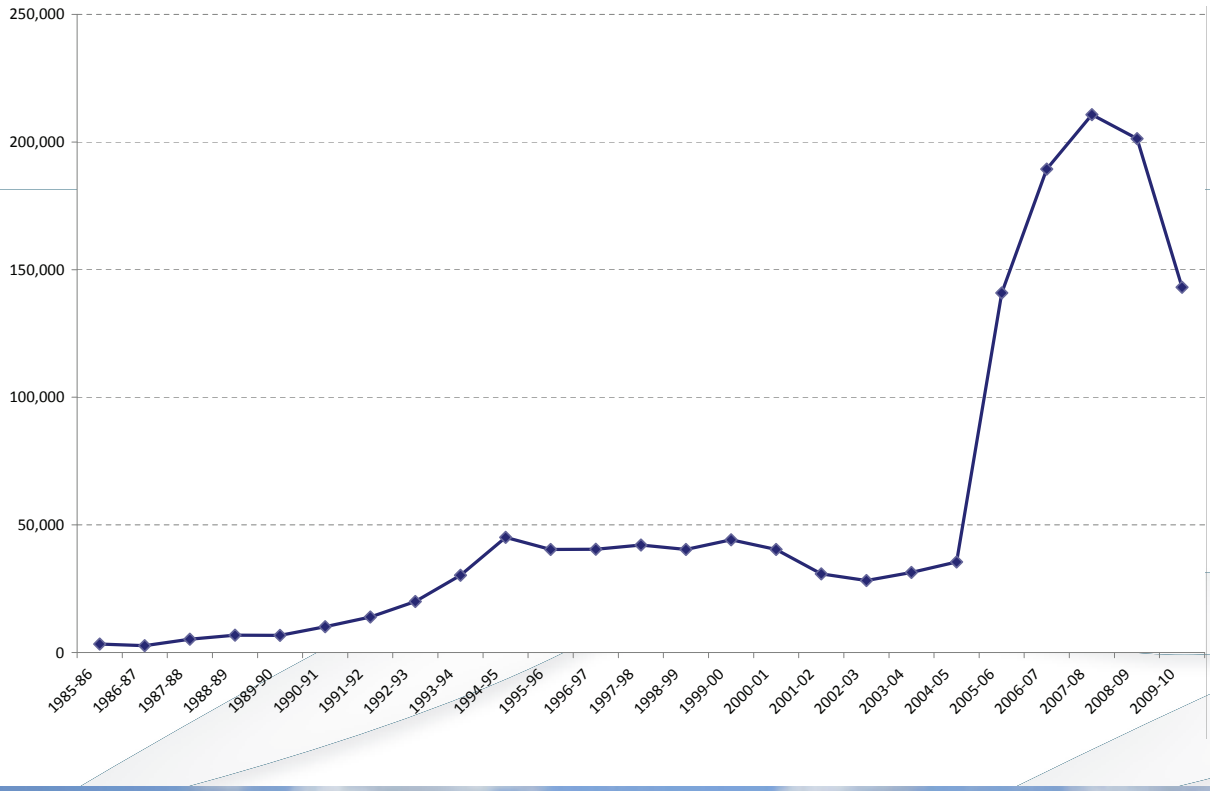
Current Passenger Movements

The Fraser Coast Airport (Hervey Bay) is a major entry and departure point for the region with in excess of 150,000 passenger movements per annum with direct services from Sydney and Brisbane. Prior to the discontinuation of Jetstar services in 2009/10 passenger movements exceeded 200,000 movements per annum.

Sydney to Fraser Coast (Hervey Bay)	
Virgin Australia	Return Flights - Daily
Brisbane to Hervey Bay	
QantasLink	Return flights daily between Hervey Bay and Brisbane

Note: 2009/10 Jetstar RPT services discontinued and reduction in aircraft capacity.

Hervey Bay - Total Passenger Movements - Financial Years



Passenger movements are highly volatile with RPT commuter services averaging 7% growth per annum between 2000 and 2010 and RPT Jet services averaging 10% growth between 2006 and 2009 and a negative 50% in 2010 with the cessation of Jetstar services and a reduction in aircraft capacity. Hervey Bay passenger movements have on average increased by 32% annually from 43,404 in 2000 to 155,959 in 2010 however it is not anticipated that this level of growth will be continued.

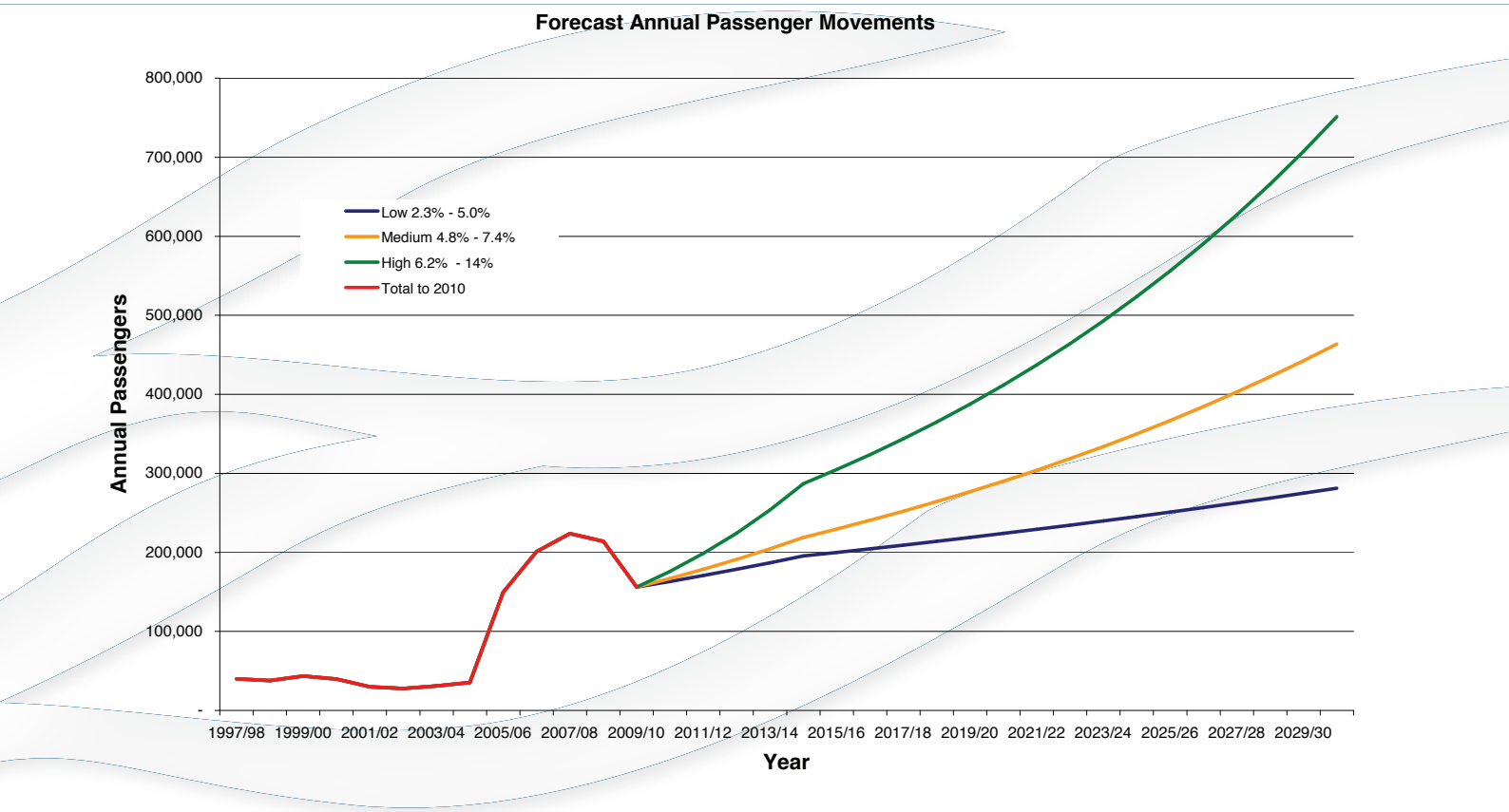
For the purpose of this Master Plan, three (3) growth series have been forecast. Based on a Low, Medium and High growth series, forecast annual passenger movements are projected to increase between 281,000 (low series) to 751,000 (high series).

Low Growth Series: is projecting 5% growth on all RPT services for five years until 2014/15 and then reducing to 2.3% for the remainder of the plan in line with population projections.

Medium Growth Series: is projecting 7.4% growth on all RPT services for five years until 2014/15 and then reducing to 4.8% for the remainder of the plan.

High Growth Series: is projecting 14.0% growth on all RPT services for five years until 2014/15 and then reducing to 6.2% for the remainder of the plan.

The projections utilise 30 June 2009 passenger numbers of 155,959 as the base. In the event that another RPT Jet Service is secured in the short-medium term, passenger movements may increase dramatically. When 2 RPT Jet Services were operating from the Airport, passenger numbers ranged between 150,000 and 224,000 per annum.



BITRE Statistics Regional Air Routes Queensland

The Bureau of Infrastructure, Transport and Regional Economics (BITRE) projects the average annual growth rate of passenger movements on interstate regional routes to be 5.3% to 2016. While intrastate passenger movements on regional air routes between major cities and regional areas in Queensland are projected to increase at an average annual growth rate of 2.6%. However intrastate passenger movements on regional air routes between regional areas in Queensland are projected to decline at an average annual growth rate of –2%.

Furthermore, BITRE predicts that out of the 405 regional routes in Queensland, 203 are projected to have a positive trend in passenger traffic. However 76 show a marginal, if not stagnant, trend in passenger growth with 79 routes projected to show a declining trend in passenger traffic. Whilst Hervey Bay Airport is one of these 79 routes with projected intrastate passenger movements on the decline between 2005 and 2016. It is anticipated that strong local demand and the attraction of visitors to the region will result in continued growth.

At present the passenger demand is approximately 80% of available seats. It is assumed that when passenger demand reaches 90% or exceeds available seat capacity that the airlines will provide additional flights.

Continued passenger demand is evident with the recent announcement of an additional 604 seats per week provided on the Hervey Bay to Brisbane route by Qantas.

Analysis of Existing Infrastructure Capacity

Runway

The existing airport provides a single 2000m runway aligned 108 degrees magnetic. The runway is capable of supporting the A320 / B737 jets operating between Hervey Bay and Sydney.

Runway Configuration

Annex 14 of the International Civil Aviation Organisation requires the orientation of runways to permit operations at least 95 percent of the time with cross wind components of:

- 37 km/h (20 kt) in the case of aircraft whose reference field length is 1,500m or over,
- 24 km/h (13 kt) in the case of aircraft whose reference field length is 1,200m or up to but not including1 500 m; and
- 19 km/h (10 kt) in the case of aircraft whose reference field length is less than 1,200m.

An analysis of the cross runway requirement at Hervey Bay was undertaken using wind data from the Bureau of Meteorology. The study determined the cross wind capability of the existing runway to be **95.3% and 95.1% for the 9.00am and 3.00pm** periods respectively.

Based on the lowest allowable crosswind component, the existing single runway layout complies with the ICAO Annex 14 recommendation and concludes that a cross runway is not warranted.

Runway Exemptions

Hervey Bay Airport currently has the following exemptions from CASA –

1. AD15/2009 – Runway Sight Distance (2 April 2009 to 1 April 2012) subject to conditions;
2. AD16/2009 – Runway Longitudinal Slope (2 April 2009 to 1 April 2012) subject to conditions; and
3. AD17/2009 – Taxiway Width (2 April 2009 to 1 April 2012) for Dash 8 – Q400 subject to conditions.

Critical Aircraft

The critical aircraft (i.e. the largest aircraft that is able to operate from the airport on a regular basis) for the Master Plan are the A320 and B737.
Presently there are no additional critical aircraft required to be accommodated at the airport, with the A320 and B737 capacity sufficient to meet future demand.

Runway Movement Capacity

The Annual Service Volumes (ASV) is an estimate of the airports annual capacity. As aircraft operations approach the annual service volume, the average aircraft delay tends to increase rapidly with relatively small increases in aircraft operations causing deterioration in the level of service. ASV is the number of annual operations that result with an average aircraft delay of 1 to 4 minutes.

Airport capacity is a measure of terminal area airspace and airfield saturation. It is defined as the maximum rate at which aircraft can arrive and depart an airport with an acceptable level of delay.

Measures of capacity include the following:

- Hourly Capacity of Runways: The maximum number of aircraft operations that can take place on the runway system in one hour.
- Annual Service Volume: The annual capacity or a maximum level of annual aircraft operations that can be accommodated on the runway system with an acceptable level of delay.

Based on projected passenger numbers and the selected high growth rates for aircraft movements the hourly capacity and ASV for the Airport is shown below:

Runway Configuration	Hourly capacity operations per hour		Annual Service Volume operations per year
	VFR*	IFR**	
Single runway	63	56	205 000

Source: Airport Capacity and Delay FAA Advisory Circular 150/5060-5

An airport's Annual Service Volume (ASV) has been defined by the FAA as "a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time." Therefore, ASV is a function of the hourly capacity of the airfield and the annual, daily, and hourly demands placed upon it. ASV is estimated by multiplying the daily and hourly operation ratios by a weighted hourly capacity.

Using the selected high growth rates of 14% per annum applied to all RPT jet until 2014 and reducing to 6.2% for the remainder of the plan and 5% per annum applied to all commuter, charter and general aviation aircraft, the predicted number of aircraft movements in 2031 is 87,232 per annum.

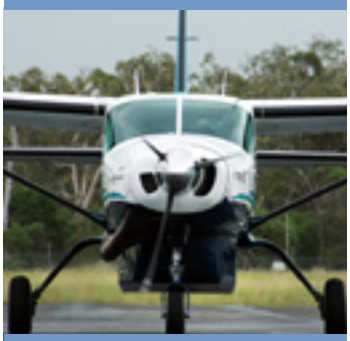
Annual Service Volume Summary - Year Annual Operations			
Year	Projected Annual Operations	Annual Service Volume	Capacity Ratio
2010	28,030	205,000	14%
2015	36,890	205,000	18%
2020	49,050	205,000	24%
2031	87,232	205,000	43%

The single runway therefore has capacity to meet all likely future growth, provided adequate taxiway entry and exit points are available.

ICAO planning guidelines suggest provision of a full-length, parallel taxiway when between 30,000 and 60,000 annual movements are reached. Partial parallel taxiways are often used well before this figure is achieved.

FAA recommends that planning for additional airfield capacity should begin when actual annual operations reach 60 percent of ASV.

Runway Capacity



The following table lists the aircraft currently operating at the Hervey Bay Airport.

AIRCRAFT	ICAO Reference Code	MAX TAKEOFF WEIGHT
Boeing B737 - 700	B737	70,143 kg
Boeing B737-800	B738	78,240 kg
AirBus A-320	A320	73,500 kg
Embraer-190	E190	51,800 kg
Bombardier Dash 8-300	DH8C	18,640 kg
Bombardier Dash 8-400	DH8D	28,988 kg
Britten Norman Islander	BN2T	2,994 kg
Cessna Caravan 1	C208	3,969 kg

Source: ICAO Doc 8643 - Edition 38 - Amendment 1

The existing runway is a Code 3C (i.e. 2000m long by 30m wide). Both A320 and B737 (variants) operations are permitted to operate from 30m wide runways under specific exemptions applied by the Civil Aviation Safety Authority to these aircraft, which would otherwise require a 45m runway.

Combined with more frequent services, these aircraft will be able to adequately cater for passenger demands at Hervey Bay. Using a high growth rate of 14% per annum until 2014 and reducing to 6.2% for the remainder of the plan, results in 10 jet aircraft flights (20 movements) per day in the planning horizon year 2031. This number can readily be accommodated into Hervey Bay subject to the provision of adequate taxiway and apron facilities.

Runway Length

A comparison of the runway lengths available at the various non capital city airports catering for jets is shown in the following table.

Airport	Runway Length (m)	Maximum aircraft stage length (km)
Broome	2368	Perth (1677)
Devonport	1838	Sydney (906)
Gove	2058	Cairns (1090)
Groote Eylandt	1901	Cairns (1048)
Kalgoorlie	2000	Adelaide (1660)
Karratha	1850	Perth (1250)
Kununurra	1829	Broome (731)
Launceston	1981	Sydney (914)
Mackay	1981	Sydney (1433)
Maroochydore	1797	Sydney (837)
Meekatharra	2181	Perth (643)
Norfolk Island	1950	Sydney (1680)
Port Headland	2500	Perth (1312)
Proserpine	2073	Brisbane (895)

With the exception of Broome, the remainder of the airports serving domestic jet operations generally have runways of around 2,000m in length.

Examination of the airport and the surrounding area shows the existing runway length is close to the maximum that can be achieved without significant engineering works, road relocation and property acquisition. Such works are likely to be in conflict with much of the community the airport is intended to serve. This Master Plan therefore suggests the existing runway length be retained for long term consideration.

The current runway length will cater for Melbourne to Hervey Bay Flights.

Runway Pavement Classification Number (PCN)

Pavement strength is important for aircraft operations. The PCN for the existing runway is 26 consisting of a minimum 50mm asphalt overlay, 400mm subbase layer and a 200mm basecourse layer with a grooved asphalt surface. For a pavement to be suitable for an aircraft operation the PCN should match or be greater than the Aircraft Classification Number (ACN) determined by the manufacturer, otherwise Pavement Concessions need to be provided to the airlines. The Hervey Bay Airport Runway is a Flexible Pavement Subgrade, with a classification of 3C.

AIRCRAFT	Aircraft Classification Number
Airbus A320 - 100	40
Airbus A320 - 200	47
Boeing B737-700	44
Boeing B737-800	51
Bombardier Dash 8 - 300	11
Bombardier Dash 8 - 400	18
Embraer 190	33
Fokker 100	31
Hercules C130	37

Services and Utilities

Water

The Airport is serviced by reticulated water mains operated by Council's wholly owned corporation Wide Bay Water.

Water is available for connection to all lots.

Sewerage

The Airport is partly serviced by reticulated sewer mains operated by Council's wholly owned corporation Wide Bay Water.

Leased lots within Don Adams Precinct can be serviced via a pressure sewer system.

Drainage

Stormwater runoff from buildings and aprons travel via open unlined channels and underground pipes to discharge points at the aerodrome perimeter.

Telecommunications

The airport is serviced by Telstra.

Electricity

There is sufficient electricity infrastructure to service current activities at the airport. Future requirements will be evaluated and determined through the development process.

Road Access

The primary road access to the Airport is Don Adams Drive and this will be maintained. However the development of the Airport Industrial Park will provide a secondary access point through Industrial Avenue.

Assessment of Future Requirements and Land Use

The Master Plan identifies precincts as shown on Page 38 and discussed in detail below.

It is anticipated that the Airport Development may attract the following aviation related industries and services –

- Flying school operations
- Aircraft servicing and maintenance
- Fuel servicing
- General aviation hangars

Land Use Planning Intent

The Hervey Bay Airport services the primary air transport needs of the Fraser Coast and is a valuable economic asset for the region. Development in the vicinity of the airport may impact on airport operations. The intent of the Master Plan is to provide a guide for future development of the airport and to promote compatible development and use of lands affected by airport operations.

The development of commercial precincts surrounding the airport will support the economic viability of the airport and provide an opportunity to attract new aviation market opportunities and business to the region.

Don Adams Drive Precinct

The Don Adams Drive Precinct designates the area within the airport intended for the development and accommodation of:

- General aviation and related service and support activities; and
- Light aviation industry and freight services.

General Aviation

In the northeast sector of the airport, a future sealed taxiway joins the apron to allow optimum use of the available space between the taxiway and the road reserve for Don Adams Drive.

In the layout sufficient space is available for:

- parking of a single row Cessna Caravan size aircraft,
- 7 existing 600m2 lots for hangars with a potential for a further 9 lots;
- 2 additional 300m2 lots for hangars with potential to amalgamate;
- separate service road; and
- vehicle parking contained within the lots.

Itinerant aircraft are currently accommodated on the grassed apron, which has "Tie down" capability in this area. However additional "Tie downs" are required and have been planned and sealing of the apron is included in future planning for the area to enhance the usability of the area.

Where requests are received for small privately owned hangars, which are predominantly utilised for aircraft storage, potential exists for a maximisation of space through the construction of a single large hangar, sufficient to store up to 10 aircraft, as opposed to the construction of up to 10 individual aircraft hangars.

Types of development/industries

Indicative precinct developments include:

- charter operators;
- small flying school operations;
- recreational and sports aviation activities;
- aero club;
- aerial photography and surveying;
- light industry aircraft maintenance and servicing;
- private aircraft hangars; and
- itinerant aircraft.

Emergency Services

A designated area exists for the Air Ambulance Service with convenient airside access. Additional apron parking and taxiway works are required to facilitate access to the runway and for patient transfers.

DON ADAMS DRIVE PRECINCT

Project Description	Indicative Timeframe			Est. $	Funding Source
	0-5 yrs	5-10 yrs	10-20 yrs		
9 General aviation and light Industrial lots (400 – 600m2) with airside access includes survey and sewerage works.				$175,000	Council
Proposed service road to additional lots				$145,000	Council
Proposed light aircraft parking – light pavement not seal				$372,000	Council
Additional "tie-down" points for light aircraft				$25,000	Council
Taxiway/Apron extension				$375,000	Council
Proposed Apron extension GA Area and Flying Doctors				$333,450	Council
Pressure Sewer System				$155,000	Council

Note: See map on Page 39.

Wondunna Enterprise Precinct

The Wondunna Enterprise Precinct designates the area within the airport intended for the development and accommodation of:

- future aviation industry developments which require airside accessibility and complement the Airport Industrial Estate; and
- commercial activities that will contribute to the economic viability of the airport and the development of the aviation industry within the region.

Commercial Aviation Support Facilities

The area northwest of the terminal and carpark has been designated for future light or heavy industry aviation developments. The area would accommodate approximately 20 x 1,000 – 2,000m2 lots with potential for airside access and a taxiway. The development of the site will be dependant on the demand for airside aviation hangars and commercial viability to warrant investment.

Types of development/industries

Indicative precinct developments include:

- Aircraft servicing and maintenance;
- Aircraft construction;
- Large flight training schools including simulation models and training facilities.

WONDUNNA ENTERPRISE PRECINCT

Project Description	Indicative Timeframe			Est. $	Funding Source
	0-5 yrs	5-10 yrs	10-20 yrs		
20 Large Industrial lots (1,000 – 2,000 m2) with airside access.				ROI	Commercial Return
Taxi-way and Apron to service large industrial lots				$1.6 m	Commercial Return

Note: Development will be dependent on demand and a commercial return. See map on Page 39.

Airport (special purpose) Precinct

The Airport (Special Purpose) Precinct designates the area within the airport intended for the development and accommodation of:

- the terminal building and related support activities;
- passenger drop-off zones and car parking;
- visitor information and retail trade; and
- aviation support facilities.

Passenger Terminal

The low (281,000) – high (751,000) passenger number projections anticipate at least a doubling of passengers through the airport over the life of this plan.

The existing passenger terminal site is retained with sufficient space to greatly increase the building footprint if required to meet future jet and commuter traffic demands. Any future terminal expansion will need to take into consideration additional areas for check-in, passenger lounges, departure gate facilities, office space and storage facilities.

Extensive areas are also available to the northwest to cater for future airline servicing equipment storage.

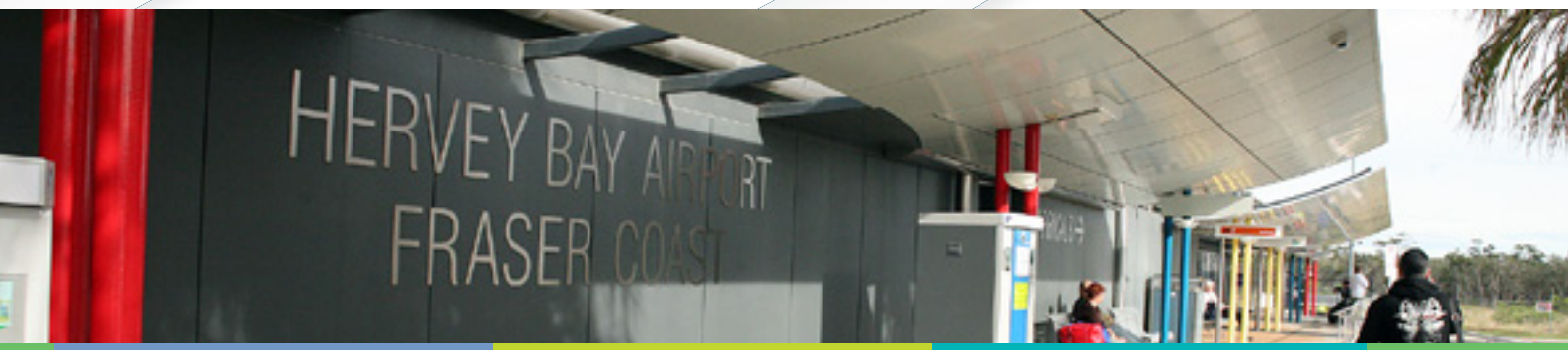
Security Screening

The Airport is a Security Controlled Airport with Checked Baggage Screening and Passenger Screening of RPT Jet Services. With the release of the Aviation White Paper, increased security screening for all RPT services will be required as regulated by the Federal Government's Office of Transport Security.

"To ensure Australia remains a world leader the Government will strengthen aviation security by:

- *requiring, from 1 July 2010, passenger and checked baggage screening for all aircraft greater than 30,000kg MTOW operating regular public transport services;*
- *extending passenger and checked baggage screening for all aircraft greater than 20,000kg MTOW operating regular public transport and prescribed air services by 1 July 2012"*

This will require that, in addition to RPT Jet Services operating from the Airport, other RPT Services greater than 20,000kg, i.e. QantasLink Dash 8s, will be required to undertake passenger and checked baggage screening as of 1 July 2012. The existing security screening facility will be able to accommodate this, however additional screening facilities will be required when passenger demand numbers warrant an extension to the terminal facilities.



Car parking and Drop-Off Zones

Car Parking

Additional car parking has been designated to the northwest of the terminal building and west of the existing carpark. This area will cater for optimistic growth in terminal use. Parking will comprise space for rental car, long-term parking, bus parking and general passenger parking.

There is potential for multi-storey carpark facilities on the existing site if passenger demands and growth warrant it.

Parking Demand Projections

Vehicle Type	CURRENT	FUTURE DEMAND*			
	No. Spaces	Peak Occupancy	2015	2020	2031
Private Cars	198	65%	184	232	389
Car Rental	62	34%	30	38	64
Staff & Users	18	33%	8	11	18
Disabled	6	20%	2	2	4
Sub Total	**284**	**N/A**	**224**	**283**	**475**
Taxis/Limousines	10	83%	10	15	15
Buses	3	50%	2	3	5

** based on medium series growth*

The Master Plan recommends a 'pay to park' scheme to recoup the costs associated with providing parking at the Airport.

Drop Off Zones

The Hervey Bay Airport provides separate drop off zones for authorised vehicles and the general public. A proposed redesign will occur on the finalisation of the Airport Industrial Estate road network, linking Industrial Avenue to Don Adams Drive. It will provide for circular movement of vehicles through the Drop-off Zone to either short/long term parking areas or the ability to exit the airport via Industrial Avenue or Don Adams Drive. The redesign will also provide improved pedestrian access and incorporates a 30m exclusion zone from the terminal for unauthorised passenger vehicles. Diagram 3 details the recommended redesign and proposed Industrial Estate road network.

DIAGRAM 3 - FUTURE CAR PARK ACCESS AND TRAFFIC FLOWS

Pedestrian Facilities

Future carpark and road network planning will need to include improved pedestrian access, facilities (e.g. bus shelters) and safety, while catering for increasing growth around the Airport.

Aviation Support Facilities

Freight - Dedicated area closer to the passenger terminal has been identified for future freight or facilities associated with commuter airlines. Sufficient apron area is available if needed to accommodate freighter aircraft parking.

Refuelling Facilities - Refuelling for aircraft is currently available via tankers from the permanent fuel facility located on the northern side of Don Adams Drive. Fraser Coast Aviation Refuellers currently hold the contract for the service of jets and aircraft with aviation fuel. There is potential for further aviation fuel storage facilities in areas to the northwest or southeast of the passenger terminal if required.

AIRPORT (SPECIAL PURPOSE) PRECINCT

Project Description	Indicative Timeframe			Est. $	Funding Source
	0-5 yrs	5-10 yrs	10-20 yrs		
Carpark Extension				$450,000	Council
Terminal Extension				TBA	Council
Reconfiguration of Drop-off zones				TBA	Council

Note: Extension works dependant on passenger and aircraft movement demands.

Airside Precinct

The Airside Precinct designates the area within the airport intended for the development and accommodation of:

- the primary runway and associated taxiways;
- aircraft navigational aids and communications equipment;
- emergency services (i.e. fire and rescue); and
- aircraft parking, storage and other facilities for the operation of aircraft.

Parallel Taxiway

International planning guidelines recommend parallel taxiway facilities when aircraft operations reach 30,000 – 60,000 movements per annum. *(ICAO Airport Planning Manual)*

Based on the low – high demand projections the provision of a parallel taxiway will be required during the life of this plan.

A provision of a full length parallel taxiway has been included to:

- facilitate aircraft movements taxiing on and off the runway;
- provide the ability for lighter aircraft to taxi onto the runway and undertake engine tests away from the western end of the runway thereby minimising noise impacts on residential areas; and
- assist in addressing the exemption requirements relating to runway sight distance and taxiway width.

Runway

Based on the critical aircraft operating from the airport, and the projected movements, there is no requirement in the life of this plan to extend the runway. CASA exemptions for aircraft requiring 45m wide runways to use 30m runways may change and therefore the runway may have to be widened to 45m within the life of this plan.

It is recommended that, to assist in addressing and improving the runway, a parallel taxi-way be constructed to cross-over at 500m from the western end of the runway, improving site lines for aircraft taking off and landing on the runway. Reconstruction of the existing runway will be problematic without interrupting services.

Furthermore, the runway will require resealing and re-grooving during the life of this plan as it reaches its design life.

RPT Apron

Forecast annual aircraft movements indicate that approximately 24 flights per day may operate by the year 2031, based on the medium growth scenario. The existing Apron area can accommodate 3 RPT aircraft parking simultaneously. The Master Plan proposes an extension to this Apron area to accommodate up to 6 RPT aircraft simultaneously sited to the west of the existing bays, as shown on the map on Page 39.

Navigational Facilities

The site of the recently decommissioned non-directional beacon (NDB) may eventually be used for development of the general aviation area. Should additional navaids be required in the longer term, areas in the western portion of the airport either north or south of the runway are currently available for this purpose. *(Refer to Section: Visual and Non Visual Navigational Aids)*

As outlined in the Federal Governments National Aviation Policy White Paper "Flight Path to the Future" - Australia is supporting the wider application and use of satellite surveillance technology, such as Automatic Dependent Surveillance-Broadcast (ADS-B) and satellite navigation technology such as the Global Navigation Surveillance System (GNSS). However, a robust ground-based surveillance capability, including radar to protect against vulnerabilities from over-reliance on one system, such as the Global Positioning System (GPS) will also be maintained.

The White Paper recommends the following for future navigational aids in Australia:

Precision - Aircraft Performance Based Navigation (PBN) specifications for Area Navigation (RNAV) and Required Navigation Performance (RNP) is the basis for precision navigation, instrument procedure design and resultant air traffic separation standards;

Non-precision - Approach with Vertical Guidance (APV) refers to instrument approaches that give pilots vertical guidance, providing significant safety, operational and environmental benefits over traditional non-precision approaches. APVs generally require the use of augmented satellite navigation systems.

Global Navigation Satellite Systems (GNSS)	The generic term for satellite navigation systems that provide autonomous geo-spatial positioning with global coverage.
Global Positioning System (GPS)	The US-based system which provides the only fully functional GNSS.
Area Navigation (RNAV)	Part of the broader Performance Based Navigation concept, a method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of a self contained system capability, or a combination of these.

Fire Fighting Services

Fire Fighting Services are required when an airport has more than 350,000 passengers in a year. (MOS Part 139H – Standards Applicable to the Provision of Aerodrome Rescue and Fire Fighting Services.) Based on the Low – High projected passenger movements' fire fighting services may be required within the life of this plan as follows:

Growth Series	Passenger Movements	Year
Low	281,181	2030/31
Medium	350,035	2024/25
High	343,671	2017/18

An area has been designated for future fire and emergency services requirements SE of the runway.

Helicopter Landing Pad and Parking

A Helicopter landing pad is planned to be built to the west of the expanded rental pick up carpark. Currently no dedicated helicopter parking is available. There is limited helicopter activity at the Airport with an average of 1 landing per day, however a growth in either the tourism or mining sector may see an increase in helicopter activities which may require a specifically dedicated area for a "heliport". (See map on page 39)

Ground Service Equipment (GSE) Storage

Ground Service Equipment (GSE) used is generally stored to the west of the terminal on the edge of the RPT Apron. However with increased numbers of aircraft movements additional GSE storage areas have been nominated (ie NW of the apron extension and West of the carpark extension) including the potential for enclosed and secured storage areas for the GSE.

AIRSIDE PRECINCT

Project Description	Indicative Timeframe			Est. $	Funding Source
	0-5 yrs	5-10 yrs	10-20 yrs		
Parallel Taxiway – Stage 1				$1.91m	Council
Parallel Taxiway – Stage 2				$1.25m	Council
Remove cross runway and turf				$24,000	Council
Helipad – concrete pad				$54,500	Council
Runway reseal and re-groove works				$4.50m	Council
Ground Service Equipment storage				TBA	Council
Apron Extensions				$3.35m	Council

Note: Parallel Taxiway construction dependant on number of aircraft movements and CASA exemptions for Runway

DIAGRAM 4 – HERVEY BAY AIRPORT MASTER PLAN PRECINCTS

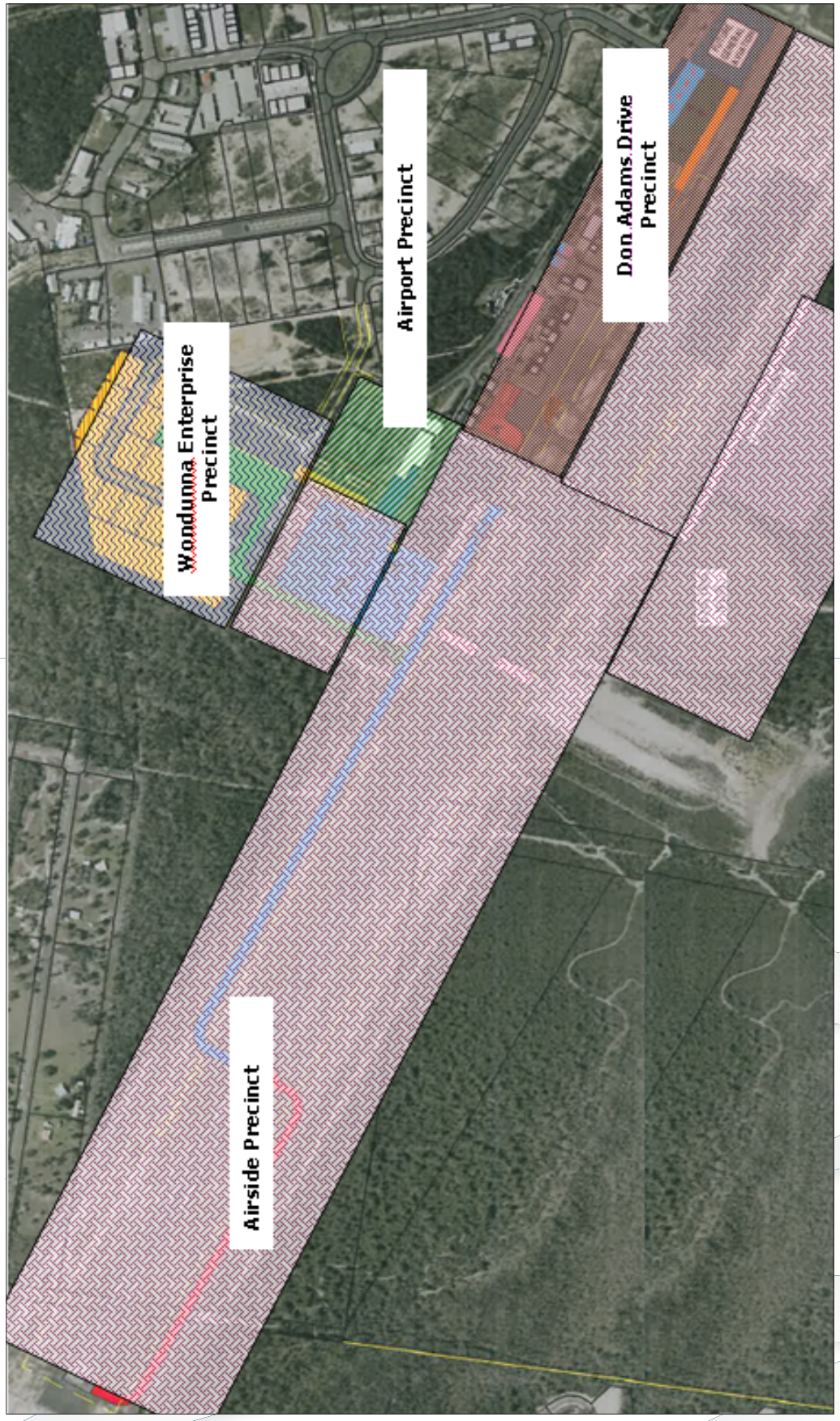
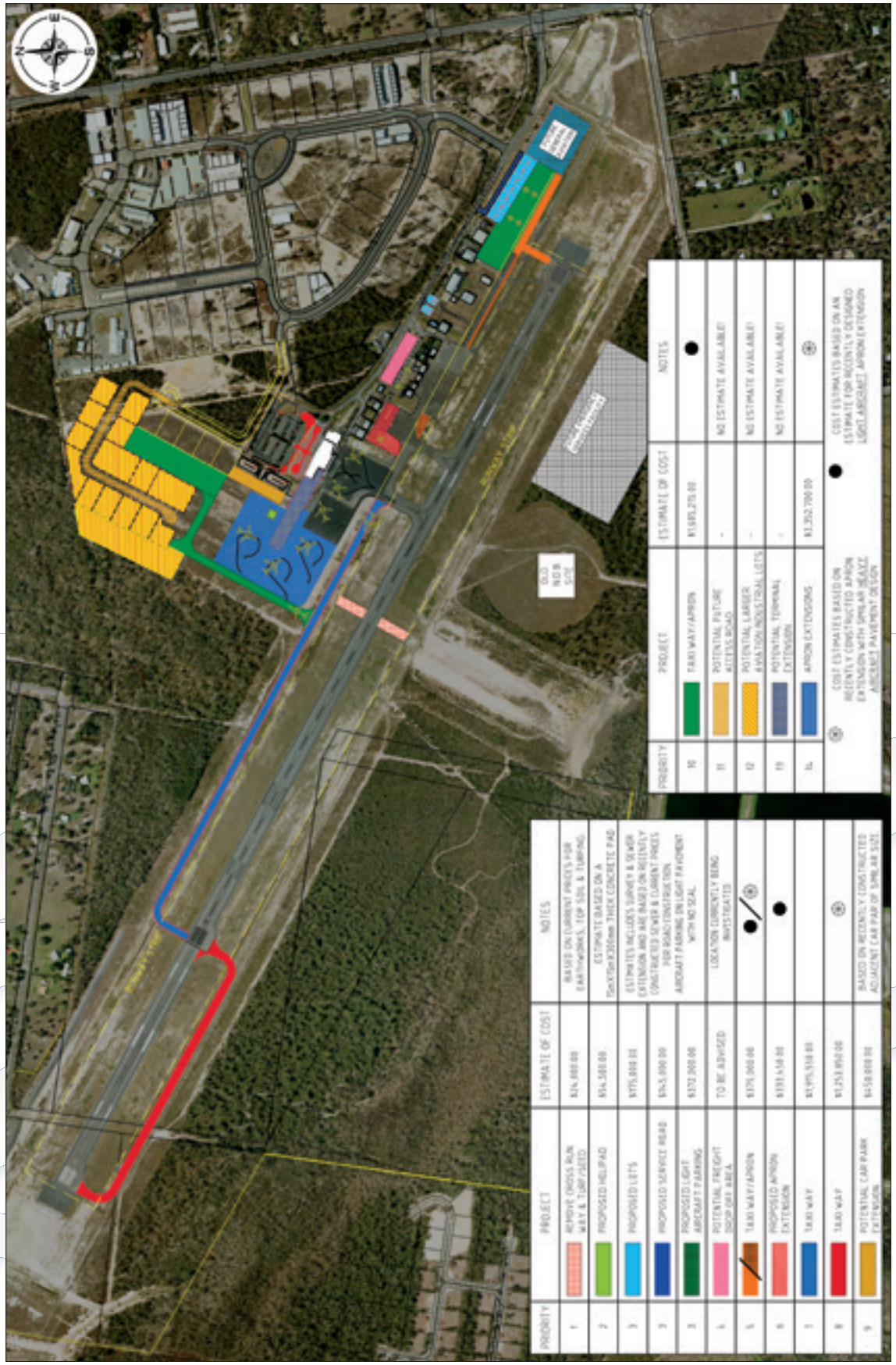


DIAGRAM 5 – FUTURE INFRASTRUCTURE REQUIREMENTS



Visual and Non Visual Navigational Aids

Obstacle Limitation Surface (OLS)

An Obstacle Limitation Surface Plan (Diagram 6) has been prepared in accordance with CASA MOS 139 Ch7 to detail the aircraft approach, takeoff, side transition and horizontal surfaces, which the airport owner is obliged to protect under the Civil Aviation Safety Authority Regulations. The OLS defines the protection requirements (i.e. the airspace in proximity to the airport which should be kept free of obstacles that may endanger visibility) for the initial and final stages of flight where the pilot must maintain visual reference to the airport.

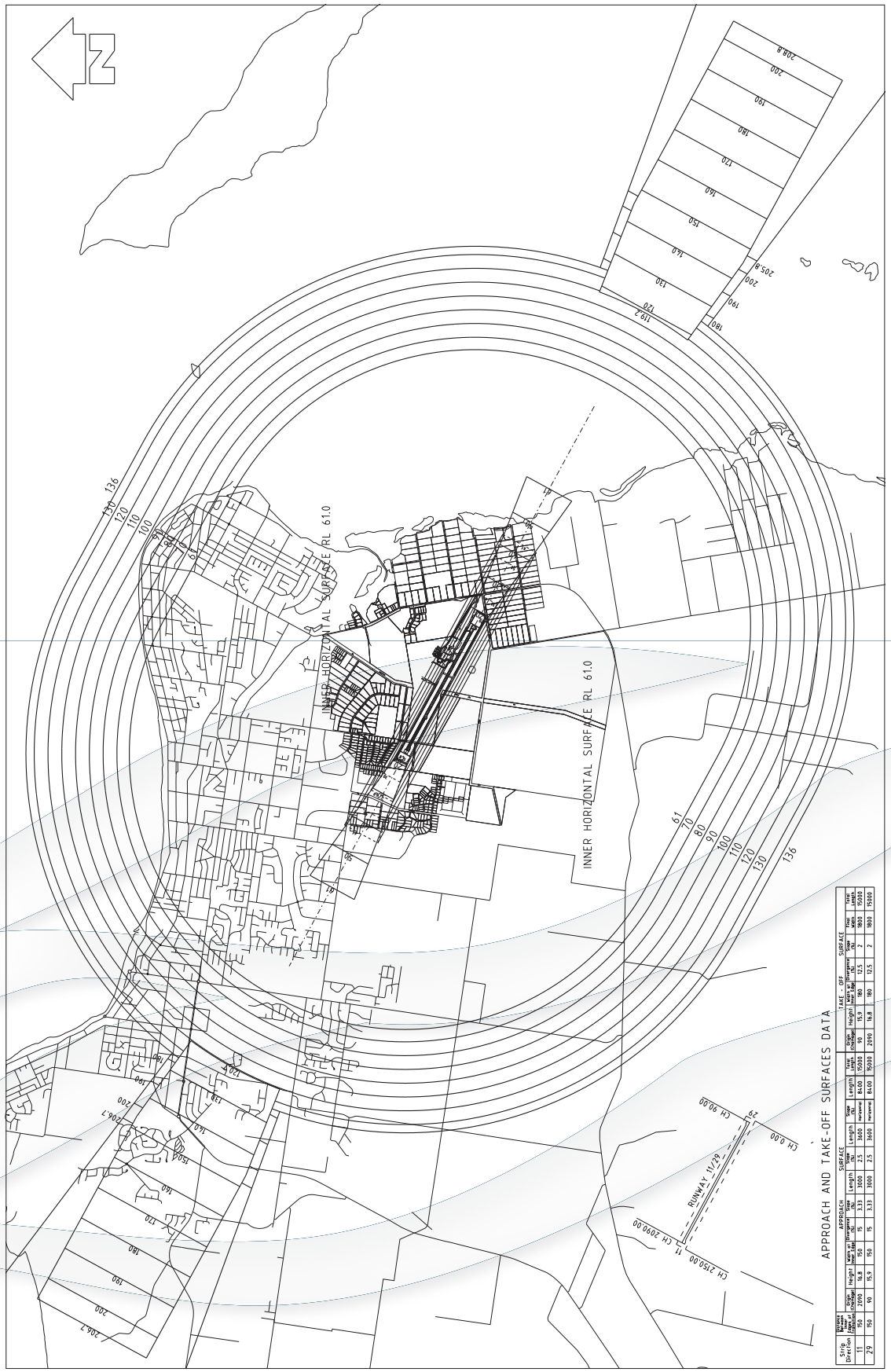
The OLS assists the airport owner in evaluation of proposals for future structures with respect to the prescribed clearance surfaces that must be protected. Those surfaces are drawn as a series of contours, overlaid onto topographical plans so the user can determine the allowable height a structure can proceed to without intruding through the Obstacle Limitation Surfaces.

The parameters applied in the preparation of OLS for runway 11/29 are:

- Code 3 non precision instrument runway
- Runway length and width 2000m X 30m
- Take off surface inner edge length 180m
- Takeoff gradient 2%
- Approach inner edge length 150m
- Approach gradient 3.3%
- Total surface length 15000m

As the current runway length of 2000m is not expected to increase within the time frame of this Master Plan, the existing Obstacle Limitation Surface Plan is the accepted long term height control tool for the next 20 years.

Diagram 6 Obstacle Limitation Surface Plan - Overall Layout



Strip Direction	RUNWAY Width	RUNWAY Strip Width	APPROACH Slope	APPROACH Length	APPROACH Slope	APPROACH Length	TAKE - OFF Slope	TAKE - OFF Length	TAKE - OFF Slope	TAKE - OFF Length
			Height	Width at Aerodrome	Divergence					
	m	m	m	m	%	m	%	m	%	m
11	150	300	14.8	150	15	3000	2.5	3600	2	1800
29	150	300	15.9	150	15	3000	2.5	3600	2	1800

Strip Direction	Slope	Length	Slope	Length	Slope	Length	Slope	Length
	%	m	%	m	%	m	%	m
11	2.5	3600	2.5	15000	90	2990	16.8	180	12.5	15000
29	2.5	3600	2.5	15000	90	2990	16.8	180	12.5	15000

Diagram 7 Obstacle Limitation Surface Plan - Airport Detail

Navigational Aids

The runway is currently equipped with pilot activated low intensity runway edge lighting. A Precision Approach Path Indicator (PAPI) system is provided at both ends of the runway to provide slope guidance to aircraft on approach. Non-precision instrument Global Positioning System (GPS) approach procedures are provided to assist pilots landing in poor weather conditions.

Global Positioning Systems (GPS) are likely to become a primary navigational aid for light aircraft operations. When this occurs, GPS approach procedures will be prepared for airport operations which may require the installation of a GPS station.

The future of technologies for use in Air Traffic Management is under review by the Federal Government with Australia moving to a national ground and satellite-based network of air traffic management.

Air Navigation Procedures

Procedures for non-precision instrument approaches to Hervey Bay have been prepared by Airservices Australia. The Airservices Australia documentation lists 4 obstacles used to determine the published minimum descent altitude also known as landing minima, the lowest altitude a pilot may descend to without making a visual reference with the aerodrome. Procedures have been provided for GPS non-precision straight in approaches. At the time of preparing the Master Plan there are no suggested upgrades to the available navigational instrumentation for the airport.

The obstacles are to be included in the OLS Plan to assist Council in its assessment of proposals and to ensure the current instrument approach procedures are protected.

Future of Air Traffic Management (ATM) in Australia

The following extract from the Federal Governments National Aviation Policy White Paper "Flight Path to the Future" outlines the future direction of ATM in Australia: *"In 2020 Australia will have moved to a national ground and satellite-based network of air traffic management providing a level of communications, navigation and surveillance coverage unprecedented in Australia's aviation history. This will be achieved by the implementation of a number of key short, medium and long-term initiatives such as investment in surveillance infrastructure and the increasing use of performance based navigation and approach with vertical (APV) guidance procedures around Australia. CASA will oversee the implementation of Approach with Vertical Guidance (APV) in Australia – a safer means of managing flight approaches.*

The Government recognises the need for investment in modern air navigation infrastructure, including in satellite and ground-based technology, to further enhance aviation safety and meet future air traffic demand.

This includes planning for greater use of satellite-based surveillance systems such as Automatic Dependent Surveillance-Broadcast (ADS-B), as well the increased adoption of other systems and procedures such as Terrain Avoidance Warning Systems (TAWS), Approach with Vertical Guidance (APV), Required Navigational Performance (RNP), Aircraft Collision Avoidance Systems (ACAS) and Wide Area Multilateration (WAM).

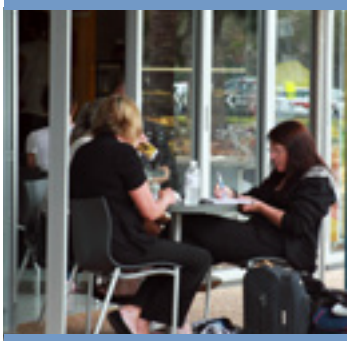
These technologies and innovations can offer better safety and efficiency outcomes often at much lower cost than the requirement for investment in new or replacement infrastructure.

One of the first tasks for CASA will be to oversee the future implementation of Approach with Vertical Guidance (APV) in Australia utilising the Baro-VNAV aircraft-based augmentations systems as well as future Satellite-Based Augmentation Systems (SBAS) capability in Australia.

APV is a safer means of managing flight approach paths which ICAO has resolved should be introduced internationally.

The implementation of APV is a major challenge for Australia. It will require APV design work by Airservices at nearly 200 aerodromes – and infrastructure upgrades at around 130 regional airports (including weather monitoring equipment).

The ICAO APV introduction timetable of 2016 should be met for airports servicing nearly all of our major passenger operations. Coverage of the remaining airports and operations will be considered subject to the outcome of the SBAS review outlined below.



Future infrastructure and technology policy directions to enhance air traffic system safety and performance

The Government is committed to ensuring that industry and Government agencies invest in modern air navigation infrastructure, including satellite technology, to improve safety and efficiency in our airways systems.

The Aviation Green Paper noted that the adoption of the International Civil Aviation Organization (ICAO) Operational Concept for Air Traffic Management (ATM) would require Government-led long-term planning, and the wider application and use of satellite technology such as Global Navigation Satellite Systems (GNSS) and Automatic Dependent Surveillance-Broadcast (ADS-B).

In particular ICAO has supported:

- *precision navigation enhancing aviation safety and also allowing more efficient use of airspace;*
- *instrument approach procedures that provide vertical guidance, enabling significant safety and service enhancements at regional and remote aerodromes;*
- *enhanced collision risk mitigation primarily through the expansion of air traffic surveillance including the wider application of satellite-based surveillance technology; and*
- *navigation capabilities that support optimum aircraft routes reducing fuel burn with attendant economic and environmental benefits.*

There are many ATM technologies and procedures being implemented to enhance international aviation safety as well as achieve efficiency and environmental benefits. The applications being implemented include:

- *Aircraft Performance Based Navigation (PBN) specifications for Area Navigation (RNAV) and Required Navigation Performance (RNP) as the basis for precision navigation, instrument procedure design, and resultant air traffic separation standards;*
- *Approaches with Vertical Guidance (APV) as the preferred instrument approach standard where precision approaches are not available;*
- *use of ADS-B OUT for air traffic control surveillance and traffic information services;*
- *introduction of ADS-B IN (ADS-B reception by aircraft) as a pilot situational awareness tool and enabler of new operations using Airborne Separation Assistance Systems (ASAS);*

- *deployment of Advanced Surface Movement Guidance and Control Systems (A-SMGCS) at major airports; and*
- *wider carriage of Airborne Collision Avoidance Systems (ACAS).*

The Government's primary objective in pursuing this course of action is clear – enhanced safety through the use of better, more advanced technology and through providing services to parts of Australia that have, until now, had little to no air traffic services and facilities or surveillance coverage.

In summary, Australia, consistent with the ICAO goals, and to harmonise with developments in other leading aviation nations, has identified a number of key ATM initiatives which CASA and Airservices, in their respective regulatory and service provision roles, will seek to pursue:

Short Term (five years to 2014)

- *Current investment in national infrastructure (including ground and satellite based technology) to address safety, efficiency, capacity and environmental needs.*
- *Closer alignment with ICAO based airspace classifications, adoption of proven international airspace systems and use of sound risk management processes for airspace management and administration.*
- *Completing the reviews of Australian airspace at airports to implement the Government's key AAPS reform directions – particularly alignment with ICAO and international best practice in airspace management and enhanced regional air traffic management services.*
- *Introduction of Class D airspace arrangements at GAAP aerodromes in 2010.*
- *Introduction of more controlled airspace with, as required, enhanced ATC services and infrastructure as determined by CASA, in the enroute environment in WA, as well as at growing regional aerodromes in WA and in eastern Australia.*
- *ADS-B OUT upper airspace mandate from December 2013.*

Medium Term (2014–2019)

- *Wider regulatory requirements for mandated communication, navigation and surveillance capability (e.g. uptake of Mode S and ADS-B OUT capable transponders) and use by aircraft set by CASA.*
- *APV procedures available for 100% of instrument runways used by APV-capable aircraft.*
- *Potential adoption of satellite based augmentation systems (SBAS) to assist in making APV widely available.*

Long Term (2020–2025)

- *The wider application of satellite technology, monitoring consistency with international timetables, including the provision of required back up ground based facilities.*
- *Performance based navigation capability appropriate to the operation will be used by all instrument flight rules aircraft.*
- *Electronic surveillance of traffic by either aircraft or air navigation service providers will be assured for operations in controlled airspace generally and from the surface within specified volumes of airspace at aerodromes with traffic densities exceeding a risk-based threshold.*
- *APV guidance for all Australian instrument runways.*

Within the life of this plan it is anticipated that all Airports will have Approach with Vertical Guidance (APV). APV refers to instrument approaches that give pilots vertical guidance, providing significant safety, operational and environmental benefits over traditional non-precision approaches. APVs generally require the use of augmented satellite navigation systems.

Advantages of APVs include safer approach path guidance, simpler approach procedures and lower minimum descent altitudes in adverse weather.

Assessment of Environmental Issues

Australia Noise Exposure Forecast (ANEF)

ANEF is a system developed as a land use planning tool aimed at controlling encroachment on airports by 'noise sensitive' buildings. The system underpins Australian Standard AS2021 'Acoustics – Aircraft noise intrusion – Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones. ANEFs are the official forecasts of future noise exposure patterns around an airport and they constitute the contours on which land use planning authorities base their controls.

The ANEF system involves drawing up ANEF noise contours and identifying the suitability of land for specified land uses in certain ANEF zones, according to the noise sensitivity of the nominated land use. The ANEF contours show the logarithmically averaged noise energy received near an airport on an average annual day of the forecast year. ANEF contours are produced from the Integrated Noise Model (INM) developed by the United States Federal Aviation Administration. The INM uses operational base data including approach and departure profiles for the number, type and flight path of each aircraft predicted to be operating in the forecast year. Aircraft operating after 7.00pm and before 7.00am are given an added weighting to take into account the increased intrusion of aircraft noise after hours.

Australian Standard AS 2021 Acoustics-Aircraft Noise Intrusion-Building Siting and Construction lists various land uses (e.g. houses through to heavy industrial areas) considered acceptable/unacceptable within the various ANEF contours. The recommended ANEF zones for residential development are shown in the following table extracted from AS 2021.

Building Site Acceptability Based On ANEF Zones

Building type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
House, home unit, flat, caravan park	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Hotel, motel, hostel	< 25 ANEF	25 to 30 ANEF	> 30 ANEF
School, university	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Hospital, nursing home	< 20 ANEF	20 to 25 ANEF	> 25 ANEF
Public building	< 20 ANEF	20 to 30 ANEF	> 30 ANEF
Commercial building	< 25 ANEF	25 to 35 ANEF	> 35 ANEF
Light Industrial	< 30 ANEF	30 to 40 ANEF	> 40 ANEF
Other Industrial	Acceptable in all ANEF zones		

Acceptable – usually no need for building construction to provide protection specifically against aircraft noise.

Conditionally Acceptable – proposed noise attenuation solutions for the construction should be determined in accordance with AS2021.

Unacceptable – construction should not normally be considered. However if developed, the required indoor design sound levels should be achieved in accordance with AS2021.

ANEF Forecasts

ANEF (Australia Noise Exposure Forecast) noise contours have been prepared for guidance in land use planning in the airport vicinity. Airbiz, in consultation with Hervey Bay Airport and stakeholders, prepared high level forecasts based on an optimistic growth scenario that formed the basis of the planning parameters and assumptions utilised for the preparation of the ANEF contours.

The forecasts below are based on the medium growth scenario of the likely range in predicted changes in aircraft movements. The use of medium growth forecasts in the development of an ANEF is seen as appropriate considering the variability experienced in recent years, especially in regards to General Aviation movements. (Diagram 8)

Calculation of Forecast daily movements year 2031

Aircraft Type	Forecast Movements per day 2031
B737	5.3
A320	4.0
E190	4.0
Dash8 (300/Q400)	10.0
Twin Engine Charter /GA	33.2
Corporate/Training GA Jets	8.3
Single Engine GA	24.9
Helicopters	n/a
T&G (by single engine GA)	16.6
TOTAL	**106.3**

The following figure illustrates the absolute and relative growth of RPT and General Aviation aircraft movement over the next 20 years. This shows an initial period of strong growth for both the RPT (8%) and GA (5%) markets. Additional growth is assumed to taper off from 2012 onwards at a more reasonable 4%.

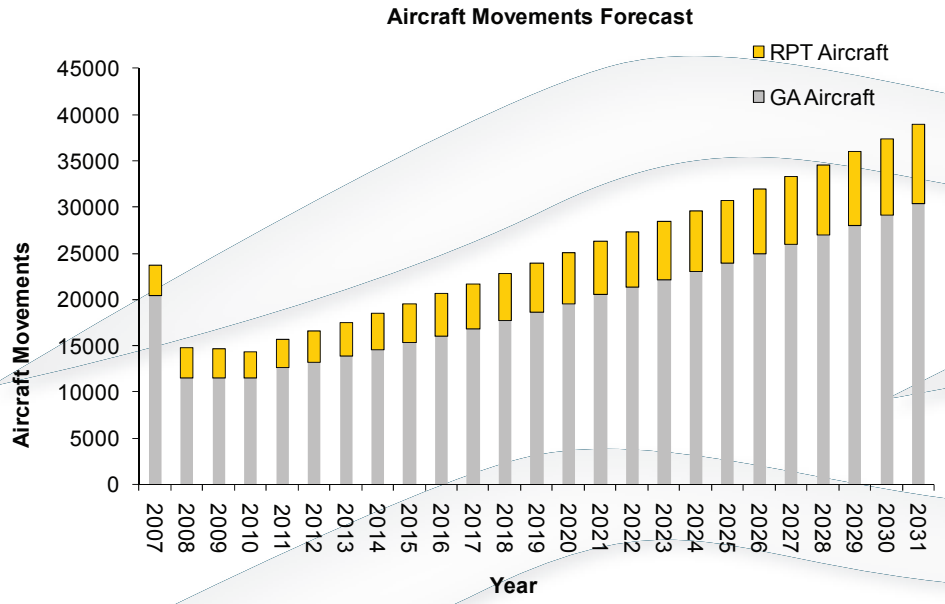
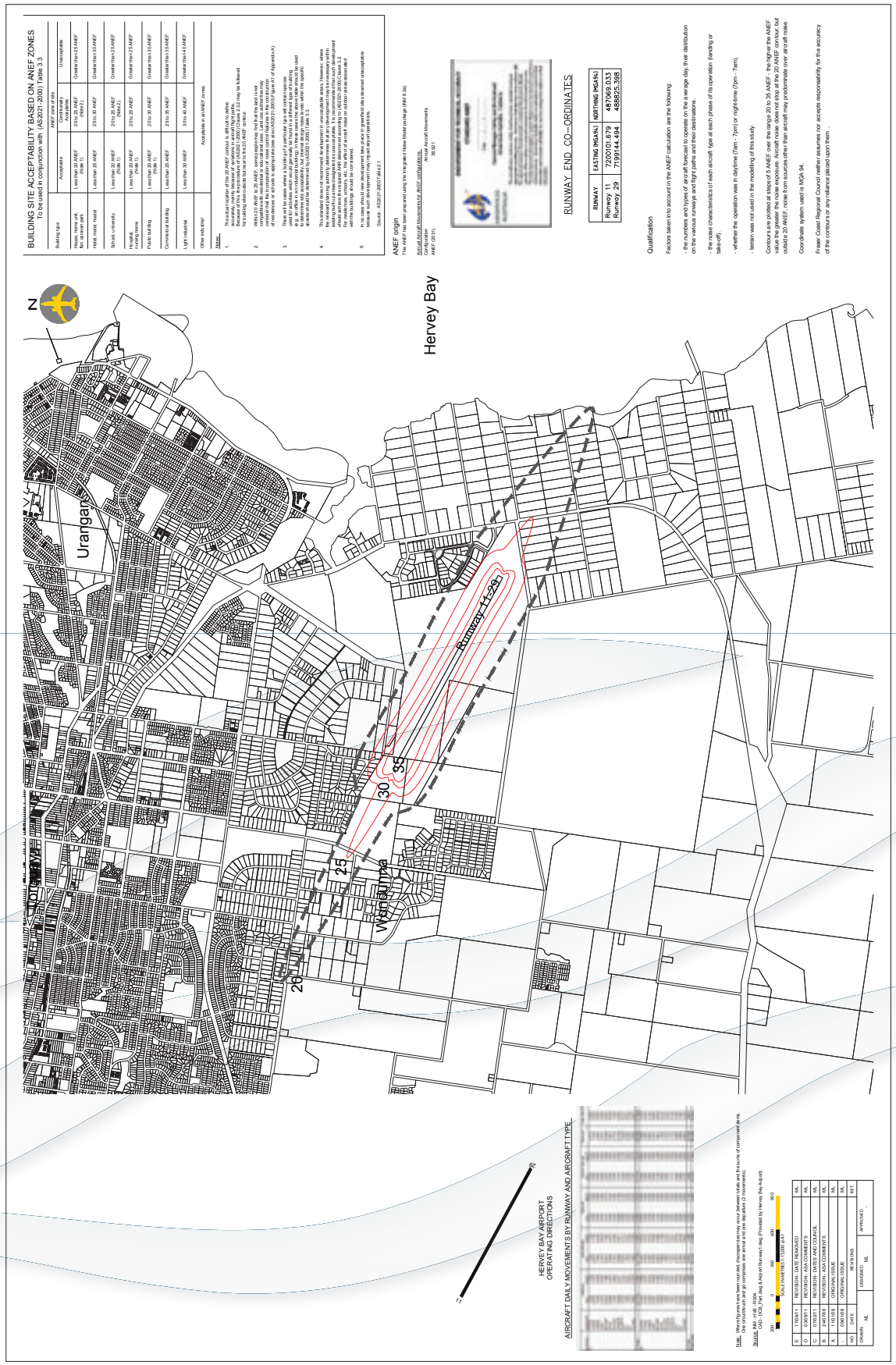


DIAGRAM 8 – ANEF CONTOURS (MEDIUM GROWTH SCENARIO)



Single Event Contour Plans

The ANEF is a summation of the total noise over an average day. When applied at aerodromes with only small numbers of aircraft movements, the results can be less than satisfactory as the ANEF contours barely go beyond the extent of the airport, whereas it is known aircraft noise will be heard over a far greater area and will, in some situations, be considered intrusive.

An alternative is to plot the aircraft noise as a single noise level event contour, superimposed on the aircraft flight paths. Typically the 70 dB(A) contour has been used in studies provided by Department of Infrastructure and Transport, as it is equivalent to a single event level of 60dB(A) specified in the Australian Standard 2021, as the accepted indoor design sound level for normal domestic dwellings. (An external single noise event will be attenuated by approximately 10 dB(A) by the fabric of a house with open windows) An internal noise level above 60 dB(A) is likely to interfere with conversation or listening to the television.

- Noise intrusion by the 70 dB(A) noise level into residential areas from the A320 / B737 and turbo prop aircraft.

DoIT published studies tend to identify areas of interest commencing at 10 noise events. This would suggest that noise considered intrusive by local residents is more to do with the commuter aircraft activity than the RPT jets. In addition the absence of a parallel taxiway to the northwest end of the runway requires aircraft execute a 180-degree turn in commencement for takeoff to the southeast. Combined with engine test runs performed at the runway end, the extended noise duration may increase the adverse noise effects. It should be noted that the single event contours from AS 2021 cover only land and takeoff events, and not ground running.

Aircraft operating in Australia are required to meet the noise standards specified in ICAO Annex 16, Volume 1. All modern jet, and large non-jet, aircraft are manufactured to meet the Chapter 3 standards. Stricter Chapter 4 standards came into effect for new aircraft models manufactured after 1 January 2006.

Noise Management

Aircraft Noise

The effective management of the impact of aircraft noise is critical to the development and operation of the airport. To achieve a balance between the economic benefit of the airport and the environmental impacts of the airport, it is important to ensure community engagement, awareness and involvement in the management of this issue.

To achieve this, the following strategies are recommended:

- Implementation of land use planning policies and acoustic standards (AS2021) for developments within the vicinity of the airport;
- Development of a "fly neighbourly commitment" for airport users e.g. reduce number smaller aircraft using western end of runway closest to residential houses, or engine runs to take place at a holding point prior to entering the runway (on taxiway)
- Development and publication of "noise abatement procedure" nominating the preferred approach and departure routes for aircraft;
- Mapping of ANEF contours identifying areas potentially affected by aircraft noise; and
- Improved communications with the wider community to broaden awareness and understanding of aviation activities e.g. flight paths, flight circuits, altitude requirements and pilot safety.

Future Development

The Planning Scheme imposes relatively low residential development densities surrounding the airport, thereby minimising the increase in population in those areas most affected by aircraft noise. All new developments should ensure that appropriate acoustic treatments are conditioned in accordance with AS2021 to minimise the impact of aircraft noise.

Development Noise

Noise generated as a result of development will be managed in Development Approvals and/or Major Works Plans. Noise impacts must be reduced by efficient site planning for operating hours.

Heritage and significant/sensitive areas (Sandy Straits Marine Zone)

No known sites of indigenous archaeological significance have been identified at the Airport.

While none of the facilities upon the airport land are Heritage listed, the road leading into the Airport terminal carries much historical significance, having been named after the pioneer in aviation in the Hervey Bay district and beyond, Mr Don Adams. Mr Adams' association with the Hervey Bay airport extends from his recommendation of its current location to the Burrum Shire Council in the late 1950s and its subsequent positioning and construction, to the present day, where he continues to work with his son, Peter, at Seabird Aviation Pty Ltd. Mr Adams joined forces with Childers fuel contractor, Mr Bill English, to make the first official landing at the Hervey Bay airport in August 1961.

Flora and Fauna

No rare or endangered flora or fauna has been identified within the vicinity of the Hervey Bay Airport. However, a potentially endangered orchid (Diuris Chrysantha) may be located at the eastern perimeter. Future flora and fauna issues will be assessed during the Development Approval and/or Major Works Plan process.

Land Contamination

Under the Environment Protection Act, Fraser Coast Regional Council has a monitoring, licensing and enforcement responsibility due to activities undertaken on the airport land, including fuel storage and supply, panel beating and spray painting, and other environmentally relevant activities. Accordingly, the Standard Airport Lease documents contain specific contamination provisions which prohibit contamination, require compliance with environmental law and require remediation upon expiration of leases of any contamination placed on site by the departing lessee.

Air Quality Management

The management of Air Quality, particularly relevant during the construction phase of any development, is important, specifically in relation to the management of dust.

Air quality will be managed in accordance with the Development Approval and/or Major Works Plan.

Strategies to manage air quality may include but not be limited to:

- water carts spraying the soil on a regular basis;
- minimising or avoiding works during dry and windy conditions;
- placing covers on loads; and
- utilising passive devises eg silt fences.

Water Quality Management

There is the chance that Bunya Creek, referred to as the 'Kawungan sub-catchment', could be impacted by development of the Airport if not adequately protected. Water quality will be managed in accordance with the Development Approval and/or Major Works Plan.

Strategies to manage water quality may include but not be limited to:

- minimising the area of land disturbed at any one time;
- diverting upstream runoffs from exposed soil or disturbed areas;
- vegetate, pave, cover or stabilize all exposed and unstable soil or loose material;
- installation of water diversion devices away from disturbed or exposed soils; and
- installation of sediment and litter control devices.

Implementation

The proposed development is based on an assessment of future requirements and forecasts contained within the Master Plan. Changing economic conditions and the emerging aviation environment may impact on the indicative timeframe for investment and development of the airport.

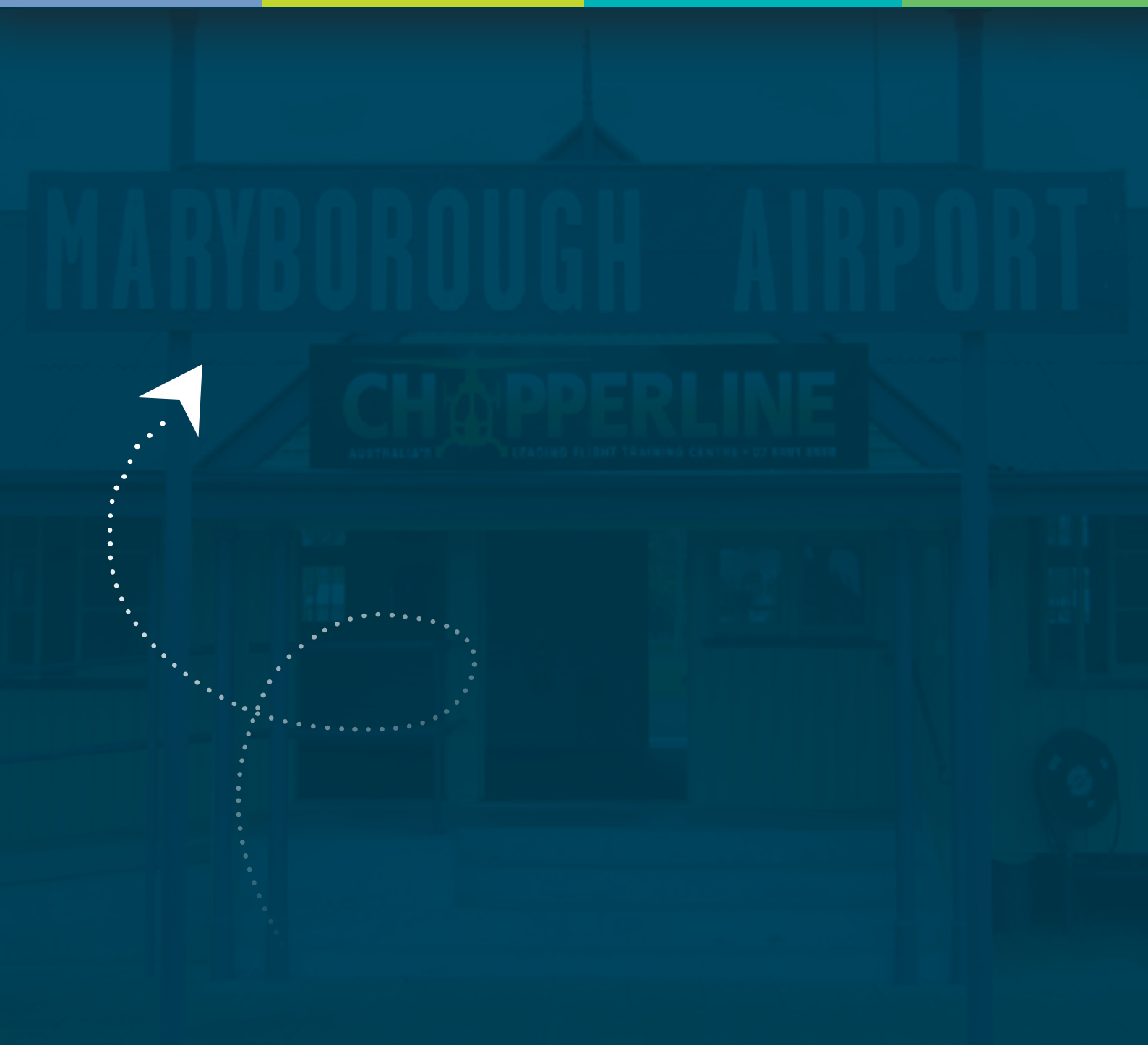
The Master Plan will be reviewed regularly as emerging issues evolve and/or when:

- changes to legislation and regulations occur,
- new and emerging technologies are presented;
- the operating environment changes; and
- market trends and economies warrant it.

Maryborough Airport

MASTER PLAN 2011-2031

PART 3



PART 3:
MARYBOROUGH AIRPORT MASTER PLAN

History

Maryborough Airport first appeared in Civil Aviation records as a "projected municipal aerodrome" in 1930 and within a few months the first commercial airline commenced flights into Maryborough.

In 1941, the Department of Defence resumed control of the airfield and RAAF Station Maryborough was formed. In 1945 the Royal Navy established a Mobile Naval Air Base (MONAB) at the airfield and it was known as HMS NABSTOCK. The RAAF continued operations until 1947 when control of the airfield was transferred to the Department of Civil Aviation. Commercial operations commenced soon afterwards and the management of the airport was handed over to the Maryborough City Council, subsequently the ownership of the land was transferred to Maryborough City Council in 1982.

Commercial flights from Maryborough airport to Brisbane through Sunshine Express and Rex Airlines operated up until late 2006, and the airport currently caters for recreational flying, medical air services, flying training and freight transport.

Land Tenure

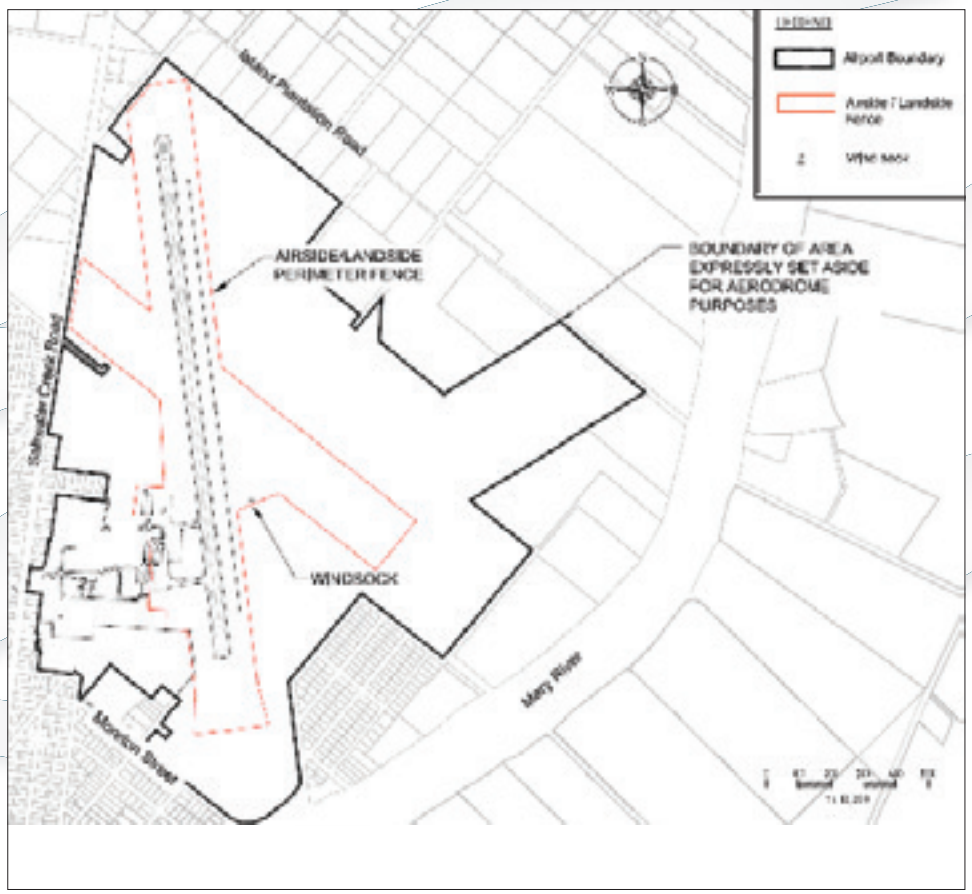
Maryborough City is situated in South-East Queensland on the Mary River, 260 km north of Brisbane via the Bruce Highway. Maryborough was proclaimed a municipality in 1861 after having been established in 1842, and subsequently developed with an emphasis on sheep farming and the provision of port facilities handling local produce including wool, timber, tallow and hides. Navigation needs of larger vessels on the Mary River necessitated relocating the township about 10 km downstream to its present site. Much of Maryborough's history has been preserved, giving Maryborough the reputation as one of the most beautiful historic towns in Queensland.

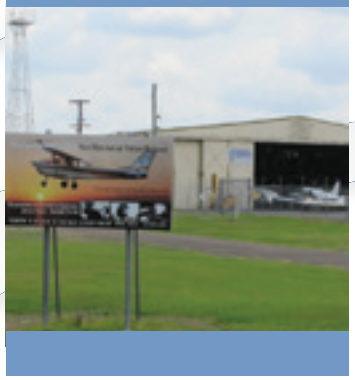
Airport Statistics and Operations

Runway Lengths	Main: 1587m x 30m (Sealed) Secondary: 865m x 30m (Grass)
Pavement Classification Number (PCN)	Main: 10 Secondary: Unrated
Critical Aircraft	Fokker F50
Aerodrome Reference Code	2C
Airport Certificate	1-C2TNL
Aircraft Parking	9,000 m2
Navigational Aids	AT-VASIS, NDB
No. Aviation Hangars	2
Air Traffic Management	Nil
Passenger Movements as at June 2011	0
Aircraft Movements as at June 2011	3000
Security Screening	No
Security Controlled Airport	No
Terminal	Currently leased
Public Car parking	20 spaces

Existing Airport Facilities and Capabilities

Airport Services and Capabilities





Terminal Facilities

- The Maryborough Airport Terminal building is a rectangular timber frame crimped iron sheeted structure with a floor area of around 120m2. Baggage loading and unloading is undertaken at the southern end under a covered area. There are facilities for check-in, airline administration, rental cars and seating for about 25 passengers and visitors. Toilet facilities are located at the northern end of the building.
- The size, appointments and facilities were considered to be barely adequate for the 36-50 seat passenger loads experienced with the F27 and Short 360 aircraft operating until 2006. The terminal is currently leased to Chopperline Pty Ltd for use as a Flying School facility until 2012.
- A new freight building has been constructed to the south of the Terminal and the opportunity has been taken to place this on the building line corresponding to the airside/landside boundary.

Runway and Aircraft Parking

Maryborough Airport is equipped with two runways.

Runway 17/35

The main runway is a 1,587m long x 30m wide sealed runway aligned in the 17/35 direction bounded by a 1,707m x 90m wide graded runway strip. The runway strips extend 60m beyond each runway end, with the exception of the Runway 35 end where it extends to 120m. This provides an additional 60m of clearway which results in the 60m increase to the Take-Off Distance Available for Runway 17 compared with the reciprocal direction.

Runway 17/35 has a published Pavement Classification Number of 10 and there is a 45m wide turning node at each runway end. The constructed runway width was originally 45m and the area beyond the current 30m width is maintained as shoulder. With a 30m width, the runway is capable of accommodating aircraft of up to Code 3C size, subject to pavement strength and runway length requirements. The runway is equipped with pilot activated low-intensity runway edge lighting based on the original 45m width. Other visual aids include pilot activated AT-Visual Approach Slope Indicator Systems (AT VASIS) for each approach located on the left hand side, when viewed from the approach, a centrally located illuminated wind direction indicator and runway markers and markings.

Runway 12/30

The second runway is an 885m long x 30m wide grassed runway aligned in the 12/30 direction bounded by a 1,005m x 90m wide graded runway strip. The runway has an unrated grassed grey silt clay surface and is defined by markers. With a 30m width, the runway is capable of accommodating aircraft of up to Code 2C size, subject to pavement strength and runway length requirements.

Passenger Services

Regular Public Transport services to Maryborough Airport ceased on 31 October 2006.

Existing Airport Layout

Parking Facilities

Maryborough Airport currently provides 20 public car parking spaces, located in front of the terminal building. Parking for taxis, shuttle buses, limousines and resort buses is also available. Use of the public car park is Free of Charge. Located directly in front of the terminal building, the public car park provides quick, easy access to the terminal, with disabled car parking located at the front of the car park.

Future Directions

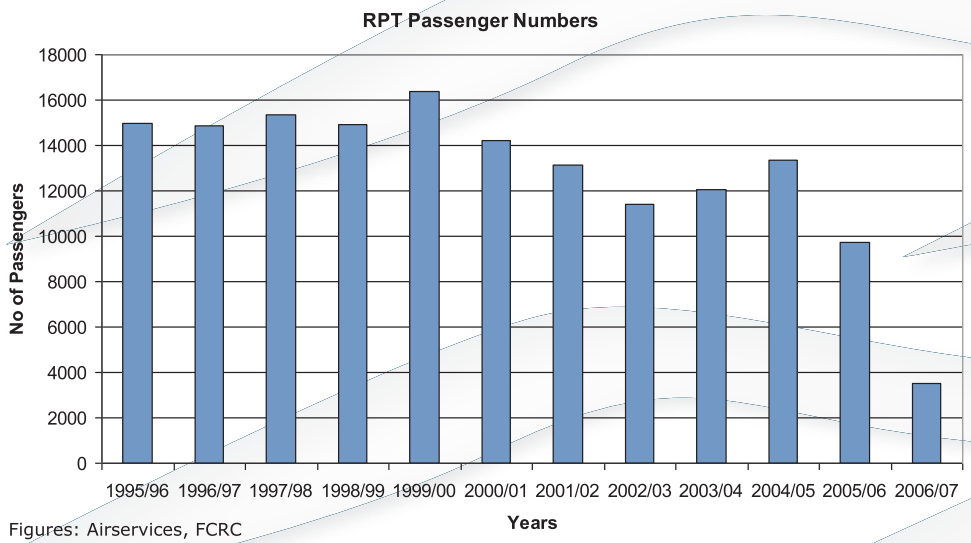
One of the aviation related opportunities identified in an earlier "Future Directions Study – Maryborough Airport" was the potential to further develop the aviation business aspects at the Airport. Currently, these are focused around the maintenance activities of Maryborough Aviation Services from Hangar 132, flight training activities, freight services and home- based and visitor general aviation traffic. The opening of the Chopperline Flying School is an indicator of the potential for Maryborough Airport to accommodate additional aviation related businesses.

Jet services at Hervey Bay Airport could result in it becoming more difficult for some elements of general aviation to continue to operate from there, and Maryborough Airport is seen as an excellent location to pursue this market segment with a view towards capturing any potentially displaced activity, by offering high quality facilities at lower costs. This and the increased activity flowing from the Airpark Precinct discussed below, would give Maryborough a much more viable critical mass of home based aircraft. In turn this would be expected to provide spin-offs for the existing operators such as increased maintenance activity and fuel sales, and potentially create a demand for expansion and for new operators to enter the market. Some organic growth in flying training activities has started and aviation activity has increased. Catering to the needs of both fixed and rotary wing operations provides further business opportunities. The Master Plan affords the opportunity to locate fixed and rotary wing activity to minimise operational conflicts.

Passenger Movements and Flights

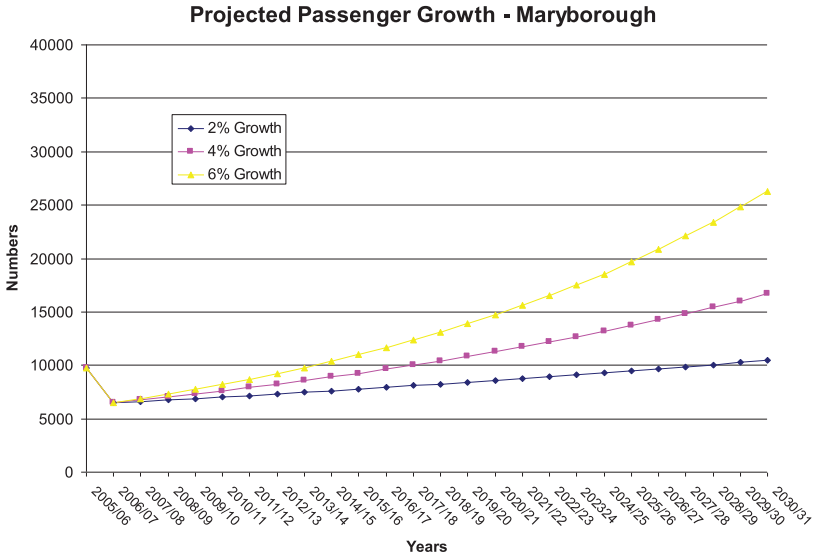
RPT Passenger Projections

Maryborough has had no Regular Public Transport (RPT) flights since the last direct air services to and from Brisbane ceased in late 2006.



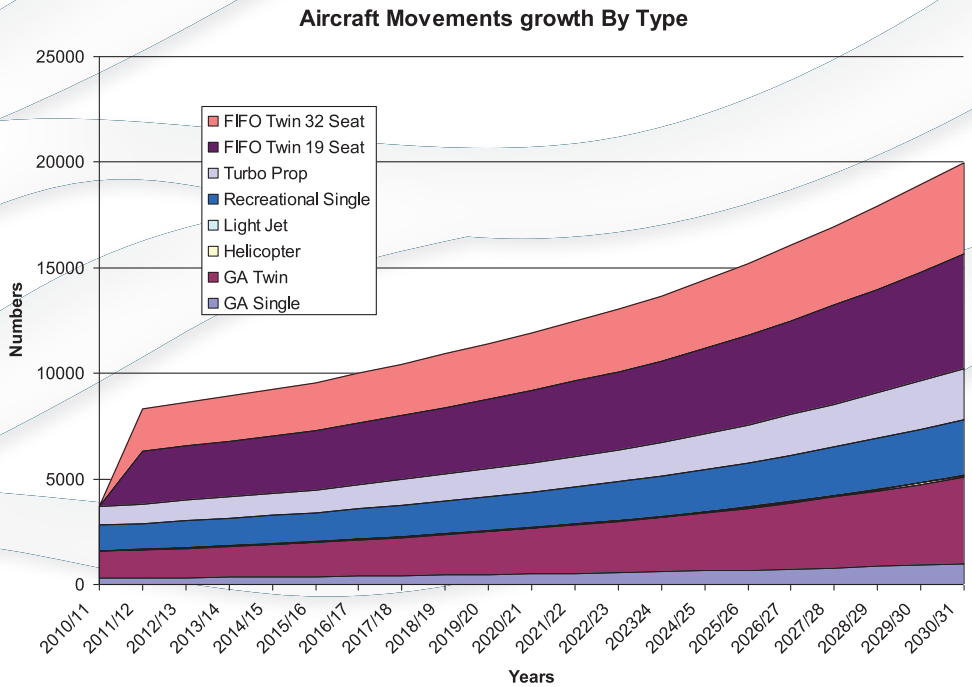
Figures: Airservices, FCRC

The graph on the left shows the annual passenger numbers up until that time. The scenarios based projections in the graph below which includes high growth figures, indicate that RPT flights are not likely to recommence at Maryborough within the life of this Master Plan. The numbers of passenger movements by FIFO charter are not factored into this calculation.



Aircraft Movement Projections

The estimated number of movements in 2005/06 was 8,500 per annum. However, since the withdrawal of RPT services this has dropped considerably. The graph below which is based on 2010/11 figures which were in the order of 3000 allows for an improving mining sector which has the potential to raise aircraft movements substantially whereby numbers could be expected to increase to over 20,000 by 2030/31, which represents an overall growth rate of approximately 5.0% per annum. The graph below represents the aircraft movement forecasts broken down by typical aircraft categories. The growth rate is not uniform across all aircraft categories.



The aircraft movements graph shows that the bulk of the growth in aircraft movements is expected to be in the Fly in- Fly out Charter operations closely followed by general aviation twin, general aviation single operations, which includes flying school activity, and recreational aircraft categories. Turbo-prop aircraft movements shown largely comprise RFDS and Government flights and are expected to remain relatively stable. Passenger growth is not taken into account as the flights are expected to be closed charter not RPT. The numbers of light jets and helicopters relative to other categories is expected to remain small as shown in the graph which depicts the expected fleet mix by 2030/31.

Analysis of Existing Infrastructure Capacity

Airport Exemptions

Maryborough Airport currently has one CASA exemption which is for the Airport Frequency Confirmation System (AFRU) and allows the airport to share the Hervey Bay AFRU to minimise confusion.

Critical Aircraft

The critical aircraft (i.e. the largest aircraft that are able to operate from the airport on a regular basis) for the Master Plan are the F50/Bombardier Dash 8. Presently there are no additional critical aircraft required to be accommodated at the airport as there are no plans for RPT services to recommence at Maryborough.

Runway Capacity

The capacity afforded by the existing two-runway layout is more than adequate to meet any long-term requirement. A typical two-runway configuration at a non-towered airport with a high proportion of general aviation traffic would be theoretically capable of handling in excess of 150,000 movements per annum.

Runway 17/35

At 1587m, Runway 17/35 is of sufficient length to meet the requirements of most aircraft falling within Code 3C likely to use the facility, although some types such as itinerant corporate jets could be take-off weight limited due to runway length requirements and pavement strength. The runway width at 30m meets the requirement for Code 3C operations under existing CASA regulations. Any change to these requirements will necessitate a further review.

Runway 12/30

Runway 12/30 is 885m long which is considered adequate for the range of aircraft types likely to use the facility. It is considered unlikely that any of the small range of aircraft which comprise the Code 2C fleet would use the runway because of its relatively short length and unsealed pavement surface.

Runway Pavement Classification Number (PCN)

Pavement strength is important for aircraft operations and management of the runway surface. The Maryborough Airport main runway construction consists of a minimum 50mm asphalt overlay, 400mm sub-base layer and a 200mm base course layer with an asphalt surface which provides a Flexible Pavement Subgrade with a bearing ratio (10%) of B and a PCN of 10. For a pavement to be suitable for an aircraft operation, the PCN should match or be greater than the Aircraft Classification Number (ACN) determined by

the manufacturer, otherwise Pavement Concessions need to be provided to the aircraft operators. The majority of aircraft which might be expected to use the airport have ACNs close to or within the airport PCN, as shown in the table below.

Aircraft	Classification Number	Code Number
Bombardier Dash 8 - 300	9	2C
Bombardier Dash 8 - 400	16	3C
Super King Air 350	3	2B
Fokker F50	9	3C

Services and Utilities

Due to the long-term nature of any proposed development of the airport, information relating to engineering services infrastructure in the vicinity of the airport is not able to be provided in a definitive form relating to service capacity. Projections and considerations are based on best available information.

Water reticulation

Current information suggests that the current water reticulation capacity at the airport is likely to be sufficient for limited future development without major upgrade. Consideration may be needed to allow for any high-use or high-draw facilities that may be proposed as part of this project. Aircraft maintenance facilities with fixed sprinkler and or foam fire-fighting infrastructure will require a further detailed assessment of the mains and precinct trunk services planning.

Sewerage infrastructure

The Maryborough sewerage treatment facility is within the vicinity of the airport. Current information suggests that the proposed development comprising a range of facilities and uses is not likely to place any major pressure on the existing system capacity.

Electrical Reticulation

The required electricity draw is highly dependant on the final composition of load-drawing facilities, in particular any industrial requirements. Planning indications are that there is sufficient capacity within the region, although any industrial development is likely to require an intake substation for precinct electricity management.

Road Access

The primary road access to the Airport is via Saltwater Creek Rd and this will remain.

Assessment of Future Requirements and Land Use

Land Use Planning Intent

Allowing that the Hervey Bay Airport now services the primary RPT needs of the Fraser Coast, and is a valuable economic asset for the region which is expected to grow and continue in that capacity, Maryborough airport is also an important general aviation, training, freight and charter operations facility that will also continue to grow in the future as the economic climate expands and as such, development in the vicinity of the airport may impact on airport operations. The intent of the Master Plan is to provide a guide for future development of the airport and to promote compatible development and use of lands affected by airport operations.

As with Hervey Bay Airport, the development of commercial precincts surrounding the airport will support the economic viability of the airport and provide an opportunity to attract new aviation market opportunities and business to the region.

The Master Plan identifies precincts as shown in the Future Airport Layout diagram & discussed in detail below.

It is anticipated that the Airport Development may attract the following aviation related industries and services –

- **Flying school operations:** Maryborough is a perfect location for the flying training industry to operate. The high number of clear, cloudless days ensures that a training provider can plan a flying program to fit a class schedule with confidence. The overall low level of flying activity and the grass secondary runway provide almost uninterrupted freedom for training activities.
- **Fly in/Fly out charter operations supporting the Mining industry:** Charter operations in support of the Mining Industry will find Maryborough an excellent choice for basing or transiting their Fly in-Fly out operations. There is more available capacity at the aerodrome as shown in the ANEF discourse for a much larger number of flights than is currently forecast.
- **Aircraft:** Maryborough currently has only one Aviation maintenance provider and with the planned increase of leases available for aviation related businesses there is ample capacity for additional aviation maintenance providers and manufacturers in the Maryborough area to meet a growing need.

Airpark Precinct

An aviation related opportunity for Maryborough Airport exists in the potential to develop an Airpark Precinct within the Airport grounds. Airparks are a common general aviation feature around the world, especially in the United States, and provide aircraft owners with the opportunity to build a residence and aircraft accommodation hangar on the same land parcel and/or within a single building. Traditional landside access (vehicle and pedestrian) is provided on one side and airside access from the hangar to a taxiway is provided on the other. Airparks are now becoming established in Australia with the proposed Kensington Airpark at Bundaberg and Airlie Beach Airpark as examples within Queensland, and Temora and Narromine in New South Wales.

The triangular area of land between the Runway 30 and 35 ends at the southern end of the Airport is an appropriate location for the Airpark Precinct. This area has a number of advantages:

- it is adjacent to existing residential areas, which provides ground access and engineering services connections;
- it has good connectivity potential to both runways; and
- being on the opposite side of the airport to the other major aviation activities, and substantially self contained, it can be specifically configured to respond to any security requirements.

Given that the vast majority of general aviation aircraft fall within Code A dimensions it is reasonable to adopt this as the design aircraft for the Airpark facility. This encompasses the range of Cessna, Piper and Beech singles and light twins, and those of many other manufacturers, as well as the recreational aviation class of aircraft.

The Van Tessel and Hillman Precincts

The Precincts designate the areas within the airport intended for the development and accommodation of:

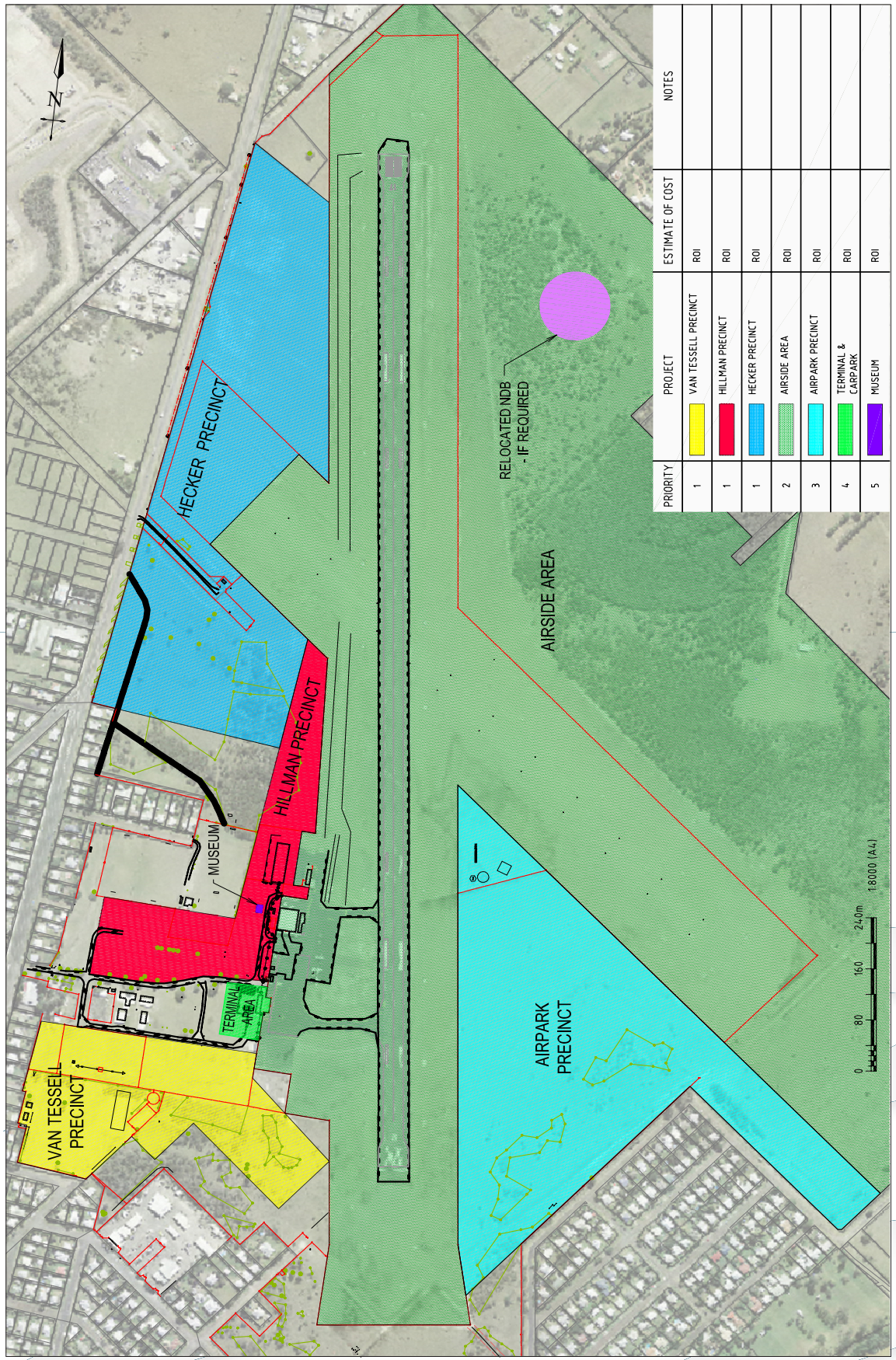
- General aviation and related service and support activities; and
- Light aviation industry and freight services.
- Future aviation industry developments which require airside accessibility; and
- Commercial activities that will contribute to the economic viability of the airport and the development of the aviation industry within the region.

The areas northwest and southwest of the terminal have been designated for future light or heavy leasehold industry aviation developments. The area would accommodate approximately 10 x 1,000 – 2,000m2 lots with potential for airside access and a taxiway at the northern end. The development of the site will be dependant on the demand for airside aviation hangars and commercial viability to warrant investment.

Types of development/industries

- Aircraft servicing and maintenance;
- Aircraft construction;
- Large flight training schools including simulation models and training facilities;
- Charter operators;
- Small flying school operations;
- Recreational and sports aviation activities;
- Aero club;
- Aerial photography and surveying;
- Light industry aircraft maintenance and servicing;
- Private aircraft hangars; and
- Itinerant aircraft.

Future Airport Layout



The Hecker Precinct

Activities which may be potential candidates for the Hecker Precinct could be as follows:

- A factory and clearance outlet complex, which would be quite separate from standard;
- Retailing complexes within the Maryborough and surrounding areas;
- Superstores, across a range of activities including hardware, personnel services, pharmaceutical's, etc;
- Tourism and hospitality activities, including tourist facilities requiring large sites, (although these may not be large employment generators);
- hotels and fast food outlets;
- Sport and recreation activities, including an indoor stadium or gymnasium; and
- Services trades, particularly relating to the aviation industry, the marine industry and building trades.

The Terminal Area

The Terminal Area designates the area within the airport intended for the development and accommodation of:

- The terminal building and related support activities;
- Passenger drop-off zones and car parking;
- Visitor information and retail trade; and
- Freight facilities.

Passenger Terminal

The existing passenger terminal site is Heritage listed and currently leased for flying school activities. Any future terminal replacement will need to take into consideration the need for areas for check-in, passenger lounges, departure gate facilities, office space and storage facilities and would only be considered if RPT services resumed, which is not envisaged during the life of this plan.

General Aviation

In the western sector of the airport, a general aviation tie down area north of the Aero Club has been identified to increase the available aviation space which would necessitate moving of the existing airside boundary. This would greatly improve the usability of the area and has potential for aviation industry to make use of the proposed Industry freehold in the land further to the west on the landside of the fence. Similarly, sealing of the grass aprons to the south of the terminal adjacent to the proposed southern Industry freehold areas also increases the opportunities for activities such as the Wings and War Birds events and allows for expansion of these types of events.

Emergency Services

The Royal Flying Doctor Air Ambulance Service has convenient airside access to the apron to facilitate access to the runway and for patient transfers.

Pedestrian Facilities

Future car park and road network planning will need to include improved pedestrian access, facilities (e.g. bus shelters) and safety, when catering for increasing growth around the Airport.

Freight

An area closer to the passenger terminal has been identified for future freight or facilities associated with commuter airlines. Sufficient apron area will be available if needed to accommodate freight aircraft parking.

Aviation Support Facilities

Refuelling Facilities

Refuelling for aircraft is currently available via bowsers on the apron close to Hangar 132.

Airside Area

The Airside area designates the area within the airport intended for the development and accommodation of:

- The primary runway and associated taxiways;
- Aircraft navigational aids and communications equipment;
- Emergency services (i.e. fire and rescue); and
- Aircraft parking, storage and other facilities for the operation of aircraft.

Runways and Taxiways

Runway 17/35

No changes are proposed to Runway 17/35, which will remain 1587m long x 30m wide. The runway strip may be widened to 150m to better facilitate non-precision instrument approaches.

Runway 12/30

If the need arises to improve the development potential of the strip of land fronting Saltwater Creek Road, it is possible to relocate the Runway 12 end, 110m to the south-east along the existing centreline. To compensate for the 110m adjustment, it would be necessary to add an additional 110m at the Runway 30 end so as to retain the overall runway length at 885m. At the same time the runway width could be reduced to 23m to meet the CASA Manual of Standards requirements for Code B operations. Similarly the runway strip width can be reduced from 90m to 80m in line with the CASA Manual of Standards requirement for Code 2 runways. The 110m extension of the runway to the south-east may require lopping of trees along the road servicing the sewerage treatment plant, to meet Obstacle Limitation Surface requirements.

Taxiways

No changes are proposed to the main regular public transport and general aviation Code C taxiways which are retained in their current locations.

Other Airside Facilities

The Master Plan makes provision for the illuminated wind direction indicator to be relocated to a standard position in relation to the Runway 35 end, as its current location will be impacted by the proposed Airpark development.

If it becomes necessary to relocate the non-directional beacon, a position in the north-east sector has been identified.

The Bureau of Meteorology's automatic weather station also sited near the illuminated wind direction indicator adjacent to the Runway 35 end. If the proposed IWDI location is unsuitable to the Bureau of Meteorology on the basis of it not being generally central to the movement area, an alternative location would be in the north-east sector near the intersection of the Runway 17/35 and 12/30 strip edges, and clear of the Obstacle Limitation Surface with respect to the 10m high anemometer mast.

Fire Fighting Services

Fire Fighting Services are not required and there is little likelihood of this changing in the life of this Master Plan

Helicopter Landing Pad and Parking

There is no Helicopter landing pad provided however, a helicopter parking space is provided near the Jet-A1 fuelling position. There is limited helicopter activity at the Airport with an average of less than 1 landing per day. However a growth in either the tourism or mining sector may see an increase in helicopter activities which may require a designated helicopter landing area being constructed.

Visual and Non Visual Navigational Aids

Obstacle Limitation Surfaces

It is important to protect the immediate airspace surrounding an airport from obstacles in order to prevent aircraft operations from becoming constrained or compromised. For this reason it is necessary to restrict some types of development and land use in the vicinity of airports.

It may be permissible under some circumstances for obstacles to infringe the Obstacle Limitation Surface. PANS-OPS surfaces, however, need to be strictly respected as they provide pilots with assured obstacle clearance in instrument conditions. The current Obstacle Limitation Surface is based on a 150m wide runway strip for Runway 17/35. The 150m width protects the airspace associated with non-precision instrument approaches (NPA). The potential to provide a 150m wide runway strip will ensure FCRC and operators will able to take advantage of these benefits when they become available.

Navigation Aids

If it becomes necessary to relocate the non-directional beacon to a new site on the eastern side of Runway 17/35, Airservices Australia's siting guidelines with respect to adjacent activities will need to be observed. The area to the north east of runway 17/35 remains available should it become necessary to relocate it.

Air Navigation Procedures

Depending on the growth of regular public transport jet traffic at Hervey Bay in the future, it may at some point become necessary to introduce towered operations in order to safely manage traffic volumes which would change the airspace classification. Some limitations may be necessary in terms of altitude over that currently enjoyed, and reconfiguration of the designated Maryborough Flying Training Area (Danger Area 688) is likely to be required.

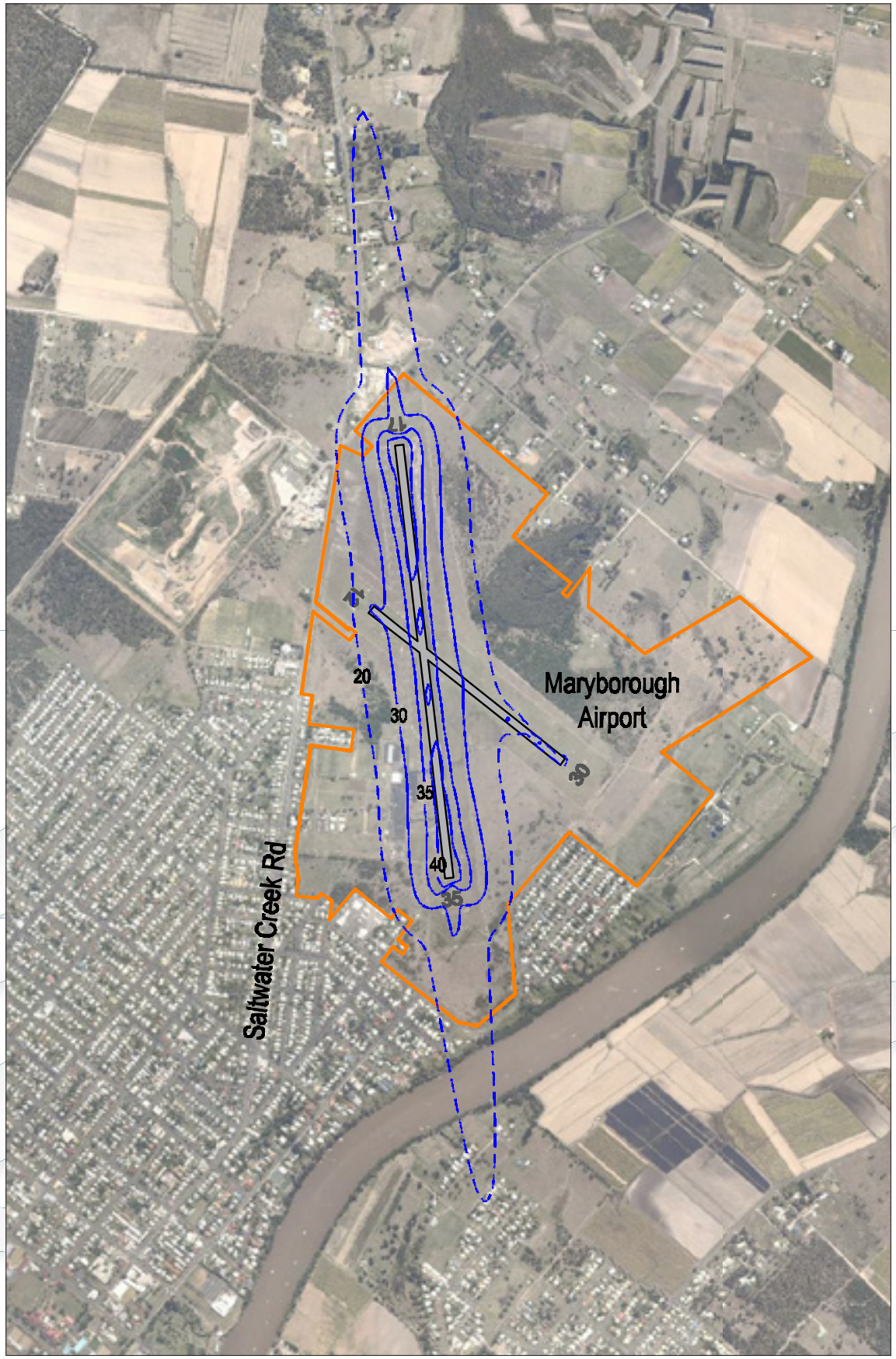
Assessment of Environmental Issues

2031 Australian Noise Exposure Forecast (ANEF)

The 2030/31 ANEF for Maryborough Airport is based on the 2030/31 forecast developed by FCRC which allows for 21,451 fixed wing aircraft movements and 144 helicopter movements per annum.

The maximum number of aircraft movements that could be accommodated on the proposed ultimate development runway system has been assessed as being approximately 205,000 movements. The ANEF is a stand alone document and available through the Fraser Coast Regional Council. A snapshot of the ANEF contours map is provided.

Snapshot of ANEF contours map



Noise Management

Aircraft Noise

The effective management of the impact of aircraft noise is critical to the development and operation of the airport. To achieve a balance between the economic benefit of the airport and the environmental impacts of the airport, it is important to ensure community engagement, awareness and involvement in the management of this issue.

Future Development

The Fraser Coast Planning Scheme imposes relatively low residential development densities surrounding the airport, thereby minimising the increase in population in those areas most affected by aircraft noise. All new developments should ensure that appropriate acoustic treatments are conditioned in accordance with AS 2021 to minimise the impact of aircraft noise.

Development Noise

Noise generated as a result of development will be managed in Development Approvals and/or Major Works Plans. Noise impacts must be reduced by efficient site planning for operating hours.

Flora and Fauna

Land Contamination

Under the Environment Protection Act, Fraser Coast Regional Council has a monitoring, licensing and enforcement responsibility due to activities undertaken on the airport land, including fuel storage and supply, panel beating and spray painting, and other environmentally relevant activities. Accordingly, the Standard Airport Lease documents contain specific contamination provisions which prohibit contamination, require compliance with environmental law and require remediation upon expiration of leases of any contamination placed on site by the departing lessee.

Implementation

The proposed development is based on an assessment of future requirements and forecasts contained within the Master Plan. Changing economic conditions and the emerging aviation environment may impact on the indicative timeframe for investment and development of the airport.

Definitions

Flight Training

Reference to flight training explicitly excludes the establishment of helicopter training facilities at both Hervey Bay and Maryborough Airports.

For more information

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