

City of Albany

Publication

Albany Airport – Master Plan 2012

Revised Airport Development - Plan 2020

Document Approval			
Document Development Officer:		Document Owner:	
Manager Governance & Risk (Airport Operations)		Executive Director Corporate & Commercial Services	
Document Control			
File Number - Document Type:	CM.STD.1 – Business Plan		
Synergy Reference Number:			
Status of Document:	Council decision: (2012) Endorsed. Administrative decision: Working document, approved.		
Quality Assurance:	Executive Management Team		
Distribution:	Internal Document Public Document post endorsement by EMT.		
Document Revision History			
Version	Author	Version Description	Date Completed
1.0	AECOM	© AECOM Australia Pty Ltd (AECOM). All rights reserved.	20 July 2012
1.1	MGR	Reviewed and amended, appended with Asset Management Framework & Modelling.	26 November 2019
1.2	MGR	Amended updating: Executive Summary, Introduction, History of Airport Development, Airport Master Planning Revision Process, Previous Development Strategies, Forecast Assumption v Actual Passenger Forecasts, Airport Site Evaluation – Summary of Future Need, Future Needs, Airport Site Evolution, Design Aircraft, Asset Management.	7 August 2020

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Associated Documents

Strategies, references, or other documents that have a bearing on this plan:

- 00a_Albany Airport – Asset Management Framework – 2020 (Copy held by Dept. of Transport WA)
- 00b_Council Report – November 2019 – Runway Surface Upgrade & Asset Management Framework
- 00c_Council Report – September 2019 – Racewars Motorsport Event (Runway 14/32)
- 00d_Council Report – December 2016 – Retirement of Instrument Landing System (ILS)
- 00e_Council Report – December 2016 – Airport Metered Parking
- 00f_Albany Airport Future Development Plan (Master Plan 2012) – August 2012

EXECUTIVE SUMMARY

The previous 2012 review provided a road map for development for Albany Airport through to 2032.

AECOM worked closely with the City of Albany, the airport operations staff, key stakeholders and external stakeholders and government agencies in carrying out the review.

The Master Plan should be reviewed every five years to allow for continual update of the passenger forecasts as these forecasts are critical to triggering airport expansion projects.

Background and major changes since the last review, being:

- **Regular Public Transport (RPT):**

- In February 2016, Virgin Australia withdrew from offering services to Perth to Albany and Esperance citing lack of profit. Type of Aircraft: Seating Capacity:
- In the same month Regional Express (Rex) took over, providing 23 weekly return flights to Perth.
- The Albany to Perth route continues to be serviced by a SAAB 340 aircraft with a seating capacity for 32 passengers.

- **RPT passenger:**

- For the medium term, turbo propeller aircraft operations continue to be the predominant aircraft type serving Albany Airport.
- Jet aircraft, specifically the F100 (up to 100 seats) have been introduced to serve the Fly in / Fly out market.

- **Passenger screening:**

- Albany Airport commenced Band 5 screening in July 2012 and transitioned to Band 4 in February 2013.
- In December 2016, screening was abolished as Rex's smaller plane, being the SAAB 340 does not require passenger screening.
- Screening equipment was then subsequently moth-balled.

- **Asset Management Modelling:**

- The City of Albany working with the Department of Transport (DoT) has developed a Regional Airport Asset Management Plan (AMP).
- The modelling used in the AMP indicates that the City of Albany aerodrome is socially sustainable, i.e. it raises enough revenue to recover operating and capital costs.

There is no change to the forecast that passenger demand will need to reach around 120,000 per annum to be attractive to the airlines to deploy larger seating capacity aircraft in the form of B737-800 and A320-200 (up to 165 seats).

Such passenger numbers are not forecast to be reached in the 20 year planning horizon, however for safeguarding purposes these aircraft have been adopted for the longer term planning of the aerodrome beyond 2032.

Prior to COVID-19 (March 2020), passenger numbers were building to around 62,000 per annum.

1. INTRODUCTION

REX Airlines currently operates regular public transport services between Albany and Perth on a regulated route under a five-year Deed.

Rio Tinto operate a Fly-in / Fly-out (FIFO) closed charter service from between Albany – Boolgeda – Geraldton – Albany.

The City of Albany designated Airport Manager, has undertaken consultation with key stakeholders including the City, airport tenants, Rex and Virgin Australia and relevant government departments.

Development proposals and modification detailed within the Master Plan follow the Civil Aviation Safety Authority (CASA) guidelines, specifically those contained within the Manual of Standards Part 139 – Aerodromes (MOS139).

1.1 Albany (Harry Riggs) Regional Airport

Albany Airport is located 10km north of the city centre and is the only airport serving the city. It provides for airline services to and from Perth and also Royal Flying Doctor Services, general aviation, flight training, RAAF operations, seasonal emergency fire-fighting, and airfreight requirements. The airport serves the business community, local residents, tourists and a vibrant general aviation sector.

Albany Airport as the Gateway to the South West serves the immediate region comprising the City of Albany and the surrounding local authority Shires of Denmark and Plantagenet, and also provides access to the Great Southern Region, with a regional population of approximately: **49, 531**.

LG Authority	Population ABS ERP 2019	Land Area ha	Population density <i>Persons per hectare</i>
Albany	38,053	431,048	0.09
Denmark	6,215	186,007	0.03
Plantagenet	5,263	487,534	0.01

Source: profile.id.au

1.1.1 History of Airport Development:

Albany Airport (IATA code ALH, ICAO code YABA) was constructed by the Royal Australian Air Force in the early 1940's and was extensively used as an air base during World War II. Airport ownership was transferred to the Department of Civil Aviation following the war, and a passenger and mail service was commenced by Airlines of WA Limited.

The airfield was rationalized as a two runway aerodrome, with the principal gravel runway being runway 14/32 and the cross field runway 05/23.

In 1984, the Department of Civil Aviation funded the reconstruction and sealing of the main 14/32 runway prior to the Shire of Albany accepting ownership and management responsibility under the provisions of the aerodrome Local Ownership Plan.

The present Terminal building was constructed by the Shire of Albany in 1988, and an open grade asphalt overlay was applied to runway 14/32 in 1984. The 05/23 Runway was re-sheathed with gravel in 1995 and has since been sealed.

In 1997, the 14/32 runway was extended by 200m at the southern end to provide an overall length of 1800m.

The terminal building was expanded in 1998 to meet the needs of increased passenger numbers.

An Instrument Landing System (ILS) was installed on the 14 Runway end in 2000 and was de-installed in 2016.

The terminal was refurbished in 2007 and modified in 2012 to accommodate passenger screening, complimented by the preparation of a new master plan (RADS contribution: \$1.25m. Total project cost: \$2.5m.)

1.2 Airport Master Planning Revision Process

The Master Plan seeks to provide an easily understood planning framework to cover both the aviation and non-aviation development of the site over the next 20 years.

The revised Master Plan also provides indications of the ultimate development potential of the airport site so that such long term airport expansion can be protected through control of surrounding developments that could constrain the airport in future.

A continued realistic representation of the future airport layout is required that maximises the capacity of the site in a way that is compatible with the environment, local community, and rational development of facilities. At the same time there must be flexibility to cater for future changes in response to the dynamic nature of the aviation industry.

Post the adoption of the 2012 Master Plan, the following projects have been undertaken:

- **Year 2016-17:** Project: Partial reseal & overlay main runway, construct new taxiway and upgrade RFDS infrastructure. RADS contribution: \$575,000 ex GST. Total project cost: \$1.5m ex GST.
- **Year 2017-18:** Project: Runway surface improvements. RADS contribution: \$40,675 ex GST. Total project cost: \$81,350 ex GST.
- **Year 2018-19:** Project: Drainage Infrastructure Improvements. RADS contribution: \$236,247 ex GST. Total project cost: \$473,587 ex GST.

1.2.1 Previous Development Strategies

The 2012 Master Plan (Plan) defined the following five key objectives:

- (1) The Plan will reflect Albany Regional Airport's role as a gateway to Albany and the region.
- (2) The Plan will identify opportunities for the City of Albany to raise the profile of the Airport's location.
- (3) The Plan will consider short (0-5 years), medium (6-10 years) and long term (11-20 years) requirements and opportunities for expanding aviation operations and utilising airport land.
- (4) The Plan will be written in plain English, for review and consideration by members of the local community.

1.2.2 Forecast Assumption v Actual Passenger Forecasts

The previous plan did not allow for the impact of global events such as COVID-19, demonstrated by the forecast passenger numbers:

- Standard annual growth forecasts of **2.5%** based on historic demand characteristics of the previous 25 years.
- Immediate passenger increases post 2012 associated with single operator FIFO movements.
- Medium term growth of an additional **2.5%** relating to on-going dual operator demand in and out of Albany.
- Tourism growth "bulge" over the next 2-5 years associated with various ANZAC commemorative events.

What materialised:

Years	Passenger Movements	Aircraft Movements	Actual v Forecast
2012	58998	1999	Baseline
2013	58903	1991	Decrease
2014	60055	1982	Increased Passengers Decrease in Aircraft Movements
2015	53557	1529	Decrease
2016	54407	2222	Increase
2017	56561	2326	Increase
2018	60633	2329	Increase
2019	62241	2342	Increase
2020	*	*	COVID-019 Decrease

**Post March 2020, COVID caused:*

- A reduction in RPT Flights between Perth to Albany from 23 to 8 flights per week.
- An increase in RIO TINTO closed charter flights to facilitate social distancing.

Passenger forecast modelling will not be utilised in the short to medium term.

1.2.3 Airport Site Evaluation – Summary of Future Needs

The Master Plan considers the future needs of the airport in the short, medium and long term, and also presents the potential ultimate development opportunities.

Albany operations continue to be monitored and referenced to the Master Plan 2012 (as the baseline).

A review is conducted every 5 years to allow for any deviations from the forecasts.

1.2.4 Future Needs:

Albany Airport is a key Regular Public Transport (RPT) airport in Western Australia, which supported around 62,000 RPT passengers per annum on 23 return services per week between Albany and Perth pre COVID.

Along with general aviation services, weekly charter services supporting the Pilbara fly-in fly-out workforce, the Royal Flying Doctor Service and Royal Australian Air Force also use the airport.

What was not identified in the previous Master Plan was that since 2004/05 fire season, a fixed wing aerial fire suppression aircraft base has been established in Albany.

Actions Required	Comment
<p>There is expected to be fairly major works over the next 12-18 months, this will include MOS139 compliance works (runway 14/32 strengthening, aprons works and emergency services apron).</p>	<p>Testing was conducted in December 2019 to determine the pavement condition. The data collected will be available for analysis of future work requirements.</p>
<p>Project delivery methodology: The decision on which approach to take will be dependent on the scale of the works program as well as the ability to attract suitable contractors to Albany.</p>	<p>Manger Governance & Risk designated to be the Airport Accountable Manager responsible to CASA for Airport Operations.</p> <p>City Engineering to manage works in consultation with appointed aerodrome experts and the Accountable Manager.</p>
<p>Since 2004/05 fire season, a fixed wing aerial fire suppression aircraft base has been established in Albany.</p> <p>The Albany Primary Response Area extends to 120km from Albany Regional Airport; however, the aircraft based at the Albany Airport support fire suppressions operations across the state.</p> <p>The current allocated aerial fire suppression aircraft located in Albany are:</p> <ul style="list-style-type: none"> • 2 x 802AT (3150lts per aircraft) SEAT • 1 x AAS fixed wing platform <p>Currently the water used to fill the fire suppression aircraft (water bombers) is supplied from an airside fire hydrant relying on mains water pressure and the aircraft are parked up without cover.</p>	<p>The proposal is to construct a dedicated emergency services apron will:</p> <ul style="list-style-type: none"> • Mitigate movement conflict between fire suppression aircraft ground operations and other aerodrome users (i.e. General Aviation and Regular Passenger Transport (Rex Airlines) aircraft. • Provide a dedicated fast fill water source for refilling of the fire bombers, which will also mitigate the possible damage to the fire hydrant system. • Facilitate the future development and building of hangars to protect the emergency services aircraft.
<p>Improved emergency helicopter landing sites.</p>	<p>It is a preference from Emergency Helicopter Pilot to land on tarmac to reduce debris.</p>
<p>Upgrade approach navigation aids for all runways</p>	<p>Safer and more accessible airport for communities serviced by the aerodrome in all weather conditions:</p> <ul style="list-style-type: none"> • Albany Regional Hospital: Patient transfers, visiting specialists. - Business: Tourism, business and agriculture sectors. • Department of Biodiversity, Conservation and Attractions (Parks and Wildlife Service): Fire Spotting and Water Bombers. – Education Institutions: Visiting lectures, relief teachers, rural student and parent visitation. Aviation Schools. • Emergency Services: Department of Fire & Emergency Services (Fire, State Emergency

Actions Required	Comment
	<p>Service), St John Ambulance Service.</p> <ul style="list-style-type: none"> • General Aviation Community. • RAAF: 2FTS, annual flight training. • Royal Flying Doctor Service (Patient transfers and emergency response). • Western Australian Police (WAPOL).

1.2.5 Airport Site Evolution

Actions Required	Comment
Facilitate additional General Aviation Hangars.	Addition leased areas to be developed.
Identify a location to facilitate aerodrome ground handling training school.	Subject to support from education sector (government /private).
Development of an Emergency Services Aviation Precinct for Fire Suppression Aircraft Operation Precinct.	Refer to 1.2.4 (Future Needs)
Maximise leasing opportunities to offset aerodrome maintenance costs.	Explore economic development opportunities to develop a transport hub within the Albany Airport Precinct.

2. Design Aircraft

Airport dimensions, setting out, pavement requirements, airspace needs and terminal building space planning are established in relation to a Design Aircraft.

The Design Aircraft represents the largest aircraft that will regularly use the airport are detailed in the Master Plan 2012.

The Civil Aviation Safety Authority (CASA) and its Civil Aviation Safety Regulations (CASR's) Part 139 provide the guidelines for airport planning and design.

The CASA Manual of Standards (MOS) Part 139 – Aerodromes is the main reference document used.

Aircraft types are grouped together based on their wing span, wheel track and their runway length requirements into internationally recognised 'codes' as follows:

Code Number	Aeroplane reference field length	Typical aeroplane
1	< 800 m	SAAB 340, F50, F100
2	800 m but < 1200 m	F50, F100
3	1200 m but < 1800 m	F50, F100, ATR72
4	1800 m and above	B717, B727, A320 / B767

Aerodrome Reference Code

Timeframe	Aerodrome Facility Reference Code	Aircraft Types
Current	3C	SAAB 340, F50, F100 (see Note 1)
Short Term	3C	F50, F100
Medium Term	3C	F50, F100, ATR72
Long Term	3C	F50, F100, ATR72
Ultimate	4C / 4D	B717, B727, A320 / B767

It is still considered appropriate for the purposes of Master Planning that the City adopt Code 4D / 4C for safeguarding ultimate design, and 3C for medium to long term development requirements of runway 14/32.

Based on the above, it is recommended that the Design Aircraft for the short and medium term are the F100 and F50.

It is also considered appropriate that the City continues to adopt:

- Code 4D / 4C for safeguarding ultimate design;
- 3C for medium to long term development requirements of runway 14/32; and
- [Strengthen the main runway 14/32 to accommodate the landing of 4C aircraft under dispensation.](#)

Recommendation:
It is recommended that the strengthening of the main runway 14/32 is undertaken to accommodate the landing of 4C aircraft under dispensation.

3. Asset Management

Asset renewal involves the replacement or refurbishment of an existing asset with a new asset capable of delivering the same level of service. Forecasting for asset renewal requirements is based on the Lifecycle Cost Model (LCCM).

The renewals investment at Albany Airport is dominated by the cyclical renewal of the runway surfacing which is predicted to occur on a 15 yearly cycle. The runway requires regular condition assessment (captured as an operational expenditure) to optimise the timing and type of asset renewal. And 2035 associated with the Runway 14/32 renewal.

The key capital expenditure projects and associated costs for the Airport over the short-term is detailed in the associated documents.

It is evident that alternative sources of funding to cover the forecast shortfall in 2020 and 2035 associated with the Runway 14/32 renewal is required, such as Federal and State government funding programs.

CCS195: REGIONAL AIRPORTS PROGRAM – GRANT OPPORTUNITY

Land Description	: Albany (Harry Riggs) Regional Airport
Proponent / Owner	: City of Albany
Business Entity Name	: City of Albany
Attachment	: <ul style="list-style-type: none">• Confidential (<i>Draft submission against funding criterion & Briefing on Upgrading Albany Code 3C to meet new Manual of Operating Standards – MOS139</i>) – Distributed Separately
Report Prepared By	: Manager Governance & Risk (Airport Operations) - S Jamieson
Responsible Officers:	: Acting Executive Director Corporate Services - D Olde

STRATEGIC IMPLICATIONS

1. This item relates to the following elements of the City of Albany Strategic Community Plan:
 - **Themes:** Leadership, Clean, Green & Sustainable.
 - **Objectives:**
 - To provide strong, accountable leadership supported by a skilled and professional workforce; and
 - To build, maintain and renew city assets sustainably.
 - **Community Priority:**
 - Provide positive leadership that delivers community outcomes.
 - Design, construct and maintain infrastructure cost effectively in a manner that maximise its life, capacity and function.

Maps and Diagrams: Follow this report.

In Brief:

- Major Runway renewal works have been identified as being required in 2020.
- The Federal Governments Regional Airport Program Round 1 funding (33.3% matched) is now open, with applications closing on the 12 December 2019.
- Seek Minister for the Department of Transport (WA) approval to contribute towards the project.
- Approve the matched in-kind contribution from the Airport Reserve of \$1.667m.

RECOMMENDATION

CCS195: RESOLUTION

VOTING REQUIREMENT: SIMPLE MAJORITY

MOVED: COUNCILLOR STOCKS

SECONDED: COUNCILLOR BENSON-LIDHOLM

THAT Council:

- (1) **NOTE that Regional Airports, such as the Albany (Harry Riggs) Regional Airport provide significant infrastructure investment, whilst not having the large passenger volumes to support a viable cost recovery model; and**
- (2) **NOTE modelling used in the City's Asset Management Plan indicates that the Albany airport is socially sustainable (i.e. it only raises enough revenue to recover operating and current infrastructure capital costs).**

CCS195: RESPONSIBLE OFFICER RECOMMENDATION (continued)

(3) APPROVES formally:

- Advising the State and Federal Government funding bodies that the City will financially commit to future runway renewal works, and APPROVE transferring \$1.667 million from the Airport Reserve, subject to a successful funding application; and
- Requesting both the Department of Infrastructure, Transport, Cities and Regional Development (Federal) and the Department of Transport (State) seek assistance from Airservices Australia to complement the runway upgrade with current air-navigational approach technology to address concerns raised by the Royal Flying Doctor Service (RFDS) in regards to Airport accessibility during inclement weather.

CARRIED 12-0

BACKGROUND

2. Regional airports are required to provide significant infrastructure investment, whilst not having the large passenger volumes to support a viable cost recovery model.

Asset Management:

3. The City of Albany has been working with the Department of Transport (DoT) for the past 18 months to develop a Regional Airport Asset Management Plan (AMP).
4. The modelling used in the AMP indicates that the City of Albany aerodrome is socially sustainable, i.e. it raises enough revenue to recover operating and capital costs.

Asset condition:

5. The Albany Airport has an average asset condition across all assets of between Good (2) and Fair (3) on a scale of Excellent (1) to Failed (5).
6. The terminal building has recently been upgraded and is in Good (2) condition, however the Department of Transport (WA) Asset Verification Inspection assessed and rated the main runway as in Poor (4) condition.
7. The Asset Verification Inspection by GHD identified that the main runway asphalt surface is approaching end of life and requires replacement within the next two years.
8. The City of Albany (CoA) based on a previous inspection has the runway rated as Fair (3) condition.
9. It is requested that the City requests the Minister for Transport's approval to contribute towards the project and support the City's application for federal grant funding.

DISCUSSION

Asset Replacement, Upgrades and Disposals:

10. Asset renewal involves the replacement or refurbishment of an existing asset with a new asset capable of delivering the same level of service. Forecasting for asset renewal requirements is based on the Lifecycle Cost Model (LCCM).

11. The renewals investment at Albany Airport is dominated by the cyclical renewal of the runway surfacing which is predicted to occur on a 15 yearly cycle. The runway requires regular condition assessment (captured as an operational expenditure) to optimise the timing and type of asset renewal. And 2035 associated with the Runway 14/32 renewal.
12. Table 1 summarises the key capital expenditure projects and associated costs for the Airport over the short-term.

CAPEX	Asset	Component	Year	Valuation Cost (FY18)
Renewal	Runway 05/23	Surface	2019	\$348,662
Renewal	Hanger Area 2	Surface	2019	\$179,245
Renewal	Sealed Shoulders	Surface	2019	\$132,906
Renewal	Hanger Area 1	Surface	2019	\$52,054
Renewal	Runway 14/32	Surface	2020	\$4,917,423
Renewal	Terminal Area and Tie Down Area	Surface	2020	\$563,182
Renewal	Taxiway A	Surface	2020	\$161,863
Renewal	Taxiway B	Surface	2020	\$23,681

Table 1 Summary of Planned Capital Expenditure Projects - Source LCCM - Capital)

13. The graph in Figure 1 highlights an expected funding short fall when the major capital expenditures related to airport pavements.

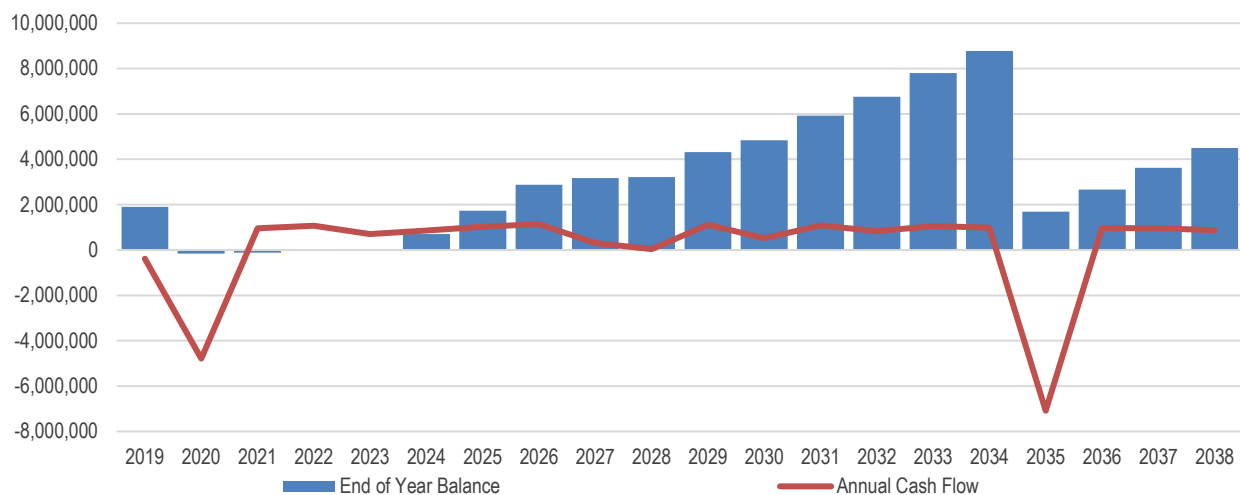


Figure 1 Albany Airport Reserve Balance 2019-2039

14. It is evident that alternative sources of funding to cover the forecast shortfall in 2020 and 2035 associated with the Runway 14/32 renewal is required, such as Federal and State government funding programs.
15. The objective of the funding program is to improve the safety and accessibility of airports or aerodrome in regional areas of Australia by assisting airport or aerodrome owners/operators to undertake essential works, promoting aviation safety and access for regional communities.
16. The funding is not available for upgrading the current runway rating to take larger aircraft.
17. A pictorial overview of upgrading the current Albany, Aerodrome Facility Reference Code 3C to meet the new Manual of Operating Standards (MOS) that comes into effect on the 2 August 2020, is detailed in the confidential attachment. This overview also details what would be required to upgrade to a Category 4C Aerodrome.

19. In summary the following provides a definition of the Aerodrome Facility Reference Codes are made up of a **Code Number** and a **Code Letter**:

Aeroplane reference field length *	Code Number
Less than 800 m	1
800 m up to but not including 1200 m	2
1200 m up to but not including 1800 m	3
1800 m and over	4

Note: * The aeroplane reference field length is the minimum field length required for take-off at maximum take-off mass, at sea level, in standard atmospheric conditions, in still air and with zero runway slope. It is set out in the aeroplane flight manual.

Wing span	Outer main gear wheel span *	Code letter
Up to but not including 15m	Up to but not including 4.5m	A
15m up to but not including 24m	4.5m up to but not including 6m	B
24m up to but not including 36m	6m up to but not including 9m	C
36m up to but not including 52m	9m up to but not including 14m	D
52m up to but not including 65m	9m up to but not including 14m	E

* Outer main gear wheel span (OMGWS) is the distance between the outer edges of the main gear wheels. This value can be found in the aeroplane's operations manual.

20. The following provides an overview of the types of aircraft that can currently land at the Albany Airport, without being given dispensation:

AEROPLANE TYPE	REF CODE
ATR 42-200	2C
Cessna 550	2C
DHC-8:	
100	2C
300	2C
Lear Jet 55	3A
IAI Westwind 2	3A
BAe 125-400	3B
Canadair:	
CL600	3B
CRJ-200	3B
Cessna 650	3B
Dassault-Breguet:	3B
Falcon 900	
Embraer EMB 145	3B
Fokker F28-2000	3B
Metro 23	3B
Shorts SD3-60	3B

AEROPLANE TYPE	REF CODE
Bae:	
Jetstream 31	3C
Jetstream 41	3C
146-200	3C
146-300	3C
Bombardier Global Express	3C
Embraer:	
EMB 120	3C
EMB 170	3C
Fokker:	
F27-500	3C
F28-4000	3C
F50	3C
F100	3C
SAAB SF-340	3C

Note: The Fokker F100 lands regularly at the Albany Airport under dispensation for weight.

21. The grant funding assessment criteria used and justification (in part) that will be presented in support of the submission is detailed in the confidential attachment.

GOVERNMENT & PUBLIC CONSULTATION

22. **Consult:** Obtain stake-holder feedback on analysis, alternatives and decisions.
23. **Collaborate:** Partnering with the Civil Aviation Authority, Air services Australia, Regional Express (Rex), subject matter experts, state and federal government to consider upgrade alternatives and the identification of the preferred solution.

Type of Engagement	Method of Engagement	Engagement Dates	Participation	Statutory Consultation
Consult & Collaborate	Face to face / formal correspondence	Quarterly	Stakeholders, federal, local, state, and airline (Rex)	Community Consultation Group
Consult & Collaborate	Meetings, document collaboration, email and telephone	On-going	Local, state appointed consultants	

STATUTORY IMPLICATIONS

24. The *Civil Aviation Act 1988* (the Act) establishes the regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, with particular emphasis on preventing aviation accidents and incidents.
25. The *Part 139 (Aerodromes) Manual of Standards 2019* (the MOS) sets out the standards for the construction, maintenance and operation of certified aerodromes, and the standards for radio communications facilities at all aerodromes.
26. The MOS prescribes, with quantitative dimensional precision, safety standards for a very wide range of technical matters pertaining to the physical construction and maintenance of a certified aerodrome, and the safety of landings, take-offs and surface movements.
27. *Local Government Act 1995*, section 6.8(1)(b): A local government is not to incur expenditure from its municipal fund for an additional purpose except where the expenditure is authorised in advance by resolution. Voting Requirement: **Absolute Majority**.

POLICY IMPLICATIONS

28. Nil

RISK IDENTIFICATION & MITIGATION

29. The risk identification and categorisation relies on the City's Enterprise Risk and Opportunity Management Framework.

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
Financial & Reputational. <i>Financial savings not passed onto consumer, noting there is a community expectation that savings should be passed onto customers to reduce community fares, and in-turn facilitate a tourism visitor stimulus to the Albany and the region.</i>	<i>Likely</i>	<i>Moderate</i>	<i>High</i>	<i>Consider utilising savings made through Commonwealth and State funds to reduce REX Albany community fares.</i> <i>Include this in the funding proposal to both the State and Federal government funding bodies.</i>

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
<i>Analysis of the cost modelling contained within the AMP may identify potential positive funding benefits, such as reduced asset management costs.</i>				
Operations & Community Safety: <i>Risk that the upgrade funding will not address, concerns raised by aviation operators.</i>	<i>Unlikely</i>	<i>Major</i>	<i>Medium</i>	<i>Clearly justify the rationale for the City's desire to improve safety, as articulated in the report.</i> <i>Seek additional funding.</i>
Opportunity: <i>Meet our communities' expectation for a safe aerodrome that is accessible in all weather.</i>				

FINANCIAL IMPLICATIONS

30. The full operational cost including depreciation of the Albany Airports assets still results in a subsidised operating result.
31. Therefore, seeking funding support is crucial.

City of Albany Contribution:

32. \$1.667 million from Airport Reserve (noting contribution can include, in-kind at \$39.00 per hour, for works conducted in-house by City staff).
33. Current balance of the Airport Reserve is \$2.355m (*actual 30 June 2019*)
34. Based on this contribution, the forecast closing balance for 30 June 2020, will be \$923 thousand.

Requested financial assistance:

35. Western Australian Government, **\$1.667m**, as follows:
 - a. \$ 1.08 million in 2020-21 Financial Year; and
 - b. \$ 0.587 million in 2021-22 Financial Year.
36. Commonwealth Government, \$1.667 million, noting the agreement goes out to June 2022.

Community Fares:

37. The City has collaborated with Regional Express (Rex) to deliver a highly successful community fare on the Albany/Perth route, which has seen a significant growth in passenger numbers, whilst not increasing the overall cost of airport fees and charges to Rex.
38. The three-year agreement commenced on 1 July 2017.
39. The City entered this agreement in good faith both parties agreed to include the requirement to provide a community fare on the Albany route at the set price.
40. As part of the current agreement, the City also agreed to fix the Rex Airport fees and charges (with CPI indexation) for the duration of the contract period.
41. The benefits from adopting this position was premised on:
 - a. Continuing to support the growth of the Rex's RPT passenger service and delivering improved socio economic benefits to the region,
 - b. Ensuring Rex continue to provide a low Community Fare for the next three years,

- c. Supporting and actively promoting growth in new inbound holiday and leisure air travel markets.
42. The City of Albany took the strategic decision to fix airport fees and charges, with the view that the community fare is of significant advantage to our community because it offers affordable airline travel.

LEGAL IMPLICATIONS

43. Legal implications will be addressed in the project management plan and conditions of funding agreement.

ENVIRONMENTAL CONSIDERATIONS

44. Environment implications will be addressed in the project management plan for any physical works.

ALTERNATE OPTIONS

45. No alternate option are proposed.

CONCLUSION

46. Noting the Albany Airports operational cost; which includes depreciation of a significant asset resulting in a subsidised operating result seeking funding support is crucial.
47. It is recommended that Council match funding with a one third contribution of \$1.6m from the Airport Reserve.

Consulted References	:	<ul style="list-style-type: none">• Interpretation Act 1901• Airport Master Plan 2012• City's Airport Asset Management Frameworks and associated asset plans• Civil Aviation Safety Regulations 1998• Part 139 (Aerodromes) Manual of Standards 2019• Regional Airports Program – Round 1 Grant Opportunity
File Number (Name of Ward)	:	GS.APC.457 (All Wards)
Previous Reference	:	Audit & Risk Committee, 5 November 2019 Report AR069.

SCM018: RACEWARS PROPOSED SPONSORSHIP AGREEMENT

Proponent / Owner	: Racewars Group Pty Ltd (RACEWARS)
	: <ul style="list-style-type: none">• Sponsorship Agreement• Business Plan – Racewars Group Pty Ltd• Racewars Event Regulations (Technical)• Racewars Risk Management Plan(s)• City of Albany Risk Assessment (Albany Airport)
<i>The following confidential documents have been circulated to all Elected Members separately under confidential cover:</i>	
Report Prepared By	: Manager Governance and Risk (S Jamieson)
Responsible Officers:	: Chief Executive Officer (A Sharpe)

STRATEGIC IMPLICATIONS

1. This item relates to the following elements of the City of Albany Community Strategic Plan or Corporate Business Plan informing plans or strategies:
 - **Theme:** Smart, prosperous and growing.
 - **Objectives:**
 - Strengthen and grow our region's economic base.
 - Develop and promote Albany as a unique and sought after visitor location.
 - **Community Priorities:**
 - Encourage, support and deliver significant events that promote our region and have a positive economic and social benefit.
 - Promote the "Amazing South Coast" region as a sought after and iconic tourism destination.

In Brief:

- Receive the RACEWARS formal business plan/case; which includes a detailed costing model for Racewars 2020 event; and
- Note the City's Risk in regards to approving the conduct of future Motorsports Events (not limited to RACEWARS).

RECOMMENDATION.

SCM018: RESOLUTION

VOTING REQUIREMENT: SIMPLE MAJORITY

MOVED: COUNCILLOR SUTTON

SECONDED: COUNCILLOR STOCKS

THAT:

- (1) The City of Albany's Risk Exposure in regards to sponsoring and approving Motorsports Events be NOTED.
- (2) The Racewars Pty Ltd, Business Plan and associated supporting documents be NOTED.
- (3) The decision to enter into a Sponsorship Agreement with Racewars Pty Ltd for the next three (3) years be APPROVED.
- (4) The Chief Executive Officer, formally advise Racewars Pty Ltd, that the proposed Racewars Events are subject to the issue of an Event Approval Permit by the City of Albany (Approving Authority) in accordance with the Sponsorship Agreement, noting each event site will be assessed on a site by site basis, for example:
 - The Racewars Principle Event located at the Albany (Harry Riggs) Regional Airport; or
 - The Racewars Middleton Beach Hill Climb Sprint Event.

CARRIED 12-1

Record of Vote

Against the Motion: Councillor Goode

BACKGROUND

2. In July 2018, Council resolved to consider additional funding support (cash or in-kind) for 2019 and 2020 being provided to hold the event.
3. Noting the event cancellation in 2019, at the Ordinary Meeting of Council held in July 2019, Council resolved to request additional information to critique the events viability and evaluate the associated risks prior to making a decision to continue supporting the event.

DISCUSSION

4. It is important that the City has confidence in RACEWARS and its ability to deliver an attractive and safe event.
5. It is acknowledged that the City cannot distance itself from being involved in the airport event noting that the airport may be required to re-open to aircraft to support emergency situations.

Governance Role

6. Under the Environmental Health Regulations the City also has a regulatory role to ensure public events are safe.
7. As the event permit authority, the City's involvement should be limited to providing approval and sponsorship.
8. It is the role of the event organiser (RACEWARS) to organise, manage and regulate the event in accordance with conditions imposed by the permit authority.
9. The City is entitled to rely on RACEWARS to run, organise and manage the event to the requisite standards in order to minimise risk and ensure safety.
10. The Agreement clearly states that the City will take control of airport operations should emergency use be required (RFDS/Water Bombers), and that the City will not be liable for any losses to RACEWARS associated with the emergency use of the airport.

Event Approval

11. The Racewars Event Proposal details major locations, being:
 - a. The Racewars Principle Event located at the Albany (Harry Riggs) Regional Airport; and
 - b. The Racewars Middleton Beach Hill Climb Sprint Event.
12. Both sites are subject to different event approval requirements that must be met prior the City being able to issue an Event Approval Permit.
13. As previously reported in May 2019, the Racewars Middleton Beach Sprint Event 2019 was a trial. Four written complaints were received in regard to this event relating to rubber being left on the road and noise.
14. It is recommended that Council note the feedback received formally and anecdotally, both in support and against the trial event, noting the positive economic impact previously reported.
15. Given the low level of complaints it is not intended to undertake further consultation in relation to the Middleton Beach Sprint Event. Community will be informed of the event.

Promotion and Marketing

16. It is desirable that the City obtain significant publicity and recognition from any event being hosted within this City's jurisdiction.
17. Whilst it is acknowledged that the City may be seen to have responsibility for the event, the event organiser is solely responsible.

Preparation of Event Site(s)

18. The City is obliged, and is expected, to ensure that the area at the airport set aside to be used for the event should be fit for purpose at the point of handover.
19. Anything that makes it more difficult for RACEWARS to prepare the event site (or that creates additional risk), and that is within the control of the City, should be fixed by the City prior to formally handing over the site to RACEWARS.

Racing Safety

20. RACEWARS current position is NOT to seek sanctioning from CAMS.
21. RACEWARS has advised they have ongoing dialogue with race event specialists and key personnel within CAMS and other bodies to ensure Racewars continues to operate to a standard in line with or surpassing the requirements set by CAMS for grassroots-style events.
22. RACEWARS current position is to remain directly insured with a specialist underwriter, who also underwrites other motorsport sanctioning bodies.
23. It is noted that the Racewars Event Technical Regulations have been fully revised and enhanced vehicle safety standards have been mandated.
24. Example of new technical standards being:
 - a. **300km plus:** Mandatory roll over protection, frontal head restraints paired with FIA (Fédération Internationale de l'Automobile) / SFI (SFI Foundation, Inc) approved seating, harnesses and driver protective clothing. An example of additional checks, being: Vehicles fitted with parachutes will be required to have a crew member display the chute pin to the driver and a start line official prior to making a pass.
 - b. **Sub 300km:** Safety measures cascade down to lower performance entrants.
25. To ensure that all competitors are aware of the risk of entering into a runway racing event of this type, a condition of approval will be that:
 - a. The dimensions of the track (i.e. length, width and end of runway surface treatments) must be given to all entrants and visually displayed along the route to the start line;
 - b. Technical safety vehicle treatments, are promoted and made available to all entrants, in order to promote best practice racing safety.
26. The City will continue to encourage RACEWARS to align their technical regulations with CAMS and seek CAMS sanctioning of the event.

GOVERNMENT & PUBLIC CONSULTATION

27. Consultation has been conducted with the City's:
 - a. Insurance Broker (LGIS); and
 - b. Legal counsel.
28. Prior to the event the following consultation will be conducted:
 - a. Airport Operations: Through the Department of Transport's Community Consultation Group, which consists of stakeholders from industry, government, and the aviation community the City will seek permission for the Albany Airport to be closed to aircraft movement from Friday evening to 12.00pm (midday) Monday. As previously communicated, air transport on the Perth to Albany route is historically low on long weekends and it is usual for flights to be cancelled due to insufficient demand.

- b. Royal Flying Doctor & Water Bombers: The Airport will remain open for emergency flights for the Royal Flying Doctor Service. To facilitate emergency use of the airport, Albany Airport staff will remain on duty to ensure safety and operational compliance needs are adhered to, and to respond to any emergency air service requirements. The Royal Flying Doctor Service, in consultation with the Albany Hospital, may schedule non-emergency flights to accommodate the event.
- c. Community & Stakeholder Consultation: The event organiser will conduct community and stakeholder notification, with the access to targeted audiences being facilitated by the City.

STATUTORY IMPLICATIONS

29. Nil

POLICY IMPLICATIONS

Health & Safety:

30. RACEWARS is fully responsible for ensuring its obligations under the OSH Act are met.
31. The Health and Safety clause in the Agreement clearly states that the City assumes no supervisory role with regard to OSH.
32. The City, as the event permit authority, can instruct and/or take direct action if it considers that obligations under the Act are not being met by the event holder.

RISK IDENTIFICATION & MITIGATION

33. The risk identification and categorisation relies on the City's Enterprise Risk and Opportunity Management Framework.

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
Business Operation & Financial. Risk: Accelerated wear and tear to the Albany Airport runway from chip seal loss.	Likely	Moderate	High	Continue to monitor the wear resulting from the event activity. Allocate additional funds from an appropriate budget line.
Reputation. There is a potential risk that the event will continue to grow and existing resources may not be able to accommodate visitor expectations.	Almost Certain	Major	Extreme	Encourage the event organisers to transition this event to be overseen by a dedicated event management entity. A fully revised risk management plan will continue to be developed which formulates potential event approval conditions to mitigate and/or manage hazards as part of the event approval process.
Legal & Reputation. Identified risks are not mitigated and/or managed by the Event Organiser.	Unlikely	Severe	High	The City as the permit authority allocates dedicated compliance staff to monitor and work with the Event Organiser. Further guidance and advice has been taken from the City's insurer. Separate legal review has been undertaken.

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
<p>Safety & Liability: Council is the venue owner, but not a participant or the event organiser.</p> <p>As venue owner Council, (City of Albany), is responsible for ensuring the venue is safe and suitable for purpose, and set out terms and conditions of use.</p> <p>Council is also responsible for ensuring the event organiser will run a safe event.</p> <p>As owner of the venue Council should establish a set of requirements, terms and conditions for the users to meet and comply with.</p> <p>This should include insurance and indemnity requirements.</p> <p>The same level of management for Council events should be required from the event organiser depending on the size of the event.</p>	Unlikely	Severe	High	<p>As a minimum the City will:</p> <ul style="list-style-type: none"> Request full details of event including site plan and conduct its own risk assessment for suitability and safety risks Obtain a risk assessment from organiser Conduct a joint site inspection with organiser to evaluate plans and processes. Detail requirements in writing to the organiser as part of the event approval process. Provide written terms and conditions (including insurance and indemnity) as part of the formal sponsorship agreement. Ensure Event Holder establishes contingencies.
<p>Legal, Reputation & Financial Risk:</p> <p>Future event cancellation results in financial loss.</p>	Possible	Major	High	<p>Condition of Event Approval that Event Cancellation Insurance must be in place to the satisfaction of the City's Insurer (LGIS).</p>
<p>Opportunity: To continue to promote Albany as a unique and sought after visitor location to attend and hold internationally recognised events and meet our Communities priority to encourage, support and deliver significant events that promote our region and have a positive economic and social benefit.</p> <p>It is still believed that there is the potential to develop this event into an internationally recognised event.</p>				

FINANCIAL IMPLICATIONS

34. It is proposed to provide sponsorship of \$35,000 per annum for a period of three (3) years for the RACEWARS event, bound by a formal sponsorship agreement.
35. This sponsorship agreement will cover the event activities for the full program of events for the March long-weekend.
36. Wear of runway surface to be monitored and funded from appropriate budget lines.

Business Case:

37. The business case is acceptable and demonstrates that the event is sustainable, noting that the incorporated association, was set up as a not for profit.
38. Review of previous events (2018, 2019, and 2020) shows an increase in revenue and expenditure.
 - a. Racewars 2018 cost **\$222,098** which included **\$20,311** carried over from 2017.
 - b. Racewars 2019 **\$285,586** which included **\$11,200** carried over from 2018.
39. Noting the Middleton Beach Hill Climb Event was included for the first time, some of the major expenditure differences from 2018 to 2019 identified were:

a. Grandstand	\$ 11, 541
b. Traffic management for Sprint	\$ 9, 812
c. Sprint concrete barriers and set up	\$ 8, 041
d. Additional mega screens	\$ 7, 735
e. Addition of the monster truck	\$ 7, 500
f. Crews to mobilise and demob	\$ 4, 000
g. Helicopter	\$ 3, 712
h. Additional toilet facilities	\$ 3, 039
Total:	\$ 55, 380

40. RW 2020 Additional Revenue:
- a. Competitor pricing has been increased, in particular for premium entrants; and
 - b. The “Cash Days Event” will be netting revenue for the first time.

Additional Funding Required to Hold Event

41. The following additional expense will continue to be met by the City:
- a. Erection of security fencing to protect general aviation users;
 - b. Grading of end of runway and drainage treatments;
 - c. Grading of internal competitor return road;
 - d. Emergency Services Support: Pilot accommodation and meal allowances for the DBCA (Fire Spotter) relocation; and
 - e. Road Traffic Management and Control (Albany Highway and Parker Brook Rd);
42. The above in-kind sponsorship expenditure is approximately \$20,000.

LEGAL IMPLICATIONS

Indemnity Clause:

43. The Indemnity Clause in the Agreement is drafted broadly and favourably to the City.
44. The clause covers damage to the “airport and surrounding grounds” as well as any potential claims against the City by a third party.
45. Default clause and Force Majeure Clause: Is considered acceptable.
46. It should be noted that the City is within its right to terminate the contract prior to the 3-year term, if event approval conditions are not complied with or a breach of the sponsorship agreement occurs.

ENVIRONMENTAL CONSIDERATIONS

Noise Regulations:

47. Airport Runway Racing Event: Not applicable.
48. **Middleton Beach Hill Climb Event:** The Racewars Sprint (Marine Drive) does not require a noise exemption or permit.
- a. Noise emissions from the propulsion and braking systems of motor vehicles operating on a road are exempt from the *Environmental Protection (Noise) Regulations 1997*, as per point (a) of Part 2 titled Allowable noise emissions of Division 1 titled General provisions.
 - b. Given the one-off nature of the event it is something, the City, as the Local Authority can approve through the events approval process and not necessarily through a noise exemption under Regulation 18 Approval under the Noise Regulations, noting Racewars Group are managing the noise with the following conditions:
 - 60kmh speed limited reconnaissance prior to 9am, and
 - Racing from 9am and finished by 6pm.
49. The Noise Section of the Dept. of Health Guidelines apply to events on premises.

ALTERNATE OPTIONS

50. Council has the following options:

- a. Approve the recommendation detailed in the report.
- b. Approve the recommendation with additional amendments, such as further consultation required on the Middleton Beach Hill Climb Sprint Event.
- c. Resolve not to support the recommendation with reasons provided.

CONCLUSION

51. The City's approach should provide confidence that due process has been undertaken, noting additional reviews conducted by both the City's Insurer and the City's appointed Legal Counsel.
52. It is recommended that the RACEWARS EVENT Sponsorship Agreement is APPROVED in accordance with the sponsorship agreement and subject to event approval.

Consulted References	:	<ul style="list-style-type: none"> Local Government Act 1995 http://www.waspeedwaycommission.com.au/ SFI Foundation, Inc. (SFI) is a non-profit organization established to issue and administer standards for the quality assurance of specialty performance and racing equipment. https://www.speedwayaustralia.org/safety/safety-and-the-sfi-foundations CAMS is the National Sporting Authority (ASN) for motor sport in Australia, and is delegated this responsibility by the Federation Internationale de l'Automobile (FIA). https://www.cams.com.au/ https://www.andra.com.au/
File Number (Name of Ward)	:	All Wards
Previous Reference	:	<ul style="list-style-type: none"> OCM May 2019, Resolution CCS152 OCM July 2018, Resolution CCS065 OCM November 2017, Resolution CCS009

ED046: ALBANY REGIONAL AIRPORT – RETIREMENT OF INSTRUMENT LANDING SYSTEM (ILS)

Land Description	: Albany Regional Airport Drome WA 6330
Proponent	: City of Albany
Owner	: City of Albany
Report Prepared by	: Manager Tourism Development and Services (M Bird)
Responsible Officer	: Executive Director Commercial Services (C Woods)

Responsible Officer's Signature:



STRATEGIC IMPLICATIONS

1. This item relates to the following elements of the City of Albany Strategic Community Plan 2023 and Corporate Business Plan 2014-2018:
 - a. **Key Themes:** 2. Clean, Green & Sustainable
 - b. **Strategic Objectives:** 2.2 To maintain and renew city assets in a sustainable manner.
 - c. **Strategic Initiative:** 2.2.1 The maintenance, servicing and renewal of City's assets are environmentally and financially sustainable.

In Brief:

- City officers are seeking Council endorsement to authorise the retirement of the Instrument Landing System (ILS) at Albany Regional Airport.

RECOMMENDATION

ED046: RESOLUTION
VOTING REQUIREMENT: SIMPLE MAJORITY

MOVED: COUNCILLOR HAMMOND
SECONDED: COUNCILLOR SUTTON

THAT Council NOTE:

- (1) That the Instrument Landing System (ILS) at Albany Regional Airport is unserviceable and will be decommissioned.
- (2) That this capability is currently not required at the Albany Regional Airport; however new navigations aids will be implemented following consultation with airport users and other key stakeholders.

CARRIED 13-0

ED046: COMMITTEE RECOMMENDATION

MOVED: COUNCILLOR STOCKS
SECONDED: COUNCILLOR HAMMOND

THAT the Responsible Officer Recommendation be ADOPTED.

CARRIED 7-0

ED046: RESPONSIBLE OFFICER RECOMMENDATION

THAT Council NOTE:

- (1) That the Instrument Landing System (ILS) at Albany Regional Airport is unserviceable and will be decommissioned.
- (2) That this capability is currently not required at the Albany Regional Airport; however new navigations aids will be implemented following consultation with airport users and other key stakeholders.

BACKGROUND

2. The Instrument Landing System (ILS) is an internationally normalized system for navigation of aircrafts upon the final approach for landing in conditions of limited or reduced visibility (i.e. heavy rain and/or very low cloud).
3. In short, aircraft require a visual sighting of the runway before attempting to land and the ILS allows aircraft a lower ceiling level to gain visibility of the airstrip, 280ft versus 500ft thereby improving the chance of landing in poor weather. An ILS will not guarantee a landing in all weather.
4. The initial installation of the ILS at Albany Regional Airport was in year 2001.
5. There are only two ILS in WA, Perth Airport and Albany Regional Airport.
6. The current system has reached the end of its design life, is currently not working and requires an estimated \$160,000 to repair.
7. The annual maintenance costs for the ILS are \$200,000 and this has been increasing as the equipment continues to age.
8. The City commissioned 2 reports for the replacement of the current ILS system. The first report “ILS Assessment for Albany Airport” was prepared by the current equipment maintenance provider Air Services Australia and estimated a \$3.3m cost to replace the current system with a new ILS version. The second report “ILS Feasibility Analysis” prepared by Keston Technologies and outlined the cost benefits for maintaining and eventually replacing the ILS at Albany Regional Airport.

DISCUSSION

9. The main benefits of the ILS are improved safety and reliability via increasing the ability of aircraft to land at Albany Airport during poor weather conditions.
10. The Keston report estimates that 155 aircraft per year use the system to aid in landing at Albany Airport.
11. There is very limited information on actual ILS use and the real economic benefit to be delivered so difficult to evaluate a serious cost-benefit.
12. Landing fee income from flying schools using Albany predominantly for the ILS has fallen significantly over the past 3 years.
13. The justification for retention of the ILS is largely from a safety perspective however a range of new and cheaper navigation aids are now available and considered better alternatives.
14. Annual maintenance costs for the past 5 years range from \$173k to \$205k pa with \$213k allocated for 16/17.
15. The current RPT provider Regional Express (Rex) has provided written feedback that the ILS is not required for their services at Albany Regional Airport.
16. The Royal Flying Doctor Service (RFDS) has provided written feedback advising that they support the City's decision to retire the current ILS and to not replace.
17. The City has advised ILS maintenance service provider Air Services Australia not to repair the current ILS.

GOVERNMENT & PUBLIC CONSULTATION

18. The City consulted with Regional Express, the Royal Flying Doctor Service, charter flight operators, Perth based flying schools, Air services Australia, and the WA State Government Aviation section of the Department of Transport. All of the above support the City's recommendation to retire the ILS at Albany Airport.

STATUTORY IMPLICATIONS

19. Nil

POLICY IMPLICATIONS

20. Nil

RISK IDENTIFICATION & MITIGATION

21. The risk identification and categorisation relies on the City's Enterprise Risk & Opportunity Management Framework.
22. No immediate risks in regards to this report have been identified.

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
Reputation. Negative public safety perception may result if new navigations aids are not procured to replace the current system.	Possible	Moderate	Medium	Clearly communicate the rational. Note: Both Royal Flying Doctor Service and Rex have advised that the capability is not required at this time.

FINANCIAL IMPLICATIONS

23. Annual maintenance costs for ILS over the past 5 years range from \$173k to \$205k pa with \$213k allocated for 16/17.
24. The ILS is currently not working and if repaired would cost in the order of \$160,000.
25. Council approving the retirement of the ILS will avoid these annual maintenance, immediate repair and the future \$3.3m replacement costs.

LEGAL IMPLICATIONS

26. Nil

ENVIRONMENTAL CONSIDERATIONS

27. Nil

ALTERNATE OPTIONS

28. Not applicable. Noting the purpose of this report is to inform Council on the rationale of an operational business decision.

SUMMARY CONCLUSION

29. The ILS at Albany Regional Airport has reached the end of its design life.
30. Current users and airport stakeholders support the City's recommendation to retire the current system.
31. Retirement of the ILS will avoid significant, immediate repair and ongoing costs.

Consulted References	:	ILS Assessment for Albany Airport – Air Services Australia ILS Feasibility Analysis – Keston Technologies
File Number (Name of Ward)	:	(All Wards) – Albany Regional Airport
Previous Reference	:	

**ED044: CITY OF ALBANY PARKING & PARKING FACILITIES
(AMENDMENT) LOCAL LAW 2012 – AIRPORT METERED PARKING**

Land Description	: Assess No: A160418, A160404, A64802 Albany Regional Airport Drome WA 6330
Proponent	: City of Albany
Owner	: City of Albany
Report Prepared by	: Manager Governance & Risk (S Jamieson) Manager Tourism Development and Services (M Bird)
Responsible Officer	: Executive Director Commercial Services (C Woods)

Responsible Officer's Signature:



STRATEGIC IMPLICATIONS

1. This item relates to the following elements of the City of Albany Strategic Community Plan 2023 and Corporate Business Plan 2014-2018:
 - a. **Key Themes:** 5 - Civic Leadership.
 - b. **Strategic Objectives:** 5.1 - To establish and maintain sound business and governance structures.
 - c. **Strategic Initiative:** 5.1.2 – Develop informed and transparent decision making processes that meet our legal obligations.

In Brief:

- Make a determination under the City of Albany Parking & Parking Facilities Local Law 2012 (as amended), which will result in a determination of metered parking at the Albany Regional Airport.

Purpose & Effect:

- **Purpose:** Provide metered paid parking at the Albany Regional Airport.
- **Effect:** Parking at the Albany Regional Airport will now be subject to parking fees.

Prescribed Metered Parking Zone:

- Follows this report.

RECOMMENDATION

ED044: RESOLUTION
VOTING REQUIREMENT: ABSOLUTE MAJORITY

MOVED: COUNCILLOR MULCAHY
SECONDED: COUNCILLOR DOWLING

THAT Council:

- (1) APPROVE the following determination under the City of Albany Parking & Parking Facilities Local Law 2012:**

Determination: Metered Parking Zone – Albany Regional Airport

- (i) A person is prohibited from parking a motor vehicle (which includes motorcycles) from parking in the Albany Regional Airport without a valid ticket.**
 - (ii) Persons must park in the designated prescribed area (as detailed in the report).**
 - (iii) This determination will come into effect 1 January 2017.**
- (2) AUTHORISES the Chief Executive Officer to authorise persons to administer the Albany Regional Metered Parking Zone and immediate surrounds under the Parking and Parking Facilities Local Law 2012.**
- (3) NOTE that Council adopted in the 2016/2017 Annual Financial Budget the following fees and charges:**
- Long term parking (first 4 hours free) – vehicles, motorcycles per day or part thereof \$8.80 per day (GST inclusive); and**
 - Lost parking validation parking ticket: \$49.50**

CARRIED 13-0
ABSOLUTE MAJORITY

ED044: COMMITTEE RECOMMENDATION

MOVED: COUNCILLOR HAMMOND
SECONDED: COUNCILLOR TERRY

THAT the Responsible Officer Recommendation be ADOPTED.

CARRIED 7-0

ED044: RESPONSIBLE OFFICER RECOMMENDATION

THAT Council:

- (1) APPROVE the following determination under the City of Albany Parking & Parking Facilities Local Law 2012:

Determination: Metered Parking Zone – Albany Regional Airport

- i. A person is prohibited from parking a motor vehicle (which includes motorcycles) from parking in the Albany Regional Airport without a valid ticket.
 - ii. Persons must park in the designated prescribed area (as detailed in the report).
 - iii. This determination will come into effect 1 January 2017.
- (2) AUTHORISES the Chief Executive Officer to authorise persons to administer the Albany Regional Metered Parking Zone and immediate surrounds under the Parking and Parking Facilities Local Law 2012.
- (3) NOTE that Council adopted in the 2016/2017 Annual Financial Budget the following fees and charges:
- Long term parking (first 4 hours free) – vehicles, motorcycles per day or part thereof \$8.80 per day (GST inclusive); and
 - Lost parking validation parking ticket: \$49.50

BACKGROUND

2. Currently parking at the airport is free and unlimited.
3. Council may by resolution constitute, determine and vary and also indicate by signs metered spaces and metered parking zones in accordance with the City's Parking and Parking Facilities Local Law 2012.

DISCUSSION

4. It is standard practice for airports to charge for long term parking.
5. The intent is to charge patrons who leave vehicles in the carpark for extended periods.

Fees & Charges:

6. The first four hours is free to encourage patrons to be dropped off and greeted.
7. Daily charge rates of \$8.80 (including GST).

Ticketing:

8. The car park will operate as a park and display.
9. The car park fees will be used to improve the car park facilities (CCTV, security patrols etc.).
10. The airport is an expensive asset to maintain and a user pays approach is considered the best approach to ensure long term upkeep with least financial impact on ratepayers.
11. The current free parking and no time limitations is placing pressure on the availability of public parking spaces and often forces some travellers to park their vehicles on grass verges.
12. Paid parking will dampen parking demand and allow better management of the public parking areas while avoiding the need to undertake significant additional capital cost to expand the parking infrastructure.
13. The \$8.80 day rate is one of the cheapest paid parking rates of Western Australia's regional airports.

GOVERNMENT & PUBLIC CONSULTATION

14. Airport user and stakeholder were informed prior to the City of Albany's budget adoption.
15. The determination will be published in local media and will come into effect from 1 January 2017.

STATUTORY IMPLICATIONS

16. Clause 6.1 of the City's Local Government Parking & Parking Facilities Local Law 2012 (as amended) stipulates inter alia:

"6.1 Determination of metered zones

- (1) The local government may by resolution constitute, determine and vary and also indicate by signs, metered spaces and metered zones.*
- (2) In respect of metered spaces and metered zones the local government may by resolution determine, and may indicate by signs—*
 - (a) permitted times and conditions of parking depending on and varying with the locality;*
 - (b) classes of vehicles which are permitted to park;*
 - (c) the amount payable for parking; and*
 - (d) the manner of parking."*

17. Local Government Act 1995, section 5.42 states, in part:

"5.42 Delegations of some powers and duties to CEO (1) ...a local government may delegate to the CEO the exercise of any of its powers or the discharge of any of its duties"*

18. Voting Requirement: **Absolute Majority.**

POLICY IMPLICATIONS

19. There is no specific Council policy position.
20. Current instrument of delegation being:
2016:044 - PARKING, TRAFFIC MANAGEMENT, BUS SHELTERS & SEATS (Amendments to Parking Schemes)
does not extend to metered parking.

RISK IDENTIFICATION & MITIGATION

21. The risk identification and categorisation relies on the City's Enterprise Risk Management Framework.

Risk	Likelihood	Consequence	Risk Analysis	Mitigation
Business Operation: <i>Indiscriminate long term parking at the airport will result in current parking facilities requiring to be expanded</i>	<i>Almost certain</i>	<i>Moderate</i>	<i>High</i>	<i>Proceed with recommended determination under the City's Local Law, to allow Council Officers to provide public education and enforcement if necessary.</i>
Opportunity: <i>Financial opportunity to offset cost of providing and improving long term car parking at airport.</i>				

FINANCIAL IMPLICATIONS

22. Costs for installation of signage and closing of access to the water using physical barriers will be funded, as required per site, within the airport reserves budget.
23. Any signage installed will be placed on the City's register for capital maintenance and replacement.
24. Council approved metered parking at the Albany Regional Airport as part of the Annual Budget Adoption in 2015/2016.

LEGAL IMPLICATIONS

25. Determinations under the Local Government Parking and Parking Local Law 2012 (as amended) is prescribed at clause 6.1.

ENVIRONMENTAL CONSIDERATIONS

26. Not applicable to this report.

ALTERNATE OPTIONS

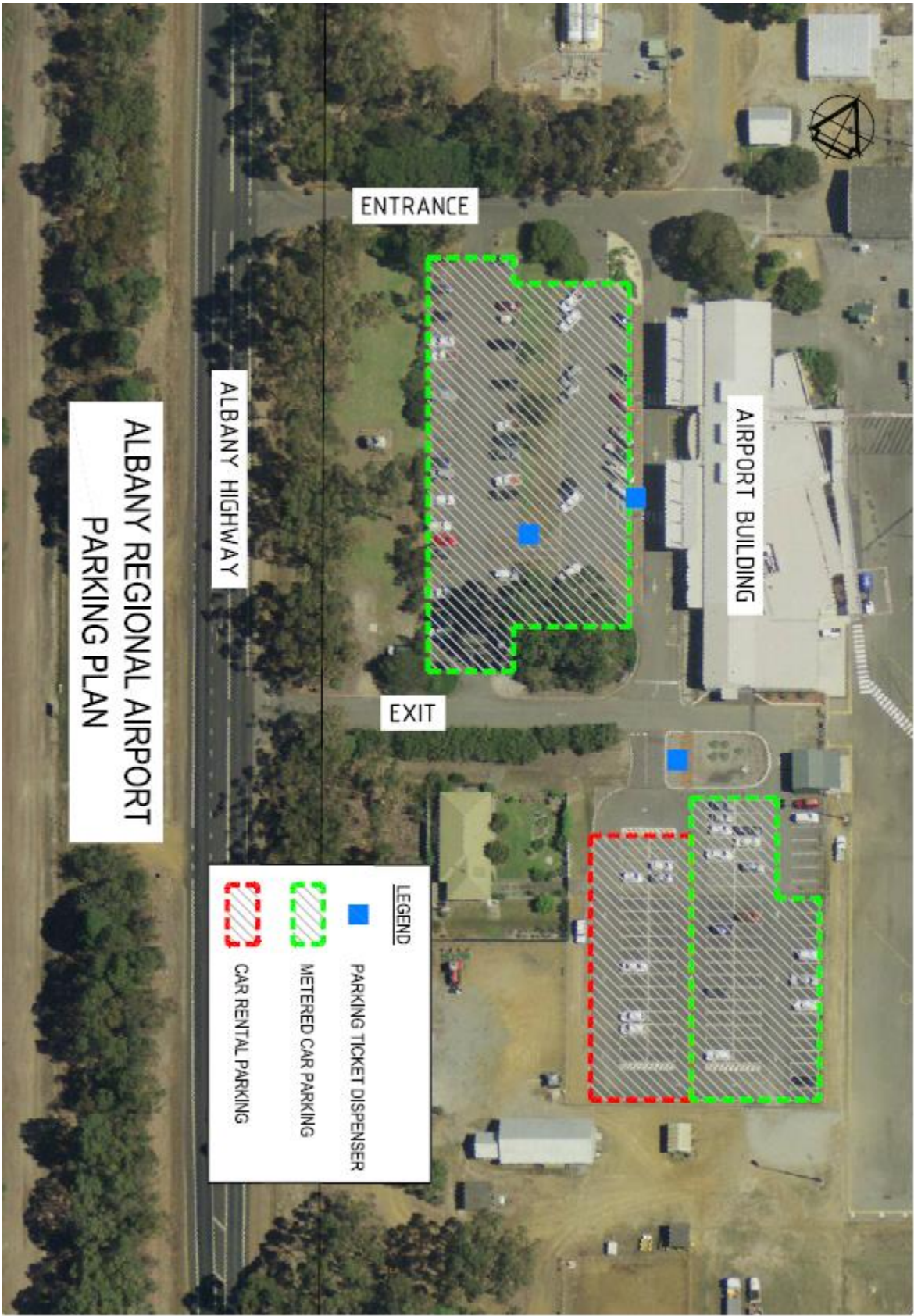
27. Council may resolve to:
 - Not support the determination; or
 - Support the determination with modification.

SUMMARY CONCLUSION

28. Support of the proposed determination under the local law will allow staff implement metered parking at the Albany Regional Airport.

Consulted References	:	<i>City of Albany Local Government Parking and Parking Facilities Local Law 2012 (as amended).</i>
File Number (Name of Ward)	:	<i>(All Wards) – Albany Regional Airport</i>
Previous Reference	:	<i>Budget Adoption 2016/2017 and 2015/2016.</i>

AIRPORT PARKING PLAN (SCHEME)





ALBANY AIRPORT

Future Development Plan

August 2012



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Executive Summary

This 2012 review of the Albany Airport 2001 Master Plan provides a road map for development for Albany Airport through to 2032.

AECOM has worked closely with the City of Albany, the airport operations staff, key stakeholders and external stakeholders and government agencies in carrying out the review. It is expected that the Master Plan will be reviewed again approximately every five years to allow for continual update of the passenger forecasts as these forecasts are critical to triggering airport expansion projects.

This Master Plan review coincides with the introduction of passenger screening at Albany Airport in accordance with legislation relating to aviation security. Albany Airport commenced Band 5 screening on July 1st 2012 and will transition to Band 4 by February 2013.

Skywest Airlines provides Regular Public Transport (RPT) air services to and from Albany under a five year Deed. Skywest currently operates 20 weekly flights on the Perth / Albany / Perth route, with a couple of flights also via Busselton. Over the period of the Deed there will be no competition from other airlines. Skywest use the Fokker 50 turboprop aircraft and this is therefore the design aircraft for the short term. The traffic forecasts show a growth in passenger numbers over the life of the Deed, but this may not be enough to encourage competition on the route and a further Deed may be tendered by the Government.

There are some flights that are overbooked, and Skywest has the opportunity to review the aircraft used at these times and potentially utilise their Fokker 100 aircraft to add capacity at peak times.

For the medium term, turbo propeller aircraft operations are likely to continue to be the predominant aircraft type serving Albany airport - Fokker 50 and potentially ATR72 aircraft are likely to be favoured. Jet aircraft, specifically the F100 (up to 100 seats) have recently been introduced serving the Fly in / Fly out market and this sector may grow, however due to the limited employee pool in Albany larger aircraft are unlikely to be required in the medium term.

Once passenger demand reaches around 120,000 per annum it would be attractive to the airlines to deploy larger seating capacity aircraft in the form of B737-800 and A320-200 (up to 165 seats). Such passenger numbers are not forecast to be reached in the 20 year planning horizon of this Plan, however for safeguarding purposes these aircraft have been adopted for the longer term planning of the aerodrome beyond 2032.

With current annual RPT passenger numbers at around 60,000 per annum Albany Airport is able to continue to expand over the life of this master plan to accommodate a projected 100,000 RPT passengers with development timing of the various facility and infrastructure requirements implemented in accordance with demand.

1.0 Introduction

AECOM was engaged by the City of Albany to review the 2001 Albany Airport Master Plan and prepare a new Master Plan to cover the next 20 years, to 2032.

Skywest Airlines currently operates regular public transport services between Albany and Perth on a regulated route under a five year Deed.

Rio Tinto recently commenced a Fly-in / Fly-out (FIFO) service from Albany to Paraburdoo to provide direct access to the mining employment opportunities in the Pilbara. This service will be operated by Skywest Airlines.

As part of the master planning process, passenger forecasts have been developed for the short, medium and long term future of the airport and these have been assessed to ascertain the level of required airport development to service this growth.

AECOM have undertaken consultation with key stakeholders including the City, airport tenants, Skywest Airlines and relevant government departments.

Development proposals within the Master Plan follow the Civil Aviation Safety Authority (CASA) guidelines, specifically those contained within the Manual of Standards Part 139 – Aerodromes (MOS139).

1.1 Albany Airport History and Description

Albany Airport as the Gateway to the South West serves the immediate region comprising the City of Albany and the surrounding local authority Shires of Denmark and Plantagenet, and also provides access to the Great Southern Region, with a regional population of approximately 51,000 (2010 census).

Albany Airport (IATA code ALH, ICAO code YABA) was constructed by the Royal Australian Air Force in the early 1940's and was extensively used as an air base during World War II. Airport ownership was transferred to the Department of Civil Aviation following the war, and a passenger and mail service was commenced by Airlines of WA Limited.

The airfield was rationalized as a two runway aerodrome, with the principal gravel runway being runway 14/32. The cross field runway is 05/23

In 1984, the Department of Civil Aviation funded the reconstruction and sealing of the main 14/32 runway prior to the Shire of Albany accepting ownership and management responsibility under the provisions of the aerodrome Local Ownership Plan.

The present Terminal building was constructed by the Shire in 1988, and an open grade asphalt overlay was applied to runway 14/32 in 1984. The 05/23 Runway was re-sheeted with gravel in 1995 and has since been sealed. In 1997, the 14/32 runway was extended by 200m at the southern end to provide an overall length of 1800m.

The terminal building was expanded in 1998 to meet the needs of increased passenger numbers.

An Instrument Landing System (ILS) was installed on the 14 Runway end in 2000.

The terminal was refurbished in 2007.

Albany Airport is located 10km north of the city centre and is the only airport serving the city. It provides for airline services to and from Perth and also Royal Flying Doctor Services, general aviation, flight training, RAAF operations, seasonal emergency fire-fighting, and airfreight requirements. The airport serves the business community, local residents, tourists and a vibrant general aviation sector.

Published Aerodrome Data is provided in **Appendix A**

1.2 Airport Master Planning Process

This Master Plan seeks to provide an easily understood planning framework to cover both the aviation and non-aviation development of the site over the next 20 years. The Master Plan also provides indications of the ultimate development potential of the airport site so that such long term airport expansion can be protected through control of surrounding developments that could constrain the airport in future. A realistic representation of the future airport layout is required that maximises the capacity of the site in a way that is compatible with the environment,

local community, and rational development of facilities. At the same time there must be flexibility to cater for future changes in response to the dynamic nature of the aviation industry.

The timing of this Master Plan relates specifically to the requirements to align Albany Airport with new legislation relating to security screening provisions at regional airports. Albany has been required to implement a security screening regime by July 1st 2012 and as such it is prudent to also update the Master Plan at this time.

1.2.1 2001 Master Plan

Previous development strategies for Albany Airport were prepared in September 1993 and July 1995. The first Master Plan for Albany Airport was prepared in 2001, which this document now supersedes. The 2001 Master Plan provided an overview of:

- Existing airport facilities.
- Stakeholder consultation.
- Forecast demand.
- Future needs and development options.
- Environmental and land use plan.
- The airport master plan.
- A development strategy.
- Cost estimates associated with the development strategy.

1.2.2 Purpose and Objectives of the 2012 Master Plan

The 2012 Master Plan updates all elements of the 2001 Master Plan, particularly the forecast demand, development options and strategy, and costs of implementation. This Master Plan details the real growth of passengers utilising the airport over the past 10 years and offers new forecasts over the coming 20 years which reflect the anticipated growth in Fly-In Fly-Out (FIFO) customers and additional tourist travel associated with the commemorations of the ANZAC centenary. These forecasts outline a need for gradual expansion of aviation and terminal facilities over the next 20 years, which must also accommodate revised security legislation released by the Commonwealth Government in 2011.

The City of Albany has defined the following five key objectives for the 2012 Master Plan:

- 1) The Master Plan will reflect Albany Regional Airport's role as a gateway to Albany and the region.
- 2) The Master Plan will provide flexibility to manage the impact of large infrequent events, including the 2014 ANZAC commemoration.
- 3) The Master Plan will identify opportunities for the City of Albany to raise the profile of the Airport's location.
- 4) The Master Plan will consider short (0-5 years), medium (6-10 years) and long term (11-20 years) requirements and opportunities for expanding aviation operations and utilising airport land.
- 5) The Master Plan will be written in plain English, for review and consideration by members of the local community.

1.2.3 Forecasting Assumptions

The following assumptions have been made regarding the passenger forecasts:

- Standard annual growth forecasts of 2.5% based on historic demand characteristics of the previous 25 years.
- Immediate passenger increases in 2012 associated with single operator FIFO movements.
- Medium term growth of an additional 2.5% relating to on-going dual operator demand in and out of Albany.
- Tourism growth "bulge" over the next 2-5 years associated with various ANZAC commemorative events.

1.2.4 Airport Site Evaluation - Summary of Future Needs

The Master Plan considers the future needs of the airport in the short, medium and long term, and also presents the potential ultimate development opportunities. Operations at Albany should be monitored and referenced to the forecasts in the Master Plan. The Master Plan is recommended to be updated on a regular, 5 yearly basis so that it can respond to any deviations from the forecasts to align the growth and development of the airport with the strategic planning requirements of Albany and the region.

1.2.4.1 Short Term – present to 2017

In the short term there are several issues that are required to be resolved by set dates as follows:

- Security Screening implemented on 1st July 2012. This included
 - Terminal modifications
 - Installation, commissioning and testing of security equipment
 - Establishment of an apron for screened services
- Civil Aviation Safety Authority (CASA) Compliant line marking, recommended as a priority, and ideally to be complete prior to next Aerodrome Technical Inspection due in January 2013
- Runway upgrades to CASA Manual of Standards Part 139 prior to expiration of exemption under CASA Instrument CASA EX51/12 (refer to **Appendix B**). This instrument expires at the end of March 2014. Upgrades required include:
 - Runway shoulders on runway 14/32
 - Runway strip extensions by 60m beyond runway thresholds
 - Compliant RESAs to be provided beyond runway strip
 - Check and amend runway lighting
 - Check and amend apron markings to be Fokker 100 compliant

Other short term issues recommended to be considered include assessments of pavements, drainage and other airport assets to allow CoA to implement an asset management approach for the ongoing maintenance of these important pieces of infrastructure. Works that require study and potential implementation in the short term are:

- Sewerage upgrade
- Runway, taxiway and apron pavement strength testing and possible upgrade
- Main power supply upgrade

In terms of airport management, CoA will review the options for Airport governance and organisational structure as the airport continues to develop. There is expected to be fairly major work over the next 12-18 months, this will include jet compliance works (runway widening and lengthening), required major works to sewerage, drainage, electrical systems, possible GA aprons works and new taxiways.

The works schedule will most likely include 10-15 or so separate major works/projects. For the delivery of these projects, whilst the airport remains operational requires, CoA is considering several approaches including:

- Employ a CoA project manager for the first 18 months to oversee the works program, meanwhile ensuring aviation compliance via the current SRO / ARO structure. Once works are completed, employ an airport manager to manage the airport asset
- Employ a suitably qualified airport manager who ideally would have project management experience as well to manage the works program and other airport duties
- Employ both an airport manager and a project manager – the Project Manager could be an external / third party rather than direct CoA employee.
- Outsource both airport and project management to third parties

The decision on which approach to take will be dependent on the scale of the works program as well as the ability to attract suitable candidates to Albany.

2.0 Design Aircraft

Airport dimensions, setting out, pavement requirements, airspace needs and terminal building space planning are established in relation to a Design Aircraft. The Design Aircraft represents the largest aircraft that will regularly use the airport.

The Civil Aviation Safety Authority (CASA) and its Civil Aviation Safety Regulations (CASR's) Part 139 provide the guidelines for airport planning and design. The CASA Manual of Standards (MOS) Part 139 – Aerodromes is the main reference document used.

Aircraft types are grouped together based on their wing span, wheel track and their runway length requirements into internationally recognised 'codes' as follows:

Table 1 Aerodrome Reference Code

Code Element 1		Code Element 2		
Code Number	Aeroplane Reference Field Length	Code Letter	Wing Span	Outer Main Gear Span ^a
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

(a. Distance between the outside edges of the main gear wheels)

For instance, the F50, F100, ATR72, BAe146 and E170 are all Code 3C aircraft, and therefore require a runway of 1,800m (under standard operating conditions) or less and have wingspan less than 36m. The F50 and F100 are a popular regional and resource sector charter aircraft in WA. The ATR72 is a turbo-propeller aircraft being introduced into the fleet of Virgin Australia for regional routes flown in the Eastern States. Indications are that this 70 seat aircraft may operate in Western Australia in future years.

CASA advise that both the B717-200 and the B737-700 may be considered Code 3C for aerodrome planning purposes due to their approved Federal Aviation Administration performance characteristics.

Similarly, the Dash 8-Q400, a turbo-propeller regional airliner in the Qantas fleet currently operating in the eastern states is a Code 3D aircraft and CASA advise that this aeroplane will be considered Code 3C for aerodrome planning purposes because it has been fully certified by Transport Canada to operate on 30 metre wide runways.

The B737-800 and the A320-200 are the largest (by passenger capacity) narrow-bodied aircraft currently operating in Australia and they form part of the Qantas Airways, Skywest Airlines and Virgin Australia fleets. These are both Code 4C aircraft.

CASA have placed the aviation industry on notice that the dispensation to air operators to allow both these narrow-bodied jets to operate on 30 metre wide runways with 3 metre sealed shoulders will no longer be permissible from early 2012. Industry consultation is underway and changes are proposed to the CASA MOS-139 to reflect revised 45m width runway requirements.

Narrow-body aircraft, such as the B737-800 and A320-200, can reach east coast destinations and it is reasonable to assess future long term development requirements for these Code 4C aircraft type operations and put plans in

place for the airport that do not constrain such potential development. The next size up is Code 4D e.g. B767 aircraft with 260 seats. Planning requirements for 4D and 4C are similar.

For the purposes of this Master Plan it is appropriate and recommended that the City adopt Code 4D / 4C for safeguarding ultimate design, and 3C for medium to long term development requirements of runway 14/32.

Based on the above, it is recommended that the Design Aircraft for the short, medium and long term are the F100 and F50.

Table 2 Design Aircraft

Timeframe	Aerodrome Facility Reference Code	Aircraft Types
Current	3C	F50, F100 (see Note 1)
Short Term	3C	F50, F100
Medium Term	3C	F50, F100, ATR72
Long Term	3C	F50, F100, ATR72
Ultimate	4C / 4D	B717, B737, A320 / B767

Note 1 – F100 aircraft are able to operate under CASA Instrument CASA EX51/12 until March 2014

The trigger point to move to the ultimate development will be the potential introduction of Code 4C / 4D aircraft into Albany. These aircraft would require a longer / wider runway.

Secondary runway 05 / 23 is presently published as non-instrument Code 2C and is suitable for most propeller driven aircraft and some small jet aircraft. Its 30m width implies it can accommodate Code 3C aircraft provided they are able to operate from the available runway length of 1096m. Such length may impose load restrictions on some of the larger aircraft however the main runway is available for such aircraft, with the secondary runway's purpose being to serve smaller, GA aircraft such as Cessna. Having two runways arranged approximately orthogonally allows small aircraft to operate into all wind directions.

No upgrading of 05 / 23 is planned, although some remediation works are required to alleviate some pavement deterioration that has occurred on the 23 end.

Albany Regional Airport is an important centre for the general aviation flying community. It is also important to note that the City of Albany has recognised the potential for Albany to further develop as a base for flying training. Whilst RPT demand looks set to continue to grow over time, it is possible that Charter operations related to FIFO may grow at a greater rate with regular jet aircraft services into Albany.

Albany Regional Airport evolution reflects the same challenges experienced by other similar regional airports experiencing continued growth of RPT and Charter operations, and the City as owner-operator should continue to direct its resources to development of those capabilities to deliver desirable social and economic outcomes for the City of Albany and the wider South West region.

2.1 Design Aircraft Requirements – Airfield Layout

The planning parameters for the recommended design aircraft are shown in Table 3. These parameters are from the Civil Aviation Safety Authority Manual of Standards Part 139 Aerodromes (MOS 139). Albany Airport was developed under the previous CASA Rules and Practices for Aerodromes (RPA). Airports designed and developed under the RPA are able to operate under those standards up to such time as they upgrade their facilities. Albany has recently commenced regular F100 jet charter operations and according to advice from CASA this constitutes an upgrade. As such, certain airfield developments are required to be implemented – these are discussed further in **Section 8.1.2**

Table 3 Design Aircraft Planning Parameters

Parameter	Fokker 50	Fokker 100	B737
Aerodrome Reference Code	3C	3C (CASA MOS) 4C (ICAO)	4C
Overall Length	25.25m	35.53m	38m
Wing Span	29m	28.08m	34.3m
Main Gear Wheel Span	7.2m	5.04m	7.0m
Main gear to pavement edge	3m	3m	4.5m
Wheel base	9.7m	14.01m	15.6
Aerodrome Reference Field Length (Runway Length)	1760m (CASA MOS) 1355m (ICAO)	1695m (CASA MOS) 1840m (ICAO)	2256m(CASA MOS)
Runway width	30m	30m	45m
Runway shoulders	n/a	3m	n/a
Runway shoulder slopes	≤2.5%	≤2.5%	≤2.5%
Runway turning area main gear clearance	3m	3m	4.5m
Maximum overall runway slope	1%	1%	1%
Maximum local runway slope	1.5%	1.5%	1.25%
Preferred Transverse slope	1.5%	1.5%	1.5%
Runway strip width	150m	150m	300m
Runway Strip length	Runway length +60 meters at each end	Runway length +60 meters at each end	Runway length +60 meters at each end
Runway strip graded width	90m	90m	150m
Longitudinal slope on graded strip	≤1.75%	≤1.75%	≤1.5%
Transverse slope on graded strip	≤2.5%	≤2.5%	≤2.5%
Runway End Safety Area length	60m	90m	90m
Runway End Safety Area width	≥2 x runway width = 60m	≥2 x runway width = 60m	≥2 x runway width = 90m
RESA Longitudinal Slope	≤5% (downwards)	≤5% (downwards)	≤5% (downwards)
RESA Transverse slope	≤5% (upwards or downwards)	≤5% (upwards or downwards)	≤5% (upwards or downwards)

Parameter	Fokker 50	Fokker 100	B737
Clearway length	60m	60m	60m
Clearway width	≥150m	≥150m	≥150m
Taxiway pavement width	15m	15m	18m
Taxiway shoulder width	3.5m	3.5m	3.5m
Taxiway centreline to object	26m	26m	26m
Taxiway Strip width	52m	52m	52m
Taxiway Strip graded width	25m	25m	25m
Taxilane centreline to object	24.5m	24.5m	24.5m
Wingtip of parked aircraft to object	4.5m	4.5m	4.5m
Maximum Take Off Weight	20,820kg	45,810kg	70,535kg

2.2 Design Aircraft Requirements – Pavement

The operator of an aerodrome regulated under Part 139 of CASR 1998 is required under Regulation 139.165 of CASR 1998 to ensure the bearing strength of aerodrome movement area pavements complies with the standards set out in MOS139.

Chapter 6, Sub-section 6.2.10 of MOS139 states 'CASA does not specify a standard for the bearing strength of pavements; however the bearing strength must be such that it will not cause any safety problems to aircraft'. The reason for not being able to specify a standard is because pavements are normally designed for a defined life. The actual life being a direct function of various factors such as the local environment, design aircraft, frequency of operations, pavement design methodology, type of pavement and quality of pavement materials and subgrade.

It is the responsibility of the aerodrome operator to maintain the load bearing capacity of the pavement for the design or critical aircraft operating over the life of the pavement.

Chapter 6, Sub-section 6.2.10 of MOS139, states 'the pavement strength rating for a runway must be determined using the ACN–PCN pavement rating system'. For a certified aerodrome, the aerodrome operator is required under Regulation 139.095 of CASR 1998 to provide information on runways, including its strength rating, to be reported in the Aerodrome Manual for the aerodrome and for this information to be passed to Airservices Australia Aeronautical Information Service (AIS) for notification in the Aerodrome Information Package – En Route Supplement Australia (AIP–ERSA).

Under the ACN-PCN rating system, aircraft are assigned a series of aircraft classifications numbers (ACN) that relate their particular wheel loads to a standard single wheel load. Various ACN numbers are required to account for various foundation strengths of materials that airports are built on. Foundation strengths are themselves relative measures of strength of various materials relative to a reference sample of well graded crushed aggregate. This measure is known as the California Bearing Ratio (CBR). For airport pavements, four values of CBR are used ranging from 3 (poor quality, often clay soils) to 15 (good quality material with high bearing strength).

Aircraft manufacturers publish the ACNs of their aircraft at both maximum take-off weight (MTOW) and operating weight when empty (OEI). For the F50 and F100 the ACNs are given in Table 4

Table 4 Aircraft Classification Numbers (ACN) for Fokker 50 and Fokker 100

Aircraft Type	MTOW (kg) OWE (kg) TP (kPa)	Flexible Pavement Subgrade CBR%			
		A 15	B 12	C 6	D 3
Fokker 50	20904	9	11	13	14
	12746	5	6	7	8
	590				
Fokker 100	46090	23	27	31	33
	24779	12	13	14	16
	940				

(Reference CASA Advisory Circular AC139-25(0) Strength Rating of Aerodrome Pavements)

At the other end of the system is the strength rating of the pavement. Pavement engineers are able to calculate a pavement classification number (PCN) using approved methods. Each aerodrome pavement needs to be evaluated individually to determine its rating based on the knowledge of pavement design, construction, type and frequency of traffic and present condition.

The determination of PCN is a fairly involved procedure. Once this has been carried out, the PCN can be published in the AIP ERS. For aircraft with ACN equal or less than the PCN there are no restrictions on pavement use during the design life of the pavement.

The main 14 / 32 runway at Albany has a published PCN of 21/F/A/1250 (181 PSI)/T. This means that the pavement is flexible, is supported on a good quality subgrade (15% CBR) and allows tyre pressures of 1250Pa (181 PSI). Aircraft with ACN on an 'A' subgrade of 21 or less can operate unrestricted on this pavement.

In Table 4, the Fokker 100 ACN is 23. This implies that for F100 aircraft to operate out of Albany when fully loaded (full passenger load, fuel load and cargo) some pavement strengthening may be required, or a concession granted by the airport operator. At lower loads, such that the ACN is 21 or less, there would be no restrictions on operations.

Chapter Recommendations

- For the purposes of this Master Plan it is appropriate and recommended that the City adopt Code 4D / 4C for safeguarding ultimate design, and 3C for medium to long term development requirements of runway 14/32.
- Based on the above, it is recommended that the Design Aircraft for the short, medium and long term are the F100 and F50.
- No upgrading of 05 / 23 is planned, although some remediation works are required to alleviate some pavement deterioration that has occurred on the 23 end.
- It is recommended that Albany consider carrying out a pavement assessment to re-check the PCN of runway, taxiways and apron areas and carry out any remedial works / strengthening works to suit the operations envisaged over the next 10 years i.e. F100.

3.0 Existing Airport Evaluation

3.1 Airside

Albany Regional Airport was developed under the CASA Rules and Practices for Aerodromes (RPAs). The RPA has been replaced by a new document called Manual of Standards (MOS) - Part 139 Aerodromes. Under CASA guidelines, the RPA standards continue to be relevant for existing facilities but any upgrading or new work is to be in accordance with MOS 139. This has implications for Albany Airport with the advent of regular charter operations on Fokker 100 jet aircraft. This constitutes an upgrade under CASA and certain infrastructure, particularly relating to the runway, requires upgrade in the short term.

Existing published aerodrome data is included in **Appendix A**.

3.1.1 Runways and Taxiways

3.1.1.1 Physical Characteristics

Albany airport has a main sealed runway 14/32 and a secondary, cross-wind sealed runway 05/23.

Runway 14/32 is presently a Code 3C runway. It has a declared length of 1800 metres and 30 m width. Turning nodes are located at both ends of the runway with an additional turning node 200m from the southern 32 end. The runway shoulders are gravel and 3m wide.

The runway surface is an open graded asphalt. Existing strength of runway 14/32 is published as PCN 21/F/A/1250 (181 PSI)/T.

The runway strip has widths of 150 metres of clear and 90 metre graded. Open unlined drains are located intermittently outside of the graded 90 metres on the western side.

Runway End Safety Areas (RESA's) exist as graded areas beyond the runway ends. The runway was developed to the RPAs and as such is non-compliant with MOS139 standards. Under MOS, the RESAs are measured from the ends of the runway strip, which extends 60m beyond the runway ends.

Runway 05/23 is a cross-wind, Code 2C, 1096 metre long and 30 metre wide runway. The runway was originally a gravel strip but has had a two coat seal added. The strength of runway 05/23 is published as PCN 10/F/A/1050 (152PSI)/U. The runway has a 90m wide strip consistent with Code 2C operations. There are open unlined drainage swales along the south side of the runway.

Taxiway Alpha is a 15m wide taxiway linking the main Runway 14/32 to the RPT apron and GA apron. The taxiway is Code C allowing aircraft with a wheel base of up to 18 metres long. The taxiway has an asphalt wearing course.

Taxiway Bravo is a 15m wide taxiway linking the 05 end of runway 05/23 and the southern end of the main apron.

3.1.1.2 Findings of 2012 Aerodrome Technical Inspection

According to the most recent annual Aerodrome Technical Inspection (ATI) carried out on 5th January 2012, the main runway is becoming aged and brittle and is losing stone. The cross runway is shortened due to some seal failures. The new seal on the cross runway is stripping badly and in need of remedial action. Both runway markings require repainting.

The bitumen content of the seal matrix is low and result is that it appears to be continued stripping. This has been verified by ground staff who have swept and removed a considerable amount of loose stone.

The ATI report recommended that CoA commission an experienced runway pavement engineer to inspect and recommend remedial works to the runways. It is stated in the ATI Report that it is most likely that the engineer would recommend an enrichment seal.

Taxiway Charlie has recently had an enrichment seal and although some problems were experienced with bleeding it has now been re-sanded and no bleeding problems were found. The join at the start of the asphalt, where taxiway Charlie joins the main apron is very rough with a 30mm dip. This dip is on the centreline of taxiway Charlie. If an aircraft with a low propeller hits this dip at the right angle, this may be a contributing factor to prop strike. There is a rough section of apron/taxiway where taxiway Charlie joins the main apron. This rough surface should be repaired with a corrective application of asphalt added to smooth the surface.

Taxiways Delta and Echo have recently had enrichment seals and it appears as though an excessive amount of bitumen was applied. This has resulted in bleeding, particularly at the furthest ends of the taxiways where the truck most likely slowed as it came to the end of its run and therefore an increased rate of bitumen was applied. Apparently the work was done in the early hours of the morning without supervision. Continued sanding, rolling and sweeping will eventually remedy the situation.

3.1.1.3 Findings of 2012 Pavement and Surfacing Inspection

Following the advice in the above ATI, Albany commissioned a Pavement and Surfacing Inspection and a report was issued on 7th June 2012. The main findings of the inspection are:

Runway 05 / 23

Blistering of the seal appeared at the Runway 23 end of the secondary runway during heavy rain in June 2011. The runway currently has a displaced threshold so these areas are not receiving traffic.

At the time of inspection, the surface and pavement appeared to be in a condition that may allow the displaced threshold to be removed and normal operations to be resumed on this runway.

Future blistering is suggested to be managed as follows:

- 1) Displace the threshold
- 2) Carefully pierce the blister with a screwdriver or similar, to allow the gas to escape
- 3) Once the rainfall has stopped and the area is drying, roll the blister area with a multi-tyred roller, prior to removing the displaced threshold
- 4) In the warmer months, extensively roll the blister area with a multi-tyred roller again, so that the seal re-bonds to the pavement when the bitumen is hotter and therefore softer. This could be carried out in a program of one day per week, or a couple of days on a monthly basis

Care should be taken not to damage the seal any more than piercing a hole to allow the air to escape, as this could allow water into the pavement and cause greater damage in the future.

As the surface appears to be in good condition at the time of the inspection, it is recommended in the inspection report that the displaced threshold is removed and aircraft be allowed to traffic that end of the runway.

At the 05 threshold end of this runway, there are some minor blisters showing as well. They appear to be as a result of heating of the bitumen in the warmer months and could be caused by volatiles (such as kerosene) that were added to the bitumen during resealing operations escaping. These blisters do not appear to be causing any issues and are not considered a problem according to the inspection.

Runway 14 / 32

Runway 14/32 is generally in a good condition, with some minor patches of stone loss which seem to be at the edges of sealing runs. These could be repaired with addition of some bitumen emulsion and 7mm sealing aggregate.

Visual inspection suggests that there is approximately 4-5 years of life left in the seal, based on current aircraft operations. This means that the City should program a single coat reseal in approximately 2016, subject to regular inspections and no upgrading work carried out in the meantime.

3.1.1.4 Runway Orientation

No formal analysis of the runway usability has been undertaken as part of the Master Planning process. Wind records for Albany Regional Airport have been obtained from the Bureau of Meteorology website for 1965 to 2004, and the annual records for 3pm and 9am are presented in Figure 1 and 2 below.

Generally winds are from the northwest quadrant in the morning and south west in the afternoon.

Looking seasonally, winds tend to vary from SE to SW in summer and autumn, from W to NW in winter and from SW to NW in spring.

Wind roses are included in **Appendix C**.

Runway 14 / 32, being essentially a NW to SE runway appears to provide a reasonable level of usability for larger aircraft. The 05 / 23 runway is required principally for General Aviation aircraft when cross wind components are exceeded on the main 14 / 32 runway. This runway should therefore be retained to prevent constraints to GA operations.

Figure 1 Wind Rose – 3pm (1965 – 2004)

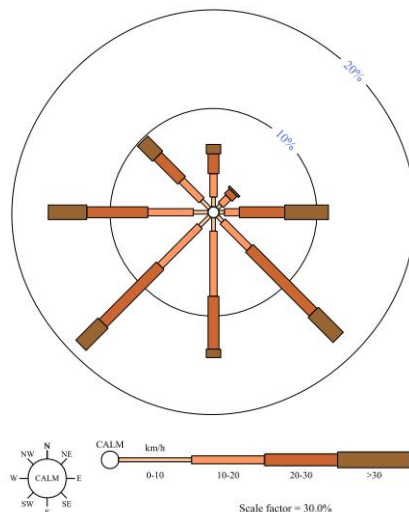
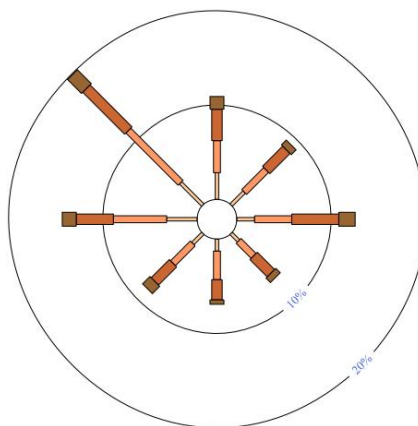


Figure 2 Wind Rose – 9am (1965 – 2004)



3.1.1.5 Airport Capacity

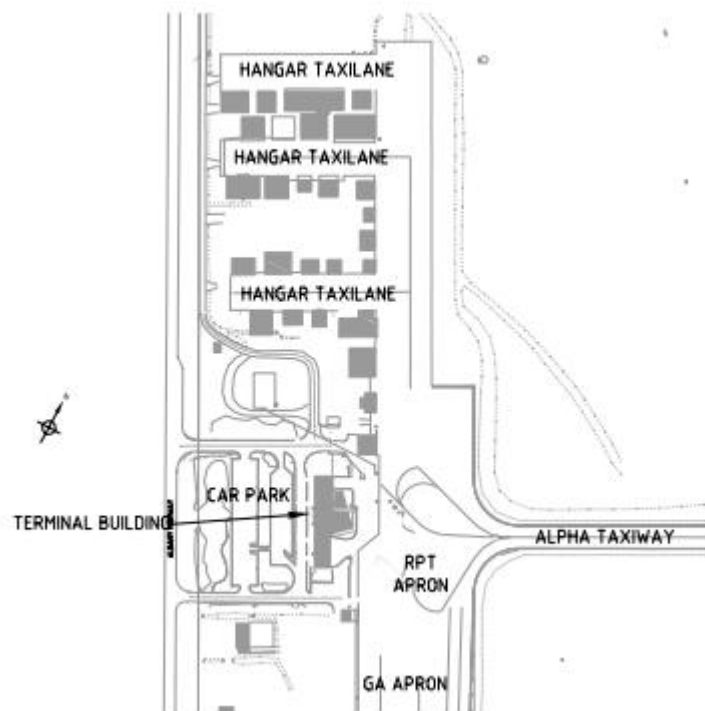
Airport capacity is defined as the throughput rate, i.e. the maximum number of operations that can occur in an hour. Delay is defined as the difference in time between a constrained and an unconstrained aircraft operation.

Runway capacity of a single runway airport could exceed 195,000 operations with suitable taxiway, apron and air traffic control procedures.

For Albany, the weekly RPT and charter services equate to 22 flights, or a total of 44 operations (a landing and take-off are each one operation). Annually this becomes 2288 operations, well below the potential capacity of the single main runway.

3.1.2 Aprons

Figure 3 shows the current apron arrangements which are described in detail in the following sections.

Figure 3 Apron Areas

3.1.2.1 Passenger Terminal Apron

The main apron is 240m long and between 65 metres and 75 metres wide. There are two Code C aircraft parking positions centrally. Two lengths of anchor wires located on the southern end of the apron allow for General Aviation parking. The apron is generally in good condition, although the apron markings have been noted as non-compliant in the ATI and should be rectified as a priority. The strength of the apron pavements is not currently known and a pavement study is recommended in order to assign pavement ratings to all paved areas.

3.1.2.2 General Aviation Apron and Hangers

An additional 230m of apron is provided beyond the northern end of the main apron for GA aircraft and access to hangers via three perpendicular taxilanes.

Grass areas beyond apron pavement edges are also used for storage of aircraft.

Figure 4 Aerial Photo of Apron Areas

3.1.2.3 Royal Flying Doctor Service Apron

There is no specifically defined Royal Flying Doctor Service (RFDS) Apron. The RFDS makes use of the apron area adjacent to the RFDS shed that is besides the crash gate just south of the Terminal Building. The adjacent security / crash gate is used for emergency vehicles, including ambulances, to transfer patients to and from the RFDS aircraft.

Figure 5 RFDS Facility



3.1.2.4 Aerodrome Markings

Markings have been found to be faded and in need of repainting on both runways. Sideline markings should be corrected to 450mm width and provided in all relevant locations including runway intersections.

According to the ATI, the apron markings should be redesigned to ensure they are fit for purpose. In the current condition there are some compliance issues. Some examples of poor apron linemarking include:

- Incorrect line width making the lines difficult to see
- No delineation between the GA parking and the RPT (Skywest) parking areas
- The proximity of the fuel bowser to the parking bay 1A
- No delineation of the edge of the GA parking and taxiway bravo

3.1.2.5 Apron Security

Access to apron areas is either via the terminal building or through the security gates in the fence. Access is restricted to ASIC card holders and passengers boarding RPT or charter flights. This is in line with Albany's status as a security controlled airport.

On the apron there is a screened portion where the RPT flights operate and access into this area is restricted to screened personnel and passengers during specific times before and after RPT operations.

3.1.2.6 Fixed Facilities

Fixed AV-Gas and Jet-A1 fuelling pumps are located beside the terminal RPT area of the Aprons. AV-Gas is available on a self service swipe card system, whereas Jet-A1 is dispensed by trained / certified staff only. The fuel and fuel system is supplied by Air BP. Two large 50,000 litre tanks are located in a secured area landside and feed the pumps through subsurface pipelines through to airside.

Figure 6 Jet-A1 Fuelling Facilities**Figure 7 Av-Gas Fuelling Facilities**

3.1.2.7 Taxiways

The main RPT apron is serviced by Taxiway A from runway 14/32. Taxiway A is a 15m wide sealed Code C taxiway.

A second Taxiway B links the aprons to the 05 runway end. This is a sealed taxiway of approximately 15m width and is suitable only for aircraft less than 10,000kg maximum take-off weight (MTOW).

Taxiways C, D, E and F are sealed taxiways / taxilanes providing access to the hangers to the north of the terminal building.

3.1.2.8 Ground Equipment Parking Areas

Limited ground equipment (steps, disabled lift) is parked along the edge of the RPT apron outside of the marked equipment clearance line. Tugs, tractors and baggage carts are generally parked in the baggage make up and / or baggage reclaim areas when not in use.

3.1.3 Navigation and Traffic Control

3.1.3.1 Visual Aids

Visual aids include the pavement markings and the airfield ground lighting. Runway 14/32 has pilot activated Low Intensity Runway Lights, and portable lights for emergency. Runway 05/23 has portable lights for emergency only.

Lights and visual aids include:

- 14 / 32 runway edge lights
- 14 / 32 runway threshold lights
- 14 / 32 runway end lights
- Taxiway A edge lights

- Taxiway A / runway hold point lights
- Apron floodlights
- Illuminated wind indicators at 14 and 32 runway ends
- PAPIs (see 3.1.3.5)

The airport lighting equipment room is located to the south of the terminal building. Emergency power is provided via diesel generator.

According to the Pavement and Surfacing Inspection report, 7th June 2012, the Runway lights are currently in the shoulders and are spaced at 90m. The upgrades for F100 operations require shoulders to be constructed and the lights will need to be re-spaced to 60m. It is suggested in the report that the cables for the lights be placed to suit the potential future widening of the runway to 45m.

3.1.3.2 Radio Navigation Aids and Associated Buildings

The aerodrome has Distance Measuring Equipment (DME) and a Non-Directional Beacon (NDB).

3.1.3.3 Aircraft Control

Air traffic services are provided through Melbourne.

Aircraft control is the responsibility of the pilots using the airport. This is made possible through use of the Common Traffic Advisory Frequency (CTAF) VHF radio frequency. The airport staff have the ability to access this frequency through a ground station.

3.1.3.4 ILS

An Instrument Landing System was installed in 2001 for the northern approach (14 end of runway 14/32). This ILS comprises a Localiser and Glide Path. This was funded through Commonwealth grants and was installed as a safety measure to counter the problems caused by Albany's weather patterns such as fog and low visibility due to rain.

Figure 8 Localiser



This ILS is one of only two ILS systems currently operational in Western Australia. The system is frequently used for pilot training.

Runway 14 is a Code 3C instrument approach runway with an instrument approach ILS system. The inner edge is designed as 150m not 300m. The Runway 14 ILS has been designated as an instrument approach, non-precision. This is because there is no approach lighting provided for the ILS and as a consequence it is not a full Cat 1 ILS system.

The ILS system annual maintenance is budgeted at \$170,000. Income generated through use of the ILS is approximately \$50,000 per annum.

3.1.3.5 Precision Approach Path Indicator (PAPI)

Runway 14 / 32 has single sided PAPI at both ends of the runway which are pilot activated. The PAPI is used for instrument, non-precision approaches. The PAPI should be checked for suitability for the F100 aircraft and may require re-positioning.

3.1.3.6 Emergency Services

Emergency services are provided by FESA from the station in Albany.

Under CASA regulations, dedicated Airfield Rescue and Fire Fighting (ARFF) services are required for

- i) an aerodrome which conducts international passenger air services and / or
- ii) an aerodrome which has more than 350,000 passengers in a year (MOS Part 139H—Standards Applicable to the Provision of Aerodrome Rescue and Fire Fighting Services).

At the end of the Master Plan time frame the forecasts predict passenger numbers to be well below this figure and therefore dedicated ARFF is not required.

3.1.4 Existing Business Uses and Requirements

3.1.4.1 RPT Services

At present, Skywest operates a scheduled Regular Passenger Transport (RPT) service between Perth Airport and Albany Airport, also operating via Busselton twice a week. The current schedule is detailed in **Table 5**.

Table 5 Current Skywest RPT Schedule (Albany – Perth)

Time of Day	Arrival / Departure	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
07:30	Arrival	✓		✓		✓		
07:55	Departure	✓		✓		✓		
08:30	Arrival		✓		✓			
08:55	Departure		✓		✓			
09:30	Arrival						✓	
09:55	Departure						✓	
10:25	Arrival			✓	✓			
10:50	Departure			✓	✓			
13:10	Arrival							✓
13:35	Departure							✓
15:45	Arrival	✓	✓	✓	✓			
16:10	Departure	✓	✓	✓	✓			
17:10 (via Busselton)	Arrival					✓		✓
17:35 (via Busselton)	Departure					✓		✓
19:30	Arrival	✓	✓	✓	✓	✓		
19:55	Departure	✓	✓	✓	✓	✓		

All RPT services are scheduled on Fokker 50 aircraft which each have capacity for 48 passengers plus pilots and crew. Skywest hold the Deed for this regulated service for a total of 5 years, which will be due for renewal in 2015.

3.1.4.2 Charter Services

Charter services operated by Skippers and Maroomba Airlines currently operate on an ad hoc basis in and out of Albany. All charters are closed and therefore determined entirely by private passenger aviation requirements. In

March 2012, Skywest began operating closed charter services for Rio Tinto between Albany and Paraburdoo, via Perth. There is a schedule associated with these private services, detailed in Table 6.

Table 6 Current Skywest Closed Charter Service Schedule (for Rio Tinto Iron Ore)

Time of Day	Arrival / Departure	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
06:30	Arrival from Perth (no passengers)		✓					
07:00	Departure to Paraburdoo		✓					
12:10	Arrival from Paraburdoo		✓					
12:40	Departure to Perth (no passengers)		✓					
20:05	Arrival from Paraburdoo		✓					
20:35	Departure to Perth (no passengers)		✓					

These services are provided on F100 jet aircraft and Albany is required to upgrade some of the airfield infrastructure to be compliant with MOS139 standards. Further details of these requirements are discussed in **Section 8.1.2**

3.1.4.3 General Aviation

There are 12 general aviation activities operating out of Albany Airport, detailed in Table 7. Eight of these activities are businesses with facilities based at Albany Airport while the remainder are operators who use Albany Airport for on an ad-hoc basis for parking, refuelling, rewatering or training purposes.

Table 7 General Aviation Activities

	Activity	Organisation / Business Name	Based at Albany Airport
1	Flying School	Rainbow Coast Flying School	Yes
2	Flying School	China Southern Flying School	No
3	Flying School	Singapore Flying School	No
4	Emergency Services	Department of Environment and Conservation	Temporarily based at Albany over summer months
5	Military Pilot Training	RAAF	No
6	Aircraft Maintenance	Rainbow Aircraft Maintenance	Yes
7	Private air services	Albany Aviation	Yes
8	Private air services	Joyce Air	Yes
9	Emergency Services	RFDS	No
10	Leisure facilities	Aero Club	Yes
11	Pilot Training	Sport Aircraft Association of Australia	Yes
12	Flying School	Great Southern Aviation	Yes
Various	Private hanger	Various	Yes

There are 27 general aviation hangers located at Albany Airport. Each hanger is the property of the owner and is located on land leased from the City of Albany. Occupancy of the hangers is currently 100% with a waiting list of 21 people. All of the available land for hangers is currently utilised. Any additional demand would require preparation of extra space for new hanger construction and infrastructure.

3.1.4.4 Pilot Training (GA and Military)

Each of the flying schools listed in **Section 3.1.4.3** utilise Albany Airport for learner and on-going pilot training. Some charter service operators train their pilots at Albany Airport in use of ILS navigation.

The Royal Australian Air Force (RAAF) utilise Albany Airport on a regular basis to conduct pilot training routines, refuelling and utilising the terminal facilities for debriefs. The RAAF also hold a 1 week training session at Albany Airport each year, utilising the conference facilities in the terminal.

An indication of regular pilot training activities is detailed in Table 8

Table 8 Pilot Training Activities

Organisation	Frequency of Aircraft Movements	Type of Aircraft Utilised	Refuelling at Albany Airport
Great Southern Aviation	Average 10 per week, up to 30 in summer weeks	Cessna 150 and 172	Yes
Rainbow Flying School	Twice per day up to 10 times per week	Jabaroo 160 and 170	Yes
Joyce Air	No more than once per week	Cessna 206	Yes
China Southern	3-4 per week	Cessna 150 , Cessna 172	Yes
RAAF	4 per week, Monday - Friday	Cessna Citation, Embraer Phenom 100	Yes
Singapore Flying School	Not available		Yes
Skippers	Not available		No

3.1.4.5 Royal Flying Doctor Service

The Royal Flying Doctor Service (RFDS) operates in and out of Albany Airport. Authors of this report have witnessed this occurring up to four times per day. A facility is provided for immediate access to landside ambulance care which is isolated from the RPT and general aviation activities. RFDS services operate on an emergency basis and therefore all other aviation operations including scheduled services are required to make way for RFDS aircraft arrivals. This arrangement is expected to continue in future.

3.2 Landside

3.2.1 Passenger Terminal Building

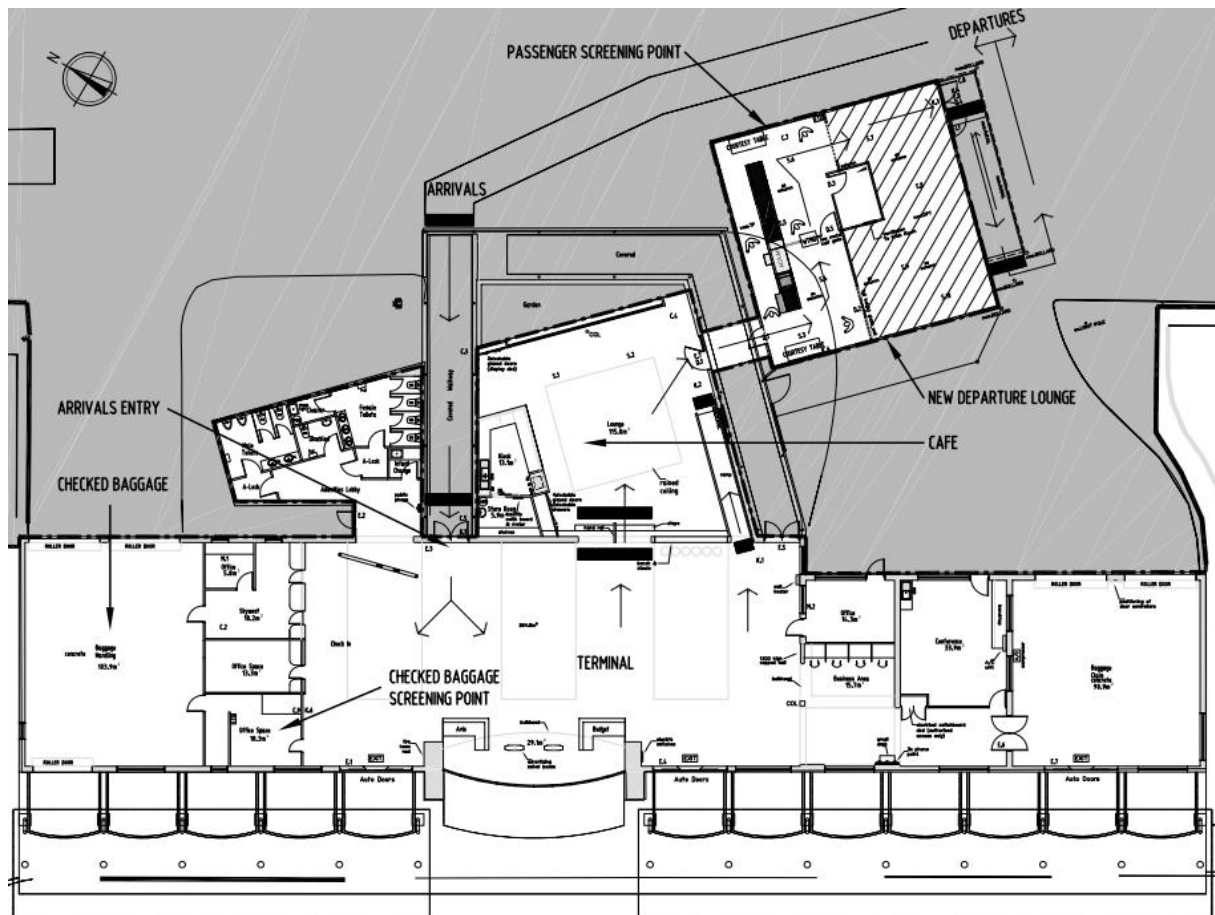
The passenger terminal building is located at the centre of the western boundary of Albany Airport alongside the Albany Highway. The terminal was redeveloped and extended in 1998. The building is set back approximately 90 metres from the edge of Albany Highway and has a footprint of approximately 1,000 sqm. The terminal provides the following services:

- Passenger check-in and waiting area
- Passenger screening
- Baggage handling, screening and reclaim
- Cafe / shop / observation area
- Toilets
- Car rental services (three companies)
- A business centre offering internet and power connection
- Conference facilities

- Airport management office
- Car parking and taxi rank outside the terminal building

According to the previous master plan, the terminal was designed as a common user domestic terminal. The maximum design aircraft was one domestic B737 with a 90% load factor equating to 100 arriving and 100 departing passengers.

Figure 9 Existing Terminal Layout



A feature of the building is the high ceiling over the central waiting lounge, with large skylights providing natural light in the area. The large glass frontage, and large glass wall to the cafe lounge adds to the feeling of space in the terminal.

3.2.1.1 Passenger Processing and Waiting

There are two Skywest check-in desks currently situated at the northern end of the terminal's central concourse. Charter operators utilise part of the same office and check-in facility when charter passengers have luggage to be stowed. The check in area connects directly through to the baggage make-up area at the north end of the building.

Upon checking in, passengers are free to wait in the main concourse or in the cafe situated in the eastern section of the terminal building. The cafe has capacity for approximately 61 seated customers, and the main concourse has 51 seats and capacity for approximately 80 standing. The business centre has four desks for laptop use.

Figure 10 Terminal Waiting Area**Figure 11 Terminal Business Centre**

The main concourse also accommodates people waiting to greet arriving passengers.

For the RPT flights, passengers proceed through the screening point and into the new departure lounge. Passengers then exit the lounge onto the apron to board the aircraft.

Arrivals enter the terminal building via a separate corridor along the north of the cafe.

Upon arrival, passengers with checked luggage are required to wait towards the southern area of the terminal building until the RPT ground staff have delivered bags into the secure area, whereupon people are permitted entry into the baggage reclaim area and can then exit the terminal building directly onto the southern end of the terminal forecourt.

3.2.1.2 Baggage Processing

Baggage processing is currently undertaken by hand from the check-in desk to the make-up area in the northern section of the terminal building. Bags are manually loaded onto baggage carts and driven out to each departing RPT service. Bags are then loaded onto the aircraft. The reverse of this system is used to deliver baggage for reclaim by arriving passengers. Baggage reclaim is located in the southern section of the terminal building and is separated from airside by secure roller doors which are accessed by the baggage handlers.

Checked baggage for RPT services is subject to screening whereby a minimum of 5% of bags are visually inspected. This is undertaken in the checked baggage screening point in the north west corner of the terminal building.

All RPT baggage processing personnel and equipment are provided by the operator, Skywest, and by the security provided MSS, and are only operational during arrival and departure of RPT services.

3.2.1.3 Passenger Amenities and Other Services

Passengers and airport visitors have access to a cafe, an aircraft viewing area, a business centre and toilet facilities as well as the screened lounge. There are also three car rental businesses operating during RPT arrival and departure times and some tourist information. Taxis can be called using a free phone in the main terminal concourse area.

Long and short stay car parking at Albany Airport is available at no charge.

3.2.1.4 Passenger Connection to Aircraft

Passengers are required to walk a short distance across the aviation apron of between 20 – 50 metres when boarding and disembarking RPT aircraft, depending on where the aircraft is parked on the apron. Passengers are monitored by RPT operating personnel at all times. Neither route across the apron is sheltered from weather conditions.

3.2.2 Cargo Facilities

All freight cargo is handled directly through the baggage make-up area at the northern end of the terminal building. A separate access for delivery vehicles is available via a roller door to landside. Freight vehicles enter the terminal forecourt and then park outside the north-western end of the terminal building frontage. Freight deliveries are subject to the same check-in time conditions as passenger baggage. Freight handling at Albany Airport is currently very low and limited to RPT services only.

3.2.3 Ground Transport, Vehicle Circulation and Parking

3.2.3.1 Airside Vehicle Movements and Access

Ground service is currently limited to the following vehicles:

- Tractor
- Tug
- Baggage trolleys.
- Ground power unit.
- One City of Albany vehicle (Hilux).

The baggage trolleys, tug / tractor and ground power unit are generally stored in the baggage make-up area in the northern section of the terminal building. The City of Albany vehicle is parked airside, outside the airport management office to the south of the cafe. Circulation for airside vehicles is not demarcated on the apron or elsewhere on the tarmac.

There are gates situated around the Albany Airport boundary which enable controlled access between landside and airside. There are also access doors from the terminal building to the airside. All access to airside is security controlled

3.2.3.2 Landside Airport Access

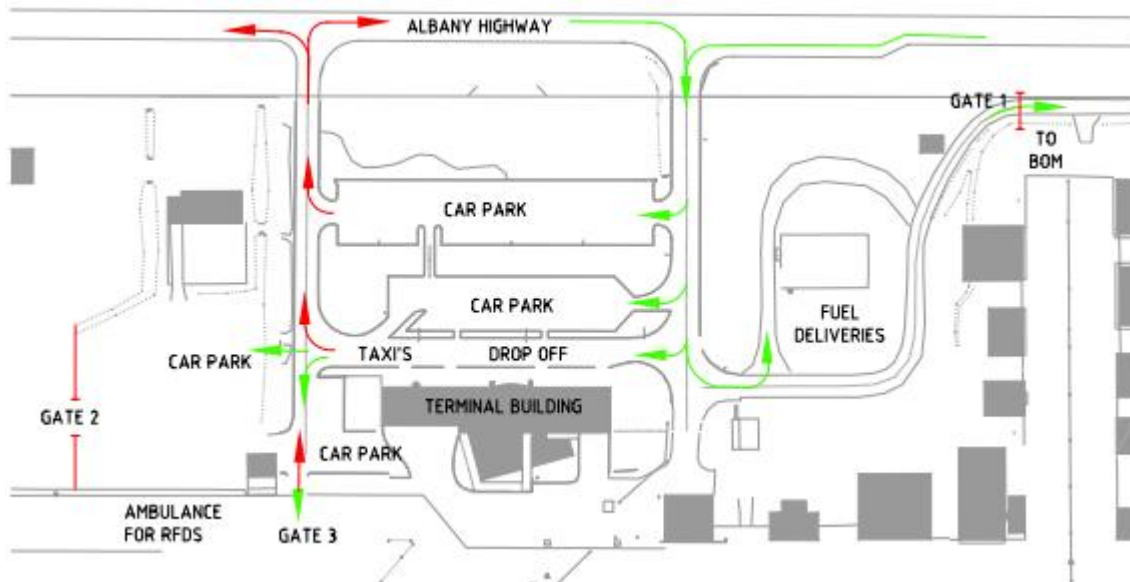
Access to Albany Airport is provided off Albany Highway directly outside the terminal building. Separate vehicle entry and exit points to and from the terminal car park and forecourt (drop off and taxi rank) are provided to minimise conflict and facilitate circulation during busy periods.

Access on and off Albany Highway is currently uncontrolled. Entering vehicles are provided with 140 metres left and right turn deceleration lanes and a right turn storage pocket which offers a safe place for approximately two vehicles to wait before turning across southbound traffic. The right turn deceleration lane is approximately 45 metres shorter than Austroads standard for 110km zone. Vehicles exiting the airport must rejoin the traffic stream from a standing start. The posted speed limit on Albany Highway at this intersection is 110km/h.

There are signs to the airport situated 200 metres north and south of the entrance, and also directly adjacent to the entrance. There is a warning sign opposite the airport exit highlighting the presence of high speed traffic travelling in both directions on Albany Highway.

Figure 12 illustrates the current vehicle circulation into, through and out of Albany Airport car park and forecourt, and the existing design of the intersections with Albany Highway.

Figure 12 Airport Terminal Car Parks and Forecourt Circulation and Access



3.2.3.3 Traffic Data

There is an average of 4,000 daily vehicle movements on Albany Highway (based on 2011 traffic counts), of which 7% are heavy vehicles. Morning and evening peak hour volumes are estimated to be 400 vehicles per hour, based on 10% of daily traffic occurring in the traditional commuter peak. The busiest period at the intersection to the airport will occur when flight arrivals and/or departures occur during the AM or PM commuter peak period.

The existing RPT schedule generates approximately 65-70 vehicle trips per aircraft, based on an assumed 85% occupancy of arriving and departing flights and allowing for a variety of ground travel options, as detailed in Table 9. There are no public transport or coach facilities currently available at Albany Airport and the location is too remote for passengers or visitors to walk or cycle.

Table 9 Observed Pattern of Customer Ground Travel for Average RPT Aircraft Movement (2011)

Travel Mode	Proportion of Trips Per Aircraft
Car driver – long term parking (>12 hours)	5%
Car driver – short term parking (<12 hours)	30%
Car passenger – pick up	20%
Car passenger – drop off	15%
Car passenger – car rental (arrival and departure)	25%
Car passenger – taxi	4%
Motorcycle rider	1%

The majority of departing passengers will arrive at the airport between 40 and 60 minutes prior to flight departure; arriving passengers may take slightly longer to leave the airport as they collect luggage and hire cars, generally dwelling for a period between 5-15 minutes after the aircraft has landed. Current layout and controls at the access intersections is therefore adequate to accommodate existing peak demand.

3.2.3.4 Drop off and Pick up Kerb Facilities

Drop off and pick up facilities are currently available at the terminal forecourt, as detailed in Table 10.

Table 10 Kerb Facilities

Item	Quantity
Taxi Bays	5
Loading Bays	1
Pick up / drop off kerb length (number of vehicles)	6
Zebra Crossings	2

3.2.3.5 Parking

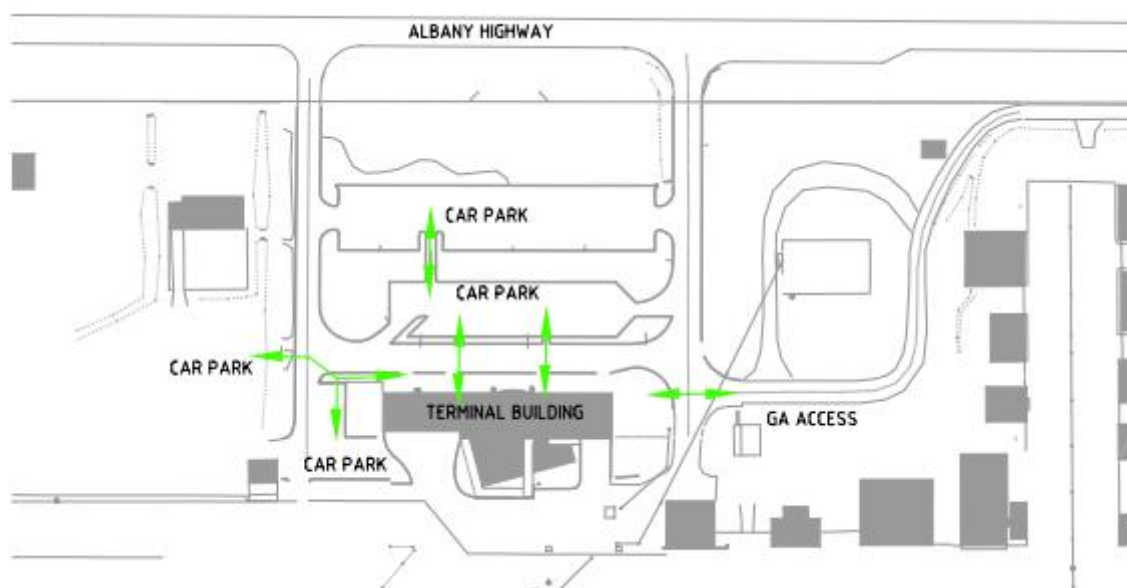
Parking facilities are currently available at no charge and with no duration of stay limitations. Other regional airports in WA have been moving towards paid parking in recent years, generally following a model where parking close to the terminal is designated as 'Short Stay', and more remote parking being 'Long Term'. Parking fees tend to be structured such that the more convenient Short Stay areas attract a price premium.

The majority of car parking is positioned outside the front of the terminal building within a 20-80 metre walk to the terminal entrance; however additional parking is also available to the southwest of the terminal, approximately 80-90 metres from the terminal entrance. Car parking quantities are detailed in Table 11. Car parking locations and pedestrian routes to the terminal are illustrated in Figure 13

Table 11 Car Parking Provision

Item	Quantity
ACROD parking	2
General Parking	80
Secondary Parking Area	20
Car Hire Parking	4

Figure 13 Car Parking Locations and Pedestrian Routes



Occupancy of the terminal frontage car park was observed to be 95% occupied directly prior to the arrival of an afternoon RPT service. The secondary car park was observed to be 20% occupied.

3.2.4 Existing Non-GA Business Uses and Requirements

There are five businesses operating out of the Terminal building at present:

- Avis Car Rental.
- Budget Car Rental.
- Hertz Car Rental.
- Runway Cafe and Shop.
- Skywest.

All businesses require access to the Terminal Building one hour prior to arrival of departing passengers and until all arriving passengers have left the Terminal building.

3.3 Airport Support Elements

3.3.1 Airport Operations and Support Facilities

3.3.1.1 Conference and Training Facilities

A conference room is currently available within the terminal building. The room is air-conditioned, can comfortably accommodate up to 12 people at any one time, and includes basic catering facilities (fridge / freezer, sink, microwave, coffee machine). The room also contains a TV, whiteboard and storage.

3.3.1.2 Ground Vehicle Fuel Stations

Diesel is available on the airside from a 1200 litre bowser with a hand pump.

3.3.1.3 Fire Season Water Bombing and Other Activities

The Department of Environment and Conservation (DEC) provide a number of services in the Great Southern which are delivered by air, namely:

- Emergency water bombing to control seasonal bush fires: 1st November – end of April.
- Fox baiting: 3-4 day period every quarter.
- Prescribed burning: late autumn through to early spring.

Emergency water bombing is an on-call process which requires priority through air-traffic control. DEC re-fuel and re-water up to six aircraft at Albany Airport during a water bombing exercise. The quantity of flights depends upon emergency conditions in the catchment area between Albany, Mount Barker and Bremer Bay. Water and fuel requirements for DEC are shown in Table 12.

Table 12 DEC Water Bombing Aircraft Requirements

Activity (Aircraft Type)	Quantity of Aircraft	Water Carrying Capacity	Fuel
Water bombing (Air Tractor 802)	4	3,100 litres each	JetA1
Water bombing (Sikorsky Helicopter)	1	3,800 litres	JetA1
Water bombing oversight (Champion Scout)	1	Not applicable	Av Gas

The Air Tractor needs 900-1000m strip to take off fully laden and so the main runway is normally used.

Other DEC activities are summarised in Table 13.

Table 13 Other DEC Activities

Activity (Aircraft Type)	Quantity of Aircraft	Fuel
Fox Baiting (aircraft type varies, normally a twin engine plane)	1	Jet A1
Prescribed burning (aircraft type varies, either a small fixed wing or a BA Squirrel Helicopter)	1	Jet A1

Occasionally pilots will use the cafe and toilets when on an extended shift (generally 10AM - 5PM).

There are some operational conflicts which can occur between DEC and RPT services. When an RPT service is at the terminal, DEC water bombing aircraft cannot access the water and Jet-A1 fuel. This complication can be adequately managed at present, but as the airport becomes busier an alternative arrangement may be required to ensure emergency activities can take place independent of RPT and general aviation activities.

3.3.1.4 Aircraft Maintenance Area

There is no dedicated aircraft maintenance area. The RPT and charter aircraft are maintained elsewhere. GA maintenance is undertaken within the GA area.

3.3.1.5 Fire fighting Services

There is no dedicated fire fighting service provided at the airport. The local FESA station in Albany would respond to emergencies.

3.3.1.6 Electrical Power, Telecommunications

Mains power is supplied to various locations within the airport boundary, including the Terminal building, various sheds and huts that house communication and support services, the new and old Bureau of Meteorology offices, and the general aviation offices and hangars.

There are independent diesel back-up power generators for essential services such as airfield ground lights and nav aids.

Power and telecommunication services are shown in Figure 14.

Figure 14 Electrical Power and Telecommunication Services



3.3.1.7 Water Supply and Sewerage

Mains system water is supplied to various locations in the Terminal building, new and old Bureau of Meteorology offices.

The Terminal building is connected to a 'BioMax' sewerage system. This system converts sewage into B-class recycled water which is then used for restricted irrigation of the airport site. The installed system is a Model C20, which is designed for 3,600 litres per day and is operating beyond its recommended service level. A larger system has been advocated, such as the C60 system, designed for 14,400 litres per day.

The water which services the water bombers and other aviation needs is fed via a hydrant from the mains water supply. An acceptable alternative to this current set up could be a mains-fed tank.

Mains water is required for water bombing services due to risk of die-back or other contamination associated with spraying water from alternative sources.

Fire hydrants are also provided in the Air BP fuel tank compound.

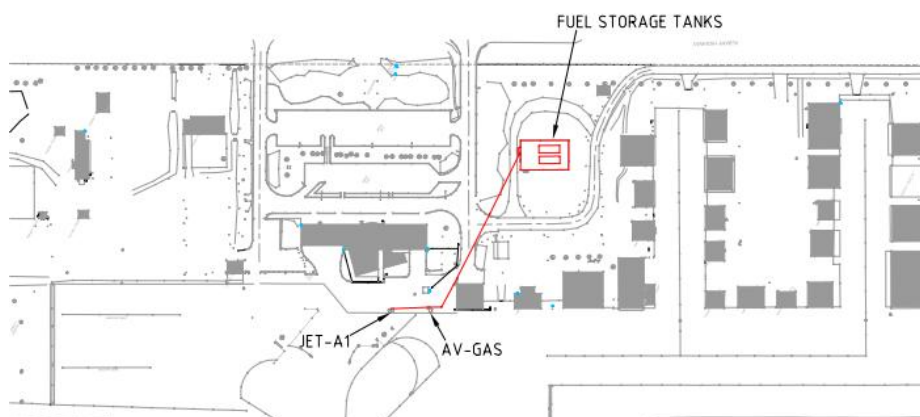
3.3.2 Aircraft Fuel Facilities

3.3.2.1 Storage Capacity and Location

Jet A1 (for jet aircraft) and Avgas (for piston engine aircraft) are supplied at Albany Airport.

Fuel is stored in 2 large bunded tanks (50,000 litres each), and dispensed via fuel pumps to the north east of the terminal building close to Bay 1. The location of the fuel tanks and fuel lines are shown in Figure 15. Air BP supplies the fuel and installed new pipes and pumps in 2010.

Figure 15 Locations of Fuel Tanks and Lines



3.3.2.2 Fuelling of Aircraft

GA aircraft are refuelled over-wing from a low pressure bowser facility. The site is adjacent to the passenger terminal, and when fuelling operations are ongoing, Bay 1 is not available for RPT services. Conversely when RPT services are parked on Bay 1, GA fuelling is not available.

Skywest do not generally re-fuel, except for a couple of flights each week that go via Busselton depending on weather conditions.

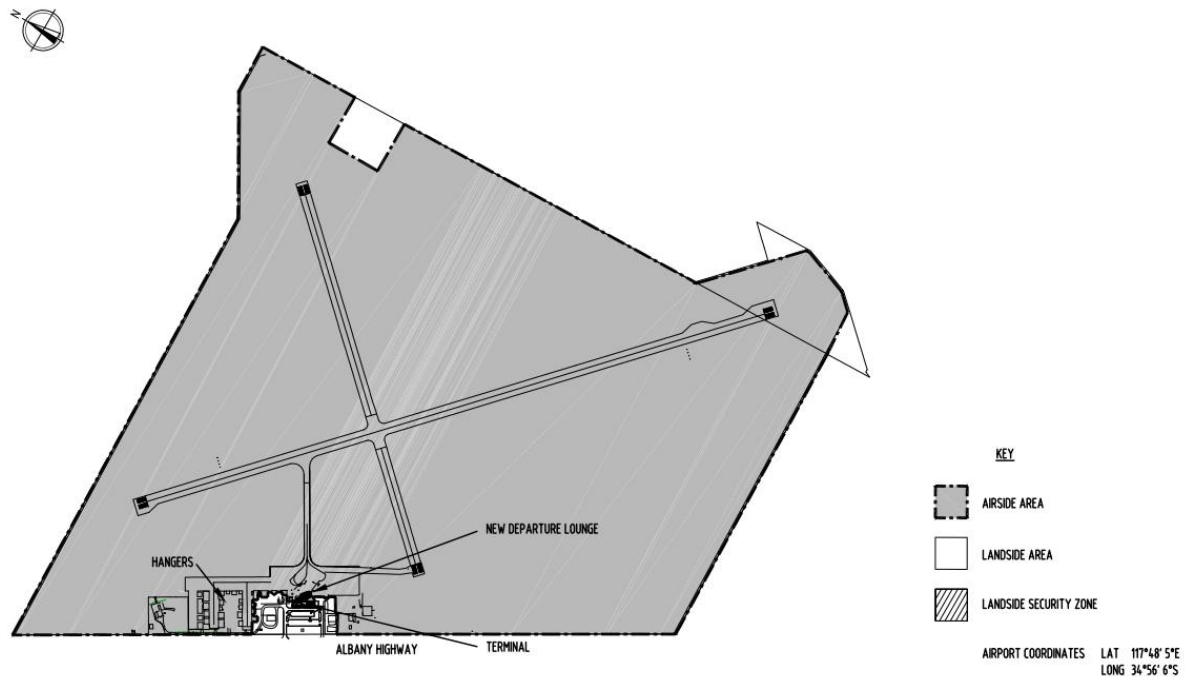
When GA aircraft are being re-fuelled, Skywest are required to park on Bay 2 which is slightly further from the terminal.

Jet A1 fuelling is carried out by the qualified ground staff whereas Av-Gas is available self-services via swipe card dispenser.

3.3.3 Security Considerations

Albany Airport is a Security Controlled Airport and as such access to airside is restricted to ASIC card holders and passengers. The airport is surrounded by a security fence as shown in Figure 16. Gates in this fence are locked, with access either via key (for gates with padlock) or swipe card. Swipe cards are issued by the Airport to those people with ASIC cards who require regular access to the airside. This includes GA operators, RFDS, FESA etc.

Figure 16 Albany Airport Security Fence Layout



The fence also acts to keep wildlife such as kangaroos out of the airport.

3.3.3.1 Passenger Screening

On July 1st 2012 Albany Airport became a security screened airport – Refer to Figure 9 for the layout of the screening process. All RPT services require passengers and baggage to be screened in accordance with legislation.

3.3.4 Aircraft Noise Impacts

An Australian Noise Exposure Forecast (ANEF) has not been prepared as a part of this master plan for the Albany Airport. The current rural land use surrounding the airport is deemed compatible to airport development in accordance with Australian Standard AS 2021-2000 'Acoustics – Aircraft Noise Intrusion – Building Siting and Construction'.

These recommendations are summarised in Table 14 below. This is a summary only; Council should consult the Australian Standard for full details of the land use recommendations, and associated notes and conditions. Council may also wish to review / update the existing noise contours and publish these to act as a development guideline for land around the airport.

Table 14 Building Type Acceptability Based on ANEF Zones

Building Type	ANEZ Zone of Site		
	Acceptable	Conditionally Acceptable	Unacceptable
House, home unit, flat, caravan park	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF	20 to 30 ANEF	Greater than 30 ANEF

Building Type	ANEZ Zone of Site		
	Acceptable	Conditionally Acceptable	Unacceptable
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF zones		

Notes:

1. 'Acceptable' means that noise attenuation is usually not required to reduce aircraft noise.
2. 'Conditionally Acceptable' means noise attenuation may be required to reduce aircraft noise.
3. 'Unacceptable' means that the development should not normally be considered.
4. The Note 1 associated with this table in AS 2021-2000 states:

The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 of the Standard may be followed for building sites outside but near to the 20 ANEF contour. Clause 2.3.2 relates to "conditionally acceptable" development and sets out the procedure for determining noise attenuation measures.

It is generally acknowledged that the ANEF system has its limitations/deficiencies. Even land under very busy flight paths can be considered as "acceptable" for residential use and other noise sensitive uses when assessed using the ANEF system. Experience in recent years has demonstrated that the aircraft noise problem is not confined to areas inside the ANEF noise contours. In fact, most complaints about aircraft noise at Australian airports come from people who live outside the published ANEF noise contours.

As a result, a number of supplementary approaches to describing and assessing aircraft noise impacts have emerged. These include "Number Above" or N60/N70 contours, which indicate the number of aircraft noise events louder than a certain noise level which are likely to occur on the average day.

No noise modelling to prepare N60/N70 contours has been undertaken as part of this master plan for Albany Airport. The existing ANEF contours are shown in Figure 17 below. The full "Albany Airport Noise Buffer Town Planning Scheme Policy" is reproduced in Appendix E. The City of Albany adopted the Albany Airport Noise Buffer Town Planning Scheme Policy in 2004 to:

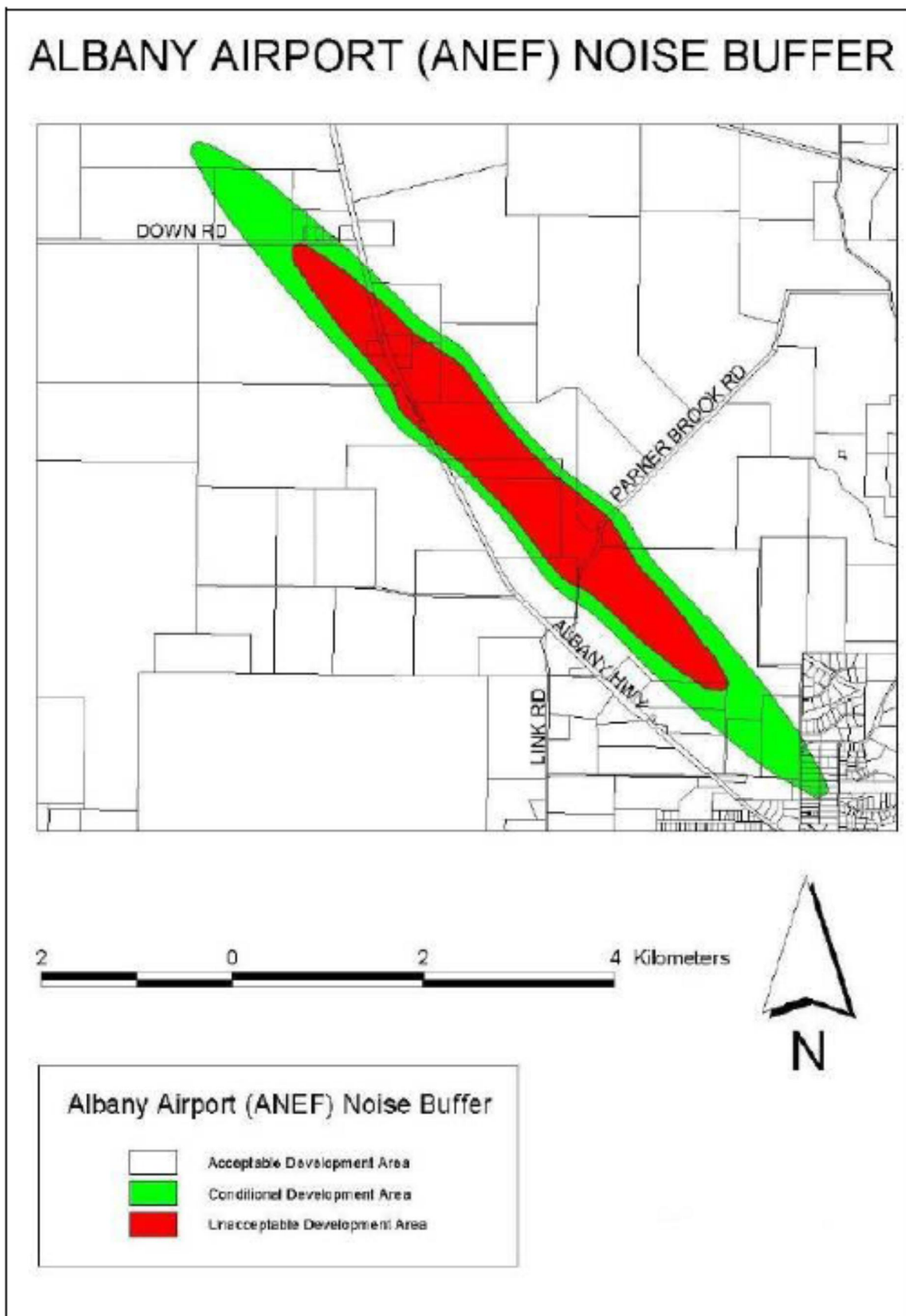
- Protect the continued operations of the airport.
- Control subdivision and development to minimise the potential for sensitive land uses within the noise buffer zone.
- Restrict the development of residential uses that can be affected adversely by aircraft noise in accordance with these Australian Noise Exposure Forecast (ANEF) guidelines for residential development:
 - Less than noise level of 20 ANEF: acceptable.
 - 20-25 ANEF: conditional.
 - More than 25 ANEF: unacceptable.

3.3.4.1 National Airports Safeguarding Advisory Group

A key initiative of the Commonwealth Government's Aviation White Paper (released December 2009) is to safeguard airports and the communities in their vicinity and to develop, with state, territory and local governments, a national land use planning regime to apply near airports and under flight paths. The National Airports Safeguarding Advisory Group (NASAG), comprising high-level Commonwealth, State and Territory transport and planning officials, has been formed to develop a national land use planning regime to apply near airports and under flight paths.

Prior to implementing any specific land use planning control around Albany Airport, Council should investigate and consider the work being undertaken by the NASAG. It may be premature to implement new planning controls until the Commonwealth has provided its response to any NASAG recommendations. In the meantime the existing noise buffers should be considered

Figure 17 Albany Airport Noise Buffer Zone



3.4 Non-Aviation Development and Facilities

3.4.1 Environment and Heritage

There are few environmental constraints to the future development of Albany Airport. Further environmental assessment is unlikely to be required where development is proposed within areas that have previously been cleared.

3.4.1.1 Vegetation and Flora

The airport has been extensively cleared; however there are patches of vegetation on the eastern and southern portions of the site, and large trees along the western boundary and terminal buildings. These areas may contain remnant native vegetation. Remnant vegetation within the project area is anticipated to be low forest of Jarrah, *Eucalyptus staeri* and *Allocasuarina fraseriana*.

Patches of vegetation on the eastern and southern sides are currently managed by burning and poisoning to control rabbit and kangaroo numbers.

No threatened or priority flora species specifically occurs on Albany Airport land or in the immediately surrounding area. The closest known threatened or priority flora species to the project area is Priority 1 flora species, *Synaphea incurve* (described as a clumped spreading shrub to 0.5m with yellow flowers). This species is known from four records and occurs within the degraded road reserve along Albany Highway within 600m of the airport entrance.

There are no recorded occurrences of Threatened or Priority Ecological Communities in the project area. The closest of these, Priority Ecological Community – *Banksia coccinea* Shrubland / *Eucalyptus staeri* / Sheoak Open Woodland (Community 14a) is recorded about 5 km from the airport boundary.

The project area contains eight identified invasive flora species.

3.4.1.2 Fauna

There are 20 threatened and priority fauna species recorded within a 10 km buffer of the project area. Land in the vicinity of the airport appears to contain Jarrah-Marri Forest, which provides suitable habitat for threatened and priority fauna species such as Black Cockatoos.

It is understood that there are rabbits found within the airport boundary. The area in and around the airport may also contain feral animal species such as the cat, pig and fox.

3.4.1.3 Heritage

The project area does not contain European, Municipal, National, Commonwealth and World heritages sites or places listed in the Register of National Estate. The southernmost extremity of the project area overlaps a registered mythological Aboriginal Heritage Site namely Creek 3 (Site ID 21837) which is a natural feature and a water source. Expansion of the airport to the south that intersects this heritage site will need to address the requirements of the *Aboriginal Heritage Act 1972*.

3.4.1.4 Native Title

Albany Airport forms part of the Southern Noongar Native Title application, which has been accepted for registration (Tribe Number WC96/109). While the Southern Noongar group has the Right to Negotiate pursuant to the Future Act provisions of the *Native Title Act 1993* for the Southern Noongar Native Title area, this right does not apply within areas of freehold estate (known as 'previous exclusive possession act' under the *Native Title Act 1993*). Albany Airport is freehold estate therefore native title has been extinguished over this portion of land.

3.4.1.5 Bird Strike

Bird strikes, while infrequent, do occur at Albany Airport and require careful management practices. CASA Advisory Circular 139-26 (0) "Wildlife hazard management at aerodromes" provides general information and advice for the management of wildlife hazards at aerodromes.

CASA has advised that Albany needs to consider bird and animal hazards and their impact on jet engines.

3.4.2 Drainage

Surface drainage is generally poor due to the low relief and the relatively low permeability of subsurface clay, which means that surface sands become saturated after heavy rainfall.

There are no natural surface water features within the airport.

On-site drainage across the airport is currently managed mainly using open swales as shown in Figure 18. Generally water flows in northerly and southerly directions away from the cross field runway. There is a small dam at the southern airport boundary which is assumed to be for water quality control. There is limited pipe infrastructure installed where swales cross taxiways or roads. There are localised drainage problems around the general aviation hangers. Attenuation from roof runoff is required around the hangers as a condition of leases, but this does not appear to be currently successfully implemented in all locations.

There are several ongoing maintenance issues associated with drainage management and control at Albany Airport, which are detailed in Table 15.

Figure 18 Existing Airport Drainage Culverts and Infrastructure



Table 15 Known Drainage Management and Control Issues

Drainage Issue	Proposed Resolution
Runway safety: there is an absolute need to avoid more than 4mm of water on the taxiways, and no standing water is allowed on the runway.	Maintain swales to allow surface water to flow away from the paved areas.
Maintenance: on the west side of the property trees drop leaves and branches which block the open swale and cause flooding of the general aviation hanger area.	Ongoing tree lopping as required. Regular clearing of leaves from the swale. If problem persists, consider removing trees and replace with less maintenance intensive native species.
Runoff capability: areas to the north are shared with Albany Highway.	Undertake detailed study of the drainage in this area to assess whether alternate outfall may be available.
Saturated Areas: areas to the south of the estate are known to become heavily saturated	Undertake detailed drainage study to assess whether additional swales / basins in this area could alleviate the problem.
Cross runway pavement: Poor drainage may be contributing to pavement distress on the east end of the cross field runway.	Undertake detailed drainage and pavement assessment to assess if cut-off drains and additional swales are required.

3.4.2.1 Topography

The topographical landscape of the airport area is formally described as 'undulating plain or plateau at low elevation, having a pronounced ridge and depression sequence, some flats'.

The majority of the airport is situated on flat land having an elevation of between 65 and 69 metres AHD. There is a high point 72.5 metres Australian Height Datum (AHD) located in the north-east portion of the site and a low point of 56 metres AHD in the south-west corner of the site.

The airport is situated within the King River sub-catchment of the Oyster Harbour Kalgan King catchment. The King River is located north-east of the airport and flows to Oyster Harbour, which is located south-east of the project area.

3.4.2.2 Soils

The overall soil landscape is one of leached sands associated with ironstone gravelly ridges with a variety of soils, all containing ironstone gravel or lateritic layers.

The soils of the airport locality are expected to be typical of the district and comprised of gravelly yellow sand and loamy sand over clays. A ferruginous layer with pebbles is likely to occur between the sand and clay layers at depths varying from 0.1 m to 0.7 m.

There is an extremely low probability of the occurrence of acid sulphate soils, with a 1-5% chance of acid sulphate soil occurring in small, localised areas.

3.4.2.3 Geology and Hydrogeology

The stratigraphic sequence of the airport locality comprises sand and duricrust at the surface, sandy clays to a depth of 10 metres, weathered yellow brown siltstone to 50 metres, clay siltstone, sandstone and lignite to 100 metres and granite beyond 100 metres.

Infiltration testing of soils concluded that surface sands have moderate permeability, while the clayey subsoils have much lower permeability. The subsoil clay layer limits the rate of infiltration and results in surface soils beneath shallow-rooted pastures (i.e. cleared areas) becoming saturated during prolonged winter rainfall.

There are no aquifers of significance; however weathered siltstones are likely to be saturated at depth.

3.4.3 Bureau of Meteorology

The Bureau of Meteorology (BOM) has a new office and weather station located on the eastern boundary of the Albany Airport land. BOM previously occupied a building north of the terminal and general aviation hangers on the western perimeter of the airport land. This building is due to be fully vacated in the near future and will be available for redevelopment.

Chapter Recommendations

- i) Taxiway C rough surface should be repaired with a corrective application of asphalt added to smooth the surface.
- ii) Taxiways Delta and Echo – continue program of sanding, rolling and sweeping to remedy the bitumen bleeding problems
- iii) 05 Runway end - the pavement inspection report recommends that the displaced threshold is removed and aircraft allowed to traffic that end of the runway
- iv) Runway 14 / 32 - the pavement inspection report recommends that City should program a single coat reseal in approximately 2016, subject to regular inspections and no upgrading work carried out in the meantime
- v) Apron markings have been noted as non-compliant in the ATI and should be rectified as a priority
- vi) The strength of the apron pavements is not currently known and a pavement study is recommended in order to assign pavement ratings to all paved areas
- vii) Markings have been found to be faded and in need of repainting on both runways. Sideline markings should be corrected to 450mm width and provided in all relevant locations including runway intersections
- viii) Runway upgrades are required in line with CASA requirements for F100 operations
- ix) Sewerage system to be upgrade to larger capacity system
- x) Drainage study to be undertaken to assess various drainage issues

4.0 Stakeholder Engagement and Consultation

During preparation of the Master Plan, the City of Albany, through its consultants, has engaged with airlines, airport tenants and businesses, airport operators, general aviation operators and government agencies to understand the major issues relating to the airport.

As part of the consultation process CoA undertook:

- Initial information and opinion gathering workshop
- Email survey
- Telephone survey
- Ad-hoc discussions with interested parties
- Final briefing / engagement session on 17th August 2012

The stakeholders contacted during the preparation of the Master Plan included:

- Albany Airport Service Ltd
- Rainbow Aircraft Maintenance
- Runway Cafe
- Budget Cars
- Hertz
- Avis
- Albany Aviation
- Joyce Air
- RAAF
- Department of Environment and Conservation
- Royal Flying Doctor Service
- Aero Club
- SAAA
- Singapore Flying College
- Rainbow Coast Flying School
- China Southern Flying School
- Main Roads Western Australia
- Skywest Airlines
- Great Southern Aviation

A separate session was also held with the Council and Mayor to present the security screening upgrade design.

During the initial workshop, the main message to stakeholders was the impending introduction of screening requirements for RPT passengers. There were some concerns raised regarding potential adverse impact to day to day airport operations. The master Plan team and City of Albany assured the stakeholders that impacts would be minimised as far as possible within the requirements of the legislation.

The email survey and follow up phone calls asked a series of questions designed to ascertain how users view the airport, which facilities were used, frequency of access, type of business, type of aircraft, frequency of flights etc. The information gathered from this exercise has been used to populate various tables and sections of this Master Plan.

The final briefing / engagement session was undertaken in the CoA offices, and was attended by representatives of the airline, GA community, airport tenants, airport staff and council. During this session AECOM provided a

presentation on the final master plan, and CoA provided a presentation on potential works to be undertaken in the first 24 months of the planning timeframe.

Several insightful comments were received and have been incorporated into this document and this concluded the stakeholder engagement process.

A summary of the consultation process is included in Table 16

Table 16 Stakeholder Consultation Summary

Stakeholder	Organisation	Issue Raised	Master Plan Response	Section Reference	Date recieved
Ralph Burnett	Rainbow Coast Flying School	Would prefer an aviation pick up and set down area in front of the flying school clear of the security area	Security controlled apron is restricted to RPT operations.	6.2.1 and Figure 23	2/02/2012
		Currently no markings to define a pick up and set down area for 2 Cessna aircraft to the NW of the security area and access by the current gate.	Markings are being reviewed under separate contract	1.2.4.1	
		Poor surface on the taxiways causing propeller damage.	Master Plan advocates ongoing maintenance of all paved areas	3.1.1.2	
		Drainage around the hanger is a long standing issue.	Master Plan advocates a drainage study be undertaken to assist in resolution of drainage issues	3.4.2	
		Hope there is no change to the access arrangements to the hanger area for vehicles despite changes to the secure area.	Albany remains as a security controlled airport and current access arrangements for GA are expected to remain initially unchanged.	n/a	
		AvGas refuelling point will be severely compromised by security. Would like an opportunity to refuel while RPT is docked. Please investigate flexible arrangement to allow refuelling of GA aircraft.	Master plan advocates moving the GA fuel away from RPT apron. The screened apron is further from the fuelling points which should improve access arrangements.	8.1.9.2	
		Preference for landside toilets with a full security separation from the terminal to avoid problems of access when the terminal is closed.	Existing toilet facilities are initially unchanged in the Master Plan. Access arrangements should be discussed with airport management	n/a	
		Use of 05 Runway as taxiway to alleviate potential conflicts at peak times.	A comment has been added to the Master Plan to introduce this concept.	8.1.4	17/8/2012
		Develop hangers on the north side of existing hanger taxilane.	Figure and text added to Master Plan	8.1.6 and Figure 34	

Stakeholder	Organisation	Issue Raised	Master Plan Response	Section Reference	Date recieved
Sally Cooper	Hertz	No issues raised	Noted		1/02/2012
Vince Hilder	DEC	There are problems accessing the water and Jet A fuel when an RPT service is at the terminal. These complications may become unacceptable as the airport gets busier due to the emergency nature of the water bombing services and access requirements.	Master Plan advocates an additional Jet A1 fuel point and additional water filling points that alleviate this issue	8.1.9.2	29/02/2012
		Sometimes volunteers are used to assist with refuelling - these individuals are unlikely to have ASIC cards so access in future will need to be managed by DEC and CoA.	Access to airside is in accordance with the Security Controlled status of the airport. ASIC cards and required or potentially VICs may be utilised. Additional investigation will be required	n/a	
		DEC would prefer to move the water to an alternative location to avoid conflict with RPT services.	Noted. Alternate locations have been identified in the Master Plan	8.1.9.2	
		DEC would also prefer to have access to fuel during RPT loading and unloading, whether this requires a secondary re-fuelling location, or an alternative layout to current operations.	Master Plan advocates an additional Jet A1 fuel point and additional water filling points that alleviate this issue	8.1.9.2	
Steve Johnson	Skywest	Please provide toilets in the sterile area	The long term development of the terminal building shows toilets in the sterile lounge area	Appendix F	31/01/2012
Lindsay Joyce	Joyce Air	Concerned about conflict between security measures on the apron and access to aviation fuel during these periods	Master plan advocates moving the GA fuel away from RPT apron. The screened apron is further from the fuelling points than current main RPT bay.	8.1.9.2 6.2.1 Figure 23	8/02/2012
Joe Lacerenza	General recreation pilot	No issues raised			9/02/2012
Malcolm Mallaby	MRWA	No issues raised			1/02/2012
Peter Stringer	MRWA	Any change of use or upgrade of the Albany Regional Airport requiring reconstruction of Albany Highway will cause Main Roads to seek			6/03/2012

Stakeholder	Organisation	Issue Raised	Master Plan Response	Section Reference	Date recieved
		compensation for the cost of the works.			
Gerry Van Der Ros	Budget	Additional car parking spaces preferred as the rental fleet grows	Additional parking areas are identified in the Master Plan – MP does not consider how these are allocated as this will be a matter of discussion between interested parties and airport management	8.1.8	1/02/2012
Hamish Wight	Rainbow Aircraft Maintenance	Have not been informed what areas and security are to be implemented.	Communication of specific security requirements are outside of the remit of the master Plan. CoA Airport Management are required to follow the legislation.	n/a	1/02/2012
John Wood	RAAF	Unimpeded access to our aircraft on the tarmac is critical so an access gate away from the terminal is important. This will still allow access to the terminal (café and toilets) but still allow access to the tarmac without having to pass through security.	RAAF are required to follow security regulations. Day to day operations to be discussed with airport management	n/a	31/01/2012
Julie Biser	Great Southern Aviation	Poor surface seal on taxiways – becomes soft / sticky in higher temperatures. Shortened cross runway limits use by students		3.1.1.2 2.0	20/07/12
Jason Balhorn	Bureau of Meteorology	Existing BOM weather station equipment close to old BOM building is required to be maintained for 3 to 5 years for calibration purposes	This issue has been highlighted in the report	8.1.6	17/8/2012
		BOM are aware of an old dump area close to the new BOM building that may be contaminated with asbestos – will this be removed	This issue has been highlighted in the report	8.4	

5.0 Forecast Passenger Growth

5.1 Growth Scenarios and Development Strategy

5.1.1 Historical Passenger Numbers and Growth

In order to provide a forecast of expected passenger demand for Albany Airport, an understanding of current and past demand is needed.

The Bureau of Infrastructure, Transport and Regional Economics provide Airport Traffic Statistics and this provided a source of historic data that could be used. A summary of demand is shown in Table 17 and graphically in Figure 19.

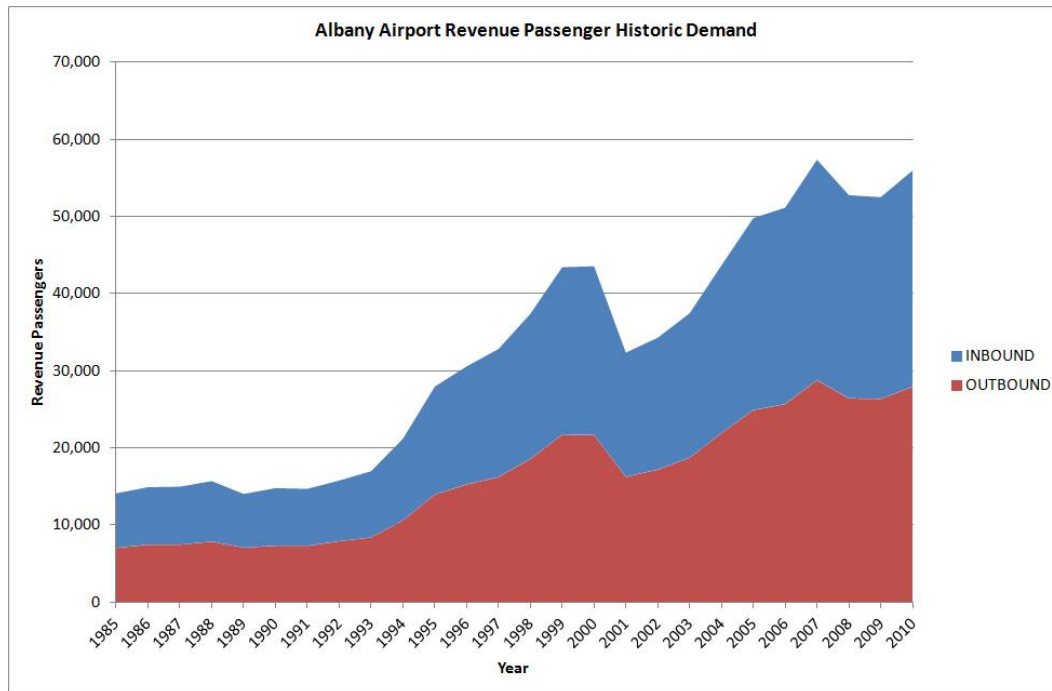
Table 17 Revenue Passenger Demand 1985 to 2010

REGIONAL AIRLINES – Revenue Passengers			
Year	INBOUND	OUTBOUND	TOTAL
1985	7,089	7,003	14,092
1986	7,448	7,441	14,889
1987	7,518	7,430	14,948
1988	7,835	7,838	15,673
1989	6,954	7,042	13,996
1990	7,481	7,284	14,765
1991	7,394	7,275	14,669
1992	7,871	7,875	15,746
1993	8,593	8,368	16,961
1994	10,585	10,591	21,176
1995	14,000	13,940	27,940
1996	15,322	15,245	30,567
1997	16,617	16,212	32,829
1998	18,826	18,563	37,389
1999	21,736	21,713	43,449
2000	21,888	21,677	43,565
2001	16,113	16,238	32,351
2002	17,121	17,182	34,303
2003	18,746	18,716	37,462
2004	21,778	21,904	43,682
2005	24,920	24,904	49,824
2006	25,495	25,691	51,186
2007	28,608	28,793	57,401
2008	26,374	26,431	52,805
2009	26,169	26,366	52,535
2010	28,064	27,938	56,002
2011	29,274	29,089	58,363

Source: http://www.bitre.gov.au/publications/91/Files/WebAirport_FY_1986-2011.xls

(Note 2011 figures are provisional and have not been carried forward into the analysis)

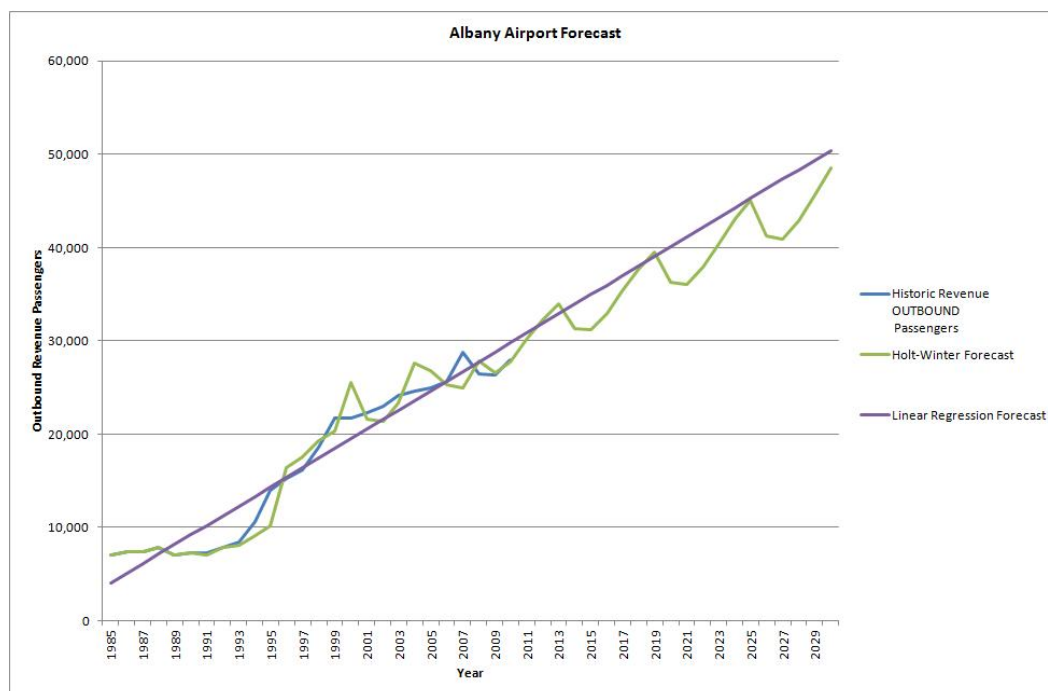
Figure 19 Albany Airport Revenue Passengers – Historic Demand



It can be seen in the historic data that there was a period of significant growth between 1994 and 2000 followed by a significant drop in passengers in 2001, possibly associated with the 9/11 event in the US. Passenger numbers were subsequently re-established and have continued to climb with only a small dip shown in 2008/09 which is likely associated with the Global Financial Crisis which peaked during this period.

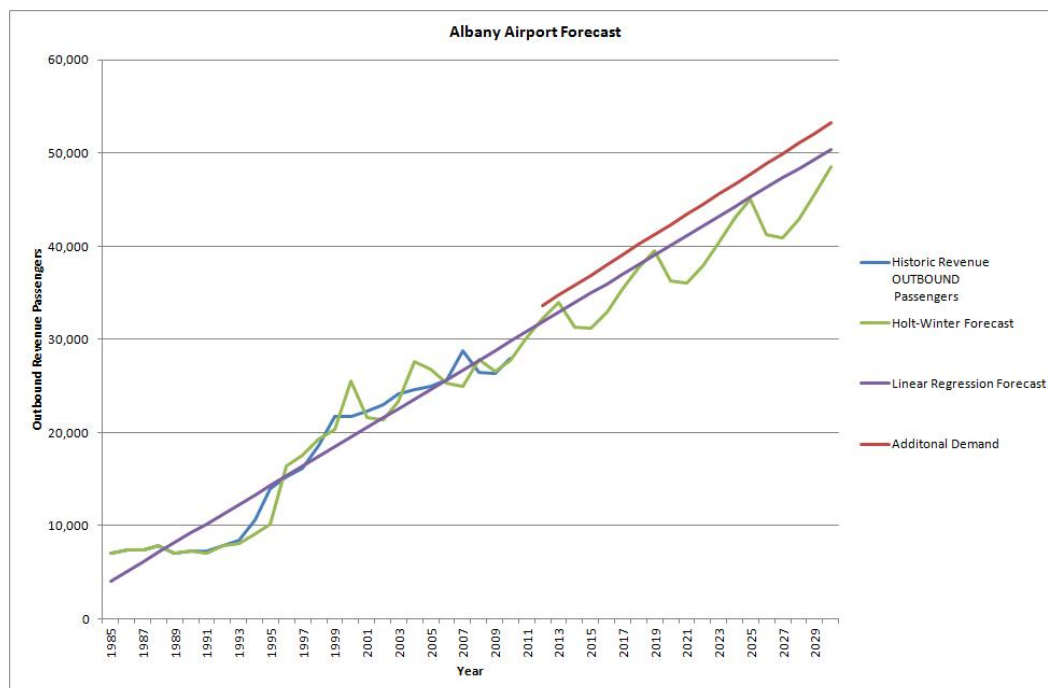
5.1.2 Base Growth

Two types of forecasting technique have been applied to the historic data to predict future passenger growth at Albany Airport. A linear regression forecast provides an estimate of just over 50,000 outbound revenue passengers in 2030 and an exponential smoothing (Holt-Winters) forecast provides an estimate of approximately 48,000. Both results are illustrated in Figure 20.

Figure 20 Base Growth Forecast – Outbound Revenue Passengers

5.1.3 Fly-In / Fly-Out Growth Scenario

There is a known additional demand from a Rio Tinto Fly-In / Fly-Out (FIFO) service, which commenced in March 2012, that will add an additional 30-40 outbound passengers a week to the overall demand. Figure 21 illustrates a revised forecast that includes these flights and assumes a 2.5% annual growth rate for FIFO activity to reflect continuing and gradually increasing demand for FIFO out of Albany.

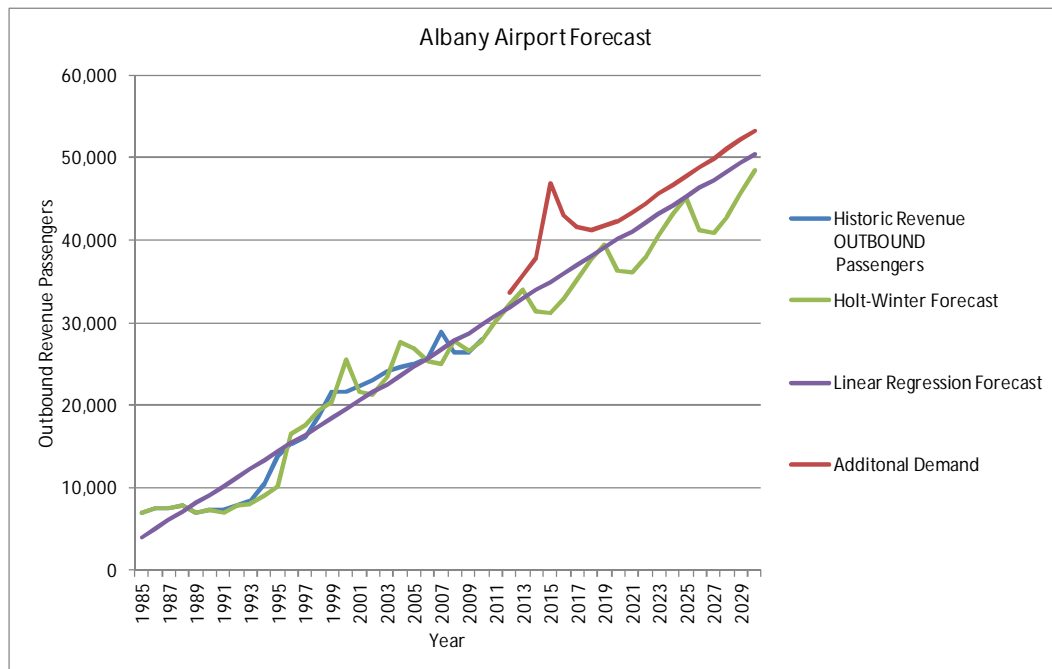
Figure 21 Base Growth + FIFO Forecast – Outbound Revenue Passengers

With this additional demand the forecast suggests that by 2030 the number of outbound revenue passengers will be in the order of 53,000.

5.1.4 Tourism Growth Scenario

A further scenario for consideration is related to the ANZAC Centenary in 2015. Figure 22 illustrates a revised forecast that (on top of FIFO forecasts) includes an additional 10,000 outbound passenger demand for 2015 with a ramp-up in the 2 previous years and a reduced demand to 2019.

Figure 22 Forecast outbound revenue passengers using revised data with additional ANZAC demand



5.1.5 Development Strategy

It is quite probable that Albany Airport will experience steady growth, reaching 40,000 outbound passengers per year within the next 5 years (by 2017) if FIFO demand continues as predicted. Forecasts beyond 5 years are less dependable, however it is reasonable to expect demand to increase to 50,000 outbound passengers per year within the next 15 years (by 2027 at the earliest based on currently available data).

The City of Albany's development strategy for the airport must take into account the landside and airside implications of larger passenger throughput expectations, specifically the rise of closed charter services delivering FIFO workers to and from Albany.

There may also be a gradual tree-change as more people relocate to Albany from other regional locations and from the Perth and Peel metropolitan area. Future economic development strategies for the City of Albany may encourage a population growth which could further drive the local economy and the success of FIFO. These strategic level issues have not been included in this master plan, but may influence the development of the airport beyond the next 10 years.

Chapter Recommendations

- i) Regularly review passenger numbers and update forecasts

6.0 Security Upgrades

6.1 Summary of Requirements

The Albany Airport is categorised as a Security Controlled Airport by the Commonwealth Department of Infrastructure and Transport.

The Government's National Aviation Policy – White Paper - Flight Path to the Future established the requirement for airports that have RPT aircraft operations of 20,000 Kg MTOW or greater to comply with security screening of both passengers and checked baggage from 1 July 2012.

The current RPT aircraft at Albany is the F50 which has a 20,820kg MTOW. Consequently, the existing airport terminal at Albany has required modifications to accommodate security equipment and enable separation of screened and non-screened persons and activities.

The Aviation Transport Security Act (ATSA) and the Aviation Transport Security Regulations (ATSR's) outline the airport security screening compliance obligations.

Hence, planning for the expansion of the Albany airport terminal building and installation of appropriate screening equipment to meet the requirements of passenger and checked bag screening has been a priority in the lead up to publication of this Master Plan.

The Office of Transport Security places airports into a series of categories which define the requirements for security screening. Albany has been initially placed into Category 5. The band relates to the passenger throughput of the airport, size of aircraft operating as well as the nature of the airport i.e. domestic or international. Table 18 provides the categories of security screened airports.

Table 18 Categories of Security Controlled Airports

Category	Security controlled airports
1	Designated airports
2	Airports to or from which an international air service operates and that are not designated airports
3	Airports that are not covered by category 1 or 2 and that meet the following: (a) aircraft operate regular public transport operations or open charter operations to or from the airport with a maximum weight of at least 20 000 kg; (b) if those operations are only operated to or from the airport by aircraft with a maximum weight of at least 20 000 kg but less than 30 000 kg — those operations involve an average of at least 50 000 revenue passengers departing the airport each year
4	Airports that are not covered by categories 1 to 3 and that meet both of the following: (a) aircraft operate regular public transport operations or open charter operations to or from the airport with a maximum weight of at least 20 000 kg but less than 30 000 kg; (b) those operations involve an average of at least 30 000 but less than 50 000 revenue passengers departing the airport each year
5	Airports that are not covered by categories 1 to 4 and that meet both of the following: (a) aircraft operate regular public transport operations or open charter operations to or from the airport with a maximum weight of at least 20 000 kg but less than 30 000 kg; (b) those operations involve an average of less than 30 000 revenue passengers departing the airport each Year
6	Airports that are not covered by categories 1 to 5 and that meet either of the following: (a) aircraft operate regular public transport operations or open charter operations to or from the airport with a maximum weight of at least 5 700 kg but less than 20 000 kg; (b) aircraft operate closed charter operations to or from the airport with a maximum weight of at least 10 750 kg
7	Airports for which the Secretary is satisfied the operator is temporarily unable to comply with the security screening requirements that apply to the category that the airport would otherwise be assigned to

Following submission of a business case to the Office of Transport Security, Albany has been reclassified as Category 4.

Screening processes related to Category 4 and 5 are presented in Table 19.

Table 19 Category Screening Requirements

Category	Screening infrastructure	Requirements for screening of passengers and checked bags			
		Passenger screening measures	Carry-on bag screening measures	Checked baggage screening measures	Transit Requirements
4	Screening operations may be conducted in terminals as outlined above, or by using portable or temporary screening equipment and structures provided by either the airport or airline. All screening points must be gazetted and established while screening is taking place.	As per current Aviation Screening Notice sections relating to domestic flights.	As per current Aviation Screening Notice sections relating to domestic flights.	100% external ETD and at least 5% internal ETD. Airports nearing the upper threshold may choose to conduct checked bag screening in accordance with the Aviation Screening Notice. Checked bags must be screened by a CBS X-Ray machine at the first available point before being loaded onto an ongoing flight.	Passengers cleared in these airports will be permitted to enter the sterile area of domestic terminals at all airports. Their checked baggage will be required to undergo re-screening prior to being loaded onto an ongoing service at an airport where CBS X-Ray is in use.
5		As per current Aviation Screening Notice sections relating to domestic flights. Airports may choose to utilise either WTMD or HHMD for primary screening of passengers.	Visual and physical inspection, random and continuous internal and external ETD. Airports nearing the upper threshold may choose to use x-ray equipment to conduct passenger clearance in accordance with the Aviation Screening Notice. Passengers screened at category 5 airports will require re-screening prior to entering the sterile area at a higher category airport.		Passengers and their carry-on baggage screened at category five airports will require re-screening prior to entering the sterile area at a higher category airport. Their checked baggage will also be required to undergo re-screening prior to being loaded onto an ongoing service at an airport where CBS X-Ray is in use.

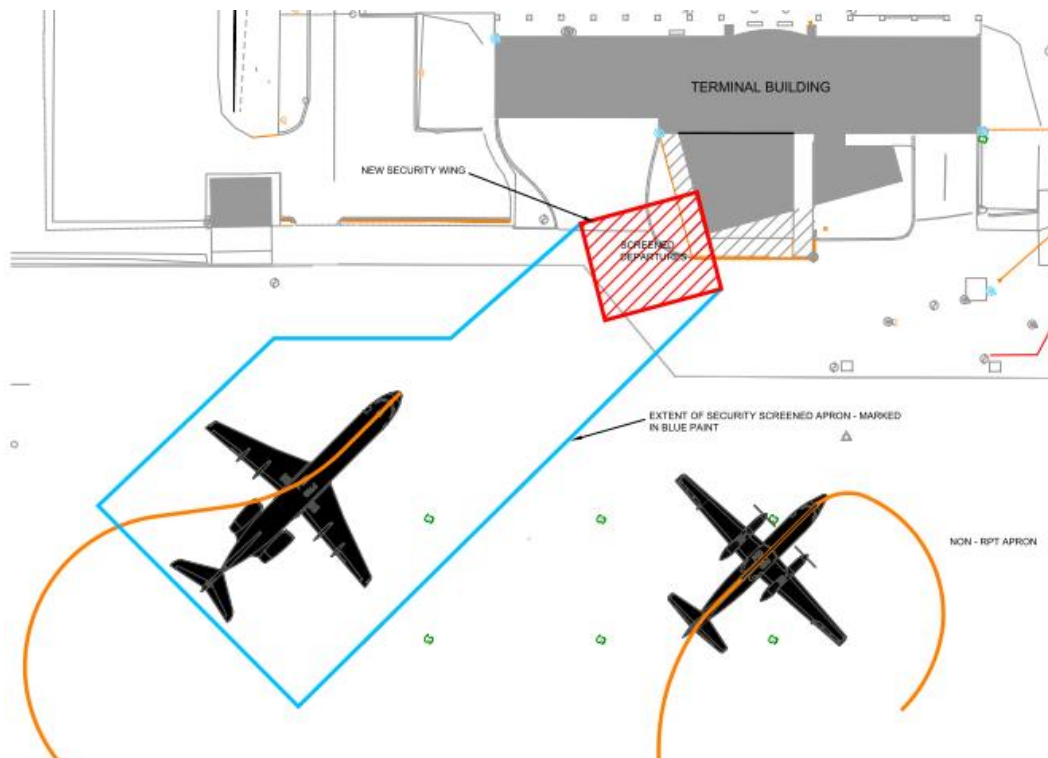
Following an assessment of available space it was established that the current terminal is adequately sized to allow for installation of the necessary equipment to meet the immediate needs for security screening for both Category 5 and 4.

In order to minimise disruption to current operations, however, an option to provide a new, temporary external structure to house the screening equipment and the sterile passenger holding lounge was chosen to be implemented.

6.2 Impact of Security Upgrades

6.2.1 Airside

On the airside, the requirement to segregate screened and non-screened air services required minimal amendments to infrastructure. The updated Transport Security Program details a screened apron which is demarked with a painted blue line on the apron as shown in Figure 23

Figure 23 Screened Apron

Screened passengers are kept within the blue lined area when embarking or disembarking from aircraft.

6.2.2 Landside

There are no implications for landside areas due to the initial security upgrade requirements.

6.2.3 Terminal Building

The terminal building required some alteration works to provide for the screening of passengers and baggage in accordance with the revised security requirements. The demand for screened passenger throughput is not likely to exceed a single F50 or possibly an F100 RPT aircraft in the initial stages. The available space in the terminal is adequate for this number of passengers.

An option to use a temporary external structure has been implemented. This option reduces the modifications to the existing building and is shown in Figure 24.

In the check in area, a new security office and search counter has been required. The search counter allows for a minimum of 5% of checked baggage to undergo internal ETD inspection in accordance with the legislation.

The cafe and lounge remain, with a new departure door to give access to the screening and holding lounge in the temporary building. Passengers wait in this sterile lounge after screening ready to board their flights.

A screening channel has been set up in the temporary building adjacent to the sterile lounge. This area will ultimately house the carry-on baggage x-ray, walk-through metal detector, explosive trace detection (ETD) station and a small search room. A secured exit will be provided for passengers who need to exit the sterile lounge after they have been screened.

Passenger circulation routes are shown in Figure 25.

Figure 24 Security Zoning Plan

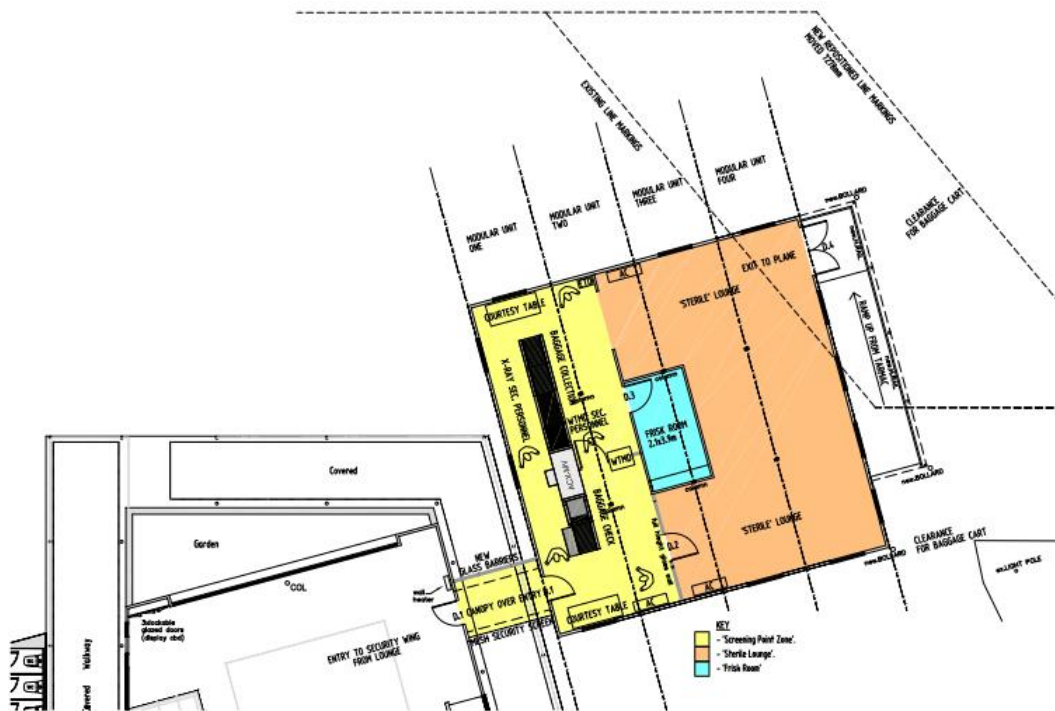
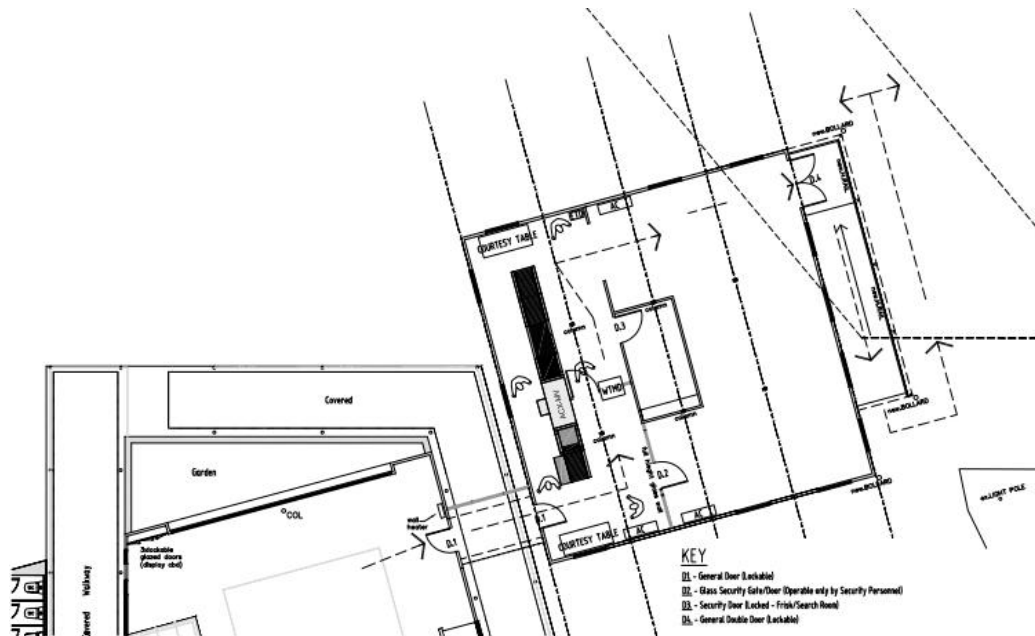


Figure 25 Passenger Circulation Plan



6.2.4 Implications for General Aviation

The General Aviation operators remain able to pass relatively freely through the terminal and out onto airside within the constraints of the airport status as a screened facility. During RPT services, the screened areas both inside and outside the terminal and on the apron will be established 30 minutes before an RPT service arrives, and will be maintained until 30 minutes after departure. During this time, non-screened personnel are required to stay clear of the screened operations.

7.0 Obstacle Limitation Surfaces

The approach/take-off surfaces of the runway, depicted by the Obstacle Limitation Surfaces (OLS) drawings are imaginary inclined planes beginning at the end of the inner edge formed around the runway strip end and extending outwards to a distance of 15 km.

'Safeguards for Airports and the Communities Around Them: Discussion Paper' (Commonwealth Department of Infrastructure, Transport, Regional Development & Local Government 2009) discusses OLS as follows:

"Commonwealth legislation – the Airports (Protection of Airspace) Regulations 1996 (Airspace Protection Regulations) CASR, the Civil Aviation (Buildings Control) Regulations 1988 and CASA's Manual of Standards Part 139 – identifies the need for consistency with internationally agreed criteria for protecting the low level airspace up to 15km radius around all civil aerodromes from tall buildings and other structures, smoke (or other particulate matter) and plumes.

"Airports require airspace in their vicinity to allow for aircraft landing, take-off or manoeuvring operations to be undertaken safely and efficiently. This airspace is described as operational airspace. During these operations, pilot workload is greatest and the aircraft is least manoeuvrable. Different airspace requirements are defined for visual and non-visual flight conditions. This depends on whether or not a pilot has the scope to operate below cloud with sufficient visibility to see and avoid other aircraft and/or obstacles while completing landing or take-off manoeuvres." (SPP 1/02 Guideline 3.1 p3)"

The approach, departure and manoeuvring paths form the protected notional surfaces of:

- the Obstacle Limitation Surface (OLS, see Figure 26) for visual flight procedures; and
- the Procedures for Air Navigation Systems operations (PANS-OPS) which relate to instrument procedures and are generally located above the OLS.

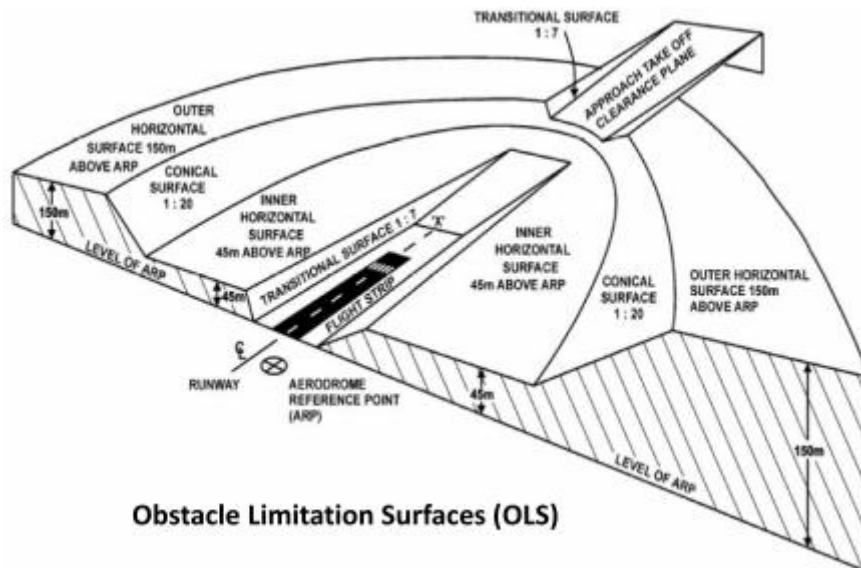
These surfaces are ascertained in accordance with International Civil Aviation Organization (ICAO) Annex 14 and ICAO document 8168".

An Obstacle Limitation Surface (OLS) plan has been previously prepared for Albany Airport to define the airspace around the Airport that must remain clear of obstacles. The OLS is made up of a series of imaginary surfaces as follows:

- Outer Horizontal Surface – the outer horizontal surface comprises a plane located 150m above the reference elevation datum, and extends from the upper edge of the conical surface for a distance of 15,000m radius from the Aerodrome Reference Point.
- Conical Surface – the conical surface comprises both straight and curved elements which slope upwards and outwards from the edge of the Inner Horizontal Surface to a specified height above this surface.
- Inner Horizontal Surface – the inner horizontal surface comprises a horizontal plane at a specified height above the reference elevation datum extending to an outer boundary comprising:
 - In the case of an aerodrome with multiple runways, curves of a specified radius centred on the middle of each of the runway strip ends and the curves are joined by a tangential line as two curves intersect (see Figure 27)
- Approach Surface – the approach surface comprise an inclined plane or combination of planes which originate from the inner edge associated with each runway threshold, with two sides originating at the ends of the inner edge. The inner edge associated with each runway threshold has a specified length, and is located horizontally and perpendicular to the runway centreline, at a specified distance before the threshold. The two sides diverge uniformly at a specified rate from the extended runway centreline. The elevation of the midpoint of the threshold is the elevation of the inner edge.
- Transitional Surface – The transitional surface comprises inclined planes which originate at the lower edge from the side of the runway strip and the side of the approach surface which is below the inner horizontal surface, and finishes where the upper edge is located in the plane of the inner horizontal surface. The transitional surface slopes upwards and outwards at a specified rate and is measured in a vertical plane at right angles to the runway centreline. The elevation of a point on the lower edge of the surface is:
 - Along the side of the approach surface, equal to the elevation of the approach surface at the point, and
 - Along the side of the runway strip, equal to the nearest point on the runway centreline or stopway

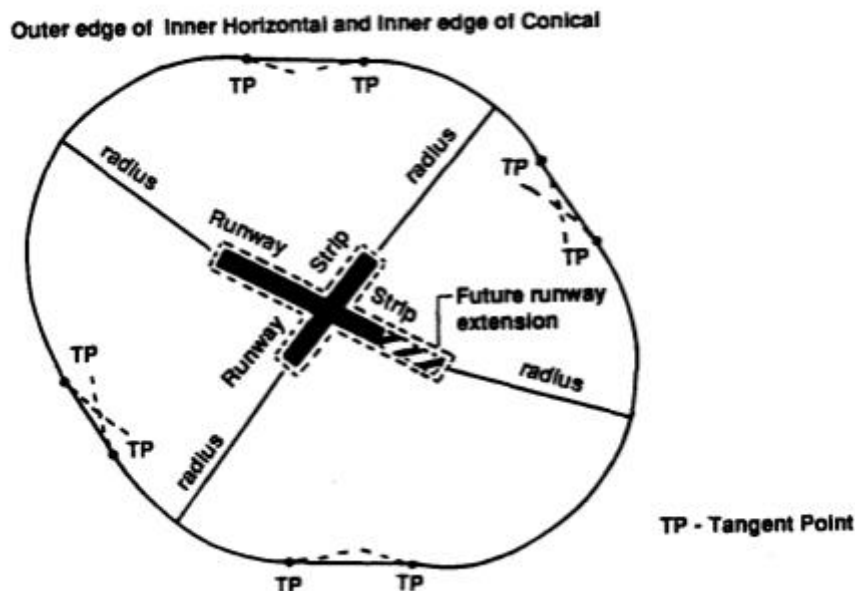
- Take-off Climb Surface – the take-off climb surface comprises an inclined plane located beyond the end of the runway. The origin of the take-off climb surface is the inner edge of a specified length, located at a specific distance from the ends of the runway. The plane from the inner edge slopes upwards at a specified rate, with the two sides of the plane originating from the ends of the inner edge concurrently diverging uniformly outwards at a specified rate, to a specified final width, and continuing thereafter at that width for the remainder of the specified overall length of the take-off climb surface until it reaches the outer edge which is horizontal and perpendicular to the take-off track.

Figure 26 Obstacle Limitation Surface



Obstacle Limitation Surfaces (OLS)

Figure 27 Outer and Inner horizontal and conical surfaces



The OLS has been previously prepared for the ultimate development of the Albany Airport and its reference elevation datum is the RL of the Aerodrome Reference Point (ARP). This Master Plan maintains the same ultimate airport development as the previous master plan and therefore the existing OLS plans do not require update.

These surfaces govern the height to which permissible structures may be erected and define heights to which they become obstacles if they protrude on or near the airport. Obstacles should not be permitted to penetrate or extend above the approach/take-off surfaces. These are critical surfaces for safe aircraft operations.

If sanctioned by the airport operator, structures may be permitted to protrude the OLS, however they must be marked and lit. CASA require all structures of proposed height 110m or greater to be referred to the regulator for approval.

Obstacles may cause operational penalties, such as an increase in the Lowest Safe Altitude (LSALT) for aircraft, which can have a profound effect when visual conditions from airport datum to LSALT are poor.

It is advisable for the City of Albany to implement planning controls to manage the height to which building of new structures around the airport can occur, encompassing the full extent of the OLS surfaces for ultimate development as depicted by the plans.

8.0 Airport Development Strategy

8.1 Summary of Development Stages and Growth Impacts

Base passenger demand derived from passenger forecasts detailed in Section 4 have been used to test the flight schedule requirement for the immediate, short, medium and long term, as shown in Table 20 and Table 21. To comfortably meet the anticipated base growth demand (assuming flights are occupied up to 85% of their carrying capacity) and to retain the current RPT schedule, it will not be necessary to increase the aircraft size beyond a Fokker 50 / 100 or similar within the next 20 years (Table 20).

Table 20 RPT Aircraft 2012 - 2032 (based on current schedule)

Timeframe		Base Passenger Demand (Out Bound)	Flights / week (F50)	Flights / week (F100)	Weekly Capacity (100%)	Weekly Capacity (85%)	Annual Capacity (100%)	Annual Capacity (85%)	Excess in Schedule (at 85%)
Immediate	2012	32,500	20	0	960	816	49,920	42,432	9,932
Short	2017	37,500	20	0	960	816	49,920	42,432	4,932
Medium	2022	42,500	20	0	960	816	49,920	42,432	-68
Long	2032	51,000	16	4	1160	986	60,320	51,272	272

Table 20 shows that in the medium term it may be required to add some Fokker 100 aircraft or similar to maintain an 85% load factor. Alternatively the frequency of F50 aircraft could be increased to cover the slight shortfall in seats.

To cover the more popular flight times in the immediate timeframe (i.e. where F50s are fully booked), the airline could potentially use F100 aircraft.

In future if the aircraft schedule can be altered, the RPT service provider may choose to operate a smaller number of larger aircraft, resulting in the aircraft quantities details in Table 21.

Table 21 RPT Schedule 2012 – 2032 (based on less frequent schedule)

Timeframe		Base Passenger Demand (Out Bound)	Flights / week (F50)	Flights / week (F100)	Weekly Capacity (100%)	Weekly Capacity (85%)	Annual Capacity (100%)	Annual Capacity (85%)	Excess in Schedule (at 85%)
Immediate	2012	32,500	20	0	960	816	49,920	42,432	9,932
Short	2017	37,500	0	10	980	833	50,960	43,316	5,816
Medium	2022	42,500	0	10	980	833	50,960	43,316	816
Long	2032	51,000	0	12	1,176	1,000	61,152	51,979	979

The future choices made by the RPT operator are at present unknown, however these choices will impact upon the planning requirements for the airport, both airside and landside. Discussions with the current RPT operator have confirmed there are no plans to increase the size of aircraft within the period of the Deed, and looking further out to 2020 it does not seem likely that larger aircraft would generally be required to be deployed on this route.

Where some of the current flights are fully booked, the operator may consider deploying an F100 to increase peak capacity.

FIFO growth in the region is seen as the more likely driver for larger aircraft, however the current FIFO F100 flight is expected to operate initially with a fairly low load factor of around 30% i.e. 30 passengers. As the route develops, the load factor will likely increase. Once this nears capacity, the options would be to supplement the F100 with either a second F100 or perhaps an F50.

8.1.1 Landside

The following tables outline the landside impacts associated with the immediate, short, medium, and long term growth forecasts. Two scenarios have been developed for the short and medium term based on whether the RPT services operate using Fokker 50 or Fokker 100 aircraft (or other aircraft of similar size). Therefore, six busy hour scenarios are detailed in Table 22.

Table 22 Busy Hour Scenarios

Timeframe		RPT	FIFO	Total Flights	Total Busy Hour PAX
Immediate	2012	1 x F50	1 x F100	2	126
Short A	2017	1 x F100	2 x F100	3	343
Short B	2017	1 x F50	2 x F100	3	299
Medium A	2022	1 x F100	2 x F100	3	453
Medium B	2022	1 x F50	2 x F100	3	368
Long	2032	1 x F100	2 x F100	3	402

The key airside and landside impacts associated with all scenarios that involve increasing the size of aircraft and the number of aircraft operating in a single hour can be summarised as:

- Requirement for runway development
- Expansion of RPT apron
- Expansion of Terminal
- Forecourt lengthening
- Car park redesign / expansion

8.1.2 Airside Impacts

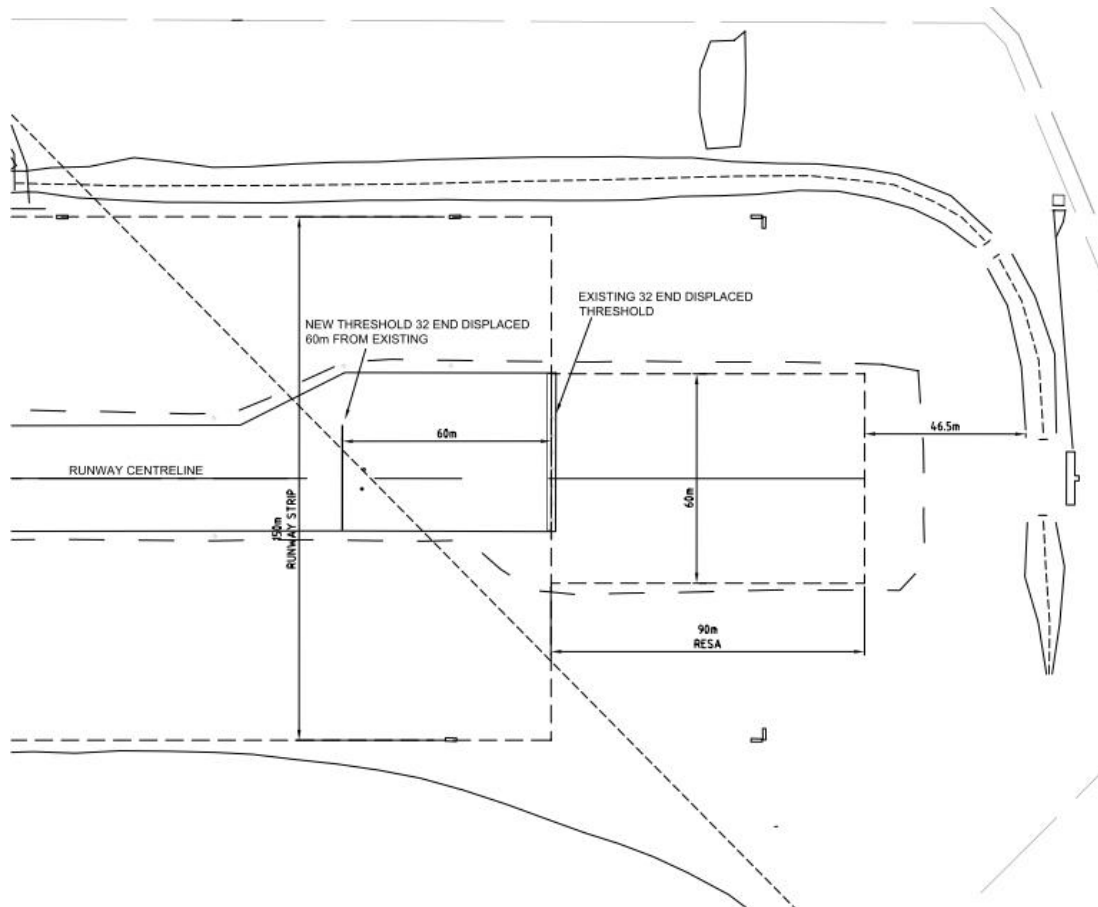
8.1.2.1 Runway – Immediate Upgrade Requirements

For current RPT operations only, there are no requirements to upgrade the runway. However, due to the FIFO charter flights starting in March 2012 on F100 jet aircraft, CASA have advised that this constitutes an upgrade and facilities must be brought in line with MOS139 standards.

For the runway this requires modifications to the RESA areas and modifications to the runway shoulders as follows:

- RESA 14 – the current RESAs are measured from the ends of the runway in accordance with the RPA requirements. Under MOS139, RESAs are to be measured from the ends of the runway strip, which extends 60m beyond the ends of the runway. At the 14 end, as shown on Figure 28, this leads to the RESA extending through the existing fence line and therefore some land resumption will be required such that the fence can be realigned.

Figure 30 RESA 32



- Shoulders – MOS139 requires sealed runway shoulders for 30m wide runways handling jet aircraft. Shoulders are to be 3m wide on each side of the runway

CoA has received an exemption from CASA for Fokker 100 operations into the current facilities under Instrument number CASA EX51/12. This instrument requires CoA to upgrade the non-compliant facilities before the instrument stops having effect at the end of March 2014.

It is therefore recommended in the Master Plan that detailed surveys are carried out of the runway RESA areas and designs progressed for RESA upgrades and fence line relocations. Designs should also be progressed for shoulder upgrades.

Construction budgets should be developed such that CoA is able to source suitable funding and procure the works in compliance with the timeframe set by CASA.

8.1.2.2 Runway – Ultimate Upgrade

Following the upgrades to the RESAs and shoulders, the current runway can service the short and medium term requirements for Albany Airport. Based on the passenger forecasts presented in this master plan, the runway is also adequate for the longer term.

To ensure future runway expansion is safeguarded, the ultimate development is presented. As stated in the previous Master Plan 2001, it is difficult to provide a definitive assessment of runway length requirements for specific aircraft as there are many factors which influence the maximum take off mass including the particular engine type, fuel reserve requirements, ambient climatic conditions and destination distance. The previous assessment remains valid for the current Master Plan and is reproduced here.

Runway assessment is based on:

- Published FAA Take-off Runway Length requirements for specific aircraft types
- Zero runway gradient
- Zero wind
- Standard day (15° at sea level) plus nominal 15° i.e. 30° ambient
- Average passenger plus baggage load of 90kg

Table 23 shows the maximum take-off masses and ranges for selected aircraft operating from runway lengths of 1800m and 2100m with loads comprising:

- Maximum passengers plus baggage (no freight); and
- Maximum payload

Table 23 Aircraft Load and Range Limits for 1800m and 2100m Runway Lengths

Aircraft Type	Runway Length 1800m			Runway Length 2100m		
	MTOW (tonnes)	Range (nm) for Max Pax plus Baggage	Range (nm) for Max Pax Payload	MTOW (tonnes)	Range (nm) for Max Pax plus Baggage	Range (nm) for Max Pax Payload
B717-200	51.7	1500	900	51.7	1500	900
B767-200	138	3200	1700	143	3900	2300
B767-300ER	147	2800	700	159	3900	1900

These ranges permit the aircraft to reach the destinations shown in Table 24 for runway lengths of 1800m and 2100m respectively.

It is reiterated that this information is indicative only and detailed studies would be required for specific cases.

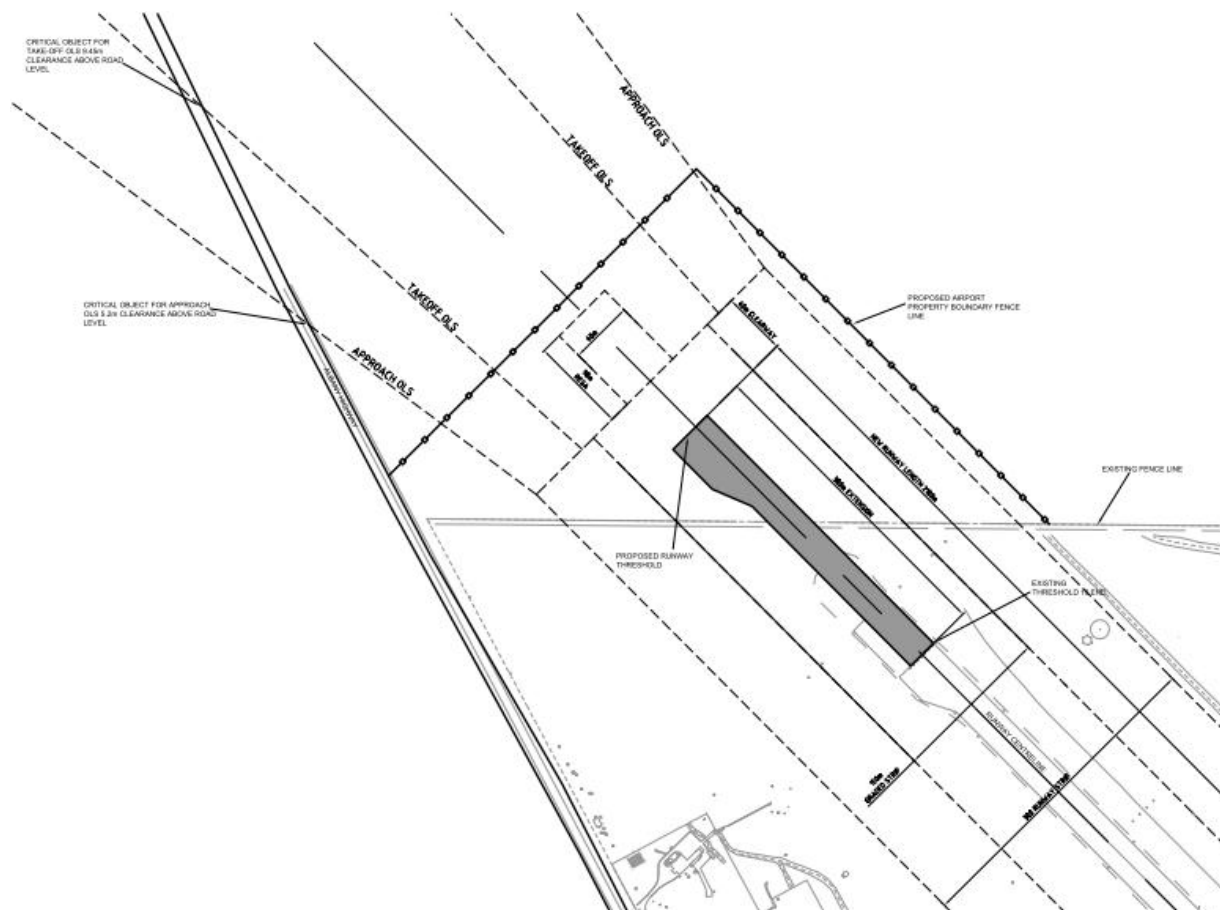
Table 24 Destinations

Destination	Distance (nm)
Perth	300
Adelaide	1010
Broome	1050
Alice Springs	1075
Melbourne	1320
Hobart	1460
Darwin	1530
Canberra	1540
Sydney	1650
Cairns	1850
Brisbane	1860

From Table 24 it is noted that under the assumed conditions, the existing runway length of 1800m permits operations of B767-200 and B767-300ER aircraft to all Australian major capital cities and regional destinations. To allow operations of the Code D aircraft, the runway would be required to be widened to 45m, with 7.5m shoulders giving a fully paved width of 60m.

Increasing the runway to 2100m gives some aircraft extended range. Detailed calculations are required to be undertaken based on operators proposed aircraft to justify any such extension. The extension is shown in Figure 31

Figure 31 Ultimate Runway Development



It should be noted that the potential runway extension is in the northwest. The topography in this area is relatively flat, and future further runway extension in this direction may also be possible, although the alignment of the Albany Highway may need amendment for any extension beyond 2100m.

To the south, the topography is much less favourable, as the ground slopes downwards away from the current site. Whilst expansion is not impossible in this direction, it will be significantly more expensive than northern expansion. Furthermore, as noted in Section 3.4.1.3, the southernmost extremity of the project area overlaps a registered mythological Aboriginal Heritage Site namely Creek 3 (Site ID 21837) which is a natural feature and a water source. Expansion of the airport to the south that intersects this heritage site will need to address the requirements of the *Aboriginal Heritage Act 1972*.

8.1.3 Taxiways

The existing Taxiway A from runway 14/32 to the RPT apron is a Code C taxiway and is satisfactory for the current, short and medium term traffic. This single taxiway is also adequate for the long term forecasts presented in the master plan.

In the longer term a parallel taxiway to the 14/32 runway would alleviate any unacceptable reductions in runway capacity or increase in delays.

For precision approach runways, a parallel taxiway centreline is located at 168m or 176m from runway centreline for Code 4C and 4D respectively. As recommended in the previous master plan, for planning purposes a Code 4D separation of 176m is recommended. The taxiway could be developed incrementally as required.

Taxiway dimensions for Code B, C and D options are presented in Table 25

Table 25 Taxiway Dimensions

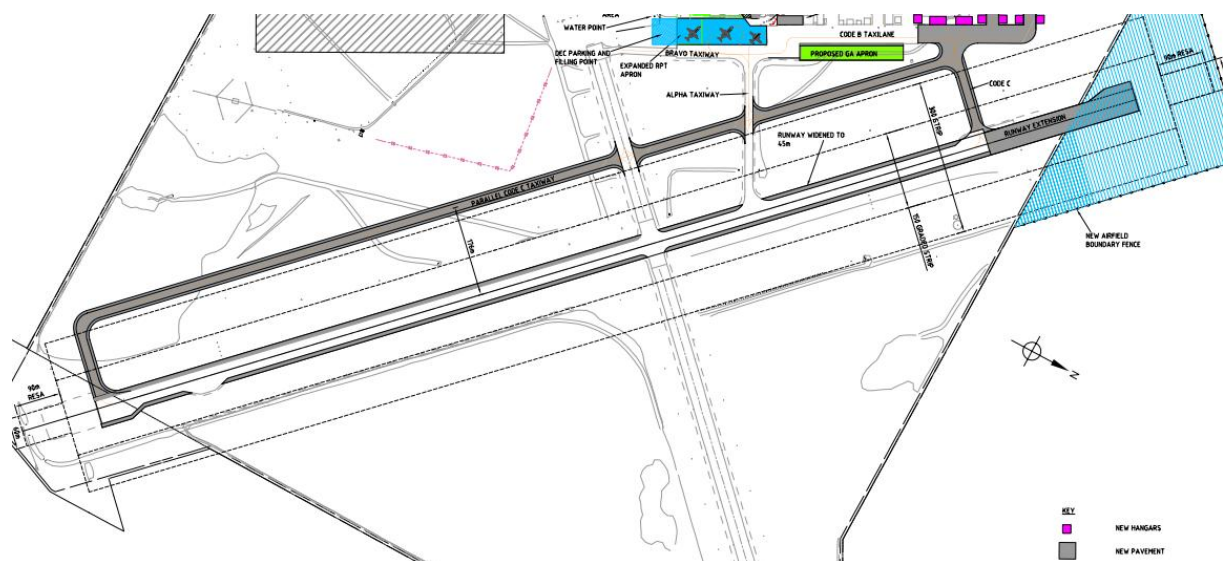
Code	Taxiway Width (m)	Shoulder Width (m)	Graded Taxiway Strip Width (m)	Taxiway Strip Width (m)
B	10.5	0	25	43
C	18 (see note 1)	3.5	25	52
D	23 (see note 2)	7.5	38	81

Notes:

1. Code C taxiway can be reduced to 15m if the wheel base of aircraft is less than 18m
2. Code D taxiway width can be reduced to 18m if the outer main gear span is less than 9m

The ultimate parallel taxiway development is shown in Figure 32

Figure 32 Ultimate Parallel Taxiway Development



8.1.4 Use of 05 Runway as Taxiway

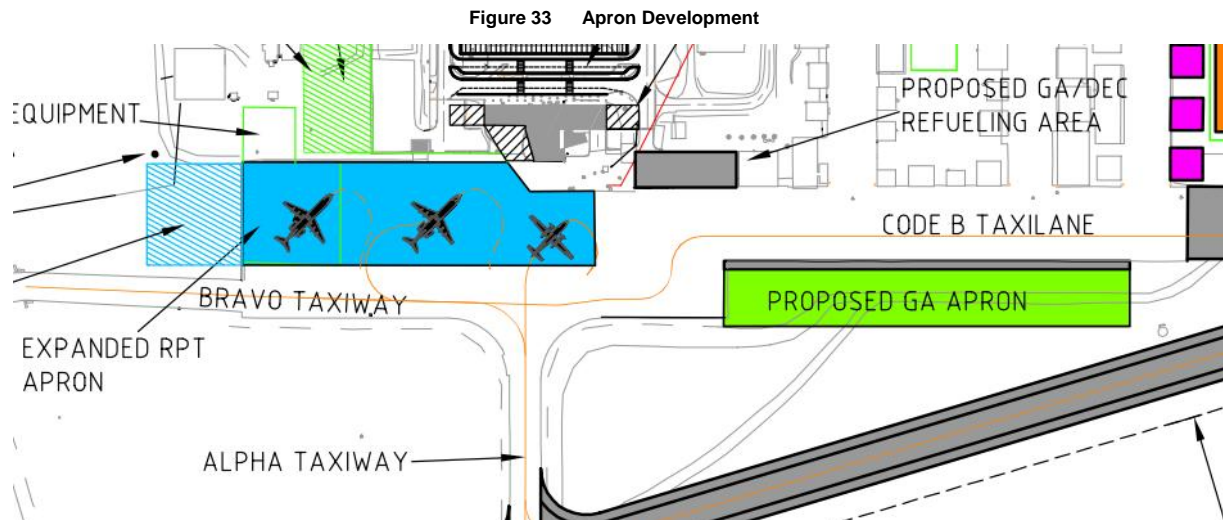
There is an opportunity that could be investigated to use the 05 runway and Taxiway B in conjunction with Taxiway A to alleviate potential backtracking and delays at peak times. If the pavement strength is adequate, arriving aircraft could be routed down the 05 runway while departing aircraft are held on Taxiway A.

8.1.5 Apron Expansion Requirements

To allow for the establishment of a screened apron, existing Bay 2 is proposed to be moved south as shown in Figure 33. The detailed location of this new location is required to allow a Fokker 100 to manoeuvre on and off stand while keeping clear of Bay 1.

A third Code C bay could be established to the south of Bay 2 in future if required due to operational needs and subject to any required pavement upgrade works.

A new GA apron is proposed on the east of taxiway C to alleviate the current issue of GA parking too close to the taxiway. This new apron could be developed in phases to suit demand, starting at the southern end which is closest to the main terminal building.



8.1.6 General Aviation Facilities Expansion

The existing general aviation activities are housed in 27 hangers and consist of:

- Private flying
- Flying training
- Charter operations
- Joy flights
- Crop dusting
- Aero club

The GA operations are all contained in the western quadrant of the airport, north of the terminal building. The area is fully leased, with a waiting list for facilities. There is some space to the north of the area that could house 3 or 4 new hangers, but further expansion is limited by the old BOM building. As this building has been replaced by the new facility to the east, there are development opportunities that open up. It should be noted that the existing weather station equipment close to the old BOM building is required to be maintained during a calibration period for the new weather station. This may constrain development in the short term while appropriate clearances are maintained to the existing equipment. Any works in this area should therefore be carried out with close consultation with BOM until the weather station is removed.

The development options identified at this stage are:

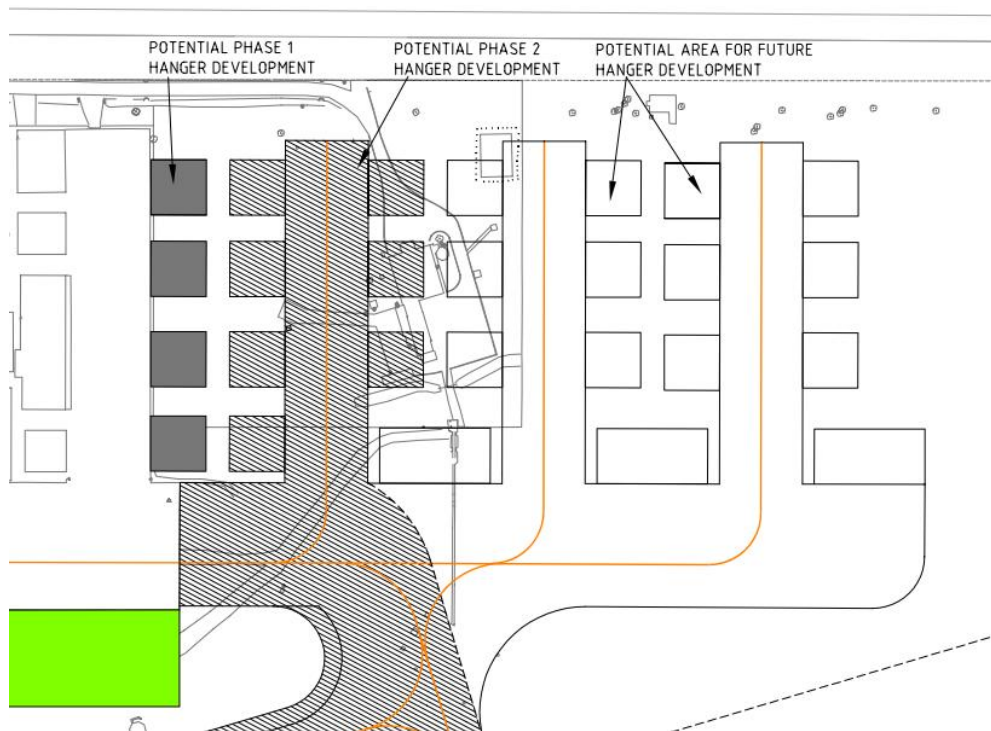
- 1) Redevelop the BOM as a GA facility
- 2) Redevelop the BOM as a flight training facility
- 3) Redevelop the BOM as an emergency control centre, which could include
 - a) Local Emergency Control Centre
 - b) District Emergency Control Centre
 - c) Emergency Command Centre
 - d) Bushfire / Emergency Service training centre
- 4) Demolish the BOM and build new GA hangers and taxiways

Option 2) would potentially be the most commercially attractive to the City and the Master Plan recommends that this option be pursued in the first instance.

If the BOM remains in place there is some space to the north of this facility for additional taxilanes and hangers to be developed. After that, there are no more development opportunities in this corner of the site due to proximity to the Albany Highway and the OLS clearances. This ultimate development is shown on the plan in Appendix D.

There is an option to develop GA facilities assuming that the BOM will be demolished and removed and this is shown in Figure 34.

Figure 34 Optional Hanger Development



This figure demonstrates that four hangers could be developed adjacent to the existing taxilane in Phase 1, followed by subsequent phased developments as demand dictates.

Any further GA development would need to be undertaken in another quadrant. There are undeveloped areas in the SE quadrant and along the eastern boundary. Due to the lack of infrastructure in these areas at present, and therefore the cost of developments, it is unlikely that any such development will occur within this Master Planning period.

8.1.7 Landside Impacts

The major landside impacts associated with the airport expansion relate to car parking and forecourt requirements. Additional car parking should be planned as passenger throughput increases. At the moment the car parking is free and there is no real delineation between short and long term. As the airport is a business, this free parking requires review.

Further study of the car parking requirements is included in **Section 8.1.8**

8.1.8 Terminal Development and Expansion

An airport terminal contains those activities associated with the transfer of passengers and their baggage from landside to airside. This includes the interfaces with ground transportation e.g. cars, buses, taxis, and the interfaces with the aircraft. The terminal building must allow for the aircraft operators to process passengers and baggage and for government authorities to undertake the required inspections. The building must also provide the facilities necessary for passenger comfort and assistance. It is also a desire of Albany Airport to provide a gateway function into the South West.

Allowing for flexibility and expansion of airport facilities is a key success factor in any airport planning exercise due to the volatile nature of the aviation industry. Historically many airports have 'painted themselves into a corner' by not taking a long term view to their developments.

The existing terminal, as introduced in Section 3.2.1, was originally planned for up to 100 arriving and departing passengers. The inclusion of security screening at the time of this Master Plan however changes the planning requirements of the terminal. The screening processes require space allocation that was not previously allowed for – this includes space in the check-in areas, as well as in the passenger screening areas.

The following section details the short and medium to long term planning for the terminal building.

8.1.8.1 Stage 1 – July 1st 2012

The immediate needs for the terminal amendments relate to the security requirements and have been discussed in Section 6.

8.1.8.2 Stage 2 – Medium to Long Term Development

As the operations through the terminal increase, additional space will be required to process passengers as well as additional space in waiting areas and sterile lounge. GA activities are concentrated at the northern end of the existing terminal, and there are also underground constraints such as sewage installations and fuel pipes that make it undesirable to expand in that direction. To the south of the terminal there are no such constraints and future development can be accommodated in this area.

In the medium to long term it is desirable to move away from the temporary screening solution and construct a building extension to house these functions.

8.1.9 Surface Access Impacts

The transport mode share assumptions associated with the busy hour scenarios are shown in **Table 26**. The mode share assumptions vary between RPT and FIFO as the passengers will be likely to have different travel requirements and spending patterns to and from Albany Airport.

Table 26 Busy Hour Scenarios – Transport Mode Share Assumptions

Timeframe		Flight Type	Long Term Parking	Short Term Parking	Pick Up	Drop Off	Taxi	Coach	PT	Rental Car
Immediate	2012	RPT	5%	30%	30%	15%	5%	0%	0%	15%
Short A	2017	RPT	5%	20%	30%	15%	10%	0%	5%	15%
		FIFO	5%	20%	20%	10%	15%	10%	5%	15%
Short B	2017	RPT	5%	20%	30%	15%	10%	0%	5%	15%
		FIFO	5%	20%	20%	10%	15%	10%	5%	15%
Medium A	2022	RPT	5%	10%	30%	20%	10%	0%	10%	15%
		FIFO	5%	10%	25%	10%	15%	10%	10%	15%
Medium B	2022	RPT	5%	10%	30%	20%	10%	0%	10%	15%
		FIFO	5%	10%	25%	10%	15%	10%	10%	15%
Long	2032	RPT	5%	10%	30%	20%	10%	0%	10%	15%
		FIFO	5%	10%	25%	10%	15%	10%	10%	15%

Demand for car parking, kerbside drop-off, and taxi pick-up is shown in

Table 27 and Table 28, based on mode share assumptions detailed in Table 26.

Table 27 Busy Hour Scenarios – Car Parking Assumptions and Land Allocation Requirements

Timeframe		Car Parking Spaces (Long/Short/Pick Up)	Total land (sqm)	Additional land required (sqm)
Current	2012	80	~3,300	35sqm is required per car parking space (including circulation and access). There is an over-supply of land at present.
Immediate	2012	82	2,860	-440
Short A (RPT F100)	2017	171	5,985	2,685
Short B (RPT F50)	2017	143	4,997	1,697
Medium A (RPT F100)	2022	189	6,630	3,330
Medium B (RPT F50)	2022	151	5,291	1,991
Long	2032	169	5,917	2,617

Table 28 Busy Hour Scenarios – Kerb Length Requirements

Timeframe		Kerb length (m)	Additional kerb required (m)
Current	2012	75	na
Immediate	2012	43	-32 (over supply)
Short A (RPT F100)	2017	118	43
Short B (RPT F50)	2017	86	11
Medium A (RPT F100)	2022	142	67
Medium B (RPT F50)	2022	121	46
Long	2032	126	51

Figure 35, Figure 36 and Figure 37 illustrate the land requirements for forecourt redesign and car parking / coach parking allocation for the short, medium and long term assuming either the Fokker 50 or Fokker 100 is utilised for RPT services.

The design of any car park modifications should take account of the expectations of users in regard to security and length of stay. Issues to be considered would include fencing, lighting, access control etc. as well as a study to identify the requirements for long stay versus short stay.

As stated earlier in the Master Plan, regional airports in WA have been moving towards paid parking.

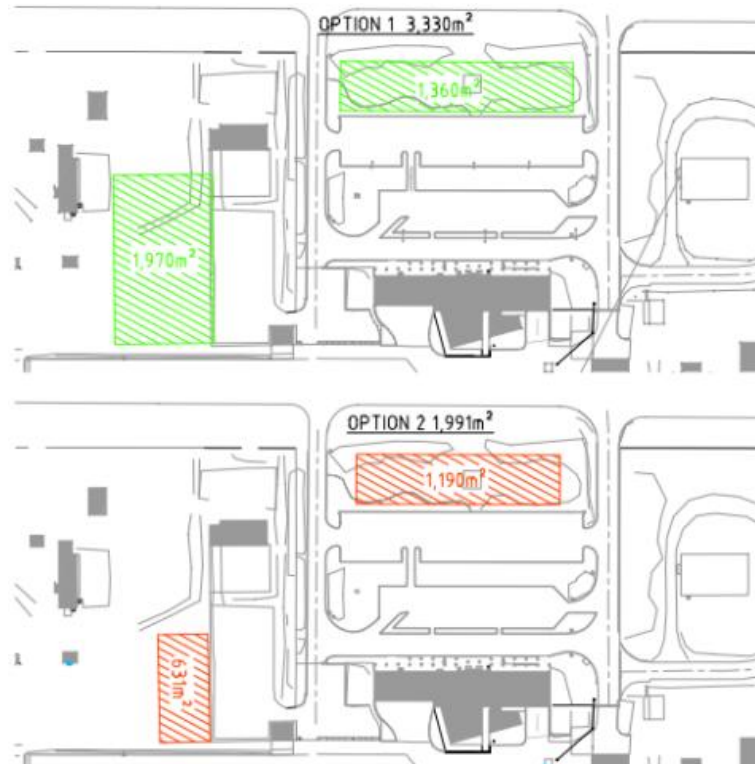
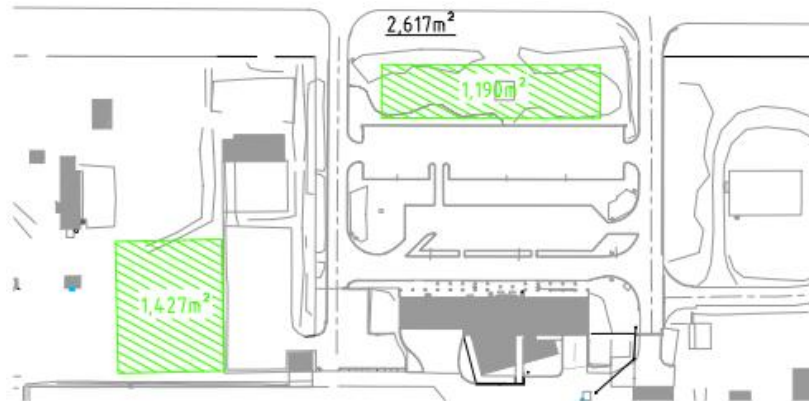
Figure 35 Parking and Forecourt Area Required by 2017**Figure 36 Parking and Forecourt Area Required by 2022**

Figure 37 Parking and Forecourt Area Required by 2032

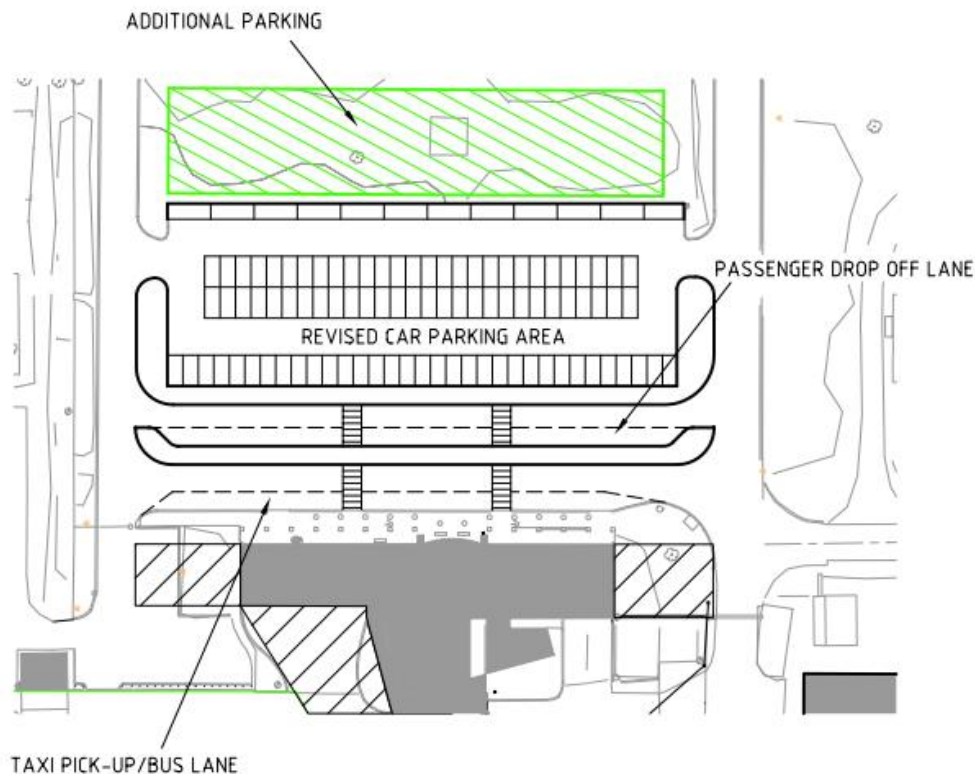
8.1.9.1 Surface Access Development Requirements

Passenger growth will impact upon the terminal size, function, forecourt design, and access strategy for the airport. Terminal expansion will need to be completed at key stages of the forecast growth based on busy hour conditions, aircraft capacity, and the number of aircraft operating in the busy hour.

A revised access strategy for the airport will need to include a review of arrival and departure patterns and modes of transport likely to be used, including prospective use of coaches for FIFO employees, introduction of a public bus service, revised access arrangements for service vehicles and freight deliveries, expansion of the car parking, and changing terms and conditions for using the car park including fees and duration of stay restrictions.

A redesign of the terminal forecourt will likely be required into the medium term to take account of the increased busy hour activity and changing needs of arriving passengers who may be transferring to bus, coach, or private pick-up. An additional drop off / pick up lane can be accommodated in front of the terminal as shown in Figure 38. There is an associated loss of parking in this scheme which may lead to an increased land take for the expanded car parking arrangements in the above figures.

Figure 38 Additional Drop Off Lane



The interface with Albany Highway will need to be redesigned to accommodate more and larger vehicles as busy periods expand over time. This process will likely require re-landscaping of the whole area in front of the terminal, which will heighten visibility of the terminal building from the road and create a stronger sense of place for airport users. It would be prudent to include an upgrade of the access signage into Albany Airport to heighten the visibility of the entrance for people arriving both from the north and the south.

Other land development requirements will include planning ahead for car park expansion, ensuring that existing residential property and associated landscaping can remain undisturbed. An opportunity exists to improve the vehicle access to the general aviation area, and to improve the legibility of the pedestrian route between the general aviation business and the terminal.

An opportunity also remains to support redevelopment of land adjacent to Albany Highway south of the terminal building. Access to this site would need a new cross-over from Albany Highway and would be subject to standard planning procedures.

8.1.10 Other Developments

The old BOM office located alongside Albany Highway north of the terminal building current resides airside, which complicates access arrangements. Realignment of the boundary fence between airside and landside could be undertaken to place this property on the landside. This action will improve ease of access and likely facilitate arrangement of a new commercial lease or alternate earning strategy. Depending on the preferred tenant type, it may be feasible / advantageous to align the fence 'through' the building so that certain suitably controlled exit(s) are able to gain airside access directly. Such an arrangement may suit a flying school for example.

Other potential development options that could be explored include:

- Storage Sheds
- Advertising billboard(s) on airport land, facing Albany Highway

8.1.10.1 Cargo / Freight Facilities

Cargo facilities in the medium term do not appear to present a significant development opportunity, with small quantities of freight being easily transferred to and from Albany city via delivery van as per current arrangements. No capacity problems were reported in stakeholder consultation.

As the airport develops, cargo throughout should be monitored. If a suitable business case were presented, a separate freight area could be developed in the southern quadrant or within the GA Hanger area where there is space behind hangers.

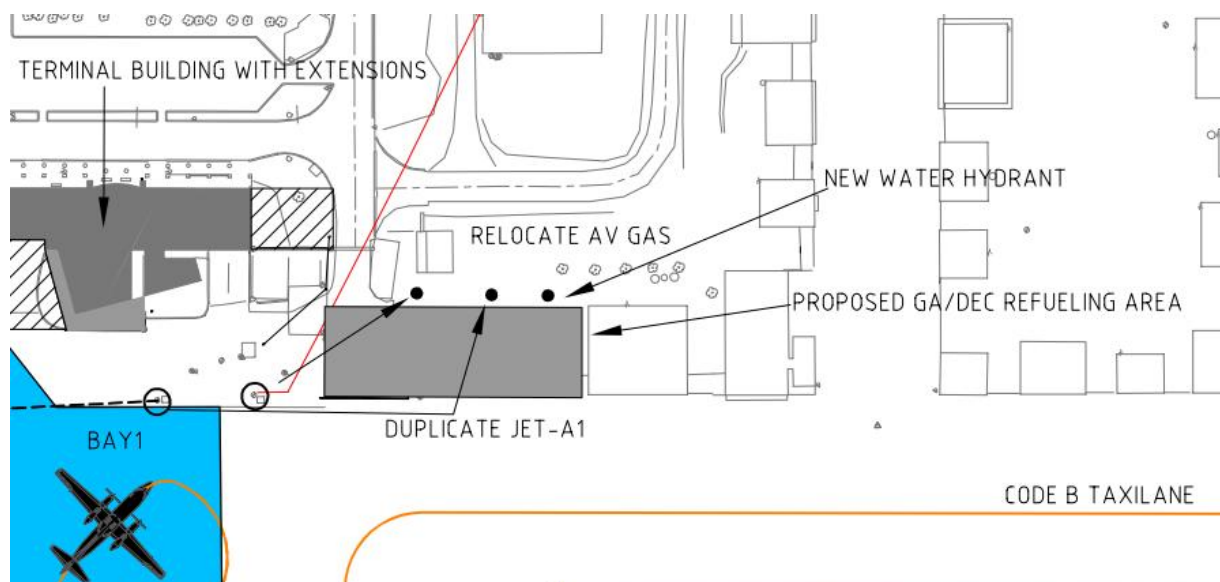
8.1.10.2 Aircraft Fuel Facilities / Water

The current location for GA fuelling clashes with RPT services and it is recommended that the two operations be separated. One possible solution would be to make a dedicated GA fuelling area adjacent to Taxiway C. At the moment there is no spare area along this taxiway, however if the two hangers closest to the terminal could be demolished or relocated then this could provide a suitable location for a fuelling apron.

This has the added possibility of also becoming a DEC water re-filling area if a new hydrant were to be also located in this area. During the fire season this would remove the current conflicts that can occur between DEC and RPT operations.

An additional Jet A1 bowser should also be investigated for RFDS, DEC, flying school use as shown in Figure 39. As stated in the previous Master Plan, the management of these decisions will be commercially based and a matter for airport management to negotiate at the appropriate time.

Figure 39 Relocated Fuelling and DEC Water Filling Area



It is recommended that this arrangement be further studied and if feasible consideration be given to implementation in the short to medium term. One of the hangers proposed to be removed contains asbestos and having this safely removed from the airport is encouraged.

As RPT and FIFO operations increase, it may be advantageous to add a second fuelling point in the apron so that fuelling can take place on Bay 2 as well as Bay 1. A cost benefit and operational study is recommended to ascertain whether a fuel bowser, fuel hydrant or fuel truck can provide the best outcome for the airport. In the short term the single fuelling point on Bay 1 should suffice as it is understood that the FIFO operations will generally not re-fuel in Albany.

8.2 External Development

The Master Plan recommends the retention of rural land uses surrounding the airport and expansion of a development node within the airport precinct for aviation-related industrial uses and transport facilities.

The 20 ANEF noise level is adopted in *Australian Standard AS2021 Aircraft Noise Intrusion Building Siting and Construction* as the maximum acceptable noise level for sensitive uses. Similarly, the *Civil Aviation Safety Authority's Obstacle Limitation Surface (OLS)* map for the airport identifies the maximum height for buildings.

Industries which produce heat or require tall structures should not be established in the Mirambeena Industrial Area (about 10km north of the airport) beneath the northern approach to the airport. Protection of the airport and its surrounding area from incompatible land uses is essential to safeguard its current level of operation and enable it to expand to meet future aviation requirements. In accordance with the 'Albany Local Planning Strategy 2010', relocation of the airport would hurt the community economically and socially.

8.3 Sustainability Opportunities and Initiatives

Any new development work should consider sustainability as part of the value proposition. There may be opportunities to lower the carbon footprint of the airport through on site power generation using photovoltaic cells for example. The City of Albany, through its "Strategic Plan 2011 – 2021" encourages sustainable development. Part of the strategy includes advocating / facilitating a shuttle service for passengers to / from the airport. The strategy also plans for the future expansion of the airport to allow for larger aircraft to access the airport. This is in line with the airport Master Plan.

The City strategy includes ensuring that new buildings will be passive solar efficient structures and have rigorous sustainability requirements.

8.4 Asbestos

There are some buildings on the airport containing asbestos, and it is recommended that a survey be undertaken by a qualified asbestos inspector to assess the extent and status of the asbestos. If there are any reported risks then removal of the asbestos and / or the affected structures should be planned.

There is also an old dump in the eastern area of the airport containing some asbestos that needs to be further investigated and potentially removed from site.

Chapter Recommendations

- i) RPT operator to consider F100 deployment for busy flights
- ii) Modify RESAs and shoulders on runway 14 / 32 as per CASA requirements for F100 operations
- iii) Assess land resumption at northern end of 14 / 32 runway for RESA
- iv) Survey and study of southern RESA and localiser to assess details for extending RESA
- v) Assess development of third RPT / Code 3C apron parking position at southern end of apron
- vi) Develop GA parking apron in phases to avoid parked aircraft infringing taxilane clearances
- vii) Plan and develop additional car parking as demand grows
- viii) Plan for additional drop off / pick up lane as demand grows
- ix) Consider paid parking
- x) Upgrade of access signage from Albany Highway
- xi) Plan for development of the old BOM building
- xii) Plan and develop a GA fuelling area away from RPT apron

9.0 Planning for Events

Albany is planning for a major event in 2014 to commemorate the departure of the Anzac fleet to Gallipoli.

Albany also hosts the Perth International Arts Festival (PIAF) Great Southern Program, bringing additional visitors to the region for this annual event.

There are potential opportunities and challenges for the airport relating to planning and implementation of such events, including:

- Surge of people
- Press profile
- Sequencing of events
- Upper bound and lower bound passenger estimates
- Terminal hourly throughput capacity
- Airfield and Landside systems may need to be upgraded to suit the size and frequency of aircraft
- Terminal capacity and size are typically dictated by the maximum throughput of passengers
- International Air Transport Association (IATA) defines 'Levels of Service' that include space requirements for passenger comfort
- A good level of service during a large event would be an over-provision of space for the remainder of the next 20 years in the Master Plan
- A lower level of service could be provided during the event leaving greater levels of comfort for passengers in the afterwards
- Alternatively temporary structures may be suitable for waiting areas etc.

9.1 Implications for Facilities

The Master Plan is designed to provide guidance on the opportunities and constraints that will need to be considered in the planning for major events. During the short to medium term, and potentially also into the long term (i.e. 20 year horizon), the airport terminal and car parking is planned for the general passenger projections. It would not be economically viable to design for the potential surges associated with major events. Such events will require careful planning to ensure an adequate level of service can be provided during these times.

The following sections provide lists of topics that will need to be covered in the event planning, with possible solutions that could be considered.

9.1.1 Landside facilities: facility review

- Car parks
- Forecourt
- Drop off zones

9.1.2 Landside facilities: facility solutions

- Enhance facilities
- High service shuttle coaches

9.1.3 Airside facilities: facility review

- Aprons
- Taxiways
- Fuelling

9.1.4 Airside facilities: facility solutions

- Temporary apron areas

- Use cross field runway for parking or as taxiway
- Additional fuel deliveries

9.1.5 Terminal facilities: facility review

- Check-in
- Baggage handling / reclaim
- Security screening
- Staffing
- Sterile lounge

9.1.6 Terminal facilities: facility solutions

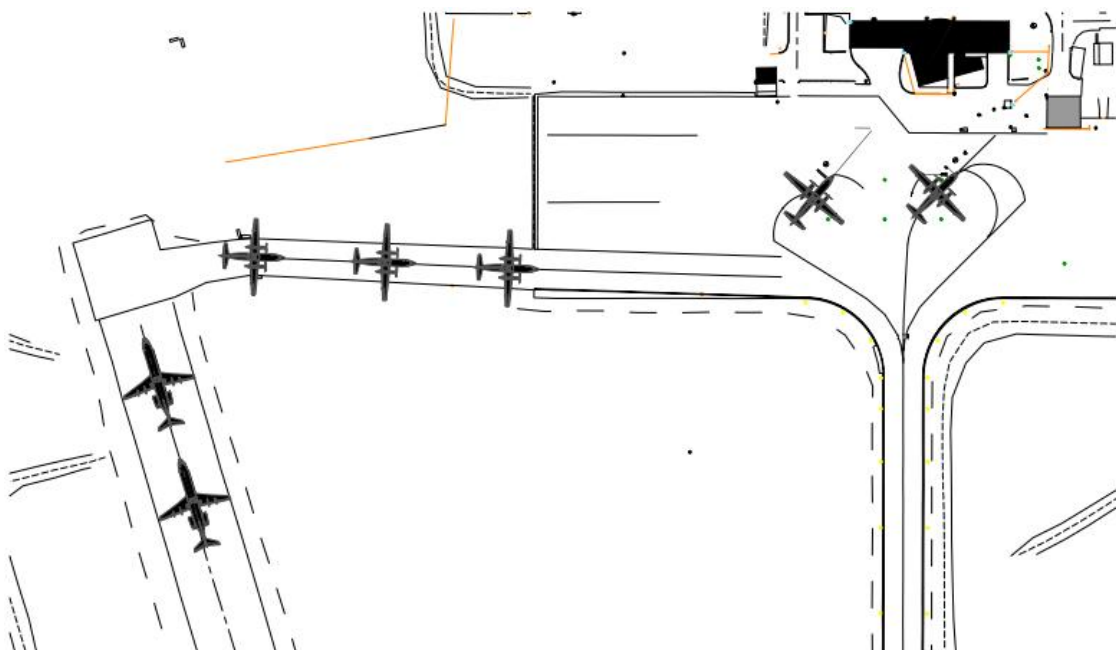
- Temporary / demountable structures to house:
 - Additional temporary check-in
 - Additional baggage handling / reclaim
 - Additional security screening
- Review aircraft schedule to spread the peak

9.1.7 Aircraft Processing

Depending on the type and frequency of aircraft bringing visitors to Albany for the peak seasons relating to Anzac commemorations and other major events, there could be potential issues relating to aircraft parking and servicing. Careful planning will be required to maintain a reasonable level of service during the peaks. Where possible flights should be turned round and depart from Albany rather than laying over for prolonged periods. With 2 active bays, Fokker 100 aircraft at full capacity can potentially cater for 400 arriving and departing passengers per hour, and up to a theoretical maximum of 4000 arrivals and departures in ten hours.

Albany can potentially make use of runway 05/23 for temporary aircraft parking if required. Empty Fokker 100 aircraft may be able to utilise this area for example if their schedule keeps them on the ground. Close inspections on the pavement will be required to check for any degradation that may occur, and the decision to allow such use of this area will be a matter for airport management. Any parking will need to remain clear of OLS surfaces. A possible parking layout is shown in Figure 40

Figure 40 Temporary Parking



10.0 Master Plan Summary

10.1 Master Plan Objectives

The purpose of an airport Master Plan is to document the perceived development of the airport from its present configuration to its ultimate, optimum configuration and to make this information available to all stakeholders and interested parties.

The principal objective in undertaking the master planning is to provide a realistic representation of the future airport layout that will maximise the capacity of the site in a way that is compatible with the environment, the local community and rational development of facilities and yet maintain flexibility to cater to future changes in response to the dynamic nature of the aviation industry.

To achieve this objective the following planning principles have been observed:

- Catering adequately and economically for forecast and potential volumes and type of aviation traffic and associated ground traffic throughout the life of the airport site
- Making maximum use of the airport site in an economical and effective way
- Achieving a balanced airport design whereby each element of the airport has a potential capacity commensurate with the capacity of each other element
- Ensuring the effective and efficient operation of each separate facility within the framework of the most effective and efficient overall design
- Permitting the progressive development of airport facilities to meet demand with minimum dislocation to existing facilities and operations
- Retaining as far as practicable, flexibility and options for development to meet unforeseen demand or changed circumstances
- Achieving as far as practicable, compatibility with the surrounding community and development

In preparing the 2012 Master Plan, due cognisance was given to the 2001 Master Plan. Where appropriate, the relevant data, planning concepts and details have been carried forward and embodied in the current Master Plan.

Additionally the operational and functional requirements of the Airport relating to the changes to security legislation have been incorporated into the planning.

Master Plans have been prepared for Albany Airport based on development to Code C standard, and ultimate development to Code 4D as shown in drawings in **Appendix D**

Current indications are that development beyond Code 3C will not be required within the planning period. However to safeguard for future it is recommended that the Code 4D layout be adopted as the master plan ultimate layout.

10.2 Master Plan

10.2.1 Airside

10.2.1.1 Runways

The existing runway 14/32 is to be brought up to full MOS 139 compliance with shoulders and RESAs being suitably upgraded. This will require a small portion of land resumption at the northern end. Provision is included in the master plan for a 300m extension to the north. Whilst unlikely to be required in the medium to long term, the advent of jet FIFO operations should be monitored in case aircraft type or destination / payload warrant such an extension.

The runway strip is currently 150m but already planned for 300m.

Runway 05/23 requires some rectification work to bring it back into regular service, and then it is retained in the Master Plan for GA operations.

10.2.1.2 Taxiways

The master plan retains the existing taxiways in their current configurations, and provides for a full length parallel taxiway on runway 14/32. New connecting taxiways are provided between the 14 end of the runway and an extended GA apron as shown in the drawing in **Appendix D**.

The parallel taxiway is set at the Code D clearance from runway to allow for upgrade to 4D in future. The construction of the parallel taxiway is proposed to be staged to suit demand.

Taxiway A would need to be upgraded to Code D by widening of shoulders and associated strip. Such upgrades to Code D would only be triggered by committed Code D operations.

10.2.1.3 Aprons

The master plan allows for development of the RPT Apron to the south to provide a total of 3 bays. Pavement upgrades are likely to be required. Detailed pavement condition assessment should be carried out to confirm the extent of the upgrade works.

There is provision in the master plan for a GA apron parallel to and east of taxiway C. A refuelling apron is also provided to separate RPT and GA operations.

10.2.1.4 General Aviation

The master plan includes the retention of the GA area, and allows for expansion of these facilities to the north. This also includes potential redevelopment of the BOM Building into a GA or Flying School facility.

10.2.2 Terminal Area

10.2.2.1 Terminal Building

The existing terminal building is capable of accommodating the new screening requirements and processing 50 to 60 passengers through a new sterile lounge. An external temporary structure will be utilised in the short term for this purpose.

From the forecasting information, the long term demand shows a steady increase in passengers. Such increasing demand could be accommodated in increased aircraft frequency, or larger, 100 seat aircraft. The likely solution is a combination of these scenarios.

Closed charter operations to resource sector airfields (FIFO) are currently exempt from screening and industry opinion is that this will remain the case going forward.

The master plan allows for building extensions to create a larger sterile lounge.

10.2.2.2 Roads and Car Parks

Public access to the airport terminal is via dedicated junctions to and from Albany Highway. The current car parking comprises approximately 106 spaces, including ACROD and some dedicated for hire car companies.

As the FIFO services develop it would be expected that additional car parking will be required to cater for longer term parking. The master plan allows for development of parking to cater for demand in land available to the west of existing parking and adjacent to Albany Highway. Additional land is also available to the south of the terminal.

10.2.3 Support Facilities

10.2.3.1 Aircraft Refuelling

The master plan retains the existing fuel storage facilities in the western quadrant, with some amendments and duplications of the delivery systems. The Avgas dispenser is relocated away from the RPT operations. Additional Jet-A1 filling points are allowed.

10.2.3.2 Airline Catering

It is assumed that airline catering will continue to be provided ex Perth, and no new facilities are required in the short to medium term. Should such services be required in the long term there is development area available in the south west quadrant.

10.2.3.3 Air Freight

No new facilities are required in the short to medium term. Freight can continue to be delivered directly into the baggage make up hall in the terminal. As per airline catering, should such services be required in the long term there is development area available in the south west quadrant.

10.2.3.4 Aircraft maintenance

RPT aircraft are assumed to remain based in Perth in the medium to long term and no maintenance facilities have been planned. General aviation maintenance will continue to take place in the GA area.

10.2.4 Commercial Developments

There have been no requirements for commercial development at the airport identified during the master planning. The master plan does allow for a development area in the south west quadrant if such potential can be developed in the long term. The previous master plan identified typical uses as:

- Service Station
- Food outlets
- Aircraft museum
- Tourist Information Centre
- Rental Car Service Facilities

Within the airport boundary in the eastern and northern quadrant there are large areas which incur maintenance costs and consideration could be given to investigating alternative income generating uses. With the new BOM building being situated on the eastern boundary there are likely to be some exclusion zones, however the previous master plan identified that short tenure leases could be negotiated with local businesses for commercial enterprises such as:

- Turf farming
- Golf driving range / short hole course
- Low rise commercial / transit / recreational activity development

Any such development would need careful assessment to ensure to adverse impacts to airfield operations or safety.

Additional developments that could be considered include:

- Storage sheds
- Paid long term secure parking
- Billboard advertising on airport land facing Albany Highway

11.0 Approach to Implementation

11.1.1 Programme Management

Due to the unique nature of airports compared to other businesses, the overall management of the airport development should be driven by the airport management. Aviation can be a volatile industry with rapid changes in demand caused by external events. Investment and development of airports can take considerable time for planning, investigation, design and implementation. For these reasons it is important to have a master plan which is flexible and can be accelerated, or decelerated as required to respond to change.

11.1.2 Costs and Funding

The programme of works identified in this Master Plan (2012) can be split into short / immediate, medium and long term. In accordance with other airport master plans these timeframes are identified as 0 – 5 years, 5 to 10 years, and beyond 10 years. The works have been assessed for priority to match the forecast airport growth, and also assessed against any external agency requirements such as CASA compliance.

In the following table the works have been identified, described, costed and justified. Note that the costs are high level estimates only and a more formal budget would need to be produced prior to applying for funds for the works.

Table 29 Implementation Strategy and Order of Costs

Trigger	Project	Description and justification	Cost
Short Term (2012 – 2017) – PROJECTS			
	Asset Management Register	Undertake asset survey and document condition / capacity of all assets to allow for an asset management approach to be implemented across the site	\$60,000
Existing sewer system is running at capacity	Sewer Upgrade	Add additional capacity to BioMax sewerage system to cater for additional demand	\$120,000
Upgrade aircraft operations to Fokker 100 jet services at airport for FIFO operations.	Pavement study	Undertake pavement strength assessment using Falling Weight Deflectometer or similar to identify strength of runway, taxiways and aprons to enable pavement asset management to be implemented	\$40,000
	RESAs	CASA have advised this constitutes a major upgrade and the RESAs are not compliant with MOS 139. Provide compliant RESAs at both ends of runway 14/32. Requires some land resumption at 14 end and realigning of fence	\$520,000
	Runway shoulders	Provide compliant 3m shoulders on both sides of runway 14/32	\$500,000
	Runway lighting	Check and upgrade runway lighting if necessary	\$250,000
Current linemarkings have been identified in CASA Audits as being non-compliant.	Linemarking	Re-mark runway, taxiway and apron linemarking in accordance with CASA MOS 139	\$20,000
Current Pavement defects identified in ATI reports.	Taxiway C	Asphalt joint is rough with a 30mm dip which could contribute to prop strike issues. Rough section of taxilane at join to main apron. Corrective asphalt application required	\$250,000

Trigger	Project	Description and justification	Cost
	Runway	ATI identified the runway bitumen is aged and brittle, with associated stone loss. Enrichment seal and additional stones may be required	\$270,000
	Taxiway D & E	Surface bleeding requires sanding and rolling and sweeping	\$50,000
Terminal extension for screening requires additional power	Power Supply	Upgrade the airport incoming main power supply	\$175,000
Security – Move to Band 4	X-Ray	Install x-ray machine by February 2013	
Drainage issues	Drainage study	Undertake drainage study to assess condition and capacity of existing infrastructure	\$30,000
Short Term (2012 – 2017) – PLANNING			
	Terminal building expansion	Commence planning for terminal building expansion to replace temporary screening and lounge and integrate into the main building	
	GA Expansion	Commence planning for GA expansion if business case shows justification. Expansion may include <ul style="list-style-type: none"> - new hanger space - access taxilanes - Code B taxilane to 14 Runway end 	
	Fuel bowser relocation	Commence planning for relocation of AvGas fuel bowser and additional Jet A1 bowser	
	Car parking expansion	Commence planning for car park expansion	
	Additional Drop Off lane	Commence Planning for additional drop off lane at front of terminal	
Medium Term – (2017 to 2022) – PROJECTS			
Growth in demand for car parking and drop off	Car park expansion	Expand car parks for additional demand.	\$300,000
	Additional drop off lane	Additional drop off / pick up lane to enhance vehicle flows through front of terminal	\$75,000
Growth in passenger demand resulting in terminal building reaching capacity	Terminal Building expansion	Terminal building expansion to replace temporary screening and lounge Add new concessionaires	\$650,000
Growth in RPT	Fuel bowser relocation	Relocate AvGas bowser to new fuelling area north of the RPT apron to give better access for GA users	\$75,000
Growth in GA	GA Expansion	Additional hanger areas and associated access taxilanes	\$800,000
Medium Term – (2017 to 2022) – PLANNING			
	Terminal building expansion	Commence planning for terminal building upgrade	
	Runway Extension	Commence planning for runway extension, parallel taxiway. Includes planning for land acquisition	
	GA Expansion	Commence planning for GA expansion	

Trigger	Project	Description and justification	Cost
	Car parking expansion	Commence planning for car parking expansion	
Long Term (Beyond 2022) – PROJECTS			
If passenger growth has accelerated beyond the forecasts in this master plan. AND There is continued and positive growth in domestic RPT, including new destinations beyond Perth, coupled with sustained demand for charters (FIFO) using 3C aircraft and demand for 4C aircraft. AND Developments that occurred in the short and medium term are no longer suitable		Expansion of terminal building to provide additional check-in, baggage handling, screening and lounge areas	\$500,000
	Runway Lengthening	Extend runway to 2100m length	\$2,250,000
	Parallel Taxiway	Completion of full parallel taxiway for runway 14/32	\$2,750,000
	Car Park expansion	Additional car parking developments in the terminal precinct	\$400,000
		Additional car parking developments in the GA precinct	\$600,000
	GA Expansion	Additional hanger areas and associated access taxilanes	\$280,000
Ultimate Development			
	Code 4D upgrade	All areas developed for Code 4D aircraft and associated passenger numbers	Not costed at this stage

11.1.3 Agency and Stakeholder Partners

Airport development is undertaken in accordance with CASA, OTS and other government bodies' requirements. It is important to work with these agencies at an early stage in any development plans to align the plans with the compliance requirements.

Local agencies and stakeholders include Council, airport tenants and users, RAAF, DEC, Air BP etc.

11.1.4 Consultation and Engagement

Ongoing consultation with stakeholders is encouraged as the airport develops. Maintaining the airport website is likely to prove to be an extremely useful tool to disseminate information. More direct engagement is encouraged with airport tenants, government agencies, regular users etc.

12.0 Glossary of Terms / Abbreviations and Acronyms

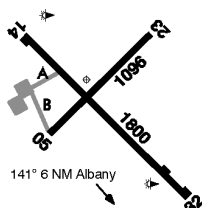
Table 30 Abbreviations

Abbreviation / Acronym	Full Text
A320	Airbus 320
ACN	Aircraft Classification Number
AHD	Australian Height Datum
AIP	Aerodrome Information Package
AIS	Aeronautical Information Service
ANEF	Australian Noise Exposure Forecast
ARFF	Airfield Rescue and Fire Fighting
ARP	Aerodrome Reference Point
AS	Australian Standard
ASA	Airservices Australia
ASIC	Aviation Security Identification Card
ATI	Aerodrome Technical Inspection
ATSA	Aviation Transport Security Act
ATSR	Aviation Transport Security Regulations
B737	Boeing 737
BOM	Bureau of Meteorology
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
CBR	California Bearing Ratio
CoA	City of Albany
CTAF	Common Traffic Advisory Frequency
DEC	Department of Environment and Conservation
DME	Distance Measuring Equipment
ERSA	En Route Supplement Australia
F100	Fokker 100
F50	Fokker 50
FAA	Federal Aviation Administration
FESA	Fire and Emergency Services Authority
FIFO	Fly in / Fly Out
GA	General Aviation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
ILS	Instrument Landing System

Abbreviation / Acronym	Full Text
LSALT	Lowest Safe Altitude
m	Meters
MOS	Manual of Standards
MRWA	Main Roads Western Australia
MTOW	Maximum Take Off Weight
NASAG	National Airports Safeguarding Advisory Group
NDB	Non-Directional Beacon
nm	Nautical Miles
OEW	Operating Weight Empty
OLS	Obstacle Limitation Surface
OTS	Office of Transport Security
PAN-OPS	Procedures for Air Navigation Services - Aircraft Operations
PAPI	Precision Approach Path Indicator
PAX	Passengers
PCN	Pavement Classification Number
PIAF	Perth International Arts Festival
PSI	Pounds per Square Inch
RAAF	Royal Australian Air Force
RESA	Runway End Safety Area
RFDS	Royal Flying Doctor Service
RPA	Rules and Practices for Aerodromes
RPT	Regular Passenger Transport
TSP	Transport Security Program

Appendix A

Aerodrome Information

ALBANY**ELEV 233****AVFAX CODE 6301**

WA S 34 56.6 E 117 48.5 UTC +8 YABA
 S 34 56.6 E 117 48.5 VAR 2 DEG W CERT
 AD OPR City of Albany, PO Box 484, Albany, WA, 6331. PH 08 9841 9333,
 FAX 08 9842 6439, ARO 0439 694 666; Manager 08 9841 7372.

REMARKS

- AD Charges: All ACFT.
- This AD is a Security Controlled Airport. Security Gate access code to access terminal and/or airside can be obtained by contacting AD office 08 9841 7372 or 0439 694 666.

HANDLING SERVICES AND FACILITIES

AIR BP: JO 2300-0900, SAT 0000-0400, AH call out fee applies. Phone 0439 282540. H24 AVGAS,
 AIR BP swipe card bowser, JETA1.

PASSENGER FACILITIES

PT/TX/HC/LG/RF/WC/ME

APRONS AND TAXIWAYS

TWY B AVBL for ACFT 10,000KG and below.

AERODROME OBSTACLES

Lit mast 671FT, WILLYUNG HILL, BRG 091 DEG MAG/1.94 NM FM ARP.

METEOROLOGICAL INFORMATION PROVIDED

TAF CAT 3. MO.

AWIS - Phone 08 9842 1623.

PHYSICAL CHARACTERISTICS

05/23	047	36a	PCN 10 /F /A /1050 (152PSI) /U	WID 30	RWS 90
14/32	137	59a	PCN 21 /F /A /1250 (181PSI) /T	WID 30	RWS 150

AERODROME AND APPROACH LIGHTING

RWY 05/23	PTBL (1)			
RWY 14/32	LIRL	PAL+AFRU 127.85		SDBY PWR AVBL
RWY 14/32	PTBL (1)			
RWY 14	PAPI (2)	PAL+AFRU 127.85	3.0 DEG39FT	SDBY PWR AVBL
RWY 32	PAPI (2)	PAL+AFRU 127.85	3.0 DEG41FT	SDBY PWR AVBL

(1) EMERG only

(2) Left side. PAL + AFRU requires three three second pulses to activate.

PAL cycle 60MIN.

ATS COMMUNICATIONS FACILITIES

FIA MELBOURNE CENTRE 123.9 On ground

RADIO NAVIGATION AND LANDING AIDS

DME	ABA	109.7/34X	S 34 57.0	E 117 48.6	(2)
NDB	ABA	240	S 34 57.1	E 117 48.6	Range 100 (HN 60) OW 200 (1) (OW HN 110)

ILS	IAB	109.7 (RWY 14)	S 34 57.2	E 117 49.1
LOC	IAB	34X/109.7 (RWYS 14)	S 34 57.2	E 117 49.1

GP	IAB	333.2 (RWY 14)	S 34 56.5	E 117 48.4
----	-----	----------------	-----------	------------

(1) 355/0.6 to ARP.

(2) Antenna ELEV 243FT

LOCAL TRAFFIC REGULATIONS

- ACFT above 18,000KG to use turning nodes only with MAX RAD turns.
- HEL parking on NE section of Main Apron.
- ACFT below 5,700KG parking in GA parking area SW section of main apron.
- RWS not AVBL for TKOF or LDG.

5. Limited parking for ACFT ABV 5,700KG MTOW. Contact AD Manager for parking.
6. TWY B not AVBL for ACFT ABV 10,000KG MTOW.

CTAF - AFRU 127.85

ADDITIONAL INFORMATION

All Pilots and Operators must possess and display a current Aviation Security Identification Card (ASIC) when airside.

CHARTS RELATED TO THE AERODROME

1. WAC 3462.
 2. Also refer to AIP Departure & Approach Procedures.
-

ALBANY

RWY	(CN)	TORA	TODA	ASDA	LDA
05	(2)	1096 (3596)	1156 (3793) (1.2%)	1096 (3596)	1096 (3596)
23	(2)	1096 (3596)	1159 (3802) (2.84%)	1096 (3596)	1096 (3596)

Slope 0.3% down to SW. RWY WID 30 RWS WID 90 Graded 90

14	(3)	1800 (5905)	1860 (6102) (1.3%)	1800 (5905)	1800 (5905)
32	(3)	1800 (5905)	1860 (6102) (2.11%)	1800 (5905)	1800 (5905)

Slope 0.1% down to SE. RWY WID 30 RWS WID 150

SUPPLEMENTARY TAKEOFF DISTANCES

RWY32 - 1600(5249)(1.6) 1769(5804)(1.9)

RWY23 - 863(2831)(1.6) 964(3163)(1.9) 1040(3412)(2.2) 1101(3612)(2.5)

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Appendix B

Casa Instrument



Australian Government
Civil Aviation Safety Authority

Instrument number CASA EX51/12

I, JOHN FRANCIS McCORMICK, Director of Aviation Safety, on behalf of CASA, make this instrument under regulation 11.160 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*.

John F. McCormick
Director of Aviation Safety

March 2012

Exemption — Fokker F100 operations at Albany aerodrome

1 Expiry

This instrument stops having effect at the end of March 2014.

2 Application

This exemption applies to the aerodrome operator mentioned in Schedule 1 when the aerodrome is used for the landing, and taking off, of a Fokker F100 aeroplane operated by Skywest Airlines (Australia) Pty Ltd (*Skywest*), Aviation Reference Number (*ARN*) 075986, and engaged in a closed charter operation (the *aeroplane*).

3 Exemption

The aerodrome operator is exempt from regulations 139.165, 139.190 and 139.195 of CASR 1998 in relation to the standards set out in paragraphs 6.2.11.3, 6.2.25.1, 6.2.26.1, 9.9.4.8 and 9.10.4.1 of the Manual of Standards Part 139 (the *MOS*).

Note 1 Paragraph 6.2.11.3 of the MOS states that if a runway is 30 m wide and is used by aeroplanes seating 100 passengers or more shoulders must be provided and the total width of the runway and its shoulders must not be less than 36 m.

Note 2 Paragraph 6.2.25.1 of the MOS states that a RESA must be provided at the end of a runway strip to protect the aircraft in the event of undershooting or overrunning the runway.

Note 3 Paragraph 6.2.26.1 states that the minimum length of a RESA must be 90 m where the runway is suitable for aircraft with a code number 3 or 4 and is used by air transport jet planes.

Note 4 Paragraph 9.9.4.8 of the MOS states, in sub-subparagraph (a) (i), that the optimum distance of PAPI wing bar from the runway threshold must be sufficient to provide adequate wheel clearance over the threshold for all types of aircraft landing on the runway.

Note 5 Paragraph 9.10.4.1 of the MOS states that the longitudinal spacing of the runway edge lights must be uniform and, as stated in paragraph (a), for an instrument runway, 60 m + 0/-5 m.

4 Conditions

The exemption is subject to the conditions mentioned in Schedule 2.

Schedule 1 Aerodrome operator

The City of Albany as the operator of Albany aerodrome, ARN 901795.

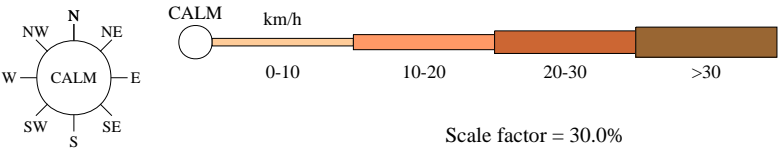
Schedule 2 Conditions

- 1 Subject to clause 3 of this Schedule, the aerodrome operator must ensure that the facilities to which this exemption applies (the *non-compliant facilities*) are maintained in accordance with the standards to which those facilities were prepared and constructed.
 - 2 For the operation of the aeroplane, the aerodrome operator must provide Skywest with particulars of the non-compliant facilities.
 - 3 The aerodrome operator must upgrade the non-compliant facilities to ensure that they comply with the standards set out in the MOS before this instrument stops having effect.
 - 4 The low frequency of operations by the aeroplane at Albany aerodrome must be maintained as proposed by the aerodrome operator in its safety case for the operations.
-

Appendix C

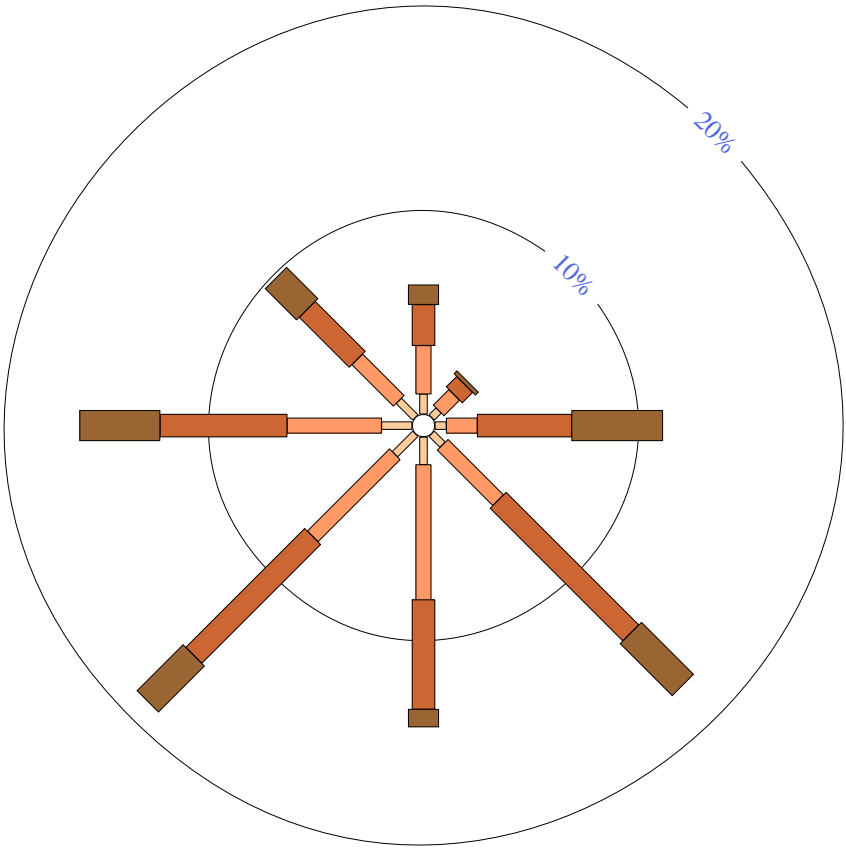
Wind Roses

WIND FREQUENCY ANALYSIS (in km/h)
ALBANY AIRPORT STATION NUMBER 009741
Latitude: -34.94 ° Longitude: 117.80 °



3 pm
14255 Total Observations (1965 to 2004)

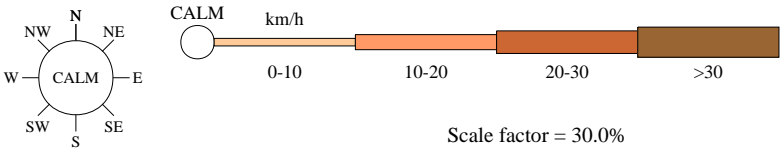
Calm 3%



Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

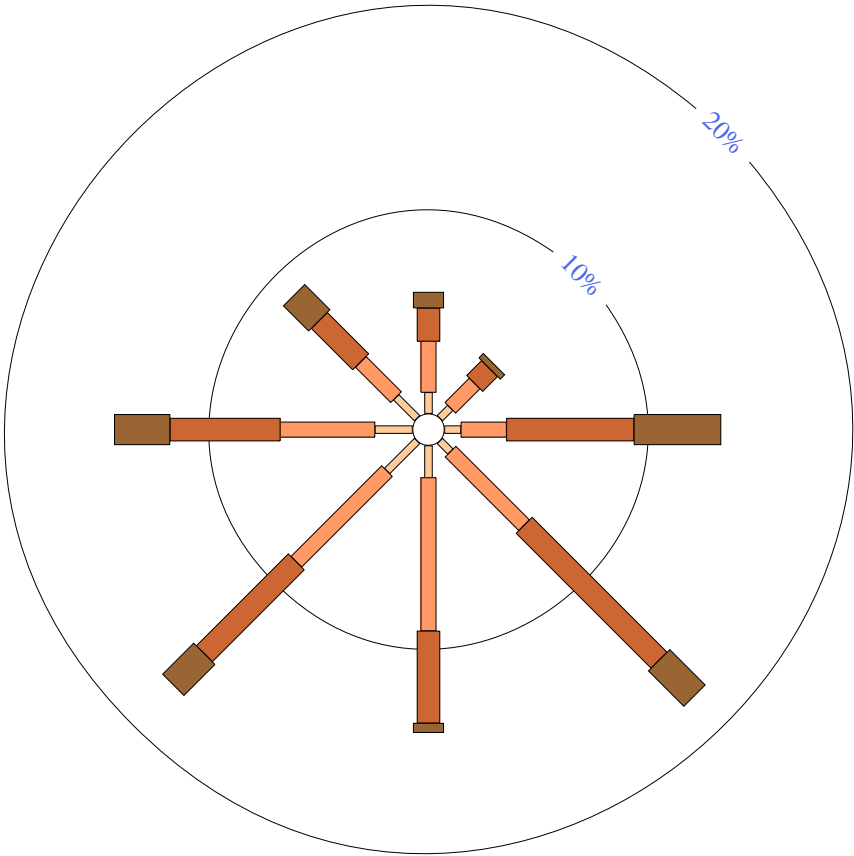


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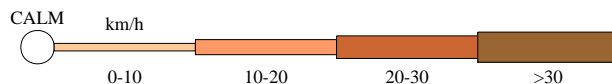
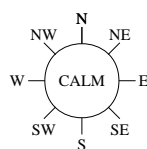
3 pm Autumn
3615 Total Observations (1965 to 2004)

Calm 4%



Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

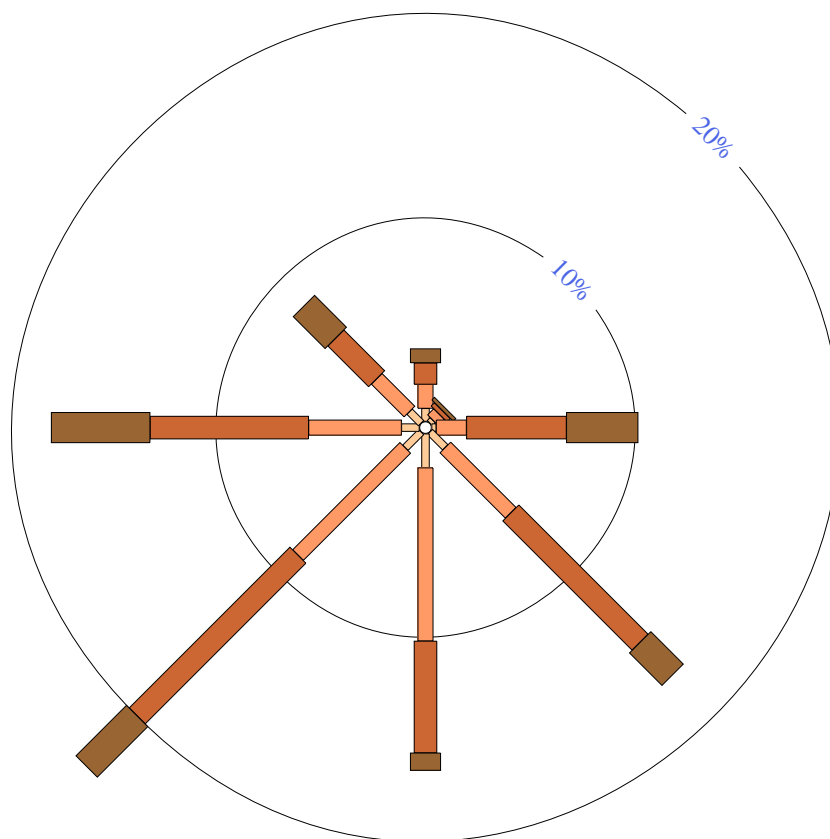
WIND FREQUENCY ANALYSIS (in km/h)
ALBANY AIRPORT STATION NUMBER 009741
Latitude: -34.94 ° Longitude: 117.80 °



Scale factor = 30.0%

3 pm Spring
3546 Total Observations (1965 to 2004)

Calm 1%



Wind directions are divided into eight compass directions. Calm has no direction.

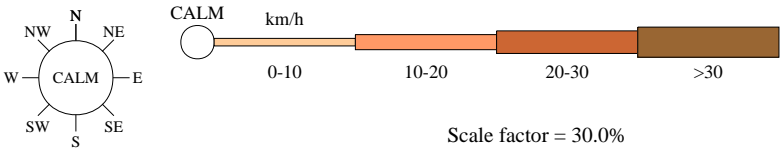
An asterisk (*) indicates that calm is less than 1% .

An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



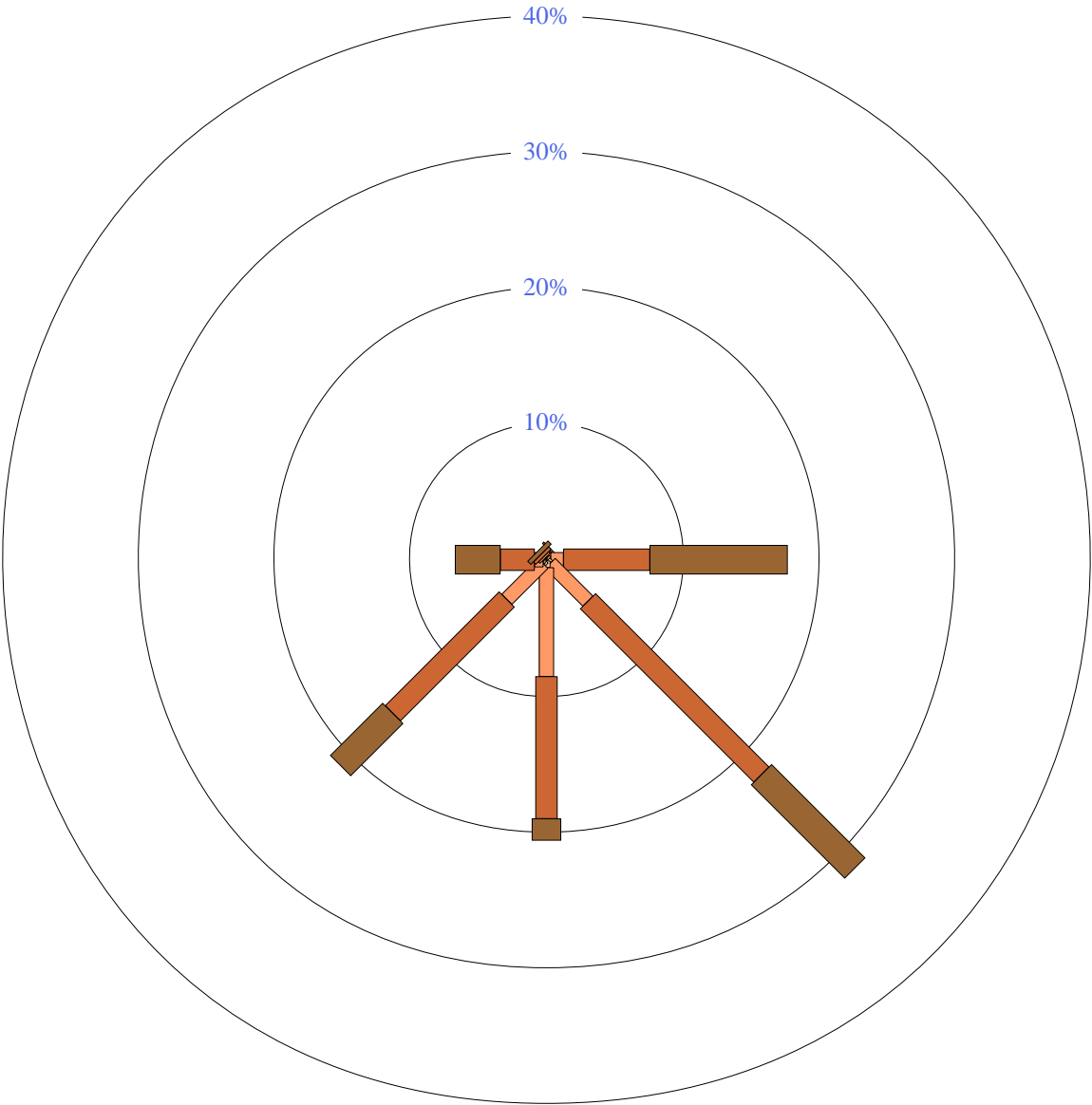
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3 pm Summer
3520 Total Observations (1965 to 2004)

Calm *

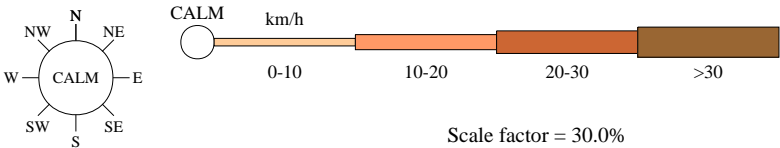


Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



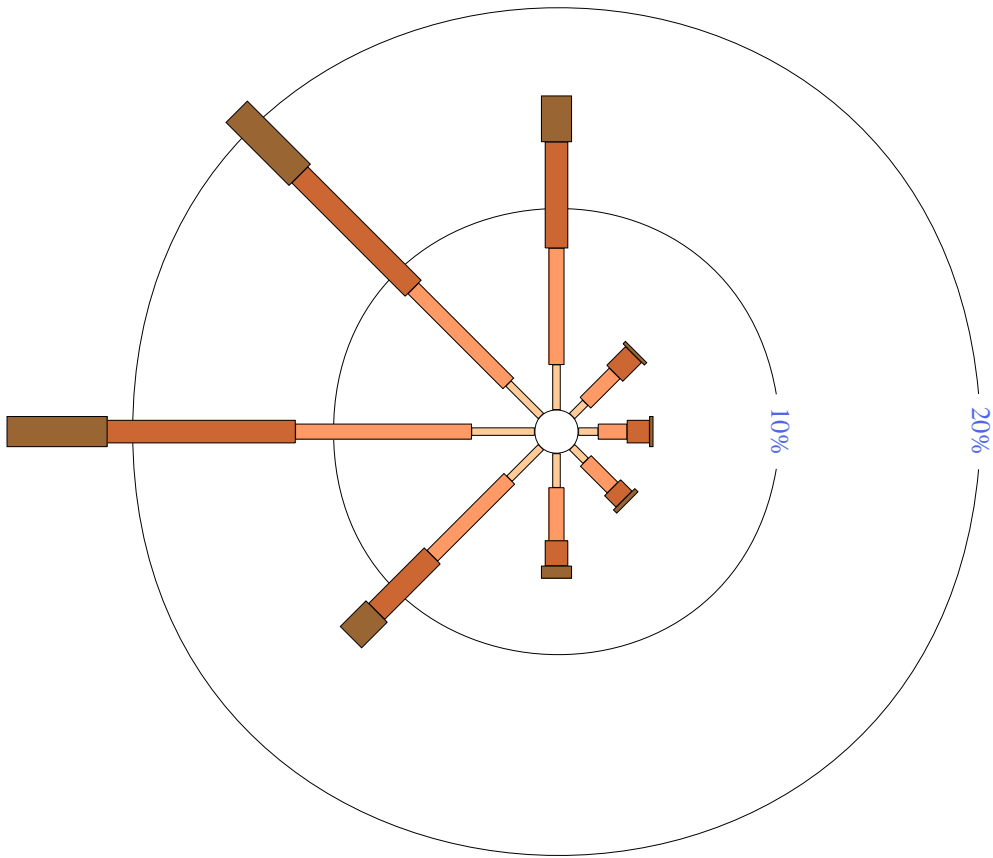
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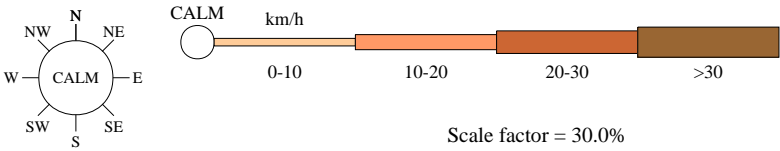


3 pm Winter
3574 Total Observations (1965 to 2004)

Calm 5%

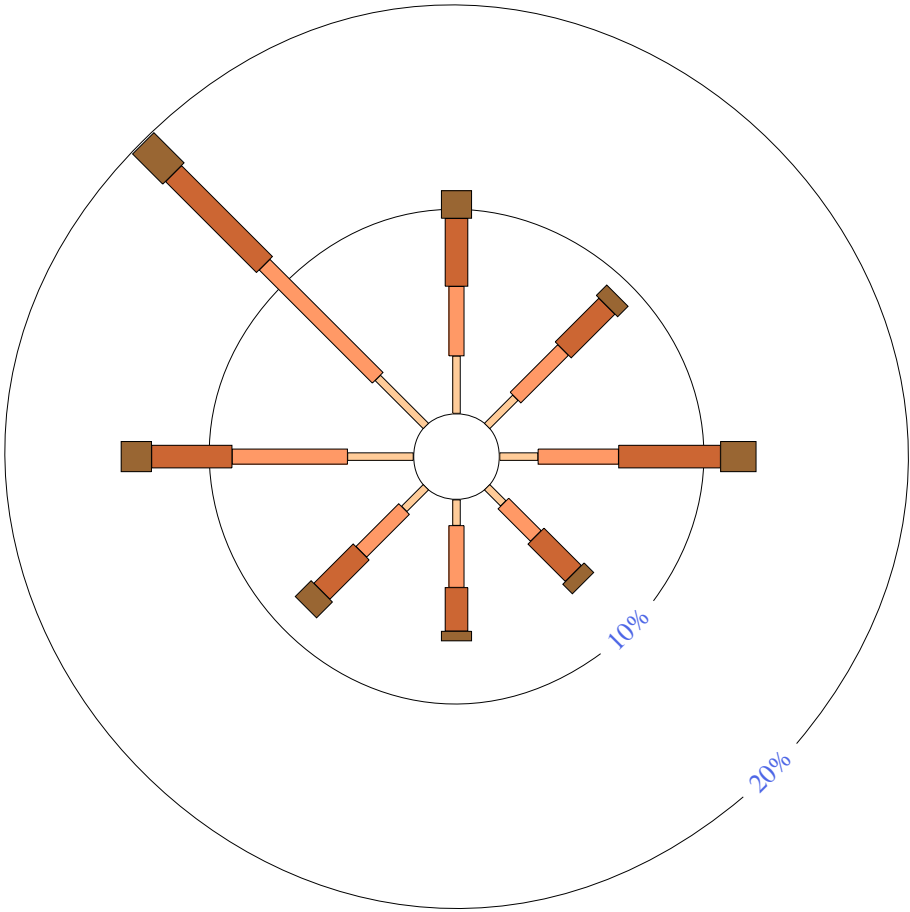


Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



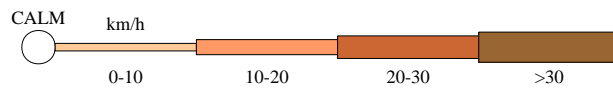
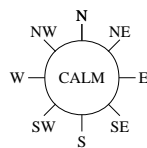
9 am
14269 Total Observations (1965 to 2004)

Calm 11%



Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

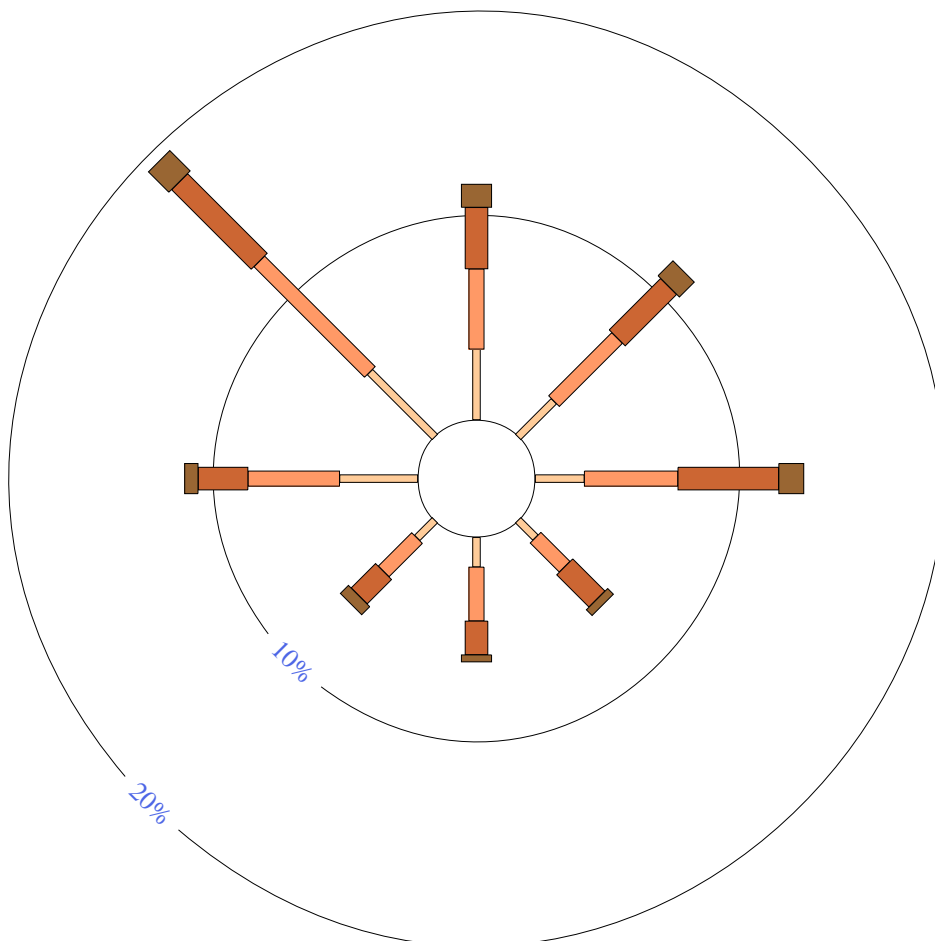
WIND FREQUENCY ANALYSIS (in km/h)
ALBANY AIRPORT STATION NUMBER 009741
Latitude: -34.94 ° Longitude: 117.80 °



Scale factor = 30.0%

9 am Autumn
3626 Total Observations (1965 to 2004)

Calm 15%



Wind directions are divided into eight compass directions. Calm has no direction.

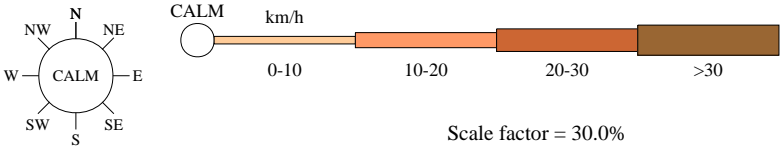
An asterisk (*) indicates that calm is less than 1% .

An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



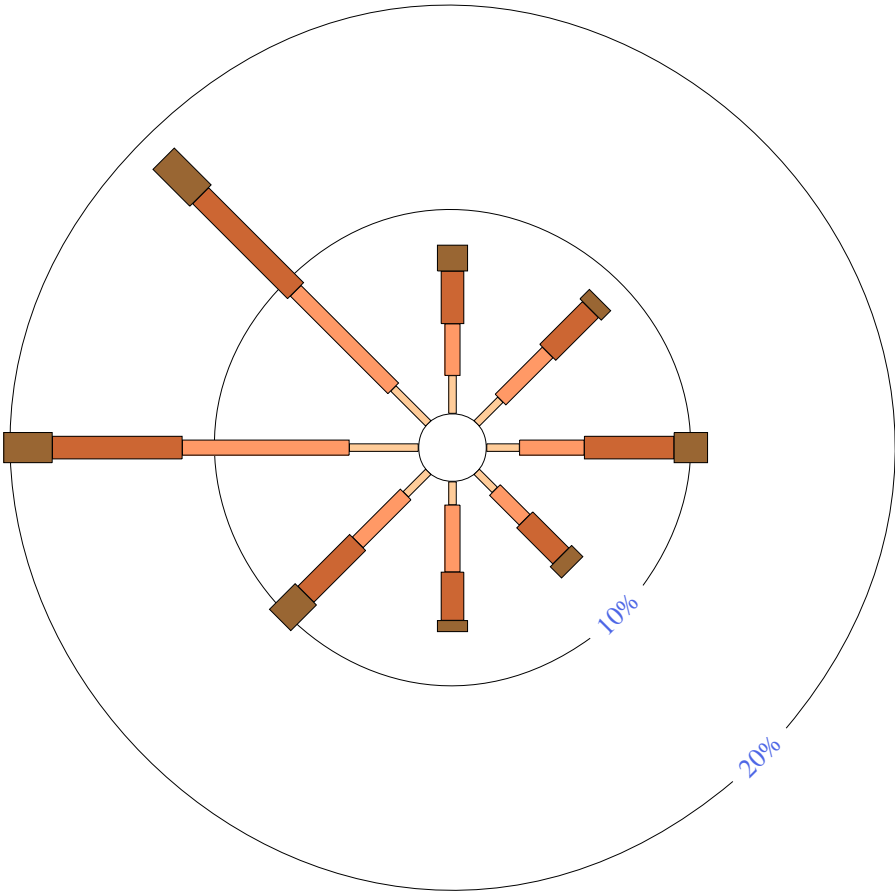
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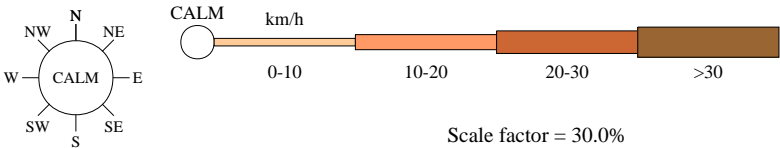


9 am Spring
3547 Total Observations (1965 to 2004)

Calm 8%

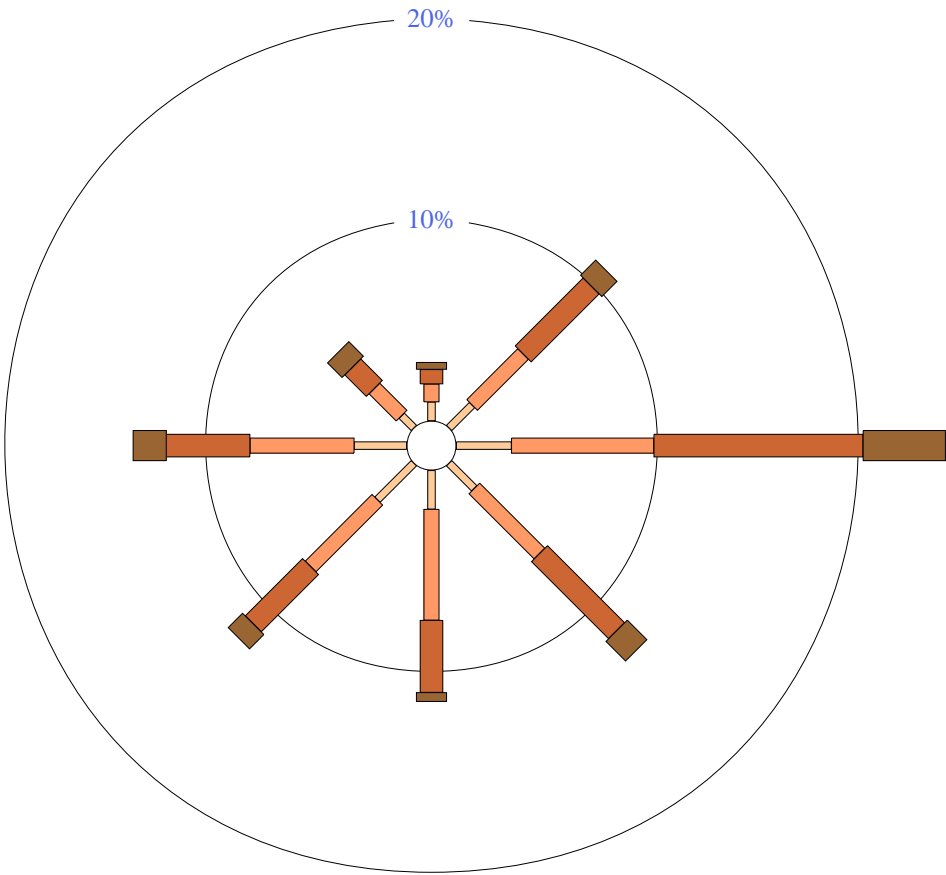


Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



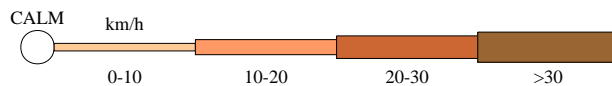
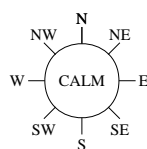
9 am Summer
3518 Total Observations (1965 to 2004)

Calm 6%



Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1% .
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

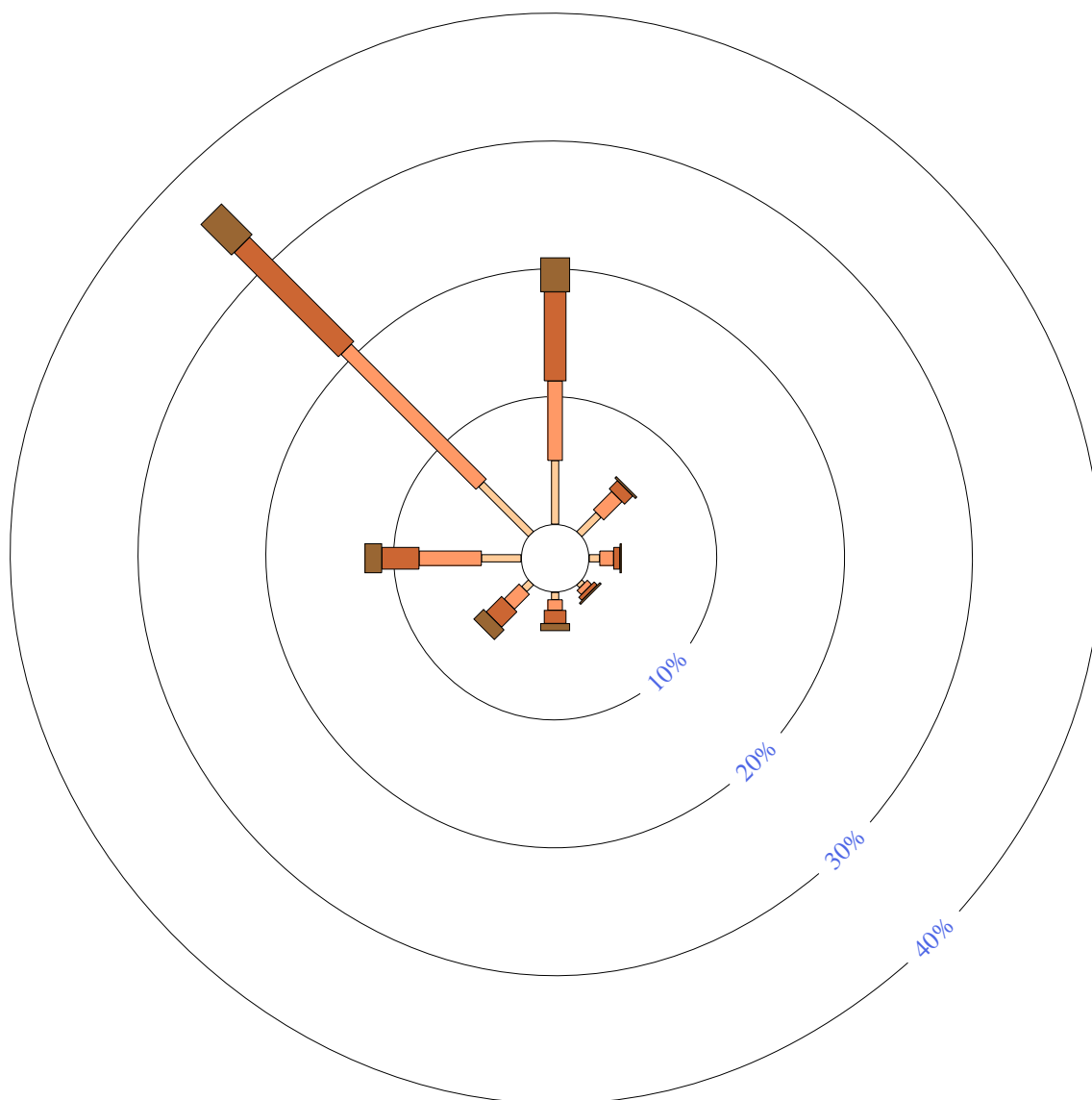
WIND FREQUENCY ANALYSIS (in km/h)
ALBANY AIRPORT STATION NUMBER 009741
Latitude: -34.94 ° Longitude: 117.80 °



Scale factor = 30.0%

9 am Winter
3578 Total Observations (1965 to 2004)

Calm 13%



Wind directions are divided into eight compass directions. Calm has no direction.

An asterisk (*) indicates that calm is less than 1% .

An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

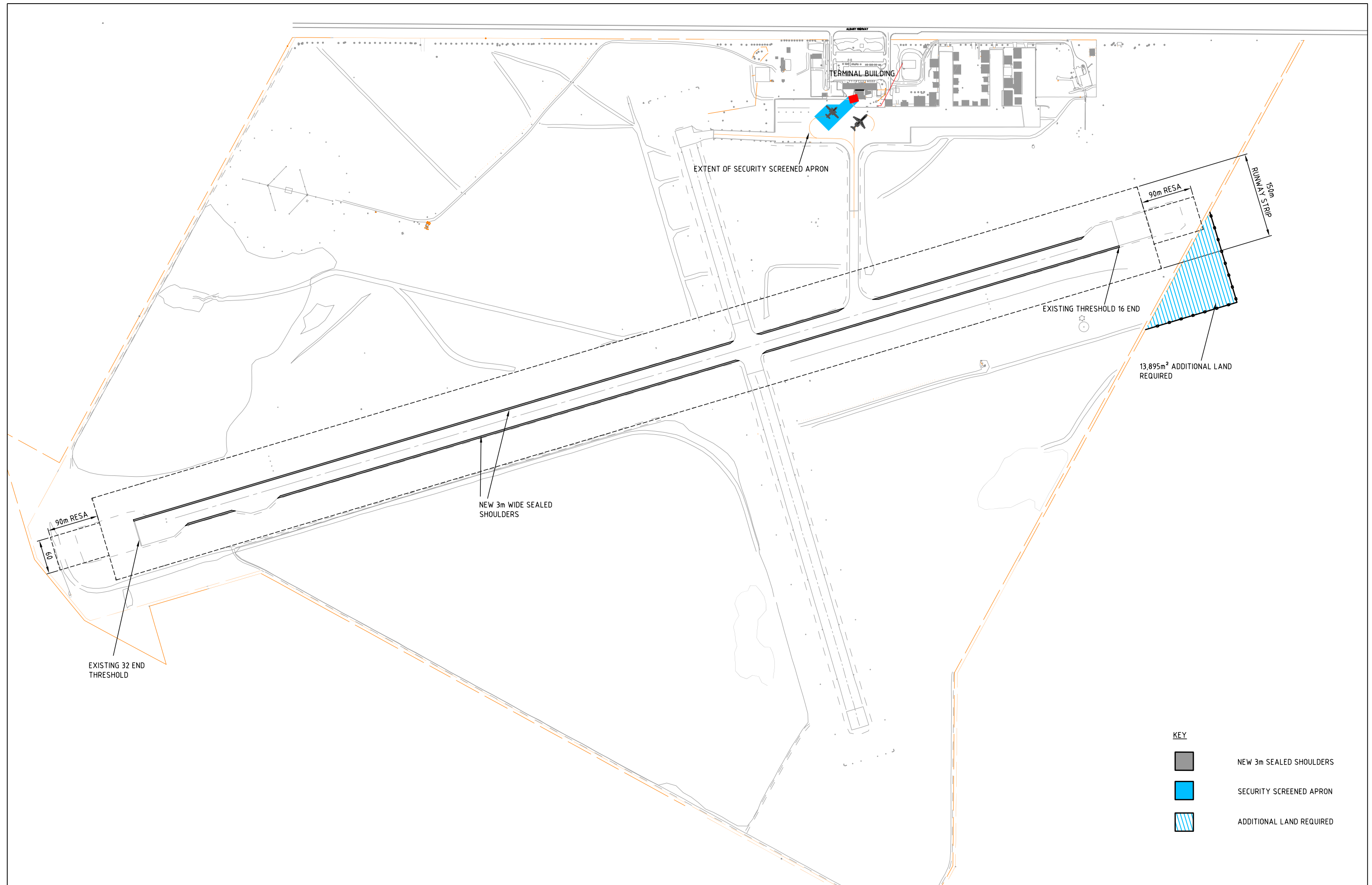


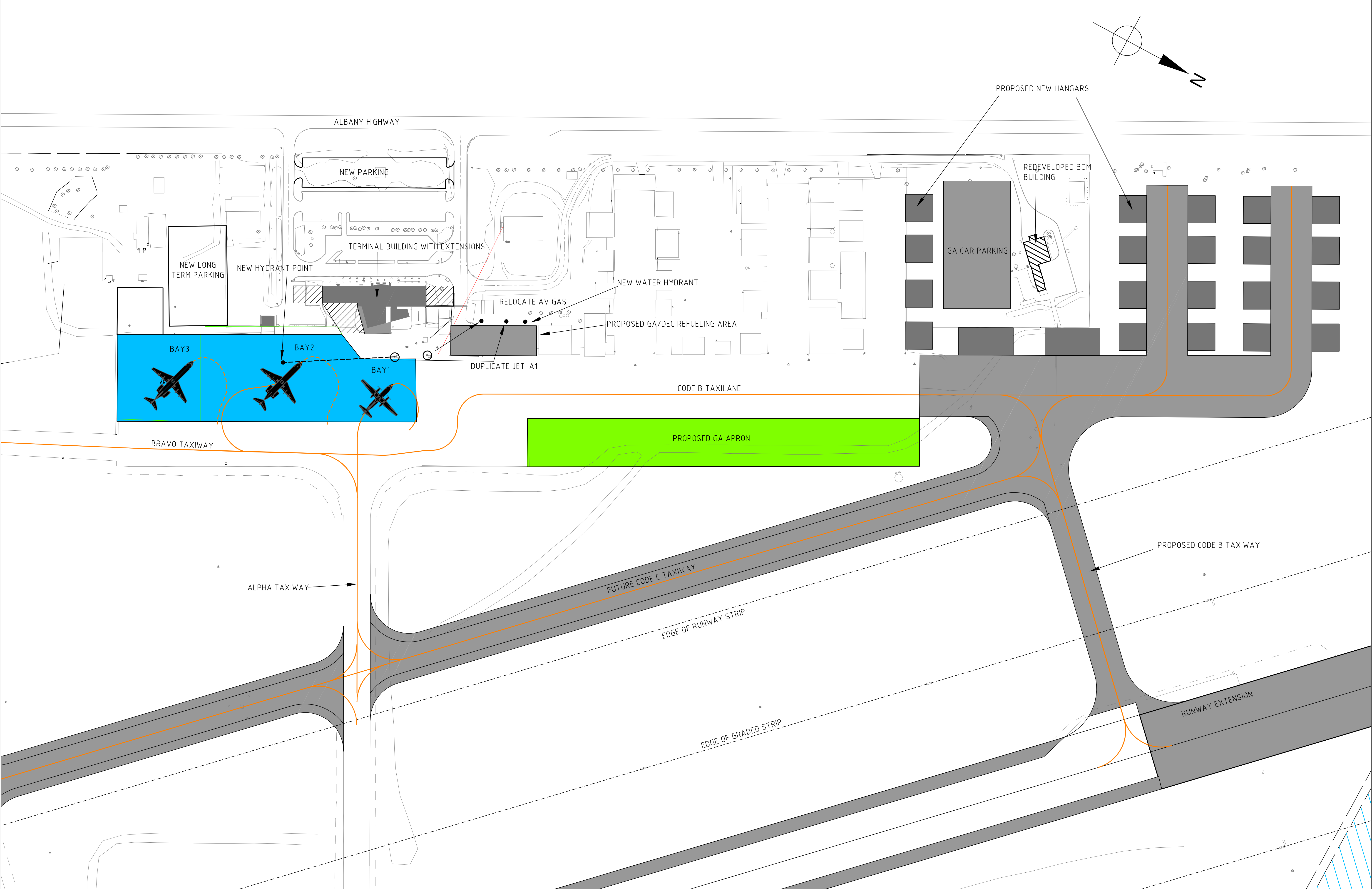
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Appendix D

Master Plan Drawings

[illegible]



REVISIONS

No.	BY	DATE	DESCRIPTION	APPD	DRG. No	TITLE

REFERENCE DRGS.

This drawing is confidential and shall only be used for the purposes of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM Quality Assurance system to ISO 9001-2000.

DESIGNED	M.McWILLIAMS	CHECKED	N.HAWLEY
DRAWN	M.WHIBLEY	CHECKED	M.McWILLIAMS
APPROVED	N.HAWLEY	DATE	
Datum		Survey	

AECOM

AECOM Australia Pty Ltd A.B.N. 20 093 846 925

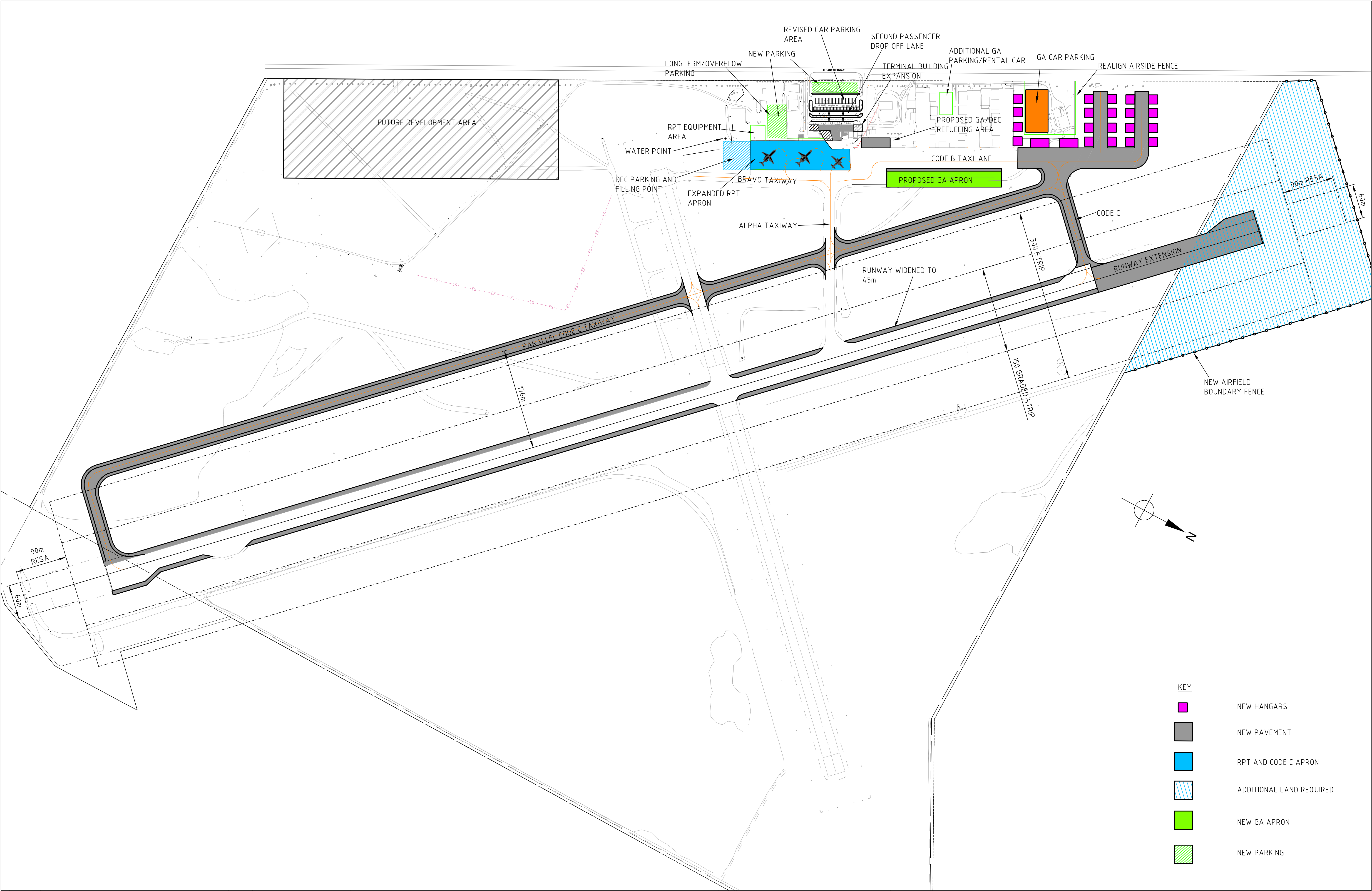
Client

ALBANY AIRPORT MASTER PLAN
TERMINAL PRECINCT DEVELOPMENT



Scale
A1- 1:1000

Drng No.
60238044-AV-DRG-002

Rev.
A



- KEY
- NEW HANGARS
 - NEW PAVEMENT
 - RPT AND CODE C APRON
 - ADDITIONAL LAND REQUIRED
 - NEW GA APRON
 - NEW PARKING

REVISIONS						REFERENCE DRGS.			This drawing is confidential and shall only be used for the purposes of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM Quality Assurance system to ISO 9001-2000.		<div>Client</div> <div></div> <div>AECOM Australia Pty Ltd A.B.N. 20 093 846 925</div>	ALBANY AIRPORT MASTER PLAN		
									ULTIMATE DEVELOPMENT					
B	MW	02/08/12	LAYOUT UPDATED		NH									
A	MJW	16/06/12	LAYOUT UPDATED		NH									
No.	BY	DATE	DESCRIPTION		APPD		DRG. No	TITLE						
PATH: T:\60238044 - Albany Airport MP\5 CADD\5.3 Working\Drwg\Aviation\60238044-AV-DRG-003-A.dwg LAST SAVED BY: Whibley DATE: 15 June 2012 1:07 PM														

Appendix E

Noise Buffer Planning Requirements



Council Policy

Albany Airport (ANEF) Noise Buffer

© City of Albany 2006

Objectives

The objectives for the Albany Airport (ANEF) Noise Buffer are to:

- protect the continued operations of the Albany regional airport and its flight paths.
- control subdivision and development to minimise the potential for sensitive land uses to be undertaken within the noise buffer in accordance with the Australian Noise Exposure Forecast criteria.
- restrict the development of residential uses and occupation of other buildings that may be adversely affected by aircraft noise in accordance with the Australian Noise Exposure Forecast (ANEF) criteria as follows:
 - i) Acceptable for residential development - areas <20 ANEF.
 - ii) Conditional for residential development - areas 20 - 25 ANEF.
 - iii) Unacceptable for residential development - areas >25 ANEF.

Policies

1. General

1.1 Planning Scheme Consent is required for all development including the construction, extension or alteration of a single house within the buffer area as designated on Map No. 5.

1.2 In considering an application, the Council shall have regard to:

- (a) the objectives of this Policy;
- (b) position of the subject site as designated on Map No. 5;
- (c) the requirements contained within Australian Standards AS2021-2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction; and
- (d) the comments of the Department for Planning and Infrastructure (Transport Division) and Department for Environment; and
- (e) the Building Use Type Acceptability Table shown below:

BUILDING USE TYPE	ANEF LEVEL		
	< 20	20 – 25	> 25
residential house, units, flats, caravan	acceptable	conditionally acceptable	unacceptable
education premises, school, university	acceptable	conditionally acceptable	unacceptable
hospital, nursing home	acceptable	conditionally acceptable	unacceptable

hotel/motel, tourism, hostel	acceptable	conditionally acceptable	conditionally acceptable
public building, library, courts	acceptable	conditionally acceptable	conditionally acceptable
commercial building, shops, offices	acceptable	acceptable	conditionally acceptable
general or light industry, manufacturing, processing	acceptable	acceptable	acceptable

NOTE: The Building Use Type Acceptability Table determines the acceptability of different building types and has been adapted from AS 2021. The building types are classified as acceptable, conditionally acceptable and unacceptable based on the sensitivity of the associated use or occupation of the building and the forecast aircraft noise level forecast for the premises.

- 1.3 Council shall not grant planning approval to any development that compromises the purposes of the Albany Airport (ANEF) Noise Buffer Policy.

2. <20 ANEF Acceptable Development Area

There are no restrictions on the development of a single house or other developments beyond the <20 ANEF contour providing that the development and land use activity is compatible with the purpose of this Policy.

3. 20 – 25 ANEF Conditional Development Area

The following standards shall apply to all land within the 20 – 25 ANEF conditional development area:

- (a) For the development of a single house (including any alteration or extension) or other form of habitable accommodation, the proponent shall provide a specialist report (prepared by a suitably qualified acoustic consultant) with the application to show that the proposed design and construction of the building can achieve the following internal noise levels:
 - common areas 55 dB(A)
 - living areas 45 dB(A)
 - sleeping areas 40 dB(A)
- (b) For the development of all other uses classified as acceptable or conditionally acceptable within the Building Use Type Acceptability Table, the proponent shall demonstrate to Council's satisfaction that the development and land use activity is compatible with the objectives of this Policy and any necessary noise attenuation measures have been incorporated into the design and construction of the building.
- (c) A memorial to be placed on the Certificate of Title stating that the premises may be subject to high noise levels from airport operations.

4. >25 Anef Unacceptable Development Area

The following standards shall apply to all land within the >25 ANEF unacceptable development area:

- (a) Council shall not approve a single house (including any alteration or extension) or other form of habitable accommodation on land contained within the >25 ANEF unacceptable development area.
- (b) For the development of all other uses classified as acceptable or conditionally acceptable within the Building Use Type Acceptability Table, the proponent shall demonstrate to Council's satisfaction that the development and land use activity is compatible with the objectives of this Policy and any necessary noise attenuation measures have been incorporated into the design and construction of the building.
- (c) A memorial to be placed on the Certificate of Title stating that the premises is subject to high noise levels from airport operations.

5. Subdivision

- (a) Council does not support the closer subdivision of land within the >25 ANEF unacceptable development area as this would increase the potential for additional lots to be developed and used for residential purposes which is inconsistent with the objectives of this Policy.
- (b) If subdivision is approved within the 20 – 25 ANEF conditional development area, Council shall require that all new lots created be subject to the following conditions:
 - A memorial to be placed on the Certificate of Title stating that the land may be subject to noise impacts from the airport operations; and
 - Any residential development will be required to comply with design and construction noise attenuation measures contained in Australian Standards AS2021-2000 Acoustics - Aircraft Noise Intrusion – Building Siting and Construction.

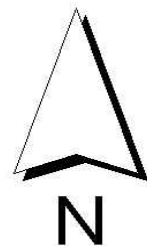
Additional Information

1. *The data for this Policy was prepared by Connell Wagner as part of the Albany Airport 2001 Master Plan.*
2. *Preliminary discussion with Council Officers is encouraged for any application likely to be affected by this Policy to ascertain the particular requirements for submitting an application and process to be followed in determining the application.*

ALBANY AIRPORT (ANEF) NOISE BUFFER



2 0 2 4 Kilometers



Albany Airport (ANEF) Noise Buffer

- | | |
|---|-------------------------------|
|  | Acceptable Development Area |
|  | Conditional Development Area |
|  | Unacceptable Development Area |

Map No. 5

Appendix F

Terminal Development Options

Appendix F Terminal Development Options

During the preparation of the Master Plan, several options for development of the terminal building were produced and these are collated in this Appendix for record purposes.

Figure 41 Terminal Building Layout Prior to Security Screening

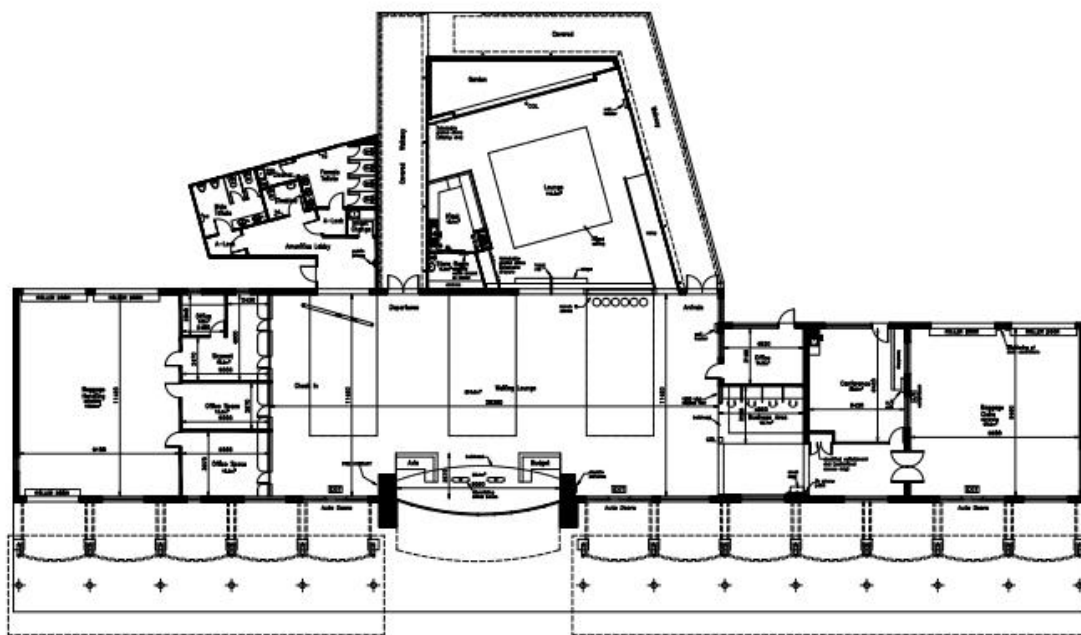


Figure 42 Optional Screening Layout (rejected)

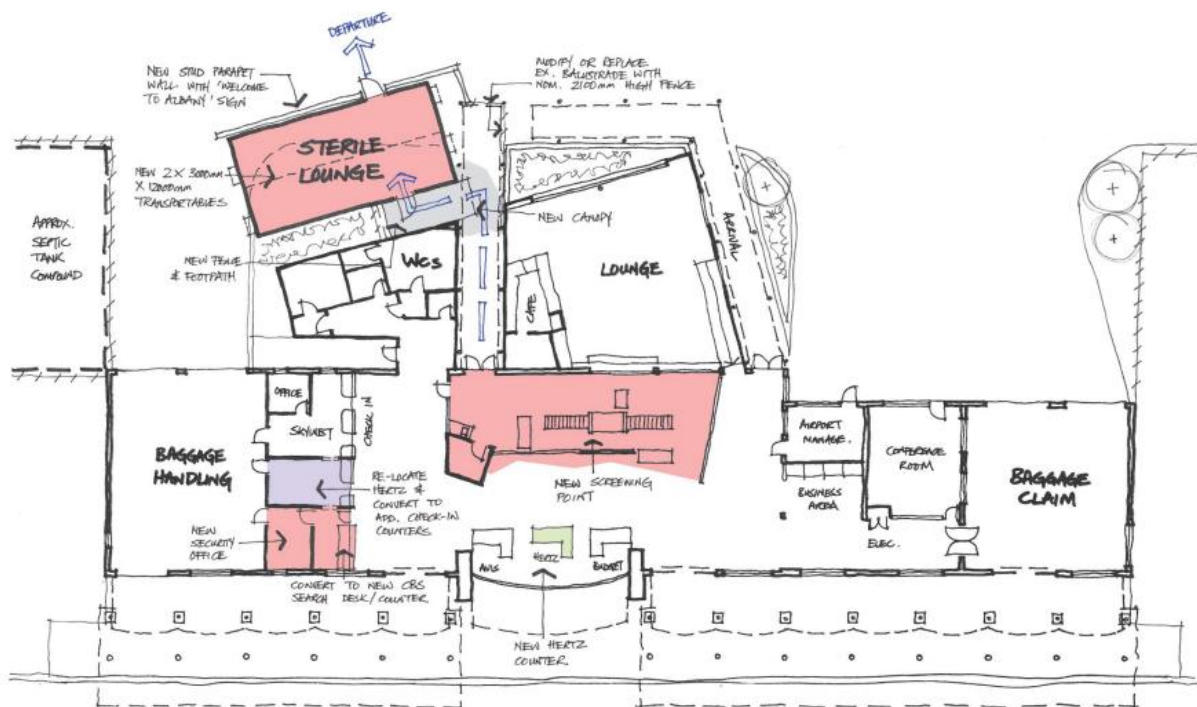


Figure 43 Optional Screening Layout (rejected)

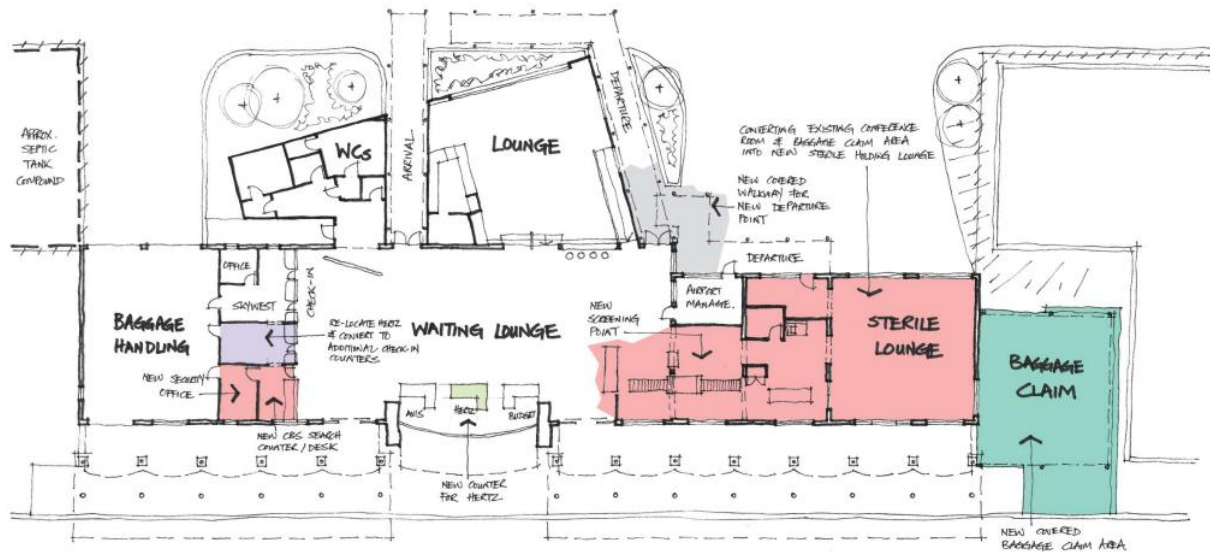


Figure 44 Terminal Building Expansion Plan Concept

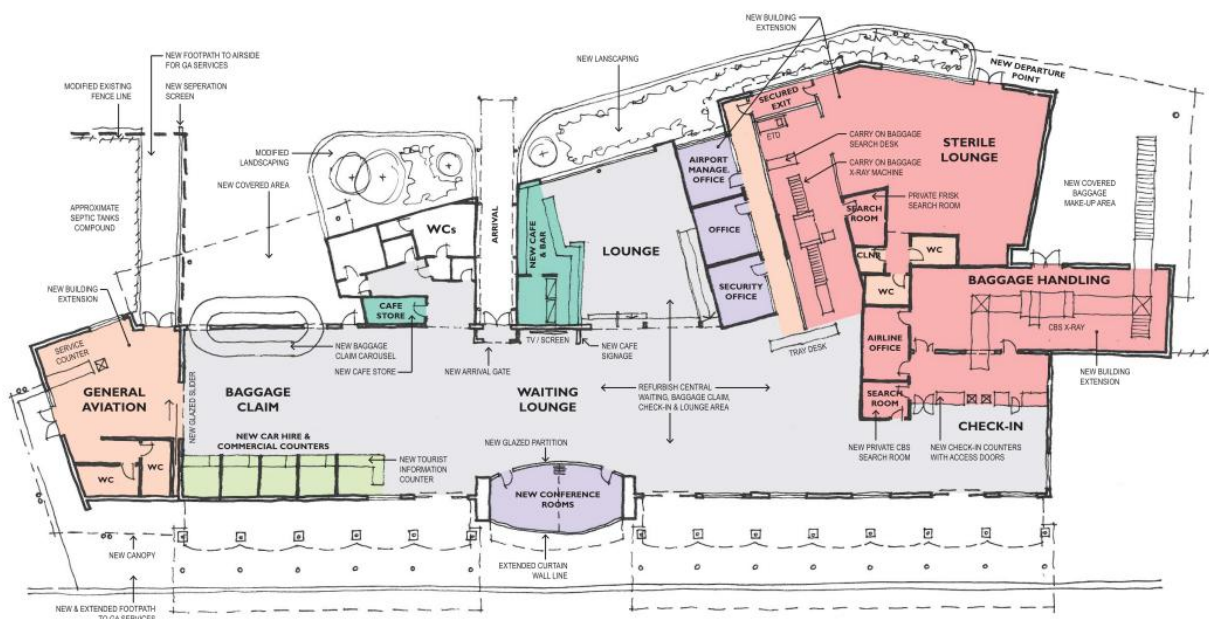


Figure 45 **Terminal Building Expansion Plan - Concept**

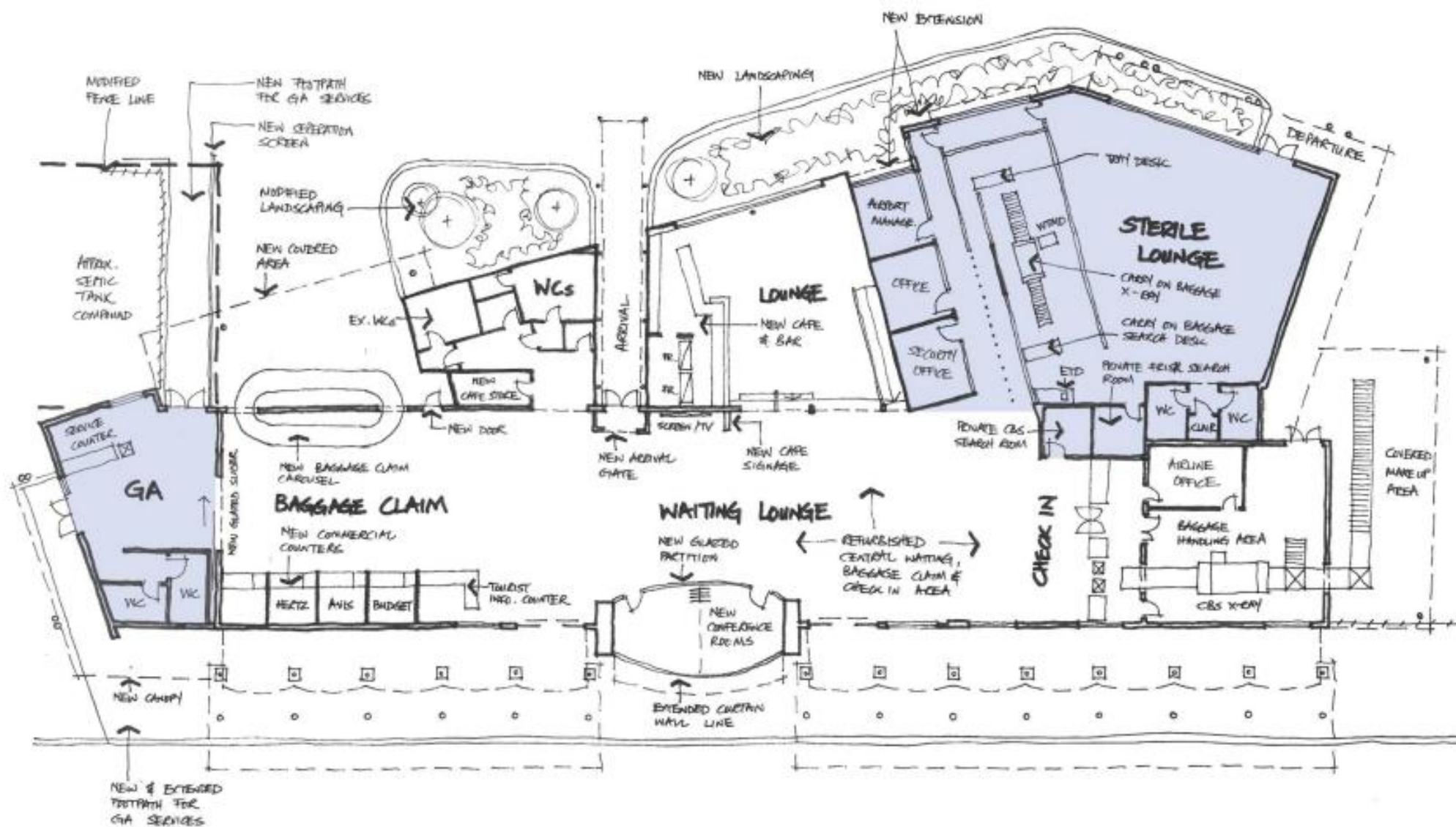


Figure 46 Terminal Building Expansion Plan - Concept

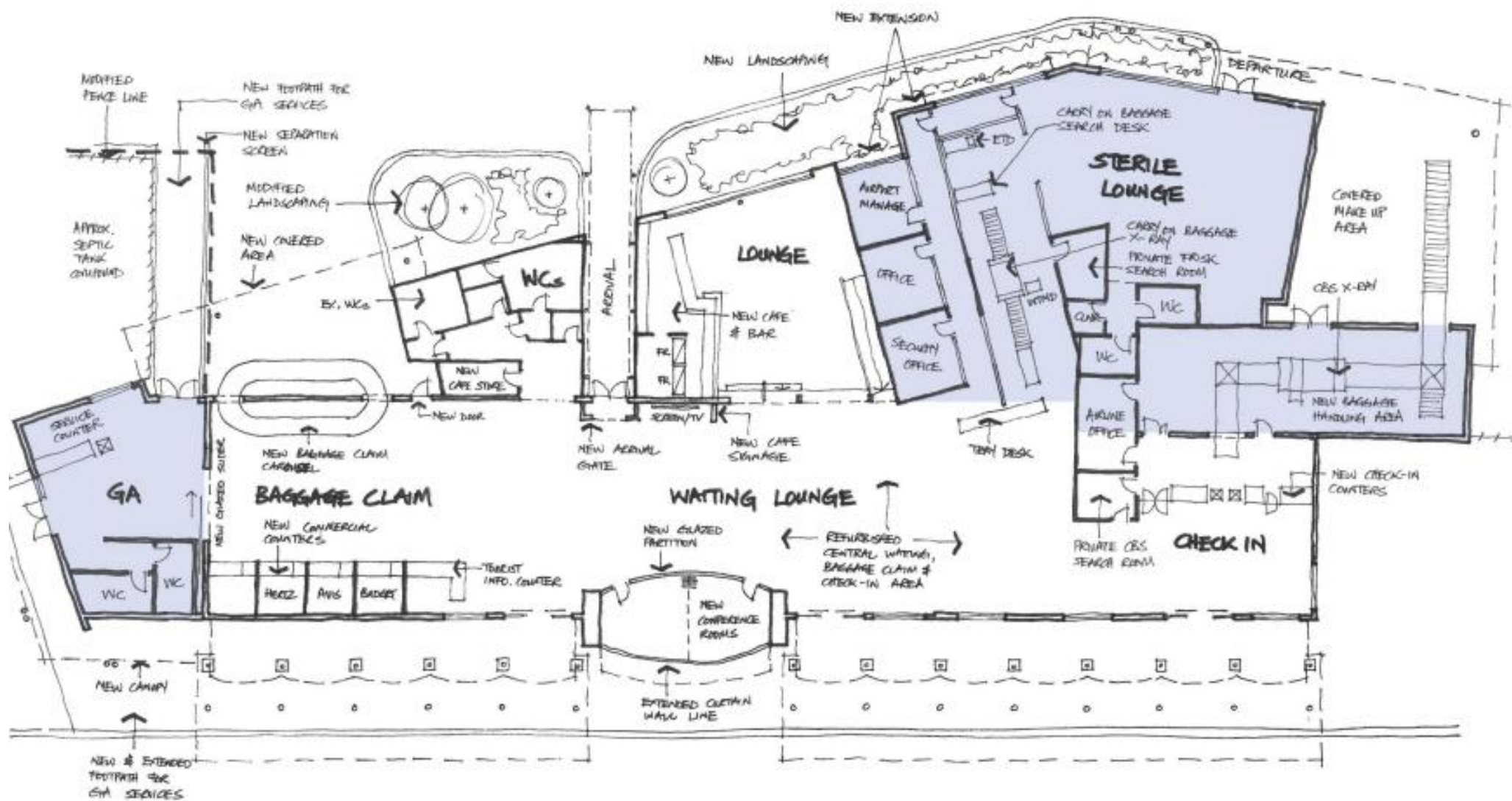
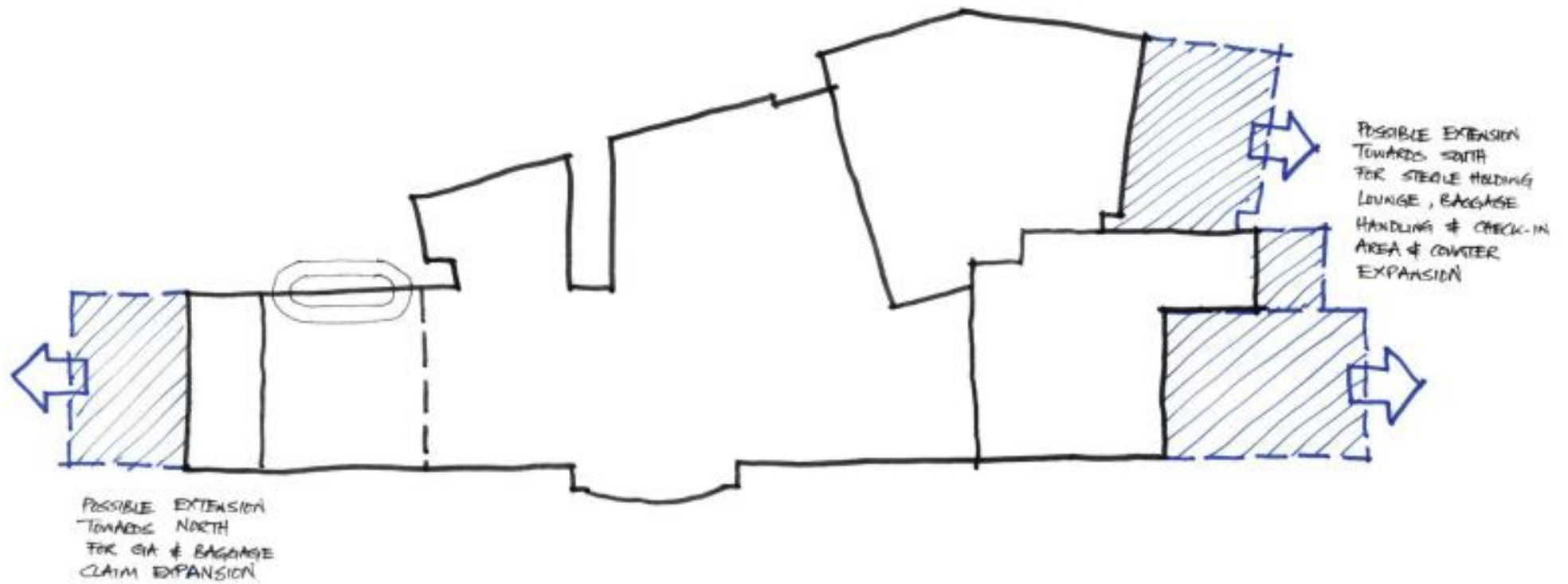


Figure 47 Terminal Building Expansion Plan – Additional Expansion Concept

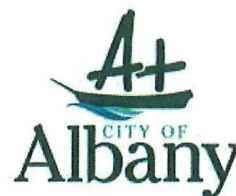




Prepared for
City of Albany
(08) 9841 9333
102 North Road
Yakamia WA 6330



Government of Western Australia
Department of Transport



Memorandum of Understanding

between the
Director Aviation for the
Department of Transport
ABN: 27 285 643 255

and the

City of Albany
ABN: 94 717 875 167

In relation to

*Albany Airport's Strategic Airport Assets and
Financial Management Framework*

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MEMORANDUM OF UNDERSTANDING

DATED

This Memorandum of Understanding ('MoU') is dated _____ 2019.

PARTIES

This MoU is made between:

1. the Director Aviation of the **Department of Transport** (ABN 27 285 643 255) of 140 William Street, Perth, Western Australia 6000 and
2. **City of Albany** (ABN 94 717 875 167) of 102 North Road, Yakamia, WA 6330 (City)

BACKGROUND

- A. The City is the owner of the Albany Regional Airport.
- B. The City has the care, control and management of the Albany Regional Airport.
- C. The Department is responsible for the administration of the Regional Airports Development Scheme on behalf of the Minister for Transport.
- D. The Department is responsible for the regulation of the air route between Perth and Albany on behalf of the Minister for Transport.
- E. The Strategic Airport Assets and Financial Management Framework objective is for a consistent, transparent and documented approach by airport operators across Western Australia to enable prudent financial management of aeronautical assets and setting of aeronautical charges that are supported by relevant stakeholders.
- F. The Framework provides the environment for improved engagement between airports and airlines, by having a standardised process to engage with airport customers. What information is shared by airports is at the discretion of airport owners.
- G. The Framework allows Airport owners to understand their airport's financial sustainability that then strengthens their case when negotiating with airlines.

- H. It is a requirement that all regional RPT airport owners who apply for Regional Airports Development Scheme grant funding will complete and maintain a Framework from 1 July 2019.

1. STATEMENT OF UNDERSTANDING

The Parties acknowledge that the purpose of this MoU is to set out the Parties understanding on their respective roles. Further, the Parties acknowledge and agree that there is no intention to create legal relations, and that this MoU does not create a contractual or other legal relationship between the Parties.

2. INTERPRETATION

2.1 Definitions

- 2.1.1 In this MoU, unless contrary intention appears:

City means the City of Albany;

Department means the Department of Transport;

MoU means this Memorandum of Understanding including it's the Schedule;

Framework means Strategic Airport Assets and Financial Management Framework

RADS Regional Airports Development Scheme

2.2 Commencement of this MoU

- 2.2.1 This MoU will commence on the date when it is signed by the last party to sign.

2.3 Term of this MoU

- 2.3.1 This MoU is for an initial term of three (3) years beginning on the commencement date.
- 2.3.2 The Parties may agree to an extension of the term of this MoU.

3. ROLE OF THE DEPARTMENT

3.1 Role of the Department

- Fund the drafting of an initial Framework for the Albany Regional Airport.
- Fund the formal review of the Framework every three years to ensure its accuracy, relevance and alignment to the City's airport strategic planning, passenger and data forecasting, financial and asset management.
- On an annual basis, meet with representatives from the City in the first quarter of the calendar year to discuss, review and provide feedback to the City's annual Framework.
- Provide support to the City in achieving outcomes and improvement plans identified in City's annual Framework when agreed by both parties.

4. ROLE OF THE CITY

4.1 Role of City

- At a minimum update the Framework on an annual basis to ensure its accuracy, relevance and alignment to the City's airport strategic planning, passenger and data forecasting, financial and asset management.
- On an annual basis, meet with representatives from the City in the first quarter of the calendar year to discuss, review and provide feedback to the City's annual Framework.
- Sign off by the City's Chief Executive Officer to the annual final Framework.
- Signed copy of the annual Framework sent to Department by July each year for its records.

5. ADMINISTRATION

Each Party will bear its own costs of administration and management activities undertaken in support of this MoU.

6. NOTICES

Any notices under this MoU will be served on the Parties at the following addresses:

Chief Executive Officer
City of Albany
PO Box 484
ALBANY WA 6331

Director Aviation
Department of Transport
P.O Box C102,
PERTH WA 6839

Contact:

Stuart Jamieson
Manager Governance and
Risk (Airport Operations)
Corporate Services
Phone: (08) 6820 3075
Email: stuartj@albany.wa.gov.au

Contact:

Michael Kennedy
Manager Airport Infrastructure
Aviation Branch
Phone: (08) 6551 6196
Email: michael.kennedy@transport.wa.gov.au

7. REVIEW AND VARIATION OF THIS MoU

- 7.1 The Parties may review this MoU at any time to determine whether it remains relevant to their respective roles.
- 7.2 This MoU may be varied at the request of either Party by the mutual understanding between the Director Aviation of the Department of Transport and the Chief Executive Officer of the City of Albany.

8. DISPUTE RESOLUTION

- 8.1 The Department and City commit to working together in good faith to implement this MoU.
- 8.1 The Parties agree that any operational issues will be resolved by the negotiation.
- 8.2 The Parties acknowledge and agree there is no dispute until a matter is formally identified as such by one of the parties.

9. WITHDRAWAL FROM THIS MoU

- 9.1 The Parties acknowledge and agree that one party may by written notice to the other party withdraw from this MoU and such notice will take effect one (1) week

from the date of that notice, unless the Parties determine an alternative date in writing, or the notice to withdraw has been cancelled by the originating party.

- 9.2 On withdrawal of a party from this MoU, the Parties agree and acknowledge that the withdrawing party will have no right to claim compensation or any repayment in respect of any monies the withdrawing party it has contributed.

This document is signed as a MoU by the following signatories on behalf of their agencies.

Signed: 

PETER RYAN

(Print Full Name)

Director Aviation
Department of Transport

Date Signed: 23 August 2019

Signed: _____

Andrew Sharpe

(Print Full Name)

Chief Executive Officer
City of Albany

Date Signed: August 2019