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ALBANY AIRPORT MASTER PLAN 2043

Prepared for: City of Albany in partnership with Great Southern Development Commission

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CITY OF ALBANY - ACKNOWLEDGMENT OF PEOPLE AND COUNTRY

The City of Albany respectfully acknowledges the Menang Noongar people as the traditional custodians of the land on which the City conducts its business, and pays respect to elders past and present.

GREAT SOUTHERN DEVELOPMENT COMMISSION - ACKNOWLEDGMENT OF COUNTRY

We acknowledge the Noongar people, the traditional custodians in the Great Southern, and their continuing connection to the region's land, waters and community. We pay our respects to all members of Noongar communities, and to elders past, present and emerging.

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1. PLANNING CONTEXT

1.1. Introduction

Albany Airport (YABA) is a community asset owned and operated by the City of Albany. As a certified aerodrome, the City of Albany is required to maintain the Airport in compliance with the Civil Aviation Safety Authority (CASA) Manual of Standards Part 139 - *Aerodromes* (PART 139 MOS 2019) and other relevant standards.

The City of Albany is located within the Great Southern region of Western Australia, approximately 400 km south-east of Perth. The Great Southern region encompasses eleven local government areas covering approximately 39,000 square kilometres on the south coast of Western Australia, bordering 250 km of the Southern Ocean and extending 200 km inland as shown in Figure 1.

The Great Southern has a regional population of 61,890, with Albany having an estimated population of 40,416 people. 82% of the region's population reside within the local government areas of Albany, Denmark and Plantagenet. Albany is the administrative and service hub of the region, and is Western Australia's first European settlement. The City will celebrate its Bicentenary in 2026.

Albany Airport supports scheduled air transport (RPT) services between Albany and Perth (a fully regulated regional air route), Fly-in / Fly-out (FIFO) closed charter jet services between Albany and Boolgeeda, and a range of general aviation activities including Royal Flying Doctor Services, flight training, RAAF operations, seasonal emergency aerial firefighting, and airfreight requirements.

Figure 1 Albany and the Great Southern region

1.2. Strategic intent

Albany Airport is the gateway to the Great Southern region.

The City of Albany aims to ensure that Albany Airport is positioned:

> *"to provide appropriate fit-for-purpose airport infrastructure and facilities to promote future growth in air transport operations to underpin the Great Southern region's ongoing growth, economic development and tourism potential".*

Future development as outlined in the Master Plan is guided by the following planning principles:

Table 1 Master planning principles

Principle	*Description*
Aviation safety, security and legislative compliance	Promoting a safe and secure environment for all users of the airport in compliance with applicable civil aviation safety regulations and standards.
Capacity and operational efficiency	Providing appropriate (fit for purpose) infrastructure and facilities future proofed to meet the forecast demand for future airport operations.
Customer experience and community and stakeholder relationships	Providing a high level of service / customer experience and establishing and maintaining strong partnerships with the local community and key stakeholders.
Environmental responsibility and compliance	Minimising the impact of airport development and operations on the local environment.
Financial viability and sustainability	Ensuring the viability and sustainability of the airport through the application of sound financial, asset and resource management principles.

1.3. Scope and limitations

The scope of work for the master planning study involved the following requirements:

- Assessment of the airport's current facilities, land use and operations including both aviation and non-aviation usage
- Analysis the trends affecting the present and future use of the aerodrome with consideration to the social, demographic, and economic opportunities
- Identify aviation and non-aviation opportunities to increase revenue and improve the financial viability of the aerodrome
- Assessment of the current regulatory requirements and their implications on future operations, land use and development
- Through consultation with key stakeholders establish a strategic vision and objectives for the airport
- Approaches to prevent the potential encroachment of incompatible activities and development in the vicinity of the airport.
- Provide recommendations and plans for scheduled future infrastructure requirements (airside and landside) based on expected future growth through to 2043.

1.4. Methodology

The master planning study was conducted generally in accordance with the Australian Airports Association Airport Practice Note 4 – Regional Airport Master Planning Guideline and modified according to the Scope of Work.

The following key activities were conducted during the course of the study:

- Inception meeting and site orientation
- Stakeholder engagement activities including site visit
- Consolidation of stakeholder feedback
- Preparation of concept plans for client endorsement
- Preparation of draft Master Plan including drawings and plans
- Final stakeholder consultation including review of draft Master Plan
- Preparation of final Master Plan for client acceptance.

1.5. Purpose of master planning study

The purpose of the Master Plan is to establish a framework for the future planning and development of Albany Airport to ensure the City of Albany achieves its strategic objectives and capitalises on the aeronautical and commercial opportunities provided by the airport.

The Master Plan is intended to establish the basis for more detailed studies of design, infrastructure planning, and land use planning required to achieve the strategic direction.

The master plan provides an overarching vision that is expected to guide the overall development of the airport over the next 20-years; identify key issues facing the airport; and provide concepts or options for addressing these issues.

1.6. Planning horizons

The Master Plan nominally considers a planning horizon of 20 years, comprised of short, medium and longer-term timeframes.

The short term is typically defined as 0 - 5 years, medium 5 – 10 years, and longer term as 10+ years through to the end of the 20-year master planning horizon.

Delivery of any individual component within the Master Plan is dependent on the availability of funding, market demand and the undertaking of a full detailed design process, and the timing of development may be delayed or accelerated in consideration of these factors.

This Master Plan identifies three (3) development scenarios:

- Code 3 Development Strategy
- Code 4 Development Strategy
- Code 4 (Long Term) Development Strategy.

1.7. Site description

Albany Airport is located 10 km north-west of the Albany CBD as shown in Figure 2 (Source: Google Earth).

An overview of the airport site is shown in Figure 3 (source: Google Earth).

Figure 2 Albany Airport Location Plan

Albany Airport (YABA) is a certified aerodrome with an asphalt sealed Code 3C instrument non precision approach main runway 14/32 1800 m long and 30 m wide and a sealed Code 2B non instrument cross runway 05/23 1096 m long and 30 m wide.

Runway 14/32 supports operations by aircraft up to Code C, such as the Saab 340 RPT service and Fokker F100 FIFO service. Runway 05/23 supports operations by general aviation aircraft up to Code B.

Figure 3 Albany Airport site

1.8. Role and history

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-sheeted with gravel in 1995 and has since been sealed.

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

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. Security screening equipment was de-installed in 2016.

Since adoption of the previous master plan in 2012, a number of maintenance and improvement projects have been undertaken including a partial reseal and overlay of main runway, construction of new taxiway and upgrade of RFDS infrastructure in 2016-17, runway surface improvements in 2017-18 and drainage infrastructure improvements in 2018-19.

1.9. Current operations

Current aircraft operations primarily include:

- Scheduled air transport (RPT) services to Perth operated by Rex Saab 340 aircraft via fully regulated regional air route – min. 24 weekly return services
- Fly-in / Fly-out (FIFO) closed charter services to Boolgeeda operated by Virgin Australia Fokker F100 jet aircraft on behalf of Rio Tinto – 4 per week. VA has announced that it intends to replace the F100 with E190 / B737-700 aircraft as part of its journey towards Net Zero and its fleet growth program
- General aviation aircraft activities including the Albany Aero Club, pilot training, local / itinerant aircraft operating for business, private flying and maintenance
- General aviation and emergency service helicopter operations
- Royal Flying Doctor Service aeromedical flights – Pilatus PC-12 / PC-24 aircraft
- Seasonal emergency aerial fire-fighting services – 2 x Air Tractor AT-802, 1 x AAS fixed wing platform
- RAAF operations
- Airfreight.

Figure 4 Typical RPT / FIFO aircraft at Albany Airport

1.10. Regional aviation

Albany Airport is located on the south coast of WA, 202 nautical miles south-east of Perth. Busselton Margaret River Airport is located 141 nautical miles to the north-west, and Esperance Airport is located 213 nm to the east as shown in Figure 5.

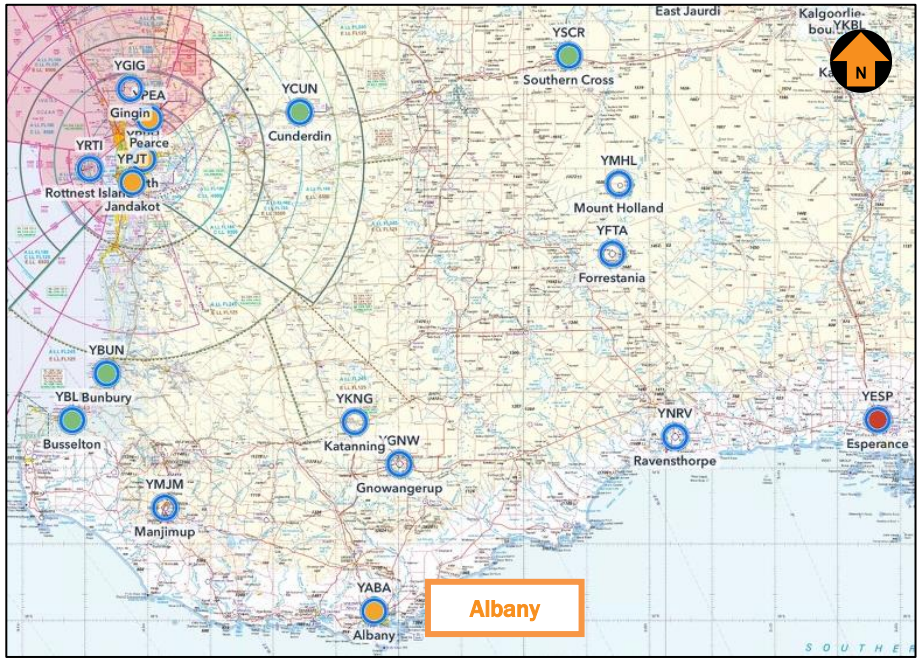

Figure 5 Albany Airport in relation to other certified regional airports

Albany Airport is serviced by Rex Saab 340 aircraft providing RPT services to Perth as a fully regulated regional air route. Under the agreement with the WA State Government, Rex has exclusive rights to operate the route until July 2028, providing a minimum of 24 weekly return services. Rex was also recently awarded the Perth – Esperance route.

Albany Airport also caters for Fly-in / Fly-out (FIFO) closed charter services operated by Virgin Australia on behalf of Rio Tinto. The Fokker F100 jet services operate 4 times per week between Albany and Boolgeeda.

The airport also supports a range of general aviation activities including Royal Flying Doctor Services, flight training, RAAF operations, seasonal emergency aerial firefighting, and airfreight requirements.

Busselton Margaret River Airport caters for a range of Fly-in / Fly-out (FIFO) closed charter services operated by Qantas, Virgin Australia, and Alliance Airlines for resource companies such as Rio Tinto, BHP and Fortesque Metals Group.

In April 2022 Jetstar commenced direct flights between Melbourne and Busselton Margaret River operating Airbus A320 aircraft. Over 50,000 passengers have travelled on the route since its commencement. In November 2023, Jetstar announced a new non-stop route between Sydney and Busselton Margaret River Airport, to commence in March 2024 with three return flights per week, adding another 50,000 seats per year.

In September 2022 Rex acquired National Jet Express (NJE), the Regional Services arm of Cobham Aviation, with a focus on expanding its FIFO operations in Queensland and the Northern Territory. NJE operates a fleet of Q400 and Embraer E190 jet aircraft. Rex has recently announced that it will consider options to utilise NJE aircraft to improve services on its WA regional routes.

In January 2023, new airline Bonza commenced services on the East Coast of Australia operating Boeing 737 Max 8 aircraft. The airline's strategy has focussed on regional routes not currently served by an airline or regional routes it considers are underserved.

In May 2023, Nexus Airlines commenced operations to regional Western Australian destinations including those previously operated by Aviair using Dash 8 Q400 turbo-prop aircraft.

Skippers Aviation operates a fleet of Fokker F100 jet aircraft, and Dash 8 300, Dash 8 100, Embraer E120, Metro 23 and Cessna C441 turbo-prop aircraft across a range of WA fully regulated regional air routes.

Airnorth operate a fleet of Embraer E190 and E170 jet aircraft and E120 turbo-prop aircraft. The airline operates a lightly regulated regional air route from Broome to Kununurra.

1.11. Aviation legislative framework

As a certified aerodrome, the City of Albany is required to maintain the Airport in compliance with the following requirements:

- Civil Aviation Safety Regulations 1998

  Civil Aviation Safety Regulation 1998 (CASR) Part 139 – *Aerodromes* describes the requirements for aerodromes used in air transport operations.

- Manual of Standards Part 139 – Aerodromes

  Manual of Standards Part 139 – *Aerodromes* (PART 139 MOS 2019) sets out the standards and operating procedures for certified and certain other aerodromes used in air transport operations.

- Aviation Transport Security Act 2004

  The Aviation Transport Security Act 2004 (amended and in force on 23 June 2021) sets out the statutory framework that safeguards Australia's essential aviation services.

- Aviation Transport Security Regulations 2005

  The Aviation Transport Security Regulations 2005 put into effect the requirements set out in the Act.

- International Civil Aviation Organisation (ICAO) Annex 14 - Aerodromes, Volume 1 Aerodrome Design and Operations

  This Annex contains Standards and Recommended Practices (specifications) that prescribe the physical characteristics and obstacle limitation surfaces to be provided for at aerodromes, and certain facilities and technical services normally provided at an aerodrome. It also contains specifications dealing with obstacles outside those limitation surfaces.

1.12. National Airports Safeguarding Framework (NASF)

The Australian Government has an interest in better planning and integrated development on and around airports and to lessen the adverse effects of aviation activity on the environment and communities. While not a planning authority, it provides guidance on broader issues such as noise around airports that can be used by statutory authorities to achieve the stated objectives. The National Airports Safeguarding Advisory Group (NASAG) has produced National Airports Safeguarding Framework (NASF) to advance this agenda. The Framework should also be taken into consideration when designing development on and in the vicinity of the airport.

Further detail is provided in section 10.

1.13. Regional characteristics

Population

The Great Southern region encompasses eleven local government areas and has a regional population of 61,890 (source: www.gsdc.wa.gov.au/our-region). 82% of the region's population reside within the local government areas of Albany (40,416), Denmark (6,537) and Plantagenet (5,586) (source: .id community profile).

With a median age of 45, the City of Albany has a lower proportion of children (aged under 18) and a higher proportion of persons aged 60 or older than Regional WA.

Population growth over the 5 years 2018 to 2022 averaged 1.3% per year (compared to 0.9% across Regional WA), with population growth of 0.8% in 2022.

Economy

The Great Southern region's Gross Regional Product is estimated at $5.2 billion, employing over 25,000 people across key sectors including agriculture, forestry and fishing / aquaculture; manufacturing; and construction.

Among the key areas of strength and potential are primary production, premium foods, wine and other beverages. The region produces 25 percent of Western Australia's wine output. (source: www.gsdc.wa.gov.au/our-focus). The region's diverse, high quality produce offers significant value-add and export opportunities.

Key potential sectors for growth include manufacturing, regenerative agriculture, renewable energy, tourism, international education, and higher education.

Tourism

Internationally recognised ecotourism assets and natural attractions in the Great Southern are unmatched in regional Western Australia for their scale, diversity and accessibility. The region attracts over 700,000 annual average visitors with 2,692,000 total visitor nights and an average of 3.7 days per visitor. Based on 2018-19 pre-COVID data, approximately 81% of visitors to the region are from WA (intrastate), with 10% interstate and 9% international.

Holiday at 61% is the primary purpose of travel for domestic overnight visitors to the region, with 25% visiting friends and relatives (VFR), 12% business and 4% other (source: Tourism WA Insights and Planning Factsheet 2022).

In 2026 Albany will host Western Australia's first Bicentenary. The Bicentenary has the potential to attract both interstate and international visitors and promote the achievement of tourism, arts and cultural objectives and establish Albany as a major tourism destination for 2026.

Climate and meteorology

The Great Southern region has a temperate climate with warm summers and cold winters. Mean annual temperatures range from 11.8°C to 19.5°C.

The region is typified by dry summers and wet winters, receiving on average 923 mm of rain per year.

Prevailing wind direction at 9 am is from the north-west, and at 3 pm from the south-east, as shown in Figure 6, supporting the main runway 14/32 alignment at Albany Airport.

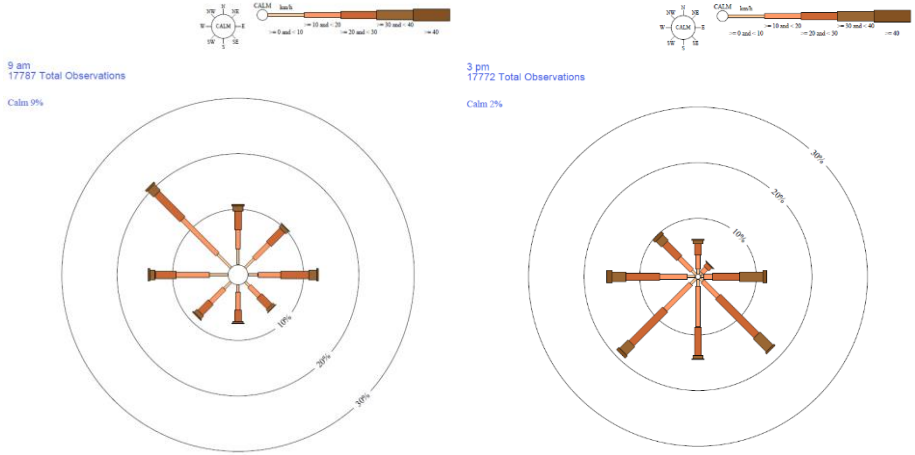

Figure 6 9 am and 3 pm wind roses

1.14. Strategic alignment

The following State planning documents define the strategic planning context for the Albany Airport Master Plan.

Department of Transport – WA Aviation Strategy 2020 (Draft)

The draft WA Aviation Strategy 2020 sets out the following vision for aviation in WA:

> *"Western Australia has a comprehensive network of affordable air services and fit for purpose airport infrastructure that supports and promotes the State's economic and social development".*

The Strategy has four main goals:

- A. Affordable Airfares

  » Regional communities have access to affordable airfares, with affordability measured through community surveys and other information, as may be appropriate.

  » Flights are a viable option for tourists and visitors to regional WA.

- B. Connected Communities

  » More regional communities have access to air services.

  » Air routes support WA's diverse economy, including the resources and tourism sectors.

- C. Fit for Purpose Infrastructure

  » Infrastructure at metropolitan and regional airports is planned and delivered in time to meet demand.

  » Long-term plans are in place for future airports servicing Perth and regional WA.

- D. Informed and Future Ready

  » Regulation, plans and decisions are data-driven.

  » The appropriate skills and training are available to support the aviation industry.

Tourism WA – Corporate Plan 2021-22

The Tourism WA Corporate Plan 2021-22 sets out the following vision for the WA tourism industry:

> *"To position Western Australia as a destination of choice, ensuring the sustainable growth of the State's visitor economy".*

To achieve this, Tourism WA has identified three key strategic pillars:

- Experience

  » Tourism WA will support the development of existing and emerging tourism experiences and events including a focus on workforce to create the foundations for a meaningful traveller experience.

- Demand

  » Tourism WA will drive consumer desire and preference for a holiday in Western Australia over any other destination in Australia.

- Access

  » Actively seek to reinstate and grow access to all parts of Western Australia exploring new and existing opportunities for direct connectivity between Perth and other destinations.

With regard to regional aviation, the Corporate Plan identifies the following actions:

» Work to extend affordable airfare programs and grow regional aviation capacity.

» Work with aviation partners to re-establish interstate aviation capacity and secure opportunities for additional interstate air routes.

Australia's South West Strategic Plan 2021-2024

Australia's South West is the peak tourism body for the South West region of Western Australia, including the regions of Margaret River, the Great Southern, Bunbury Geographe, and the Southern Forests and Valleys.

The Australia's South West Strategic Plan 2021-2024 sets out a destination vision:

> *"... for Australia's South West to be a leading prosperous and sustainable tourism destination".*

The Strategic Plan identifies four strategic priorities / themes:

- Efficient and effective marketing and promotion

  » We will promote and drive desire for our region with a relevant marketing strategy and competent use of our marketing spend.

- Access to the region and regional dispersal

  » We will support and work with Tourism WA to grow accessibility into our region and develop strategies and initiatives to encourage dispersal around our region.

- Destination development

  » We will be the catalyst to support stakeholders achieve the region's development priorities to drive visitation and spend in our region. We will also support growth in capacity and capability of regional tourism operators.

- Driving industry engagement

  » We will work collaboratively with our stakeholders to build a resilient tourism industry and a cohesive region, and perform a conduit role between Tourism WA and industry.

With regard to regional aviation, the Strategic Plan identifies the following action:

> » Facilitate access via flights from intrastate, interstate and international direct to the region.

Australia's South West Tourism Destination Management Plan 2024-2034 (Draft)

The draft Tourism Destination Management Plan (TDMP) sets out a number of priority projects to guide the region's decision-making, investment and capability development over the next ten years, including:

- Priority Project 1: Aviation and Albany Airport

  » Approach: Continue to explore opportunities for redevelopment / expansion of the Albany Regional Airport.

  » Rationale: Strengthening the region's aviation networks is essential to maximise intrastate and interstate visitation and encourage visitor dispersal throughout the region. The redevelopment will pave the way for the potential for future international connections.

  » Actions: Advocate for developing an Albany Regional Airport Master Plan to explore upgrades to the Albany Airport. The plan should consider Albany's future development as a gateway to the Great Southern and the potential for interstate and short-haul international flights, supported by a range of landside services.

  Once completed. Work across government to seek its implementation.

  Work with the airport and airlines to increase daily services to the region and identify new routes.

Great Southern Development Commission Strategic Plan 2022-23 to 2024-25

The Great Southern Development Commission Strategic Plan 2022-23 to 2024-25 sets out the following vision for the region:

> *"Sustainable economic development with lasting prosperity for the Great Southern region and its communities".*

The Commission's Strategic Priorities are:

- Strong and Diverse Economy
  - » Leverage the region's comparative advantages (including primary production, tourism, education and research, lifestyle and natural amenity).
  - » Facilitate sustainable, supported economic development.
  - » Focus on diversification.
- Regional Liveability
  - » Facilitate investment in critical social and economic infrastructure.
- Strong Communities
  - » Facilitate skills and knowledge development.
- Organisational Excellence
  - » Ongoing priority and a key enabler for regional economic development.

The Strategic Plan also identifies the opportunity to:

> *"leverage the region's growth in population and visitation to seek investment in tourism and transport infrastructure".*

City of Albany Strategic Community Plan 2032

The City of Albany Strategic Community Plan 2032 identifies the following vision:

> *"Amazing Albany, where anything is possible".*

The Plan has five strategic pillars:

- People
  - » A welcoming, healthy and inclusive community, with pride in our rich history and heritage.
- Planet
  - » We are leaders in sustainability with a shared commitment to climate action and protecting our beautiful, natural environment.
- Place
  - » A responsibly planned city that is attractive, vibrant and well connected.
- Prosperity
  - » A thriving city with an abundance of opportunities.
- Leadership
  - » A well governed city that uses resources wisely to meet local needs.

As part of the "Place" pillar, the Plan includes the following outcomes and objectives related to the Albany Airport:

- 10 A safe, sustainable and efficient transport network.
- 10.5 Improve access to marine, rail and aviation transport to support population growth, tourism and economic development.

City of Albany Corporate Business Plan 2022-26

The City of Albany Corporate Business Plan sets out the focus actions for the period 2022-26 to achieve the long term aspirations and outcomes articulated in the Strategic Community Plan 2032. These include:

- 11.1.7 Provide a feasibility study for the expansion of the Albany Airport.

1.15. Planning requirements

City of Albany Local Planning Strategy 2019

A key objective of the Local Planning Strategy 2019 is to *"protect regional assets such as the airport and port facilities"*. This includes the following provisions:

Albany Regional Airport

The City operates the Harry Riggs Albany Regional Airport, which is a regionally significant asset. Given the importance of the continued operation of the airport, it should be protected from the development of sensitive land uses or other incompatible development in its vicinity. It is anticipated that aircraft activity will increase and there will be an associated need to upgrade and extend infrastructure at the airport over the coming decades. There may also be opportunity to develop a business hub close to the airport, with a focus on an aviation and logistics.

Strategic direction: Recognise the role of Albany Regional Airport in the economic development of the region.

Actions

1. Maintain the Albany Airport noise Special Control Area under the Local Planning Scheme to protect the airport from sensitive land uses and include the Obstacle Limitation Surface as a matter that will be considered in applications for planning approval.

2. Protect land from development that could compromise future expansion of the airport.

3. Investigation Area 13 – Potential Airport Business Area

Identify Albany Regional Airport as an investigation area and prepare a structure plan that shows future expansion and development of industry and businesses associated with aviation services and logistics to create or develop competitive advantages.

13. Investigation Area 13 (IA13) – Potential Airport Business Area

There are opportunities for compatible business and commercial activities to be developed adjacent to Albany Regional Airport that could take advantage of this proximity. These may include aviation-related industrial uses, logistics and transport facilities. Subject to the final updated Airport Master Plan, there is 'in principle' support to undertake conceptual design and planning to guide consideration and establishment of complementary commercial uses.

Investigation will be required into the feasibility of a potential airport business area and an airport land use strategy would have to be prepared to guide appropriate land use.

City of Albany Local Planning Scheme No. 1

In the City of Albany Local Planning Scheme No. 1, Albany Airport is defined as Local Scheme Reserves Public Use : Airport. The Reserve Objectives are stated as:

Public Use	*To provide for a range of essential physical and community infrastructure.*

2.4 ADDITIONAL USES FOR LOCAL RESERVES

There are no additional uses for land in local reserves that apply to this scheme.

2.5 USES AND DEVELOPMENT OF LOCAL RESERVES

2.5.1 A person must not:

(a) Use a Local Reserve; or

(b) Commence or carry out development on a Local Reserve;

without first having obtained development approval in accordance with the Planning and Development (Local Planning Schemes) Regulations 2015.

2.5.2 In determining an application for development approval the Local Government is to have due regard to:

(a) The matters set out in Schedule 2 Part 9 cl.67 Planning and Development (Local Planning Schemes) Regulations 2015'; and

(b) The ultimate purpose intended for the Reserve.

2.5.3 In the case of land reserved for the purposes of a public authority, the Local Government is to consult with that authority before determining an application for development approval.

Part 5 of the Local Planning Scheme No. 1 sets out the operation of special control areas, including the Albany Airport Noise Special Control Area.

5.2 ALBANY AIRPORT NOISE SPECIAL CONTROL AREA

5.2.1 The purpose of the Albany Airport Noise Special Control Area is to:

(a) Protect the continued operations of the Albany regional airport and its flight paths;

(b) Control subdivision and development to minimise the potential for sensitive land uses to be undertaken within the special control area in accordance with the Australian Noise Exposure Forecast criteria and AS 2021-2000: Acoustics – Aircraft Noise Intrusion – Building Siting and Construction; and

(c) Restrict the development of the 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 less than 20 ANEF.

(ii) Conditional for residential development: areas between 20 – 25 ANEF.

(iii) Unacceptable for residential development: areas greater than 25 ANEF.

5.2.2 In considering any application for development approval, the Local Government shall have particular regard to:

(a) The position of the premises and the ANEF level areas shown in the Special Control Area mapping and the associated Building Type Acceptability as set out in the following table:

ANEF Levels			
Building Type Acceptability	*ANEF Level*		
	<20	*20 – 25*	*>25*
Single House, Grouped / Multiple Dwellings, Units, Flats	*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*
Light, Manufacturing, Processing, General, Special and Other Industry	*Acceptable*	*Acceptable*	*Acceptable*

Notes:
1. The ANEF Table above determines the acceptability of different building types and has been adapted from AS 2021-2000: Acoustics – Aircraft Noise Intrusion – Building Siting and Construction.
2. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths and the

Local Government may apply the scheme controls for building sites outside but near to the 20 ANEF contour.

3. Within 20 ANEF to 25 ANEF, the Local Government may recommend the incorporation of noise control features in the construction of residences contained within AS 2021:2000.

(b) Recommendations contained within AS 2021-2000: Acoustics – Aircraft Noise Intrusion – Building Siting and Construction; and

(c) Advice of the relevant State Government authorities.

5.2.3 All development the subject of clause 5.2.2 is to be subject to the discretion of the Local Government notwithstanding that the use may be designated a 'P' use in the Zoning Table and the Local Government may exercise discretion as to the approval of the use.

5.2.4 The Local Government will refuse applications for development of any sensitive land uses within the >25 ANEF area.

5.2.5 The Local Government may refuse any application for development approval or may approve the development of sensitive land uses within the 20 – 25 ANEF and <20 ANEF areas and impose conditions on the approval including requiring the applicant:

(a) Incorporate noise attenuation measures into the design of the building; and/or

(b) Register a notification on title advising of the potential for aircraft noise nuisance.

5.2.6 The Local Government will not support the rezoning of land within the 20 – 25 ANEF or above contour levels for any of the above sensitive uses (i.e. acceptable within the <20 ANEF Level) or subdivision which would permit development involving any increase in residential density above one dwelling for every 10 hectares, or any increase in occupational density of other noise-sensitive premises above that which would normally be expected for the equivalent rural residential development based on a 10 hectare minimum lot size.

1.16. Cultural heritage

A search of the Department of Planning, Lands and Heritage Aboriginal Cultural Heritage Inquiry System identified 2 locations of interest as shown in Figure 7.

- Aboriginal Cultural Heritage (ACH) Lodged Place 4630 to the north of the airport
- Aboriginal Cultural Heritage (ACH) Register Place 21837 (creek) to the south of the airport.

Figure 7 ACHIS online mapping

1.17. Native vegetation

An overlay showing the extent of native vegetation in the vicinity of the airport, extracted from NationalMap, is shown at Figure 8.

Figure 8 Native vegetation mapping

2. STAKEHOLDER ENGAGEMENT

A stakeholder engagement plan was developed in consultation with the City of Albany and the Great Southern Development Commission to provide key stakeholders with the opportunity to provide input into the development of the Master Plan.

2.1. Stakeholder engagement program

Engagement activities conducted through September and October 2023 included:

- Face to face interviews
- Telephone / online interviews
- Email feedback.

2.2. Meeting schedule

Aviation Projects conducted face to face meetings in Albany on 11 and 12 September 2023, and additionally engaged in telephone and online meetings with other interested parties.

The following stakeholders were engaged either through face to face meeting, telephone interview or email correspondence:

- City of Albany
- Great Southern Development Commission
- WA Department of Transport - Aviation
- Tourism WA
- Australia's South West
- Development WA
- Albany Aero Club.

2.3. Results of stakeholder engagement

Initial feedback from the stakeholder meetings identified:

- The urgent need for the upgrade / strengthening of the main runway 14/32 to cater for current operations including intended replacement of F100 FIFO services with larger E190 / B737-700 aircraft and large capacity aerial firefighting emergency services aircraft
- Growth and service constraints associated with the current fully regulated regional air route arrangement
- The current airport infrastructure and facilities as a barrier to unlocking the significant tourism potential of the region, including the potential attraction of new intrastate and interstate air services
- The opportunity presented by the upcoming 2026 Bicentenary events
- The potential for the airport to cater for export markets / international freight for premium local produce (food and beverage)
- The need for future development of the airport to be fit for purpose and aligned with airline demand / forecasts, with staging and investment decisions supported by a robust business case.

3. SWOT ANALYSIS

A Strengths Weaknesses Opportunities and Threats (SWOT) analysis has been used to identify significant areas for consideration in relation to the Albany Airport and its support of the City of Albany's strategic objectives, as detailed in Table 2 and Table 3.

Table 2 Albany Airport SWOT analysis – Strengths and Weaknesses

Strengths	*Weaknesses*
• Attractive destination with stunning natural landscape and built environment assets (eg National Anzac Centre), Aboriginal heritage – region is well positioned to attract visitors • Thriving economy with significant trade / freight associated with regional produce (food and beverage) • Over 700,000 annual visitors (source: Tourism WA Insights and Planning Factsheet 2022) • Growing regional population > 60,000 • Good road access to airport, located on Albany Highway (to Perth) supported by new Albany Ring Road connections to South Coast Highway (Denmark, Esperance) * note: road access to Perth and across the South West is a weakness	• While the current regulated route arrangement provides benefits to the local community in terms of guaranteed minimum service levels / frequency and capped fares under the Regional Airfare Zone Cap scheme, the regulated route arrangement limits competition and increased services / capacity ALH – PER to July 2028 • Most visitors prefer to access Albany region by car (possibly due to current air services) • Road access to Perth and across the South West is a constraint • Relatively unknown tourism brand (outside of WA) • Lack of premium quality accommodation stock • Relatively small population base • Airport is the barrier - significant infrastructure and facility upgrades required to cater for future RPT / FIFO services ○ Runway – urgent need for upgrade (strengthening) to cater for current FIFO services; Taxiways; Apron; Terminal building (+ future pax / CBS security screening – equipment + contractors); Car Park; Water supply / fire hydrant network (for fire fighting capability) • Security screening required for larger RPT aircraft above screening threshold (> 40 seats) • No clear vision for (or understanding of the importance of) general aviation at the airport; poor / restricted access and poor amenities for visitors to GA precinct; lack of a plan for the stage release of future GA hangar space; poor refuelling facilities / products; poor utilities / services to GA precinct; access to GA precinct off the busy Albany Highway 110km/hr • Internal road / access circulation (within the airport terminal / GA precinct), car parking, access issues

Table 3 Albany Airport SWOT analysis – Opportunities and Threats

Opportunities	*Threats*

• Post July 2028, opportunity to attract additional RPT services / capacity on the ALH – PER route
• Emulate the success of Busselton Margaret River Airport
• Unlock the tourism and export trade potential (incl. time critical aquaculture) of the Great Southern region (Albany described as the "missing link")
• Great Southern region will have significant focus over the coming years with the 2026 Bicentenary celebrations, first for WA, opportunity to promote aboriginal culture / heritage
• Post COVID desire for people to have new experiences, get out into nature
• Leverage support from 11 local government areas including Albany, Broomehill-Tambellup, Cranbrook, Denmark, Gnowangerup, Jerramungup, Katanning, Kent, Kojonup, Plantagenet, and Woodanilling
• Attract intra and interstate RPT services (subject to infrastructure upgrades)
• Short term = Rex, upscale from Saab to Q400 (National Jet Express) + narrow body aircraft from Perth to East Coast
• Continue to grow FIFO services
• Investigate potential for establishment of an Airport Business Area, plus expand existing emergency services facilities / precinct
• Opportunity to attract / cater for major flight training provider
	• Current / deteriorating pavement condition to cater for current / larger aircraft – urgent need for runway upgrade (strengthening)
	• Regulatory requirements re MOS139 for upgraded facilities eg runway width etc
	• Land ownership, and extent of land available to the north (and south) of the airport for extension of the main runway 14/32
	• Availability of funding $$$ for infrastructure / facility upgrades – to be supported by robust cost-benefit business case:
	  ○ need to quantify / demonstrate social (liveability) and economic benefit of upgrade
	  ○ view that upgrade should be self-funded through airport operations
	  ○ infrastructure should be fit-for-purpose
	  ○ considered approach supported by facts noting highly competitive State Government funding process
	• Misalignment of stakeholder objectives
	• Renewal of regulated route services in 2028
	• Unable to attract RPT services / allocate sufficient resources to market new airport routes

4. EXISTING AERODROME FACILITIES

4.1. Aeronautical infrastructure

Albany Airport is equipped with the aeronautical infrastructure described in this section.

Runway 14/32 Code 3C 1800 m x 30 m sealed, 150 m runway strip – instrument non precision

- RWY PCN 21/F/A/1250 (181PSI) /T (Note: subgrade strength assessed in 2023 as category C)

Runway 05/23 Code 2B 1096 m x 30 m sealed, 90 m runway strip – non instrument

- RWY PCN 10/F/A/1050 (152PSI) / U

Note: the pavement classification number (PCN) is expressed as a five-part code, separated by forward-slashes, describing the relevant pavement.

Declared distances are provided in Table 4 (source: Airservices Australia, 30 November 2023).

Table 4. Runway declared distances

Runway	*TORA*	*TODA*	*ASDA*	*LDA*
14	1800	1860 (1.55%)	1800	1800
32	1800	1860 (2.04%)	1800	1800
05	1096	1156 (1.2%)	1096	1096
23	1096	1159 (5.36%)	1096	1096

Note the acronyms used are defined as: take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA) and landing distance available (LDA).

Figure 9 shows the Albany Airport Aerodrome Chart (source: Airservices Australia, 15 June 2023).

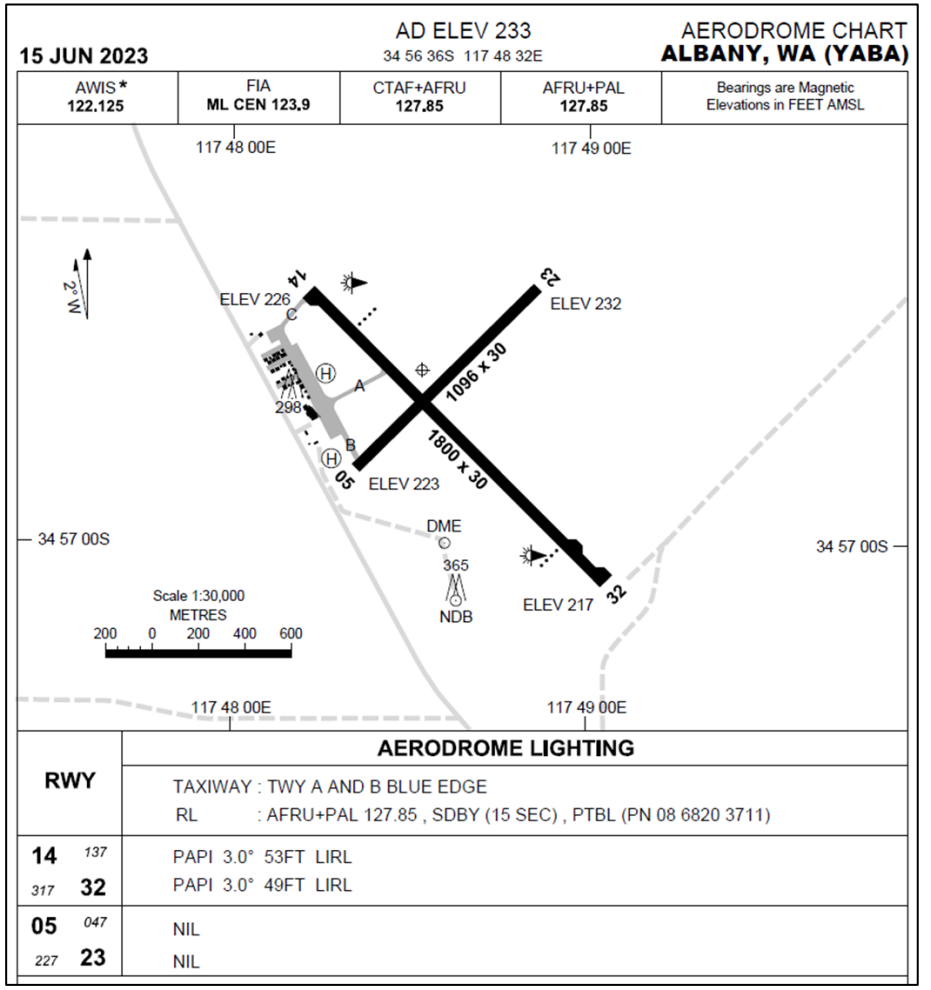

Figure 9 Albany Airport Aerodrome Chart

An image of runway 14, looking south-east from the take-off position, is provided at Figure 10.

Figure 10 Runway 14

An image of runway 32, looking north-west from the take-off position, is provided at Figure 11.

Figure 11 Runway 32

An image of runway 05, looking north-east from the take-off position, is provided at Figure 12.

Figure 12 Runway 05

An image of runway 23, looking south-west from the take-off position, is provided at Figure 13.

Figure 13 Runway 23

The main RPT aircraft parking apron is located adjacent to the passenger terminal building and can accommodate up to three (3) code C aircraft on the parking positions Bay 1, Bay 2 and Bay 3. Bay 2 is the designated RPT apron. Bay 1 is designated for refuelling services.

It is noted that the 2023 Aerodrome Technical Inspection (ATI) report identifies that the main RPT apron slopes towards the terminal building.

Part 139 MOS 2019 section 6.60 specifies:

> *(5) Subject to subsection (6), the grading of an apron must be such that it does not slope down towards the terminal building.*
>
> *(6) If a slope down towards a terminal building cannot physically be avoided, apron drainage must direct any spilled fuel away from the building and other structures adjoining the apron.*
>
> *(7) If a stormwater drain collects spilt fuel from the apron area, flame traps or interceptor pits must be provided to isolate the fuel and prevent it spreading from the apron area.*

The ATI report includes the following recommended corrective action No. 12.5.1 which should be considered as part of any future apron design work:

> *When the major works are undertaken, consider reworking apron so drainage is directed away from the terminal.*

A code A general aviation aircraft parking apron is located adjacent to the GA hangar precinct. The apron is limited to aircraft under 5,700 kg and maximum wingspan 15 m.

A RFDS Apron is located to the north of the GA hangar precinct for operations of Royal Flying Doctor Service aircraft.

The aircraft parking aprons are connected via three (3) taxiways – code C Taxiway Alpha (15 m wide), code B Taxiway Bravo (15 m wide) and code B Taxiway Charlie (10.5 m wide).

Taxiway Bravo is available for aircraft up to 10,000 kg. Taxiway Charlie is available for RFDS aircraft only, and aircraft under 5,700 kg and maximum wingspan 15 m. Taxiways (taxilanes) D, E and F provide access to the GA hangar sites.

Helicopter parking is available on marked grass section north side of Taxiway Alpha, and also, western side of Taxiway Bravo.

An aerial view of the RPT terminal and GA precinct showing the current configuration of the parking aprons and taxiways is shown at Figure 14 (source: Google Earth).

Figure 14 RPT terminal and GA precinct - aerial view

4.2. Ground Servicing Equipment (GSE) Storage 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.

4.3. Support facilities

The airport has a range of aviation support facilities, including the following Communications, Navigation and Surveillance (CNS) facilities provided by Airservices Australia:

- Non Directional Beacon (NDB)
- Distance Measuring Equipment (DME)
- Very High Frequency (VHF) / Satellite Ground Station (SGS).

The airport is also served by satellite-based navigation procedures.

The airport is located outside controlled airspace and has a common traffic advisory frequency (CTAF). There is no air traffic control tower service.

There is no aerodrome rescue and firefighting service (ARFFS).

Onsite fuel (both Jet A1 and Avgas) is located off the RPT apron (Bay 1) and in front of the passenger terminal building. AV-Gas is available on a self service swipe card system, whereas Jet-A1 is dispensed by trained / certified staff only. Two large 50,000 litre fuel tanks are located in a secured area landside north of the terminal car park with subsurface pipelines connecting through to the airside fuel pumps.

The current location of the refuelling facility is a constraint to current operations with potential clashes between RPT, general aviation and emergency service operations. The facility should be relocated to facilitate current operations and make way for future proposed landside development.

An image of the refuelling facility is provided at Figure 15.

Figure 15 Refuelling facilities

Albany Airport is a security controlled airport. A perimeter fence encloses the airside area, and the boundary is clearly marked with signage. Airside access for Albany Airport is via gates surrounding the airside and landside boundary.

4.4. Landside development

Landside facilities include:

- the passenger terminal building with car parking areas for the general public, hire cars and staff
- Royal Flying Doctor Service facility
- general aviation hangars and the Highway Volunteer Bushfire Brigade facility.

An image of the terminal is provided at Figure 16.

Figure 16 Albany Airport terminal building

The passenger terminal building was refurbished in 2007 and modified in 2012 to accommodate passenger screening. Security screening equipment was de-installed in 2016 when the aircraft type change and Saab 340 services commenced.

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.

As shown in Figure 17, the terminal provides the following services:

- passenger check-in
- departure lounge and café
- arrivals hall / baggage reclaim with car hire and tourist information desks
- baggage handling areas and airport operations office
- areas for passenger and checked baggage security screening (currently decommissioned).

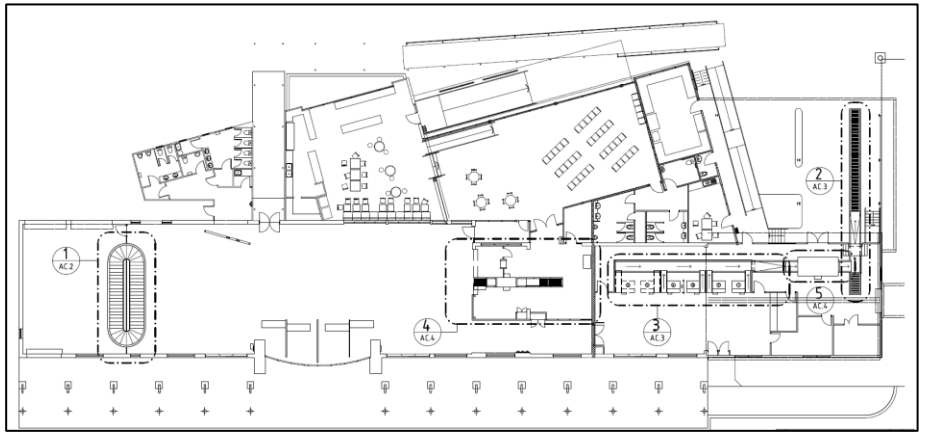

Figure 17 Terminal building layout

An image of the check-in area is provided at Figure 18, and departure lounge at Figure 19.

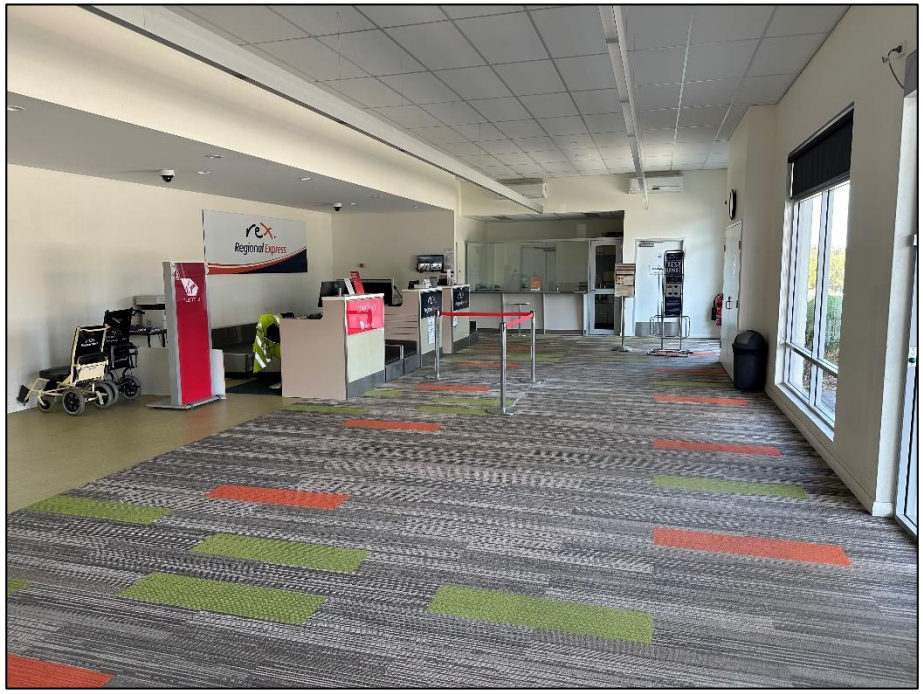

Figure 18 Check-in area

Figure 19 Departure lounge

An image of the arrivals / baggage claim area is provided at Figure 20.

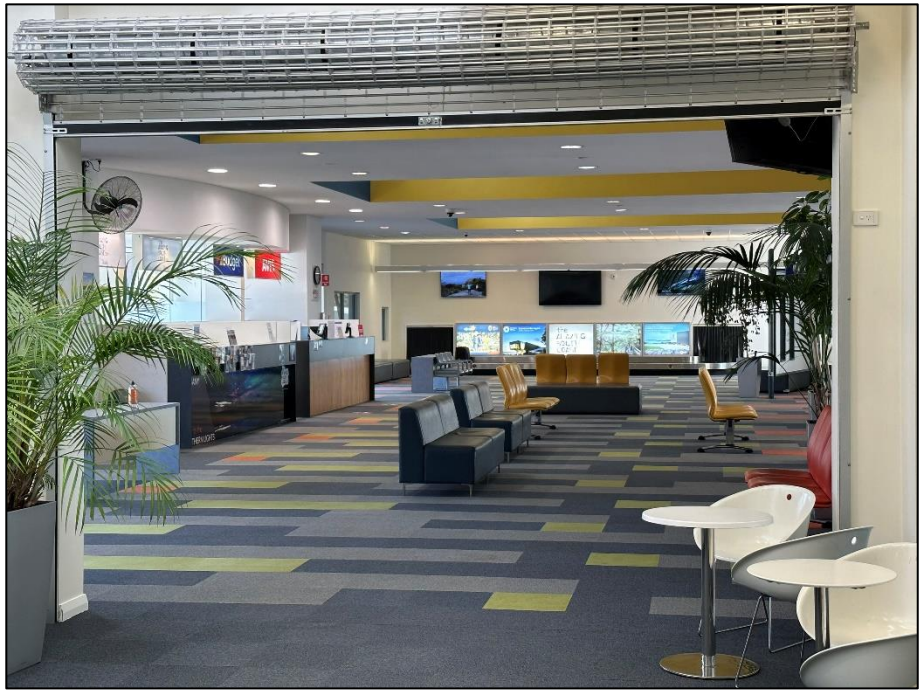

Figure 20 Arrivals / baggage claim

Car parking areas are shown in Figure 21. There are 185 spaces at present including 86 spaces immediately in front of the terminal building, and 63 long term (incl. staff) spaces along with 36 car hire spaces located to the south of the terminal. The car park is operating at / near capacity at current busy hour peak periods.

Drop off and pick up facilities are located kerbside in front of the terminal building.

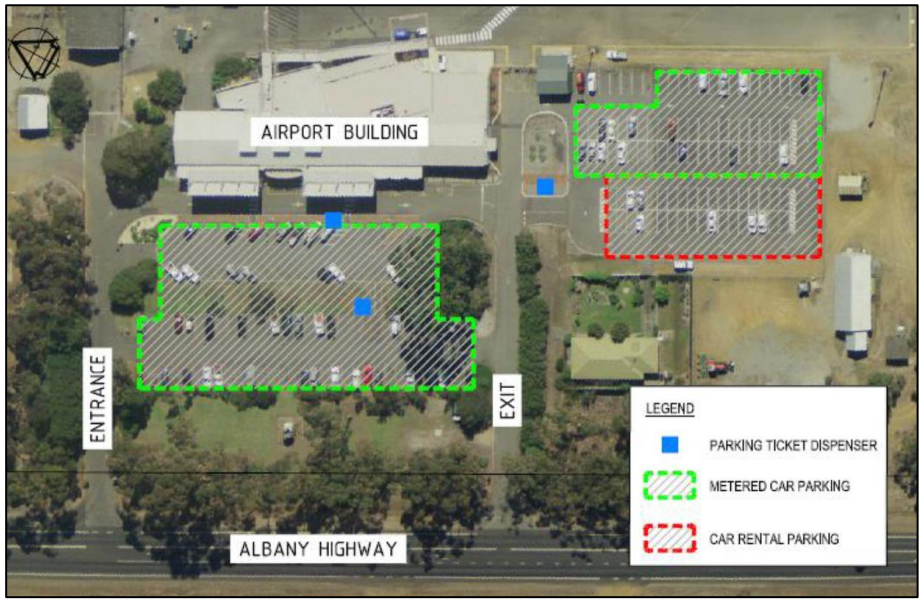

Figure 21 Car parking areas

A RFDS apron is located to the north of the GA hangar precinct for operations of Royal Flying Doctor Service Pilatus PC-12 and PC-24 aircraft. An image of the apron and associated St John Ambulance facility is provided at Figure 22.

Figure 22 RFDS apron

There are 26 hangars located in the general aviation precinct to the north of the terminal building area. The area supports a range of general aviation activities including private flying, flying training and charter operations.

An image of the general aviation hangar precinct is provided at Figure 23.

Figure 23 General aviation hangars

4.5. Aerodrome lighting

A Pilot Activated Lighting (PAL) System is available on runway 14/32. The system includes runway end / threshold, low intensity runway edge lights and precision approach path indicator (PAPI) available for each visual approach on runway 14/32. Portable lights are available for emergency.

Illuminated wind direction indicators are installed at 14 and 32 runway ends.

There is no lighting on runway 05/23 other than portable lights for emergency only.

Blue taxiway edge lights are provided on taxiway Alpha and Charlie. There is no taxiway lighting on Taxiway Bravo.

Apron floodlighting is provided to Bays 1, 2, 3, GA entry, refuelling bay and the RFDS apron. As noted in Table 5 the existing main apron flood lighting does not achieve Part 139 MOS 2019 lux levels and is noted as a "grandfathered facility". Future major works associated with the main RPT apron and upgrades to cater for larger Code 4 design aircraft should seek to correct this non-compliance.

The aeronautical ground lighting facilities are satisfactory for the intended operations, but compliance is contingent upon certain grandfathered provisions (see section 0).

4.6. Navigation and approach aids

Current navigational facilities as described at section 4.3 are satisfactory for current and future needs. An Airservices Australia facilities plan for Albany Airport identifies a site for a future Very High Frequency Omni-directional Range (VOR) facility to the south of runway 14/32 and east of runway 05/23. Further consultation with Airservices Australia is recommended to confirm its future requirements at the airport.

4.7. Weather information service

The Bureau of Meteorology (BOM) has an office and weather station located on the eastern boundary of the Albany Airport land. The aerodrome weather information service (AWIS) broadcasts automatic weather station observations.

4.8. Aerodrome rescue and firefighting services

There is no expectation of a need for ARFFS within the master planning period.

4.9. Ground transport

Albany Airport is accessed via the Albany Highway – the main highway between Albany and Perth. Dedicated right and left turn lanes are provided for vehicles turning into the Airport. The Highway handles heavy goods vehicle traffic as shown Figure 24. It is anticipated that future growth in Albany Airport will require improved road access to cater for the various vehicle movements.

Figure 24 Albany Airport access

A new Albany Ring Road is currently under construction providing improved connections to the South Coast Highway and Denmark and Esperance.

The terminal building and associated car parking areas are accessed via a circulatory loop road as shown at Figure 25.

Figure 25 Terminal precinct loop road

4.10. Utilities and civil infrastructure

Water

Town water is provided to the airport site. Stakeholder feedback noted the need for improvements to the water supply / fire hydrant network to support / enhance firefighting capability.

Electricity

The airport is connected to the main power grid. Emergency power is provided via diesel generators.

Sewer

The airport is connected to an On-site Wastewater Management System.

Communication

Telephone services are provided to the airport site.

Stormwater

Stormwater run-off is managed onsite via a series of open unlined drainage swales.

4.11. Grandfathered facilities

CASA allows certain airport facilities that have been previously constructed in compliance with regulatory standards that have since been amended, to be maintained in accordance with the requirements of the previous standard, even though they are not compliant with the new standard. These facilities are referred to as being “grandfathered facilities” and are noted in the aerodrome manual.

The following Albany Airport facilities rely on grandfathered provisions.

Table 5 Albany Airport Grandfathered provisions

Existing Facility	*MOS139 2019 Standard*	*Compliance with Previous Standard*
RWY 14/32 Code 3 NPA strip width 150 overall	Table 6.17 (4) RWY strip width Code 3 – 280m	MOS139 V1.14 - Table 6.2-6 Overall runway strip width 150m
RWY 14/32 Code 3 NPA RESA declared 60m(W) x 90m(L) from end of RWY strip	Table 6.26 minimum 90m (240m preferred) measured from the end of the runway strip.	MOS139 V1.14 - 6.2.26.1 minimum RESA 90m
RWY 14/32 Approach Surface: Inner Edge Width 150m Slope First Section 3.33%	Code 3 NPA Approach: Inner Edge 280m First Section Slope – 2.0%	MOS139 V1.14 Table 7.1-1
Longitudinal slope of runway strip for Runway 14/32 at 2 locations on the extreme southern edge exceeds maximum design slope and slope changes	6.18 (1) longitudinal slope along the graded area of the runway strip must not exceed: for a code 3 runway — 1.75% 6.19 Longitudinal slope changes on the graded area of a runway strip must not exceed 2%	
RWY 05 threshold located to achieve 5% clear approach gradient	Table 7.15 (1) Approach surface slope 5%, located 60m from threshold	MOS139 V1.14 – 6.2.1 - Note: The obstacle free approach surface to the threshold is not to be steeper than… 5% where the code number is 3.
Apron floodlighting horizontal and vertical illuminance > 5 lux	Table 9.116 minimum parking position average illuminance 20 lux when intended for air transport operations.	MOS139 V1.14 9.- 16.4.4 apron parking position intended to be used by Code 3C aircraft, horizontal and vertical illuminance at least 5 lux.
Taxiway A Code C taxiway 15m wide with 3.5m sealed shoulders	6.45(1)(d) total width 25m	MOS139 V1.14 6.3.1.1A(a) TWY width 15m 6.3.9.1(d) width of shoulders Code C – 3.5m
Wind indicator approach RWY 32 located on the left-hand side 270m upwind.	8.101 (7) A wind direction indicator provided at the threshold of an instrument runway must be located (d) 100m upwind of the threshold	MOS139 V1.14 8.7.1.7 If practicable to do so, a wind direction indicator provided at the threshold of a runway must be located 100m upwind of the threshold.

5. VISION

The City of Albany's vision for Albany Airport is to ensure that the airport is positioned:

> *"to provide appropriate fit-for-purpose airport infrastructure and facilities to promote future growth in air transport operations to underpin the Great Southern region's ongoing growth, economic development and tourism potential".*

Central to this vision is the desire to attract new air transport (RPT) services to the region including interstate East Coast services eg Melbourne, Sydney and Brisbane, operating up to 180 seat Code 4 aircraft such as the Airbus A320, Boeing B737-800 and B737 Max 8 aircraft.

Virgin Australia, the current operator of Fly-in / Fly-out (FIFO) closed charter services to Boolgeeda on behalf of Rio Tinto has also indicated that it intends to replace its current Fokker F100 services with larger Embraer E190 or Boeing B737-700 aircraft.

Both of these requirements will trigger a significant upgrade of the airside infrastructure ie Runway 14/32, Taxiway Alpha and RPT apron to cater for operations by these larger aircraft.

The City of Albany is also planning for continuing growth on the existing Perth – Albany route. While this route is currently operated as a fully regulated regional air route, as demand and passenger numbers grow over time, the desire is to see this route expanded to offer a greater range of competitive airline services to the community.

6. DEMAND

6.1. Regional population

The Great Southern region has a regional population of 61,890 (source: www.gsdc.wa.gov.au/our-region). Population growth for the City of Albany over the 5 years 2018 to 2022 averaged 1.3% per year. It has been assumed that the region approximates the airport's passenger catchment.

6.2. Historical passenger movements

The Australian Bureau of Infrastructure and Transport Economics (BITRE) produces annual airport traffic data for all airports that support air transport (RPT) services. Data is compiled for International and Domestic (including Regional) airline RPT services and does not include charter or other non-scheduled activity.

The data in Figure 26 (source: BITRE) shows annual RPT passenger movements for the period 1985-86 to 2022-23. Excluding the effects of COVID-19 average annual growth over the preceding 20-year period has been at a rate of approximately 2.5% per annum.

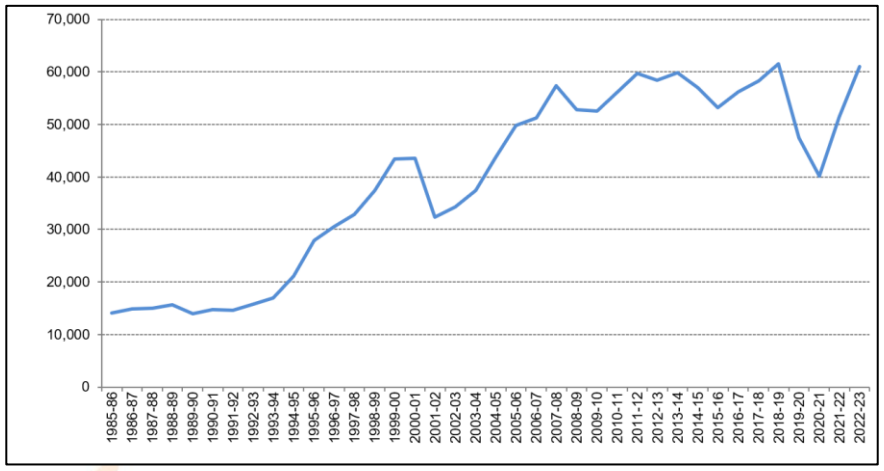

Figure 26 Historical RPT passenger movements at Albany Airport

6.3. Forecast passenger demand

Forecast passenger demand is a key determinant of future aircraft operations and infrastructure requirements.

It is assumed that passenger demand on the Albany – Perth route will continue to match pre COVID-19 levels in 2023-24 with 60,000 annual RPT passengers being used as the base for passenger demand forecasting.

Several indicative growth rates (1% - low, 2.5% - medium and 4% - high) have been projected from 2024 to establish a range of reasonably possible outcomes. A 1% growth rate derives around 72,500 passenger movements in 2043, 2.5% produces almost 96,000 movements and 4% produces 126,000 or a doubling of passenger movements by 2043.

One way of calibrating potential demand is by using multiples of population, including multiples of 1.5 - low, 2.0 - medium and 2.5 - high.

Considering these parameters, forecast passenger growth on the Albany – Perth route is shown in Figure 27.

The analysis in Figure 27 would suggest that based on the population multiplier guide, there is an element of unrealised demand (ie there is a gap) between current passenger movements and those theoretically possible at the "low" rate of 1.5 times the regional population.

Current RPT services to Perth operated by Rex 34-seat Saab 340 aircraft under a fully regulated regional air route agreement with a minimum of 24 weekly return services provides around 85,000 seats per annum.

The minimum demand for two airlines to operate on the Albany – Perth route is estimated to be in the order of 80,000 to 100,000 passenger movements per annum (source: Department of Transport Snapshot: Perth-Albany Air Route March 2023).

Without stimulating current demand to achieve passenger movements at a rate of at least 1.5 times the regional population, it is likely that the Albany – Perth route will remain fully regulated for at least the next 10 years.

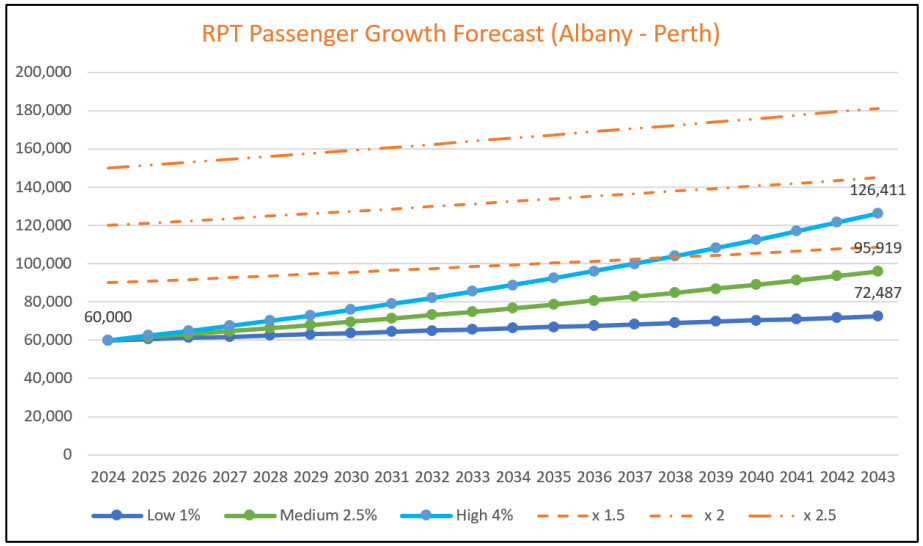

Figure 27 Passenger growth forecast (Albany – Perth)

It is difficult to forecast growth in the current fly-in / fly-out (FIFO) closed charter services as this market is subject to external factors and potential fluctuation with economic cycles.

For master planning purposes it has been assumed that there will be a doubling of FIFO passenger movements over the 20-year period of the master plan.

6.4. Future RPT routes

The City of Albany's vision for the future of Albany Airport is to promote future growth in RPT services to underpin the Great Southern region's ongoing growth, economic development and tourism potential. Central to this aim is the attraction of new interstate services from Albany to eastern cities such as Melbourne, Sydney and Brisbane.

It is envisaged that the current regional population would support low frequency leisure based services operating Code 4 A320 / B737-800 type aircraft subject to appropriate upgrades in the airport infrastructure and facilities.

A 180-seat aircraft operating at 80% load factor and 2 return services per week would result in an additional 30,000 passenger movements per annum (and 45,000 passengers per annum at 3 return services per week) as shown in Figure 28.

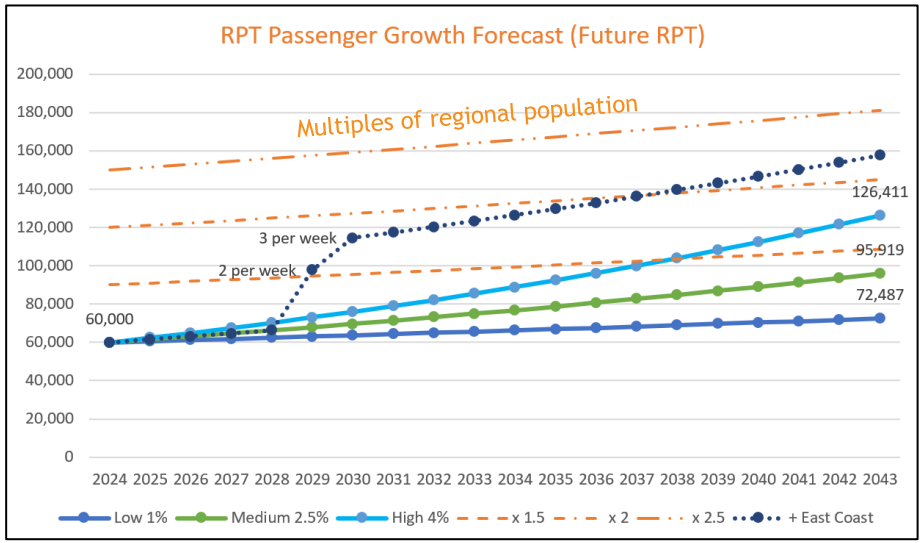

Figure 28 Passenger growth forecast (Future RPT)

The addition of potential future East Coast RPT services can be validated from a master planning perspective against the regional population multiplier guides, but would be subject to further detailed route specific analysis and business case.

6.5. Historical aircraft movements

Historical RPT aircraft movement data as published by BITRE is shown at Figure 29.

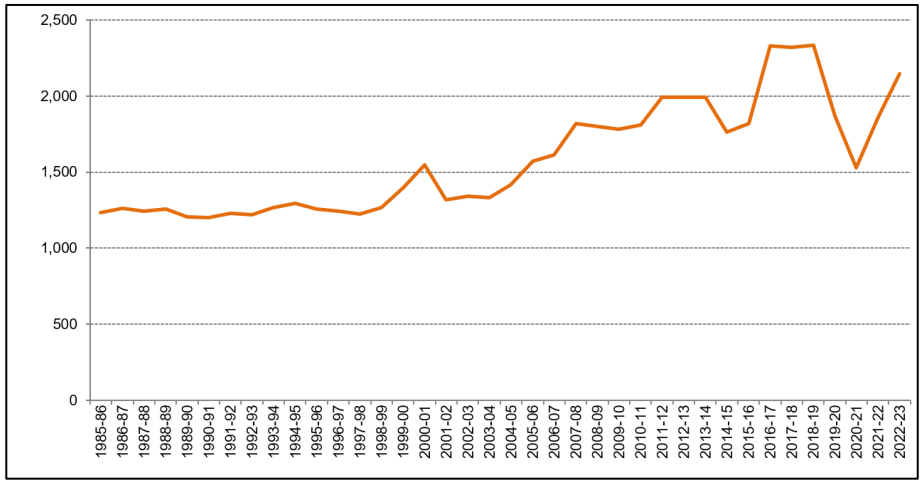

Figure 29 Historical RPT aircraft movements at Albany Airport

The current RPT services to Perth operated by Rex at a minimum frequency of 24 weekly return services equates to approximately 2,500 aircraft movements per annum.

Fly-in / Fly-out (FIFO) closed charter services to Boolgeeda operated by Virgin Australia Fokker F100 jet aircraft on behalf of Rio Tinto operate 4 return services per week (416 aircraft movements per annum).

6.6. Forecast aircraft movements demand

Aircraft movements associated with air transport (RPT and FIFO) services are not expected to change significantly (in number) during the master planning period, noting that the forecast increase in passenger numbers would potentially be achieved through the operation of larger seat capacity aircraft at a similar frequency to current operations.

7. DEVELOPMENT OPTIONS

7.1. Aircraft movement areas

Runway 14/32

The existing main Runway 14/32 is a Code 3C instrument non precision runway, 1800 m long x 30 m wide, with a 150 m runway strip. It has a published PCN of 21/F/A/1250 (181PSI) /T.

A pavement strength review conducted by ACG in October 2022 identified:

- *The majority of the runway calculates as Cat D (3) subgrade strength with CBR values from 1.5% to 4%. The back-calculated CBR values (3% to 4.8%). This is not in alignment with the published PCN category A.*
- *The PCN of Runway 14/23 is calculated as PCN 17.8. This is not in alignment with the published PCN of 21.*
- *The surface appears to be at the end of its operational life (functional and structural) and pavement rehabilitation should be planned.*

Significant pavement strengthening is required to cater for not only existing operations of Fokker F100 aircraft, but also the planned introduction of either E190 and/or B737-700 aircraft.

The Code 3 Development Strategy to cater for these aircraft is outlined in section 8.2, and retains the airport as a Code 3 aerodrome with Runway 14/32 remaining at 1800 m long x 30 m wide with the pavement strength upgraded to cater for up to Code 3 E190 (PCN 36) / B737-700 (PCN 47) aircraft.

The City of Albany's future vision for the airport is to attract new air transport (RPT) services to the region including interstate East Coast services eg Melbourne, Sydney and Brisbane, operating up to 180 seat Code 4 aircraft such as the Airbus A320, Boeing B737-800 and B737 Max 8 aircraft.

An initial runway length assessment has indicated that Runway 14/32 will need to be extended to 2100 m long to cater for these operations, along with further pavement strengthening.

Part 139 MOS 2019 (ref: Table 6.02 (1)), specifies that Code 4 aircraft require a minimum runway width of 45 m, and as such Runway 14/32 should be widened as part of any future upgrade of the aerodrome to cater for Code 4 aircraft.

The Code 4 Development Strategy to cater for Code 4 aircraft is outlined in section 8.3, with Runway 14/32 extended to 2100 m long and widened to 45 m wide as a Code 4 runway with an upgrade of the pavement strength to cater for up to Code 4 A320, B737-800 and B737 Max 8 (PCN 56) aircraft.

The Code 4 (Long Term) Development Strategy outlined in section 8.4 identifies options for further extension of Runway 14/32 to future-proof the runway to cater for future demand in air transport services to the region. These options include either:

- an extension of the runway to 2300 m long, subject to land acquisition (and resolving access issues to an adjoining property) to the north of the airport, or
- the provision of 150 m long runway starter extensions at each end of the 2100 m long runway, to provide a 2250 m take-off run available (TORA) distance in each take-off direction within the current extent of the airport boundary.

In each of the development strategies, the runway strip associated with Runway 14/32 needs to be widened from 150 m to 280 m, which will require vegetation clearing (subject to environmental planning approval) on both sides of the runway strip at the southern end of the airport.

Subject to further survey / detailed investigation, a portion of land acquisition is likely to be required on the north-eastern side of the runway strip, at the southern end of the airport, to provide for the 280 m wide runway strip and ensure associated boundary fencing does not infringe the associated OLS transitional surface.

The Master Plan makes provision for 90 m long runway end safety areas (RESA) and the relocation of existing illuminated wind direction indicators (IWDIs) at each of Runway 14/32 in each development scenario.

Runway 05/23

Existing Runway 05/23 is a Code 2B non instrument sealed runway, 1096 m long x 30 m wide, with a 90 m runway strip. It has a published PCN of 10/F/A/1050 (152PSI) / U.

Runway 05/23 is generally considered to be suitable for current and future aviation needs, and no change is proposed to this infrastructure during the term of this Master Plan other than for essential maintenance works as required.

The Master Plan does propose however to protect a possible future need to upgrade the runway to an instrument non-precision runway, and as such the Master Plan provides for a future 140 m wide runway strip and associated obstacle limitation surfaces in line with planning principles to future proof the airport for possible future demand in air transport services.

It is also noted that land is available to the north-east of Runway 05/23 to allow for future extension of the runway if required.

Taxiways

Taxiway Alpha is a Code C taxiway 15 m wide, providing access for air transport (RPT and FIFO) aircraft to and from the main aircraft parking apron. As noted at section 0, Taxiway Alpha has 3.5 m wide sealed shoulders which is noted as a “grandfathered facility”.

Part 139 MOS 2019 (ref: 6.45) specifies that a Code C taxiway must have a minimum width (including shoulders) of 25 m, and as such future upgrades (ie to Code 4) should incorporate widening of Taxiway Alpha in accordance with this requirement.

Taxiway Alpha will also require significant pavement strengthening to cater for the proposed introduction of E190 and/or B737-700 aircraft, as well as the potential future A320, B737-800, B737 Max 8 Code 4 aircraft.

Taxiways Bravo and Charlie, along with taxiways / taxilanes D, E and F, are generally considered to be suitable for current and future aviation needs, and no change is proposed to this infrastructure during the term of this Master Plan other than for essential maintenance works as required.

The Code 4 (Long Term) Development Strategy at section 8.4 provides for future duplication of Taxiway Alpha to improve operational efficiency of aircraft movements subject to demand.

The strategy also makes provision for a future Code C taxiway parallel to Runway 14/32. While the need for a parallel taxiway based on forecast aircraft movements is not envisaged within the term of this Master Plan, it is good planning practice to reserve land (ie a 52 m wide Code C taxiway strip) for this potential infrastructure so as not to constrain potential development in the future. The taxiway is proposed to be planned / reserved at a 172.5 m Code E taxiway offset from Runway 14/32, as a future-proofing provision.

It is noted that additional vegetation clearing (subject to environmental planning approval) will be required to provide for a future parallel taxiway to the Runway 32 threshold.

Aircraft aprons

The main RPT aircraft parking apron is located adjacent to the passenger terminal building and can accommodate up to three (3) code C aircraft on the parking positions Bay 1, Bay 2 and Bay 3. Bay 2 is the designated RPT apron. Bay 1 is designated for refuelling services.

The Code 3 Development Strategy at section 8.2 provides for minor widening / reconfiguration of the apron to cater for the proposed introduction of E190 and/or B737-700 aircraft. The apron will also require significant pavement strengthening to cater for the proposed introduction of these aircraft.

The Code 4 and Code 4 (Long Term) Development Strategies at sections 8.3 and 8.4 make provision for an expansion of the RPT apron to cater for up to four (4) free moving parking positions for Code C aircraft to cater for future demand. The apron will also require pavement strengthening to cater for potential future A320, B737-800, B737 Max 8 Code 4 aircraft.

As noted at section 4.1, the existing apron slopes towards the terminal building, and the 2023 ATI report has recommended that when major works are undertaken, that consideration be given to reworking the apron to direct drainage away from the terminal building.

Section 0 also identifies the apron flood lighting as a “grandfathered facility” and future major works associated with the main RPT apron and upgrades to cater for larger Code 4 design aircraft should seek to correct this non-compliance.

Future upgrades of the RPT apron should also provide for suitable storage areas for ground servicing equipment to suit operating aircraft.

The existing general aviation aircraft parking apron and RFDS Apron located adjacent to the GA hangar precinct are generally considered to be suitable for current and future aviation needs, and no change is proposed to this infrastructure during the term of this Master Plan other than for essential maintenance works as required.

Existing areas for helicopter parking, and the parking of seasonal fire fighting aircraft, are proposed to remain as existing as part of this Master Plan.

7.2. Aviation support facilities

Fuel facilities

On site fuel (both Jet A1 and Avgas) is currently located off the RPT apron (Bay 1) and in front of the passenger terminal building. Two large 50,000 litre fuel tanks are located in a secured area landside north of the terminal car park with subsurface pipelines connecting through to the airside fuel pumps.

The current location of the refuelling facility is a constraint to current operations with potential clashes between RPT, general aviation and emergency service operations. The above ground fuel tanks also present a constraint to future landside development, and in particular expansion of the passenger terminal car park.

The facility should be relocated to facilitate current operations and make way for future proposed landside development.

There is the potential for the Jet A1 fuel facility to remain adjacent to Bay 1, incorporating the relocated Jet A1 fuel storage tank, to facilitate refuelling of air transport (RPT / FIFO) aircraft on the main aircraft parking apron.

Further investigation should be undertaken in conjunction with existing and/or potential new refuelling operators to identify the preferred site for a new refuelling facility (Jet A1, Avgas, Mogas as required) adjacent to the RFDS apron / GA precinct to facilitate GA, RFDS, and emergency services aircraft refuelling separate to the RPT apron.

7.3. Passenger facilities

Passenger terminal building

The existing passenger terminal building was designed with the maximum design aircraft as one domestic B737 with a 90% load factor equating to 100 arriving and 100 departing passengers. The building has a floor area of approximately 1,500 square metres including external / back-of-house baggage areas.

The introduction of larger seat capacity Code 3 and Code 4 aircraft and the potential for increased peak busy hour passenger periods will require substantial expansion of the existing terminal building over time to cater for demand.

The Code 3 Development Strategy makes provision for incremental expansion of the terminal building as required to cater for demand. It is noted that the introduction of air transport (RPT) aircraft with more than 40 seats will require the re-introduction of passenger and checked baggage security screening facilities including sterile departure lounge facilities as previously operated at the airport between 2012 and 2016.

The Code 4 Development Strategies and the potential introduction of up to 180-seat A320, B737-800 and B737 Max 8 Code 4C aircraft will require significant upgrades to the terminal building subject to load factors and scheduling alongside other services.

As a guide, a single 180-seat Code 4 aircraft operating alongside increased capacity Code 3 RPT and FIFO aircraft has the potential to produce a busy hour of up to say 300 arriving and 300 departing passengers, requiring at least a doubling in size of the existing terminal building subject to detailed functional / level-of-service planning and design.

Car parking

The existing car park has capacity for 185 vehicles across short term, long term (incl. staff) and hire car users. The car park is operating at / near capacity at current busy hour peak periods. Drop off and pick up facilities are located kerbside in front of the terminal building.

As with the passenger terminal building, the introduction of larger seat capacity Code 3 and Code 4 aircraft and the potential for increased peak busy hour passenger periods and growth in passenger numbers overall (including FIFO), will require substantial expansion of the existing car parking facilities over time to cater for demand.

Future car parking facilities should make provision for short / long term (incl. staff) and hire cars as at present, along with premium parking products such as security and undercover parking, in conjunction with the introduction of enhanced paid parking systems.

The Code 3 Development Strategy makes provision for an additional approximately 60 parking spaces between the existing car park and the Albany Highway in the short term to cater for current demand / short term growth in passenger numbers.

The Code 4 Development Strategies make provision for more significant expansion of the car parking facilities adjacent to the passenger terminal building to provide up to 600 car parking spaces in the future aligned with demand and forecast growth in passenger numbers.

Alternative apron / terminal precinct

While the Master Plan provides for incremental upgrades of the existing RPT apron, passenger terminal building and car parking facilities over time to meet demand, the Code 4 (Long Term) Development Strategy also reserves an area of the airport land to the south of Runway 05/23 to be set aside for potential future development of a new apron, terminal and car parking precinct if required.

The area is located adjacent to the existing DME aviation support equipment and planning and design for the new precinct would need to consider building restricted areas associated with the DME facility as discussed in section 10.6.

7.4. Commercial land use development

Potential Airport Business Development Area (Landside)

The City of Albany Local Planning Strategy 2019 includes an action in regard to Investigation Area 13 – Potential Airport Business Area to:

> *Identify Albany Regional Airport as an investigation area and prepare a structure plan that shows future expansion and development of industry and businesses associated with aviation services and logistics to create or develop competitive advantages.*
>
> *13. Investigation Area 13 (IA13) – Potential Airport Business Area*
>
> *There are opportunities for compatible business and commercial activities to be developed adjacent to Albany Regional Airport that could take advantage of this proximity. These may include aviation-related industrial uses, logistics and transport facilities. Subject to the final updated Airport Master Plan, there is 'in principle' support to undertake conceptual design and planning to guide consideration and establishment of complementary commercial uses.*
>
> *Investigation will be required into the feasibility of a potential airport business area and an airport land use strategy would have to be prepared to guide appropriate land use.*

The Code 4 (Long Term) Development Strategy identifies an approximately 10 ha area of land of the airport to the south of Runway 05/23 adjacent to the Albany Highway for further investigation as a potential Airport Business Area.

The area is located adjacent to the existing NDB and DME aviation support equipment and future investigations would need to consider building restricted areas associated with the aviation facilities as discussed in section 10.6.

Potential Business / GA Development Area (Airside)

The Master Plan also identifies an area of land to the north of the existing General Aviation precinct for potential future development as a business / GA hangar area with airside access to support future growth in aviation businesses at the airport. Further

planning and design of this area should consider aviation transport security requirements with the design ensuring that future hangars are located landside with appropriate public access available outside the security restricted areas.

Key planning issues to be considered include suitable road access off the Albany Highway, utilities / service provision to GA businesses / hangars, and improved amenities for visitors.

Subject to further detailed planning, the area could provide for improved emergency services facilities and/or the establishment of a flight training school at the airport.

7.5. Ground transport

Albany Highway access

Albany Airport is accessed via the Albany Highway – the main highway between Albany and Perth. Dedicated right and left turn lanes are provided for vehicles turning into the Airport. It is anticipated that future growth in Albany Airport will require improved road access to cater for the various vehicle movements.

7.6. Utilities and civil infrastructure

Details of the existing utilities / services to the airport are provided at section 4.10. Stakeholder feedback has noted the need for:

- improvements to the water supply / fire hydrant network to support / enhance firefighting capability; and
- improved utilities / services to existing general aviation hangars.

It is also noted that the terminal building operates off an on-site wastewater management system, which will need to be upgraded or reticulated services provided to the airport to cater for future demand.

8. MASTER PLAN

This section sets out the progressive development of Albany Airport over a nominal planning horizon of 20 years, comprised of short, medium and longer-term timeframes.

The short term is typically defined as 0 - 5 years, medium 5 – 10 years, and longer term as 10+ years through to the end of the 20-year master planning horizon.

Overall master plan stage drawings are provided in **Annexure 1**. In this section individual elements are described for each development scenario.

8.1. Master Plan staging / development scenarios

Delivery of any individual component within the Master Plan is dependent on the availability of funding, market demand and the undertaking of a full detailed design process, and the timing of development may be delayed or accelerated in consideration of these factors.

This Master Plan identifies three (3) development scenarios:

- Code 3 Development Strategy – the development elements that can realistically be implemented in the short term to support current Code 3 intrastate RPT and FIFO services
- Code 4 Development Strategy – the development that would be necessary to cater for future Code 4 interstate services subject to demand
- Code 4 (Long Term) Development Strategy – the possible extent of future development given the design constraints and currently available airport land.

These scenarios show a logical progression in development that could take place for planning purposes. Actual development and time frame is dependent on demand and the policies the City of Albany adopts to promote airport growth.

8.2. Code 3 Development Strategy

The Code 3 development strategy retains the airport as a Code 3 aerodrome, catering for current intrastate Albany – Perth air transport (RPT) services and the introduction of larger Code 3 E190 / B737-700 FIFO closed charter aircraft services.

The scenario addresses the urgent need identified by stakeholders to upgrade / strengthen the main runway 14/32 and associated Taxiway Alpha and RPT apron pavements to cater for the intended replacement of F100 FIFO services with larger E190 / B737-700 aircraft. In doing so the scenario also improves the airport's capability to cater for large capacity aerial fire fighting emergency services aircraft.

The scenario involves:

- Runway 14/32 1800 m x 30 m – upgrade pavement strength to cater for up to Code 3 E190 (PCN 36) / B737-700 (PCN 47) aircraft
- Taxiway A – upgrade pavement strength to cater for up to Code 3 E190 / B737-700 aircraft
- RPT apron – widen as necessary and upgrade pavement strength to cater for up to Code 3 E190 / B737-700 aircraft – 3 free moving parking positions as existing
- Runway 05/23, Taxiway B, Taxiway C and GA / RFDS aprons – no change other than essential maintenance works as required
- Passenger Terminal – incremental expansion as required to meet demand. Potential reintroduction of passenger and checked baggage security screening in conjunction with an introduction of air transport (RPT) services / aircraft > 40 seats
- Car Park – expansion of the existing car park adjacent to the Albany Highway with the addition of up to approximately 60 additional spaces (subject to detail design).

Items for further investigation during the initial Code 3 development scenario include:

- Vegetation clearing assessment and environmental planning approvals to achieve a 280 m overall runway strip width associated with Runway 14/32
- Subject to future clearing, relocate the Runway 32 illuminated wind direction indicator (IWDI) in accordance with Part 139 MOS 2019
- Options for the relocation of the existing Jet A1 and Avgas refuelling facility to make way for future development (eg car parking)
- Consider potential future land acquisition to the north to future proof possible future extension of Runway 14/32 to 2300 m (note: road access issues to adjoining property).
- Investigate land acquisition requirements on the north-eastern side of the runway strip, at the southern end of the airport, to provide for the 280 m wide runway strip and ensure associated boundary fencing does not infringe the associated OLS transitional surface.

8.3. Code 4 Development Strategy

The Code 4 development strategy identifies the development that would be required to cater for future Code 4 interstate services of up to 180 seat A320, B737-800 and B737 Max 8 aircraft.

The scenario represents a step change for the airport to a Code 4 aerodrome and requires an extension and widening of Runway 14/32 in accordance with Part 139 MOS 2019 standards.

The scenario involves:

- Runway 14/32 2100 m x 45 m – extension of the runway to 2100 m long and widening to 45 m wide as a Code 4 runway with an upgrade of the pavement strength to cater for up to Code 4 A320, B737-800 and B737 Max 8 (PCN 56) aircraft
- Taxiway A – widening in accordance with Part 139 MOS 2019, and corresponding upgrade of the pavement strength to cater for up to Code 4 A320, B737-800 and B737 Max 8 aircraft
- RPT apron – widen as necessary and upgrade of the pavement strength to cater for up to Code 4 A320, B737-800 and B737 Max 8 aircraft – up to 4 free moving parking positions subject to demand
- Runway 05/23, Taxiway B, Taxiway C and GA / RFDS aprons – no change other than essential maintenance works as required
- Passenger Terminal – expansion as required to meet demand. Reintroduction of passenger and checked baggage security screening in conjunction with an introduction of air transport (RPT) services / aircraft > 40 seats
- Car Park – incremental expansion of the existing car park to provide up to 400 to 450 spaces subject to demand and relocation of the existing Jet A1 and Avgas refuelling facility (tanks).

8.4. Code 4 (Long Term) Development Strategy

The Code 4 (long term) development strategy identifies the possible extent of future aviation development and aviation and non-aviation property development opportunities given the design constraints and currently available airport land.

The long term development scenario is based on the airport as a Code 4 aerodrome and involves:

- Runway 14/32 2100 m x 45 m – as per the Code 4 Development Strategy, with possible future extension to 2300 m long subject to land acquisition and aviation demand, or provision of 150 m long runway starter extensions at each end of the 2100 m long runway, to provide a 2250 m take-off run available (TORA) distance in each take-off direction within the current extent of the airport boundary
- Taxiway A – as per the Code 4 Development Strategy with possible duplication of the taxiway to support operational efficiency
- RPT apron – as per the Code 4 Development Strategy (or construct new to the south of Runway 05/23)
- Parallel Taxiway – while a full length Code C taxiway parallel to Runway 14/32 is not envisaged as being necessary in the planning horizon of this master plan, sufficient space should be reserved from a land use planning perspective to allow for its future provision when demand dictates. The 52 m wide Code C taxiway strip should be reserved at a Code E 172.5 m offset from the centreline of Runway 14/32 to future proof future development of the airport.
- Runway 05/23, Taxiway B, Taxiway C and GA / RFDS aprons – no change other than essential maintenance works as required
- Passenger Terminal – expansion as per the Code 4 Development Strategy (or construct new to the south of Runway 05/23 with new road connection to the Albany Highway)
- Car Park – expansion of the existing car park to provide up to 600 spaces subject to demand ((or construct new to the south of Runway 05/23 with new road connection to the Albany Highway)
- Land subject to further investigation to the south of Runway 05/23 adjacent to the Albany Highway for a potential future Airport Business Area (landside development)
- Land subject to further investigation to the north of the existing GA precinct adjacent to the Albany Highway for a potential future Airport Business / General Aviation precinct (airside development).

9. FUNDING STRATEGY

Funding for major capital works at Albany Airport is sourced through a combination of:

- the Albany Airport Reserve and / or funding from the City of Albany
- aeronautical revenue (from ongoing airport operations)
- non-aeronautical revenue (from commercial property and airport concessions)
- external financing (such as loan borrowings and Government grants).

Planning and financial modelling for major airport works is undertaken in accordance with the WA Department of Transport Strategic Airport Asset and Financial Management Framework and Business Case process.

Indicative cost estimates (in 2023 $ excluding GST) for the principal airside infrastructure works (ie Runway 14/32, Taxiway Alpha and RPT Apron) outlined in the master plan are shown in Table 6.

Estimates exclude associated landside upgrades including passenger terminal and car park improvements.

Table 6 Indicative Master Plan Cost Estimates (Airside Infrastructure)

Development Scenario	*Cost (2023 $ excl GST)*
"Business as Usual" maintenance overlay only (no upgrade)	$9.5 million
Existing Runway 14/32, Taxiway Alpha and RPT Apron	
PCN 21	
Code 3 Development Scenario	
Code 3 1800 m x 30 m Runway 14/32, Taxiway Alpha and RPT Apron	
PCN 36 (E190)	$22.3 million
PCN 47 (B737-700)	$27.0 million
Code 4 Development Scenario	
Code 4 2100 m x 45 m Runway 14/32, Taxiway Alpha and RPT Apron	
PCN 56 (A320 / B737-800 / B737 Max 8)	$48.3 million

10. AERODROME SAFEGUARDING

In addition to state requirements, the Australian Government has an interest in better planning and integrated development on and around airports and to lessen the adverse effects of aviation activity on the environment and communities. While not a planning authority, it provides guidance on broader issues such as noise around airports that can be used by statutory authorities to achieve the stated objectives. The National Airports Safeguarding Advisory Group (NASAG) has produced the National Airports Safeguarding Framework (NASF) to advance this agenda. The Framework should also be taken into consideration when designing development on and in the vicinity of the airport.

10.1. Aircraft noise

Aircraft noise can affect the allocation of appropriate uses on and external to the airport site.

Australian Noise Exposure Forecast (ANEF) contours provide a scientific measure of the aircraft noise exposure levels around airports taking into account the frequency, intensity, time and duration of aircraft operations. Standard methodology for evaluating the noise climate around airports is defined in AS 2021-2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction, which recognises the ANEF contour charts as the primary method for long-term noise impact assessment.

Further information can be found in NASF Guideline A: *Measures for Managing Impacts of Aircraft Noise*.

The Albany Airport Noise Special Control Area and associated Albany Airport (ANEF) Noise Buffer Zone described at section 1.15 provide details in regard to aircraft noise in the vicinity of Albany Airport. It is recommended that the current airport / aircraft noise modelling and Australian Noise Exposure Forecast (ANEF) be reviewed and updated in conjunction with this master plan.

10.2. Building generated windshear and turbulence

Building generated windshear / turbulence becomes safety critical when a significant obstacle, such as a building, is located in the path of a crosswind to an operational runway. The wind flow will be diverted around and over the buildings causing the crosswind speed to vary along the runway.

NASF Guideline B sets out an assessment methodology to follow in assessing this risk.

Further information can be found in NASF Guideline B: *Managing the Risk of Building Generated Windshear and Turbulence at Airports*.

10.3. Wildlife hazard buffer zone

All wildlife on or around an airport should be regarded as a potential hazard to aircraft safety. Most wildlife strikes occur on and in the vicinity of airports, where aircraft fly at lower elevations. Flying vertebrates (e.g., birds or bats) mainly use airspace within 300 metres of the ground so are likely to conflict with aircraft when they are at their most vulnerable, i.e., immediately after take-off and during landing approaches or other low flying manoeuvres. Development should seek to avoid creating wildlife attracting land uses both on and within the vicinity of the airport.

Further information can be found in NASF Guideline C: *Managing the Risk of Wildlife Strikes in the Vicinity of Airports*.

10.4. Lighting restriction zone

Manual of Standards Part 139 - Aerodromes establishes a restriction to lighting within the vicinity of an airport which, by reason of its intensity, configuration or colour, might endanger the safety of an aircraft. The vicinity of the airport can be taken to be within a 6km radius of the airport.

Further information can be found in NASF Guideline E: *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*.

10.5. Operational airspace

Obstacle limitation surfaces

An airport's obstacle limitation surfaces (OLS) define the operational airspace that should be kept free of obstacles for aircraft operations being conducted under the visual flight rules. Both current and future OLS should be considered in the design of developments on and within the vicinity of the airport.

Manual of Standards Part 139 Chapter 7 provides relevant parameters for the design of the OLS.

PANS-OPS surfaces

PANS-OPS surfaces define the operational airspace a pilot is required to use when flying an aircraft under the instrument flight rules—that is, when relying on instruments for navigation. Development should seek to avoid any permanent encroachments into current and future PANS-OPS airspace.

Detailed information about the PANS-OPS surfaces is provided by Airservices Australia in documentation held by the Airport Manager.

Further information can be found in NASF Guideline F: *Managing the Risk of Intrusions into the Protected Airspace of Airports*.

10.6. Building restricted areas for aviation facilities

The Building Restricted Area (BRA) is defined as a volume where buildings and other objects have the potential to cause unacceptable interference to the signal-in-space transmitted by the radio navigation facility. All radio navigation facilities have a BRA defined which may extend to a significant distance from the facility. The purpose of the Building Restricted Area is not intended to prohibit development but rather to trigger an assessment of a proposed building or development for its impact on the radio navigation facility. The BRA is primarily intended to be used by Aerodrome Operators and Local Planning Authorities but is also required to be used by the systems engineer when selecting a new site for a radio navigation facility. All development applications near a radio navigation facility shall be assessed to determine if the facility BRA is infringed. If there is no infringement the assessment process may be terminated, and the application approved.

Further information can be found in NASF Guideline G: *Protecting Aviation Facilities — Communications, Navigation and Surveillance (CNS)*.

10.7. Public safety areas

A public safety area (PSA) is a defined area at the end of an airport's runway where there is potentially an increased risk of an aircraft accident occurring.

When imposed by a planning instrument, the public safety area defines the area in which specified development is restricted in order to protect the safety of both aircraft passengers, property and people on the ground in the event of an aircraft accident during landing or take-off.

NASF Guideline I: *Managing the Risk in Public Safety Areas at the Ends of Runways* provides guidance to states and local governments on the assessment and treatment of potential increases in risk to public safety which could result from an aircraft incident or development proposal in areas near the end of an airport runway.

There is no consistent approach to the implementation of public safety areas within Australia, and Western Australia does not currently have any planning controls in place regarding public safety areas at airports or aerodromes within the state.

The International Civil Aviation Organization (ICAO) has not developed standards and recommended practices regarding PSAs, and CASA's aviation safety regulations and standards do not provide for their establishment.

Since there is no formal requirement to implement public safety zones, and because of the uncertainty about specific design parameters, this concept has not been incorporated in the Master Plan.

Further information can be found in NASF Guideline I: *Managing the Risk in Public Safety Areas at the Ends of Runways*.

11. GLOSSARY

AAGR	average annual growth rate
AIP	Aeronautical Information Package
AMSL	above mean sea level
ANEF	Australian Noise Exposure Forecast
ARFFS	aerodrome rescue and firefighting service
AsA	Airservices Australia
ASDA	accelerate-stop distance available
ATC	air traffic control
BRA	building restricted area
CAAP	Civil Aviation Advisory Publication
CAR	Civil Aviation Regulation 1988
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation 1998
CTAF	Common Traffic Advisory Frequency
DME	Distance Measuring Equipment
ERSA	En Route Supplement Australia
FIFO	fly-in / fly-out
GA	general aviation
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GSE	ground support equipment
HLS	helicopter landing site
ICAO	International Civil Aviation Organization
INP	instrument non-precision
IWDI	illuminated wind direction indicator
LDA	landing distance available
LGA	local government authority
LIRL	low intensity runway lights
MOS	Manual of Standards
MTOW	maximum take-off weight
NASF	National Airports Safeguarding Framework
NDB	Non-Directional Beacon
OLS	obstacle limitation surfaces
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PAL	pilot activated lighting
PAPI	Precision Approach Path Indicator
RFDS	Royal Flying Doctor Service
RNAV-GNSS	Area Navigation – Global Navigation Satellite System
RPT	regular public transport
TODA	take-off distance available
TORA	take-off run available

12. REFERENCES

- Airservices Australia, Aeronautical Information Package; including En Route Supplement Australia (ERSA, RDS, DAP) effective 30 November 2023
- Australian Airports Association, Regional Airport Master Planning Guideline, Airport Practice Note 4
- Australian Standard AS 2021:2015 *Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*, dated March 2015
- Civil Aviation Safety Authority, Civil Aviation Safety Regulations 1998
- Civil Aviation Safety Authority, *Part 139 (Aerodromes) Manual of Standards 2019*, dated 13 August 2020
- International Civil Aviation Organization, International Standards and Recommended Practices (SARPS) Annex 14 Aerodromes, Volume 1 *Aerodrome Design and Operations* and Volume II *Heliports*
- National Airports Safeguarding Framework, Guideline A: *Measures for Managing Impacts of Aircraft Noise*, version 1.2, dated November 2016
- National Airports Safeguarding Framework, Guideline B: *Managing the Risk of Building Generated Windshear and Turbulence at Airports*, version 2.2.5, dated May 2018
- National Airports Safeguarding Framework, Guideline C: *Managing the Risk of Wildlife Strikes in the Vicinity of Airports*, version 3.1.4, dated October 2014
- National Airports Safeguarding Framework, Guideline E: *Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*, version 5.1.4, dated October 2014
- National Airports Safeguarding Framework, Guideline F: *Managing the Risk of Intrusions into the Protected Airspace of Airports*, version 5.1.3, dated July 2012
- National Airports Safeguarding Framework, Guideline G: *Protecting Aviation Facilities - Communications, Navigation and Surveillance (CNS)*, version 1, dated November 2016
- National Airports Safeguarding Framework, Guideline I: *Managing the Risk in Public Safety Areas at the Ends of Runways*, version 1, dated November 2018

ANNEXURES

Annexures contain the following Albany Airport Master Plan Drawings:

1. Existing Airport Precinct Plan [YABA-SKT-0001 A]
2. Existing Terminal & General Aviation Precinct [YABA-SKT-0002 A]
3. Code 3 Development Strategy [YABA-SKT-0003 A]
4. Code 4 Development Strategy [YABA-SKT-0004 A]
5. Code 4 (Long Term) Development Strategy [YABA-SKT-0005 A]
6. Airport Safeguarding - Windshear Protection Runway 14/32 [YABA-SKT-0006 A]
7. Airport Safeguarding - Windshear Protection Runway 05/23 [YABA-SKT-0007 A]
8. Airport Safeguarding – Wildlife Hazard Zones [YABA-SKT-0008 A]
9. Airport Safeguarding – Lighting in the Vicinity of Aerodrome [YABA-SKT-0009 A]
10. Airport Safeguarding – Proposed Obstacle Limitation Surfaces Regional Plan [YABA-SKT-0010 A)
11. Airport Safeguarding – Proposed Obstacle Limitation Surfaces Airport Surrounds [YABA-SKT-0011 A)
12. Airport Safeguarding – Building Restricted Areas for Aviation Facilities [YABA-SKT-0012 A]

RESA
BOM WEATHER STATION
AERODROME BOUNDARY
PARKER BROOK ROAD
23
RWS
RUNWAY 05/23 1096 x 30 (RWS 90 CODE 2 NI)
RWS
IWDI
RWS
RUNWAY 14/32 1800 x 30 (RWS 150 CODE 3 INP)
RESA
14
32
RESA
RWS
RWS
TWY C
TWY A
RWS
RWS
IWDI
HLS
RFDS
GENERAL AVIATION
RPT APRON
TWY B
HLS
05
TERMINAL CARPARK
VHF
DME
NDB
RESA
MOUNT BARKER (PERTH)
ALBANY HIGHWAY
ALBANY
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HATCH LEGEND

- AIRPORT PROPERTY
- AIRSIDE PRECINCT
- LANDSIDE PRECINCT
- AERODROME BOUNDARY

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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DRAWING SCALE 1:4000
GRID MGA.Z50
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
EXISTING AIRPORT PRECINCT PLAN

DRAWING No. E21040-04-YABA-SKT-0001
REVISION A

DATE: Thursday, 7 December 2023 1:00:39 PM BY: AARON COGHILL FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0001-02 MP EXISTING.DWG

PLAN

SCALE 1:1000

HATCH LEGEND

- AIRPORT PROPERTY
- AIRSIDE PRECINCT
- LANDSIDE PRECINCT
- AERODROME BOUNDARY

SCALE 1:1000 (A1) 0 20 40 60 80 100m (20 10)

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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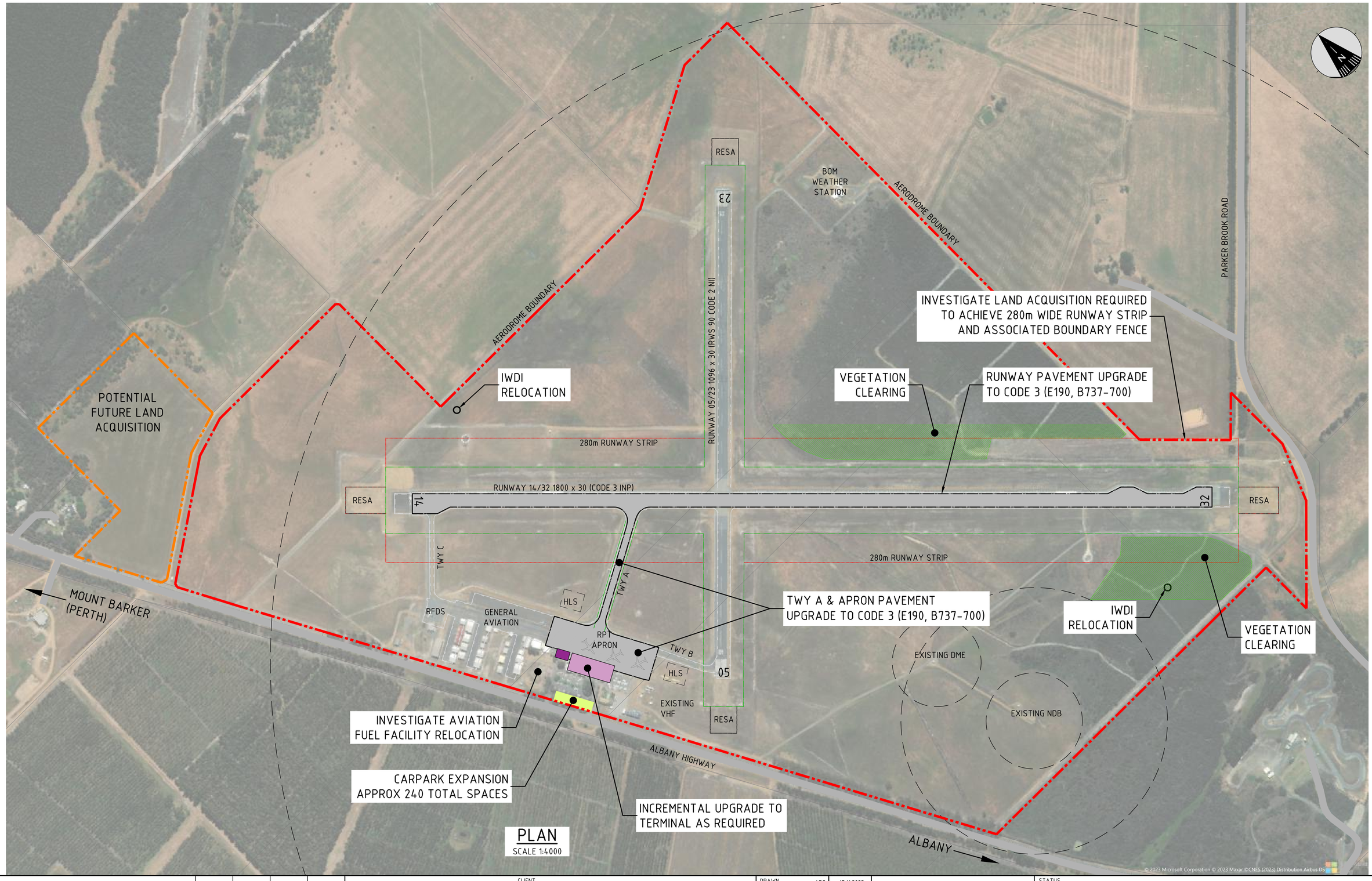
STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
EXISTING TERMINAL & GENERAL AVIATION PRECINCT

DRAWING SCALE	GRID	ORIG. SIZE	DRAWING No.	REVISION
1:1000	MGA.Z50	A1	E21040-04-YABA-SKT-0002	A
	DATUM AHD			

FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0001-02 MP EXISTING.DWG
BY: AARON COGHILL
DATE: Thursday, 7 December 2023 1:00:46 PM



PLAN
SCALE 1:4000

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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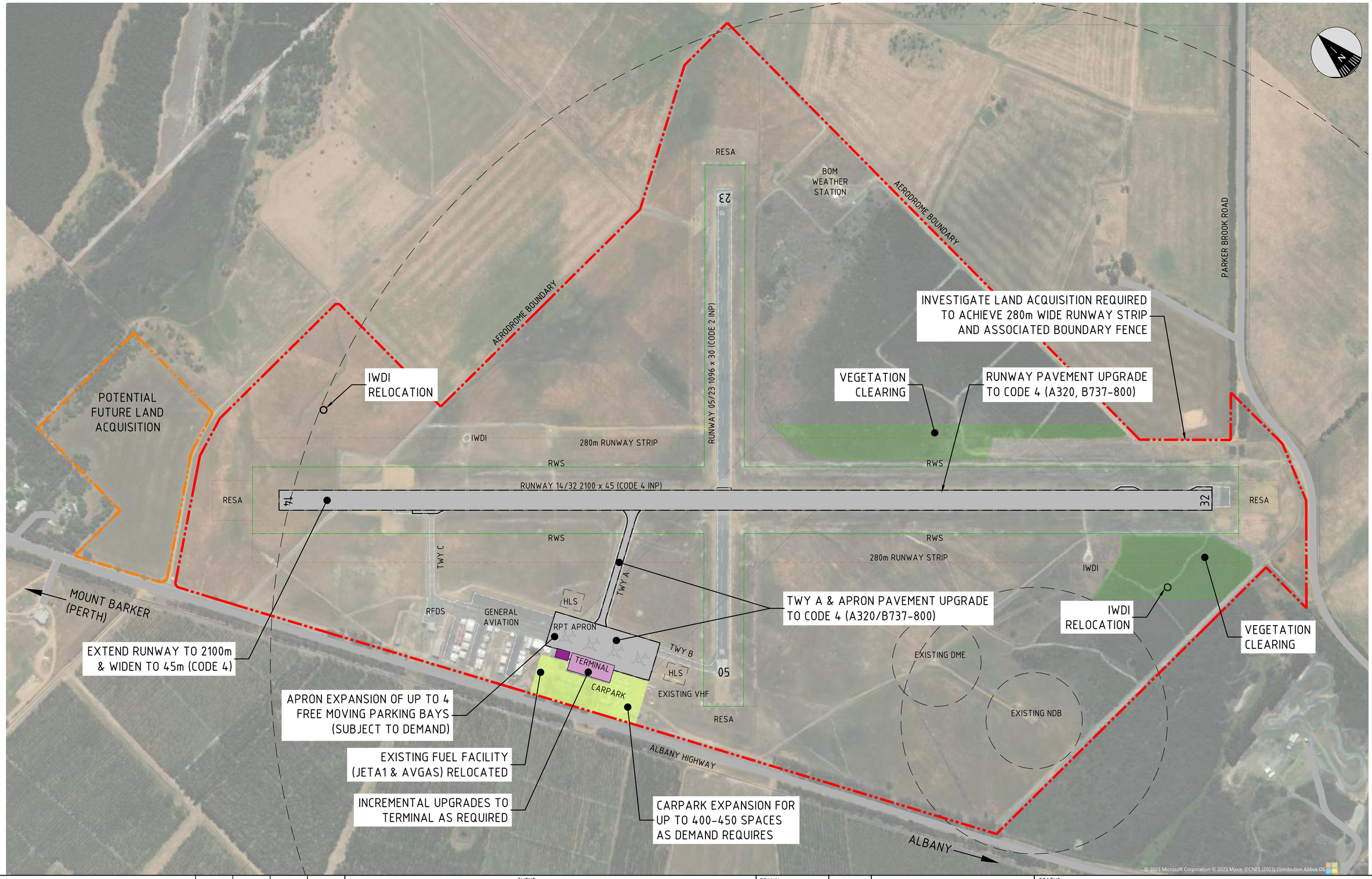
DRAWING SCALE 1:4000
GRID MGA_ZS0
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
CODE 3 DEVELOPMENT STRATEGY

DRAWING No. E21040-04-YABA-SKT-0003
REVISION A

DATE: Tuesday, 12 December 2023 4:40:13 PM BY: AARON COGHILL FILE: Q:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0003 CODE3 DEVELOPSTRATEGY.DWG



REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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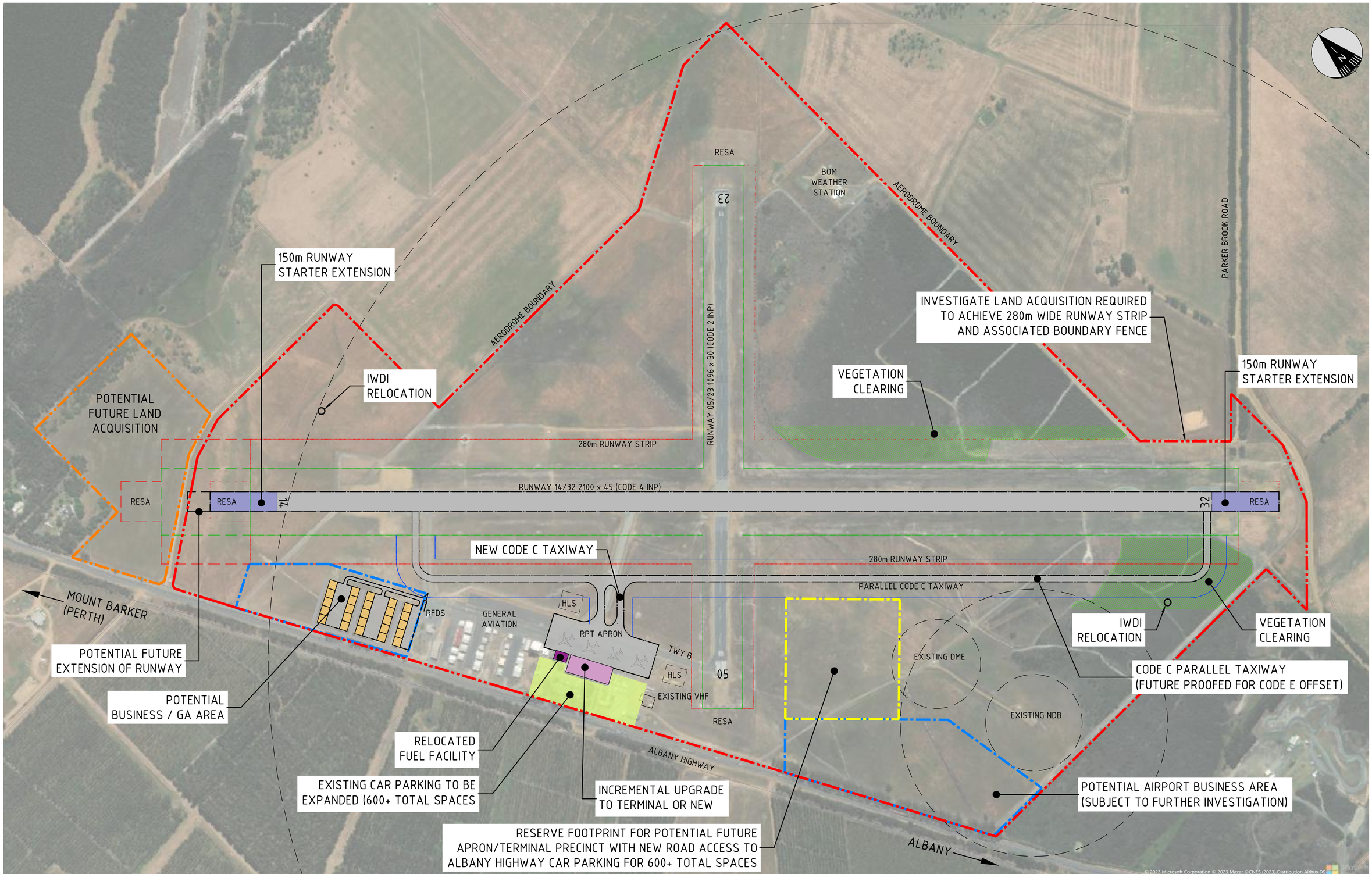
STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
CODE 4 DEVELOPMENT STRATEGY

DRAWING SCALE	GRID	ORIG. SIZE	DRAWING No.	REVISION
1:4000	MGA_Z50	A1	E21040-04-YABA-SKT-0004	A
	DATUM AHD			

DATE: Tuesday, 12 December 2023 4:17:53 PM BY: AARON COGHILL FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0004 CODE4 DEVELOPSTRATEGY.DWG



REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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AIRPORT CONSULTANCY GROUP
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STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
CODE 4 (LONG TERM) DEVELOPMENT STRATEGY

DRAWING SCALE	GRID	ORIG. SIZE	DRAWING No.	REVISION
1:4000	MGA.Z50	A1	E21040-04-YABA-SKT-0005	A
	DATUM AHD			

DATE: Tuesday, 12 December 2023 4:17:29 PM BY: AARON COGHILL FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0005 CODE4-LT DEVELOPSTRATEGY.DWG

RUNWAY 05/23
WINDSHEAR ASSESSMENT ZONE
REFER SKT-0007

103.066

100.456

68.78

66.17

RUNWAY 14/32

RUNWAY 05/23

ALBANY HIGHWAY

RUNWAY 05/23
WINDSHEAR ASSESSMENT ZONE
REFER SKT-0007

LEGEND

DESIGN 2m CONTOUR

DESIGN 10m CONTOUR

FOR MORE INFORMATION, REFER TO:
- NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE B

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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DRAWING SCALE 1:7000
GRID MGA.Z50
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING - WINDSHEAR PROTECTION
RUNWAY 14/32

DRAWING No. E21040-04-YABA-SKT-0006
REVISION A

DATE: Thursday, 7 December 2023 1:01:20 PM BY: AARON COGHILL FILE: Q:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0006-7 WINDSHEAR.DWG

RUNWAY 14/32
WINDSHEAR ASSESSMENT ZONE
REFER SKT-0006

RUNWAY 14/32
WINDSHEAR ASSESSMENT ZONE
REFER SKT-0006

105.026 104 102 100 98 96 94 92 90 88 86 84 82 80 78 76 74 72 70.74 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 105.026

RUNWAY 14/32

RUNWAY 05/23

67.87

102.156 100 98 96 94 92 90 88 86 84 82 80 78 76 74 72 70 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102.156

ALBANY HIGHWAY

LEGEND

DESIGN 2m CONTOUR

DESIGN 10m CONTOUR

FOR MORE INFORMATION, REFER TO:
- NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE B

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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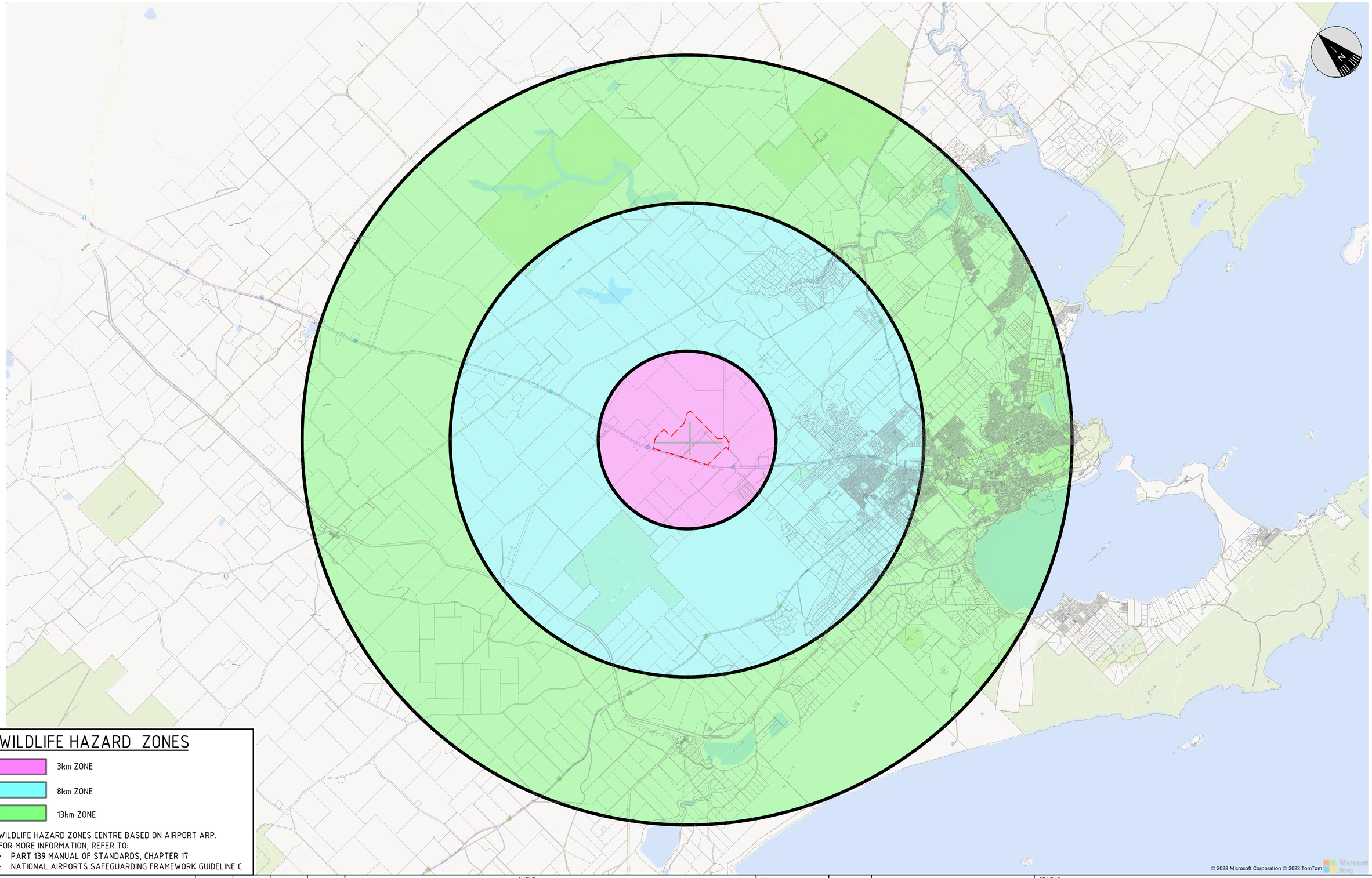
STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING - WINDSHEAR PROTECTION
RUNWAY 05/23

DRAWING SCALE	GRID	ORIG. SIZE	DRAWING No.	REVISION
1:7000	MGA_Z50	A1	E21040-04-YABA-SKT-0007	A
	DATUM AHD			



WILDLIFE HAZARD ZONES

- 3km ZONE
- 8km ZONE
- 13km ZONE

WILDLIFE HAZARD ZONES CENTRE BASED ON AIRPORT ARP.
FOR MORE INFORMATION, REFER TO:
- PART 139 MANUAL OF STANDARDS, CHAPTER 17
- NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE C

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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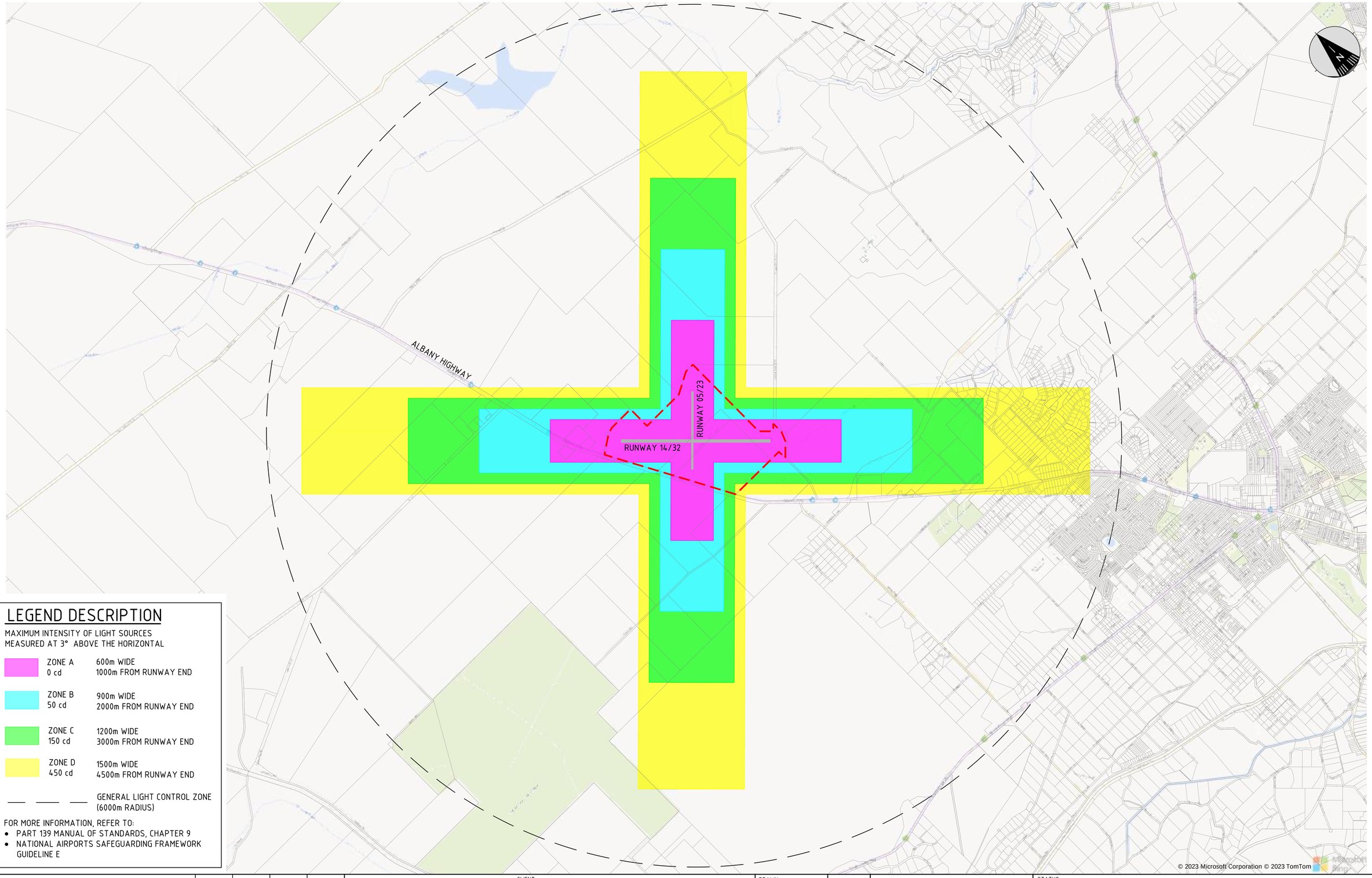
DRAWING SCALE 1:60,000
GRID MGA.Z50
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING - WILDLIFE HAZARD ZONES

DRAWING No. E21040-04-YABA-SKT-0008
REVISION A

DATE: Thursday, 7 December 2023 10:13:34 PM BY: AARON COGHILL FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0008 WILDLIFE.DWG



LEGEND DESCRIPTION

MAXIMUM INTENSITY OF LIGHT SOURCES
MEASURED AT 3° ABOVE THE HORIZONTAL

ZONE A	0 cd	600m WIDE 1000m FROM RUNWAY END
ZONE B	50 cd	900m WIDE 2000m FROM RUNWAY END
ZONE C	150 cd	1200m WIDE 3000m FROM RUNWAY END
ZONE D	450 cd	1500m WIDE 4500m FROM RUNWAY END
— — —		GENERAL LIGHT CONTROL ZONE (6000m RADIUS)

FOR MORE INFORMATION, REFER TO:
- PART 139 MANUAL OF STANDARDS, CHAPTER 9
- NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE E

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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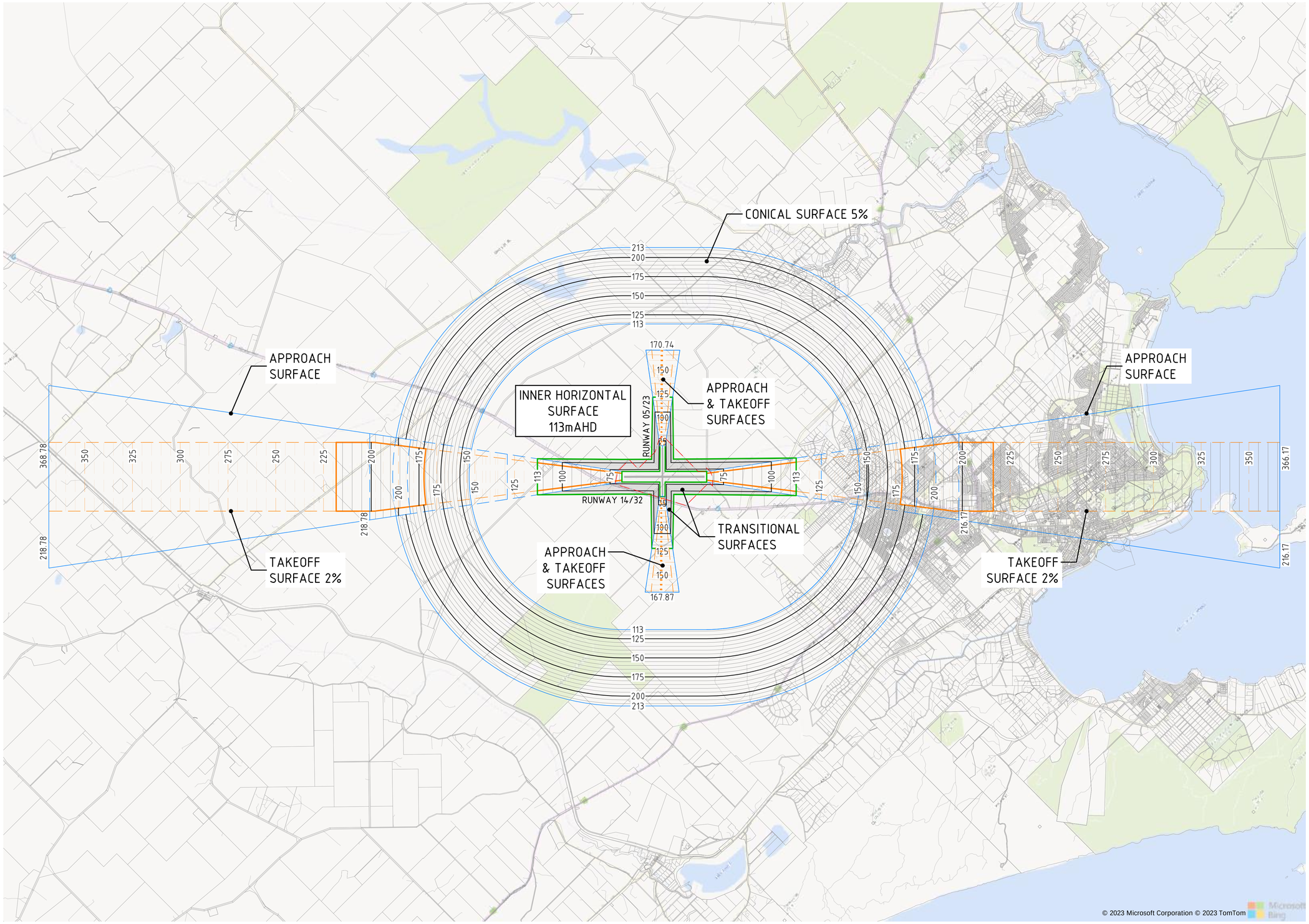
DRAWING SCALE 1:25,000
GRID MGA.Z50
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING -
LIGHTING IN THE VICINITY OF AERODROME

DRAWING No. E21040-04-YABA-SKT-0009
REVISION A

DATE: Thursday, 7 December 2023 1:01:47 PM BY: AARON COGHILL FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0009 LIGHTZONE.DWG



OBSTACLE LIMITATION SURFACE
RUNWAY 14 / 32
Code 4 Instrument Non-Precision
2100m x 45m

OLS & Dimension	Measurement
CONICAL SURFACE	
Slope	5%
Height (m)	100
INNER HORIZONTAL SURFACE	
Elevation (m) RED+45m	113
Radius (m)	4000
APPROACH SURFACE	
Length of inner edge	280
Distance from threshold (m)	60
Divergence each side	15%
First Section length (m)	3000
Slope	2%
Second section length (m)	3600
Slope	2.5%
Horizontal section length (m)	8400
Total Length	15000
TRANSITIONAL SURFACE	
Slope	14.3%
TAKE-OFF CLIMB SURFACE	
Length of inner edge (m)	180
Distance of inner edge from runway edge (m)	60
Rate of divergence (each side)	12.5%
Final Width (m)	1800
Overall length (m)	15000
Slope (m)	2%

Reference Elevation Datum (m)	68m

Threshold RL (AHD)	
RWY 14 Threshold RL	68.78m
RWY 32 Threshold RL	66.17m

RUNWAY 05 / 23
Code 2 Instrument Non-Precision
1096m x 30m

OLS & Dimension	Measurement
CONICAL SURFACE	
Slope	5%
Height (m)	60
INNER HORIZONTAL SURFACE	
Elevation (m) RED+45m	113
Radius (m)	3500
APPROACH SURFACE	
Length of inner edge	140
Distance from threshold (m)	60
Divergence each side	15%
First Section length (m)	2500
Slope	3.33%
Second section length (m)	-
Slope	-
Horizontal section length (m)	-
Total Length	2500
TRANSITIONAL SURFACE	
Slope	20%
TAKE-OFF CLIMB SURFACE	
Length of inner edge (m)	80
Distance of inner edge from runway edge (m)	60
Rate of divergence (each side)	10%
Final Width (m)	580
Overall length (m)	2500
Slope (m)	4%

Reference Elevation Datum (m)	68m

Threshold RL (AHD)	
RWY 05 Threshold RL	67.87m
RWY 23 Threshold RL	70.74m

NOTES:
1. ALL DIMENSIONS AND DISTANCES ARE IN METRES, UNLESS OTHERWISE STATED.

2. ELEVATION DATUM - AHD.

3. OLS SURFACES IN ACCORDANCE WITH PART 139 MoS / ICAO ANNEX 14.

FOR MORE INFORMATION, REFER TO:
· PART 139 MANUAL OF STANDARDS, CHAPTER 7
· NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE F

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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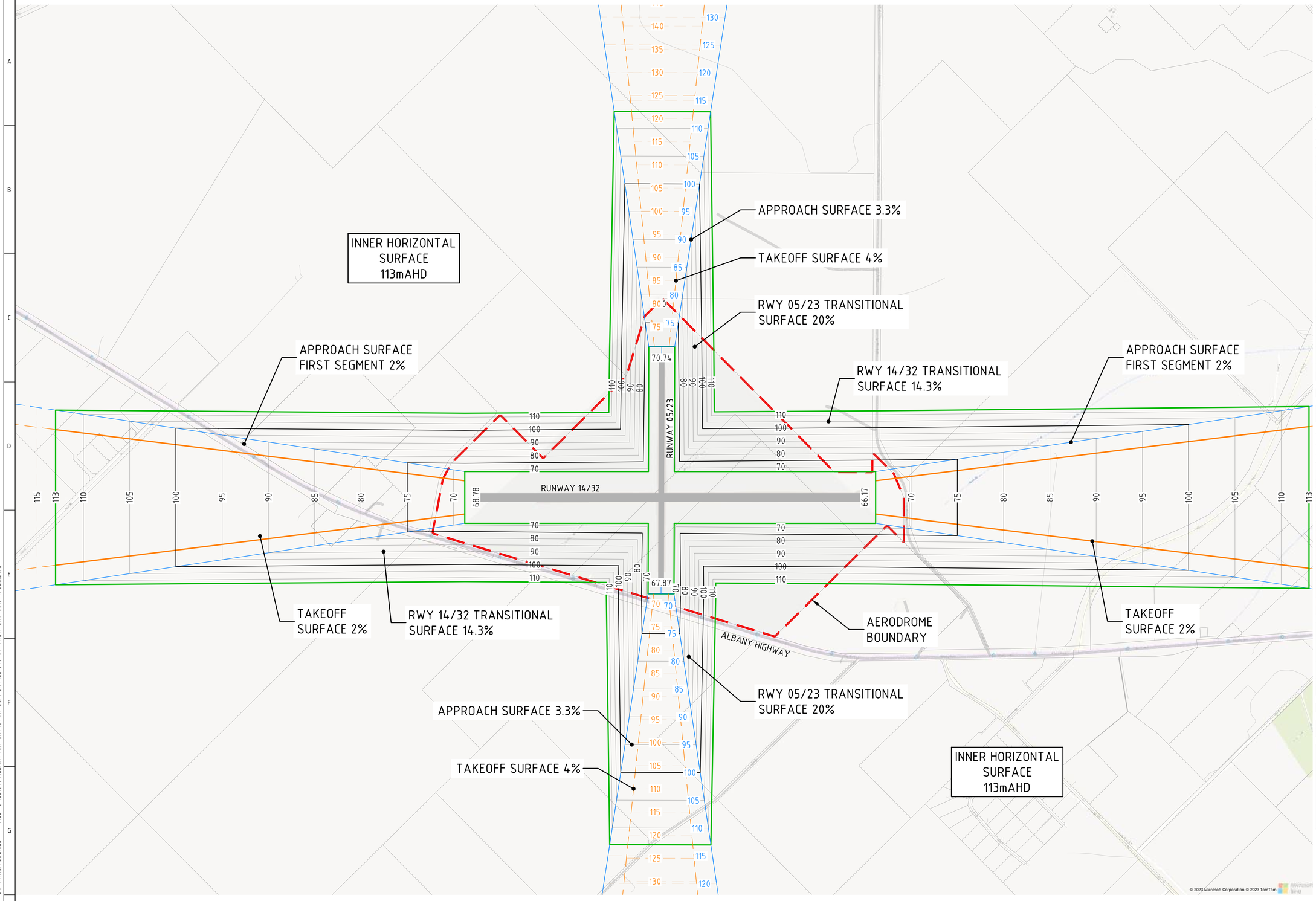
DRAWING SCALE 1:50,000
GRID MGA.Z50
DATUM AHD
ORIG. SIZE A1

STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING - OBSTACLE LIMITATION SURFACES REGIONAL PLAN

DRAWING No. E21040-04-YABA-SKT-0010
REVISION A

FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0010-11 OLS.DWG
BY: AARON COGHILL
DATE: Thursday, 7 December 2023 10:57:17 PM



OBSTACLE LIMITATION SURFACE
RUNWAY 14 / 32
Code 4 Instrument Non-Precision
2100m x 45m

OLS & Dimension	Measurement
CONICAL SURFACE	
Slope	5%
Height (m)	100
INNER HORIZONTAL SURFACE	
Elevation (m) RED+45m	113
Radius (m)	4000
APPROACH SURFACE	
Length of inner edge	280
Distance from threshold (m)	60
Divergence each side	15%
First Section length (m)	3000
Slope	2%
Second section length (m)	3600
Slope	2.5%
Horizontal section length (m)	8400
Total Length	15000
TRANSITIONAL SURFACE	
Slope	14.3%
TAKE-OFF CLIMB SURFACE	
Length of inner edge (m)	180
Distance of inner edge from runway edge (m)	60
Rate of divergence (each side)	12.5%
Final Width (m)	1800
Overall length (m)	15000
Slope (m)	2%

Reference Elevation Datum (m)	68m

Threshold RL (AHD)	
RWY 14 Threshold RL	68.78m
RWY 32 Threshold RL	66.17m

RUNWAY 05 / 23
Code 2 Instrument Non-Precision
1096m x 30m

OLS & Dimension	Measurement
CONICAL SURFACE	
Slope	5%
Height (m)	60
INNER HORIZONTAL SURFACE	
Elevation (m) RED+45m	113
Radius (m)	3500
APPROACH SURFACE	
Length of inner edge	140
Distance from threshold (m)	60
Divergence each side	15%
First Section length (m)	2500
Slope	3.33%
Second section length (m)	-
Slope	-
Horizontal section length (m)	-
Total Length	2500
TRANSITIONAL SURFACE	
Slope	20%
TAKE-OFF CLIMB SURFACE	
Length of inner edge (m)	80
Distance of inner edge from runway edge (m)	60
Rate of divergence (each side)	10%
Final Width (m)	580
Overall length (m)	2500
Slope (m)	4%

Reference Elevation Datum (m)	68m

Threshold RL (AHD)	
RWY 05 Threshold RL	67.87m
RWY 23 Threshold RL	70.74m

NOTES:
1. ALL DIMENSIONS AND DISTANCES ARE IN METRES, UNLESS OTHERWISE STATED.

2. ELEVATION DATUM - AHD.

3. OLS SURFACES IN ACCORDANCE WITH PART 139 MoS / ICAO ANNEX 14.

FOR MORE INFORMATION, REFER TO:
· PART 139 MANUAL OF STANDARDS, CHAPTER 7
· NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE F

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT: CITY OF ALBANY
PROJECT: AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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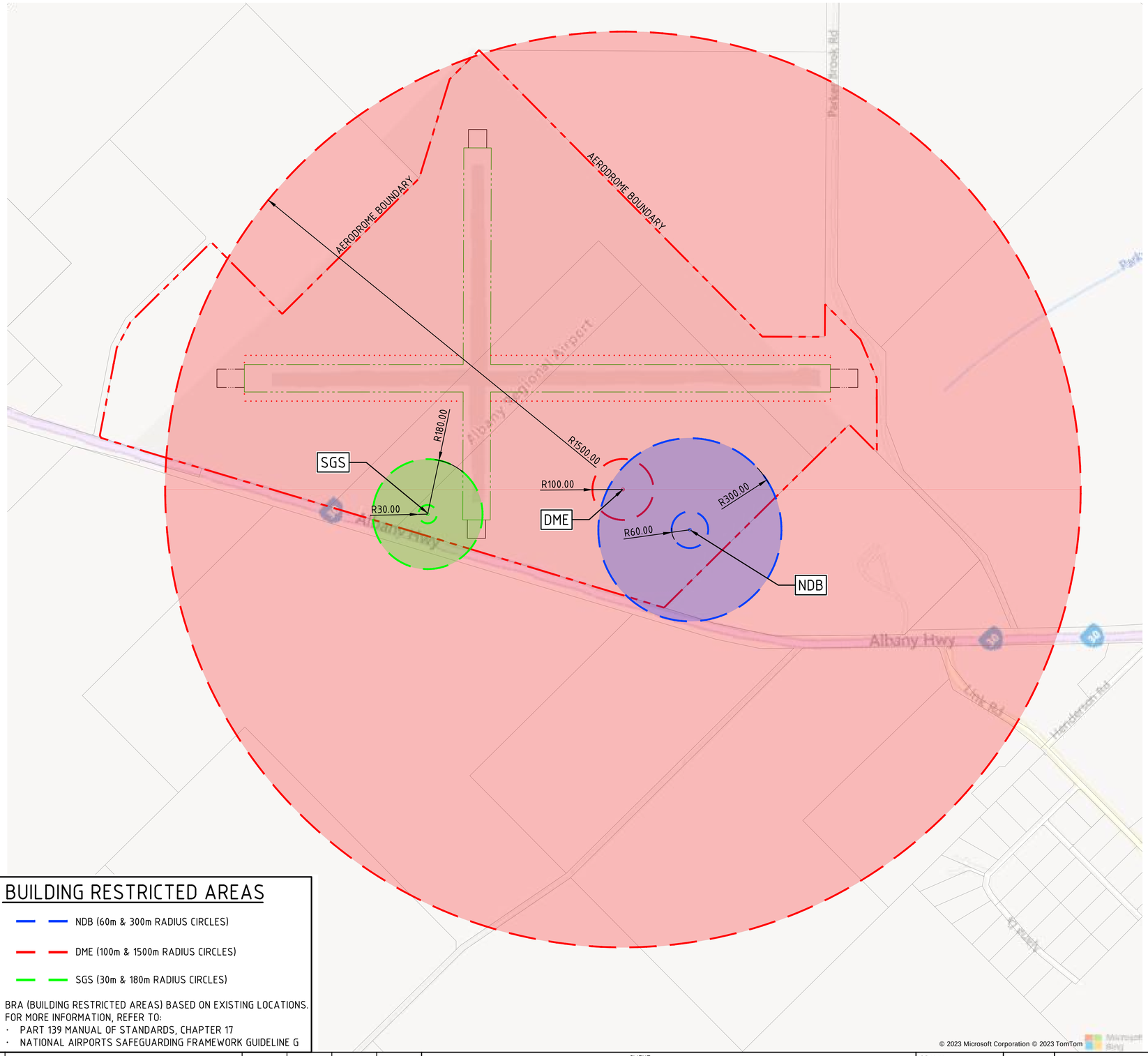
DRAWING SCALE: 1:10,000
GRID: MGA Z50
DATUM: AHD
ORIG. SIZE: A1

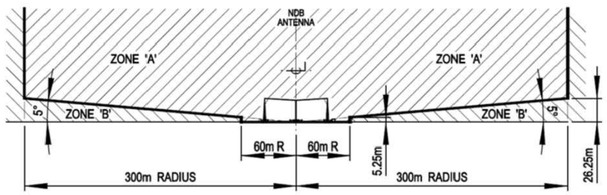
STATUS: FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING - OBSTACLE LIMITATION SURFACES
AIRPORT SURROUNDS

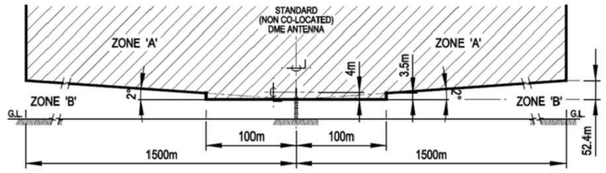
DRAWING No.: E21040-04-YABA-SKT-0011
REVISION: A

DATE: Thursday, 7 December 2023 1:02:00 PM
BY: AARON COGHILL
FILE: G:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0010-11 OLS.DWG

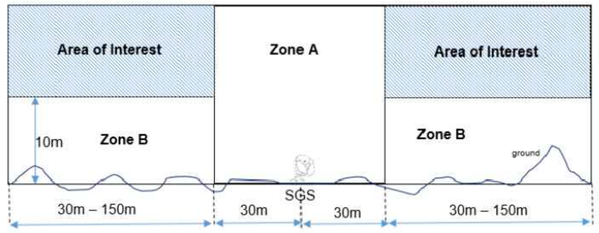




NDB – NON-DIRECTIONAL BEACON



DME – DISTANCE MEASURING EQUIPMENT



SGS – SATELLITE GROUND STATIONS

BUILDING RESTRICTED AREAS

- NDB (60m & 300m RADIUS CIRCLES)
- DME (100m & 1500m RADIUS CIRCLES)
- SGS (30m & 180m RADIUS CIRCLES)

BRA (BUILDING RESTRICTED AREAS) BASED ON EXISTING LOCATIONS.
FOR MORE INFORMATION, REFER TO:
- PART 139 MANUAL OF STANDARDS, CHAPTER 17
- NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK GUIDELINE G

REV	DESCRIPTION	DATE	DESIGN	VERIFIED	APPROVED
A	ORIGINAL ISSUE	17.11.2023	APC	PJO	

CLIENT
CITY OF ALBANY

PROJECT
AIRPORT MASTER PLAN
ALBANY AIRPORT
360 ALBANY HWY, DROME WA 6330

DRAWN	APC	17.11.2023
DRAFTING CHECK	PJO	17.11.2023
DESIGNED	APC	17.11.2023
DESIGN CHECK	PJO	17.11.2023
VERIFIED	PJO	17.11.2023
APPROVED		

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STATUS
FOR INFORMATION

AIRPORT MASTER PLAN
AIRPORT SAFEGUARDING –
BUILDING RESTRICTED AREAS FOR AVIATION FACILITIES

DRAWING SCALE	GRID	ORIG. SIZE	DRAWING No.	REVISION
1:7000	MGA.Z50	A1	E21040-04-YABA-SKT-0012	A
	DATUM AHD			

FILE: O:\E21040 ALBANY AIRPORT\04 MP SUPPORT\E21040-04-YABA-SKT-0012 BRAZONES.DWG
BY: AARON COGHILL
DATE: Thursday, 7 December 2023 1:02:10 PM

AVIATION PROJECTS

Brisbane Head Office

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