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<tr>
<td>AAL</td>
<td>Adelaide Airport Limited</td>
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<tr>
<td>ABC</td>
<td>Airport Building Controller</td>
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<tr>
<td>ACCC</td>
<td>Australian Competition and Consumer Commission</td>
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<tr>
<td>AEP</td>
<td>Airport Emergency Plan</td>
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<tr>
<td>AES</td>
<td>Airport Environment Strategy</td>
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<td>AFP</td>
<td>Australian Federal Police</td>
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<tr>
<td>AMSA</td>
<td>Australian Maritime Safety Authority</td>
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<tr>
<td>ANEC</td>
<td>Australian Noise Exposure Concept</td>
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<tr>
<td>ANEF</td>
<td>Australian Noise Exposure Forecast</td>
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<tr>
<td>ANEI</td>
<td>Australian Noise Exposure Index</td>
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<tr>
<td>ATS</td>
<td>Air Traffic Services</td>
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<tr>
<td>ATSB</td>
<td>Air Transport Safety Bureau</td>
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<tr>
<td>BAeFTA</td>
<td>British Aerospace Flight Training Adelaide</td>
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<tr>
<td>BOM</td>
<td>Bureau of Meteorology</td>
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<tr>
<td>CASA</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>CASRs</td>
<td>Civil Aviation Safety Regulations</td>
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<tr>
<td>CBD</td>
<td>Central Business District</td>
</tr>
<tr>
<td>DAF</td>
<td>Department of Agriculture and Fisheries</td>
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<tr>
<td>DHA</td>
<td>Department of Health and Ageing</td>
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<tr>
<td>DoIT</td>
<td>Department of Infrastructure and Transport,</td>
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<tr>
<td>ETA</td>
<td>Electricity Trust of South Australia</td>
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<tr>
<td>FAA</td>
<td>Federal Aviation Authority</td>
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<td>FAC</td>
<td>Federal Airports Corporation</td>
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<td>FTA</td>
<td>Flight Training Australia</td>
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<td>GA</td>
<td>General Aviation</td>
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<td>GAAP</td>
<td>General Aviation Aerodrome Procedures</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<tr>
<td>GPS</td>
<td>Global Positioning System</td>
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<tr>
<td>GSP</td>
<td>Gross State Product</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organisation</td>
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<tr>
<td>ILS</td>
<td>Instrument Landing System</td>
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<tr>
<td>MDP</td>
<td>Major Development Plan</td>
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<tr>
<td>MOS</td>
<td>Manual of Standards</td>
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<tr>
<td>MTOW</td>
<td>Maximum Take Off Weight</td>
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<tr>
<td>OLS</td>
<td>Obstacle Limitation Surface</td>
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<tr>
<td>PAR</td>
<td>Plan Amendment Report</td>
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<tr>
<td>PANS-OPS</td>
<td>Precision Approach Navigation Surfaces – Operations</td>
</tr>
<tr>
<td>RPAs</td>
<td>Rules and Practices for Aerodromes</td>
</tr>
<tr>
<td>RFFS</td>
<td>Rescue and Fire Fighting Service</td>
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<tr>
<td>RPT</td>
<td>Regular Public Transport</td>
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<tr>
<td>SA</td>
<td>South Australia</td>
</tr>
<tr>
<td>SES</td>
<td>State Emergency Service</td>
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<tr>
<td>TAAATS</td>
<td>The Australian Advanced Air Traffic System</td>
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<tr>
<td>TFI</td>
<td>Tourism Futures International</td>
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<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
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<tr>
<td>VMC</td>
<td>Visual Meteorological Conditions</td>
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<tr>
<td>WCC</td>
<td>Whyalla City Council</td>
</tr>
</tbody>
</table>
2. GLOSSARY

**Ab initio** - All training up to completion of commercial pilots licence and multi-engine command instrument rating.

**Aerodrome/ Airport** - A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Airport Control Service/ Air Traffic Control** - Airspace Management provided by Airservices Australia

**Airport Emergency Plan** - A plan developed by the Airport operator to coordinate all agencies and their individual Airport Emergency Procedures, State or supporting area plans for dealing with an Airport emergency

**Airport Emergency Procedures (Standard Operating Procedures)** - Individual agency procedures for meeting the Airport Emergency Plan.

**Airline Operator** - The operator of a Regular Public Transport air service

**Aviation-Related Support Industry** - Includes aircraft hangars, catering services, freight terminals, car rental and valet facilities, car parking, vehicle storage, fuel depots and hydrants, storage facilities and warehousing, offices, engineering support and maintenance activities and passenger terminals.

**Airport Security Program** - A Written plan prepared by an Airport operator that details security measures and procedures for the Airport as approved by the secretary, Department of Infrastructure, Transport, Regional Development and Local Government.

**Airside** - The movement area of an Airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

**Apron** - The part of an Airport used for the purpose of enabling passenger to board, or disembark from aircraft; for loading cargo onto, or unloading cargo from, aircraft; and or for refuelling, parking or carrying out maintenance on aircraft.

**Aviation Security** - A Combination of measures and human and material resources intended to safeguard civil aviation against acts of unlawful interference.

**Control Tower** - A unit established to provide air traffic control service to Airport traffic

**Department** - The Commonwealth Department of Infrastructure and Transport.

**Farming** - Cropping and grazing, including horse or animal agistment (except agistment for air freight or export purposes) and horticulture.

**In Flight** - In flight commences when the last external door of the aircraft is closed in preparation for the first movement of the aircraft for the purpose of taking off; or if the aircraft moves before all doors are closed for the purpose of taking off, when it first so moves, until the first external door of the aircraft is opened after the aircraft comes to rest.

**Joint User Airport** - An Airport under control of a part of the Defence Force in respect of which an arrangement under Section 20 of the Civil Aviation Act is in force.

**Landside** - That area of an Airport and buildings to which the public normally has free access.
**Maneuvering Area** - Those parts of an Airport used for the take-off landing and taxiing of aircraft, excluding aprons.

**Movement Area** - That part of an Airport used for the surface movement of aircraft, including maneuvering areas and aprons.

**Prohibited Area** - In relation to an Airport, means any part of the Airport upon or in relation to which is posted a notice to the effect that access to that part of the Airport is prohibited.

**Regular Public Transport Service** - A service consisting of Regular Transport aircraft operations, as prescribed in the Civil Aviation Regulations.

**Regulatory Signs** - A sign which advises of any law, regulation or restriction which it would be an offence to disregard.

**Runway-related Activities/ Facilities** - Includes runways, taxiways, aprons, clearways, compass swing and engine run-up areas, glide path facilities, helicopter landing, parking, training and servicing, landing equipment, radar and all aircraft navigation aids.

**Secretary** - The secretary to the Commonwealth Department of Infrastructure and Transport.

**Soil Treatment Facility** - A facility that allows for the slit and soil to be removed from watercourses to be stockpiled tested and safely removed from the site.

**Sterile Area** - In relation to an aerodrome, means an area in the aerodrome to which persons, vehicle and goods are not permitted access until given clearance, in relation to aviation security, under Section 12 of the Aviation Transport Security Act 2004.
3. INTRODUCTION

Whyalla Airport is located in the City of Whyalla in the State of South Australia, 381km or a 45 minute flight from Adelaide. The Airport lies on the southern-western fringe of the City and is adjacent to the Lincoln Highway. The Airport was constructed on its current site in 1951 with ownership passing from the Commonwealth Government to the Corporation of the City of Whyalla in 1991.

The Airport is located on 774 hectares of freehold land. It is a level site with direct highway access and frontage. It is bounded by rural-residential engulfo development land to the east, open farming land to the west, and fringe hotel and industrial development to the north.

The Airport today provides a Regular Public Transport ('RPT') service to Adelaide with one airline operator, Regional Express Airlines (REX), and supports general aviation and charter services. Passenger growth has been encouraging in recent years however it has fluctuated over the longer term in line with economic conditions. The RPT services are heavily dependent on resources and steel industry activity and this has been a barrier to investment momentum. Current passenger volumes are 71,740 with 2 daily return services to Adelaide operating 7 days per week.

There is a fulltime resident Airport Manager / Aerodrome Reporting Officer who reports through to The Council of the City of Whyalla (Council) Engineering & Infrastructure Department. Council last adopted an Airport Management Plan in May 2002.

The airside asset comprises two runways, a number of aprons and taxiways, a Terminal Building, carparking, general aviation hangars, fuel facility, and other minor buildings. The airside infrastructure is well-maintained and requires little in the way of upgrade over the short term should the growth forecasts be realized. At a State level, the Airport supports 37 FTE jobs and generates a broader economic benefit to the State of $4.7 million per annum.

Whyalla has a population of 22,600 and services a broader catchment of 59,000 in Whyalla and Eyre Peninsula. It is characterised by mining and resources activities including several active iron ore mines within 100 kilometres and major steel manufacturing and port infrastructure in the Whyalla City area. Whyalla forms part of the Upper Spencer Gulf Region, which includes nearby regional towns Port Augusta and Port Pirie. Whyalla is the largest mining services town in South Australia and the second largest regional town (after Mount Gambier).

Council is currently undertaking a renewal program across the Airport following successful public funding applications. This encompasses a Terminal Building upgrade, carparking reconfiguration and beautification, car rental expansion (including commercial arrangements), and entrance statements. Council is also proactively examining the opportunity for development of the eastern land fronting the Lincoln Highway for a range of non-aeronautical commercial activities. These initiatives are designed to commercialise the asset for its long-term economic sustainability.

This Master Plan is required by Council to assist with its long term planning and with negotiations with third party commercial partners and airlines. It is intended to form part of a central planning reference package which will include the Asset Management Plan and Business Plan.

3.1. Terms of Reference

This Master Plan is both a vision statement and a detailed operational and infrastructure review which depicts the forecast growth and associated planning and investment needs that are required for the effective long term operation of the Airport.

Regional Airports are not mandated to adopt a Master Plan (federal leased Airports are governed by the Airports Act (1996) and are required to renew their Master Plans on a five yearly basis). There are however numerous other regulations pertaining to the operation of aviation and aviation safety with which Whyalla Airport must comply; it is also good practice for regional Airports to complete a formal long term planning process.
3.1.1. Purpose of the Master Plan

The Master Plan provides the Airport operator, the Commonwealth, state and Local government, the local community, aviation industries and interests, commercial users and investors with confidence to plan for the future development of the Airport, its environment and the broader metropolitan community. It provides the basis for planning of aviation activities, land and commercial development, environmental management and infrastructure delivery in an integrated and timely manner.

The Master Plan should provide a realistic representation of the future Airport layout which maximizes the Airport’s operational capacity in a way which is compatible with the local community, the environment, commercial development opportunity within the Airport, and which is flexible to respond to changes in both the regional industry and in the aviation industry.

3.1.2. Background Studies

The Master Plan is based upon several detailed studies undertaken in recent years concerning Airport planning, runway and terminal development, land use planning and environmental and socioeconomic issues. These include:

- Whyalla Airport Economic Impact assessment (Hudson Howells), April 2010;
- Whyalla Runway Capacity assessment (Aerodrome Design Pty Ltd), April 2010;
- Whyalla Pax and movement forecasting (Adelaide Airport Ltd), 2010;
- Whyalla Draft Master Plan (Adelaide Airport Ltd), 2010 (incomplete); and
- CASA Safety Inspections (various).

It should be noted that the 2010 Draft Master Plan (incomplete) has been utilized as a base document for this 2013 Master Plan. In particular, we have reviewed and adopted much of the precincts discussion and Airport (Whyalla) Zone Structure Plan text that was previously formulated and have adopted the environmental provisions (apart from the ANEF and Airspace sections).

3.2. Consultation

Best practice dictates that a consultation program is required prior to the preparation of a Master Plan. The consultation program adopted at Whyalla has included the following:

- Direct consultation with stakeholders including Council, industry, economic development officers, Regional Development Australia, airline operators; and
- Public consultation in accordance with Council’s policies.

3.3. Scope of Master Plan

Table 1.1 Requirements for Master Plan Content

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Location in the Document (In this volume except where indicated)</th>
</tr>
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<tbody>
<tr>
<td>Development objectives, including the extent of consistency (if any) with planning schemes in South Australia</td>
<td>Section 6</td>
</tr>
<tr>
<td>Assessment of the future needs of the Airport users for services and facilities relating to the Airport</td>
<td>Section 9</td>
</tr>
<tr>
<td>Intentions for land use and related development of the Airport site (covering landside, airside, surface access, and land planning/ zoning) including the extent of consistency (if any) with planning schemes in South Australia</td>
<td>Section 13</td>
</tr>
<tr>
<td>Requirements</td>
<td>Location in the Document (In this volume except where indicated)</td>
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<tr>
<td>Forecasts relating to noise exposure levels, over a 20-year planning period</td>
<td>Section 11.1</td>
</tr>
<tr>
<td>Flights paths for aircraft likely to use the Airport in the future</td>
<td>Section 11.2</td>
</tr>
<tr>
<td>ANEFs for the surrounding Airport lands.</td>
<td>Section 11.1</td>
</tr>
<tr>
<td>Plans, developed through consultation with airline users of the Airport and the neighbouring Local Government bodies, for managing significant aircraft noise intrusion above significant levels.</td>
<td>Section 11.1</td>
</tr>
<tr>
<td>Assessment of the environmental issues that might reasonably be expected to be associated with the implementing of the plan and the city of Whyalla’s plans for dealing with those expected issues.</td>
<td>Section 11.3 – 11.16</td>
</tr>
<tr>
<td>Any change to the OLS or PANS-OPS surfaces for the Airport concerned that is likely to result if development proceeds in accordance with the Master Plan</td>
<td>Section 11.2</td>
</tr>
<tr>
<td>An Airport Master Plan must, in relation to the landside part of the Airport, where possible, describe proposals for land use and related planning, zoning or development in an amount of detail equivalent to that required by, and using terminology (including definitions) consistent with that applying in, land use planning, zoning and development legislation in force in the State or Territory in which the Airport is located</td>
<td>Section 12 Appendix D &amp; E</td>
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4. AIRPORT MASTER PLAN

4.1. Vision

Whyalla Airport has a critical role as a ‘gateway’ for the City of Whyalla and the surrounding Upper Eyre Peninsula Region, for both industry and residents. It is imperative that the future operations of the Airport are protected and that the future development of the Airport for both operational and commercial purposes can be adequately accommodated.

The Airport is located on the fringe of the City with the Lincoln Highway running along the length of its northern boundary, and hence it can be assumed that further city development will extend beyond the Airport over the Master Plan forecast period to 2028. The planning for the Airport must ensure that the Airport’s operations are not compromised but must also protect the existing surrounding development which is principally of a rural residential and city fringe commercial / industrial nature.

It is also important to recognise the industry base that underpins Whyalla’s economic growth. There are variances in this growth profile, which are difficult to predict, and it may eventuate that the growth projections are inadequate and the Airport’s development and operational scale is greater in the forecast period.

The vision for Whyalla Airport is:

To operate effectively as a gateway to the City of Whyalla and the Upper Eyre Peninsula Region and as a portal for industry and residents, as well as to make a growing contribution to the region and community as an economic and employment hub.

4.2. Principles & Objectives

The purpose of this Master Plan is to optimise the long-term strategic, functional and operational capability of the Airport within the context of the surrounding development while minimising any environmental impact. It is intended as a management and planning instrument that will assist and guide development over the forecast life of the Master Plan (to 2028) without compromising the current and near-term operations.

It is premised on an analysis of current operations and projected forecasts that have been used to derive a coordinated and staged development plan for aeronautical and non-aeronautical development.

The principle objective of the Master Plan is to provide a realistic representation of the future Airport layout that will maximise the capacity of the site in a way which is compatible with the environment, community, and rational development of the facilities, and yet maintain flexibility to adapt to the dynamic aviation industry.

We have based our Master Plan approach on the following key principles:

- Based on historic and current observations we have forecast the aircraft movements and types and ground transport volumes and associated spatial requirements over the forecast period;
- Integrated the airside and landside development outlook to generate complementary land use precincts;
- Designed for optimal development in a sequenced manner for the airside operational assets (aprons, runways), in a way that minimises disruption to existing assets and operations;
- Built in flexibility for unforeseen growth;
- Integrated the Master Plan within the context of the Whyalla Development Plan and the Regional Development Australia Strategic Plan; and
- Provided for the integration of the Airport with the regional Airport route and airspace navigation systems, and the regional transport system.

This Master Plan should be seen as a guide and framework for future development, not as a commitment by the Council to specific development programs, and should be reviewed periodically to adapt to changes in aviation or broader regional economic circumstances.
4.3. Growth Projections

This Master Plan adopts a pax growth forecast rate of 4.5% per annum to 2028, with pax numbers growing from 71,000 to 140,000 in this period. A high growth case is 6.0% per annum (171,000 pax) and a low growth case is 3.3% per annum (116,000 pax). Aircraft movements are forecast to grow moderately due to latent capacity on the current REX Airlines RPT services. The design aircraft SAAB 340B is not expected to alter without higher growth rates in which case the design aircraft is the Dash8-Q400 / ATR 72.

4.4. Airside

This Master Plan details the following key airside components.

- Runways and Aprons – the existing airside infrastructure is adequate for the forecast traffic movements over the Master Plan period. Substantial upgrades will be required should the design aircraft increase of higher pax growth than is forecast over the Master Plan period.
- Terminal Expansion – there is a Terminal Building Upgrade Project currently underway (extending from 140m2 to 300m2, due for completion June 2014). This will provide short-term improvements in functionality and appearance and commence a staged improvement over the longer term.
- Emergency Services – the current airside infrastructure is adequate for emergency training and operations.

4.5. Aviation Support

This Master Plan details the following key aviation support components.

- Fuelling Facilities – there is an inground AVGAS and Jet A1 facility with a 46,000 litre capacity.
- Aviation Maintenance – there is little in the way of aviation maintenance however there is similarly little demand.
- Navigation Aids – the current installations are adequate for forecast needs, although an approach slope indicator system would be required for larger aircraft.

4.6. Landside

This Master Plan details the following key landside components.

- Car Parking – there is a Carparking Upgrade Project currently underway to extend the public and car rental areas (an additional 119 bays and rental holding yards, due for completion April 2014).
- Commercial Development – this Master Plan extends the Airport’s non-aeronautical precincts beyond those currently in the Council Development Plan so as to increase the opportunity and scope for commercial development in the future.

The Master Plan (also referred to as the Whyalla Airport Zone Structure Plan) is shown at Appendix A.
5. **THE AIRPORT**

5.1. **Airport Site**

Whyalla Airport is located in close proximity to Whyalla City, within South Australia. The Airport is situated S 33.03.5, E 137 30.9, on Barngarla Avenue off the Lincoln Highway, approximately 5 kilometres or 9 minutes drive from the CBD. The Airport site is functionally placed allowing for further development while maintaining its close proximity to the infrastructure of Whyalla City.

![Figure 1 – Whyalla Airport in relation to Whyalla CBD](image)

5.2. **Airport History**

The Airport was constructed in 1951, managed by the Federal Government. Ownership was then transferred to Council in 1991 and an Airport Management Plan adopted in 2002.

The Airport provides an essential passenger service to Adelaide.

5.3. **Relationship to Other Airports**

Whyalla Airport is located on the Eyre Peninsula, tertiary to Adelaide Airport, which is approximately 392km to the southeast - a 4 hour and 17 minute drive, or a 50-minute flight, from Whyalla. The Eyre and Western region has a number of significant Airports, including Whyalla, Port Lincoln and Ceduna all of which are owned and operated by local government. Being a vast and relatively remote area, commuter air services are a critical element of the regional passenger transport mix.
Key South Australian Airports in relation to Whyalla Airport are shown below:

![Map of South Australian Airports with Whyalla Airport highlighted](image)

**Figure 2 – Whyalla Airport in relation to South Australian regional Airports**

5.4. Economic Significance

Whyalla Airport provides key economic growth, which supports the City of Whyalla, the local region and the wider South Australian economy. The Airport generates employment and attracts further economic development from associated businesses and tourism; measured through surveys and economic modelling. Historically the Airport has expanded congruently with the economic fortunes of Whyalla.

Whyalla Airport provides essential infrastructure and is a key economic factor for the mining and resources sector, tourism, transport, emergency services, general aviation, regular public transport and military expansion. Whyalla is a relatively remote area and commuter air services are critical to regional passenger transport.

Based upon economic modelling and business survey conducted by Hudson Howells (2010), for the Whyalla region alone, Whyalla Airport supports 18 FTE jobs and generates a gross regional product of $2.1 million annually. Furthermore, within a state level, Whyalla Airport supports 37 FTE jobs and gross state product of $4.7 million.

Whyalla Airport generates further productivity and efficacy through the provision of RPT services compared to less efficient road transport. From this, Whyalla Airport provides a statewide saving of approximately $5.1 million dollars per annum. *(Hudson Howells (2010))*

RPT services also allow mining activity and further positive flow on effects as Whyalla has developed as a regional mining hub featuring iron ore investments. Whyalla continues to offer the expectation of investment for the mining and resources industries both over the medium and long term.
Whyalla Airport also facilitates occasional military aviation activities (via the Cultana Defence Training Range) although this has diminished in recent years.

The major findings of the Hudson Howells (2010) economic analysis have shown the following:

<table>
<thead>
<tr>
<th>Estimated Economic Activity</th>
<th>Whyalla</th>
<th>South Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Employment (FTE’s)</td>
<td>9.2</td>
<td>13.9</td>
</tr>
<tr>
<td>On Site</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Off Site</td>
<td>4.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Indirect Employment (FTE’s)</td>
<td>8.7</td>
<td>23.1</td>
</tr>
<tr>
<td>Total Employment (FTE’s)</td>
<td>17.9</td>
<td>37.0</td>
</tr>
<tr>
<td>Total Value Added ($0,000)</td>
<td>2,146</td>
<td>4,711</td>
</tr>
</tbody>
</table>

We consider that the Hudson Howells report can be regarded as conservative given the growth in pax volumes of 13% since 2010. We also expect that economic contribution of the Airport will increase further as a result of the development works currently being undertaken and planned for the future.
6. LEGISLATIVE FRAMEWORK AND PLANNING CONTEXT

The development of Whyalla Airport has been considered relative to Commonwealth, State and Local Government planning regimes. Whyalla Airport does not fall under the remit of the *Airports Act (Cth)* (1996), however elements of the legislated master plan requirements have been included in this Master Plan.

Various forms of development surround Whyalla Airport. Compatible planning is recommended as being required by State and Local Government planning authorities to protect the operation of the Airport. This Master Plan is to be viewed as complementing State and Local Government land use planning while ensuring the operational integrity and continued viability of the Airport.

Other Commonwealth agencies control, support or have influence on the Airport’s activities in the following areas:

- The standard setting and enforcement activities of the Civil Aviation Safety Authority (CASA);
- Aviation environment controls under the Air Navigation Act 1920 and the Air Services Act 1995;
- The aviation security controls of the Aviation Transport Security Act 2004 and Regulations administered by the DoIT;
- The requirement of the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999, the Endangered Species Protection Act 1992, the Aboriginal and Torres Strait Islander Heritage Protection Act 1982 and the Australian Heritage Commission Act 1975; and
- Australian Federal Police.

This Master Plan is to be viewed as complementing State and Local Government land use planning while ensuring the operational integrity and continued viability of the Airport.

The Airport site is assessable in accordance with Federal, State and Local Planning policies.

There are a number of strategic and statutory documents at both the State and Local Government level, offering a planning perspective on Whyalla Airport, that have been considered in this Master Plan.

A review of the State and Local Government Planning Policies as they relate to Airports, reveals the importance of Airports to South Australia in terms of economic and commercial development, and an increasing emphasis toward economic, social and environmental sustainability, particularly evident through integration of community opportunities where possible.

There is also some evidence of a changing direction under State and Local Government planning to consider Airports and aviation activity in future planning surrounding Airports, but with some need by Local Government in particular to have a greater realisation of the long-term nature of Airport operations and the level of capital investment necessary for the development and maintenance of aviation infrastructure. These planning authorities therefore need to integrate their planning philosophies consistently with existing Airport activities and operations.

Discussion on the key documents follows.

6.1. Federal Planning Policy

6.1.1. Airports Act 1996

Whyalla Airport does not fall under remit of the *Airports Act (1996)*, however the requirements of the Act for a Master Plan have been referred to for the purposes of preparing parts of this Master Plan.

6.1.2. Regional Development Australia Whyalla and Eyre Peninsular Regional Plan 2013-14

Regional Development Australia Whyalla and Eyre Peninsula (RDAWEP) prepared the Regional Development Australia Whyalla and Eyre Peninsula Regional Plan 2013-14.
RDAWEP is part of an Australia wide network of 55 Regional Development Australia Committees established as a national initiative in 2009. RDAWEP was founded on a cooperative arrangement between the Australian Government, State Government and the region’s local member Councils. The benefit of this regional framework is that it strengthens the partnership between the three levels of government.

RDAWEP was established through the amalgamation of the Eyre Regional Development Board and the Whyalla Economic Development Board. This experience, along with comprehensive local intelligence, underpins the operations of RDAWEP and provides a valuable resource for successfully delivering outcomes to benefit industry and the regional community.

The Regional Plan provides an overview of the RDAWEP region’s strengths, needs, challenges and opportunities and identifies a path to be followed to achieve the Board’s vision for the region. Some of the region’s main needs, such as the construction of major infrastructure, will only be met by significant financial investment from the government and private sector. The Regional Plan targets the period of 2013-2014 but will be effective to June 2016.

The RDAWEP refers to Whyalla Airport under the ‘Infrastructure Challenges’ section and identifies that major upgrades of Whyalla and Ceduna Airports are required to accommodate passenger growth and support for mining and business developments. It also specifically identifies the preparation of the Whyalla Airport Master Plan as a top regional transport priority, along with developing the utilization of the Airport as a strategic base for Defence operations.

6.2. State Planning Policy

Council has retained responsibility for land use planning and development management for the Airport in accordance with the Whyalla Development Plan (Consolidated – 25 October 2012).

Land use controls are necessary in areas adjacent to the Airport to protect its long-term safe and efficient operations. To this end, Council has ensured that the operational integrity of the Airport is maintained, noting this Master Plan covers only the Airport area, however greater attention is warranted to ensure a higher consideration of Aviation Standards, such as AS2021-2000 Aircraft Noise – Building, Siting and Construction for localities surrounding Whyalla Airport.

6.2.1. South Australia’s Strategic Plan (2012)

The South Australian Government first released South Australia’s Strategic Plan in March 2004. The updated plan’s targets reflect South Australia’s aspirations as a State in 2020 and beyond. Targets are grouped under the following six objectives:

- Growing Prosperity;
- Improving Wellbeing;
- Attaining Sustainability;
- Fostering Creativity and Innovation;
- Building Communities; and
- Expanding Opportunity.

Development of Whyalla Airport will help to achieve some of these targets.

6.2.2. Development Act 1993 and Development Regulations 2008

The South Australian planning system is established under the Development Act 1993 and associated Development Regulations 2008. The objective of the Development Act is to provide for the proper, orderly and efficient planning and development in the State.
The Act requires the preparation of the Planning Strategy for South Australia. The Planning Strategy is integrated with, and should be read in conjunction with, other specialist plans, including the Strategic Infrastructure Plan for South Australia. The Planning Strategy provides a physical and policy framework to assist in reaching the various targets outlined in South Australia’s Strategic Plan. The Act requires that Development Plans should seek to promote the provisions of the Planning Strategy.

### 6.2.3. Planning Strategy for South Australia - Eyre and Western Region Plan 2012

The Planning Strategy for SA is divided into a number of volumes (Planning Strategy for Regional SA, January 2003, as amended at February 2010).

Under the State Government’s approach to regional land use planning, a specific volume of the Planning Strategy, prepared on a region-by-region basis, covers each of the seven regions of the State outside of Greater Adelaide.

The relevant volume of the Planning Strategy applicable to Whyalla Airport is the *Eyre and Western Region Plan 2012*.

The Plan identifies the planning priorities, principles and policies necessary to achieve community and economic targets outlined by the South Australian Government.

The Plan outlines 14 principles and the policies that will help to realise the development of the region. Whyalla Airport is referred to in principle 4 – “protect and build on the region’s strategic infrastructure”.

Principle 4 identifies that infrastructure should be planned and developed to maximise investment, support business and employment growth, and provide for community health, safety and well being. Further, infrastructure should be planned in proximity to related developments to take advantage of economies of scale.

The Plan recognises that Airports play a critical role in supporting the region’s economic and social development, as well as medical emergency access, and notes that Whyalla, Port Lincoln and Ceduna Airports all require redevelopment if they are to meet growing industry and tourism demands and associated safety and security standards.

The plan outlines the following (relevant) policies to address principle 4.

- Infrastructure development should be consolidated to limit unnecessary duplication of services and resources and to reduce the impact on the surrounding environment, economy and community.
- Ensure Development Plans provide for existing and future strategic infrastructure corridors and assets by:
  - Identifying land for expansion;
  - Protecting corridors and assets from encroachment by incompatible land uses;
  - Addressing impacts of climate change; and
  - Incorporating flexible policy to accommodate changing operational needs.
- Include an overlay map in Development Plans of existing and planned strategic, primary and secondary freight rail and road corridors, major ports and Airports and intermodal sites (as detailed in the Strategic Infrastructure Plan for South Australia).
- Upgrade and protect airfields (Airports, aerodromes and airstrips) to support economic, tourism and social development and accommodate medical emergency services such as the Royal Flying Doctor Service (RFDS).

### 6.2.4. Strategic Infrastructure Plan for SA 2005/6 - 2014/15

The SA Government has adopted the *Strategic Infrastructure Plan for SA 2005/06 - 2014/15*. The Plan has guided and coordinated the State’s approach to infrastructure provision since 2005. It provides an overarching state framework for the planning and delivery of infrastructure by all government and private sector infrastructure providers. Strategic priorities for the period between 2005-06 and 2014-15 are identified for 14 infrastructure sectors.
Whyalla Airport is addressed under the ‘State Challenges and Opportunities – Transport’ section of the plan. This section suggests that sustaining infrastructure at most local Airports is a challenge because low traffic levels do not produce sufficient income to meet maintenance needs. Only 8 regional Airports within South Australia (Ceduna, Port Lincoln, Kingscote, Whyalla, Port Augusta, Roxby Downs, Coober Pedy and Mount Gambier) have scheduled passenger and freight services. Extension and expansion of these Airports to cater for larger passenger aircraft may be required as tourism or freight transport grows.

Strategic priorities for the aviation sector are identified in the plan as:

- Maintain an efficient transport network to Adelaide Airport to support anticipated passenger and freight movements;
- Ensure any change in land use on or adjacent to export Airports does not preclude future transport development; and
- Provide for the orderly expansion of facilities at regional Airports to meet growing visitor and freight activities.

6.3. Whyalla Planning Policy

Whyalla Airport is situated within the City of Whyalla planning area. The regulatory framework is in place to ensure the continued operation of the Airport while suitable development takes place within the Airport and surrounding areas.

6.3.1. The Council of the City of Whyalla Strategic Plan – 2012/13 To 2016/17

The Strategic Plan identifies the key issues facing Council and presents specific long-term goals and five-year outcomes that will address these challenges. It also provides a platform from which Council can collaborate with its communities and other partners to identify and work towards common outcomes.

As a guiding document, the directions outlined in the Plan are implemented through Council’s Business and Annual Budget and Business Planning processes.

Whyalla Airport is considered in the Economic Prosperity section of the Plan. The objective states that Whyalla Airport should meet the region’s needs with the strategy being to monitor and review the Airport’s services and facilities and to investigate (via an appropriate study) the need for an upgrade, in conjunction with RDA.

The Strategic Plan identifies the Airport as an RDA priority requiring upgrade and Master Plan. Council must “deliver infrastructure and services according to strategic priorities and risk and opportunity management”, and “apply business risk principles to decisions”. It also identifies some key steps:

- Council requires Asset Management Planning – develop annual work programs and long term projects to reflect maintenance and investment priorities, risk and available resources and be proactive and link them to Council’s annual budgeting and long term financial plans;
- Council should use financial risk management strategies and take appropriate action to manage these risks across the organisation; and
- Council should look for opportunities to dispose of surplus assets in order to reduce long-term operating and capital costs.

6.3.2. The Council of the City of Whyalla Development Plan (2012)

The Council Development Plan (2012) outlines the objectives and principles of development control applicable generally and more specifically to development management for Whyalla Airport and its environs.

Council has zoned the Airport land as a mixture of Airfield (Af) and Commercial (C) under the Whyalla Development Plan. On the whole, this is a sensible and appropriate zoning arrangement that recognises the commercial opportunity of the land that fronts the Lincoln Highway and Mullaquana Road, and also protects the airfield and terminal areas. This Master Plan recommends some amendments to these zoning boundaries, and in particular seeks to further activate non-aeronautical development toward the Mullaquana Road and Lincoln Highway intersection as well as along Barragarla Avenue toward the Terminal area.
Existing zonings are as follows:

**Airfield Zone (Af)**

The desired character of the Airport is described as:

"The Airport's role is for scheduled air services and provides daily passenger service to Adelaide and other scheduled air services, charter operations, flying training, access for the Royal Flying Doctor Service, gliding, aircraft maintenance, and/or agricultural operations or the like.

It is essential that the Airport reflect the needs of an expanding community and the regional focus of Whyalla on the Eyre Peninsula and northern parts of South Australia, whilst retaining an ability to expand or accommodate both a growth in domestic flights and Airport related facilities and commercial activities which may be required in the future."
There is a strong possibility that the resource development to the north of the South Australia and the increased army presence in the vicinity will result in a large growth in aircraft movement.

There is also the capacity for commercial activities which may rely on air transport and the possibility that the runway may be extended to accommodate larger aircraft. It is intended that development within the Airport and upgrade of the terminal not impair the operation of the airfield, while also preserving the amenity and ambience of the area.”

Land uses controls are as follows:

1. The following forms of development are envisaged in the zone:
   - Air passenger or air freight terminal
   - Aircraft related facilities
   - Airport
   - Clubroom
   - Fuel depot
   - Light industry ancillary to and in association with aviation activities
   - Office ancillary to and in association with aviation activities
   - Recreation area
   - Service industry ancillary to and in association with aviation activities
   - Shop within the terminal building
   - Warehouse ancillary to and in association with aviation activities

2. Development listed as non-complying is generally inappropriate and not acceptable unless it can be demonstrated that it does not undermine the objectives and principles of the Development Plan.

3. Development that would be adversely affected by noise and other hazards caused by Airport activities should not be undertaken in the zone.

4. Development should not impede the use of the zone for aviation purposes.

Design controls (Form and Character) are as follows:

1. Development should not be undertaken unless it is consistent with the desired character for the zone.

2. Commercial and light industrial development located on the Airport site should:
   - facilitate the more efficient operation of the Airport;
   - be sited in defined clusters; and
   - not adversely affect the amenity of surrounding land uses.

Non-complying development is listed as the following:

- Abattoir
- Agistment and holding of stock
- Community centre
- Consulting room
- Dwelling (except where for a caretaker’s dwelling in association with an existing commercial or industrial activity on the site)
- Educational establishment (except where ancillary to and in association with aviation activities)
- Hospital
- Horse keeping
- Horticulture
- Hotel
• Intensive animal keeping
• Junk yard
• Library
• Motel
• Nursing home
• Place of worship
• Pre-school
• Prescribed mining operations
• Racecourse
• Shop (except where located within the terminal building)
• Stock sales yard
• Tourist accommodation
• Waste reception, storage, treatment or disposal
• Welfare institution

**Commercial Zone**

**Objectives**

"1. A zone accommodating a range of commercial and business land uses.
2. Development that minimises any adverse impacts upon the amenity of the locality within the zone."

**Land Use controls** are as follows:

1. The following forms of development are envisaged in the zone:
   • Bulky goods outlet
   • Bus depot
   • Consulting room
   • Light industry
   • Motor vehicle related business other than wrecking yard
   • Office
   • Petrol filling station
   • Service trade premises
   • Store
   • Warehouse

2. Development listed as non-complying is generally inappropriate and not acceptable unless it can be demonstrated that it does not undermine the objectives and principles of the Development Plan.

**Non-complying Development**

Development (including building work, a change in the use of land, or division of an allotment) for the following is non-complying:

• Agistment and holding of stock
• Camping area
• Caravan park
• Clubroom
• Community hall
• Dairy
• Dwelling
• Educational establishment (except on an allotment adjacent to the Lincoln Highway)
• Farm building
• Farming
• Fuel depot
• General industry
• Golf course
• Golf driving range
• Horse keeping
• Horticulture
• Hospital
• Hotel (except on an allotment adjacent to the Lincoln Highway)
• Intensive animal keeping
• Motel (except on an allotment adjacent to the Lincoln Highway)
• Nursing home
• Place of worship (except on an allotment adjacent to the Lincoln Highway)
• Plant nursery
• Pre-school
• Prescribed mining operations
• Racecourse
• Recreation area
• Road transport terminal
• Shop or group of shops (except where it achieves one of the following: (a) the gross leasable area is less than 250 square metres, (b) the shop is a bulky goods outlet)
• Special industry
• Stadium
• Stock sales yard
• Stock slaughter works
• Waste reception, storage, treatment, or disposal
• Welfare institution
• Winery
• Wrecking yard

Public Notification

Categories of public notification are prescribed in Schedule 9 of the Development Regulations 2008. Further, the following forms of development are designated.

• Category 1
  – Consulting room
  – Office
  – Service trade premises
  – Store
  – Warehouse

• Category 2
  – Bulky goods outlet
  – Light industry
  – Motor vehicle related business
  – Petrol filling station
6.3.3. Development Assessment Process

There is a two-step approval process for all development activity at the Airport that requires Airport Management approval as an initial step followed by the formal Council development approval process. This is designed to ensure that all development is consistent with the Airport’s land use plan and relevant planning regulations.

All works require approval from the Airport Management, including but not limited to:

- Any new building or structure;
- Alterations and extensions to an existing building or structure;
- Signage;
- Any changes of use;
- Hardstand areas;
- Excavation and services;
- Earthworks;
- Fencing; and
- Landscaping.

Following Airport Management Approval, all applications will be required to be lodged with Council.

Most forms of development require Council approval under the Development Act (1993) unless specifically excluded by regulation. Development Approval comprises both Development Plan Consent (Planning Consent) and Building Rules Consent (Building Consent). The application is generally made for both consents together in the form of a complete development approval (separate consents may be sought but neither can be effected without the full approval being issued).

Council considers any form of building activity or change of use of land as development. Most forms of development require approval by Council or in certain circumstances the State Government’s Development Assessment Commission.

Planning Consent is assessed against the Development Plan, which is the policy document administered by Council to ensure development occurs in an orderly manner. The matters considered include for example:

- The visual impact of the structure on adjoining properties and the street;
- The safety and convenience of proposed access points;
- The appropriateness of the intended use in relation to the character of the area and its zoning; and
- The intensity of developments and the degree of site coverage.

Building Rules Consent is assessed against the technical requirements of the Building Code of Australia, and other relevant standards such as the Timber Framing Code, to ensure the structural safety, fire safety, health, amenity and sustainability of the structures are maintained.

The DAP is a body established by the Council with a responsibility for determining three kinds of development primarily, being either more major development proposals (over $5 million development cost or significant city-wide impact), non-complying or those proposals where third party objections are not readily resolved. The Panel must ensure that all its decisions pay proper regard to the provisions of Council’s Development Plan. Applications not considered by the DAP are assessed by Council staff under delegation.

6.3.4. Planning Definitions

Included in the Glossary are definitions for varying Airport activities consistent with Airport needs or exiting Airport uses. Where a particular land use is not defined, regard should be given to the definitions contained in the South Australian Development Regulations 2008.

6.4. Existing Interests

Third parties mostly through leasehold ground lease arrangements and building leases of varying terms and conditions occupy Whyalla Airport. There is currently no remaining land for lease at the Airport. This Master Plan will identify future available land supply for the Airport over the short, medium and long term.
7. EXISTING AIRPORT INFRASTRUCTURE & FACILITIES

7.1. Aircraft Movement Areas

Whyalla Airport consists of a two-runway configuration serving both Regular Public Transport (RPT) operations and General Aviation (GA) activity. The main runway (17/35) consists of a flexible asphalt pavement suitable for mid-range regional aircraft movements, while the cross runway (05/23) supports GA and light aircraft and consists of a composite gravel surface. The runways intersect at the northern-most end of runways 17 and 23.

Additionally, dedicated aircraft parking aprons, located at the northeast end of the main runway, provide for current REX RPT movements and fixed and rotary wing GA operations. These aprons are serviced from the runways by Taxiway ‘Alpha’ which is a sealed asphalt pavement, 18m wide and capable of Code 3C (up to and including SF-340, F50, F100, ATR-72 and Dash8-Q400 aircraft) operations. The remaining link taxiways, ‘Bravo’ and ‘Charlie’ at 15m wide, service the GA areas and consist of a composite gravel surface.

Upon inspection the taxiways, aprons and runways appear in a satisfactory operational state for the current aircraft moments, and should not require any immediate remedial works to adequately service a modest increase in aircraft loading or schedule frequency. The geotechnical survey performed in 2007 and the physical inspection of the pavement condition data informs short, medium and longer-term strategies for maintenance and/or upgrades to suit the future needs of the Airport. Overall the Whyalla Airport movement area meets, and generally exceeds the requirements of the current aircraft capacity and is compliant with CASA MOS part 139 standards.
7.1.1. Runways

The main runway dimensions are 1686m in length x 45m in width, widened from a previous width of 30m. It should be noted that the outer 7.5m on each side is of a significantly lower bearing strength to the original central 30m. A 150m wide runway strip protects the main runway and dimensionally the main runway is suitable for RPT aircraft operations up to and including Dash8-Q400 movements. However, the published runway loading capability would not satisfy the operational weight and tyre pressures required for Q400 use.

The cross runway is 1408m in length x 30m wide with a 90m wide runway strip, and provides the dimensions and surface consistent with the intended use for light aircraft GA movements. All associated runway flank and strip areas are maintained in accordance with CASA standards (MOS part 139).

7.1.2. Runway Capacity

There are many and varied components to an aviation system such as Whyalla Airport, such that any single value of capacity is misleading.

In considering Whyalla’s capacity only the main runway has been considered in determining the runway capacity, the reason being that intersecting runways do not significantly increase capacity, as they cannot operate independently. Their main purpose is to increase the usability of the aerodrome in different wind conditions, particularly for smaller aircraft.

The FAA have issued guidance on the ultimate capacities of runways in a variety of configurations, taking into account a number of variables, namely that runway utilisation will be such as to produce the highest sustainable capacity for the Airport and information on the ‘mix’ of various sizes of aircraft that use the Airport.

Taking into account the current ‘mix’ characteristics of the aircraft using Whyalla the ultimate capacity of the runway (putting aside pavement condition) is approximately 195,000 movements per annum (adjusted with airspace constraints and a nominal capacity adjustment down to 136,000 movements per annum), which well exceeds the forecast movement scenarios for Whyalla Airport within the Master Plan 15 year planning horizon.

<table>
<thead>
<tr>
<th>Annual Long Term Compound Growth Rate</th>
<th>Scenario Description</th>
<th>Total Movements (FY2010)</th>
<th>Forecast Movements (FY 2030)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+3%</td>
<td>Historical long term growth for Whyalla</td>
<td>6,850</td>
<td>12,320</td>
</tr>
<tr>
<td>+6%</td>
<td>Best Case: Mining Growth</td>
<td>6,850</td>
<td>26,410</td>
</tr>
</tbody>
</table>

7.1.3. Taxiways

The taxiways linking both GA and RPT aprons are suitable in dimensions for their intended use and again, in relation to the future RPT movements, will require further assessment for Dash 8-Q400 operations. All associated runway flank and strip areas are maintained in accordance with CASA standards.
7.1.4. Aprons

The aircraft parking aprons for both RPT and GA operations provide significant capacity for the current movement frequency, allowing for further aircraft operational increases without the need for expansion of the allocated parking areas.

Future increase in RPT aircraft movements and larger aircraft types from the current SF 340 could be absorbed within the current apron dimensions, with a minor rationalisation of the aircraft parking positions. The current apron coverage could provide parking positions for 1 x fully independent (power-in/power-out) Dash8-Q400 type aircraft. Expansion of the current apron could potentially provide parking positions for 2 x fully independent (power in / power out) Dash 8-Q400 aircraft. With this work there is the potential to allow for a third SAAB 340B parking position on the RPY apron.

Modifications to the apron parking bays for future operations will need to consider positioning suitable for the existing ground hydrant refuelling service from Bay 1.

![Figure 5.1 – RPT Apron Useability – Dash 8-Q400](image-url)
The current RPT apron pavement is a rigid concrete construction providing substantial load capability for operating aircraft. Based on our on-site observations of this apron pavement area, we would anticipate this pavement to be suitable for Dash8-Q400 aircraft. However, geo-technical information will confirm or refute this observation.

The GA apron areas, for both rotary and fixed wing operations, have substantial growth capacity for increased aircraft movements and parking. No changes would be required to the GA parking aprons based on the current capacity observations, including a significant increase in GA movements. Expansion works would only be required if a substantial change in local or regional operations such as charter (FIFO), flight training and maintenance type activities occur, or for future capacity preparation and planning.
7.1.5. Airfield Lighting

The current 17/35 runway lighting supports the existing operational movements and compliance code requirements. The current main runway edge lighting consists of low intensity lights at 90m centres positioned based on the 45m runway width. The runway end and approach lighting, supports the current RPT activity and is compliant with 45m wide runway end set-out requirements.

As the current instrument flight procedures for runway 17/35 currently published in the AIP-DAP by Airservices direct arriving aircraft to a visual minima of 600 feet or greater, the classification for the runway would be as a non-instrument runway. The edge light fitting separations at 90m supports this. Future Airport expansion and the requirements of airline flight operations may dictate the need for full instrument approaches to runway 17/35. If so, the runway edge lighting will require upgrading to 60 centres and the possible inclusion of a visual approach slope indicator array, that is single sided or double-sided PAPI at each main runway end. This would almost be considered as a mandatory requirement for QantasLink to operate their Q400 fleet, and it would almost certainly be duplicated for SkyWest in relation to the ATR-72.

Taxiway ‘A’ has edge lighting installed extending from the runway edge to the RPT. The taxiway lighting conforms to the required code requirements and would be suitable for larger aircraft operations, up to and including maximum Code 3C capacity.

Based on the aerodrome information supplied, the apron floodlight appears sufficient for the current RPT operations and would suit an increase in operations by aircraft defined as not ‘large aircraft’. While the exact definition of a ‘large aircraft’ is somewhat contentious, CASA has required Airports upgrading to Q400 standard, or greater, to install the apron lighting in accordance with ‘large aircraft’ operations. A reasonable planning application for upgrading of apron flood lighting would be for the introduction of aircraft that carry 70 or more passengers. Aircraft such as ATR-72 and Dash8-Q400 would trigger an upgrade to the apron lighting based on this criteria. In the majority of floodlight upgrade cases, particularly when the apron does not require expansion, the light poles are retained and the lighting array is enhanced or augmented to achieve the required horizontal and vertical lux levels.

Runway 05/23 has no permanent runway lighting, which is satisfactory for light aircraft movements conducting visual operations in suitable daytime conditions.

Generally, the GA taxiways linking the runways and aprons are marked, but not lit. This is consistent with the type of aircraft movements under the applicable visual flight conditions.

7.1.6. Obstacles

The current obstacle limitation surfaces (OLS) identify three marked or lit obstacles within the assessment area for aircraft operations in and out of Whyalla Airport. This includes the high terrain of Mount Laura and the associated antenna, the nominated police communications towers, and the Arrium tower.

These obstacles would not constrain the ability to increase the Airport operations up to maximum Code 3C activity.

7.1.7. Navigation Aids

Whyalla Airport is currently serviced by a ground-based NDB that serves as the primary nav-aid for the runway 35 approach procedure and the GPS arrivals. Due to the uptake of GPS navigation it is envisaged that no further ground based radio navigation aids would be required for Whyalla Airport. Further introduction of satellite based flight procedures will accommodate any future aircraft type and movement increases. However as previously stated, an approach slope indicator system would need to be considered for larger aircraft operations.
7.1.8. Airfield Markings

All airfield markings are generally installed in accordance with the CASA standards and meet or exceed the requirements of the current aircraft operations. Some minor apron marking changes may be required depending on the aircraft capability requirements of the Airport.

7.2. Aviation Support Facilities

7.2.1. Fuelling Facilities

Council operates both Avgas and Jet A1 services. This is a comprehensive service, which typically generates a moderate return or breakeven commercial position.

There is a 46,000 litre underground Jet A1 tank, and a 20,800 litre underground Avgas tank. An above ground 800 litre diesel tank services Airport vehicles.

Jet A1 volumes have fallen significantly in 2012/13 with Defence almost ending its usage at the Airport. This has had a large impact on Airport gross revenues however the fuel operations remain profitable.

Further work is required to assess the outlook for sustainable fuel operations, however clearly the Regional Plan priority of re-engaging with Defence is relevant (although our consultation with Defence in forums is that they do not anticipate increase usage in the foreseeable future).

The in-ground fuel tanks are quite aged and will require an environmental management program as described in Section 12.

7.2.2. Weather Information System

There is an operating Aviation Weather Information System (AWIS) in place.

7.2.3. Ground Service Equipment

There is limited GSE required to service the REX RPT operations. Fuel is accessed via an inground hydrant located on the apron at Bay 1.

The baggage handling is operated by a trolley via the under cover skillion roofed Terminal area. Baggage is manually collected by passengers directly via the carpark / taxi waiting area. There is no automated baggage handling facility.
7.3. Hangarage

There are minimal hangar facilities at the Airport. A large GA hangar is located adjacent to the Terminal to the south and accommodates numerous GA light aircraft operated by local business / recreational flyers.

Given the volume of GA operations, we cannot see significant further scope for hangar development, unless undertaken in response to specific pre-commitment.

Figure 6 – Main GA Hangar (Multi-User Facility) adjacent to the Terminal Area (view from GA Apron)
7.4. Passenger Facilities

7.4.1. Terminal

The Terminal Building is an aged structure which is approved and funded for a major refurbishment and reconfiguration in 2013-14. While it adequately services the current volume of RPT operations, it does not offer any retail opportunity for Council and is not suitable for security operations should these be required.

The existing check-in desks and car rental kiosks are in moderate condition and other fittings and fixtures are similarly dated.

Council will shortly commence a Terminal Building Upgrade Project which will fully refurbish and reconfigure the existing building in a staged program. This is detailed in Section 9.2.1.

Figure 7 – Existing Terminal and Baggage Handling (View from Carpark)

7.5. Ground Transport Facilities

7.5.1. Carparking

The existing carparking facilities present well and appear adequate to service demand. They are divided into the following areas.

- Short term Terminal area – 37 bays (including disabled)
- Paid medium term – 42 bays
- Paid and secure long term – 46 bays (including disabled)
- Car rental – 27 bays plus unallocated general holding areas
- Bus parking – 5 bays adjacent to the Terminal
- Taxi waiting area – 5 bays
The layout is inefficient and is inadequate to handle growth in demand. In particular there is a high-risk area at the Terminal face where all traffic and pedestrians interact in a loose arrangement. At peak times of demand the pedestrian access is congested and presents a risk to Council.

Council has commenced a Carpark Upgrade Project which will improve safety and efficiency, as well as adding further capacity in a way that can be expanded into the future. Refer to Section 9.2.2 for further detail.

7.5.2. Road Networks

The Airport has ideal direct access from the Lincoln Highway, which is the major arterial road into Whyalla. The Lincoln Highway entrance is a four-way intersection which links into Barngarla Avenue (the Airport entrance road), a 1.2 kilometre long direct road through to the Terminal and Carparking Area.

The eastern portion of the Airport land is bounded by Mullaquana Road which provides the opportunity for future access points.

7.6. Services & Infrastructure

- There is above ground electricity
- Telecommunications is via 18 pair copper wiring (no fibre optic cabling)
- Water mains are via a ring service (no redundancy)
- Septic services are located at the Terminal and Airport Manager’s Residence
8. AVIATION DEMAND FORECASTS

8.1. Aircraft Movements

For the year to June 2013, Whyalla Airport had the third largest number of RPT aircraft movements (3,054) of any of the Regional Airports in South Australia, after Port Lincoln (6,974) and Mount Gambier (4,028). RPT movements constitute approximately 40% of all aircraft traffic at Whyalla Airport. Comparative aircraft movements from FY 2009 until FY2013 are shown below.

<table>
<thead>
<tr>
<th>Airport</th>
<th>2009/10 RPT Aircraft Movements (FY)</th>
<th>2010/11 RPT Aircraft Movements (FY)</th>
<th>2011/12 RPT Aircraft Movements (FY)</th>
<th>2012/13 RPT Aircraft Movements (FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide Airport</td>
<td>74,504</td>
<td>76,110</td>
<td>72,259</td>
<td>75,518</td>
</tr>
<tr>
<td>Port Lincoln</td>
<td>6,803</td>
<td>7,316</td>
<td>7,133</td>
<td>6,974</td>
</tr>
<tr>
<td>Whyalla Airport</td>
<td>2,730</td>
<td>2,845</td>
<td>2,961</td>
<td>3,054</td>
</tr>
</tbody>
</table>

Average RPT aircraft traffic growth over the 2010-2013 statistical period is 3.81% per annum.

Whyalla Airport has accommodated larger RPT aircraft since 2006-07 with the introduction of the REX SAAB 340B aircraft, which has reduced the volume of movements commensurate with an increase in passengers. The demise of O'Connor Airlines has reduced the volume of RPT movements. Historical aircraft movements for Whyalla Airport are shown below.

![WHYALLA AIRCRAFT TRAFFIC](Image)
GA movements have grown in the AVDATA statistical period of 2008-2013. We can see a range of 3000-3500 movements of GA aircraft (including rotary, recreational, business/executive jets, military aircraft).

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPT Movements</td>
<td>2,996</td>
<td>2,730</td>
<td>2,845</td>
<td>2,961</td>
<td>3,054</td>
<td>2,917 (0.48% average annual increase)</td>
</tr>
<tr>
<td>GA Movements</td>
<td>3,100</td>
<td>3,300</td>
<td>3,700</td>
<td>3,700</td>
<td>3,700</td>
<td>3,450 (6.08% average annual increase)</td>
</tr>
<tr>
<td>Total</td>
<td>5,830</td>
<td>6,145</td>
<td>6,661</td>
<td>6,754</td>
<td>6,754</td>
<td>6,347 (5.03% average annual increase)</td>
</tr>
</tbody>
</table>

REX Airlines advise us that they have latent capacity in the current services with a load factor of 63-65%. This confirms for us that the current aircraft design will be capable of handling the forecast pax growth throughout the Master Plan planning period to 2028.

Using the forecast pax growth adopted below, we estimate that the RPT movements will increase to 5,161 movements by 2028 on the basis that the SAAB 340B will be the only operating aircraft. This is an average annual increase in RPT movements of 4.6%.

GA aircraft movement forecasts are adopted at 4% based on the 4-year average of 6.08% per annum but moderated to allow for recent levelling of growth. This provides for a growth to 6,663 movements by 2028.

Total aircraft movements are therefore forecast to grow at 5.0% per annum, escalating from 6,754 in 2013 to 11,824 in 2028.

8.2. Passenger Data

Whyalla Airport is the busiest Airport in the Upper Eyre Peninsula Region. It has maintained consistent annual passenger volumes of 65-70,000 over recent years, with some softening through 2008-12 and following the collapse of O’Connor Airlines in 2007.

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual PAX Volumes</td>
<td>68,087</td>
<td>62,401</td>
<td>66,539</td>
<td>70,114</td>
<td>71,740</td>
<td>67,776 (1.32% average annual increase)</td>
</tr>
</tbody>
</table>
8.3. Airline Operations – RPT

REX Airlines has been the sole RPT operator since the exit of O’Connor Airlines in 2007. REX operates daily flights as follows.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Further work is required to assess the route viability before any initiative to add a second carrier is undertaken. A second carrier was introduced at the 150,000 pax level at Port Lincoln and we have adopted this as the likely entry point for Whyalla. It is therefore unlikely, short of any spike in passenger growth under the high growth scenario (or higher), that we will see a second carrier introduced at Whyalla over the Masterplan forecast period.

8.4. Airline Operations - Rotary

There is limited rotary activity and no dedicated rotary landing area.

8.5. Airline Operations – General Aviation (‘GA’)

The Airport does not have a high volume of GA operations. These are predominantly regional business operators, and recreational flyers. The Avgas offer and the large hangar space are both attractive to GA flyers, however there is no downstream manufacturing or other GA support facilities.

8.6. Airline Operations – Defence

The Department of Defence operates the Cultana Defence Training Centre nearby to Whyalla. In the past, Defence has been a significant user of the Airport but this has reduced in the past 2-3 years. Defence operations are now limited to only occasional activity.

As outlined in Section 5.1.2, the RDA Regional Plan identifies the priority of re-engaging Defence with the Airport as the top transport priority for the Region.

Our discussions with Defence indicate a continuing low level of appetite for use of the Airport. Council should maintain open lines of communication with Defence should this requirement evolve.

8.7. Passenger Survey

‘Survey Monkey’ has been used to determine the key demographic information about Whyalla Airport passengers. This information is key in understanding the current and future needs of the Airport and how best to accommodate growth within the region. The results of the survey highlight the important link between mining and resources activities and the role Whyalla Airport plays in sustaining these growth industries.

According to the survey the most common passenger from the majority of participants is a non-residential male working within the mining and resources industry aged between 25-44. This passenger typically arrives at the Airport via a private vehicle with checked baggage and departs Whyalla for business. This passenger on average travels to Whyalla four times per year staying and working within Whyalla for 1–7 days per week in a hotel/motel.
8.8. Growth Forecasts

The following graph shows the recent volumes and a range forecast scenarios to illustrate a wider range of forecast outcomes.

**Master Plan Growth Outlook**

![Range of Pax Growth Forecasts](image)

*Figure 10 – Range of Pax Growth Forecasts*

We have applied a forecast growth rate of 4.5% per annum over the forecast period to 2028. This is based on the following analysis:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>10 Year Average Pax Growth Rate</td>
<td>5.57% per annum</td>
</tr>
<tr>
<td>5 Year Average Pax Growth Rate</td>
<td>1.32% per annum</td>
</tr>
<tr>
<td>Peak Growth Year</td>
<td>25.04% per annum</td>
</tr>
<tr>
<td>Lowest Growth Year</td>
<td>-14.28% per annum</td>
</tr>
<tr>
<td>Regional Aviation Industry Forecast Pax Growth Rate</td>
<td>3.3% per annum</td>
</tr>
</tbody>
</table>

A milestone point of 100,000 pax is reached in 2021, and 145,000 is reached in 2028 under the adopted 4.5% per annum forecast assumptions.
REX Airlines have adopted a forecast pax growth rate of 2 - 3% per annum for the next 5 years. We have adopted a higher rate for planning purposes to ensure that adequate infrastructure (airside and landside) is in place should a more rapid growth profile occur in line with any rapid escalation in industry-related economic activity. We’ve seen this occur at other regional Airports over the 2009-2013 period and Council should be prepared for such eventualities – indeed significantly larger growth may occur however this is difficult to predict or document.

The below graph isolates the adopted forecast pax growth profile and combines it with RPT aircraft movement forecasts.

It is not expected that significant aircraft movement increases, nor significantly larger aircraft designs, will be required under the low and adopted growth scenarios due to the latent capacity on the existing REX SAAB 340B route service. For the high growth scenario, if a second carrier is introduced then aircraft volumes may increase slightly, or if a larger aircraft with a greater seating capacity is introduced then movements may decrease.

![Graph showing 4.5% Growth Passenger Movements vs RPT Aircraft Movements](image-url)
9. FUTURE NEEDS AND DEVELOPMENT OPTIONS

Responsible development of a regional Airport should usually be done via a staged process with a focus on airside operational assets as a primary objective, and the terminal and parking areas as a priority over the more remote landside development opportunities.

9.1. Airside Upgrade Priorities

The current runway dimensions at 1686m x 45m provide the required width for instrument non-precision runway operations. The runway length of 1686m is suitable for maximum code 3C aircraft, but not larger jet aircraft that require a 45m wide runway. However, the realistic future limitations of movements in to Whyalla Airport suggest the appropriate medium / long-term design aircraft should be the Dash8-Q400, or similar. This aircraft has been categorised by CASA in 2012 as a Code 3C aircraft in terms of movement area requirements.

If the Dash8-Q400 is to be adopted as the design aircraft, then the runway dimensional requirements are for a width of only 30m. As the current 17/35 runway width is 45m, 15m of runway pavement width could be removed providing the same operational conditions without the required maintenance programs and costs. This would however trigger a requirement to relocate the edge and end lights to conform to the adjusted 30m width. The costs associated with the current maintenance versus a return to the 30m width should be quantified for comparison of either outcome. It should be noted that if the runway is returned to 30m in width, part of the 45m wide runway pavement at each end of the main runway could be retained for Dash8-Q400 / ATR-72 turning node purposes. The remaining length can then be brought in to a 30m maximum width and marked accordingly.

As stated, the current Airport movement area is dimensionally suitable for up to Code 3C operations, including Dash8-Q400. Therefore, in simple terms, as the heavier aircraft pavements have suitable load capacities; there is no requirement to upgrade any of the RPT runway, taxiway or apron pavement areas.

The geo-technical testing conducted by Coffey Geotechnics suggests that the RPT runway, taxiway and apron area pavements and subgrades are extremely good. The AIP published pavement rating, particularly for subgrade conditions supports this. The overall pavement structure and grades would appear suitable for the current aircraft types or similar and would satisfactorily accommodate Dash8-Q400 movements based on the current RPT scheduling. The general shape supports this and the form of the pavements upon inspection (excluding the outer 7.5m sections on the main runway) which do not show signs of rehabilitation works appear to be holding up to the current traffic levels very well.

Our Master Plan development strategy as defined in this report, supports three possible scenarios which could be adopted as airside development expansion stages that reflect a short, medium and longer term of airside outcomes based on aircraft and passenger movement data and our adopted forecasts in Section 8.

- Firstly, the current operational activity levels could be retained as a short-term option and a determination can be made of any upgrade / maintenance requirements to maintain the current capacity and operations for a given period of time.
- Secondly, a scenario which involves an increase in movements of possibly double the current count to 140-150,000 passenger movements, based on the existing aircraft type or similar.
- Thirdly, proposing an Airport capability based on maximum Dash8-Q400 capability and increased movement activity – this is for the larger pax volumes that may be generated through spikes in regional industry activity.

Scenario 1 - Current Operational Volumes

In terms of aircraft movements, based on the current aircraft types servicing Whyalla Airport, the required pavement life of the Airport would need to be assessed and a program initiated to meet the current and forecast requirements. The analysis of the runway and the required design lifespan, of say, 10-15 years, may mean a minor asphalt overlay application is required to achieve a relative maintenance free period based on the design life of the pavement. This would be considered a normal pavement life rehabilitation program that all asphalt pavement based Airports conduct at 10 to 15 / 20 year intervals. This first stage scenario would ensure the main runway and taxiway ‘A’ are maintained at a desired pavement standard and strength for the design life required.
Scenario 2 - Forecast Pax Volumes to 140-150,000 by 2028 (Master Plan Adopted Forecast Growth)

The second scenario or expansion stage, based on current aircraft types (SAAB 340B or similar) with an increased movement frequency to 140-150,000 pax, may alter the Scenario 1 application by a very marginal increase in overlay depth. This would need to be supported by adopted future aircraft movement frequency statistical forecast data and full a pavement design program.

Scenario 3 – Larger Volumes Through Industry Activity (Dash8–Q400) (High Growth Forecast or Higher)

This scenario would accommodate the possible introduction of Dash8-Q400 and/or ATR-72 aircraft at some future time. The introduction of these regular movements will trigger a variety of additional upgrade works to satisfy the aircraft operations, loadings, flight operations and CASA aircraft capacity standards.

This would include airside works involving the following.

- Likely minor pavement strengthening at next maintenance overlay stage to:
  - runway 17/35 (30m width only);
  - taxiway ‘A’ and;
  - RPT apron (very unlikely, but considered).

- Likely navigation systems inclusions:
  - Precision Approach Path Indicator (PAPI) system;
  - Apron Floodlighting enhancement.

- Movement area modifications:
  - Main runway, runway nodes, taxiway re-marking after overlay works;
  - RPT apron markings upgrade and; and
  - Runway edge lighting restored to 30m runway width.

- Runway end turning node formation and taxiway edge lighting.

In summary, minor works to facilitate the airside upgrade are required for increased pavement life and/or increased capacity and movements. This would be achieved for relatively low costs (costs that would normally be associated with periodic maintenance upgrades or marginally higher). The immediate upgrade requirements associated with Dash8-Q400 / ATR-72 operations would be no greater in terms of overlay works application than a minor increase in the maintenance overlay depth. However, the associated upgrade or introduction of the airside facilities to accommodate these regular large aircraft services would increase the expenditure needed.

This Master Plan will adopt Scenario 2 with the continued design aircraft being the SAAB 340B. The Airport can however accommodate the larger aircraft with minimal airside upgrades (although the associated security and other works will be additional).
9.2. Landside Upgrade Priorities

9.2.1. Terminal Building Upgrade Project (2013-14)

The Terminal Building Upgrade Project is currently being undertaken by Council following the successful sourcing of public funding from State and Federal Governments in 2013. Delivery is anticipated in June 2014.

The Project will provide a much-needed refurbished ‘gateway’ presence for the City of Whyalla and the region. It will also involve an expansion from 140m² to 300m², and a reconfiguration to enhance pedestrian flows and to plan for future security operations should they be required by legislation and/or the operation of larger aircraft.

It will enhance the ground handling operations and coordinate at the terminal face with the Carparking Upgrade Project. It is also intended to improve the commercial sustainability of the Airport by providing for retail amenity.
Figure 12.1 – Terminal Building Upgrade Project Images (2013)
The first stage will reconfigure the core operational area. Subsequent stages will expand in a linear direction to include additional retail areas, enclose the baggage handling area, and establish security screening operations as and when required.
Future Terminal Building Expansion Requirements

The growth forecasts to 140,000 pax could be accommodated within the expanded Terminal Building footprint of 300m² provided that security screening is not required. This could however prove difficult at peak times (for example if more than one aircraft is scheduled to arrive / depart) and additional seating, pedestrian separation and baggage handling areas may be required. Any such expansion can be readily accommodated within the land area either side of the current building.

9.2.2. Carparking Upgrade Project (2013-14)

Council is currently undertaking the Carparking Upgrade Project in conjunction with the Terminal Building Upgrade Project following successful commercial negotiations with car rental operators in 2013. Delivery is anticipated in April 2014. This will increase the number of public carparks from 89 to 120, and introduce 88 rental car bays (including 20 ready bays), as well as 3,780m² of rental car holding yards.

The Carparking Upgrade Project is designed to enhance the pedestrian and vehicle interface at the Terminal entrance and surrounds, and to improve the commercial sustainability of the Airport.

The Carparking Upgrade Project comprises:

- the reconfiguration of the drop off / pedestrian zone at the Terminal face including the taxi drop off / pick up area, bus parking area, and pedestrian walkways (this has been identified as a high risk accident area);
- the introduction of 20 car rental ready bays closest to the Terminal entrance, as well as 8 disabled parking bays;
- the introduction of 68 car rental medium term bays within 100 metres of the Terminal entrance (rental returns to be accessed via a dedicated slipplane from the main Airport entrance road away from the Terminal area);
- the reconfiguration of the paid short term public parking area to add additional bays and improve traffic flows; and
- landscaping improvements throughout the carparking area.

Future stages will expand outward with growth into the expansion land areas.
Whyalla Airport – The Corporation of the City of Whyalla

Master Plan – 7 February 2014

Figure 13 – Carparking Upgrade Project Plan (2013)
Further works associated with the revised car rental agreements is the construction of a dedicated secure parking and washdown bay area. This is located approximately 200 metres southeast from the Terminal and is designed to offer a full business solution for the rental operators. In the future this may also include a dedicated fuel operation.

**Figure 14 – Car Rental Holding Yard and Washdown Facility Plan (2013)**

**Future Carparking Requirements**

We expect that the completed carpark project will adequately service the short-term growth, however we expect that additional public (short and long term) and parking and rental car parking will be required over the forecast period. We anticipate an additional 44 rental bays, and an additional 100 public car parks will be required. This will require an additional 0.73 hectares of land, which is amply accommodated within the broader carparking surrounding land (as will any further increases).
9.2.3. Landscape Plan

Council is investing in a beautification program at the Lincoln Highway entrance, along the Barngarla Avenue, and throughout the Carparking and Terminal surrounds. This is designed to enhance the Airport’s role as a ‘gateway’ to the city and the region. Delivery is anticipated in April 2014.

![Figure 15 – Draft Landscaping Plan (Terminal Area) (2013)](image-url)
9.2.4. Commercial Development Opportunities

Council is proactively pursuing commercial development opportunities along the Lincoln Highway frontage area. This area is quite remote from the aeronautical area and offers the benefits of flat land with high profile visibility and ease of access. Some development considerations include the cost of introducing services and flood mitigation works (not on all sites). Traffic impact and planning is the key constraint which needs to be examined further. This is at an early stage of investigation however direct communications have been established with market participants.

Figure 16 – Proposed (Indicative) Commercial Development Sites (subject to planning approval) (2013)

The commercial development area identified in the land use planning provisions of this Master Plan (refer Section 13) is consistent with the land use controls within the City of Whyalla Development Plan in as much as it will provide for clustered development and will not affect the amenity of the surrounding area. It does however increase the commercial development land area east toward Mullaquana Road and west toward the Terminal area. Some of the contemplated uses will also likely be regarded as non-complying development under the current Development Plan.

The Master Plan therefore proposes specific amendments to the Development Plan that will broaden the scope of non-aviation uses. This is entirely consistent with existing development trends at regional and metropolitan Airports throughout Australia and is also consistent with the various State and Local Government strategy documents outlined in Section 6.
10. STAKEHOLDER CONSULTATION

We have conducted consultation with various stakeholders including Council, airline / aircraft operators, emergency services, regional authorities, CASA.

In summary the existing infrastructure is adequate for the current and forecast level of operations over the Master Plan forecast period.

Details of consultation are contained at Appendix C.
11. ENVIRONMENTAL CONSIDERATIONS

The following environmental considerations are covered in this section.

1. Aircraft Noise Metrics and ANEF / ANEC
2. Airspace
3. Flood and Stormwater
4. Vegetation
5. Flora and Fauna
6. Hazardous Substances / Dangerous Goods
7. Soil and Groundwater
8. Surface Waters
9. Waste
10. Air Quality
11. Noise
12. Archaeology and Heritage
13. Sustainability
14. Carbon Accounting
15. Sustainable Development

11.1. Aircraft Noise Metrics And ANEF/ANEC

11.1.1. Introduction

This is a peer review (not new modelling) of existing modelling work completed as part of the Draft Master Plan 2010. We note that volumes of aircraft traffic and aircraft configurations have not altered materially since 2010 and hence not changed the modelling outlook.

An aircraft noise impact analysis for Whyalla Airport has been conducted based on the current and forecast movements associated with the RPT and GA aeronautical activities. The current aircraft movement numbers could be considered static, at collectively 6500 movements per annum. The current noise impacts generated by Whyalla Airport operations would be generally consistent with the levels experienced over recent years. The study period for this noise impact analysis is based on a 5 year period from 2008 to 2013 which examines the passenger and aircraft movement forecasts.

The noise modelling analysis performed indicate that no identifiable changes to the aircraft noise coverage have occurred over the study period, and while the operational profile of the Airport remains as per the current aircraft activity, no increase in noise impacts is envisaged. As the passenger movements are predominantly provided by REX's SAAB 340B, the major component of localised noise impacts will be associated with the RPT movements of this aircraft, so any increase in the noise profile will be generated by a noticeable increase in RPT movements rather than significant increase in GA activity, which is not envisaged in the short to medium term.

The Master Plan forecasts show short to medium term increases from the current 70,000-75,000 pax to accommodate 100,000 per year, roughly a 30% increase in passenger throughput by 2021. This represents a maximum aircraft movement growth of approximately 1,000 movements per year, or on average up to 3 additional movements per day. This increase in the daily RPT activity would have a negligible effect on aircraft noise increases in relation to the Whyalla community.

The longer-term forecast based on 140-150,000 pax per year and the possible introduction of Dash8-Q400 and/or ATR72-500/600 aircraft would alter the noise coverage based on the current model extent. Larger aircraft types generally increase the noise impact based on single event movements. If the daily movement count was to be retained based on the current REX Airlines schedule but replaced with Dash8-Q400 type operations to accommodate the increase to 140-150,000 pax then a noticeable, but not significant, additional aircraft noise effect would, in all likelihood, be experienced.

In simple terms, until there is a substantial increase in current movements, or an upgrade change to the aircraft flight operations at Whyalla Airport, the current and short to medium term forecast aircraft noise profile will not change.
11.1.2. Current Movements

Statistically the Whyalla Airport aircraft movement volumes are considered reasonably stable from 2008 to 2013, at 6000 to 6500 movements per year. This stability is supported by the percentage breakdown of the RPT and GA activity, with the RPT movements comprising 40%-45% of all movements over the 2008-2013 period.

In addition, the aircraft types for both GA and RPT movements have also remained static and in terms of the greater contributor to noise environment around Whyalla, the SAAB 340B, which comprises on average 8 movements per day, the operation has remained consistent in terms of movements over the study period.

Furthermore, aircraft movement statistics for both the main runway and cross runway activity indicate that there is no applicable change to the average approach and take-off figures. This is supported by Bureau of Meteorology wind analysis data for Whyalla Airport which reflects consistent wind directions and seasonal ranges that would normally impact on aeronautical activity.

Aircraft Ground Operations

Aircraft ground operations can be a significant contributor to the noise impact experienced by communities around Airports. Aircraft engine run up, taxiing and initial take-off run operations can create substantial noise impacts at ground level, particularly to areas immediately outside of the Airport boundary and in close proximity to the aircraft activity.

Whyalla Airport aircraft ground operations in relation to movement area activity and engine run-ups have remained static over the previous 5 years. No infrastructure modifications have been made to the Airport movement area, and are unlikely in the short to medium term. Developments such as parking aprons, run-up bays, turning nodes and runway ends are indicators of additional aircraft activity and generally increases in operational noise conditions follow.

The unchanged movement area configuration in the short term, coupled with current aircraft variations over the study period, indicate that any changes to the aircraft ground noise profile would be negligible.

The longer-term introduction of Dash8-Q400 type aircraft will require physical modifications to the Airport movement area infrastructure. This will, in all likelihood, increase the noise intensities based on the larger aircraft and the associated ground operations. Appropriate design and construction techniques can be employed to reduce the anticipated increase in aircraft ground noise associated with larger aircraft operations.

Flight Path Design and Planning

The current visual and instrument approach and take-off paths for Whyalla Airport significantly assist in the noise control and migration in relation to the Whyalla district community and neighboring Airport properties. Although the design of the instrument flight procedures has been based mainly on the terrain, obstacle environment and no circling restrictions to the northeast of the Airport, the arrival and departure flight directions are generally conducted primarily to the west of the Whyalla township. This provides a beneficial outcome in relation to noise impacts associated with the flight path movements.

The current visual and instrument flight paths are unlikely to change even with a significant increase in aircraft movements and larger aircraft types. This then provides an advantageous flight path outcome for Whyalla in terms of aircraft noise limitation.
11.1.3. Future Operations

The short to medium term forecast increase in the Whyalla Airport flight operations will not necessarily have a noticeable impact on the associated noise coverage. For example, an increase in movements based on the current aircraft types over the short/medium term would not significantly alter the noise impact experienced by the Whyalla community. The extent of the noise coverage area would not normally change with a minor increase in aircraft movements based on the retention of the current critical aircraft type.

With the introduction of larger capacity aircraft such as the Dash8-Q400, increases in single event noise impacts will be expected, however as larger aircraft mean greater passenger loads, significant increases in aircraft movements to meet the longer term capacities are unlikely, hence mitigating the combined noise impacts associated with busier ports. Larger aircraft that absorb the required passenger capacity increases may actually require less frequent movements, therefore reducing the overall noise footprint impact to the community.

The major factors that will assist in aircraft noise mitigation are as follows:

- advances in aircraft engine technology resulting in quieter aircraft;
- noise reduction considerations in relation to Airport infrastructure design and construction methodologies; and
- larger aircraft that cater for forecast capacity expansion without increases in aircraft movements, and possibly reductions in the required aircraft movements.

Council management strategies aimed at anticipating aircraft noise issues from within the community are as follows:

- monitoring aircraft noise, including anticipated daily peaks, and identifiable changes;
- comprehensively record community noise complaints and note remedial actions, where taken;
- establishing a community forum for consultation and input; and
- promoting the Airport within the community as a valuable asset and necessary local service provider.

As stated, the current and short to medium term forecasts do not appear to be significant enough to alter the existing aircraft noise conditions experienced by the Whyalla community. Consideration should be given to preparing a comprehensive noise study based on a nominal critical aircraft single event movement, as well as an overall ANEF application that reflects the forecast expansion of flight operations at Whyalla Airport.

11.1.4. The Australian Noise Exposure Forecast System

The ANEF computation is based on forecasts of traffic movements on an average day. Allocations of the forecast movements to runways and flight paths are on an average basis and take into account the existing and forecast air traffic control procedures at the Airport which nominate preferred runways and preferred flight paths for noise abatement purposes.

The following factors of aircraft noise are taken into account in calculating the ANEF:

- The intensity, duration, tonal content and spectrum of audible frequencies of the noise of aircraft takeoffs, landings and reverse thrust after landing (the noise generated on the Airport from ground running of aircraft engines or taxiing movements is not included for practical reasons);
- The forecast frequency of aircraft types and movements on the various flight paths;
- The average daily distribution of aircraft takeoffs and landing movements in both daytime (7am to 7pm) and night time (7pm to 7am) hours; and
- The topography of the area surrounding the Airport.
11.1.5. Calculation of the ANEF

The ANEF system combines noise level and frequency of operations to calculate the average noise level at any point along and to the side of the flight path using the following reasonably simple mathematical procedure.

Partial ANEFs are calculated for the frequency of number of night-time and day-time operations of each aircraft type and flight path. These calculations use a value of Effective Perceived Noise Level (EPNL) for each aircraft and takes into account all known annoying aspects in the temporal, frequency spectrum and spatial domain. The EPNL level is obtained by the algebraic addition of the maximum perceived noise level at any instant corrected by noise tonal and duration factors.

The EPNL unit is also used for the international certification of new aircraft. These Partial ANEF values are computed for each significant type of noise intrusion. The total ANEF at any point on the ground around the Airport is composed of all individual noise exposures (summed logarithmically) produced by each aircraft type operating on each path over the period of one day.

These calculated values do not take account of any background noise levels from road or rail activities.

11.1.6. Noise Threshold Levels

The effects of noise can range from minor to very serious depending on the noise level, its duration and the subject’s sensitivity. Noise, by definition being unwanted sound, elicits a wide range of individual responses in the vicinity of airports and the reasons for the differences between individuals are largely socially-based and complex to quantify. Research has indicated however, that, unlike an individual’s reaction, community response to noise impact issues is more predictable.

In the area outside the 20 ANEF contour it is generally accepted that noise exposure is not of significant concern, although there will be some individual exceptions. Within the area between the 20 to 25 ANEF contour, levels of noise are generally accepted to emerge as an environmental problem, and within the 25 ANEF contour the noise exposure becomes progressively more severe. Table 11.1 compares land use to acceptable ANEF contour levels.

It should be noted that the actual location of the 20 ANEF contour is difficult to accurately define. This is because variations in actual flight paths, pilot’s operating techniques, meteorological conditions and topography, all have a largely unpredictable effect on the position of the 20 ANEF contour for any given day.

11.1.7. The Integrated Noise Model

Studies of aircraft noise impacts presented for Whyalla Airport were carried out using the United States Federal Aviation Administration (FAA) approved Integrated Noise Model (INM) Version 6.4. This internationally recognised, computer-based noise simulation model calculates contours from an analysis of the contribution the various defined aircraft and their operations have on the overall noise emissions from the Airport. The resulting noise ‘footprint’ can then be used to assess the relative impacts different aircraft fleets and/or operational procedures have on the surrounding environs. The INM model contains a database of civil passenger and military aircraft along with their performance and typical noise characteristics. Three ANEF scenarios were modeled as part of these studies:

- ‘Base’ forecast for 2029;
- ‘High’ forecast for 2029; and
- ‘Low’ forecast for 2029.

For the Ultimate Capacity ANEC, two scenarios were modeled:

- Ultimate Capacity (ANEC) using 2009 aircraft fleet mix, and
- Ultimate Capacity (ANEC) replacing the smaller S340 with the DHC830.

The numbers for each of these forecasts were scaled from 2009 movement numbers and dependent on assigned aircraft categories. For the 5th scenario in which the S340 is replaced by the larger DHC830, movements were scaled down to accommodate the larger passenger capacity of the DHC830 (Section 2.2).

These scenarios are estimated to be worst-case in terms of potential noise impacts and provide a considerable safety margin for future planning.
Figure 17 – Base ANEF. Apart from a protrusion of the ANEF 20 over public open space to the north and Mullaquana Road to the south, the affected area is contained within the Airport boundary.
Figure 18 – ANEC modelling for the SAAB S340 operated by REX Airlines
Figure 19 – ANEC modelling for the DHC 830 aircraft
11.1.8. Flight Movements

The number of flights operating from Whyalla Airport in the future (forecasts) is discussed in detail in Section 8. The numbers of flights used in the noise modelling were the “Base Case” values for both the 2029 and capacity modelling. These are provided in Table 11.2 and 11.3 respectively.

11.1.9. Fleet Mix

The fleet mix of aircraft operating from Whyalla Airport twenty years or more into the future cannot be defined exactly. At best, the mix of aircraft using the Airport in the future can only be inferred from current fleet mixes and an assessment of the types of aircraft being purchased or manufactured for similar routes and passenger capacities.

The expected fleet mix for RPT and general aviation that were used for the modelling are provided in Tables 11.2 and 11.3, and for the majority of the movements generally reflect the current fleet mix.

11.1.10. Runway Utilisation

Whyalla Airport comprises a two runway layout. The main 17/35 runway is 1686m x 45m and features a spray sealed surface. The runway strength is rated for F50 size aircraft. The 05/23 cross runway is 1408 x 30m and is unrated; this implies it is suitable for unrestricted use by aircraft up to 5700kg maximum all up weight.

Only the main runway has been considered in determining the runway capacity. The reason for this is intersecting runways do not significantly increase capacity as they cannot operate independently; their main purpose is to increase the wind usability of the aerodrome particularly in respect to small aircraft.

11.1.11. Flight Paths

The impacts of aircraft noise will be greatly affected by the flight paths that are used by aircraft approaching the Airport or after takeoff. The flight paths that are used are determined by the runway used (discussed previously) and the destination of the flight. Generally, the tracks used by aircraft have been chosen to limit the impact of noise on surrounding land uses, but within the bounds of operational guidelines and safety standards.

Airport parameters and flight tracks were derived primarily from charts supplied by Airservices Australia. Flight tracks were described in INM, and movements were allocated to these tracks by apportioning movements to runways, and then allocating movements to each runway to the tracks for that runway. The runway allocations were confirmed by Council.

11.1.12. Modelling Results

Maps showing the ANEF for the numbers of aircraft movements expected in 2029 and the ANEC for the ultimate capacity of the Airport are shown in Figures 17 and 18 respectively.
11.1.13. Aircraft Noise Mitigation

The ANEF for 2029 (Figure 17) and the ANEC for ultimate capacity (Figure 18) show that there may be some increase in the residential areas affected by Airport noise with the increased air traffic expected in the future. These impacts will be alleviated to some degree by the gradual replacement of the existing fleet with quieter aircraft.

Whyalla Airport currently operates 24 hours of the day. Conceivably, as growth in movements continues, industry working arrangements will need to be established for the mitigation of aircraft noise impacts. This can occur through consultative meetings with the Airport operators to minimise the impacts on the community.

The long-term land use planning of the Airport and surrounding areas, particularly those associated with the ANEF contours produced at Figure 17 is being addressed by Council. The South Australian Government has commenced a process to implement planning protections in council development plans to ensure that proper account is taken of aircraft noise. This process has been given a priority as little zoning protection recognising the ANEF/AS2021 system currently exists in areas surrounding Whyalla Airport. The State has developed proposals for council development plan inclusions based on Ultimate Capacity ANEC/AS2021 recognition and are presently consulting with the State Department of Planning and Local Government on these proposals.
### Table 11.1 AS2021 Table of Building Site Acceptability Based on ANEF Zones

<table>
<thead>
<tr>
<th>Building type</th>
<th>ANEF Zone of Site</th>
<th>Conditionally Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>House, home unit, flat, caravan park</td>
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<td>20 to 25 ANEF2</td>
<td>Greater than 25 ANEF</td>
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<td>25-30 ANEF</td>
<td>Greater than 30 ANEF</td>
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<td>Less than 20 ANEF1</td>
<td>20 to 25 ANEF2</td>
<td>Greater than 25 ANEF</td>
</tr>
<tr>
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<td>20-35 ANEF</td>
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<td>Public building</td>
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<td>20-30 ANEF</td>
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<td>Commercial building</td>
<td>Less than 25 ANEF</td>
<td>25-35 ANEF</td>
<td>Greater than 35 ANEF</td>
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<td>Light industrial</td>
<td>Less than 30 ANEF</td>
<td>30-40 ANEF</td>
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<td>Other industrial</td>
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</table>

**Notes:**

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 in AS2021 – 2000 may be followed for building sites outside but near to the 20 ANEF contour.
2. Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also Figure A1 of Appendix A in AS2021 – 2000).

There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 7.1 should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3 in AS2021 – 2000.

This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2 in AS2021 – 2000. For residences, schools etc., the effect of aircraft noise on outdoor areas associated with the building should be considered.

In no case should new development take place in greenfield sites deemed unacceptable because such development may impact Airport operations.
### Table 11.2 2029 Movements

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**Note:** Touch go/ circuit operations are counted as two movements. These operations are allocated between Touch go and Circuits at a ratio of 1 : 4. Helicopter Overflights represent Arrivals and Departures. Helicopter Overflights represent Arrivals and Departures. Where figures have been rounded discrepancies may occur between totals and the sums of component items.
### Table 11.3 Ultimate Capacity Movements

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<th>Aircraft</th>
<th>Arrivals</th>
<th>Dept.</th>
<th>Touch / Go</th>
<th>Overflights</th>
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<td>13.8073</td>
<td>184.891</td>
<td>67485</td>
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</table>

*Note: Where figures have been rounded discrepancies may occur between totals and the sums of component items.*
11.2. Airspace

The Federal Minister for Transport can protect the airspace surrounding an Airport in accordance with the directions provided in the Airports (Protection of Airspace) Regulations 1996.

Airservices Australia is responsible for the airspace surrounding Whyalla Airport. Within this airspace it provides aerodrome and approach control services to arriving and departing aircraft.

Airservices Australia also provides services to aircraft transiting the designated control zone in which Whyalla Airport is situated.

These operations are conducted in accordance with published procedures, requirements and air traffic control clearances and instructions.

11.2.1. Obstacle Limitation Surface (OLS)

OLS are a number of reference surfaces in airspace which determine when an object may become an obstacle to aircraft manoeuvring in the vicinity of an Airport during approach or departure. They define protection requirements for the initial and final stages of a flight. During these manoeuvres visibility must be good enough for the pilot to see and maintain visual reference to the Airport and take responsibility for obstacle avoidance and separation from other aircraft.

The objective of OLS is to define a volume of airspace in proximity to an Airport which should ideally be kept free of obstacles that may endanger aircraft in visual operations or during the visual stages of an instrument flight. Even so, the intention is not to restrict or prohibit all obstacles but to ensure that either existing or potential obstacles are examined for their effect on aircraft operations and that their presence is properly taken into account.

Since the OLS are relevant only to visual operations it may be sufficient to ensure that the obstacle is conspicuous to pilots, and this may simply require that it be marked and/or lit. Of course each new obstacle will in some way restrict the freedom of aircraft operations and inevitably contribute to flight path congestion and delays. If an obstacle is located in the approach and take-off areas pilots will need to make adjustments to their normal take-off and landing to make guarantee obstacle clearance. This may mean using less than the full runway length available and may result in significant operational penalties such as fewer passengers, or less cargo or other operational restrictions.

The most stringent requirements apply on the extended centre line of a runway in the approach and take-off areas. Depending on the type of aircraft able to use the runway, the approach and take-off surfaces may extend 15 km from the runway strip end. At either side of the runway strip and the approach surface are two OLS components called the transitional surfaces. These are intended to protect an aircraft which encounters severe cross winds during the final phase of the approach to land and may then drift sideways as the pilot decides to ‘go around’ for another attempt.

There are two, or in some cases three, other surfaces which provide obstacle protection for aircraft circling to land – the inner horizontal surface, the conical surface and/or the outer horizontal surface. Depending on aircraft size and the type of activities catered for by the Airport, their combined effect may extend up to 5.5 km radius of the Airport.
Figure 20.1 – OLS Surfaces
Figure 20.2 – PANS-OPS Surfaces
11.2.2. PANS-OPS

The area directly north of the Airport is zoned Open Space and Residential whilst there are established Rural Residential Zones further to the southeast. To the west of the Airport, open grazing is the dominant activity.

The so-called PANS-OPS surfaces are based on criteria released by the International Civil Aviation Organization (ICAO) in a document named “Procedures for Air Navigation Services – Aircraft Operations” Volume II (document 8168 – PANS-OPS). Aircraft flight paths are accommodated within those unpenetrated surfaces to clear obstacles by a safe margin. All Airports which have a scheduled or regular passenger service or those which allow for “all-weather” operations MUST have such flight paths (procedures).

Aircraft not only fly in fine weather conditions, but also in weather which limits the pilot’s ability to see obstacles or the Airport. In these conditions the pilot must rely on instruments in the cockpit to provide navigation. This is called Instrument Flight and there are rules (I.F.R.) which mandate aircraft operations. Instrument Flight Procedures (IFP) are defined flight paths which guarantee the safety of aircraft operating without visual reference, and these are developed in accordance with the criteria in PANS-OPS. The surfaces created to this standard offer aircraft a minimum clearance from obstacles based on statistics, weather records and aircraft performance characteristics.

For larger ports, departure procedures are created to safeguard all weather departures and to facilitate Air Traffic Control information services. Large aircraft (greater than 5700kg) must also have a safe departure path in the case of an engine failure of the critical engine after take-off. Approach procedure paths guide a landing aircraft to align with the landing runway and generally position the aircraft at a height, orientation and 3D velocity from which the pilot can make a safe visual landing, or, if unsuccessful, will allow the pilot to climb to a safe height to consider the next option.

Manoeuvring to align with the runway can commence as far as 56km from the Airport and forms a horizontal plane which surrounds the Airport at a safe height. Through that surface, individual surfaces descending to the runway or climbing from the runway form channels of safe heights in 3D. Where flight paths cross, the lowest individual surface is ‘critical’ and will ‘cut’ through other surfaces. With many flight paths the resulting surface will be very complex. The modelling of such surfaces can either be as individual surfaces, which are then easier to interpret, or a combined critical surface model, which has complex interactions modelled as a series of contours and intersecting planes. The latter version, although more difficult to comprehend, allows for determination of a single critical height at any particular location.

11.2.3. Building Heights and Other Obstacles

Obstacles in the vicinity of an Airport, whether they be natural or constructed may seriously limit the scope of the Airport’s operations. Most people appreciate that tall structures and Airports are basically incompatible, but they tend to consider only the immediate approach and take-off areas and of structures that are a short distance away. While this is of primary concern, it is equally true that objects up to 56 km from the Airport and apparently unrelated to the runway alignment can affect aircraft approaching or departing an Airport, particularly in poor weather conditions or in instances of ‘One Engine Inoperative’ (engine failure) departures. There are sets of invisible surfaces used to define these airspace requirements and to assess the significance of an existing or proposed objects. These surfaces are called the Obstacle Limitation Surfaces (OLS), and the PANS-OPS Surfaces which are shown at Figure 20.

OLS are a number of reference surfaces in airspace which determine when an object may become an obstacle to aircraft manoeuvring in the vicinity of an Airport. They define protection requirements for the initial and final stages of visual flight. Protection is normally either by identification or exclusion/limitation of obstacles. During visual manoeuvres visibility must be good enough for the pilot to see and maintain visual reference to the Airport and take responsibility for obstacle avoidance.

The PANS-OPS surfaces, by contrast, protect aircraft in all-weather operations and specifically when the ambient conditions do not allow the pilot to see the runway or manoeuvre to avoid obstacles. Because of this limitation, NO intrusion is acceptable to the PANS-OPS surfaces under ANY condition.
11.2.4. Hazardous Lighting

The source of light emissions in close proximity to the Airport is a potential source of concern to safe aircraft operations for two main reasons. Firstly, if bright lights, such as floodlights, emit too much light above the horizontal plane, there is the possibility that a pilot can be dazzled and momentarily be unable to read the flight deck instruments. Secondly, lights might create a pattern that looks similar to approach or runway lighting and this might cause confusion for a pilot unfamiliar with the Airport. Street lighting, security lighting and illuminated sports grounds are examples that require special consideration. The problem can often be corrected by providing suitable screening or shielding of the light source.

CASA has powers to impose requirements on developers of a controlled activity (artificial lighting) to deal with lights that could be considered to cause confusion, distraction or glare to pilots and potentially endanger safe aircraft operations by prevention of clear reception of instruments and air navigation lights.

It is preferable if the lighting design can take account of these issues in advance, rather than requiring modification or the extinguishment of the light source after installation is complete.

Local authorities’ planning schemes should recognise the potential hazard of inappropriate lighting by specifying appropriate performance standards for lighting installations in proximity to Airports.

Developers/designers will need to take advice upon the zones of restricted lighting at Whyalla Airport in accordance with the guidelines issued by CASA - Lighting in the Vicinity of Aerodromes - Advice to Designers.

11.2.5. Public Safety Zones (PSZ)

CASA is considering a preference for adopting a European model of aircraft safety landing zones to be known as Public Safety Zones (PSZs).

These PSZs would be located at the ends of Airport runways and would extend some significant distance, dependent on runway capacity and future intended use, thereby involving land both on and off the airfield.

The intent of the PSZs is to minimise the intense use of this land within the zone. State and Local Governments are thereby advised that if applicable, they need to plan the re-zoning of this land from what may be regular high level grouping of people for lengthy periods in nature such as residential to other less populated uses.

11.2.6. Navigation Aids and Aircraft Operations

Whyalla Airport, in consultation with the relevant authorities including CASA and Airservices Australia is cognisant of the need to ensure that any development on the Airport must be carried out and constructed in a manner that does not compromise the efficiency of navigation aids or the operational capability of aircraft using the Airport.

In that regard all developments will be required to give due and proper consideration where applicable to the following issues:

- Navigation Aid infrastructure safety zones and signal direction;
- Minimising sun glare from reflective surfaces;
- Wind turbulence impacts during construction and of the finished facility;
- Height limitations in respect of OLS and PANS-OPS surfaces;
- Height limitations including dishes and aerials;
- Thermal plumes or misting from roof vents; and
- Lighting that may illuminate above the horizontal.
11.3. Flood and Stormwater

A broad flood risk study was completed by Australian Water Environments (AWE) in 2009.

Council has commissioned a specialist consultant to undertake more accurate floodplain mapping for the area surrounding Whyalla. This has followed more accurate digital terrain modelling carried out for the city and environs as a whole.

There is on-going hydrology work being completed for the urban area itself and this will then need to be incorporated into the overall flooding information, but for practical purposes, this should not greatly alter the flooding predictions for the Airport precinct.
The detailed mapping suggests that the Airport buildings will be affected by both the 1 in 20 year and the 1 in 100 year flood events. Majority of the Airport land falls within the 0.11–0.25 m and 0.26–0.50 m flood depth ranges in the 1 in 20 year flood would reach 0.51 – 1.0 m in a 1 in 100 year flood event. This will need to be considered for the terminal redevelopment works.
Figure 22 – AWE mapping for the 1 in 100 year
11.4. Vegetation

Whyalla Airport underwent a vegetation assessment in 2010 due to possible further development. The unoccupied Crown land surrounding the Airport contains native vegetation consisting of low open Myall (Acacia papyrocarpa) woodlands, which occur naturally throughout the region, with understorey of bluebush (Maireana spp.) and/or saltbush (Atriplex vesicaria). Myall that may have been present appear to have been cleared from the vicinity of the Terminal and runways with only bluebush, saltbush and various other chenopods remaining.

Myall and Sugarwood and considered to be of high conservation value. The Myall woodland habitat extends across large areas of the Airport with the exception of the Terminal/apron area, runway strips and runway approaches. Habitat composition is continuous with that found in the pastoral properties situated beyond the northern, western and southern Airport perimeter. It has been suggested that the health of the habitat inside the Airport boundary has improved due to the exclusion of grazing livestock over many years.

The soil is composed of a sandy alluvial soil over a sodic clay base, which is inherently difficult for vegetation growth. All areas of the Airport have weed disturbance, there are two main weeds spread across the Airport. The first is Wards Weed established throughout Whyalla and is naturalised. The second is African Boxthorn, which can be brought under control within a few years.

General removal or clearance of the native vegetation described above would require consent under the Native Vegetation Act 1991. Clearance of native vegetation for erection of a building or structure approved under the Development Act 1993 or within 20 metres of a dwelling is exempt from requiring approval under the Native Vegetation Act 1991.
11.5. Flora and Fauna

The reserve land surrounding the Airport contains native vegetation consisting of low open Myall (Acacia papyrocarpa) woodlands which occur naturally throughout the region, with an understorey of bluebush (Maireana spp.) and / or saltbush (Atriplex vesicaria). Myall that may have been present appear to have been cleared from the vicinity of the terminal and runways, with only bluebush, saltbush, and various other chenopods (low lying salt and drought tolerant species) remaining. There are some large Eucalyptus trees within the car park area of the Airport site. There is also a large tree adjacent to the St John Air Ambulance Services memorial on the southern side of the car park.

The Myall woodland habitat extends across large swathes of the Airport with the exception of the terminal / apron area, runway strips and runway approaches. Habitat composition is assumed to be continuous with that found in the pastoral properties situated beyond the northern, western and southern Airport perimeter. It has been suggested that the health of the habitat inside the Airport boundary has improved due to the exclusion of grazing livestock over many years.

General removal or clearance of the native vegetation described above would require consent under the Native Vegetation Act 1991. Clearance of native vegetation for the erection of a building or structure approved under the Development Act 1993 or within 20 metres of a dwelling is exempt from requiring approval under the Native Vegetation Act 1991.

<table>
<thead>
<tr>
<th>Endemic Plant Species</th>
<th>Endemic Bird Species</th>
<th>Exotic Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oswald’s Wattle</td>
<td>Australian Bustard</td>
<td>Wards Weed</td>
</tr>
<tr>
<td>Western Myall</td>
<td>Australian Raven</td>
<td>African Boxthorn</td>
</tr>
<tr>
<td>Bullock Bush</td>
<td>Black-faced Cuckoo-shrike</td>
<td>Fox</td>
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<tr>
<td>Bladder Saltbush</td>
<td>Mulga Parrot</td>
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<tr>
<td>Wallaby Grass</td>
<td>Crested Pigeon</td>
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<tr>
<td>Native Pigface</td>
<td>Masked Woodswallow</td>
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<tr>
<td>Ruby Saltbush</td>
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<tr>
<td>Spotted Emubush</td>
<td>Mistletoe Bird</td>
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<tr>
<td>Broom Emubush</td>
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<tr>
<td>Opposite leaved Emubush</td>
<td>Magpie-lark</td>
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<tr>
<td>Sheep Bush</td>
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<td>Nankeen Kestrel</td>
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<tr>
<td>Scented Matrush</td>
<td>Spiny-cheeked Honeyeater</td>
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<tr>
<td>Australian boxthorn</td>
<td>Singing Honeyeater</td>
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<tr>
<td>Black Bush</td>
<td>Tawny Frogmouth</td>
<td></td>
</tr>
<tr>
<td>Pearl Blue Bush</td>
<td>Variegated Fairy-wren</td>
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</table>
Whyalla Airport is surrounded by agricultural, light industrial and rural residential developments. The surrounding areas provide a habitat for a number of bird, mammal and marsupial species that to date have not been a significant problem for aircraft operations. Land use, development, the design of facilities and landscaping, whether on-Airport or in the immediate environs, should not compound the potentially serious risk associated with wildlife attraction and bird strike.

11.7. Hazardous Substances / Dangerous Goods

The main hazardous substances storages are two underground storage tanks (UST) – one holding Jet A1 and the other Avgas – and an associated fuel hydrant (Jet A1), hydrant cart (Jet A1) and bowser (Avgas) comprising the fuel farm to the south east of the terminal. Ownership of the current fuel farm, including another three decommissioned underground storage tanks, was transferred from ExxonMobil to Council in 2004.

Evidence suggests that integrity tests have not been conducted on these tanks since Council took ownership in 2004. The last known integrity test of the current Jet A1 and Avgas USTs was undertaken in 2003 prior to transfer to Council ownership. MassTech Australia (2003) reported both tanks as having passed the integrity test and the entire system as having met the USEPA requirements for leak detection.

The diesels above ground storage tanks (AST) observed at the maintenance compound and powerhouse are of steel construction. Secondary containment, to the standard required by the EPA Guidelines for Bunding and Spill Management (EPA, 2007), should be provided.

Minor quantities of herbicides and chemicals for septic system maintenance are stored in the maintenance compound herbicide shed, which was appropriately bunded but had no spill station.

The Country Fire Service maintains its own store inside the maintenance compound for fire fighting foam and general equipment.

A cupboard for storage of minor hazardous substances and one spill station was situated inside the hangar.

<table>
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<th>Endemic Bird Species</th>
<th>Exotic Species</th>
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<td>Coast Daisy-Bush</td>
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<tr>
<td>Prickly Knavel</td>
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<tr>
<td>Desert Senna</td>
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<tr>
<td>Broad-leaf Desert Senna</td>
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<tr>
<td>Sticky New Holland Daisy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Twinleaf</td>
<td></td>
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</tr>
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</table>
Any proposed development will need to consider separation distances from the flammable goods storage compound (adjacent to the terminal) in accordance with the Dangerous Substances Act 1979.

Several buildings contain asbestos and Council has maintained an up-to-date asbestos register as per the requirements of the Occupational Health, Safety & Welfare Act 1986. An asbestos removal program for the terminal building was completed in 2007 (The Corporation of the City of Whyalla, 2008).

11.8. Soil and Groundwater

The dominant geological formation at the Airport comprises undifferentiated Quaternary profiles consisting of thin, red-brown sand and clay soil veneers (including Loveday Soil and Callabonna Clay) over locally exposed Bakara Soil and Ripon Calcrete. These undifferentiated Quaternary deposits are interspersed with Holocene fluviatile gravel, sand, and clay of modern drainage channels (Department of Mines and Energy, 1983).

Taken in its regional hydrogeological context, the Whyalla area occupies the lower end of a groundwater flow path which extends from Precambrian aged rocks of the Gawler Craton to the eastern margin of the Gulf St Vincent. Groundwater is found in the fractured rock aquifer and as a shallow watertable aquifer. Recharge is expected within the ranges as well as direct recharge. The relief is generally low near the coast, with expected comparably low hydraulic gradients and groundwater levels naturally close to the ground surface on the flats.

A search of the Primary Industries and Resources South Australia (PIRSA) South Australian Resources Information Geoserver (SARIG) was undertaken to identify registered boreholes within the vicinity of the site. Although no bores were located within the Airport itself, the DME (1983) geological map indicates that soils at the borehole locations are likely to be generally similar to the Airport (i.e. undifferentiated Quaternary profiles). Soils generally consisted of silty sand, clayey sand, overlying clayey gravel, and gravelly clay.

Groundwater quality in the area is highly saline. The Groundwater Resource Map of South Australia indicates the groundwater underlying the area to have a total dissolved salt (TDS) concentration greater than 12,000 mg/L, which is considered unsuitable for stock, domestic or irrigation purposes. Groundwater quality in the Basement Aquifer is poor throughout the Eyre Peninsula with the only good quality water found in small shallow sedimentary basins. The standing groundwater level in registered bores located near the northern boundary of the Airport is approximately 3m below ground level.

11.9. Surface Waters

The Airport site is generally flat and stormwater drainage largely consists of open surface drains and swales. Overland flood waters flow from the Middleback Ranges across the Airport towards the coast in an east-north east direction (Janine Hugo, pers. comm.). The Airport buildings drain into the car park and other roads where the surface water is drained into a side entry pit in the north-west corner of the car park where it soaks into the ground as there is no underground stormwater service. There is no pre-treatment of stormwater from hard-surface areas.

The last major flood event was in 2007 following a 1:5 ARI at Whyalla Airport and a 1:20 ARI in the adjacent Middleback Ranges, of which the latter caused most of the damage. Flood waters inflicted significant damage to airside roads, fences, drains and runway shoulders and Rwy 17-35 was unserviceable for more than 2 days. Erosion up to 300mm deep was observed in the worst-affected areas and there was substantial scouring around the exit from the 700mm pipe beneath Rwy 17-35 (Janine Hugo, pers. comm.).

A broad flood risk study was completed by Australian Water Environments in 2009.

Council recently commissioned a specialist consultant to undertake more accurate floodplain mapping for the area surrounding Whyalla. This has followed more accurate digital terrain modelling carried out for the city and environs as a whole.

There is on-going hydrology work being completed for the urban area itself and this will then need to be incorporated into the overall flooding information, but for practical purposes, this should not greatly alter the flooding predictions for the Airport precinct.
Stormwater treatment requirements for the future development of the site would be stipulated through the development approval process in accordance with the Development Act 1993 and the Council Development Plan. The State ‘Guidelines for Urban Stormwater Management’ (Planning SA, 2002) outline objectives for urban stormwater management at a site level. These guidelines encourage the containment and management of stormwater pollutants within the site to minimise export to downstream systems as well as the on site retention and use of stormwater using safe means (e.g. rainwater tanks).

The Council Development Plan outlines various policies for stormwater management to encourage the onsite re-use and treatment of stormwater to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.

11.10. Waste

11.10.1. Sewerage

The Airport site currently has no sewer service. There are two known septic systems on the Airport, adjacent to the Terminal Building, and a third suspected system situated behind the maintenance compound toilet block. Of the known septic systems, one is substantially aged, whilst the second is a new aerobic system constructed in 2009.

The old system accepts wastewater from the hangar, maintenance compound (in the absence of a third system inside the maintenance compound) and Aeroclub building, and releases effluent into soakage pits.

The new aerobic septic system receives wastewater from the Terminal Building and generates effluent used to irrigate 266m² of landscaped gardens in front of the Terminal.

11.10.2. Solid Waste

Council collects solid waste on a regular basis from the Airport for disposal to a landfill licensed under the Environment Protection Act 1993. There are no recycling programs in place (Janine Hugo, pers. comm.).

11.11. Air Quality

There are no known air quality issues with the exception of occasional dust generation.

11.12. Noise

There have been no documented noise complaints received by Council relating to aircraft or ground-based noise (Janine Hugo, pers. comm.).

There were no observed ground-based sources of high noise. Local residents are currently well buffered from the terminal area and other Airport infrastructure.

11.13. Archaeology and Heritage

There are no recorded or State/local listed sites of built or archaeological heritage significance at Whyalla Airport (Janine Hugo, pers. comm.). This was confirmed through a search of the Whyalla Airport real property description (Deposited Plan 47141 Allotment 124, CT 5421/156) against the Australian Heritage Places Inventory (AHPI). The subject site, or any part of the Subject Site, is not a State Heritage Place.

There are no State Heritage Places adjacent to the Subject Site.

The nearest heritage place is the Whyalla - Iron Knob - Iron Baron Area, listed on the Register of the National Estate on 18th April 1989, covering approximately 65,000 hectares and lying approximately 1 km west of Whyalla. On the Register of the National Estate website (2009) the area is described as containing “the best example in Australia of representative western myall-saltbush-bluebush (ACACIA PAPYROCARPA-ATRIPLEX spp- MAIREANA spp) vegetation and falls within the most south-eastern distribution of this association. It is an important reference area for conservation pastoral management of this vegetation type and is an area where regeneration is most likely to occur of western myall and the associated shrub species.”
The area is also an Australian centre of richness for soil lichens and a centre of distribution of ant species”. The southeast corner of this area is adjacent to the western corner of the Airport (Department of the Environment, Water, Heritage and the Arts, 2009).

Council consults actively with the local aboriginal community prior to any developments. A local independent heritage consultant undertakes surveys and research and also facilitates the consultation process with the local aboriginal community in the event of land development (Janine Hugo, pers. comm.).

Whyalla Airport is on freehold land and there are no known native title issues.

11.14. Sustainability

An energy audit was conducted on all major facilities approximately 3-4 years ago.

No water audit has been conducted at the Airport to date.

11.15. Carbon Accounting

The Airport’s carbon footprint has yet to be calculated. The Airport facility is of a size which is unlikely to trigger mandatory reporting thresholds under the National Greenhouse and Energy Reporting Regulations 2008.

11.16. Sustainable Development

Council has implemented a number of broad environmental sustainability programs (some of which are in evidence at Whyalla Airport) including:

- Energy efficient housing;
- Solar heating rebate;
- Stormwater capture/reuse;
- Effluent capture/reuse;
- Solar thermal generation;
- Biodiversity (with the Natural Resource Management Board);
- Waste management and
- Eco city program.

The Council Development Plan was amended in November 2000 to incorporate sustainable design principles.
12. ENVIRONMENTAL MANAGEMENT

12.1. Introduction

The Airport is bound to the west with vacant unoccupied Crown land which consists of native vegetation and low-lying scrub. The land is open to the public for passive recreational uses (walking, equestrian etc). There is urban farmland on the north-eastern side of the Airport and rural residential land to the south. On the other side of the Lincoln Highway land uses are general commercial, pastoral with some urban farming.

12.2. Background

As a manager of a large area of land, the Airport operator has a legal and moral requirement to effectively manage broad environmental issues. Aspects such as flora and fauna, soil and groundwater quality, air and noise emissions, hazardous substance storage, waste and resource consumption contribute to the environmental performance of a company.

The following Commonwealth and State environmental legislation is relevant to the Airport.

- Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth).
- Environmental Protection Act 1993 and relevant policies:
  - Environment Protection (Noise) Policy 2007;
  - Environment Protection (Water Quality) Policy 2003; and
- Development Act 1993.
- Public and Environmental Health Act 1987.

The following environmental management targets have been identified as high priority for Whyalla Airport.

- Development of an EMS.
- Development of a flood risk model.
- Implementation of risk management.
- Development of a wildlife hazard management plan.
- Development of an environmental monitoring plan.
- Completion of a baseline environmental site assessment(s) for high-risk sites.

12.3. Environmental Management

A number of priority areas will be addressed to ensure environmental best practice. The following sites on Airport pose the highest risk to the environment:

- Fuel farm;
- Apron areas;
- Fire training compound;
- Maintenance compound; and
- Septic system locations.
A comprehensive program will be developed to ensure that fuel storage, both aboveground and underground, complies with the requirements of the relevant Australian Standard. Other requirements for fuel management include implementation of a tank integrity testing program as well as establishing systems for effective inventory control and occupational safety.

A number of locations including areas of fuel storage and the location of septic systems pose a high risk to soil and groundwater quality therefore baseline environmental site assessments will be required. These will be undertaken using a risk management approach and the investigations will be aligned with the Assessment of Site Contamination National Environment Protection Measure (NEPM).

12.4. Environmental Management System

An Environmental Management System (EMS) will be developed to align with the requirements of AS/NZS/ISO 14001 (Environmental Management). Integral to an EMS will be the adoption of a Sustainability Policy as the foundation of the management system. The environmental management system will be implemented at Whyalla Airport to ensure that risks are identified and managed, monitoring and management actions are implemented and a framework for continuous improvement is provided.

An example of an environmental management plan to manage surface water issues will include development of objectives and targets relating to surface water management, reviewing the flood risk modelling, implementing identified actions to mitigate the highest risks on Airport and implementing a stormwater quality monitoring program as required.

12.5. Environmental Monitoring

The development of an environmental monitoring plan and site environment register will be developed as part of the EMS. A site environment register will identify areas of environmental significance, areas of environmental monitoring and include information on contamination status of sites. This will also be used as a planning tool for future development. An environmental monitoring plan will facilitate data collection and provide quantitative data for any compliance monitoring. Of particular importance will be undertaking flora and fauna surveys across the Airport to document and identify the composition of the native chenopod habitat.

12.6. Wildlife Management

Management of an Airport requires wildlife management practices to balance the dual interests of aviation safety and wildlife conservation. Kangaroos at Whyalla Airport were confirmed as the major wildlife management issue. Two kangaroo strikes with aircraft were recorded for 1998 and 2002. This was the catalyst for a major fencing upgrade. ‘Shoo Roo’ stations have been installed at regular intervals along Runway 17/35 with mixed results and accompanying technical problems (Janine Hugo, pers. comm.).

There are two sites in the vicinity of the Airport that have the potential to attract birds – a wastewater treatment plant (with settling lagoons) and piggeries in the ‘urban farming’ zone to the southeast of the Airport. Anecdotally, there has been no observed link between these sites and bird numbers or bird strikes on the Airport (Janine Hugo, pers. comm.).

12.7. Wildlife Hazard Management Plan

Effective wildlife management is required to maintain the safety of an Airport. In order to ensure that wildlife management practices are implemented, a comprehensive Wildlife Hazard Management Plan should be developed. The Plan should also be aligned with the template developed by the Australian Aviation Wildlife Hazard Group. Underpinning the Plan should be a risk assessment to identify the high risk wildlife species which will inform the priority management actions. It is also important that the Wildlife Hazard Management Plan should be integrated into other systems such as a Safety Management System.
13. LAND USE PLANNING

13.1. Introduction

The land use planning provisions of this Master Plan take into account the planning and legislative framework outlined in Section 6.

This Master Plan recognises that Whyalla Airport is an important regional aviation facility for South Australia with considerable potential for future development. It seeks to ensure that Airport development proceeds in a manner which is compatible with existing adjacent land uses and development policies whilst ensuring that the operational integrity and economic viability of the Airport for all aviation and support sectors is not compromised.

By appropriately positioning the land within its regional economic context, Council can generate an economic zone within and around the Airport that balances the core aviation income, passenger-aligned revenue streams (car rental, car parking, terminal retail), and more indirect uses as such as land development.

Council has zoned the Airport land as a mixture of Airfield Land (AF) and Commercial (C) under the Whyalla Development Plan. On the whole, this is a sensible and appropriate zoning arrangement that recognises the commercial opportunity of the land that fronts the Lincoln Highway, and also protects the airfield and terminal areas.

We are of the view that the land fronting Lincoln Highway between Mullaquana Road and Barngarla Avenue should be identified as a key strategic commercial / retail / accommodation development opportunity. It is ideally located at the ‘airfront’ intersection of the Airport land and surrounding township at a distance that has no impact on the current and future airfield operations.

We note that Council has received approaches from developers interested in bulky goods and motel / worker accommodation. There is adequate precedent for these forms of development at Airports across Australia; they provide an ideal transitional use that leverages from high volume vehicular traffic, large flat land areas, and passenger traffic.

We have broken the AF & C zonings down into the following precincts (‘policy areas’ under a Development Plan Amendment).

These precincts areas are:

- Airfield;
- Terminal and Carparking;
- Aeronautical;
- Commercial / Business;
- Commercial / Business (Entry);
- Commercial / Business (Highway);
- Equestrian and
- Airport Environs.

13.2. Airport Zone (Whyalla) Structure Plan

The vision for Whyalla Airport is to position itself as the region’s ‘gateway’ through a proactive improvement in terminal and ancillary infrastructure, aggressive pursuit of increases in passenger traffic, and the integration of the Airport with the surrounding business and commercial development areas.

The Airport Management’s ambition is to become a vibrant and attractive gateway infrastructure asset for the community of Whyalla and the surrounding region.
The purpose of this Structure Plan is to provide a framework for the development of the various Airport development precincts in a way that delivers an improved amenity, consistency in design quality and aesthetics, and certainty for third parties wishing to develop and / or occupy premises at the Airport.

It is Council's intention to provide the opportunity for appropriately planned development within the Airport which will best suit the region's demand but remain aesthetically complementary to the surrounding community.

We have proposed the following Land Use Planning policies to apply under the AF & C zonings. These policies consist of Objectives, a Desired Character statement and Principles of Development Control. They provide general guidance as to the forms of development envisaged within the overall zone and provisions to further guide such matters as the design and scale of development.

The various precincts we have proposed above will contain additional policies specific to each precinct. Regard will be given to both the overall zone policies and the more specific precinct policies when assessing whether or not to approve a development proposal.

13.3. Precincts

For each precinct, the Master Plan contains Objectives, Desired Future Character Statements, and Principles of Development Control which include Envisaged and Non-Complying uses in a similar vein to that in existence under the State Planning regime. Any uses not listed as envisaged or Non-Complying are able to be considered on “Merit” and must undergo an agency referral and public consultation process prior to a decision being made on whether to approve the proposal or not.

The detailed Precincts description (including land uses) and design and development controls are contained at Appendix D and E. This way they are readily imported by Council for the purposes of a Development Plan Amendment.

Council Officers will prepare the Development Plan Amendment such that the Development Plan will ultimately set detailed policy for development within the relevant zones and policy areas so that it is consistent with the intent of this Master Plan.
13.4. Other Documents Review

We have reviewed the various reports that have been prepared for Council over recent years.

<table>
<thead>
<tr>
<th>Author / Title</th>
<th>Date</th>
<th>Overview</th>
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<tbody>
<tr>
<td>Hudson Howells - <em>Discussion Paper – Whyalla Airport Governance Model and Development Opportunities</em></td>
<td>March 2012</td>
<td>A high level and fairly comprehensive review of the Airport’s operational and commercial challenges / opportunities. Key findings are for Council to consider commercialising the Airport by leasing to a third party or retaining the asset and development of land and other revenue streams. Identifies the common regional port inflexion point of how to fund infrastructure upgrades required by larger aircraft. Suggests an upgrade cost of $7-15 million for airside and terminal upgrades in the period 2015-18. Considers the Airport in the broader SA industry context and Council’s broader financial position.</td>
</tr>
<tr>
<td>Adelaide Airport Limited - <em>Draft Master Plan</em></td>
<td>December 2010</td>
<td>A half completed draft plan that appears to be focussed on complementing State and Local land use planning while ensuring ongoing operational airside viability. No real reference to commercialisation. Identifies the Airport’s economic benefit $2.1m to local area, $4.7m Statewide. Makes a detailed effort at quite specific land use planning. Somewhat incomplete and now out of date.</td>
</tr>
<tr>
<td>PKF – <em>Corporate Financial Health Check</em></td>
<td>December 2012</td>
<td>A review of whole of Council financial position (not just Airport), benchmarked to other local councils. Council has been very focussed on debt reduction and hence has been underinvestment in infrastructure capex ($10.4m backlog) – and even at that level it has been in excess of cash generation from these assets. Council identifies as one of the most unsustainable in SA. Council’s Infrastructure Asset Management Plans are inadequate and require a detailed assessment of the ‘as is’ condition and useful life of the assets along with timing of capex forecasts based on a risk analysis. Airport requires pax forecasting. Council needs to formally prioritise its infrastructure spending. Some asset disposals should be contemplated.</td>
</tr>
<tr>
<td>JB Audit &amp; Admin Services – <em>Independent TSP Audit</em></td>
<td>December 2012</td>
<td></td>
</tr>
<tr>
<td>Whyalla City Council - <em>Draft Development Plan Amendment (Statement of Intent) Airport Commercial and Rural Living</em></td>
<td>2009</td>
<td>Rezoning of part of Airport to Commercial and Rural Living <em>(now in place)</em>. States that Council will prepare a Master Plan to include consultation with government agencies.</td>
</tr>
<tr>
<td>Author / Title</td>
<td>Date</td>
<td>Overview</td>
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<tr>
<td>Whyalla City Council – RDA Fund Round Three Application (Terminal Upgrade)</td>
<td>December 2012</td>
<td>A formal RDA application for the terminal expansion. The plans and costings are indicative only. This is a top regional priority and prospects for success are strong. 3 priorities: capitalise on opportunities to upgrade Airport for benefit of community as a ‘gateway’, increase Whyalla’s role as an entrepot for resources and freight / transport, maintain and upgrade infrastructure as per Asset Management Plans. $250,000 Council funds committed.</td>
</tr>
<tr>
<td>Hudson Howells – LGASA Regional Airports Project</td>
<td>February 2012</td>
<td>Looks at 5 regional SA ports but not Whyalla. Identifies issues however that apply to Whyalla, in particular the common regional port inflexion point of how to fund infrastructure upgrades required by larger aircraft. Recommends a central management system to provide skilled staff and ensure quality of operations. Contemplates the sale or lease of assets to third parties.</td>
</tr>
<tr>
<td>Financials (5 year average to 30 June 2011)</td>
<td></td>
<td>Capex has been decreasing, strong (sustainable?) rates growth, debt funded investments in 2009.</td>
</tr>
<tr>
<td>Airport Manager - Whyalla Aerodrome Information Booklet</td>
<td>January 2013</td>
<td>Detailed description of the ‘as is’ aerodrome (user manual)</td>
</tr>
<tr>
<td>CASA – Aviation Safety Report</td>
<td>March 2011</td>
<td>Formal technical safety inspection report. Found generally well maintained operated in accordance with CASA safety regulations and standards and appropriate systems in place. Some minor amendments to the Manual of Operating Standards (‘MOS’) were required. Runway ponding was identified and consideration of an upgrade recommended, reseal recommended (planned in 2011), a range of other minor operational matters also identified.</td>
</tr>
<tr>
<td>Airport Manager - Actual and Budget Financials 2009/10 – 2012/13</td>
<td>January 2013</td>
<td></td>
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<tr>
<td>Airport Manager - Actual Pax Data 2007/08 – 2012/13</td>
<td>January 2013</td>
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<tr>
<td>Aerodrome Design P/L – Pavement Evaluation</td>
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<tr>
<td>AVDATA Aircraft Movement Data</td>
<td>January 2013</td>
<td></td>
</tr>
<tr>
<td>LGA Mutual Liability Scheme – Annual Technical Inspection</td>
<td>March 2012</td>
<td></td>
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</table>
These documents give comprehensive and consistent key directions for Council, and provide a sound base for the ongoing work to be completed. The findings are somewhat consistent with what we have found at many other regional Airports, most particularly the industry wide issue of how to fund infrastructure upgrades required through passenger volume growth, larger aircraft, and regulatory changes.

As a ready reference point, the key issues identified from the documentation are as follows:

- Under-funded capex in recent years with minimal revenue to support this;
- Lack of strategic focus on the commercialisation of the Airport;
- The Airport Master Plan and re-engagement with Defence are top regional transport priorities for the Whyalla and Eyre Peninsula region;
- An Asset Management Plan is required for the Airport and this will need a detailed assessment of the ‘as is’ infrastructure and useful life forecasts, passenger and aircraft usage forecasts, capex forecasts, risk analysis;
- The land use zoning already supports commercial and rural living uses, which is an encouraging framework for land development plans; and
- Council more broadly has genuine financial challenges and hence the Airport must be commercialised, either through retention and careful revenue generation, or sale / lease to a third party.
14. IMPLEMENTATION & ADMINISTRATION OF MASTER PLAN

This Master Plan has a forecast timeframe of 15 years to 2028. Given that the Whyalla and broader regional economy and the passenger volumes, are subject to material variations in high profile industry projects, we recommend that the Master Plan is reviewed every five years (not a full rewrite).

We also recommend that the Master Plan is reviewed earlier in the event of any major alterations to the Whyalla Development Plan or any significant change in influencing factors such as Defence activities or industry activity.

Any review should include input from Regional Development Australia and other key stakeholders such as airline operators and major industry.

Council’s Town Planning Department will conduct the implementation of the Master Plan in so far as it relates to planning policy. Council’s Engineering & Infrastructure Department will undertake other aspects of the Master Plan implementation. The Airport Security & Advisory Committee will provide relevant operational advice and act as a conduit between user groups and Council Management.

Further documents to follow from, and support the implementation of, this Master Plan are the Asset Management Plan (including capex planning and asset life cycle costing), Financial Plan, and Marketing Plan.
15. REFERENCES

- Aviation Refuelling Maintenance Pty Ltd (2009) Tank Inspection and Cleaning Records
- Department of Environment and Heritage (2009) Destruction Permit
- ExxonMobil (2004) Statement of Transfer
- Janine Hugo, City of Whyalla, pers. comm.
- Register of the National Estate website
- The Corporation of the City of Whyalla (2009) Daily Tank Inspection Records
- The Corporation of the City of Whyalla (2008) Whyalla Airport Asbestos Register
- The Corporation of the City of Whyalla (2009) Septic Irrigation System Design Drawing
- The Corporation of the City of Whyalla (2009) Septic System Approval
- The Corporation of the City of Whyalla (2009) Dangerous Goods License
- URS (2008) Infrastructure and Environmental Study for Regional Airports, 8 Sep 2008
18. APPENDIX B – COUNCIL WORKSHOP PRESENTATION (2 December 2013)
20. **APPENDIX D – PRECINCT DESCRIPTIONS**

20.1. **Airfield Precinct**

This section addresses land use planning for the Airfield Precinct.

**Objectives**

The objectives of the Airfield Precinct are to provide the following.

1. An area accommodating:
   - Safe aircraft landing, take off and taxiing operations; both for fixed wing and rotary services;
   - Aircraft navigation aids, radar and communications equipment;
   - Air traffic control, aviation rescue and fire fighting and meteorological services; and
   - Aviation related support industry.

2. Safe and efficient access and operation of all movement area infrastructure recognising aircraft type, number of aircraft movements and surrounding development on Airport land.

3. A safe and enhanced environment for the precinct provided through:
   - Controlled access and secure movement and operational areas;
   - An aesthetically pleasing public viewing area and passive open space; and
   - Landscaped buffers between the movement area and surrounding areas.

4. Establishment of activities of an environmental nature, or that assist in sustainable development of other Precincts.

**Desired Character**

The Airfield Precinct is 200 Ha which is 26% of the area of the Airport. It occupies the major portion of the Airport and is essentially bounded by the other precincts. The precinct is an area of the Airport set aside to be protected for the operation and movement of aircraft and associated activities. Development within the precinct should focus on the aviation needs of the Airport, with ancillary and related support facilities enhancing the Airport’s operation, and must not in any way impede aircraft movements.

**Principles of Development Control**

**Structure Plan**

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.

**General**

1. Development should be primarily associated with the operational aspect of the precinct and aviation-related support industry.

2. Runways, taxiways and aircraft movement areas should be designed and developed:

To maximise the capacity of the existing infrastructure:

- To ensure safe and efficient movement of aircraft operations;
- To minimise aircraft noise impacts and environmental impacts generally;
- In a cost effective manner; and
- To comply with national and international mandates and standards.
3. Landscaped buffers should provide an enhanced environment.

4. Any public viewing area and open space should:
   - Be aesthetically pleasing;
   - Be restricted to designated areas; and
   - Provide for safe and efficient vehicular and pedestrian movement.

Access

1. Access to the precinct should be strictly controlled and the area suitably secured from adjacent precincts with:
   - Appropriate security perimeter fencing incorporating access control measures; and
   - Surveillance monitoring as necessary.

Envisaged Development

- Air traffic control tower/Area approach control centre
- Stormwater detention and harvesting
- Communication facility (aviation-related)
- Emergency staging area
- Fire fighting and rescue facility
- Fuel depot
- Runway related activities/facilities
- Weather and atmospheric testing facility

20.2. Terminal and Carparking Precinct

This section addresses land use planning for the Terminal and Carparking Precinct.

Objectives

The objectives of the Terminal and Carparking Precinct are to provide:

1. An area primarily accommodating aviation related passenger movement (including future growth); and
2. Enhancement of the amenity of the precinct, including landscaping, signage and other ‘gateway’ improvements.

Desired Character

The Terminal and Carparking Precinct is 15 Ha which is 2% of the area of the Airport. It is bounded to the west by the Airfield Precinct, to the east by the Commercial / Business Precinct and to the south by the Aeronautical Uses Precinct.

The precinct encompasses the main Terminal Building, carparking, and aviation support facilities and associated infrastructure. Land use is aviation-related and functions as the key passenger ‘gateway’ area. This will generally be a secure area with controlled access to the Airfield Precinct.

Principles of Development Control

Structure Plan

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.
**Amenity**

2. Development should not adversely impact on the character, amenity, function and operation of the Airport and nearby land by way of:
   - Excessive noise, smoke, smell, dust or other nuisance; or
   - Character and scale of buildings.

**Envisaged Development**

- Advertising
- Air traffic control tower/Area approach control centre
- Aviation museum
- Aviation-related support industry
- Carparking
- Car washdown facilities
- Child care centre
- Club rooms
- Consulting rooms
- Courier/freight terminal
- Office
- Runway-related activities/facilities
- Shop (to service the day-to-day needs of passengers, the workforce, visitors)
- Telecommunications facility
- Warehouse

**20.3. Aeronautical Uses Precinct**

This section addresses land use planning for the Aeronautical Uses Precinct which is shown in Figure 6.

**Objectives**

The objectives of the Aeronautical Uses Precinct are to provide:

1. An area primarily accommodating aviation-related activities, as well as complementary commercial and industrial services;

2. Development exhibiting an appropriate standard of building design with elements, features, services and infrastructure compatible with the primary conservation focus of the precinct; and

3. Establishment and maintenance of linkages to the adjoining Terminals Precinct.

**Desired Character**

The Aeronautical Uses Precinct is 45 Ha which is 5.8% of the area of the Airport. It is located at the southern end of the Airport to the south of the Terminal and Carparking Precinct and adjoins the Airfield Precinct. Compatible uses such as aviation-related industries and aeronautical equipment may be appropriate. Vehicular access to the precinct will be limited to that required in association with aviation-related facilities and to service the aviation requirements of the Airport, hangars, including any aeronautical equipment. This will generally be a secure area with controlled access to the Airfield Precinct.
Principles of Development Control

Structure Plan

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.

General

2. Development should be compatible with aviation-related activities, as well as complementary commercial and industrial services.

Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the Airport and nearby land by way of:
   • excessive noise, smoke, smell, dust, stormwater run-off or other nuisance;
   • hours of operation; or
   • character and scale of buildings.

Access

4. Access to the precinct should be limited to that required to service the aviation requirements (including aeronautical equipment) of the Airport, controlled airside access for occupants and visitors, and between the Terminal and Carparking Precinct.

5. Access between Mullaquana Road and the Terminal and Carparking Precinct shall be discouraged for security reasons.

Envisaged Development

- Aviation-related support industry
- Car parking (associated with aviation-related activities, as well as complementary commercial and industrial services)
- Educational establishment (associated with aviation training activities)
- General industry
- Hangars
- Research and development facility
- Service industry
- Service trade premises
- Warehouse

20.4. Commercial / Business Central Precinct

This section addresses land use planning for the Commercial / Business Central Precinct.

Objectives

The objectives of the Commercial / Business Central Precinct are to provide:

1. An area primarily operating to accommodate a range of regional industry-related facilities including commercial, accommodation, government and educational services;
2 Safe and convenient pedestrian access and car parking throughout the precinct; and

3 An integrated landscape and signage theme throughout the precinct with effective separation of uses and integration with the Terminal and Carparking Precinct.

**Desired Character**

The Commercial / Business Central Precinct is 50 Ha which is 6.5% of the Airport area. It is located in the northern central area of the Airport with frontage to Lincoln Highway and Barngarla Avenue. It will have strong presence for travelling passengers that access the Airport via Barngarla Avenue and therefore should exhibit a high standard of design suitable for a 'gateway' entrance precinct.

The precinct will accommodate a range of industry and government-related uses such commercial, service, trade, and accommodation.

Built form will be of a contemporary design, with a consistent architectural and signage theme when viewed from adjacent roads. Buildings will have a horizontal emphasis and be designed to reduce their visual bulk through design elements such as articulation, colour and detailing and variations to facades. Car parking areas will be integrated and landscaped to enhance amenity and provide screening and shade. Pedestrian paths will provide for safe movements and will be clearly delineated.

**Principles of Development Control**

**Structure Plan**

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.

**Amenity**

2. Development should not create any excessive noise, smoke, smell, dust or other nuisance.

**Land Division**

3. Allotments created by land division should generally have:
   - A minimum allotment size of 2,000 m²; and
   - A minimum frontage width of 30 m.

**Envisaged Development**

- Accommodation (industry-related)
- Advertising
- Aviation museum
- Aviation-related support industry
- Building and/or landscaping materials
- Child care centre
- Consulting room
- Education facility
- Indoor Recreation Area
- Office
- Service trade premises
- Warehouse
20.5. Commercial / Business Entry Precinct

This section addresses land use planning for the Commercial / Business Entry Precinct.

Objectives

The objectives of the Commercial / Business Entry Precinct are to provide:

1. An area primarily operating as a centre for accommodating a range of commercial, transport-based service trade and retailing facilities, such as a service centre, bus park and ride facility, retail showrooms and other shops, capitalising on the prime exposure / access to Lincoln Highway and Barngarla Avenue;

2. Safe and convenient pedestrian access and car parking throughout the precinct;

3. Adequate turning and manoeuvring areas for heavy vehicles; and

4. An integrated landscape and signage theme throughout the precinct.

Desired Character

The Commercial / Business Highway Precinct is 40 Ha which is 5% of the Airport area. It is located in the northern central area of the Airport with frontage to Lincoln Highway. The precinct therefore has a prime location and exposure to significant traffic volumes. Access is to be gained directly from the highway via the Barngarla Avenue and Mullaquana Road intersections.

The precinct will accommodate a range of commercial, service, trade and some retailing facilities, with supporting shops and services.

Built form will be of a contemporary design, with a consistent architectural and signage theme when viewed from adjacent roads. Buildings will have a horizontal emphasis and be designed to reduce their visual bulk through design elements such as articulation, colour and detailing and variations to façades. Car parking areas will be integrated and landscaped to enhance amenity and provide screening and shade. Pedestrian paths will provide for safe movements and will be clearly delineated.

Principles of Development Control

Structure Plan

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.

Amenity

2. Development should not create any excessive noise, smoke, smell, dust or other nuisance.

Land Division

3. Allotments created by land division should generally have:

   • A minimum allotment size of 2,000 m²; and

   • A minimum frontage width of 30 m.
Envisaged Development

- Advertising
- Aviation museum
- Aviation-related support industry
- Child care centre
- Consulting room
- Fast food outlet
- Home display and building centres
- Hotel, tavern and liquor outlet
- Indoor Recreation Area
- Motel
- Office
- Petrol filling station
- Restaurant
- Retail showroom
- Service trade premises
- Shop (except a Department store, Discount department store or Supermarket Telecommunications facility)
20.6. Commercial / Business Highway Precinct

This section addresses land use planning for the Commercial / Business Highway Precinct. A detailed precinct plan is shown below.

Objectives

The objectives of the Commercial / Business Highway Precinct are to provide:

1. An area primarily operating as a centre for accommodating a range of commercial, service trade and retailing facilities, such as a brand outlet centre and associated support retail activities, bulky goods retailing, retail showrooms and other shops, capitalising on the prime exposure to Lincoln Highway;

2. Safe and convenient pedestrian access and car parking throughout the precinct; and

3. An integrated landscape and signage theme throughout the precinct.

Desired Character

The Commercial / Business Highway Precinct is 40 Ha which is 5% of the Airport area. It is located in the northeast corner of the Airport with frontage to Lincoln Highway. The precinct therefore has a prime location and exposure to significant traffic volumes. Access is to be gained directly from the highway via the Barngarla Avenue and Mullaquana Road intersections.

The precinct will provide for a range of commercial, service, trade and large scale retailing facilities, with supporting shops and services.

Built form will be of a contemporary design, with a consistent architectural and signage theme when viewed from adjacent roads.
Car parking areas will be integrated and landscaped to enhance amenity and provide screening and shade. Pedestrian paths will provide for safe movements and will be clearly delineated.

**Principles of Development Control**

**Structure Plan**

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.

**Amenity**

2. Development should not create any excessive noise, smoke, smell, dust or other nuisance.

**Land Division**

3. Allotments created by land division should generally have:
   - A minimum allotment size of 2,000 m²; and
   - A minimum frontage width of 30 m.

**Envisaged Development**

- Advertising
- Aviation museum
- Aviation-related support industry
- Brand outlet centre and associated support retailing
- Building and/or landscaping materials
- Bulky goods retailing
- Car Retailing
- Child care centre
- Consulting room
- Fast food outlet
- Home display and building centres
- Hotel, tavern and liquor outlet
- Indoor Recreation Area
- Office
- Restaurant
- Retail showroom
- Service trade premises
- Shop (except a Department store, Discount department store or Supermarket Telecommunications facility
20.7. **Equestrian Precinct**

This section addresses land use planning for the Equestrian Precinct.

**Objectives**

The objectives of the Equestrian Precinct are to provide:

1. A broad suite of possible non-aeronautical uses that are as yet not defined but that do not adversely impact the amenity of the locality and which contribute to the desired character of the zone; and
2. To operate as a land reserve for longer-term development and buffer to existing rural residential development.

**Desired Character**

The Equestrian Precinct is 65 Ha which is 8.5% of the area of the Airport. It is located on the eastern side of the Airport and shares a boundary with the Terminal and Carparking Precinct and the Commercial / Business Entry and Highway Precincts.

**Principles of Development Control**

*Land Use*

1. The following forms of development are envisaged in the zone:
   - Detached dwelling
   - Domestic outbuilding in association with a detached dwelling
   - Domestic structure
   - Dwelling addition
   - Farming
   - Farm building
   - Stable.

2. Development listed as non-complying is generally inappropriate and not acceptable unless it can be demonstrated that it does not undermine the objectives and principles of the Development Plan.

3. There should be no more than one dwelling per allotment.

4. A dwelling should not be erected unless it is on an allotment of greater than 2 hectares.

5. The keeping of animals should be ancillary to and in association with the residential use of the land.

6. The keeping of horses should only be undertaken if the horses are accommodated within a stable or shelter with supplementary feeding to maintain pasture cover.

*Form and Character*

7. Development should not be undertaken unless it is consistent with the desired character for the zone.
A dwellings should be designed within the following parameters:

- Parameter Value
- Minimum setback from primary road frontage - 50m
- Minimum number of on site car parking spaces (one of which should be covered) - 2

A dwelling should have an allotment area of at least 2 hectares.

Amenity

Development should not adversely impact on the character, amenity, function and operation of the Airport and nearby land by way of:

- excessive noise, smoke, smell, dust or other nuisance; or
- hours of operation.

Non-Envisaged Development

- Advertisement and/or advertising hoarding
- Advertisement and/or advertising hoarding where the development achieves at least one of (a) or (b):
  
  (a) Is adjacent to a road with a speed limit of less than 80km/h

  (b) Has an advertisement area of 2 square metres or less and achieves all of the following:

  (i) The message contained thereon relates entirely to a lawful use of land

  (ii) The advertisement is erected on the same allotment as the use it seeks to advertise

  (iii) The advertisement will not result in more than two advertisements on the allotment.

- Amusement hall
- Amusement machine centre
- Bus depot
- Bus station
- Clubrooms
- Community centre
- Consulting room
- Crematorium
- Dairy
- Dwelling
- Educational establishment
- Fire station
- Fuel depot
- Golf course
- Golf driving range
- Hospital
- Hotel
- Industry Except service industry
- Intensive animal keeping
- Library
- Major public service depot
- Motel
• Motor repair station
• Multiple dwelling
• Office
• Petrol filling station
• Place of worship
• Prescribed mining operations
• Residential flat building
• Restaurant
• Road transport terminal
• Row dwelling
• Service trade premises
• Shop
• Stadium
• Stock sales yard
• Stock slaughter works
• Store
• Timber yard
• Warehouse
• Waste reception, storage, treatment or disposal
• Welfare institution
• Wrecking yard

20.8. Airport Environs Precinct

This section addresses land use planning for the Airport Environs Precinct.

Objectives

The objective of the Airport Environs Precinct is to provide:

1. A secure area buffer area for the Airfield Precinct from the Lincoln Highway and future development to the north of the Airport.

Desired Character

The Airport Environs Precinct is 130 Ha which is 16.5% of the Airport area. It is located in the northern boundary of the Airport. Access is intended to be limited to via the secure Airfield Precinct access points.

Principles of Development Control

Structure Plan

1. Development should be generally in accordance with the Whyalla Airport Structure Plan and the forms of development listed as Envisaged Development.
2. Development should be complementary to aviation services.

Amenity

3. Development should not adversely impact on the character, amenity, function and operation of the Airport and nearby land by way of:
   • excessive noise, smoke, smell, dust or other nuisance;
   • hours of operation; or
   • character and scale of buildings.

Envisaged Development

• Conservation
• Equestrian Precinct
21. **APPENDIX E – AIRPORT (WHYALLA) ZONE - DEVELOPMENT CONTROLS**

21.1. **Objectives**

1. Development within the zone which promotes:
   - A key element of regional transport infrastructure for the State, accommodating a range of services and facilities necessary for the safe, convenient, and efficient operation of aviation activities; and
   - A business enterprise providing a transport hub, aviation passenger, freight and general aviation facilities, flight training centre, employment and commercial, retail and industrial development opportunities.

2. Development that ensures the long-term operational, safety, commercial, training and general aviation requirements of the Airport continue to be met.

3. Development of active and passive recreation, Defence and other appropriate activities on land restricted by aviation needs.

21.2. **Economic Development**

4. Development which promotes the economic improvement of Whyalla and the State by:
   - Facilitating the movement of general aviation passengers and freight by infrastructure improvements;
   - Providing flight training services; and
   - Contributing to the viability of the Airport as a business enterprise.

5. Development of a nature that might enhance and service the operations of the Australian Defence Forces and mining and resources industries.

6. Retail development within the zone to include retail shopping facilities that provide a range of convenience and comparison goods to service tourists, visitors and employees of the Airport and the surrounding community. Bulky goods retailing is appropriate in parts of the zone.

21.3. **Amenity**

8. Development that is compatible with forecast noise levels from aircraft operations.

9. Enhancement of the visual and environmental quality of Whyalla Airport through:
   - Quality buildings of contemporary, sustainable design;
   - The provision of appropriate landscaping, both for aesthetic and screening purposes;
   - The establishment of landscaped and grassed swales or detention basins for on-site stormwater management or linkages to the existing network of council drains under easement on Airport land, or that abut Airport land; and
   - Sustainable activities such as energy conservation or the possible generation of renewable or solar energy. Different issue

10. Development designed and sited to conserve energy and minimise waste.

11. Development located and designed to minimise adverse impact and conflict between land uses, both on the Airport and on surrounding areas.

12. The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous drought resistant plant species.

13. Development consistent with the principles of water sensitive urban design.

14. Adoption of adequate separation distances between non-aviation and aviation development on Airport land, and between development on Airport land and off-Airport uses.

15. A safe, secure, and crime-resistant environment.
21.4. Desired Character

Whyalla Airport is recognised as a key element of transport infrastructure, for the City of Whyalla and the surrounding region, providing a significant service of benefit to residents and industry.

Future development will continue to provide economic improvement to the region and associated communities.

Enhanced amenity and environmental values for the Airport is desired through the provision of:

- Quality buildings of contemporary design;
- Development located and designed to minimise adverse impact and conflict between land uses, both on the Airport and on surrounding areas;
- The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous plant species where possible; and
- Development consistent with the principles of water sensitive design.
- External access to the Airport will be improved and internal traffic movements will be enhanced by:
- The provision of internal roads providing convenient access to the external road system; and
- Bike and pedestrian paths being provided where appropriate.

21.5. Principles of Development Control

In determining appropriate development within the Airport (Whyalla) Zone, consideration will be given toward Airport sustainability and development principles that successfully meet the economic, social and environmental goals of the City of Whyalla.

The following principles apply to development in the Airport (Whyalla) Zone.

Land Use

1. Development of Whyalla Airport shall accommodate the primary aircraft operations and Airport and aviation-related support activities necessary to support its role as the primary Airport servicing the City of Whyalla and surrounding regions.
2. A range of services and facilities, necessary for the safe, convenient and efficient operation of aviation activities and passenger services at the Airport will be provided.
3. Development shall ensure that the long-term operational, safety and flight training and general aviation requirements of the Airport continue to be met.
4. The zone should accommodate:
   - A range of Airport and aviation-related, industrial and commercial uses; and
   - Employment and commercial, retail and industrial opportunities commensurate with the Airport's role.
5. Development should not adversely impact on areas set aside for conservation purposes.

Form of Development

7. Development should not be undertaken unless it is consistent with the desired character for the zone.
8. Development should be staged, having regard to infrastructure requirements.

Retail Development

9. Retail development should be of a size and type, and be located, to reflect its location along a major transport corridor, and integrate sustainable initiatives appropriate to its locality and operational scale.
10. Smaller scale retail facilities may be appropriate in some areas, servicing the day-to-day needs of employees and/or the travelling public.
11. Larger scale retail facilities, servicing the needs of the surrounding community or wider region, should be located to take advantage of the Airport's location along major highways and roads.
Larger scale retail facilities, including bulky goods retailing, should:

1. provide choice in the range of goods and services available to the community and visitors;
2. expand retail employment opportunities within the region;
3. provide a competitive environment for the benefit of customers; and
4. have clearly identifiable signage.

Bulky goods retailing should provide for pick-up areas to avoid the necessity for customers to carry large items to vehicles.

Office Development

Office development should provide suitable services and be of a size and scale commensurate to the Airport’s major business enterprise role and employ sustainable initiatives suited for the age, scale, size and operational efficiency of the Airport environment.

Industrial Development

Industrial development should be primarily directed at transport and distribution activities, warehousing and storage in appropriate areas, and employ suitable sustainable initiatives such as the use of solar energy, natural light and sun shading as appropriate.

Community Facilities

An appropriate range of community facilities, such as child care, consulting and health care facilities, should be provided to service aviation activities, visitors and employees at the Airport and the surrounding community.

Hazards

All development will incorporate measures to ensure that the operational integrity of adjacent navigation and communication systems is maintained at all times.

Buildings are to be designed of external materials which will not result in interference with aircraft navigation facilities located within the Airport and not contribute to excessive glare and reflections externally.

Landscaping, stormwater management, waste management and construction activities should not increase the attraction of wildlife and birdlife to the Airport.

Lighting associated with buildings and internal roads should not result in a hazard to aviation operations and should be constructed in accordance with the Airport’s requirements.

Building Height

Buildings should be sited and be of a height which will not result in a breach of the Obstacle Limitation Surfaces (OLS) and navigation clearance zones.

Amenity

Development should provide appropriate separation distances from adjoining residential zones.

Airport buildings should be designed and constructed to protect occupants from aircraft noise in accordance with AS 2021-2000.

Development should be located and designed to prevent adverse impact and conflict between land uses.

Development and the amenity of land should be enhanced with appropriate planting and other landscaping works.
Energy

28 Development should be designed and sited to conserve energy, taking into account:
   • Hot water efficiency through insulation of pipes and fittings and use of timers and thermostats;
   • Energy efficient heating and cooling selection and where practical time/occupancy controls;
   • Energy efficient lighting such as compact fluorescent bulbs or LEDs and maximising the use of natural light where possible;
   • Alternative energy supplies including installation of solar panels, mini wind turbines;
   • Thermal building performance improvements on new buildings where feasible;
   • Building management systems at the design phase of new developments; and
   • Metered electricity consumption where feasible, as monitored by building area and by smart meters.

29 Development should provide for efficient solar access to buildings and open space all year round, and cater for use of mini-wind turbines if appropriate.

30 Development should facilitate the efficient use of photovoltaic cells and solar hot water systems by:
   • Taking into account overshadowing from neighbouring buildings; and
   • Designing roof orientation and pitches to maximise exposure to direct sunlight.

Building Appearance

31 Building development should be of a quality standard and visual appearance, and present an attractive facade to public roads and any internal roads, consistent with building use and corporate images.

32 Buildings and associated elements, including landscaping, paving and advertising displays, should present a clear and coordinated appearance and exhibit a standard of design which will enhance the visual attractiveness and amenity of the zone.

33 The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is consistent with the scale of the development and with the context of its setting with regard to shape, size, materials and colour.

34 Development should have a horizontal emphasis incorporating design elements which achieve visual articulation and relief.

35 Buildings should be of solid construction and appearance with facades visible to the public incorporating design elements which achieve visual articulation and relief such as:
   • Windows
   • Canopies
   • Porticos and verandas
   • Parapet detailing and modelling
   • Sun protection.

36 The external walls of buildings should integrate earthen colours and tones as well as blues and greys in lighter tones that match the skyline, varying with the size and scale of the development and the background, but can also include stronger colour schemes to provide visual interest if appropriate to the form of development.

Access and Parking

37 Development should provide for appropriate vehicular and pedestrian linkages.

38 On-site parking should be provided to meet the anticipated demand of development, with flexibility for further increases.
39 Development should be provided with safe and convenient access which:
- Avoids unreasonable interference with the flow of traffic on adjoining roads;
- Accommodates the type and volume of traffic likely to be generated by the development or land use; and
- Is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.

40 Development should make sufficient provision on each individual site for the loading, unloading and turning of all traffic likely to be generated.

41 Vehicle parking areas should be sited and designed in a manner that will:
- Not inhibit safe and convenient traffic circulation;
- Result in minimal conflict between customer, employee and service vehicles;
- Minimise the number of vehicle access points to public roads;
- Where reasonably possible, provide the opportunity for shared use of car parking and integration of car parking areas with adjoining development to reduce the total extent of vehicle parking areas and the requirement for access points; and
- Enable extensive landscaping that will provide shade and enhance the appearance of such areas.

42 Bike and pedestrian paths should:
- Be designed to facilitate efficient links to neighbouring paths and facilities; and
- Be designed and provided in accordance with relevant provisions of the Australian Standards and Austroads Guide to Traffic Engineering Practice.

Service Areas

43 Mechanical plant, storage and service areas required for buildings and structures should be suitably located, designed, and screened from public view.

44 Storage areas should be suitably screened to present an attractive façade to adjoining development and from public and internal roads, and be of a suitable structure not susceptible to wind damage.

Waste

45 New developments should aim to reduce the extent of construction waste going to landfill and post-occupancy allow for segregated waste recycling.

Landscaping

46 Landscaping should be provided as a part of all developments and should:
- Enhance the visual amenity of the zone;
- Be of a high standard of design and visual appearance;
- Facilitate stormwater management strategies;
- Be undertaken in a manner that will not attract bird life and compromise aircraft operational safety;
- Use locally indigenous plant species and where possible employ plantings that are drought tolerant; and
- Ensure adequate sight lines at access points.
Water Sensitive Urban Design

47 Development should be designed to maximise conservation and minimise consumption through:
  • Implementation of automated leak detection devices;
  • Use of water saving devices and fittings, such as dual flush toilets and water saving showerheads;
  • Use of water efficient appliances such as suitably rated dishwashers;
  • Water consumption metered and monitored by building area; and
  • Recycled water utilised from available network supply points around the Airport.

Materials

48 Design, development and construction activities will consider materials selection and use strategies to:
  • Encourage recycling or rejuvenation of materials where feasible (e.g. steel for non-structural members, recycled structural concrete, recycled bitumen, recycled timber);
  • Materials low in volatile organic compounds; and
  • Encourage selections of building materials that are 100 per cent recyclable.

Stormwater Management

49 Design, development and construction activities should incorporate stormwater management strategies to:
  • Improve the quality of stormwater run-off;
  • Minimise pollutant transfer to waterways and drainage channels; and
  • Provide opportunities for re-use of stormwater and treated waste waters.

50 Development should provide stormwater management strategies that can be adopted for each land parcel, either individually or collectively for groups of buildings, and should incorporate grassed swales, gross pollutant traps and flow detention areas where possible.

51 Stormwater drainage swales should be designed according to function and space, be grassed and extensively landscaped, and allow passive and active recreation facilities in suitable locations.

52 Internal roads and car parking areas should be designed to direct stormwater to adjacent landscaping and grassed stormwater swales, where appropriate. Where possible an appropriate porous paving (or pipe drainage to tree root levels) might be considered, as well as “soft shoulders”.

53 Stormwater runoff from roofing should be separated and treated in a separate manner to ground surface flows where possible, and opportunities for re-use optimised.

54 Stormwater management systems should:
  • Maximise the potential for stormwater harvesting and re-use, either on-site or as close as practicable to the source;
  • Utilise, but not be limited to, one or more of the following harvesting methods:
    ∙ the collection of roof water in tanks;
    ∙ the discharge to open space, landscaping or garden areas, including strips adjacent to car parks; and
    ∙ the incorporation of detention and retention facilities.

Recreation

55 Recreation areas should provide pleasant, functional and accessible open spaces for formal and informal recreation activities.

56 Bike and pedestrian paths should service recreation areas or be located in close proximity to enable ease of access.
57 Development in recreation areas should not compromise the operational or safety requirements of the Airport.

58 Development in recreation areas should:
   • Be clustered, where practical, to ensure that the majority of the site remains open;
   • Where practical, be developed for multi-purpose use; and
   • Be located and designed to maximise safety and security.

59 Recreation areas should be sited and designed to minimise negative impacts on the amenity of the locality.

**Signage**

60 Outdoor signage, both free-standing and attached to buildings, should be located, sited, designed, constructed of such materials, and be of a size and shape so as to:
   • Be in scale and proportion with the developments as a whole, the buildings therein and the desired character of the area;
   • Be coordinated with and complement the architectural form and design of the building it is to be located on or adjacent to;
   • Not distract attention from traffic control information; and
   • Clearly identify retailing activity where appropriate.

61 The number of signs associated with a development should take into account the nature of the use and consider:
   • Clutter;
   • Disorder; and
   • Untidiness of buildings and their surrounds.

**Crime Prevention**

62 Development should:
   • Be designed to provide a safe, secure, crime resistant environment;
   • provide a robust environment that is resistant to vandalism and graffiti;
   • provide lighting in frequently used public spaces, including along dedicated bike and pedestrian paths and around public facilities such as toilets, telephones, bus stops and car parks;
   • use landscaping to discourage crime;
   • avoid pedestrian entrapment spots and movement predictors; and
   • take into account the secure restricted nature of the Airfield, and Terminal and Carparking Precincts of the Airport Zone.