PORT LINCOLN AIRPORT MASTERPLAN

2016

June 2016

1 INTRODUCTION

This Master Plan has been prepared in accordance with guidelines set by the Planning and Transport Policy section of the South Australian Department of Planning, Transport and Infrastructure. This plan replaces the 2006 master plan prepared by Airport Technical Services commissioned by the DCLEP which itself was an update of the November 2000 master plan.

Significant physical changes have occurred on the airport since the 2006 Master Plan was adopted. These changes include the construction of a new Airport Terminal building, new high strength taxiway, extension of the Regular Passenger Transport (RPT) aircraft parking ramp and a new 180 bay public car park.

1.1 Overview of the Airport

Port Lincoln Airport is located 14 km north of the Port Lincoln CBD and provides the primary aviation gateway to the Eyre Peninsula. The existing airside infrastructure incorporates a 3-runway layout.

- The sealed 01/19 north/south runway is 1499 metres long and 30 metres wide and is suitable for use by BAE 146 aircraft (maximum weight 46,000 kg). The largest aircraft currently using the facility on a regular basis are the commuter turbo prop Saab SF 340 aircraft (12,927 kg) and the DHC8 300 (19,540 kg). The runway is rated as non-precision instrument and has published instrument procedures for a straight-in GPS approach to runway 19 from the north and a non-directional beacon (NDB) circling approach.

- The gravelled 15/33 northwest/southeast runway is 1450m long; it can be used by Regular Public Transport (RPT) commuter aircraft when the pavement is dry. During Instrument Flight Rules (IFR) conditions, taking off by RPT aircraft is permitted to the southeast only; IFR landings are not permitted on this runway.

- The 05/23 northeast-southwest runway is 1275m long and is limited to use by light aircraft only as terrain constraints do not permit use by RPT aircraft.

The RPT sealed apron is capable of handling 2 Saab SF 340 and 1 DHC8 300 or 400 series aircraft simultaneously. Primary access is via a sealed taxiway off the 15/33 Runway with a sealed connection to runway 01/19.

The General Aviation (GA) Apron is capable of handling 2 x SF 340 series aircraft including the refuelling bay.

1.2 Purpose and Objectives of the Master Plan

The purpose of the Master Plan is to provide a detailed guide for the development of Airport infrastructure.

The key objectives of the Master Plan are:

- provide an easily understood planning framework covering aviation and non-aviation development over the next 20 years;
- to ensure future development enhances the aviation safety aspects of the airport;
- to encourage value adding development and business ventures on the airport;
- to guide the land use surrounding the airport; and,
- to guide the provision of future access requirements for the airport.

1.3 Methodology and Consultation

The Master Plan has been developed by the DCLEP Master Plan Committee through a series of meetings and in consultation significant stakeholders.

A public consultation process prior to submission of the completed plan will involve;

- distribution of the draft plan for review;
- consultation with local businesses and aviation industry stakeholders;
- advertising in local newspapers; and,
- placing the Master Plan on the Council's web-site and social media pages.

1.4 Report Structure

This document comprises 2 parts; - background information - Sections 1-3, and Master Planning - Sections 4 onwards.

2 MASTER PLAN CONTEXT

2.1 Historical Background

The Port Lincoln Airport is South Australia's largest and busiest regional airport. The facility provides public landing strips and associated taxiway, apron, terminal, aircraft hangars and refuelling facilities for all air transport operators.

The airport is of strategic importance, servicing many of Eyre Peninsula communities and industry. Regular passenger transport provides up to 12 services per day between Port Lincoln and Adelaide.

The airport consists of a 3-runway layout with the capacity to handle BAe 146 aircraft, Saab SF 340 aircraft and the Embraer 120 (12,134 kg). A sealed apron is capable of handling 3 RPT Saab sized aircraft simultaneously.

Port Lincoln Airport is located 14km north of the city of Port Lincoln. In terms of passenger numbers it is South Australia's busiest regional airport. It is owned and operated by the DCLEP following transfer from the Commonwealth under the Aerodrome Local Ownership Plan in 1990. The aerodrome was previously owned and operated by the Department of Civil Aviation.

During the 1960s, the Port Lincoln Airport was the major regional port, with scheduled flights via the Airlines of South Australia Fokker F27 Friendship. Since then, the airport has undergone various expansions including sealing of the main runway and later upgrades to the terminal and apron facilities as part of the transfer arrangements from the commonwealth.

In 2013 the airport completed construction of a modern new terminal, with supporting infrastructure (RPT apron extension, new taxiway, road network and 180 bay car park)

2.2 Regional Context

Port Lincoln is the busiest regional airport in South Australia. The city is situated 45 minutes flying time from Adelaide (compared to more than 7 hours by road). The city had a population of 14,574 in 2012 *Australian Bureau of Statistics http://stat.abs.gov.au/.* The airport reached nearly 200,000 passenger movements in 2010-11. This is around 70% more movements compared to the next

busiest regional airport (Mount Gambier) in SA despite serving a population of only 56% of Mount Gambier's population.

The short flying time of 35 - 45 minutes to Adelaide compared to 7 hours by road makes air travel a far more attractive option in comparison to other centres. Ceduna (402km by road from Port Lincoln) and Whyalla (267km) are the only centres on the Eyre Peninsula to receive RPT services. The airport is therefore strategically placed to continue to be a primary transport mode for business, personal and tourism travel.

The principal industries of the region are agriculture, fishing, aquaculture and mining.

2.3 Socio-Economic Context

The airport forms a vital part of the local transport infrastructure providing regular and frequent access for business, tourism and private flying and patient transfer year round, 7 days a week.

The Airport serves as a base for aviation fire-fighting contractors to the Country Fire Service SA Region 6 between the months of November-April annually

The Airport supports 27 full-time jobs and generates Gross Regional Product (value added) of approximately $36.0 million annually.

2.4 Regulatory Context

Port Lincoln is a Civil Aviation Safety Authority (CASA) certified airport and is required to meet CASA standards as specified in Civil Aviation Safety Regulation 139 and the Manual of Standards Part 139 - Aerodromes.

The airport receives RPT services and consequently a security designated airport requiring compliance with the Commonwealth *Aviation Transport Security Regulations 2005*. The regulations require controlled access to airside. Current RPT aircraft are less than 20 tonnes; meaning that electronic screening of passenger and luggage is not required.

2.5 Policy Context

The continued ownership and development of the Port Lincoln Airport is supported by:

- DCLEP Development Plan February 2015.
- DCLEP Development Strategic Plan
- Long Term Financial Plan

National perspective:
Airports are critical pieces of national infrastructure and suitable locations are scarce. The current and future viability of aviation operations at Australian airports can be threatened by inappropriate development. Communities under flight paths and near airports can be affected by issues including noise, development restrictions and safety risks.

In the interest of safety and public amenity, development needs to be carefully managed in the vicinity of airport operations. However, there is also a need for airports to be easily accessible to

population centres and for developments to be undertaken in a way that is compatible with airport operations, both now and into the future.

The National Airports Safeguarding Framework (NASF) was developed with the above in mind and comprises overarching Principles and Guidelines. Section 11 of this Master Plan (Airport Safeguarding Plan) provides further detailed information on the Framework.

State-wide Perspective:

The SA Government has seven strategic priorities. These include making South Australia an affordable place to live. The quality of life for South Australians is influenced by the rising costs of housing, transport and utilities. Regional airports are an important component of the transport sector.

SA Government Strategic Plan targets include the provision of key economic and social infrastructure to accommodate population growth. The Eyre Peninsula is a significant region for agriculture, aquaculture and tourism.

Regional population levels are anticipated to increase in regional areas, by 20,000 to 30,000 or more by 2020. Air access to the Lower Eyre Peninsula is a key component for the projected increased population.

Increased visitor expenditure in South Australia's total tourism industry is expected to exceed $8 billion by 2020.

The South Australian Government Integrated Transport and Land use Plan provides guidance to maintain aviation assets – and continues to actively support local councils and airport owners in maintaining regional and remote aviation assets and identify upgrades of strategically important local airports.

2.6 Previous and Current (Master) Plans

In May 2005, the State Government announced its intention to investigate the potential for the development of the airport to cater for large jets (Airbus A320, Boeing 737) to service tourism markets out of the east coast capital cities. The introduction of this type of aircraft was seen by the State Government (at the time) as being crucial to the economic development of the Eyre Peninsula. The previous Airport Master Plan, prepared by Airport Technical Services in 2006, did not take on the role of justifying the introduction of jet services; but provided a planning model that catered for possible introduction of larger jet aircraft, should such an event occur.

2.7 Key Stakeholders

Key Stakeholders essential to the ongoing daily serviceability and amenity of airport operations:

- Airlines – Qantaslink, Regional Express
- Hire Car agencies
- Aircraft Repair Service
- AVGAS, AVTUR Refuelling Service
- Taxi and Shuttle Bus service
- Qualified trades with thorough knowledge of Airport infrastructure such as Electricity distribution, Water, Sewer and HVACV Systems

3 CURRENT SITUATION

3.1 Ownership and Management

Port Lincoln Airport has been wholly owned and managed by the DCLEP since its acquisition from the Department of Civil Aviation in July 1990. The management structure consists of the Airport Manager reporting to the Director of Works and Infrastructure who in turn reports to the Chief Executive Officer and the Elected Council members.

At the time of acquisition, the DCLEP undertook not to utilise ratepayer funding to support airport operations. This is still the case and the Airport Reserve pays an annual dividend to Council's consolidated revenue.

3.2 Site Description

The airport is situated approximately 14 kilometres north of centre Port Lincoln. The airport slopes from an elevation of 13m in the northwest corner down to a level of 2m to the southeast. Road access is directly off the Lincoln Highway which connects Port Lincoln to Whyalla.

3.3 Surrounding Land

The area surrounding comprises hilly terrain 5km to the west which rises to 165m above the airport. The Spencer Gulf shoreline extends the length of the airport south-eastern boundary and in part comprises coastal swamp. The remaining sectors north, west and south are used for farming, generally cropping and stock. The settlement of North Shields is 1.7km to the South, Poonindie 2km to the north and Louth Bay 8.0km to the Northeast. (measurements from the airport perimeter)

3.4 Existing Activities

Aviation activities comprise:

- RPT flights to and from Adelaide with Qantas ink Q300 Regional Express SAAB 340 aircraft operating around 11 flights daily (the actual number varies on weekends etc.
- Aircraft maintenance facilities (Tuna City Aviation).
- Aircraft Charter (Lincoln Air Charter).
- There are a number GA aircraft based at Port Lincoln Airport used for a range of activities including fish sporting, charter, private / recreational aircraft. There is also an aero club.
- The Royal Flying Doctor Service also makes regular visits using PC12 aircraft.
- During the summer months the Air Tractor firebombing aircraft are located on the airport
- Aircraft refuelling services (Avfuel SA).

Non aviation activities include:

- Secure car park / General car parking area / Hire Car services.
- Taxi Services and Shuttle Bus.

3.5 Existing Facilities

Runway and Taxiways

The existing airside infrastructure incorporates a 3-runway layout. The sealed 01/19 north/south runway is 1499 metres long and 30 metres wide and is suitable for use by BAE 146 aircraft (maximum weight 46,000 kg). The largest aircraft currently using the facility on a regular basis are the commuter turbo prop Saab SF 340 aircraft (12,927 kg) and the DHC8 300 (19,540 kg). The runway is rated as non-precision instrument and has published instrument procedures for a straight-in GPS approach to runway 19 from the north and a non-directional beacon (NDB) circling approach.

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Lighting

The existing airport lighting consists of low intensity runway and taxiway lighting, illuminated wind indicators and apron floodlighting. The following sets out the upgrading undertaken in 2012/13.

Power supply and control

Additional lighting/electrical loads from Runway 01/19 and new Taxiway Bravo required a review of the capacity of the existing mains and the installation of a back-up power supply and switchgear and upgrading of the lighting control system.

Runway lights

For a runway upgrade, new runway lighting will be required in accordance with the current standards that require 60m longitudinal spacing of the edge lights (currently 90m) and greater output from the threshold lights. The additional lights may require new cabling and upgrading of the supply system.

PAPI

Port Lincoln Airport's existing provision of Pilot Approach Indicator (PAPI) consisting of a series of lights near each end of the runway providing approach slope guidance to pilots on landing. The array is single sided. The arrangement will need to be reviewed if larger jet aircraft utilise the airport in the future.

Taxiway

New taxiway lighting was installed on Taxiway B in 2013.

Illuminated wind direction indicators

An existing illuminated direction wind indicator is provided north of the sealed taxiway between the 15 and 19 runways. Unlit wind indicators are also provided near the thresholds of runways 01 and 19. Supplemented with an Aerodrome Weather Information Service (AWIS) which is an approved alternative to the requirement for a lit wind indicator at each threshold used at night for an instrument approach.

Apron lights

Floodlight poles are currently installed providing sufficient illumination of the apron in accordance with CASA standards. Lighting is sourced from towers either side of the aircraft fuselage to minimise shadows.

Passenger Terminal
The new passenger terminal building comprises a floor area of approximately 2300 sqm, catering for a peak demand of 260 patrons passing through at any one time.

Navigational Aids
The airport has a GPS RNAV approach to runway 19 and runway and a non-directional beacon (NDB) circling approach. The NDB is owned and operated by Airservices Australia.

Aircraft hangars
There are 2 individual hangars in the commercial apron northwest of the terminal, an aero club hangar South East of the terminal and a number of extended private / recreational use hangars with internal lessee separation off the light aircraft apron south of the terminal .

Fuel Facilities
An aircraft refuelling and storage facility is located northwest of the former passenger terminal. The facility serves RPT aircraft from a single Saab position via hose reel and bowser. Self serve swipe card facilities are also available for AVTUR and AVGAS.

Other
A number of other ancillary facilities are located landside, including:

- car rental office;
- a small clubhouse and hangar for the Port Lincoln Aero Club;
- Bureau of Meteorology Automatic Weather Station which includes ceilometer and visibility meter.

3.6 Ground Transport Access

Road access is directly off the Lincoln Highway leading to a loop road servicing the passenger terminal and car park. Addition roads link to hangars, workshops, long term vehicle parking and other commercial facilities etc.

3.7 Utility Services

The airport has 3-phase mains power, emergency back-up power for the airfield lighting and selected landside areas including the RPT passenger terminal, mains reticulated water, sewer (septic tanks) and telecom.

3.8 Environmental Values

Swamp land adjacent to the Airport's southern boundary provides a wildlife habitat; however there is no gazetted sanctuary zone or RAMSA wetland significance.

3.9 Heritage Values

There are no heritage items or structures present within the airport boundary. Heritage buildings within the Airfield Zone (an area that includes the airport surrounds) are described in the Development Plan for the Lower Eyre Peninsula (DC) 2015. These include: Cemetery Reserve, former Superintendent's Residence, former Bakehouse Complex and Well, Mission Schoolhouse and St Matthew's Anglican Church; all located at Poonindie Mission which is located north of the airport boundary.

4 STRATEGIC VISION AND OBJECTIVES

4.1 Strategic Vision

The strategic vision for Port Lincoln Airport is to develop airport facilities that will support (a) growth in regular passenger services and future aircraft type, (b) growth in tourism charters, and (c) increased commercial use of available land areas.

4.2 Objectives

The objective of Council's airport ownership and operation is:

- To develop the airport to accommodate growth on passenger numbers and number and type of future aircraft.
- To maintain financial viability by development of sustainable revenue streams from aviation and non aviation sources.
- Maintain a high level stakeholder engagement to determine trends and assist in forward planning.

5 CRITICAL AIRPORT PLANNING PARAMETERS

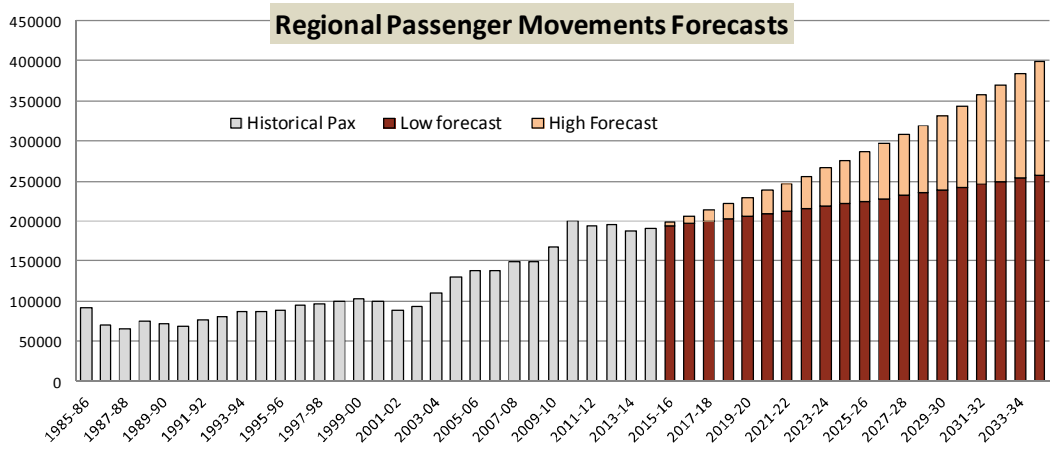
5.1 Forecast of Regional Passenger Movements

Regional airline operations servicing Port Lincoln currently comprise Rex Saab SF340 and Qantas Bombardier Q300 aircraft (previously Q400) operating direct to and from Adelaide.

Historical passenger movements from 1985-86 to 2014-15 are included in the chart show below. (A movement is a single event, either an arrival or a departure). Passenger numbers declined immediately after closure of the Airlines of South Australia Fokker F27 service 1985 but have grown steadily since 1987-88.

The recorded average annual growth in passengers is:
5 years 2009-10 to 2014-15: 2.6%
10 years 2004-05 to 2014-15: 3.9%
20 years 1994-95 to 2014-15: 4.0%.

A projected growth for the next 20 years is attached to the historical movements shown below. The numbers were calculated by applying an increase of 1.5% per annum to represent the low forecast. An increase of 3.75% per annum was used to predict the high forecast as shown below.



All regional services are direct to and from Adelaide. The 2015 Adelaide Airport Master Plan, by way of comparison, predicts a 3.7% annual growth in regional passenger numbers. As Port Lincoln provides the largest number of passengers into Adelaide, the agreement in forecasts is reassuring.

Regional Aircraft Movements

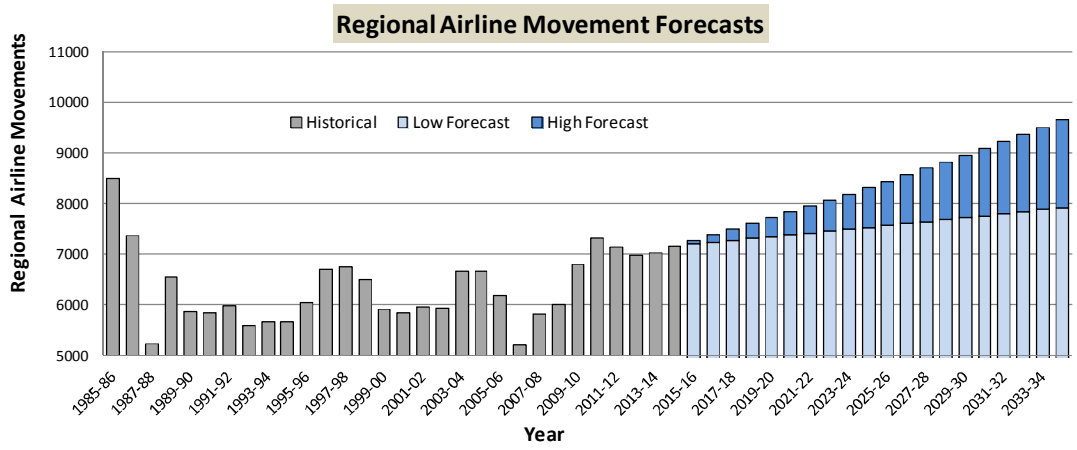
The historical growth in regional airline movements since 1985-86 is shown overleaf. The large variation in movements from 1985-86 can be attributed to the change in aircraft type with the cessation of smaller 15 seat commuter aircraft in 1987. Later the introduction of larger 70 seat Q400 aircraft in 2005/06 saw a reduction in airline movements but a continued growth in passengers.

The recorded average annual growth in aircraft movements is:
5 years 2009-10 to 2014-15: 1.0%
10 years 2004-05 to 2014-15: 0.7%
20 years 1994-95 to 2014-15: 1.2%

The forecast high and low annual aircraft growth is estimated at 1.5% and 0.5% respectively

The high forecast figure regional airline activity equates to around 9600 aircraft movements per year, or 14 flights per day. The high passenger forecast's is close to 400,000 movements or 550 passengers arriving per day. Assuming by this time there will be no 34 seat aircraft flying regional routes, operation by 50 seat aircraft operating at 60% seat occupancy would require around 18 flights per day or 12 flights per day when using 75 seat aircraft.

Both numbers are feasible in terms of airport capacity with a logical obvious requirement for some further apron expansion to cope with increased demand and / or larger aircraft.



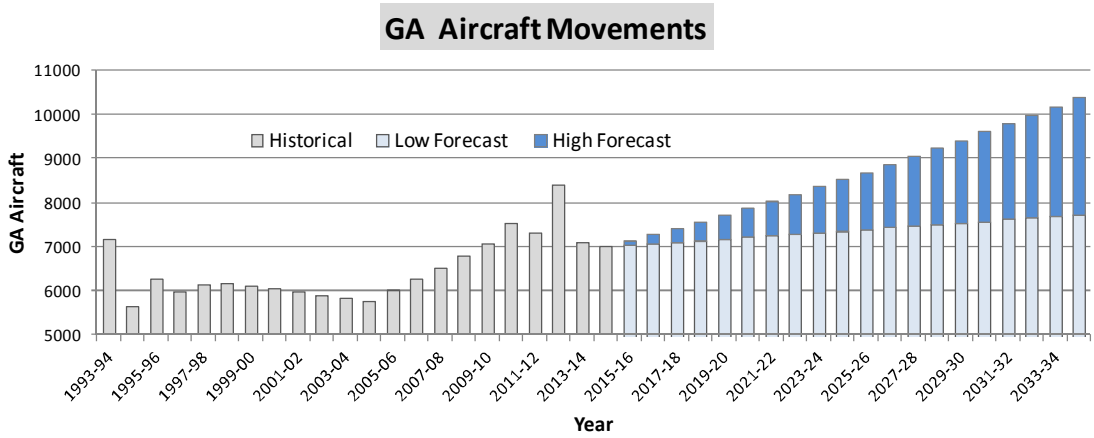
Growth in General Aviation

General aviation activity is made up of non-scheduled flying and includes charter, flying training, private/ business, agricultural and aerial work.

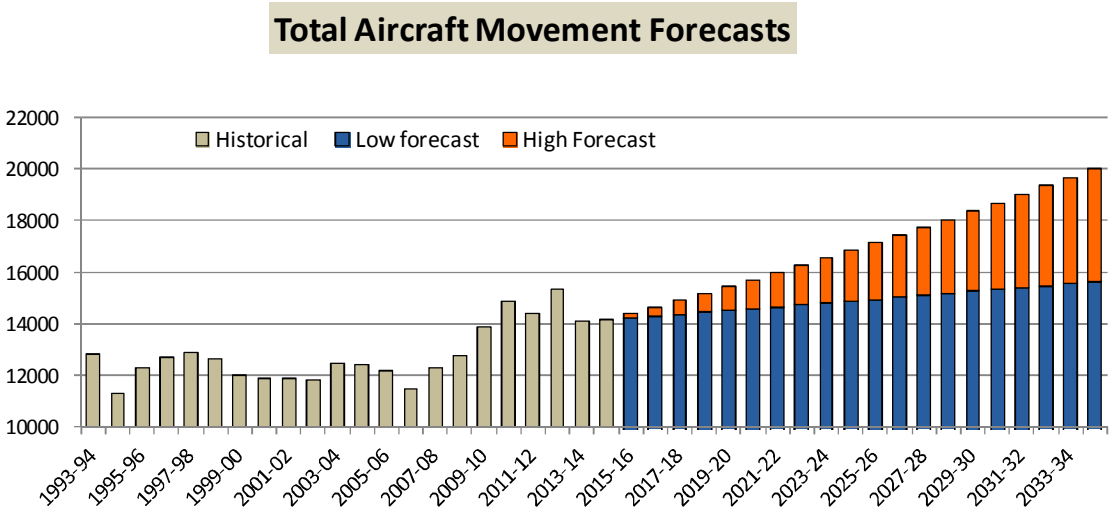
Analysis of data DIT / AVDATA shows a decline of 0.12% over the last 20 years with a growth of 1.94% over the last 10 years.

Nationally there was a 1 % increase in general aviation flying hours recorded to the end of 2012. The Adelaide Airport master plan shows a forecast of 1.16% per annum over the next 20 years

For planning purposes a high annual growth rate of 2.0% has been adopted; higher than Adelaide due to the relatively low base which can provide more volatility. The high forecast is for 10,380 general aviation aircraft movements in 2035. For planning purposes it is assumed this will be an even mix of single and twin engine aircraft



The combined number of the total aircraft movement's forecast at Port Lincoln is shown at Graph 4. The projected high and low growth corresponds to an average annual increase over the next 20 years of 2.96% and 1.14% per annum respectively.



The forecast number of helicopter movements is based on a 1.0% per annum increase until 2035. This may vary depending on State Government contracts of helicopter use and the locations of various private helicopter operations.

5.2 Airport Capacity

The following capacity estimate is based on the methodology contained in the Federal Aviation Administration Airport Capacity and Delay Advisory Circular AC 150/5060-5 designed to provide broad capacity estimates for long term planning and screening of various layout proposals. .

The AC method provides estimates of Annual Service Volume as an alternative to practical annual capacity. As aircraft operations approach the Annual Service Volume, the average aircraft delay increases rapidly with relatively small increases in aircraft operations, causing deterioration in the level of service. Annual Service Volume describes the number of annual operations that will result in an average delay to aircraft of the order of 1 to 4 minutes.

The Federal Aviation Administration Handbook, Advisory Circular AC 150/5060-5, provides estimates of Hourly Capacities and Annual Service Volumes for various runway layout configurations and mix indexes.

The mix index is expressed in terms of four aircraft classes as shown:

- Class A single engined aircraft 5,700kg or less
- Class B small twin engined aircraft of 5,700 kg or less
- Class C large aircraft more than 5,700 kg and up to 136,100 kg
- Class D large aircraft more than 136,100 kg

The mix index = (% of aircraft in Class C + 3 X % of aircraft in class D).

Operation	Aircraft	Aircraft Weight	2035 Movements	Classification	%
Domestic Jet	A 320 B737	< 136100		C	
Commuter	Q400/Q300 SF 340	< 136100	9600	C	50.6
GA	Twin engine	< 5700 kg	4700	B	24.7
	Single engine	< 5700 kg	4700	A	24.7

Using figures from the projected forecasts, the mix index for Port Lincoln was determined to be 50.6.

From Federal Aviation Administration Advisory Circular AC 150/5060-5 Chapter 2 the following broad capacity estimates can be made.

Runway Configuration	Hourly capacity operations per hour		Annual Service Volume operations per year
	VFR*	IFR**	
Single runway	63	56	195,000

*VFR Visual Flight Rules by which aircraft must be flown as permitted by meteorological conditions in terms of visibility, distance from cloud, and ceiling, equal or better than the specified minima.

**IFR Instrument Flight Rules by which aircraft must be flown as permitted by meteorological conditions in terms of visibility, distance from cloud, and ceiling, less than the specified minima.

The FAA uses the concept of annual service volume to determine airport capacity. As aircraft operations approach the annual service volume, the average aircraft delay tends to increase rapidly with relatively small increases in aircraft operations causing deterioration in the level of service. Annual service volume is the number of annual operations that result with an average aircraft delay of 1 to 4 minutes.

The predicted service volumes are based on the following assumed conditions:

- availability of sufficient runway to accommodate all aircraft demands;
- availability of full runway navigational instrumentation;
- availability of sufficient taxiways to expedite traffic on and off the runway; and
- touch and go operations ranging from 0 to 50% of the total operations.

The availability of the cross runways at Port Lincoln are not considered in the estimated service capacity, as they are used to cater for outer wind movements rather than offering independent landing and takeoff facilities.

Provision for a parallel taxiway (partial or full-length) should occur when aircraft movements reach between 30,000-60,000 per annum (*ICAO Airport Planning Manual Part 1 Master Planning 1997*). At the high forecast rate, this is not expected to occur until beyond 2035.

5.3 Aerodrome Reference Code System

The Airport Reference Code is described by International Civil Aviation Organisation (ICAO) as a system that relates the characteristics of Airports to specifications that are suitable for the aeroplanes that are intended to operate from these Airports. The code number relates to the aeroplane reference field length, the code letter is based on the aeroplane wingspan and outer main

gear wheel span. Note that determination of the aeroplane reference field length is solely for the selection of the code number and is not intended to influence the actual runway length provided.

The table below indicates the aircraft characteristics that determine the Aerodrome Reference Code.

Aerodrome Reference Code				
Code Element 1		Code Element 2		
Code number	Aircraft reference field length (ARFL)	Code letter	Wing span	Outer main gear wheel span
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

5.4 Selected Design Aircraft

Current RPT operations at Pt Lincoln include regional turboprop Saab 340 and Dash 8 300. In the longer term it is anticipated these aircraft may be replaced by ATR 42/72, EMB 120, and Dash 8 400 etc. These aircraft are classified by the International Civil Aviation Organisation (ICAO) and CASA as Reference Code 3C which comprises aeroplanes with a reference field length up to 1800m and wingspans up to 36m. Jet aircraft including the Fokker 100 and EMB 170 also fit into this category.

Typical Aircraft Characteristics

Aircraft	Seats	ARFL (m)[2]	MTOW (kg)[3]	ACN[4]	Ref code
EMB 120	30	1420	12134	6	3C
SAAB-340	35	1220	12371	5.7	3C
F50	50	1760	20820	11	3C
Bombardier Q-300	50	1122	18642	10	2C
Bombardier Q-400	75	1354	29347	16.5	3D**
ATR 42	50	1165**	18560	10	2C
ATR 72-600	68	1165	21566	12	3C
F100	100	1695	44450	27	3C
EMB170 175	72-88	1600	37200	21	3C
EMB190	100	2110	51800	30	4C

Note 1: For indicative purposes only. Specific values for particular aircraft should be obtained from the aircraft operator or the aircraft manufacturer.
Note 2: ARFL = Aircraft reference field length.

Note 3: MTOW = Maximum take-off weight.
Note 4: ACN = Aircraft Classification Number. The ACN is based on the aircraft's maximum take-off weight on a flexible pavement; the values listed are for medium a sub- grade rating of "B".
Note **: Q400 allowed as Code 3C by CASA.
***Basic MTOW ISA-SL http://www.atraircraft.com/products_app/media/pdf/Fiche-42-600-juin-2014-.pdf

Adopted Design Aircraft

For Master Planning purposes the adopted design aircraft for the period 2015 - 2035 is the Bombardier Q400 turbo prop or equivalent with allowance for possible but less likely introduction of regional jets typified by the Embraer ERJ 170/175.

5.5 Runway configuration

a) Runway Layout and Orientation

Existing runways comprise

- runway 01/19 1499m x 30m (sealed) aligned 010 degrees magnetic
- runway 05/23 1275m x 30m (gravel) aligned 051 degrees magnetic
- runway 15/33 1450m x 30m (gravel) aligned 147 degrees magnetic

Wind useability is the percentage of time during which the airport is not restricted because cross winds. There is no CASA requirement for an airport to have specific wind useability, although pilots must observe the allowable cross wind component for their aircraft. ICAO Annex 14 states the number and orientation of runways at an aerodrome should be such that the usability factor of the aerodrome is not less than 95 per cent for the aeroplanes that the aerodrome is intended to serve.

The allowable crosswind component varies with aircraft type. ICAO Annex 14 assumes for planning purposes, that landing or take-off by aeroplanes is precluded when the cross-wind component exceeds:

- 37 kph (20 knot) for aeroplanes whose reference field length[1] is 1 500m or over,
- 24 kph (13 knot) for aeroplanes whose reference field length is 1 200m or up to 1,500m;
- 19 kph (10 knot) for aeroplanes whose reference field length is less than 1 200 m.

[1] Reference Field Length is the minimum field length required for take-off at maximum certificated take-off mass, sea level, standard atmospheric conditions, still air and zero runway slope.

Evaluation of the existing runway wind useability at Port Lincoln was undertaken as part of the 1993 Master Plan. The results derived from the former Department of Aviation Wind Useability Graphs, produced from wind data recorded over a 10 year period and covering 0000 to 2300 hours daily. Using an allowable crosswind component of 13 knots, (24 kph), the following wind useability results were obtained:

Configuration	Useability
All runways	98.99%
Runways 05/23 and 01/19	95.02%
Runways 15/33 and 01/19	96.92%
Runway 01/19	92.36%

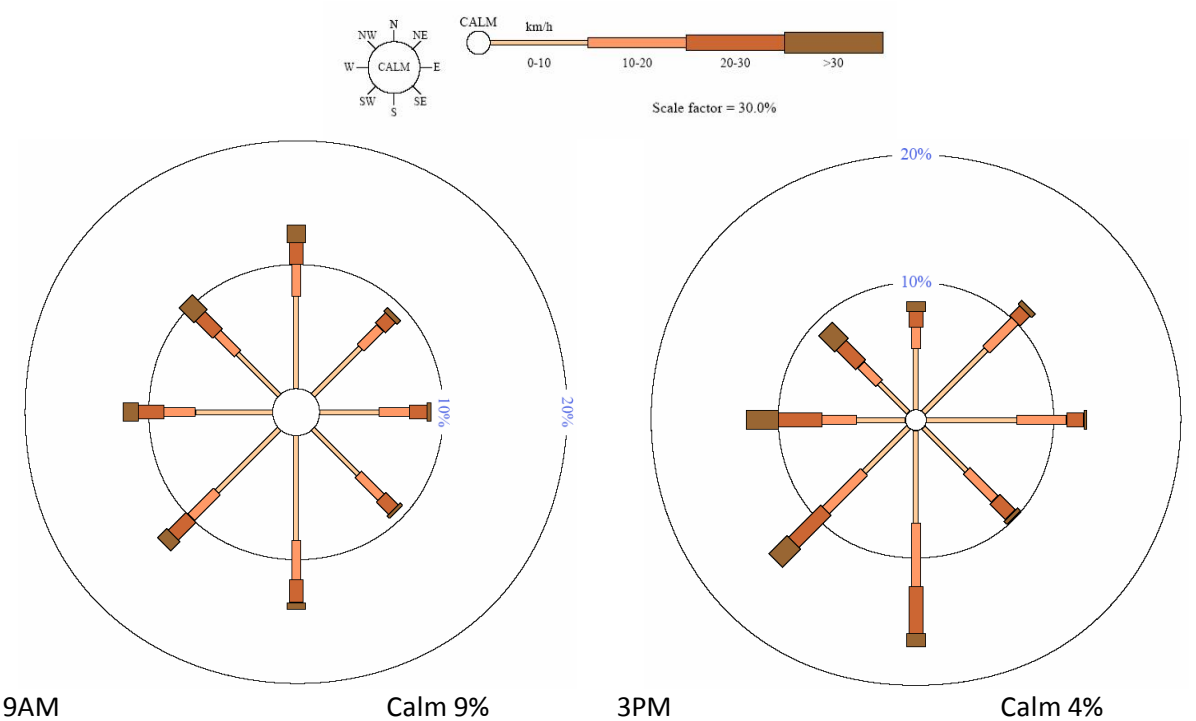
Adopting a 10 knot allowable crosswind component lowers the airport useability with all runways to 96.09%. Therefore while a two runway layout is suitable for larger aeroplanes, and retention of the three runway layout is useful, it is not critical to the key ongoing operations of the airport.

Data available on the Bureau of Meteorology website provides a graphic illustration of the wind direction, speed and duration, presented as an annual average for morning and afternoon winds as illustrated overleaf. The morning and afternoon wind conditions are more likely to be representative of the wind condition during the bulk of the RPT traffic rather than an average taken over a 24 hour period.

The wind diagrams for Port Lincoln above provide an indication of wind direction, velocity (by colour) and percentage duration by length of the coloured portion.

Key information obtained from the wind diagrams include:

- for commuter aircraft with an expected allowable cross wind component of 17 knots (30kph), the main north-south runway will be out of wind for approximately 2% of the year due to winds from the west; and,
- winds will favour landings from the north and takeoffs to the south for 58% of the time in the morning increasing to 68% in the afternoon.



9AM Calm 9% 3PM Calm 4%

Source Bureau of Meteorology Website
Observations taken from 1892 to 2002

b) Runway Length

The runway length required for an aircraft to reach a specified destination is dependent on the aircraft type and model, aircraft operating weight (in turn dependant on destination distance and fuel payload), ambient temperature and air pressure, wind direction, runway slope, terrain clearance, prevailing surface condition (runway wet or dry).

The current runway length is considered suitable for the short haul turboprop operations between Port Lincoln and Adelaide. An extension in runway length would only be required to facilitate introduction of interstate operations. Operations by jet aircraft may be preferable to service longer interstate routes.

Should interstate jet operations commence at Port Lincoln in the future, the runway length requirements will be determined from negotiations with the aircraft operators. For Master Planning purposes, a nominal length of 2000m has been adopted as representative of an ultimate runway length required for F100 / EMB170 aircraft operating to east coast destinations primarily Melbourne and Sydney.

A runway extension to the north is limited by the presence of the Todd River that runs south of Poonindie out to the ocean. Sullivan Drive located immediately north of the airport provides access from the Lincoln Highway to Point Boston residential area. The road was realigned in 2014 to allow greater approach/takeoff clearance over increased traffic volumes.

c) Pavement Strength

The existing main runway layout and pavement strength is capable of accommodating Code 3C aircraft, which includes current turboprop operations and EMB170 jet aircraft. The Fokker F100 exceeds the pavement strength capacity. Runway strengthening, if required, would involve application of an asphalt overlay as needed to meet the necessary structural capacity. New pavements for a runway extension would involve construction of a new flexible pavement.

A new high strength taxiway and apron extension were constructed in 2012 capable of supporting the aircraft types included in this Master Plan.

5.6 Navigation Systems

Port Lincoln currently has a Global Navigation Satellite System GNSS (GPS) non-precision approach to Runway 19. Long term planning should include provision for a GPS approach to Runway 01. There is no obvious benefit or future provision of GNSS approaches to the other runways.

A Non-Directional Beacon (NDB) is also provided. Air Services Australia indicated in March 2015 that the NDB will remain operational indefinitely. The ground based NDB, located immediately south of the access road, is considered an impediment to logical development of the terminal car park precinct. A plan has been initialed to have the NDB relocated to the east of the airport in the next 5 years.

5.7 Aviation Support and Landside Facilities

a) Passenger Terminal

The existing passenger terminal facilities provide arrival and departure lounge, check in counters, toilets, baggage facilities, café and five Hire Car booths.

The current terminal location is consistent with the long term layout. Sufficient adjacent space is available to the south of the terminal once the aero club has been relocated for future development as needed over the next 20 years.

b) Security Requirements

Current security regulations do not require mandatory passenger and baggage screening for RPT operations by aircraft below 20 tonnes. The Port Lincoln passenger terminal is capable of meeting all screening requirements into the future should Code 3 aircraft in excess of 20 tonnes be introduced.

c) Refuelling facilities

The present Mobil aviation fuel storage facility is located north of the RPT apron. The site contains underground storage for 66,000 litres of aviation turbine fuel (AVTUR) and 33,000 litres of aviation gasoline (AVGAS).

Depending on future demands placed by aircraft operators, the capacity of the existing fuel storage area may need to be reviewed.

This Master Plan suggests any significant increase in fuel storage capacity should involve relocation to a new site at the northern extremity of the apron as shown at Figure 4. The suggested site allows direct access to airside by mobile tankers.

Development of new fuel storage facilities allows:

- release of the existing fuel storage area for terminal related development;
- construction of new tanks to the new EPA requirements;
- placement of the site clear of high levels of passenger and aircraft activity;
- ease of access to aircraft by refueling vehicles; and,
- ease of road access by bridging tankers for storage replenishment.

d) Aircraft Hangars

Commercial

There are three commercial hangars currently located on the airport; the largest used for aircraft maintenance. The current master plan supports future expansion of commercial hangar facilities to the area north of the existing maintenance hangar site.

A minimum area of 500 square metres was adopted in 2014 for commercial hangar facilities to ensure only large, quality facilities were erected. Similar guidelines should be retained in consideration future commercial hangar development.

Private

Hangars for storage of private aircraft have been developed south of the terminal precinct in line with the recommendations contained in the 2005 Master Plan.

The hangars have been grouped to form single buildings to maximise the use of available airside space and movement area infrastructure. The hangars have been formed into rows with aircraft access via the space between each row. The current configuration can continue towards the south west.

Should demand outstrip the available area, options available to Council include:

1. Adjust / reduce the commercial / leasable site area of land immediately adjacent to the Lincoln Highway and extend the hangars into this zone.
2. Consider closure of runway 05/23 and use the space for hangar development.
3. Enlarge the airport land holding through acquisition of adjoining property.

Helicopters

Long-term helicopter facilities are shown at the northern extremity of the apron. DCLEP as the Airport owner has planned for segregation of helicopter and fixed wing aircraft, except where helicopters can be ground handled to various locations for maintenance purposes. It is also likely

that a high proportion of light helicopter maintenance will be carried out in fixed wing aircraft maintenance hangars.

e) Meteorological facilities

The existing Bureau of Meteorology (BoM) facilities at Port Lincoln comprises an automatic weather information station (AWS) including a Ceilometer and rain gauge.

5.8 Airspace Protection Surfaces

A list of Airport Obstacle Limitation Surface (OLS) clearance criteria, for the 3 runways is shown in the table below.

RUNWAY	**RWY 01/19 Existing and future**	**RWY 15/33 Existing**	**RWY 05/23 Existing**
Classification	Code 3 Non-precision instrument approach	Code 3 Non instrument approach	Code 2 Non instrument approach
INNER HORIZONTAL			
Conical			
Slope %	5%	5%	5%
Height above inner horizontal	75	75	55
Inner Horizontal			
Height above ARP	45	45	45
Radius from RWS end	4000	4000	2500
APPROACH SURFACE			
Width of inner edge	150	90	80
Distance from threshold	60	60	60
Divergence %	15%	10%	10%
First Section Length	3000	3000	2500
Slope %	3.33%	3.33%	4%
2nd Section Length	3600	-	
Slope %	2.5%	-	
Horizontal Section	8400	-	
Total Length	15000	3000	
Transitional			
Slope %	14.3%	14.3%	
TAKE OFF SURFACE			
Length of Inner Edge	80	80	80
Distance of Inner Edge from runway end	60	60	60
Rate of Divergence %	12.5%	12.5%	10%
Final Width	1800	1800	580
Overall Length	15000	15000	2500
Slope %	2%	2%	4%

Note the location of the approach and take off inner edge will vary in the case of runway 01/19 based on the existing runway length of 1499m to the possible future length of 2000m.

5.9 Aircraft Noise Contours

This section looks at the potential noise impacts of possible new aircraft being introduced to Port Lincoln in addition to ongoing commuter and general aviation traffic.

As all jet movements and virtually all RPT commuter movements will use the main runway, the 05/23 and 15/33 runways have not been taken into consideration.

The Australian Standard AS 2021 2000 *Acoustics - Aircraft noise intrusion – Building siting and construction*, provides guidelines for the assessment of potential aircraft noise exposure around airports based on the Australian Noise Exposure Forecast (ANEF).

The ANEF system involves drawing up ANEF noise contours and identifying the suitability of land for specified land uses in certain ANEF zones, according to the noise sensitivity of the nominated land use. The ANEF contours show the logarithmically averaged noise energy received near an airport on an average annual day of the forecast year. ANEF contours are produced from the Integrated Noise Model (INM) developed by the United States Federal Aviation Administration.

The INM uses operational base data including approach and departure profiles for the number, type and flight path of each aircraft predicted to be operating in the forecast year. Aircraft operating after 7PM and before 7AM are given an added weighting to take into account the increased intrusion of aircraft noise after hours.

Australian Standard AS 2021 *Acoustics-Aircraft Noise Intrusion-Building Siting and Construction* lists various land uses (e.g. houses through to heavy industrial areas) considered acceptable/unacceptable within the various ANEF contours.

The acceptable ANEF zones for residential development is less than ANEF 20 is acceptable, ANEF 20-25 is conditional, while greater than ANEF 25 is considered unacceptable. The standard notes the following

1. The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths.
2. Within the 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. *Ref AS 2021-2000*

Single Event Contours

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

In the case of jet aircraft operating into Port Lincoln, 4 movements per day by jet aircraft, combined with the commuter and general aviation traffic will be insufficient to generate ANEF contours to effectively describe the areas subject to potential adverse noise.

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

The following data obtained from the Australian Standard AS 2021 Acoustics—*Aircraft noise intrusion—Building Siting and Construction*, provides noise levels appropriate for a particular building site and number of aircraft operations.

BUILDING SITE ACCEPTABILITY BASED ON AIRCRAFT NOISE LEVELS*

Number of flights per day	Aircraft noise level expected at building site dB(A)		
	Acceptable	Conditionally acceptable	Unacceptable
House, home, caravan park, school, university, hospital, nursing home			
>30	<70	70-75	>75
15–30	<80	80–85	>85
<15	<90	90-95	>95
Hotel, motel, hostel, public building			
>30	<75	75-80	>80
15–30	<85	85-90	>90
<15	<95	95-100	>100
Commercial Building			
>30	<80	80-85	>85
15-30	<90	90-95	>95
<15	<100	100-105	>105

- The values in the above table from AS 2021 are based on a small aerodrome with a small number of civil, non-jet aircraft movements.
- Each night-time flight between 1900 hours and 0700 hours is to count as four operations.

Aircraft Fleet Mix

The following assumptions have been made in selection of aircraft for the noise study:

- The intra state fleet will comprise Saab 340, DHC8 Q300 & 400 or equivalent such as ATR 42/72.
- The potential interstate aircraft may include Embraer ERJ 170/175.

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

Aircraft Movements

The number of movements by the critical aircraft in terms of noise is unknown. The expected flight arrangements are likely to consist of arrivals and departures early morning say 7am, midday and in the evening at around 6 pm.

Other aircraft that may operate into Port Lincoln include Royal Flying Doctor Service Aero-medical services, freight, business charter and private flying. (It should be noted RFDS intend to commence use of the PC24 Jet Air Ambulance by mid 2016)

Sensitive Flight Times

The Australian Noise Exposure Forecast system applies a weighting of 4 times to aircraft movements between 7PM and 7AM. In the United States, the movements between 10 PM and 7 am are weighted by 10 times.

Based on the timing of flights into the existing airport it suggests there is unlikely to be a need for flights much after 7PM or earlier than 7 AM.

Flight Paths
Based on advice provided by the airlines it is assumed all RPT aircraft will operate on a straight in approach for 10 NM. On departure RPT aircraft will climb to at least 1000 feet before turning. Turns will always be to the east away from terrain and towards the sea.

Runway Utilisation
A review of wind data obtained from the Bureau of Meteorology website shows the average wind direction, velocity and duration data for daylight hours of 9am and 3 pm. Analysis of the data found that:

- Morning winds are mainly from the south west but extend to the north and the south.
- The afternoon winds are stronger and are generally from the west to the south.
- Winds will favour landings from the north and takeoffs to the south for 58% of the time in the morning increasing to 68% in the afternoon.
- During periods of calm it is likely that takeoffs would be to the south due to reduced taxying distances.

Analysis
For the purpose of looking at aircraft noise, aircraft have been placed into three broad groups comprising:

1) Turbo prop - Saab 340,
2) Turbo prop Dash 8 300/Q400.
3) Jets – Embraer 170/175.

Noise data in the form of 70 dB(A) contours for each group of aircraft was plotted from AS2021 which provides noise levels at various distances and offsets from the runway ends based on actual measurements recorded at Sydney Airport. The contours show:

- Noise intrusion by the 70 dB(A) noise level into residential area in North Shields from current Saab 340 operations will be reduced significantly when the existing fleet is replaced with ;later model turbo prop aircraft equivalent to Q400 aircraft.
- Introduction of jet aircraft will generate single event noise levels above current levels

A plot of the single event noise contours is appended to the end this Master Plan.

Studies at overseas airports have shown that in some cases the number of events alone had a higher contribution to the total variance in response than the noise level itself. *Ashford and Wright 1994.* Where a maximum of 2 flights by jet aircraft (E170 or equivalent occur each day), some residents, may not be unduly disturbed. Should the number of events increase, the noise is likely to become more intrusive. This will be more pronounced if jet aircraft operate during the sensitive periods before 7am and after 7pm. Where extended jet operations are planned, detailed noise studies and preparation of ANEF contours are recommended.

5.10 Environmental and Heritage Sites

Refer to 3.8 and 3.9

6 LAND USE PLAN

6.1 Land Use Precincts

Land surrounding Port Lincoln Airport has been zoned as:

1. Coastal
2. General Farming
3. Mixed Use (Point Boston)
4. Settlement

Development Plan Lower Eyre Peninsula (DC) 2015 MAP LEP/22 and LEP23

6.2 Land Use Precinct Guidelines

Vicinity of the Airport

The Development Plan provides the following principles in development control to areas in the vicinity of the airport to ensure there is no adverse impact on current and future aircraft operations through the control of:

- height and location of buildings and structures; *Refer Fig LEP OLS/1 in the following pages*.
- lighting and glare;
- smoke, dust and exhaust emissions;
- air turbulence;
- storage of flammable liquids;
- attraction of birds;
- reflective surfaces (e.g. roofs of buildings, large windows);
- materials that affect aircraft navigational aids; and
- noise development consistent with AS 20121.

Airfield Zone

The objectives and principles of development control that follow apply to the Airfield Zone (refer AF/2 over leaf. They are additional to those expressed for the whole council area.

Objectives

Objective 1: Maintenance of agricultural and pastoral activities on land surrounding Port Lincoln Airport.

Objective 2: Sand dunes, wetlands, native vegetation and areas subject to inundation and erosion kept free of development and the grazing of stock.

Objective 3: Maintenance of the long-term operational, safety and commercial aviation requirements of Port Lincoln Airport.

Objective 4: Airspace surrounding Port Lincoln Airport maintained free of obstacles.

Objective 5: Minimisation of potentially hazardous situations by limiting development, including landscaping, surrounding Port Lincoln Airport.

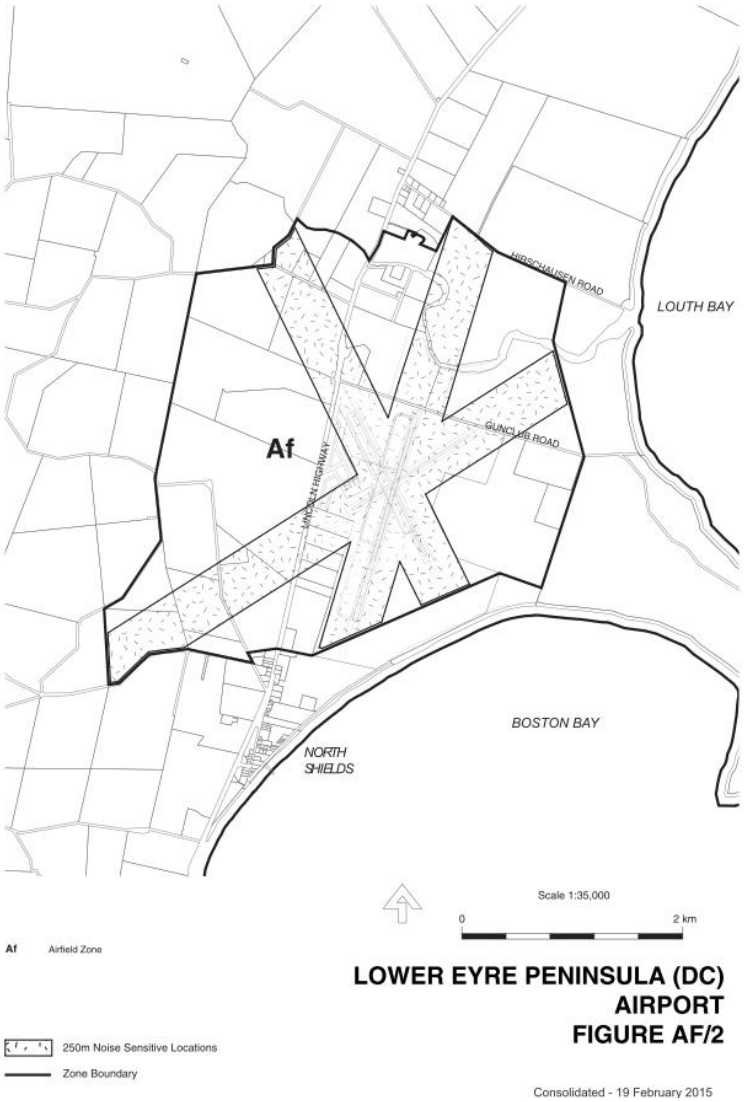
Objective 6: Provision for a range of commercial, freight and other compatible land uses within the site of the Port Lincoln Airport.

Airfield Zone *continued*

Principles

The following is an précis extract of the principles contained in the Development Plan that are closely linked to this Master Plan:

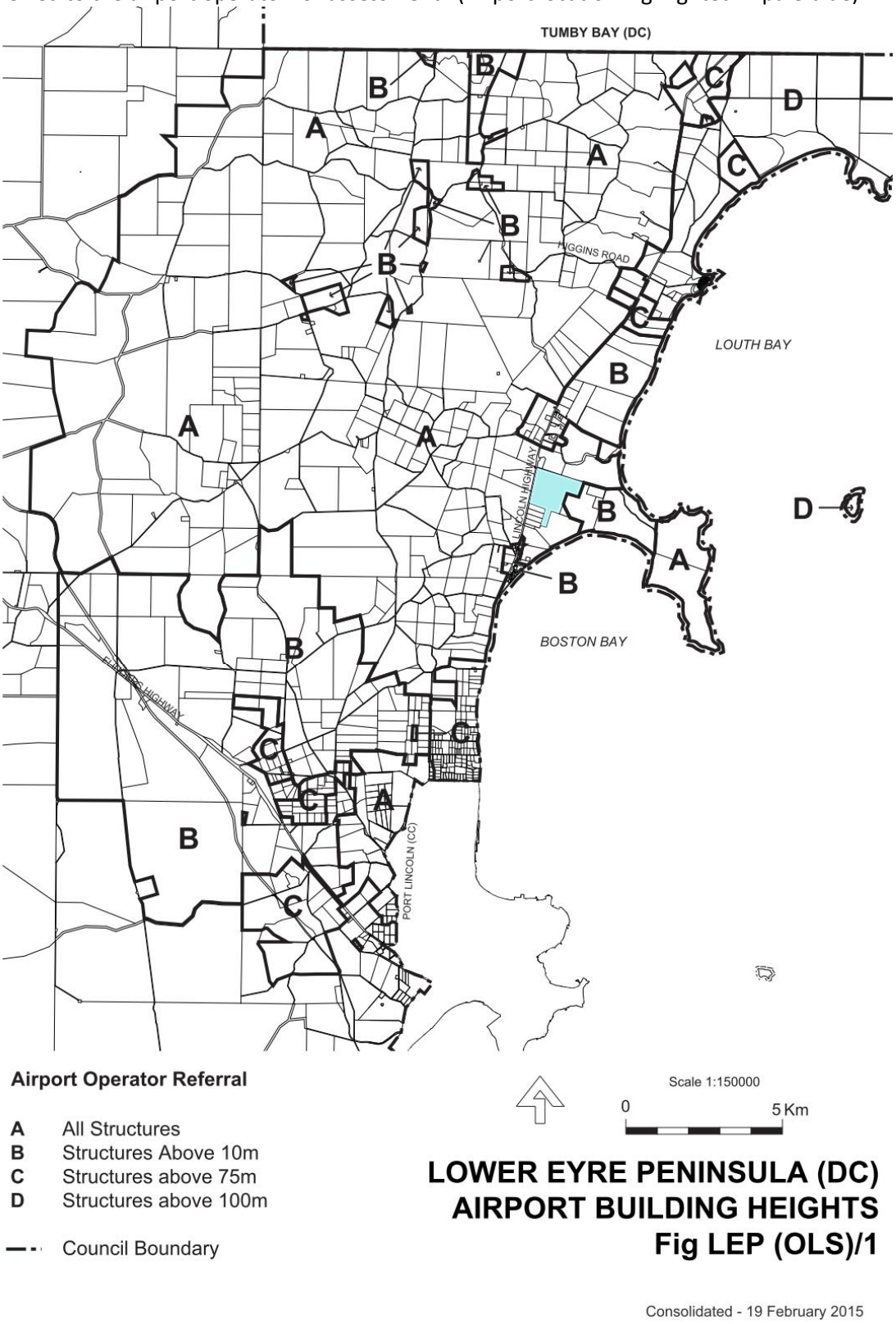
- The height if building and structures should not adversely affect the operation of the airport
- Buildings should not be located within 250 metres either side of the centre-line prolongation's of Runways 01-19, 05-22 and 15-33
- External cladding should comprise surfaces which are of a low light-reflective
- Commercial development should be confined to within the boundaries of the Port Lincoln Airport and should be developed in accordance with the Port Lincoln Airport Structure Plan; - Fig Af/1 Refer over leaf.



Source: Development Plan Lower Eyre Peninsula (DC) 2015

Structure Height Controls in the vicinity of Port Lincoln Airport

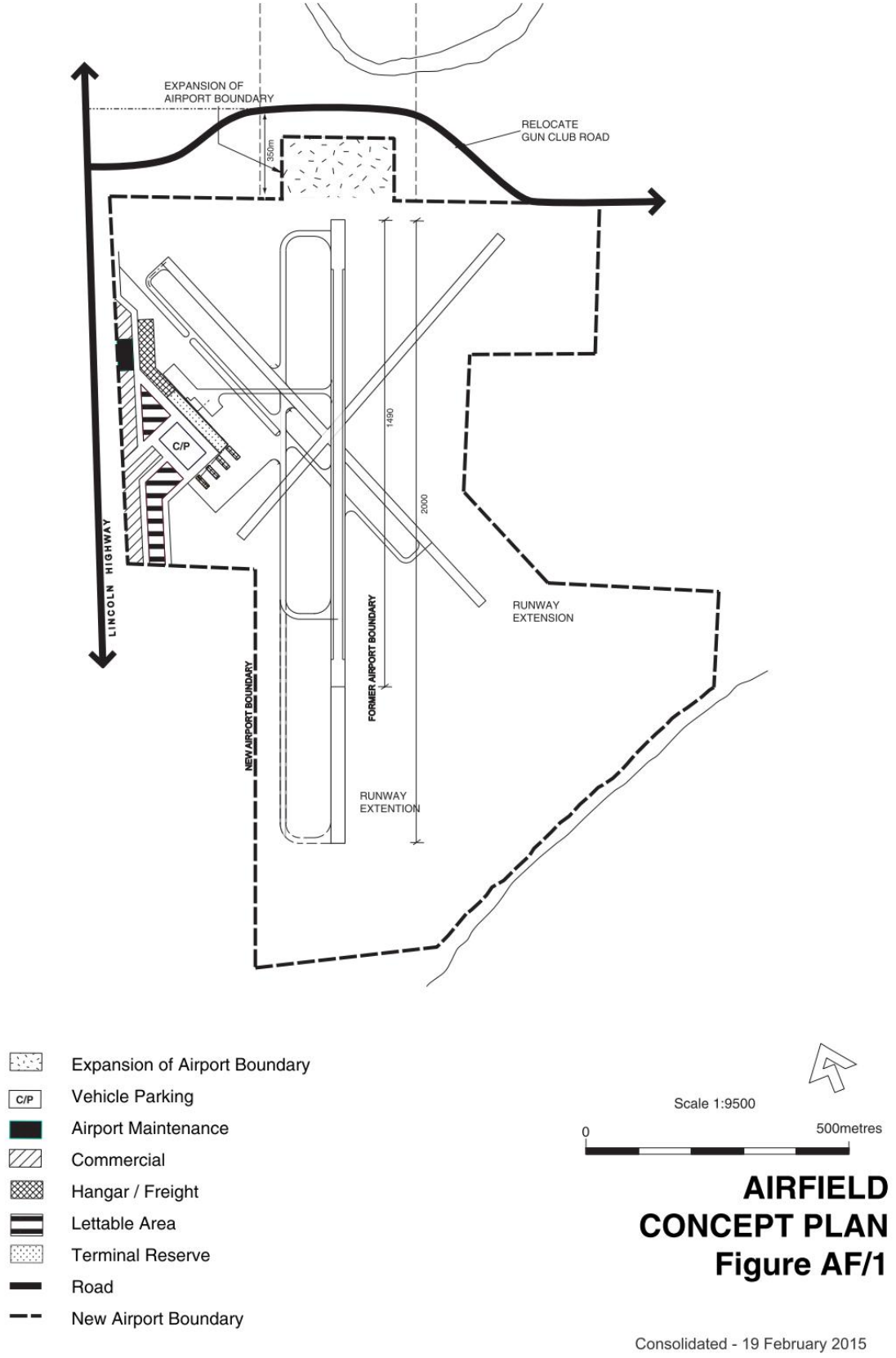
All structures that exceed the prescribed height for the particular zone shown below are to be referred to the airport operator for assessment. (Airport location highlighted in pale blue)



Source: Development Plan Lower Eyre Peninsula (DC) 2015

Concept Planning

A broad outline of the long term planning for the airport is shown in the following extract from the LEP Development Plan.



Source: Development Plan Lower Eyre Peninsula (DC) 2015

7 FACILITY DEVELOPMENT PLAN

7.1 Movement Area Facilities

This Master Plan has included provision for the following movement area facilities:

1. Extended runway 01/19 (subject to introduction of larger aircraft operating direct interstate flights).
2. Expansion of apron areas (RPT, commuter, GA and helicopter)
3. Parallel taxiway to runway 01/19.
4. Extended runway 15/33 (included in Development Plan, actual requirement for extension considered low probability)
5. Parallel taxiway to runway 15/33 (included in Development Plan considered low probability)

7.2 Aviation Support Facilities

This Master Plan has included provision for the following aviation related facilities:

1. Expansion of the passenger terminal (in addition to that achieved during 2013)
2. Space for additional aircraft hangars for maintenance and private
3. Aviation support facilities
4. Meteorological facilities
5. Flying training facilities (including replacement and relocation of the current Aero Club Hangar)

7.3 Other Facilities

This Master Plan has included provision for the following aviation related facilities:

1. Access roads
2. Car parking expansion short and long term (secured)
3. Aviation and Non-aviation business / commercial development
4. Recreational activities

8 GROUND TRANSPORT PLAN

There is no anticipated change to the current road network. The external road system comprising the Lincoln Highway may be upgraded in the future to include additional passing lanes, improved grade alignment into the airport etc. Internal roads will eventually require resurfacing, widening and geometric upgrades, plus extension to service new hangar or landside development projects.

9 ENVIRONMENTAL MANAGEMENT PLAN

An airport specific Environmental Management Plan has not been prepared on the basis that there are no known sites of environmental significance within the airport boundary. The airport will be managed and developed in accordance with the Council Wide Provisions and objectives contained in the Development Plan 2015 in regards to the protection of the environment

10 HERITAGE MANAGEMENT PLAN

There are no Heritage Items of significance within the airport boundary. Protection of heritage buildings and structures within the Airfield Zones is covered in the Lower Eyre Peninsula DC Development Plan 2015. Refer also Section 3.9.

11 AIRPORT SAFEGUARDING PLAN

11.1 National Airports Safeguarding Framework (NASF)

The National Airports Safeguarding Framework is a national land use planning framework that aims to:

- improve community amenity by minimising aircraft noise-sensitive developments near airports; and
- improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.

The National Airports Safeguarding Advisory Group (NASAG), comprising of Commonwealth, State and Territory Government planning and transport officials, the Australian Government Department of Defence, the Civil Aviation Safety Authority (CASA), Airservices Australia and the Australian Local Government Association (ALGA), has developed the National Airports Safeguarding Framework (the Framework).

The National Airports Safeguarding Framework was developed to provide guidance for Planners to consider potential impact of developments outside the airport on airport operations. Principles of the guideline will be considered in local planning processes when assessing a development application in the vicinity of Port Lincoln Airport. The purpose of the framework is to enhance the current and future safety, viability and growth of aviation operations at Australian airports, by supporting and enabling:

- the implementation of best practice in relation to land use assessment and decision making in the vicinity of airports;
- assurance of community safety and amenity near airports;
- better understanding and recognition of aviation safety requirements and aircraft noise
- impacts in land use and related planning decisions;
- the provision of greater certainty and clarity for developers and land owners;
- improvements to regulatory certainty and efficiency; and
- the publication and dissemination of information on best practice in land use and related planning that supports the safe and efficient operation of airports.

NASF PRINCIPLES

Principle 1. The safety, efficiency and operational integrity of airports should be protected by all governments, recognising their economic, defence and social significance.

Principle 2. Airports, governments and local communities should share responsibility to ensure that airport planning is integrated with local and regional planning.

Principle 3. Governments at all levels should align land use planning and building requirements in the vicinity of airports.

Principle 4. Land use planning processes should balance and protect both airport/aviation operations and community safety and amenity expectations.

Principle 5. Governments will protect operational airspace around airports in the interests of both aviation and community safety.

Principle 6. Strategic and statutory planning frameworks should address aircraft noise by applying a comprehensive suite of noise measures.

Principle 7. Airports should work with governments to provide comprehensive and understandable information to local communities on their operations concerning noise impacts and airspace requirements.

NASF GUIDELINES
Over the long term, inappropriate development around airports can result in unnecessary constraints on airport operations and negative impacts on community amenity due to the effects of aircraft noise. These impacts need to be managed in a balanced and transparent way.

Guideline A *p*rovides advice on the use of a complementary suite of noise metrics, to inform planners and provide communities with comprehensive and understandable information about aircraft noise.

Guideline B presents a layered risk approach to the siting and design of buildings near airport runways to assist land use planners and airport operators to reduce the risk of building - generated windshear and turbulence. It also provides options to modify existing buildings.

Guideline C provides advice to help protect against wildlife hazards originating off-airport through appropriate land use planning decisions and the way in which existing land use is managed in the vicinity of airports.

Guideline D provides advice on the location and safety management of wind turbines and other similar structures which can constitute a risk to low-flying aviation operations and can also affect the performance of Communications, Navigation equipment operated by Airservices Australia.

Guideline E provides advice on ensuring lighting in the vicinity of airports is not configured so as to cause distraction or confusion to pilots

Guideline F provides advice for planners and decision makers about working within and around protected airspace, including obstacle limitation surface (OLS) and Procedures for Air Navigation Services (PANS-OPS) intrusions, and how these can be better integrated into local planning processes.

11.2 Airspace Protection Surfaces

- ***Obstacle Limitation Surface Plan.***
  An airport OLS has been developed for Port Lincoln for the protection of the 3 runways. The OLS plans are in 2 forms Exiting and Future to cover both the existing and long term.

- ***PANS OPS***
  Port Lincoln has straight in approach Area Navigation Global Navigation Satellite System (RNAV GNSS) procedures for runway 19 and a NDB approach to the airport. The clearance surfaces associated with these procedures are covered by the OLS parameters.

For the purpose of this Master Plan, allowance has been included for GPS approaches to both ends of the extended 01/19 runway.

11.3 Aircraft Noise Contours

Australian Noise Exposure Forecasts have not been prepared for Port Lincoln on the basis that the frequency of aircraft movements and the type of aircraft flying are not sufficient to generate a meaningful ANEF even using the most optimistic forecasts. Instead single event noise contours have been generated using modelling data for aircraft types typically using Port Lincoln.

11.4 Planning Policies and Controls

Planning policies and controls relating to safeguarding of the airport are contained within the District Council of Lower Eyre Peninsula Development Control Plan.

The land use provisions of this Master Plan are based on the District Council of Lower Eyre Peninsula Development Plan.

The Master Plan also takes into account State, Regional and Local Government strategic directions, planning policies and legislative framework.

This Master Plan acknowledges Port Lincoln Airport as a vital aviation facility for the mid and Lower Eyre Peninsula 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.

The plan will ensure the operational integrity and economic viability of the airport is not compromised by surrounding development and the airport has the capacity to expand to meet future growth potential in regional travel, tourism and the expanding oil/gas and mining industries.

Development on airport land is assessed under the Development Act and relevant regulations, the Master Plan develops the framework to guide future development on airport land.

State, Regional and Local Government strategic directions, planning policies and legislative frameworks guide future development within the Lower Eyre Peninsula and will directly impact and influence the future growth and development of the Port Lincoln Airport.

At a State-level, the following Planning Frameworks are relevant to the region:

- SA Strategic Plan;
- Strategic Infrastructure Plan for SA;
- Development Act and Development Regulations; and
- Eyre and Western Region Plan (A volume of the South Australian Planning Strategy).
- Whyalla and Eyre Peninsula Regional Economic Development Board Regional Plan – Whyalla and Eyre Peninsula.

There are also a number of Council-level Planning Frameworks that need to be considered:

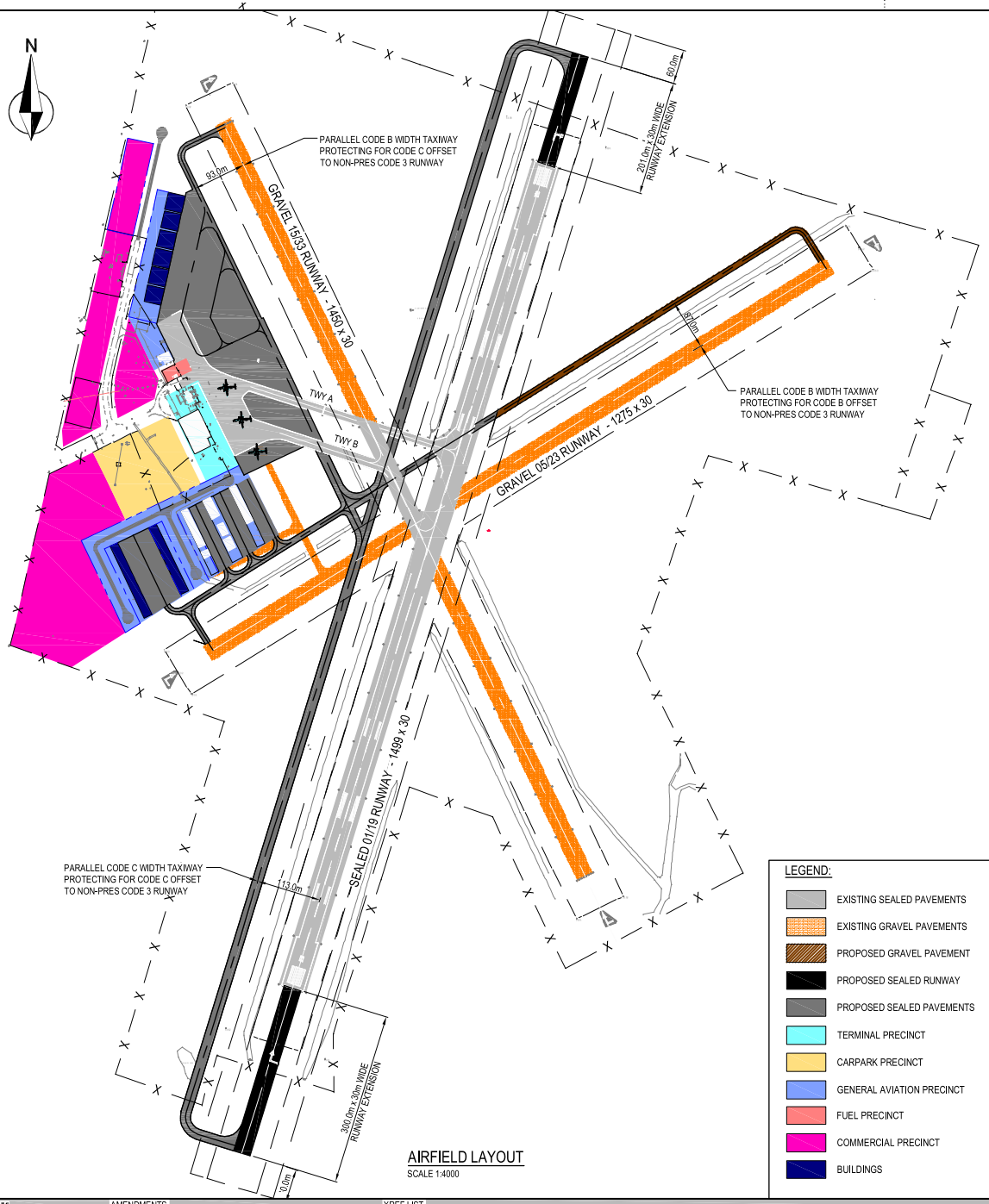
- District Council of Lower Eyre Peninsula Strategic Plan; and
- District Council of Lower Eyre Peninsula Development Plan

12 IMPLEMENTATION PLAN

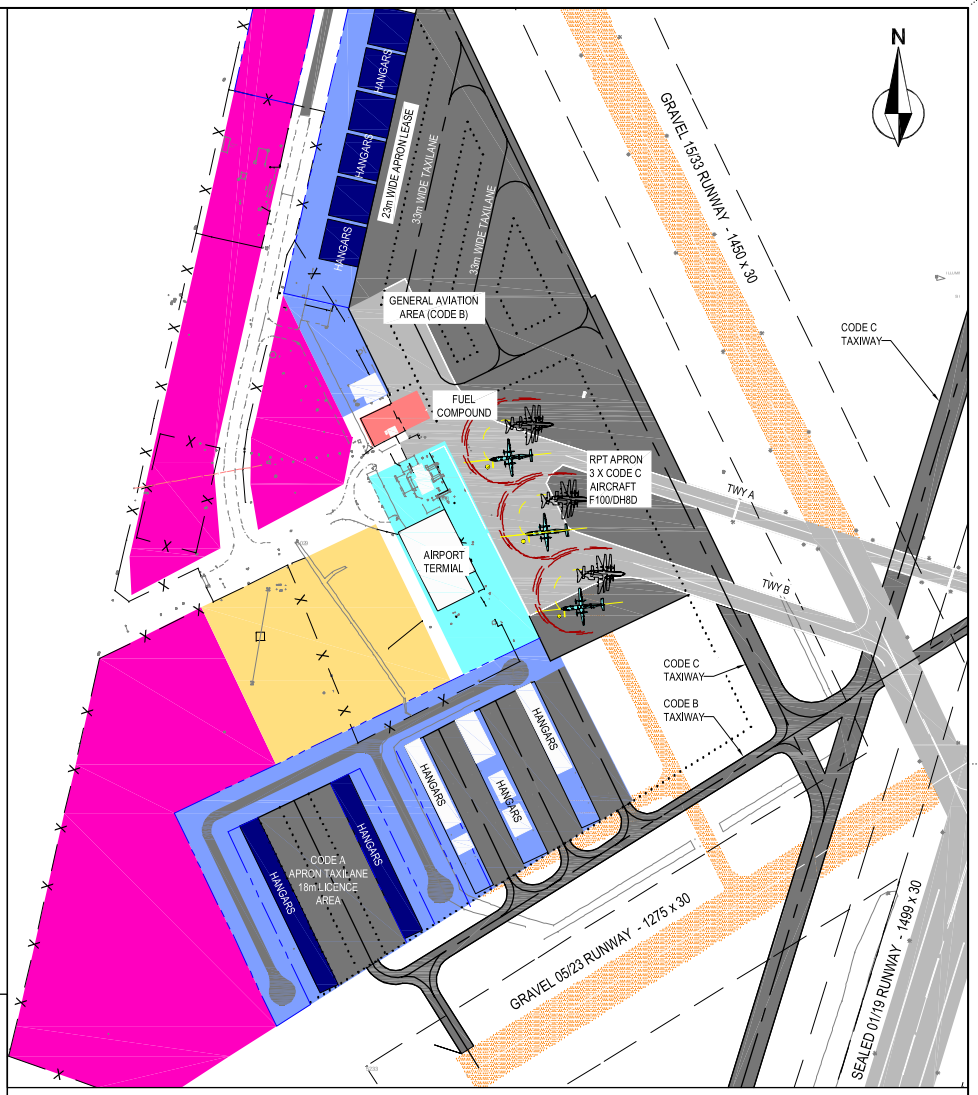
Location	Detail	Year	Cost Estimate $
Runway 01/19 reseal	Bituminous overspray of runway 01/19 including turning nodes and fillets	2016	450,000
RPT Apron	Extension to allow independent and simultaneous use by 2 Q400, 2 Saab 340 PC12	2026	800,000
Runway 15/33	Sealing of turning Nodes and 100 metres at either end	2017	150,000
RPT taxiway	Upgrade former RPT apron and taxiway Alpha to Q400 standard (alternatively Q300)	2022	200,000
Aeroclub relocation	Relocate/ replace in a new location in the light aircraft apron reserve to allow development south of the terminal	2020	50,000
New area south of passenger terminal	Develop the area vacated by the Aeroclub initially for expanded GSE storage	2021	130,000
Maintenance Apron	Extend sealed apron to meet current demand and allow passing by 30m wingspan aircraft	2017	160,000
Maintenance Apron (Part 2) and associated infrastructure	Extend maintenance apron, provide road access and utilities to allow construction of new commercial hangars	2023	100,000
RFDS Retrieval Apron	New sealed apron off the north end of the maintenance apron. New access gate and road connection	2024	80,000
RPT Apron and high strength taxiway	Maintenance Reseal and resurfacing as required	2022	120,000
Light aircraft apron	Extend sealed areas to GA Hangars	2017	20,000
New aircraft refuelling facility	Establish new aviation fuel storage remote from terminal and congested area	2026	TBA
Western Boundary Provision of Serviced Sites	Provision of Engineering Services (roads footpaths drainage utilities etc) to facilitate development of new commercial sites parallel to the Lincoln Highway	2022	150,000
Western Boundary Provision of Serviced Sites Stage 2 south of access road	Provision of Engineering Services (roads footpaths drainage utilities etc) to facilitate development of new commercial sites parallel to the Lincoln Highway	2023	150,000
Secure car park	Construct new secure car park compound in line with main terminal car park	2021	300,000
NDB replacement	Provision of a new NDB in the eastern sector to allow optimal use of the current site	2021	TBA – to be paid by Airservices
Helicopter Apron	A further extension of the maintenance apron to the north to accommodate helicopter activities	2019	120,000
New parallel taxiway to runway 01/19	Full length parallel taxiway undertaken in stages as required to accommodate increased use of runway 01/19	2030	800,000
Runway 15/33 sealing	Sheeting and sealing full length of runway 15/33	2030	2.5M
Runway 01/19 strengthening	Asphalt strengthening overlay to accommodate medium sized jet aircraft	2026	TBA

13 DRAWINGS

1. Master Plan Layout
2. Single Event Noise Contours
3. Obstacle Limitation Surface Plans PLC AD 101 sheets 1 and 2



AIRFIELD LAYOUT
SCALE 1:4000



TERMINAL PRECINCT LAYOUT
SCALE 1:2000

EXISTING DECLARED DISTANCES

	TORA	TODA	ASDA	LDA
RWY 01	1499	1559	1499	1499
RWY 19	1499	1600	1499	1499
RWY 05	1275	1335	1275	1275
RWY 23	1275	1335	1275	1275
RWY 15	1450	1510	1450	1450
RWY 15	1450	1510	1450	1450

PROPOSED DECLARED DISTANCES

	TORA	TODA	ASDA	LDA
RWY 01	2000	2060	2000	2000
RWY 19	2000	2060	2000	2000
RWY 05	1275	1335	1275	1275
RWY 23	1275	1335	1275	1275
RWY 15	1450	1510	1450	1450
RWY 15	1450	1510	1450	1450

REV	DATE	AMENDMENTS
A	19/05/16	FOR INFORMATION

XREF LIST
Includes: ZSH_A1
Includes: X YPLC AD
Includes: X YPLC MP
Includes: X YPLC HATCH MP
Includes: X YPLC HATCH EX
Includes: X YPLC HATCH EX BLDG

AERODROME DESIGN Pty Ltd
ABN 63 102 371 871
71 Salisbury Crescent
Colonel Light Gardens SA 5041

CLIENT
DISTRICT COUNCIL OF LOWER EYRE PENINSULA

DRAWN :	AIRWORKS	19/05/16
DESIGNED :	AIRWORKS	19/05/16
ORIGINATOR :	P.FRANCIS	
COMPANY :	AERODESIGN	
APPROVED :		

PORT LINCOLN AERODROME
20 YEAR MASTER PLAN

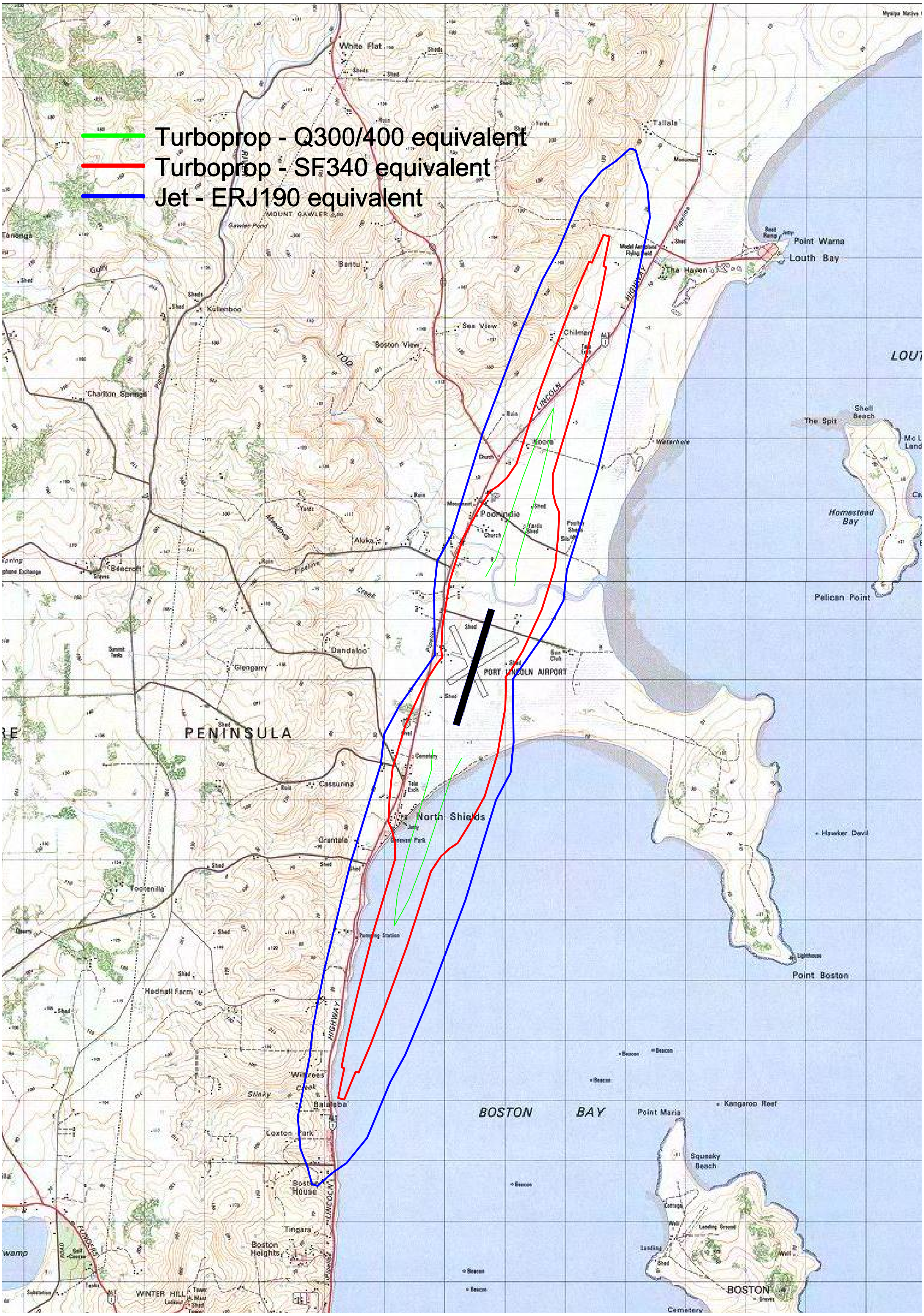
TITLE
RUNWAY AND TERMINAL PRECINCT

SCALE 40 0 40 80 120m
A1 SCALE 1:4000

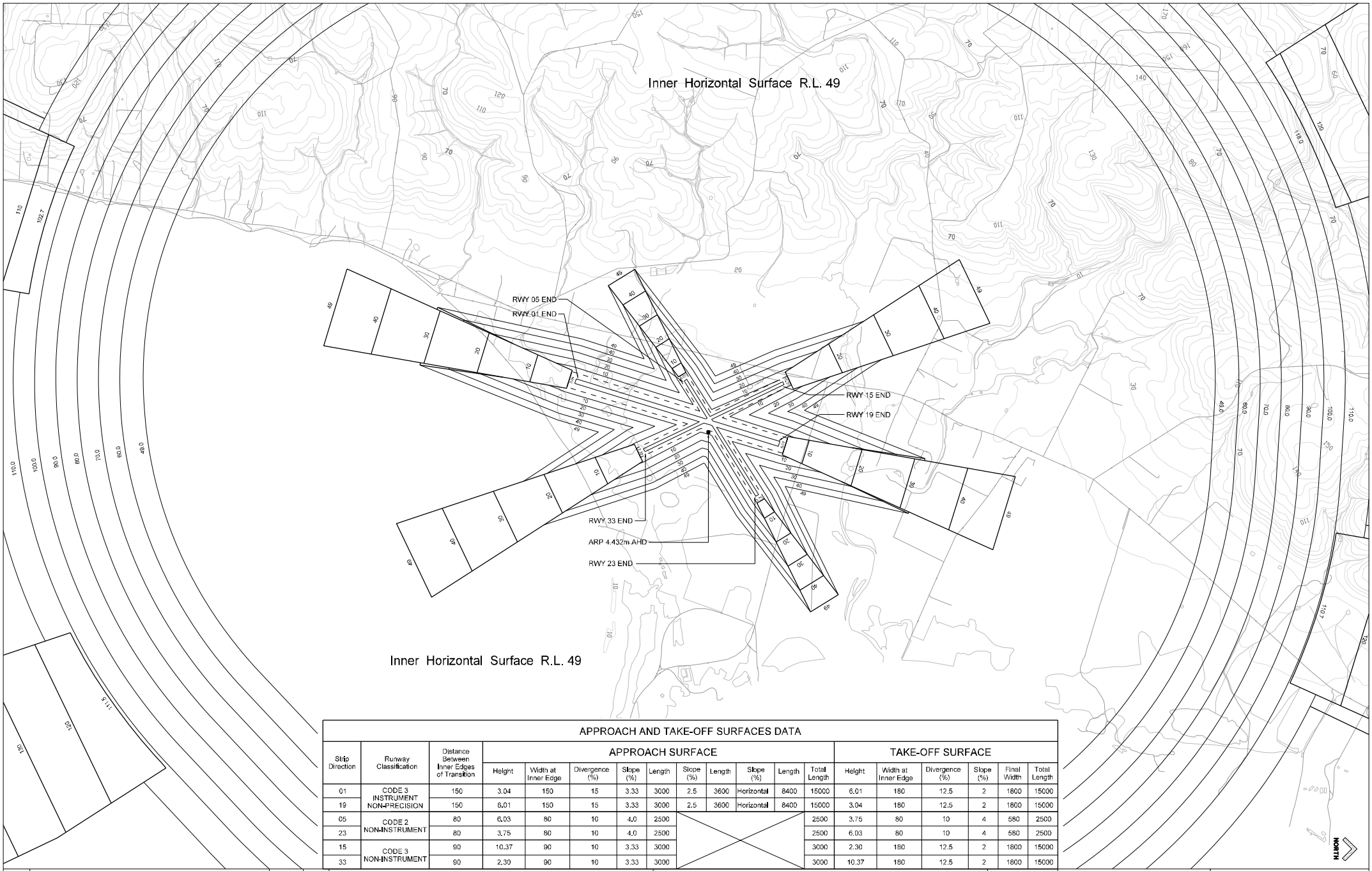
DRAWING No. YPLC16AV01
REV A

A1 Border

Cad File: E:\zwork\Aerodesign\Jobs 16\160510 Pt Lincoln - YPLC Mplan OLS\DRG YPLC16AV-01-A MP.dwg 19-May-16 - 02:43:30 PM



Turboprop - Q300/400 equivalent
Turboprop - SF340 equivalent
Jet - ERJ190 equivalent
PORT LINCOLN AIRPORT
PENINSULA
North Shields
BOSTON BAY
Point Warna
Louth Bay
Pelican Point
Point Boston
Point Maria
Kangaroo Reef
Hawker Devil
Poonindie
Boston View
Sea View
MOUNT GAWLER
Tallala
The Haven
White Flat
Kullinboo
Beecroft
Glengarry
Dandaloo
Cassurina
Grantala
Toctenilla
Hednall Farm
Witarees
Balaleba
Coxton Park
Boston House
Tingara
Boston Heights
WINTER HILL
BOSTON
Squeaky Beach
The Spit
Shell Beach
Homestead Bay



APPROACH AND TAKE-OFF SURFACES DATA

Strip Direction	Runway Classification	Distance Between Inner Edges of Transition	APPROACH SURFACE										TAKE-OFF SURFACE					
			Height	Width at Inner Edge	Divergence (%)	Slope (%)	Length	Slope (%)	Length	Slope (%)	Length	Total Length	Height	Width at Inner Edge	Divergence (%)	Slope (%)	Final Width	Total Length
01	CODE 3 INSTRUMENT NON-PRECISION	150	3.04	150	15	3.33	3000	2.5	3600	Horizontal	8400	15000	6.01	180	12.5	2	1800	15000
19		150	6.01	150	15	3.33	3000	2.5	3600	Horizontal	8400	15000	3.04	180	12.5	2	1800	15000
05	CODE 2 NON-INSTRUMENT	80	6.03	80	10	4.0	2500					2500	3.75	80	10	4	580	2500
23		80	3.75	80	10	4.0	2500					2500	6.03	80	10	4	580	2500
15	CODE 3 NON-INSTRUMENT	90	10.37	90	10	3.33	3000					3000	2.30	180	12.5	2	1800	15000
33		90	2.30	90	10	3.33	3000					3000	10.37	180	12.5	2	1800	15000

REVISION	AMENDMENT DESCRIPTION	APPROVED	DATE
P1	ISSUED FOR INFORMATION	PF	07-10-12

16m 32m 80m 160m

NOTE: CONFIRM ALL DIMENSIONS
SCALE: 1:1600 @ A1 size

AERODROME DESIGN PTY LTD
ABN 63 102 371 871
TECHNICAL & SAFETY INSPECTIONS
PLANNING & DESIGN
T/F : (08) 8172 2090 Mobile: 0409 806 599
Email: peter @aerodrome.com.au

DRAWN: PF
DESIGN: PF
APPROVED: PF

PROJECT:
PORT LINCOLN AERODROME

FOR:

TITLE:
OBSTACLE LIMITATION SURFACE - PART

DRAWING STATUS	DRAWING No.	REV.
Planning only	PLC-AD-101	P1

APPROACH AND TAKE-OFF SURFACES DATA

Strip Direction	Runway Classification	Distance Between Inner Edges of Transition	APPROACH SURFACE										TAKE-OFF SURFACE					
			Height	Width at Inner Edge	Divergence (%)	Slope (%)	Length	Slope (%)	Length	Slope (%)	Length	Total Length	Height	Width at Inner Edge	Divergence (%)	Slope (%)	Final Width	Total Length
01	CODE 3 INSTRUMENT NON-PRECISION	150	3.04	150	15	3.33	3000	2.5	3600	Horizontal	8400	15000	6.01	180	12.5	2	1800	15000
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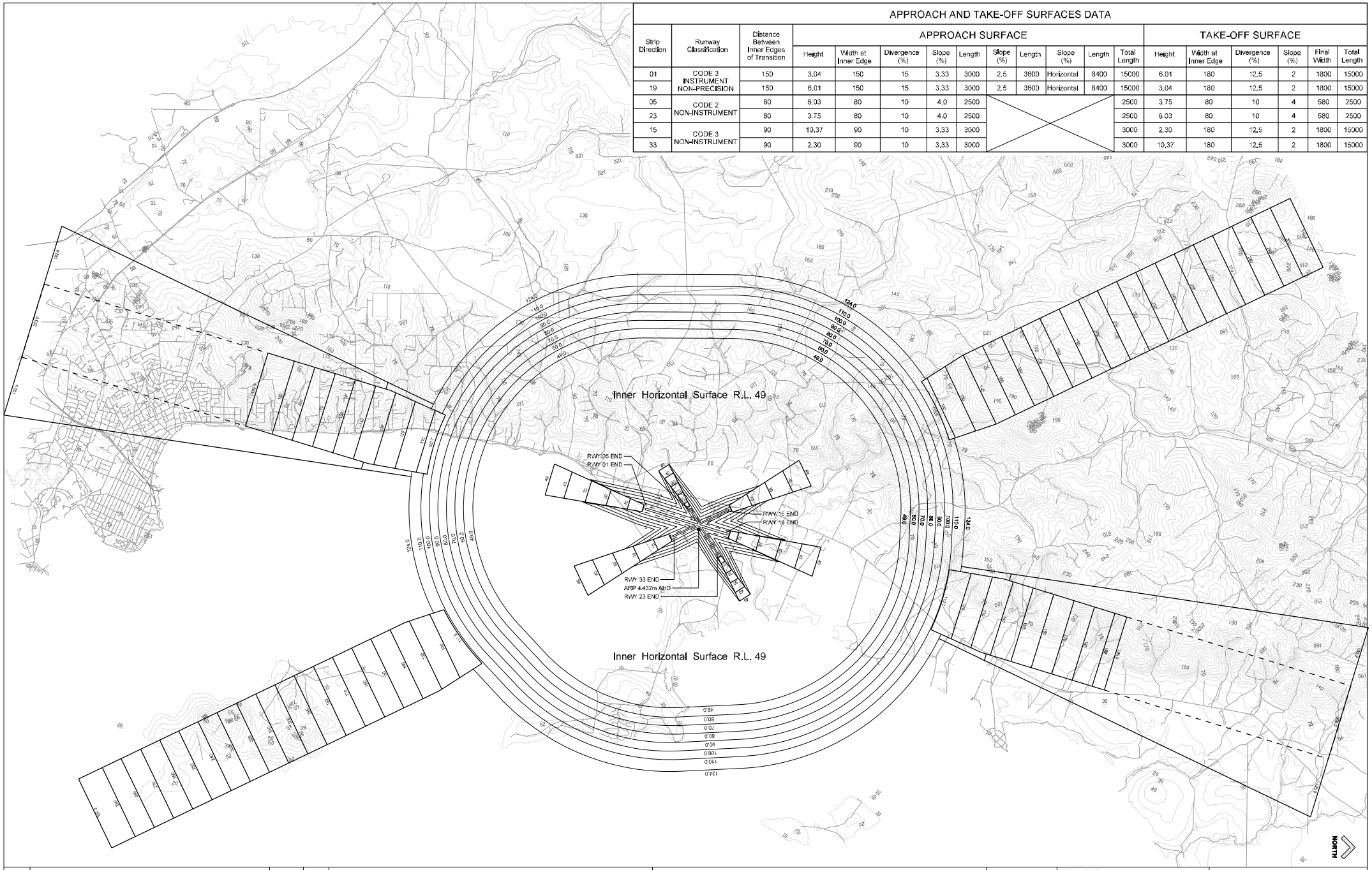
23		80	3.75	80	10	4.0	2500					2500	6.03	80	10	4	580	2500
15	CODE 3 NON-INSTRUMENT	90	10.37	90	10	3.33	3000					3000	2.30	180	12.5	2	1800	15000
33		90	2.30	90	10	3.33	3000					3000	10.37	180	12.5	2	1800	15000



REVISION	AMENDMENT DESCRIPTION	APPROVED	DATE
P1	ISSUED FOR INFORMATION	PF	07-10-12

40 80 200m 400m

NOTE: CONFIRM ALL DIMENSIONS

SCALE: 1:4000 @ A1 size

AERODROME DESIGN PTY LTD

ABN 63 102 371 871

TECHNICAL & SAFETY INSPECTIONS
PLANNING & DESIGN

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Email: peter @aerodrome.com.au

DRAWN: PF

DESIGN: PF

APPROVED: PF

PROJECT:

PORT LINCOLN AERODROME

FOR:

TITLE:

OBSTACLE LIMITATION SURFACE - FULL

DRAWING STATUS: Planning only

DRAWING No.: PLC-AD-100

REV.: P1