22.074.01

Central Coast Airport

Draft Master Plan 2023

Aviation Safety • Efficiency
Capacity • Environment

Central Coast Airport Draft Master Plan 2023 Version 1.0

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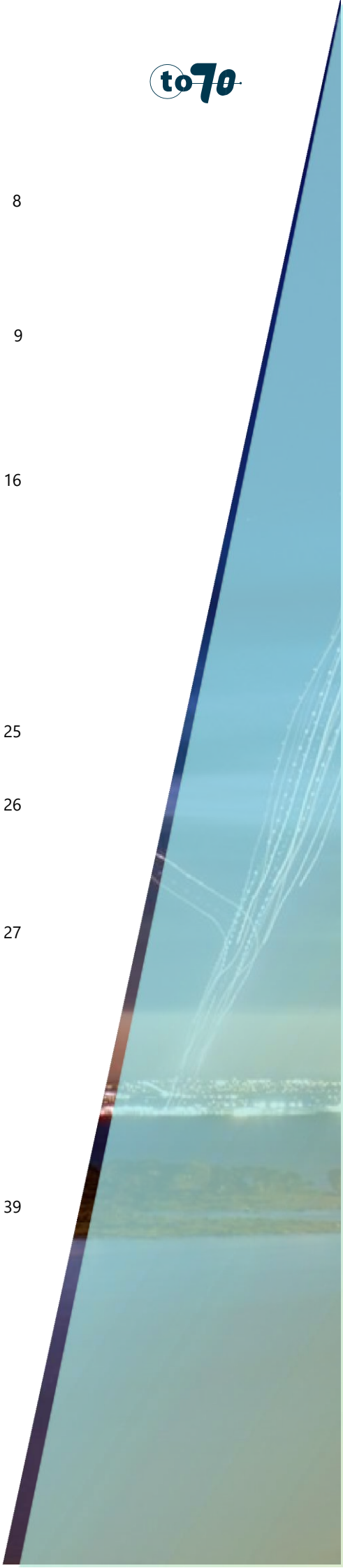

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Filename	Comments
22.074.01_CCA Master Plan Development Plan Summary	Large format figures and tables for reproduction

Document Review

Version	Name	Title	Date
0.1	Rob Morris	Senior Aviation Consultant	20-Jun-23

Document Ownership and Approval

Name	Title	Signature
Jamie Barclay	Unit Manager	

Terms and Acronyms

Term or Acronym	Definition
ALA	Aircraft Landing Area
ARO	Aerodrome Reporting Officer
ARC	Aerodrome Reference Code
CCC	Central Coast Council
CCA	Central Coast Airport
CCAC	Central Coast Aero Club

CCDCP	Central Coast Development Control Plan
CASA	Civil Aviation Safety Authority
HLS	Helicopter Landing Site
ICAO	International Civil Aviation Organization
MOS	Manual of Standards
NASF	National Airports Safeguarding Framework
OLS	Obstacle Limitation Surface

1 Overview

1.1 Overview

The Central Coast Airport (CCA) is owned and operated by Central Coast Council (CCC). It is located in Warnervale, approximately 1 hour north of Sydney and 1 hour south of Newcastle via the M1 Pacific Motorway. The airport is situated two kilometres east of the M1 Pacific Motorway via the Sparks Road interchange and west of the Main Northern Railway Line.

More specifically, the airport is located at 15 Jack Grant Avenue, Warnervale, on 44 hectares of land zoned as E4 – General Industrial. The airport is currently uncertified, having a Civil Aviation Safety Authority (CASA) classification of an Aircraft Landing Area (ALA). There is a single sealed runway orientated in the 02/20 direction and a parallel gravel taxiway.

CCA is currently used for General Aviation purposes, including for private and recreational flying, flight training and emergency services. CCA is home to the Central Coast Aero Club (CCAC), which has been active for over 45 years at the airport.

Whilst this Master Plan document primarily deals with CCA, it also provides information regarding future planning for the Erina Helicopter Landing Site (Erina HLS). This facility is located in Erina, approximately 1 hour north of Sydney and 1 hour south of Newcastle via the M1 Pacific Motorway. The Helicopter Landing Site is situated south off Pateman Rd via the Central Coast Hwy. Further details and future planning requirements for this facility is specifically addressed in Section 11 and provides additional opportunity for complementary expansion and coordination of rotary operations across both sites.

1.2 Purpose and Objectives of the Master Plan

Council is aiming to develop the Central Coast Airport into a general aviation hub which integrates aviation, technology, education, and business, and provides opportunities for interaction, collaboration, and alliances in the general aviation sector.

The strategic objective is to develop the Central Coast Airport into a regional general aviation industry hub serving the Sydney, Central Coast and Hunter Regions.

To this end, CCC commissioned the preparation of this Master Plan to provide the Council with a strategic planning document to facilitate the achievement of the above objectives and guide CCA's future growth and development. The key objectives of the Master Plan, as outlined in the project brief, are to enable CCA to:

- Achieve regional economic objectives such as attracting business investment, developing tourism and generating employment opportunities
- Ensure the airport is ready for the opportunities resulting from the repeal of the Warnervale Airport (Restrictions) Act 1996 and lifting of flight restrictions
- Provide strategic direction to support development of airport infrastructure and ensure appropriate safeguarding measures
- Establish a framework for establishing straightforward contractual and leasing arrangements at the airport for new and existing users/operators.

Furthermore, this Master Plan considers and provides for the following:

- Requirements for CCA to attain the required level of certification for forecast traffic and disposition
- Provision of fit-for-purpose facilities that provide the ability for the airport to grow and expand in response to demand
- Continued use by recreation and commercial aircraft operators
- Ensure capability to support emergency use for natural disasters or road incidents
- Ensuring operational management compliance with relevant regulations.

1.3 Strategic Vision and Objectives

The strategic vision for CCA, which forms the basis of this Master Plan, is:

Develop Central Coast Airport for flying enthusiasts, training and supporting businesses, by upgrading facilities and surrounding precincts. Highlight location, airspace and ease of access to promote Central Coast Airport as a leading aeronautical and employment hub in regional NSW. The key objectives are for CCA to be a:

- Key driver for regional economic development
- Key driver for the generation of regional employment opportunities, particularly in the skilled, professional and technology- based sectors
- Stimulus for regional investment
- Stimulus for regional education & innovation
- Stimulus for a new tourism sector and the tourism industry
- Key regional infrastructure project which will provide air transport options for residents, and improve the region's economic competitiveness
- Benchmark for environmentally sensitive and sustainable development in the region.

1.4 Report Structure

The structure for this Master Plan is based on the Australian Airports Association's Regional Airport Master Planning Guideline.

Section 2 of this report describes the Master Plan context, including the historical context, regulatory environment and underlying policy context.

Section 3 of this report outlines the airport's current state. This includes a description of the airport's existing use, the airfield facilities, utility services and environmental issues.

Sections 4 and 5 describe the outcomes of the stakeholder consultation and strategic (SWOT) analysis that was undertaken in preparing this Master Plan.

In Section 6 an analysis of the critical airport planning criteria, and how they relate to CCA, is outlined. This includes a discussion of future aircraft activity, design aircraft, pavement strength, security requirements and airspace protection surfaces and aircraft noise contours.

Section 7 is the core part of the Master Plan as it sets out the future planning requirements for the airport. This includes a land use plan, a facilities development plan and an airport safeguarding plan.

Section 8 brings all of the preceding sections together into an outline of the overarching 15-year Master Plan, in three stages: Stage 1 - within the next 5 years and Stage 2 - within the next 5-10 years.

Section 9 provides a summary of the Master Plan recommendations and Section 10 sets out an implementation plan which provides possible trigger points and estimated timing for key actions arising from the plan.

2 Master Plan Context

2.1 Historical Background

Central Coast Airport (also known as Warnervale Airport) was opened in 1973 following engagement by a local group of aviation enthusiasts with Wyong Shire Council to rezone an area of land for the establishment of a landing area for recreational flying activities.

The airport was operated solely by the Central Coast Aero Club until the 1980s when a land swap was negotiated with Wyong Shire Council whereby the Aero Club consolidated the area around their club rooms and Council assumed ownership of the runway and movement areas. Council completed sealing works and the provision of utilities to the airport site and contracted Central Coast Aero Club to conduct regular maintenance activities.

In 1993 a master plan was developed for the airport which proposed the extension of the runway to cater for regular passenger services and a freight hub. There was opposition to these proposals which culminated in a political intervention with the establishment of the Warnervale Airport Restriction Act 1996 (WAR Act) in NSW State Parliament. The WAR Act curtailed the ability for Wyong Shire Council to develop the airport site beyond limited maintenance work.

In February 2021, the NSW State Parliament voted to repeal the WAR Act along with the immediate lifting of any flight restrictions. The review report also made recommendations for Central Coast Council to develop and adopt a framework for the future of the airport and act to reduce the obstacle risk of trees located on final approach at the northern end of the runway.

The airport continues to provide value to the community through:

- Recreational flying and hangarage
- Flight training
- Community events
- Medical and emergency services.

2.2 Regional Context

Over time it has become increasingly unlikely that economic, environmental and community criteria for a runway extension will be met and the emphasis from Central Coast Council has shifted more toward the development of a Central Coast General Aviation Hub with the following objectives:

- Key driver for regional economic development
- Key driver for the generation of regional employment opportunities, particularly in the skilled, professional and technology-based sectors
- Stimulus for regional investment
- Stimulus for a new tourism section and tourism industry
- Stimulus for regional education & innovation
- Key regional infrastructure project which will provide air transport options for residents, and improve the region's economic competitiveness.
- Opportunity to capitalise and support emerging technologies such as hydrogen and electric aviation
- Benchmark for environmentally sensitive and sustainable development in the region.

2.3 Regulatory Context

2.3.1 Aviation Regulatory Framework

2.3.1.1 Civil Aviation Safety Authority (CASA)

CASA is the authority responsible for the implementation and enforcement of safety regulations for civil aviation operations in Australia. Their authority is derived under the Civil Aviation Act 1988 and promulgated through Civil Aviation Safety Regulations 1988 (CASRs). CASA has powers to protect operational airspace or to curtail aircraft operations if they believe safety is compromised.

CASR Part 139 prescribes the requirements for certified aerodromes used in air transport operations. The Manual of Standards (MOS) Part 139 Aerodromes is made pursuant to CASR Part 139 and sets out detailed standards and operating procedures for aerodromes used in air transport. The manual provides the rules, mandatory standards, procedures, and guidance information relating to the planning, design, and operation of airports.

In addition to MOS 139, which can be located here - MOS 139 Aerodromes, CASA conducts periodic inspections (surveillances) to ensure airport and aircraft operators meet their regulatory responsibilities under:

CASR Part 139 – *Aerodromes*

CASR Part 175 – Aeronautical information management

CASR Part 173 – Instrument flight procedure design

Further advice is provided to aerodrome owners and operators by the following guidelines:

AC 139.C-04 – Aerodrome technical inspections

AC 139.C-09 – Visual aids, markings, signals and signs

AC 139.C-10 – Aerodrome lighting

AC 139.C-26 – Safety management system for aerodromes

AC 139.C-27 – Risk management plans for aerodromes

AC 139.C-16 – Wildlife hazard management at aerodromes

As a non-certified aerodrome, or aeroplane landing area (ALA) operations at Warnervale Airport are conducted at the discretion of pilots based on the following guidelines:

AC 91-02 – Guidelines for aeroplanes with MTOW not exceeding 5,700kg – Suitable places to take-off and land.

Regulation 91.410 authorises a place for use as an aerodrome if: (i) it is suitable for the landing and taking-off of aircraft; and (ii) an aircraft can land at or take off from the place safely, having regard to all the circumstances of the proposed landing or take-off (including the prevailing weather conditions).

AC 91-10 – Operations in the vicinity of non-controlled aerodromes

CAAP 92-1(1) – Guidelines for aeroplane landing areas

Warnervale Airport does not meet the minimum requirements for air transport operations or instrument flight procedures. This requires the aerodrome to achieve certification using the process outlined in the following advisory circulars:

AC 139.B-01 v1.0 – Applying for aerodrome certification

AC 139.A-03 v1.0 – Application of aerodrome standards

2.3.1.2 Airservices Australia (Airservices)

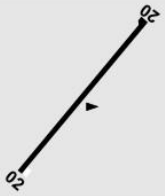
Airservices has responsibility for the management of airspace and air traffic, and to provide Australia's network of aviation users with facilities for aircraft navigation, communication and surveillance.

Local governments are encouraged to seek advice from Airservices on any development that has the potential to impact an aviation facility's sensitive areas such as landing and navigational areas.

Airservices also maintain aerodrome information, and the current plate within ERSA for Warnervale (CCA) is shown below.

WARNERVALE **ELEV 25**

FULL NOTAM SERVICE NOT AVBL



NSW UTC +10 YWVA
331425S 1512549E VAR 12 DEG E UNCR
AD OPR Central Coast Council, PO Box 20, Wyong, NSW, 2259. PH 02 4350 5555. ARO 02 4392 4741. Website: www.centralcoast.nsw.gov.au.

REMARKS

1. AD charges all ACFT. Refer Central Coast Council website.
2. Curfew applies: no movements permitted BTN 2200-0630 Local.

HANDLING SERVICES AND FACILITIES

Warnervale Air Pty Ltd: 0730-1600 Local DLY. Phone 02 4392 5174.
Aero Refuellers: H24 AVGAS bowser. Accepts Aero Refuellers cards, V and MC. PH 0413 003 808.

PASSENGER FACILITIES

LG/RF/WC

AERODROME OBSTACLES

Tall trees 55FT AGL 278M S of DTHR RWY 02.

PHYSICAL CHARACTERISTICS

02/20	39a	5700/ Unrated. Sealed. RWY LEN 1,193M. RWY 02 DTHR 242M. RWY 20 DTHR 210M.	WID 10	RWS 50

ATS AND AERODROME COMMUNICATION FACILITIES

FIA	SYDNEY CENTRE	125.8 Circuit Area

LOCAL TRAFFIC REGULATIONS

1. Preferred RWY 20 with LV wind or direct crosswind.
2. Back tracking on the RWY not permitted (except for line-up RWY 02) and pilots should vacate the RWY as soon as practicable after landing.
3. Carriage and use of radio is required by the AD OPR.
4. Broadcast with intentions turning base is required.
5. Pilots should limit radio transmissions in the circuit to those necessary to provide traffic information and separation.
6. Straight-in approaches are not permitted.

CTAF 132.1

NOISE ABATEMENT PROCEDURES

Pilots are requested, where possible to avoid a noise sensitive areas (Watanobbi) to the SSE of AD.

ADDITIONAL INFORMATION

1. Flight training by RA and GA aircraft.
2. Kangaroo and bird hazard exists.
3. Caution: standing water or soft movement areas after rain.

CHARTS RELATED TO THE AERODROME

WAC 3456.

2.3.2 Commonwealth, State & Local Environmental and Planning Frameworks

2.3.2.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EBPC Act)

The EBPC Act provides a legal framework to protect and manage nationally and internationally significant flora, fauna ecological communities and heritage places.

2.3.2.2 Local Government Act 1993 (NSW)

As a Council owned asset, the airport is subject to the requirements of the Local Government Act 1993. This applies to the sale, lease, transfer exchange and use of land. Council must operate in accordance with the Local Government Act.

2.3.2.3 Environmental Planning and Assessment Act 1979 (NSW)

The Environmental Planning and Assessment Act 1979 is the primary legislative instrument for ensuring an environmentally sustainable and structured approach to planning development in NSW.

The objects of this Act are as follows:

- to promote the social and economic welfare of the community and a better environment by the proper management, development, and conservation of the State's natural and other resources
- to facilitate ecologically sustainable development by integrating relevant economic, environmental, and social considerations in decision-making about environmental planning and assessment
- to promote the orderly and economic use and development of land
- to promote the delivery and maintenance of affordable housing
- to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities, and their habitats
- to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)
- to promote good design and amenity of the built environment
- to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants
- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State
- to provide increased opportunity for community participation in environmental planning and assessment.

2.3.2.4 Central Coast Local Environmental Plan 2022

A Local Environmental Plan (LEP) is the primary legal planning document for guiding land use and planning decisions made by Council. Through zoning and development controls, the LEP allows Council to manage the way in which land is used to strategically plan for the region and shape and support our local communities. The Central Coast Local Environmental Plan 2022 (CCLEP) came into effect on 1 August 2022.

Figure 1 below is a snapshot of the zoning controls applying to the airport site and surrounds under the CCLEP. The bulk of the airport site including the hangar / aero club area is zoned E4: General Industrial as is the Woolworths site and adjacent land. The balance of the airport site and adjacent land is zoned C2: Environmental Conservation..

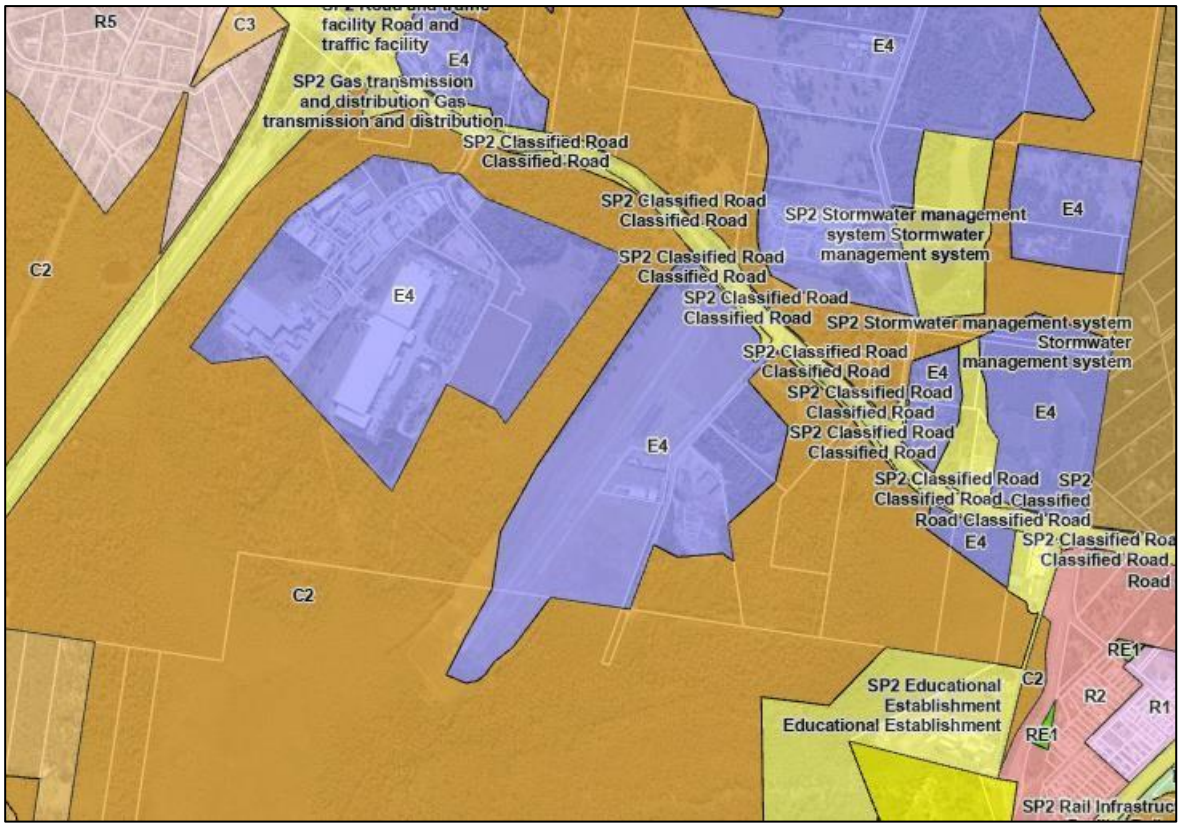


Figure 1 - Central Coast Airport zoning controls

The objectives of the General Industrial Zone are:

- To provide a range of industrial, warehouse, logistics and related land uses.
- To ensure the efficient and viable use of land for industrial uses.
- To minimise any adverse effect of industry on other land uses.
- To encourage employment opportunities.
- To enable limited non-industrial land uses that provide facilities and services to meet the needs of businesses and workers.
- To ensure that retail, commercial or service land uses in industrial areas are of an ancillary nature.
- To support and protect industrial land for industrial uses.

"Airport" is a use that is permitted with consent in the General Industrial Zone (E4) as it is not specified in item 2 or 4 of the zone provisions.

The objectives of the Environmental Conservation Zone (C2) are:

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

"Airport" is a use that is prohibited in the Environmental Conservation Zone as it is not specified in item 2 or 3 of the zone provisions.

There are two specific clauses in the CCLEP of direct relevance to the safeguarding of Central Coast Airport:

- Clause 7.4: Airspace operations
- Clause 7.5: Development in areas subject to aircraft noise.

The objectives of Clause 7.4: Airspace operations, are:

- to provide for the effective and ongoing operation of Central Coast Airport by ensuring that its operation is not compromised by development that penetrates the Limitation or Operations Surface for Central Coast Airport
- to protect the community from undue risk from that operation.

The objectives of Clause 7.5: Development in areas subject to aircraft noise, are:

- to prevent certain noise sensitive developments from being located near Central Coast Airport and its flight paths
- to assist in minimising the impact of aircraft noise from Central Coast Airport and its flight paths by requiring appropriate noise attenuation measures in noise sensitive buildings
- to ensure land use and development in the vicinity of Central Coast Airport do not hinder or have other adverse impacts on the ongoing, safe and efficient operation of the airport.

2.3.2.5 Central Coast Development Control Plan 2022

A Development Control Plan provides detailed planning and design guidelines to support the planning controls in the LEP. The Central Coast Development Control Plan 2022 (CCDCP) also came into effect on 1 August 2022. There does not appear to be any guidelines in the CCDCP directly relating to the Central Coast Airport.

2.4 Policy Context

This section details the relevant policies that influences the future use and development of Central Coast Airport. The Master Plan should be consistent with the existing planning policies, strategic objectives and guidelines.

2.4.1 Central Coast Regional Plan 2041

The Central Coast Regional Plan is the strategic planning blueprint to ensure a sustainable future and the ongoing prosperity of the Central Coast's vibrant and connected communities.

The Central Coast Regional Plan 2041 was on public exhibition from 6 December 2021 until 4 March 2022, which was adopted by Central Coast Council.

In relation to the Warnervale Growth Area, the draft plan states:

- Council to prepare a master plan for Central Coast Airport and consider opportunities for expanded aviation activities including freight and logistics, joy flights and parachute jumps, training and education, maintenance and servicing to satisfy the recommendations from the review of the Warnervale Airport (Restrictions) Act 1996 and the requirements of the repeal of the Act.
- Ensure any ongoing or future uses associated with the Central Coast Airport consider the protection of the Porters Creek Wetland.

Further information regarding the draft plan can be found here:

https://www.planning.nsw.gov.au/plans-for-your-area/regional-plans/central-coast/central-coast-regional-plan-2041

2.4.2 The National Airports Safeguarding Framework (NASF)

The NASF 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 recognition of aviation safety requirements in land use planning decisions.

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

NASF was convened by Commonwealth, State and Territory Ministers at the Standing Council on Transport and Infrastructure (SCOTI) meeting on 18 May 2012. The agreement represents a collective commitment from Governments to ensure that an appropriate balance is maintained between the social, economic and environmental needs of the community and the effective use of airport sites. The Framework applies at all airports in Australia and affects planning and development around airports, including development activity that might penetrate operational airspace and/or affect navigational procedures for aircraft. Pursuant to the SCOTI agreement, it is the responsibility of each jurisdiction to implement the Framework into their respective planning systems.

NASF is comprised of a set of seven principles and nine guidelines. The NASF principles are:

- 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.

The nine guidelines are:

- Guideline A – Measures for Managing Impacts of Aircraft Noise
- Guideline B – Managing the Risk of Building Generated Windshear and Turbulence at Airports
- Guideline C – Managing the Risk of Wildlife Strikes in the Vicinity of Airports
- Guideline D – Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
- Guideline E – Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
- Guideline F – Managing the Risk of Intrusions into the Protected Airspace of Airports
- Guideline G – Protecting Aviation Facilities – Communication, Navigation and Surveillance
- Guideline H – Protecting Strategically Important Helicopter Landing Sites
- Guideline I – Managing the Risk in Public Safety Areas at the Ends of Runways

Copies of the full set of current guidelines can be found on the Department of Infrastructure, Transport, Regional Development, Communications and the Arts' website at the following address: https://www.infrastructure.gov.au/infrastructure-transport-vehicles/aviation/aviation-safety/aviation-environmental-issues/national-airports-safeguarding-framework/national-airports-safeguarding-framework-factsheet

3 Central Coast Airport – Current State

The following section provides information regarding the existing situation, including site conditions at the airport and surrounding land context.

3.1 Ownership & Management

Central Coast Airport Is owned and operated by Council who appoint a manager to oversee daily operations with the support of two Airport Reporting Officers (ARO).

3.2 Master Planning

A review was undertaken on the technical considerations for the masterplan study outlining the most practical configuration for future operations within the known constraints:

- Obstacles penetrating the approach and departure surfaces.
- Any extension of the runway considered unlikely, from an economic, environmental, and planning viewpoint.
- Safeguarding sufficient facilities to enable Central Coast Airport to consider certification if circumstances made that a favourable option.

It is recommended as an interim step as part of the stagged masterplan that Central Coast Airport develop as a Code 2B aerodrome, with movement area infrastructure defined as follows:

MOS 139 REF.	***DESCRIPTION***	***RECOMMENDATION***
4.01	Runway length	1,199m (stage 1 and 2), with take-off length of 1,030m with displaced thresholds
6.02	Runway width (OMGWS <6m)	23m constructed width
6.16	Runway strip length	60m
6.17	Runway strip width	150m (Safeguarding for non-precision instrument approach)
6.26	RESA length	60m minimum (120m preferred)
6.37	Taxiway width (minimum)	10.5m
6.53-1	Taxiway centreline to runway centreline	82m (Safeguarding for non-precision instrument approach)
6.53-2	Taxiway centreline to an object, structure, parked aircraft 20m or road	

Figure 2 - Previous Master Plan review recommendations

These recommendations are consistent with the approach for this Master Plan and will form part of the future planning section (Section 7).

3.3 Site Description

CCA is situated on a site of 44 hectares which is located on the south-west side of Sparks Road and west side of Jack Grant Avenue, in Warnervale. Access to the airport is via Jack Grant Avenue.

The airport site has a gradual slope from north to south.

The bulk of the airport site including the hangar / aero club area is zoned E4: General Industrial.

The existing facilities on the site are described in Section 3.6 below.

Figure 3 - Aerial Photograph of CCA

3.4 Surrounding Land

As outlined earlier in Section 2.3.2.4 (and shown in Figure 1), the land surrounding CCA largely falls into one of two land use categories: either general industrial or environmental conservation. However, the majority of the surrounding land is zoned for environmental conservation and comprises substantial areas of existing trees and other vegetation.

Immediately to the west of the airfield the land is zoned for conservation and adjacent to that is an industrial zoned site. Further to the west there is a general industrial area which includes a major Woolworths distribution centre.

To the south-west, south and south-east of the airport there is a large area of conservation land comprising existing vegetation and wetlands.

To the east of the airport site, on the opposite side of Jack Grant Avenue, there is an area of general industrial land, which includes an existing industrial use that is a concrete recycling facility, which is not in keeping with the adjoining aviation use. Beyond this industrial area the adjoining land is zoned conservation and comprises existing vegetation.

On the opposite (north-east) side of Sparks Road there is a mix of general industrial and conservation land.

The nearest residential area is over 1 kilometre from the airport site.

3.5 Existing Activities

CCA is currently used for General Aviation activities, particularly for private and recreational flying, flight training and emergency services. CCA is home to the Central Coast Aero Club (CCAC), located east of the existing runway, which has been active for over 45 years at the airport. Council has a small office and storage facility on site.

There are currently no Regular Public Transport (RPT) passenger services provided at CCA.

3.6 Existing Facilities

Figure 4 shows CCA's existing facilities. The key facilities are discussed further in the sub-sections below.

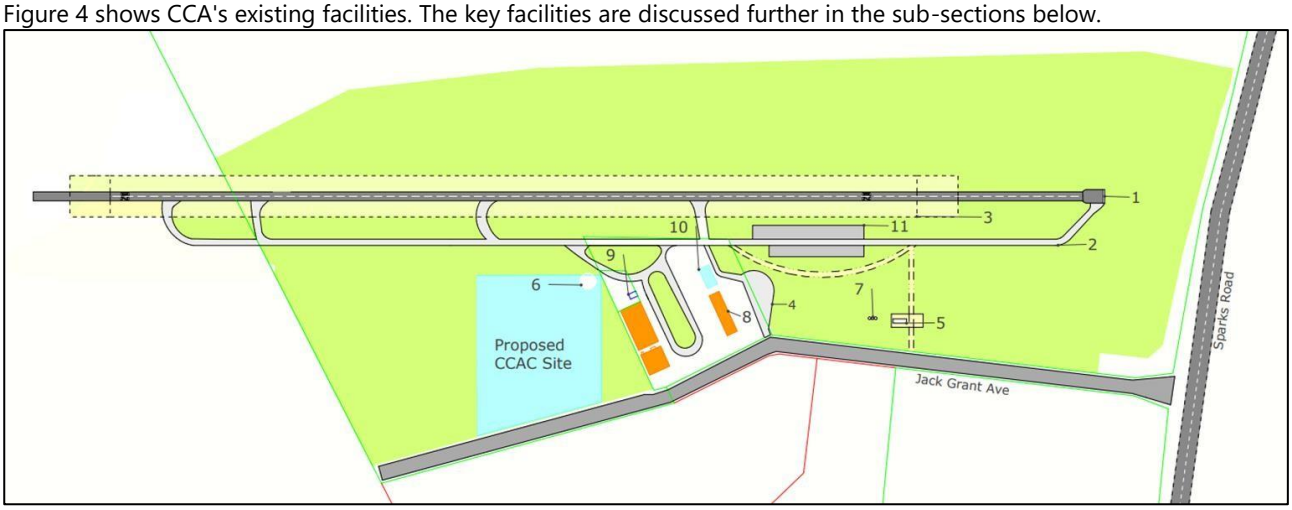


Figure 4 - Central Coast Airport existing facilities

Figure 4 legend:

1. 1198 m x 10 m x sealed runway (02/20)
2. Gravel taxiway
3. 46 m runway strip
4. Carpark
5. ARO Office
6. Windsock
7. Water Tanks
8. Hangarage
9. Fuel Bowser
10. Central Coast Aero Club
11. Bitumen Pad

3.6.1 Runway Specifications

The airport has a single sealed runway orientated in the 02/20 direction and a parallel gravel taxiway. The existing displaced thresholds reduce the effective length of the runway to 902 metres and limits the runway to small aircraft. Runway characteristics are detailed in the table below.

Airport Element	***RWY 02/20***
Runway Length (m)	1,199 m

Displaced Threshold (m)	RWY 02 – 86 m RWY 20 – 210 m
Runway WID (m)	10 m
Pavement Type	Sealed
Pavement Surfacing	Asphalt/Bitumen
Take Off Distance Available (m)	RWY 02 – 1,112 m RWY 20 – 988 m
Landing Distance Available (m)	902 m
Pavement Classification Number (PCN)	Unrated

The northern threshold is temporarily displaced by 210m, and the southern is temporarily displaced by 86m for obstacle avoidance. The existing displaced thresholds reduce the effective landing distance of the runway to 902 metres, limiting the runway to small aircraft. The runway length cannot be extended as there are development approval barriers from the wetlands to the south and physical barriers including Sparks Road to the north of the runway.

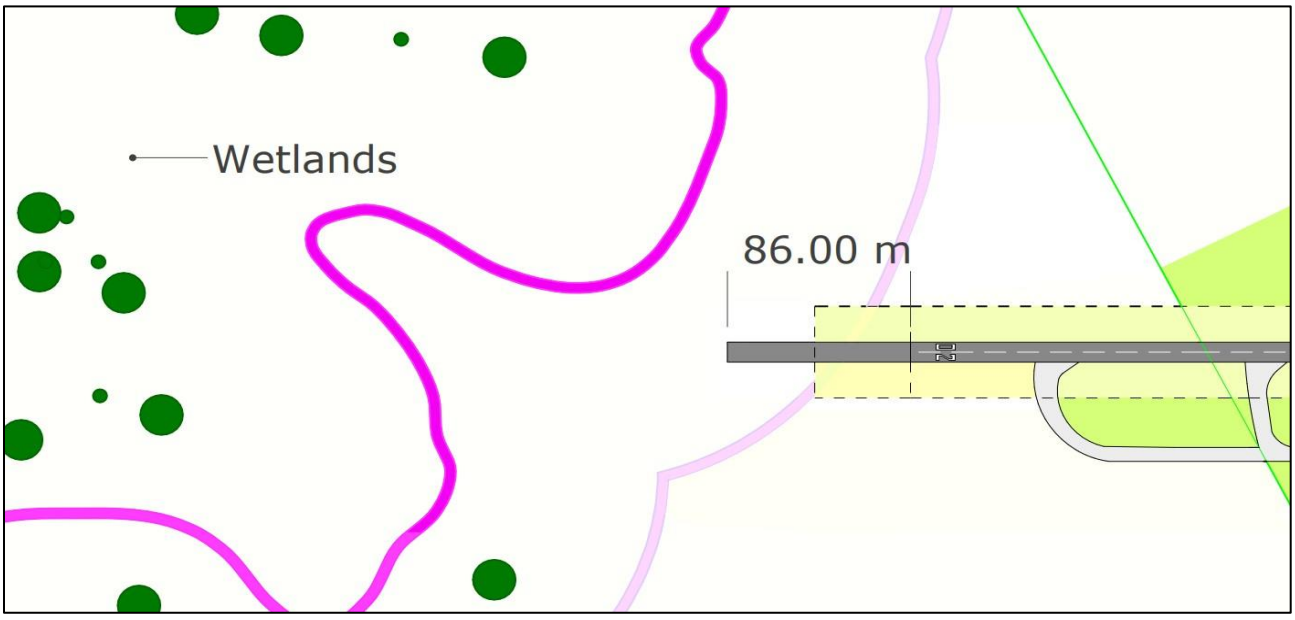


Figure 5 - Wetlands and significant vegetation encroaching on RWY 02 (southern) end

Figure 6 - View southwest from RWY 02 (southern) end

3.6.2 Aprons, Taxiways and Aircraft Parking

There is one gravel taxiway at the airport, in a parallel alignment with the runway. There is a bitumen pad that is connected to the taxiway to allow aircraft manoeuvring and staging. This area is currently used for aircraft parking which presents safety challenges. The taxiway also connects to the Central Coast Aero Club (CCAC) facilities and hangars.

There is no formal apron and aircraft parking areas at Central Coast Airport. The grass area that is available on the Aero Club land is primarily used for aircraft parking. Aero Club members who have leased hangars from CCAC park their aircraft either inside or in front of their hangars.

Through various stakeholder interactions it was identified that one of the challenging issues with a gravel taxiway at the airport was the risk of damage to propeller driven aircraft resulting from stone chips. Other issues of concern were particularly around the grass parking and movement areas with poor drainage which regularly become boggy during and after rain.

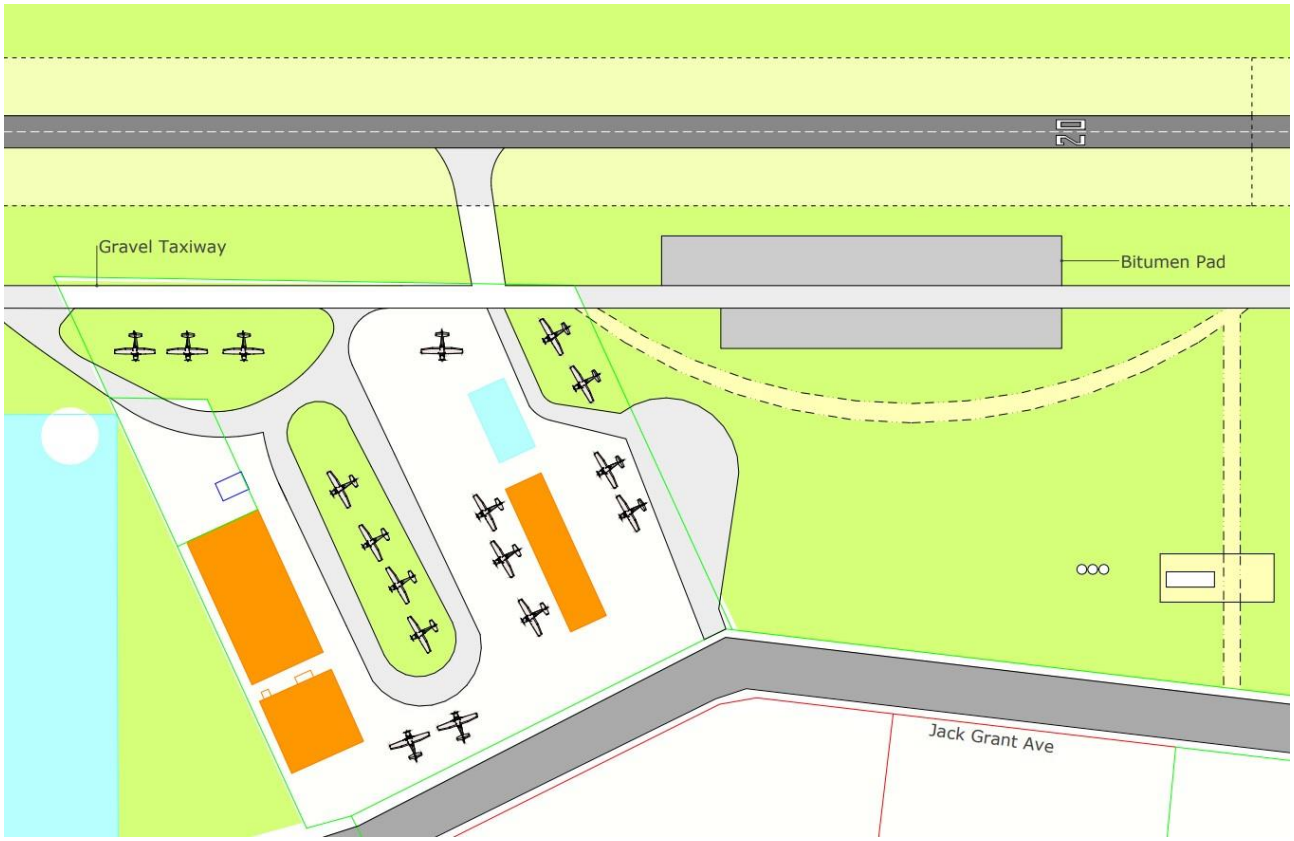


Figure 7 - Airside facilities layout0

Figure 8 - Parallel taxiway from RWY 02 end looking north

Figure 9 - Parallel taxiway from RWY 02 end looking southwest

3.6.3 Aerodrome Lighting

There is no permanent runway lighting at the airport. Central Coast Aero Club uses battery-operated portable lighting for their night-operations training.

Figure 10 - Airport lighting (inoperable)

Figure 11 - Aerodrome windsock

3.6.4 Windsock

There is one windsock on the Central Coast Airport located on the council owned section of the site which is the new proposed land swap site for the CCAC.

3.6.5 Aircraft Fuelling

The aircraft fuelling facility that is currently installed at the airport is a 50,000L underground fuel storage tank. The fuel bowser is located on the CCAC site as seen in Figure 12. Through consultation it has been noted that one of the concerns with the fuelling facility is the age of the infrastructure presenting a potential hazard for leaks and significant environmental risks associated with soil and water contamination.

Figure 12 - Fuel bowser and underground storage access (right)

Figure 13 - Central Coast Aero Club hangars and hardstands

3.6.6 Central Coast Aero Club

The Central Coast Aero Club (CCAC) holds 2.25ha of land on the airport site located east side of the airfield, containing underground fuel storage, a number of aircraft hangar facilities, an aviation maintenance hangar, a club house and external viewing area from which flight movements are observed.

3.6.7 ARO Office

The ARO building is a demountable modular with portable toilet facilities. The building is located on the far eastern side of the airport limiting visibility of the airport facilities. The only access to the taxiway from the ARO building is via a grass vehicle track.

Figure 14 - ARO office and facilities

Figure 15 - Central Coast Aero Club hangars and hardstands

3.6.8 Car Parking Area

There is an allocated carpark area located behind the Central Coast Aero Club with a capacity of approximately 20 cars. The carpark area is accessed from Jack Grant Avenue.

3.6.9 Perimeter Fencing

The airside facilities and operational areas are enclosed by 2.4 m chain-link fencing with lockable gate access.

Figure 16 - Perimeter fencing in southeast corner of Aerodrome Figure 17 - Area west of runway showing overland drainage

3.7 Ground Transport Access

The only road access to the airport is from Jack Grant Avenue which provides access to the main car park area, CCAC site and ARO building. Limited vehicle access controls / restrictions currently leads to private cars accessing airside areas such as taxiways and aprons.

There is no graded vehicle access to the area west of the runway and perimeter fencing. This presents challenges for performing visual inspections of boundary fencing.

3.8 Utility Services

Electricity and tank water services are currently available at the airport site. There are three water tanks available on the airport premises located adjacent to the ARO office for non-potable supply, used for aerial fire-fighting tasking.

3.9 Environmental & Heritage Status

There are significant environmental values on the airport site. This is discussed in Section 6.10.1 of this report.

A search conducted using the NSW State Heritage Inventory detected no cultural or heritage sites on Central Coast Airport land.

4 Stakeholder Consultation

4.1 Stakeholder Engagement Process

In preparing this Master Plan, a range of formal and informal stakeholder consultations were conducted, via a range of 1 to
1 and group sessions. Consultation was performed both in-person and via teleconference to maximise reach. The stakeholder consultation activities contribute to the Master Plan with the following objectives:

- Explain the purpose, objectives and benefits of an Airport Master Plan.
- Document opportunities and constraints of the Airport from the perspective of primary stakeholders.
- Understand and catalogue requirements for potential new users of the Airport.

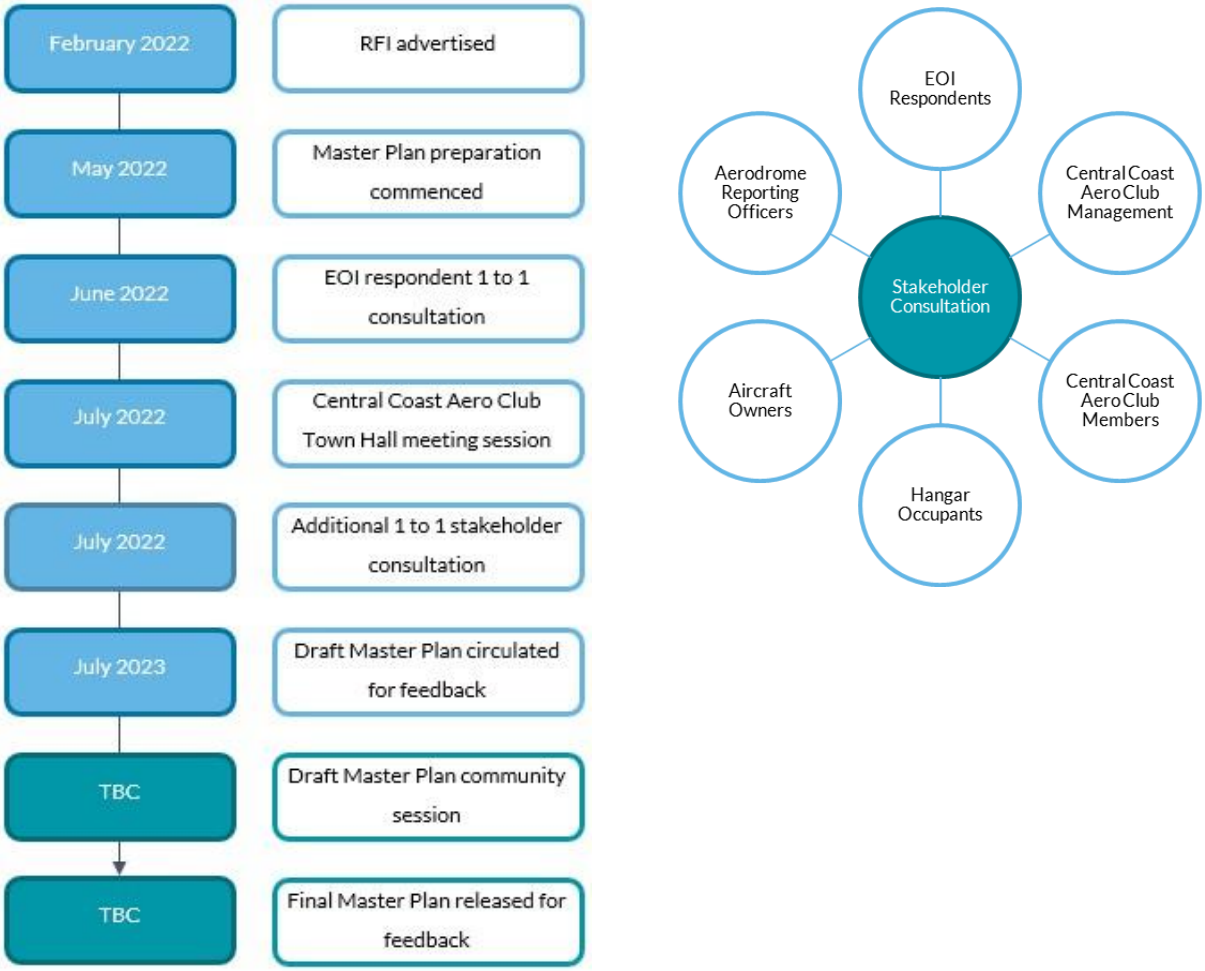


Figure 18 - Stakeholder engagement categories and timeline

Initial outreach was conducted by Council in the form of an RFI advertised on numerous direct and indirect media platforms in February 2022. Respondents to this RFI formed the cohort of potential airport users that were contacted and Interviewed In the early stages of engagement.

Existing airport users were also canvassed via the Central Coast Aero Club. On Monday 18 July 2022 a Town Hall session was conducted by the project team and hosted at the Aero Club for current members and aircraft owners. Approximately 40 in-person and 12 online attendees participated in the two-hour session, which included a presentation by the project team discussing the project scope, site opportunities and constraints and questions from the attendees.

Figure 19 - Stakeholder Town Hall at Central Coast Aero Club

Several additional 1 to 1 consultation sessions arose from the Town Hall to discuss additional information not covered during the group session.

All stakeholders were contacted by email to scope their willingness to participate and discuss their thoughts on the strategic direction of the airport and activities in the surrounding area. Consultation was primarily conducted through phone and video interviews that were typically between 30-60 minutes long.

The categories of discussion during these meetings included:

- Background
- Governance
- Economic Impact/Regional Development
- Airport Operations
- Infrastructure
- Maintenance
- Safeguarding

5 SWOT Analysis

5.1 Methodology

Based on the observations of the site visit, a desktop review of the background material from Council and feedback from stakeholders, a SWOT analysis was undertaken to provide a visualisation of significant factors for the airport. The results from the SWOT analysis activity are outlined below. Most of these matters are addressed in further detail throughout this report.

5.2 SWOT Analysis Results

STRENGTH	OPPORTUNITY
Location - Large catchments for potential customers and skilled labour. **Access** - Proximity to high-capacity networks – M1, rail. **Airspace** - Uncontrolled up to 7,500ft. In close proximity to diverse range of airspace types for training sorties. **Paved Runway** - All weather take-off and landing surface. **Aero Community** - Organised and dedicated user base of well engaged stakeholders via the Central Coast Aero Club.	**Precinct Development** **Taxiway Upgrade** - All weather take-off and landing surface. **Additional Hangarage** - Uncontrolled up to 7,500ft. In close proximity to diverse range of airspace types for training sorties. **Instrument Approaches** - Potential for non-precision approach implementation. **Obstacle Mitigation** - Undergrounding of powerline north of Sparkes Rd. Vegetation management for trees on approach. **Additional Recreational Operators** - Skydiving, joy flights, Airshow.
WEAKNESS/CONSTRAINT	**THREAT**
Access - Not all parts of the aerodrome are easily accessible, especially the Western and Southern extents. **Lighting** - Airport lighting inoperable. No runway lighting. **Fuel Storage** - Underground storage **Gravel Taxiways** - Low resilience against all weather conditions. Potential for damage to aircraft. **Apron Layout** - Shared aircraft and vehicle access to apron via single parallel taxiway. **Drainage** - Aerodrome is slow to drain after significant rain events and holds water. **Operational Limitations** - Runway length extension constrained on both ends. Large displacement of thresholds for obstacle avoidance. Powerline and trees within close proximity. **ARO Facilities** - Currently operated from temporary structure. Doesn't have line-of-sight to entire runway length. Not obvious to visitors and contractors.	**Flooding** **Sole Anchor Tenant** - Central Coast Aero Club **Macro-Economic Conditions** - Fuel price, inflation, skill shortage **Community Concern**

6 Critical Airport Planning Criteria

This section provides an analysis of the relevant airport planning parameters to help guide the Master Plan and achieve the strategic vision and objectives for Central Coast Airport (CCA). Key issues and recommendations are highlighted in ***bold italics*** and are discussed further in Section 7 of this report. The key recommendations also form part of the implementation plan set out in Section 10.

It is noted that this section is based on the assumption that CCA will eventually become a certified aerodrome, and therefore subject to CASA regulations, particularly the Manual of Standards (MOS) 139 – Aerodromes (MOS 139). This requires the aerodrome to achieve certification using the process outlined in the following advisory circulars:

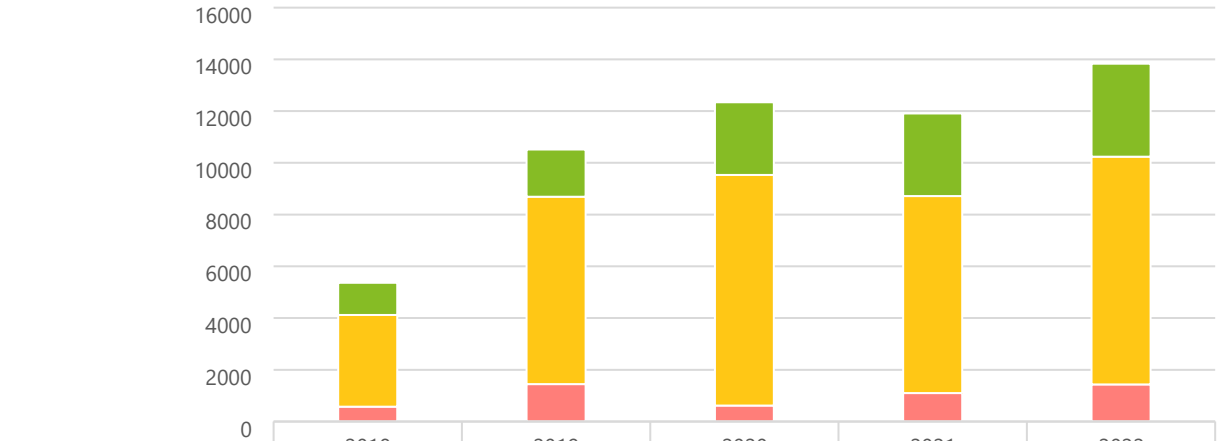
AC 139.B-01 v1.0 – Applying for aerodrome certification

AC 139.A-03 v1.0 – Application of aerodrome standards

6.1 Forecast of Future Operations

Airport Master Plans typically include aircraft activity forecasts which are used to check that the airport facilities are adequate for the forecast movements and also to indicate the timing for future airport infrastructure development. As such, a forecast of aircraft movements has been prepared for CCA. The purpose of the forecasting is to convert the stakeholder consultation and understanding of market demand to land requirements at the airport site.

This forecast is primarily based upon actual aircraft movement data provided CCC, using the total aircraft movements from 2018 to 2022 as known traffic levels at CCA. These aircraft movements were then categorised by BITRE operation category to identify the distinct types of aircraft activities at the airport. These are shown in Figure 20 below.



	2018	2019	2020	2021	2022
Sport and pleasure flying	1244	1825	2811	3195	3592
Instructional flying	3546	7245	8915	7614	8805
Aerial Work	574	1445	618	1101	1433

Figure 20 - Historical Movement Data by Activity Type

The forecasting future growth rates derived for this study were reached through analysis of historical flying activity in Australia provided by the Australian Aircraft Activity (2014-2020) reports sourced from BITRE. This data was analysed based on a 5-year moving average to determine an overall idea of the long-term trends by each operation category. Although the pandemic impacts introduced uncertainty into the data, the study looked at the 3-year moving average of different activity types. It also looked at the 2017 BITRE General Aviation Study for guidance https://www.bitre.gov.au/publications/2017/cr_001.

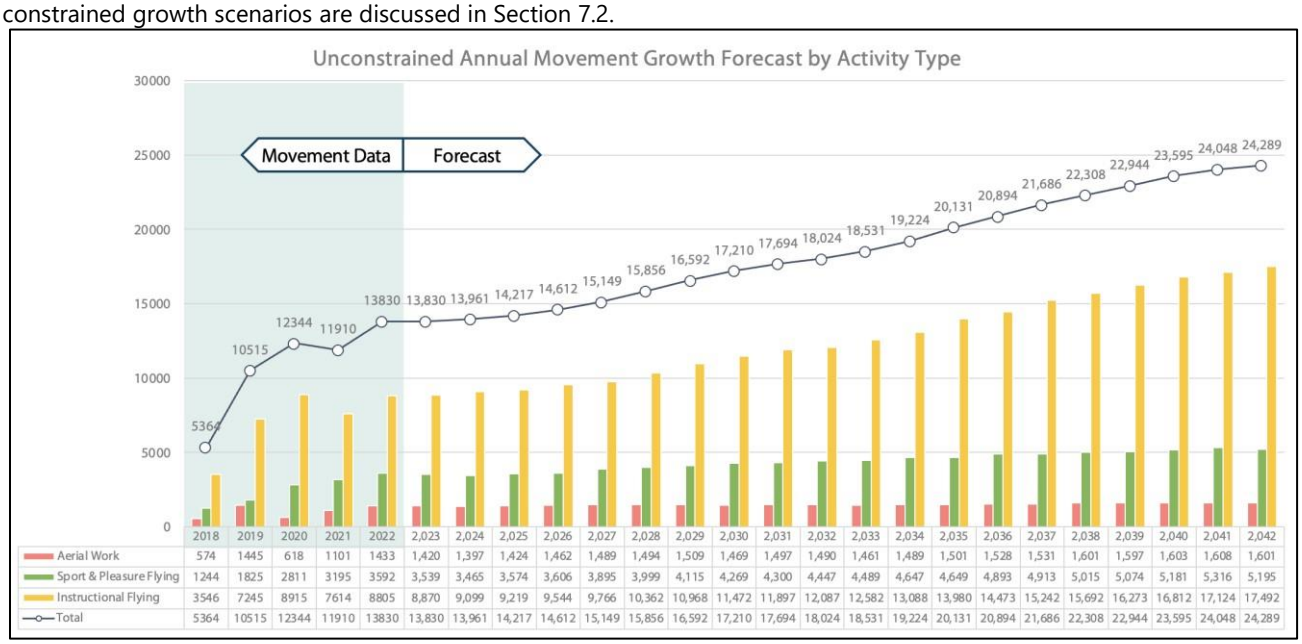
Figure 21 - Historical Movement Trends by Activity Type

Table **1** - Forecast Growth Rates – Baseline Determination by Activity Type

2022+	**GA - Sport & Pleasure Flying**	**GA – Instructional Flying**	**GA - Aerial Work**
BITRE Mean % YoY	1.5 %	2.0 %	(-2.0 %)
BITRE Std. dev	2.0 %	2.0 %	2.0 %
CCA Mean % YoY	32.1%	31.7%	50.7%
CCA 3yr moving average	Trending **UP**	Trending **UP**	Trending **FLAT**
Apply +1 std dev to BITRE mean YoY change, multiply by CCA mean YoY change			
CCA Baseline Growth Rate	4.6%	5.2%	0% (Steady)

Growth simulations were carried out using a Monte Carlo method. This is a modelling technique that incorporates random variability using probability distributions and repeated sampling to determine outcomes within defined limits. The expected growth rate is entered into the model and then a rate of standard deviation is applied to capture the uncertainty of long-term modelling. The simulation is then run several thousand times to produce a range of possible forecast scenarios from which low, medium and high growth scenarios were derived.

The resulting unconstrained aircraft movement growth forecast is shown below in Figure 22. Several different constrained growth scenarios are discussed in Section 7.2.



	2018	2019	2020	2021	2022	2,023	2,024	2,025	2,026	2,027	2,028	2,029	2,030	2,031	2,032	2,033	2,034	2,035	2,036	2,037	2,038	2,039	2,040	2,041	2,042
Aerial Work	574	1445	618	1101	1433	1,420	1,397	1,424	1,462	1,489	1,494	1,509	1,469	1,497	1,490	1,461	1,489	1,501	1,528	1,531	1,601	1,597	1,603	1,608	1,601
Sport & Pleasure Flying	1244	1825	2811	3195	3592	3,539	3,465	3,574	3,606	3,895	3,999	4,115	4,269	4,300	4,447	4,489	4,647	4,649	4,893	4,913	5,015	5,074	5,181	5,316	5,195
Instructional Flying	3546	7245	8915	7614	8805	8,870	9,099	9,219	9,544	9,766	10,362	10,968	11,472	11,897	12,087	12,582	13,088	13,980	14,473	15,242	15,692	16,273	16,812	17,124	17,492
Total	5364	10515	12344	11910	13830	13,830	13,961	14,217	14,612	15,149	15,856	16,592	17,210	17,694	18,024	18,531	19,224	20,131	20,894	21,686	22,308	22,944	23,595	24,048	24,289

Figure 22 - Unconstrained Annual Movement Growth Forecast by Activity Type

6.2 Aerodrome Reference Code (ARC)

Australia has adopted the International Civil Aviation Organisation (ICAO) methodology using a code system known as the Aerodrome Reference Code (ARC) in the MOS 139. The ARC specifies the standards for individual aerodrome facilities which are suitable for use by aircraft within a range of performances and sizes.

The ARC is based on the characteristics of an aircraft rather than the aerodrome facility. Once the critical aircraft (or design aircraft) is determined, aerodrome facilities are designed, and maintained, to meet those characteristics in accordance with MOS 139 requirements. CCA is currently uncertified, having a Civil Aviation Safety Authority (CASA) classification of an Aircraft Landing Area (ALA). An ALA is usually limited to aircraft that have a Maximum Take Off Weight (MTOW) of 5,700kg or less i.e Code A light aircraft.

Currently there is a single sealed runway orientated in the 02/20 direction and a parallel gravel taxiway. The existing displaced thresholds reduce the effective length of the runway to 902 metres and limits the runway to small aircraft which is prudent considering the narrow runway width. Currently, the runway (RWY 02/20) at CCA is capable of accommodating most Code 2A aircraft.

6.3 Design Aircraft

Determining whether runway length, width and pavement strength for an aerodrome is fit for purpose involves selecting a design aircraft that will be likely to operate at the aerodrome in the future.

A technical study outlining the most practical configuration for future operations within the airport yields the below known constraints:

- Obstacles penetrating the approach and departure surfaces.
- Any extension of the runway considered unlikely, from an economic, environmental, and planning viewpoint.

- Safeguarding sufficient facilities to enable Central Coast Airport to consider certification if circumstances made that a favourable option.

The report concluded with the findings that CCA develop as a Code 2B aerodrome.

Based on further discussions with Council officers, aerodrome users and other stakeholders, it has been agreed that the design aircraft for CCA planning purposes should be a Code 2B aircraft. This would provide for an appropriate range of aircraft including the following:

Code 1A / 1B aircraft examples:

• **Cessna 172** is an American four-seat, single-engine, high wing, fixed-wing aircraft made by the Cessna Aircraft Company First flown in 1955,	
• **Mahindra Airvan** The Mahindra Airvan is an eight-seat utility aircraft designed for operations in the Australian Outback.	
• **Piper PA-28 Warrior** The Piper PA-28 Cherokee is a family of two-seat or four-seat light aircraft built by Piper Aircraft and designed for flight training, air taxi and personal use. The PA-28 family of aircraft comprises all-metal, unpressurized, single piston-engined airplanes with low-mounted wings and tricycle landing gear.	
• **Beechcraft Super King Air 200** The Beechcraft Super King Air family is part of a line of twin-turboprop aircraft produced by Beechcraft. The Model 200 series were originally marketed as the "Super King Air" family; the "Super" designation was dropped in 1996.	

• **Cessna 208 Caravan** The Cessna 208 Caravan is a utility aircraft produced by Cessna. The project was commenced on November 20, 1981, and the prototype first flew on December 9, 1982. The production model was certified by the FAA in October 1984 and its Cargomaster freighter variant was developed for FedEx. The 4 ft (1.2 m) longer 208B Super Cargomaster first flew in 1986 and was developed into the passenger 208B Grand Caravan.	
• **Cessna 441 Conquest II** The **Cessna 441 Conquest II** is the first turboprop powered aircraft designed by Cessna, and was meant to fill the gap between their jets and piston-engined aircraft. It was developed in November 1974, with the first aircraft delivered in September 1977. It is a pressurized, 8–9 passenger turbine development of the Cessna 404 Titan.	
• **DHC6 Twin Otter** The de Havilland Canada DHC-6 Twin Otter is a Canadian STOL (Short Takeoff and Landing) utility aircraft developed by de Havilland Canada in the mid-1960s and still in production today. De Havilland Canada produced it from 1965 to 1988; Viking Air purchased the type certificate, then restarted production in 2008 before re-adopting the DHC name in 2022. In 2023 DHC restarted production of the 300 series, in addition to the Series 400 produced by Viking. The aircraft's fixed tricycle undercarriage, STOL capabilities, twin turboprop engines and high rate of climb have made it a successful commuter airliner, typically seating 18–20 passengers, as well as a cargo and medical evacuation aircraft. In addition, the Twin Otter has been popular with commercial skydiving operations, and is used by the United States Army Parachute Team and the 98th Flying Training Squadron of the United States Air Force.	

• **Air Tractor AT802A.** The Air Tractor AT-802 is an American agricultural aircraft that may also be adapted into fire-fighting or armed versions. It first flew in the United States in October 1990 and is manufactured by Air Tractor. The AT-802 carries a chemical hopper between the engine firewall and the cockpit. In the U.S., it is considered a Type III SEAT, or Single Engine Air Tanker.	

Code 2A /2B aircraft examples:

• **Pilatus PC-12** The Pilatus PC-12 is a pressurized, single-engined, turboprop aircraft manufactured by Pilatus Aircraft of Stans, Switzerland since 1991. It was designed as a high-performance utility aircraft that incorporates a large aft cargo door in addition to the main passenger door. Due to its efficient, high-utility design, the PC-12 is used by a large variety of operators. The main use for the aircraft is corporate transportation, but it is also used by fractional and small regional airlines, air-ambulance operators, and many government agencies, such as police departments and armed forces. The PC-12 is successful with 2,000 deliveries made as of May 2023.	
• **Embraer EMB 110 Bandeirante** The Embraer EMB 110Bandeirante (English: *pioneer*[2]) is a Brazilian twin-turboprop light transport aircraft designed by Embraer for military and civil use.	
• **Cessna Citation I/II** The Cessna Citation I/II are light corporate jets built by Cessna as part of the Citation family. Stretched from the Citation I, the Model 550 was announced in September 1976, first flew on January 31, 1977, and was certified in March 1978. The II/SP is a single pilot version, the improved S/II first flew on February 14, 1984 and the Citation Bravo, a stretched S/II with new avionics and more powerful P&WC PW530A turbofans, first flew on April 25, 1995. The United States Navy adopted a version of the S/II as the T-47A. Production ceased in 2006 after 1,184 of all variants were delivered.	

• **Beech 1900D** The Beechcraft 1900 is a twin-engine turboprop regional airliner manufactured by Beechcraft. It is also used as a freight aircraft and corporate transport, and by several governmental and military organizations. With customers favoring larger regional jets, Raytheon ended production in October 2002	
• **Metro III.** The Fairchild Metroliner III (Metro III for short) is our third largest aircraft, capable of transporting up to 19 passengers per flight. With a cruising speed of 300 mph, and a range of 1700 statute miles, the Metro III is the second fastest aircraft with the longest range in our fleet. It is easily capable of flying non-stop to any destination in North America, including airstrips with short gravel runways in adverse weather conditions.	

The adoption of a Code 2B design aircraft is considered to cover the full range of activities that are likely to occur at CCA in the foreseeable future including pilot training, emergency services, and some charter, corporate and light freight.

Recommendation: Initial stage aerodrome facilities should be designed, and maintained, to meet Code 2B characteristics in accordance with MOS 139 requirements.

6.4 Navigation Systems

There are no current ground-based navigational aids at CCA. As air navigation practices and regulations in Australia move towards satellite-based technologies, it is unlikely there will be a need for any ground-based navigational aids at CCA in the future.

This Master Plan safeguards for the possible introduction of a non-precision approach procedure at CCA.

6.5 Pavement Strength

The runway pavement at CCA is currently unrated.

The movement area pavement strength can be a major limiting factor for aircraft operations. The construction materials used, and the constructed depth of the pavements determine pavement strength. For a pavement to be determined suitable for an aircraft operation the designated Pavement Classification Number (PCN) should be greater than or equal to the Aircraft Classification Number (ACN), which is determined by the aircraft manufacturer. When the ACN of the aircraft is greater than the PCN of the pavement, the pavement is being overloaded.

MOS 139 states:

> *"A runway must be capable of bearing the weights and aircraft movement frequencies of the types of aeroplanes which the runway is nominated to serve.*
>
> *Note: As required by paragraph 5.04 (1) (e), the pavement strength rating for a runway must be reported using the ACN – PCN pavement rating system."*
>
> *"The bearing strength of a taxiway must be:*
>
> *(a) at least equal to the bearing strength of the runway it serves; or*

(b) otherwise capable of bearing the weights and movement frequencies of the types of aeroplanes which the taxiway serves."

Recommendation. Ensure future runway and taxiway upgrades, provide a suitable strength rating for planned design aircraft to avoid pavement concessions and risk of runway damage.

6.6 Aviation Support & Landside Facilities

All future aviation support and landside facilities will need to comply with CASA regulatory requirements, particularly MOS 139. This includes:

- Wind direction indicators
- Aircraft parking areas
- Hangar developments
- Helicopter areas
- Controlling airside access (eg. fencing)

It also includes safeguarding for future facilities such as a passenger terminal and associated apron.

Any facilities that are not designed and constructed in accordance with MOS 139 could prejudice the ability for CCA to ultimately become a certified aerodrome.

Recommendation: All future aviation support and landside facilities will need to comply with CASA regulatory requirements, particularly MOS 139.

6.7 Security Requirements

Under MOS 139, the aerodrome manual must contain the procedures for preventing the unauthorised entry onto the movement area (airside) of persons, vehicles, equipment, mobile plant or animals (including land-based wildlife) or other things that may endanger aircraft safety, including procedures for the following:

a) controlling airside access;
b) monitoring airside access control points and barriers, such as fencing.

Recommendation. Ensure that airport operators monitor visitor access and prevent unauthorised persons accessing airside areas where their presence is not anticipated.

6.8 Airspace Protection Surfaces

Airspace protection surfaces are critical for airport safeguarding purposes, in relation to both on-airport and off-airport development. The airspace protection surfaces comprise the Obstacle Limitation Surfaces (OLS) and the Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) surfaces.

An airport's OLS define the operational airspace that should be kept free of obstacles for aircraft operations being conducted under the visual flight rules. Both current and future (ultimate) OLS should be considered in the design of developments on and within the vicinity of the airport. An OLS chart is required for certified airports. The Manual of Standards Part 139 (MOS 139) Chapter 7 provides relevant parameters for the design of the OLS.

Whilst Central Coast Airport is not (yet) a certified airport, an OLS chart was produced for the aerodrome in 2021 for a 1030m (Code 2) Non-Instrument Runway OLS, incorporating the requirements of the current MOS. This version of the OLS is still applicable up to a 85m displaced threshold at both runway ends, recognising the incursion of the overhead powerlines adjacent to Sparkes Rd requiring a temporary increase of the displaced threshold at the northern end up to 210m.

Within the airport site, the OLS is particularly relevant for the development of landside facilities and will influence the location and height of future development on the site. Limiting the height of development close to runway is critical. Future development areas on the airport, particularly close to the runways, should have a maximum building height restriction applied, as per the airport OLS chart, to ensure that buildings and other structures do not intrude into the applicable airspace surfaces.

PANS-OPS surfaces define the operational airspace a pilot is required to use when flying an aircraft under the instrument flight rules - that is, when relying on instruments for navigation. Development should seek to avoid any permanent encroachments into current and future PANS-OPS airspace. Note that Central Coast Airport does not have PANS-OPS surfaces and it is not intended to introduce them within the scope of this Master Plan.

Outside the aerodrome site, appropriate airspace protection planning controls should be in place based on the applicable airspace surfaces, as recommended in the National Airports Safeguarding Framework, Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports. This is discussed further in Section 7.8.

Recommendation: Ensure all development on and surrounding CCA is undertaken in accordance with the airport's OLS chart.

6.9 Aircraft Noise Contours

The consideration of aircraft noise effects is an important airport safeguarding matter, as outlined in NASF Guideline A: Measures for Managing Impacts of Aircraft Noise. This element of the safeguarding framework aims to ensure that:

- Sensitive land uses are not located in areas of unacceptable aircraft noise
- The amenity of surrounding developments is not adversely affected by aircraft noise
- Airport operations are protected long term from conflicts due to the encroachment of inappropriate development into noise affected areas.

An Australian Noise Exposure Forecast (ANEF) is a contour map showing the forecast of aircraft noise levels that are expected to exist around an airport in the future. An ANEF chart, once endorsed by Airservices, is the official forecast of future noise exposure around an airport. It constitutes the contours on which planning authorities base their land use controls and is the approved metric across all Australian jurisdictions for statutory land use planning in noise affected areas around airports.

Recommendations relating to land use within the ANEF contours are contained in Australian Standard AS2021-2015: Acoustics – Aircraft Noise Intrusion – Building Siting and Construction. These recommendations are summarised in Table 2 below. This is a summary only - the Australian Standard should be read for full details of the land use recommendations, and associated notes and conditions.

Table 2 - Australian Standard AS2021-2015: Acoustics – Aircraft Noise Intrusion

Building Type	ANEF Zone of Site		
	Acceptable	**Conditional**	**Unacceptable**
House, home unit, flat, caravan park	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF zones		

'Acceptable' means that special measures are usually not required to reduce aircraft noise.
'Conditional' means that special measures (noise attenuation) are required to reduce aircraft noise.
'Unacceptable' means that the development should not normally be considered.

An Australian Noise Exposure Concept (ANEC) is a map showing hypothetical forecast contours of aircraft noise exposure around an airport. Because ANEC maps are based on various assumptions, and may not have been subject to review or official endorsement by Airservices, they have no official status and cannot be used for land use planning.

An ANEC was prepared for Central Coast Airport in 2018. However, this ANEC is now outdated. Furthermore, it was never endorsed by Airservices and as such there is currently no official ANEF for the airport. It is therefore recommended that an ANEF be prepared for CCA, based on the forecasts in this Master Plan, and that it be submitted to Airservices for endorsement.

The NASF Guideline A contains further information and recommendations regarding aircraft noise contours which should be considered by airport operators. This includes the use of the 'Number Above' noise metric (commonly referred to as 'Ncontours') to supplement the ANEF.

One of the principles of NASF is:

> *'Strategic and statutory planning frameworks should address aircraft noise by applying a comprehensive suite of noise measures.'*

The N-contour system is a complementary aircraft noise metric that shows the potential number of aircraft noise events above 60dB(A), 65dB(A) or 70dB(A) per day. It has some advantages over the ANEF system because it shows noise in a way that a person perceives it – as a number single events per day above a certain decibel level.

NASF Guideline A recommends the use of N-contours for strategic planning purposes. This is particularly important for the consideration of any proposals for zoning changes for residential purposes near the airport and its flight corridors.

Outside the aerodrome site, appropriate aircraft noise planning controls should be in place based on the applicable aircraft noise contours, as recommended in the National Airports Safeguarding Framework, Guideline A: Measures for Managing Impacts of Aircraft Noise. This is discussed further in Section 7.8: Airport Safeguarding Plan.

6.10 Environmental & Heritage Sites

6.10.1 Environmental Values

The environmental values of the CCA site have been extensively investigated by expert ecological consultants engaged by Council. The results of these studies were used in developing this draft Master Plan, particularly the land use plans and growth scenarios.

A Strategic Biodiversity Advice Report was produced by Anderson Environment & Planning (AEP) in April 2022. This study identified various ecological constraints on and around the CCA site.

Building on the AEP work, de Witt Ecology undertook further investigations and in October 2022 produced an updated ecological constraints map for the CCA site. In April 2023 de Witt Ecology produced a further updated ecological constraints map for the CCA site.

6.10.2 Heritage Values

A search conducted using the NSW State Heritage Inventory detected no cultural or heritage sites on Central Coast Airport land.

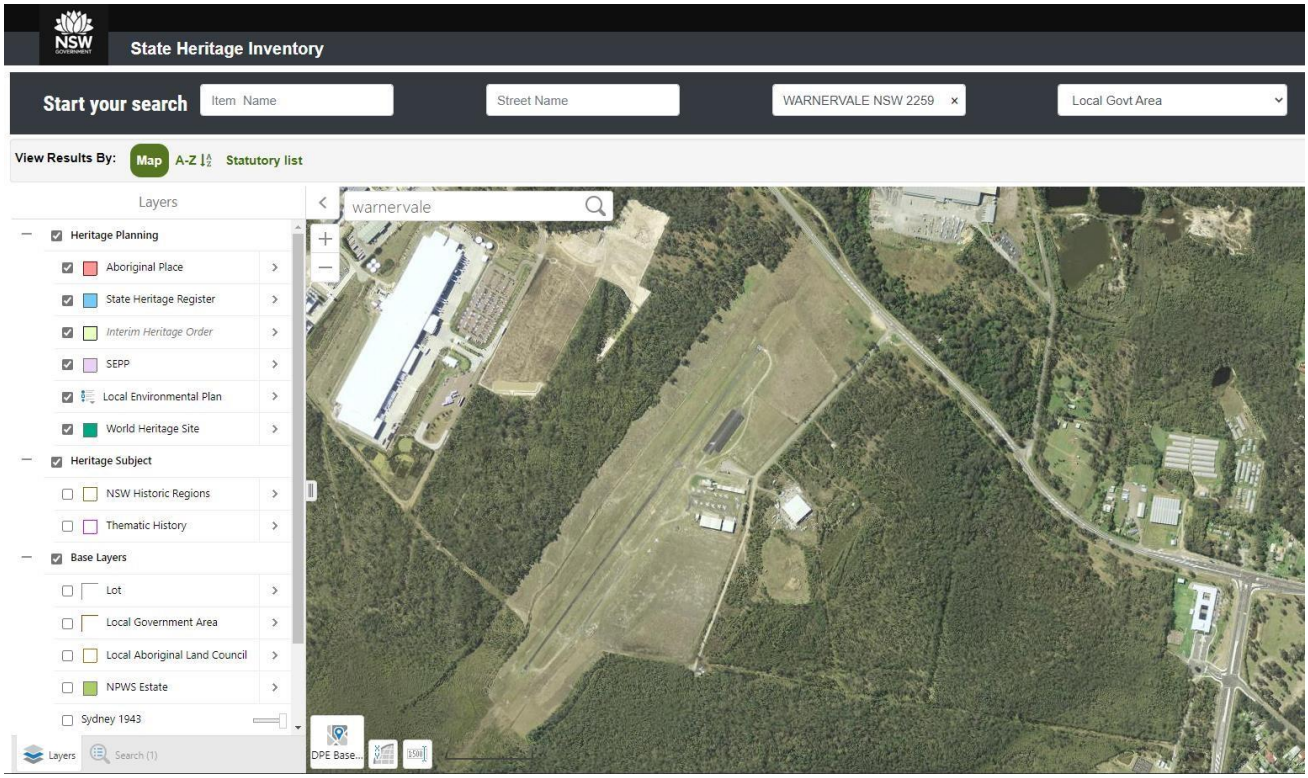


Figure 24 - State Heritage Inventory

7 Central Coast Airport – Future Planning

7.1 Land use Plan

A Short-term strategy, where the airport continues to operate as predominately a Recreational and General Aviation hub utilising vacant airside land on the eastern side of the Runway and various upgrades:

Core Precinct

Stage 1:
1. Vegetation control and power pole removal (underway)
2. Site grading and perimeter road construction
3. ARO / Facilities management relocation (future location TBC)
4. Runway End Safety Area (RESA)
5. Code 2B runway upgrade including full-length parallel taxiway upgrade (widened to be 23 meters, with a runway length remaining at 1200 metres)

Stage 1:
6. Existing Central Coast Aero club (CCAC)
7. Automated Weather Station (AWS) safeguarding
8. Relocated CCAC

Stage 2:
9. Instrument procedure design and installation
10. Apron expansion for Patient Transfer Facilities

Investigation Areas

1. Areas shown in blue identified for future investigation and potential expansion areas

N

1:9250 @ A3

7.2 Growth Scenarios

Future stages of the airport growth will depend on a market sounding process to determine the appropriate outcomes for surrounding underutilised land, shown above.

7.3 Facilities Development Plan

The Facilities Development Plan is perhaps the most important part of the Master Plan as it relates to the development of the airport's physical facilities and infrastructure, particularly the airfield facilities. This section of the Master Plan discusses the future development of the airport's physical facilities and infrastructure over the planning period. Further information regarding the location and staging of facility upgrades is provided in Section 8.

7.3.1 Runway

Planning around the future development of the runway should be based on:

- Code 2B runway
- 23 metres wide

- 80 metre wide runway strip initially for non–instrument operations (however 150 metre wide strip to be safeguarded for possible non-precision approach runway).
- RESA 60 metres long (120m preferred).

Recommendation: Planning around the future development of the runway should be based on it being a Code 2B runway, 23 metres wide within an 80-metre-wide runway strip initially for non–instrument operations (however 150 metre wide strip to be safeguarded for possible non-precision approach runway) and a 60 metre long RESA (120m preferred).

As stated in Section 6.5, Council should ensure that future runway upgrades provide a suitable strength rating for planned design aircraft to avoid pavement concessions and risk of runway damage.

7.3.2 Taxiways

This Master Plan includes future provision for parallel taxiways on both sides of the runway to service existing and future aviation activities. Planning around the future development of such taxiways should be based on:

- Taxiway width (minimum): 10.5m
- Taxiway centreline to runway centreline: 82m (safeguarding for non-precision instrument approach)
- Taxiway centreline to an object, structure, parked aircraft or road: 20m

Recommendation: Planning around the future development of taxiways should be based on minimum taxiway width of 10.5m, taxiway centreline to runway centreline of 82m (Safeguarding for non-precision instrument approach) and taxiway centreline to an object, structure, parked aircraft or road of 20m.

As stated in Section 6.5, Council should ensure that future taxiway upgrades provide a suitable strength rating for planned design aircraft to avoid pavement concessions and risk of taxiway damage.

7.3.3 Passenger Terminal and Apron (Future Development) Safeguarding

Whilst passenger services at CCA are not envisaged in the foreseeable future (for at least 10 years), it would be prudent to reserve land for this purpose. The Master Plan includes a site for this purpose on the west side of the runway.

7.3.4 Other Facilities

Various other facilities upgrades will or may be required over the life of this Master Plan to service the growth of the airport. They include:

- Perimeter road
- ARO facilities
- Automated Weather Station
- Car parking
- Helicopter facilities

Further information regarding the location and staging of these facility upgrades is provided in Section 8: 15-year Master Plan.

7.4 Ground Transport Plan

Road access to the Eastern Precinct will remain via Jack Grant Avenue.

Development of the Western Precinct will require new road access from Sparks Road and will be subject to a future investigation.

Within the airport site, the separation of private vehicles from airside / aircraft movement areas is critical. The design of new facilities, such as new hangar areas, must ensure that private vehicle access to such areas is landside and not airside.

As previously stated, under MOS 139, the aerodrome manual must contain the procedures for preventing the unauthorised entry onto the movement area (airside) of persons, vehicles, equipment, mobile plant or animals (including land-based wildlife) or other things that may endanger aircraft safety.

7.5 Environmental Management Plan

The environmental values of the CCA site were outlined in Section 6.10.1 of this report.

All development on the airport site must consider the findings and recommendations of the ecological assessments undertaken by AEP and de Witt Ecology.

Recommendation: All development on the airport site must consider the findings and recommendations of the ecological assessments undertaken by AEP and de Witt Ecology.

7.6 Heritage Management Plan

As stated in Section 6.10.2, a search conducted using the NSW State Heritage Inventory detected no cultural or heritage sites on CCA land. As a result, there are no specific heritage management requirements.

Recommendation: If any cultural heritage sites or artifacts are found during any development activities, airport management should be immediately notified to ensure that appropriate measures can be taken to address any legislative requirements.

7.7 Airport Safeguarding Plan

Sites for airports are scarce and finding new appropriately located and unconstrained land to replace or expand existing airports is difficult. Existing airport sites in many cases pre-date significant urban/township development. Urban expansion and densification have increased tensions between residential and industrial development and airport operations.

The capacity of an airport to operate unencumbered is fundamentally dependent on what occurs on the land surrounding it. The erection of structures that physically intrude into the flight paths of arriving and departing aircraft can clearly limit or prevent use of the airport. So too can other developments that are less obvious. For example:

- Residential developments adjacent to airports and under flight paths may lead to complaints about aircraft noise and eventually lead to the introduction of curfews or even the closure of an airport.
- Industrial activities that generate smoke or similar hazards may constrain use of an airport.
- Other activities such as agriculture, animal husbandry or wetland developments may attract birds and/or wildlife species and pose a hazard to aviation.

The National Airports Safeguarding Framework (NASF), outlined earlier in Section 2.4.2 (Policy Context), provides a set of principles and guidelines to assist in addressing these and other airport safeguarding issues to better protect the ongoing operation of airports in Australia. In addition, the Australian Airports Association (AAA) has produced a practice note titled Planning Around Airports – Safeguarding for the Future which provides guidance to airport operators and planning authorities on how to implement NASF.

The key requirement in relation to airport protection is to ensure that the use and development of land surrounding the airport does not prejudice the ongoing operation of the airport. The two most important issues involve ensuring that:

- development proposals near the airport and under flight paths do conflict with the airport's airspace protection surfaces (NASF Guideline F).
- changes of land use near the airport and under flight paths are not for land uses that may be sensitive to aircraft noise in areas defined by the applicable aircraft noise contours (NASF Guideline A).

General information regarding these two safeguarding matters was provided in Sections 6.8 and 6.9 of this report. More detailed information regarding the implementation of specific safeguarding measures relating to these and the other NASF matters, to protect the ongoing operation of CCA, is provided below.

7.7.1 Airspace Protection Surfaces

Consistent with NASF Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports, the Central Coast Local Environmental Plan 2022 (CCLEP) includes controls protecting the airspace surfaces. Clause 7.4 (Airspace operations) of the CCLEP, referred to in Section 2.3.2.4 of this report, applies to development that the consent authority is satisfied will penetrate the 'Limitation or Operations Surface'. Development consent must not be granted for development to which this clause applies unless:

"(a) the consent authority has consulted with the relevant Commonwealth body about the development, and

(b) the relevant Commonwealth body advises the consent authority that—

(i) the development will penetrate the Limitation or Operations Surface but it does not object to the development, or

(ii) the development will not penetrate the Limitation or Operations Surface."

'Limitation or Operations Surface' is defined as:

"…the Obstacle Limitation Surface or the Procedures for Air Navigation Services Operations Surface as shown on the
Obstacle Limitation Surface Map or the Procedures for Air Navigation Services Operations Surface Map for Central Coast Airport."

As outlined in Section 6.8, an OLS chart was produced for the aerodrome in 2017, but this was prepared based on the requirements of the old MOS 139. The MOS has since been revised and updated, and as such, a new OLS chart should be prepared. CCA does not have PANS-OPS surfaces and it is not intended to introduce them within the scope of this Master Plan.

Recommendation: A new updated OLS be prepared for CCA based on the revised and updated MOS 139 requirements, for the purpose of CCLEP Clause 7.4.

7.7.2 Aircraft Noise Contours

Consistent with NASF Guideline A: Measures for Managing Impacts of Aircraft Noise, the CCLEP includes controls requiring consideration of the ANEF and AS2021. Clause 7.5 (Development in areas subject to aircraft noise), referred to in Section
2.3.2.4 of this report, applies to development on land:

(i) near Central Coast Airport

(ii) in an ANEF contour of 20 or greater.

In deciding whether to grant development consent to development to which this clause applies, the consent authority:

(a) must consider whether the development will result in an increase in the number of dwellings or people affected by aircraft noise, and

(b) must consider the location of the development in relation to the criteria set out in Table 2.1 (Building Site Acceptability Based on ANEF Zones) in AS 2021:2015, and

(c) must be satisfied the development will meet the indoor design sound levels shown in Table 3.3 (Indoor Design Sound Levels for Determination of Aircraft Noise Reduction) in AS 2021:2015.

As stated in Section 6.9, an ANEC was prepared for CCA in 2018. However, there is currently no endorsed ANEF for the airport. It is a recommendation of this Master Plan that an ANEF be prepared for CCA, and that it be submitted to Airservices for endorsement. The ANEF should be based on the forecasts in this Master Plan. This

will then become the official ANEF for the airport, which can then be used for the purpose of implementing Clause 7.5 of the CCLEP.

As outlined in Section 6.9, NASF Guideline A contains further information and recommendations regarding aircraft noise contours which should be considered by airport operators. This includes the use of the 'Number Above' noise metric (commonly referred to as 'N-contours') to supplement the ANEF.

NASF Guideline A recommends the use of N-contours for strategic planning purposes. This is particularly important for the consideration of any proposals for zoning changes for residential purposes near the airport and its flight corridors.

There are currently no N-contours for CCA. It is a recommendation of this Master Plan that N-contours should be prepared for the airport at the same time as the ANEF is prepared. In accordance with NASF, the airport's N-contours should then be incorporated into the planning framework in a way that gives them proper and appropriate effect, at least as an additional strategic planning consideration over and above the ANEF contours and AS2021. Further information regarding this matter can be found in NASF Guideline A.

Recommendation: The new ANEF, once endorsed by Airservices, be used the purpose of CCLEP Clause 7.5: Development in areas subject to aircraft noise.

Recommendation: The N-contours should be incorporated into the planning framework in a way that gives them proper and appropriate effect, at least as an additional strategic planning consideration over and above the ANEF contours and AS2021.

7.7.3 Other NASF Matters

The CCLEP currently only addresses two of the NASF matters (Guidelines A and F) as outlined above. Whilst these are the two most critical safeguarding matters, the assessment of land use and development proposals around CCA should consider all of the NASF guideline matters, particularly the following additional guidelines:

- Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports
- Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports
- Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
- Guideline I: Managing the Risk in Public Safety Areas at the Ends of Runways.

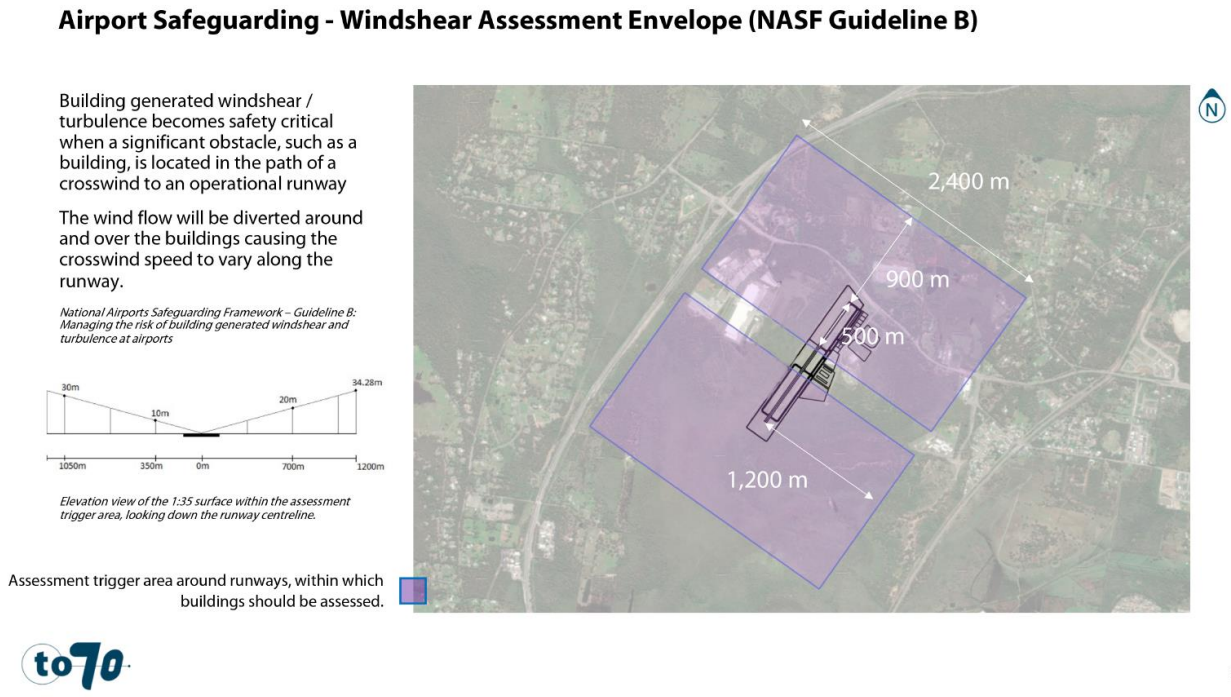
Land use and development around CCA should take these guidelines in account. This should be reflected in the CCLEP and/or CCDCP in accordance with the NASF principles, to ensure that the use and development of land surrounding the airport does not prejudice its ongoing operation.

Diagrams showing the different areas of land to which these guidelines apply are provided below. Details of the parameters and restrictions for land use and development within these areas are contained with the relevant NASF guidelines.

Recommendation: The NASF Guidelines B, C, E and I should be reflected in the CCLEP and/or CCDCP in accordance with the NASF principles, to ensure that the use and development of land surrounding the airport does not prejudice its ongoing operation.

7.7.3.1 Windshear Assessment Envelopes

Building generated windshear / turbulence becomes safety critical when a significant obstacle, such as a building, is located in the path of a crosswind to an operational runway. The wind flow will be diverted around and over the buildings causing the crosswind speed to vary along the runway. NASF Guideline B identifies assessment envelopes within which new buildings should be assessed for windshear impacts. Those envelopes are shown in Figure 38.



7.7.3.2 Wildlife Buffer Zones

Wildlife strikes and/or avoidance can cause major damage to aircraft and/or compromise aircraft safety. Whilst the Civil Aviation Safety Authority has well-established safety requirements for wildlife management plans on-airport, wildlife hazards also occur outside the airport fence. NASF Guideline C provides advice to help protect against wildlife hazards originating off-airport. Many existing airports are surrounded by areas that are attractive to wildlife, especially birds, but appropriate land use planning decisions and the way in which existing land use is managed in the vicinity of airports can significantly reduce the risk of wildlife hazards.

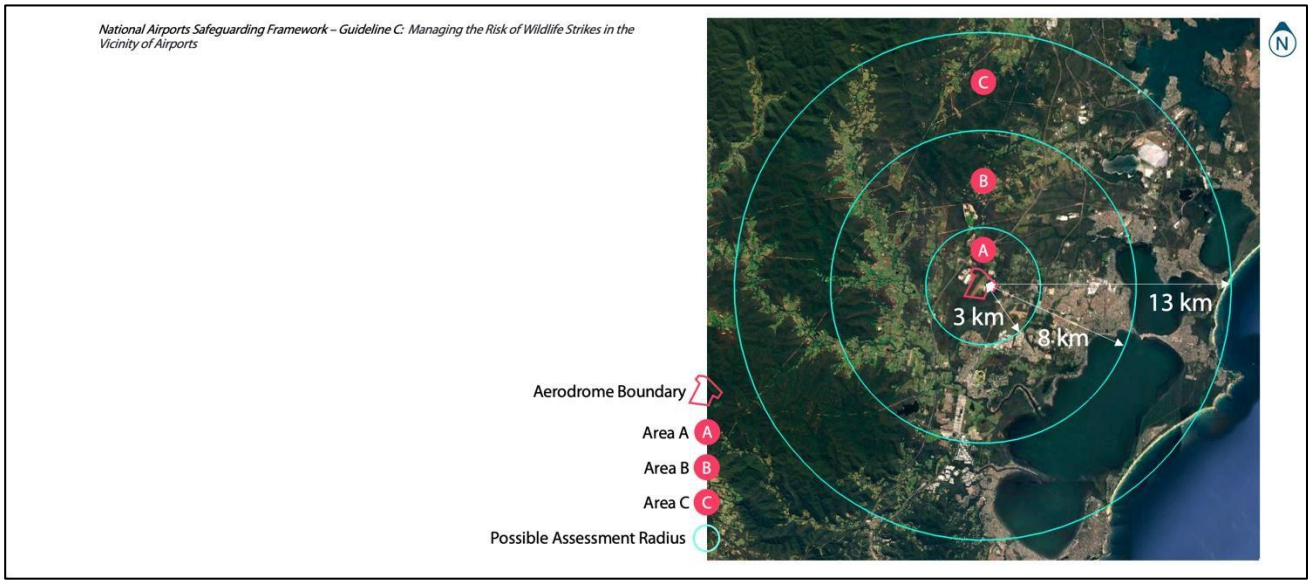


Figure 39 - NASF Wildlife Buffer Zones

7.7.3.3 Lighting Intensity Zones

Pilots are reliant on the specific patterns of aeronautical ground lights during inclement weather and outside daylight hours. These aeronautical ground lights, such as runway lights and approach lights, play a vital role in enabling pilots to align their aircraft with the runway in use. They also enable the pilot to land the aircraft at the appropriate part of the runway.

It is therefore important that lighting in the vicinity of airports is not configured or is of such a pattern that pilots could either be distracted or mistake such lighting as being ground lighting from the airport. NASF Guideline E identifies lighting intensity zones within which new lighting proposals should be assessed. Those zones are shown in Figure 40.

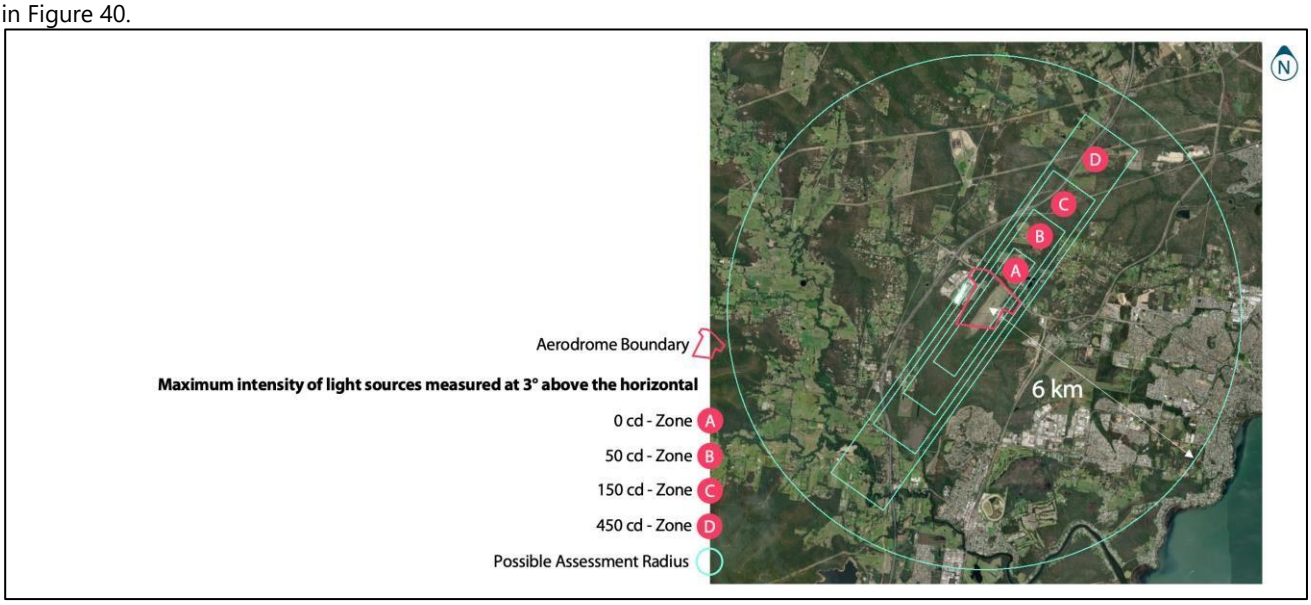


Figure 40 - NASF Lighting Intensity Zones

7.7.3.4 Public Safety Areas

Public Safety Areas (PSAs) are designated areas of land at the end of airport runways within which certain planning restrictions may apply. While air crashes are rare events, the majority occur in the vicinity of airports during take-off and landing. The PSA Guideline was developed to mitigate the risk of on-ground fatalities from an aircraft incident, by informing a consistent approach to land use at the end of Australian airport runways. NASF identifies land uses that are compatible and incompatible within these areas.

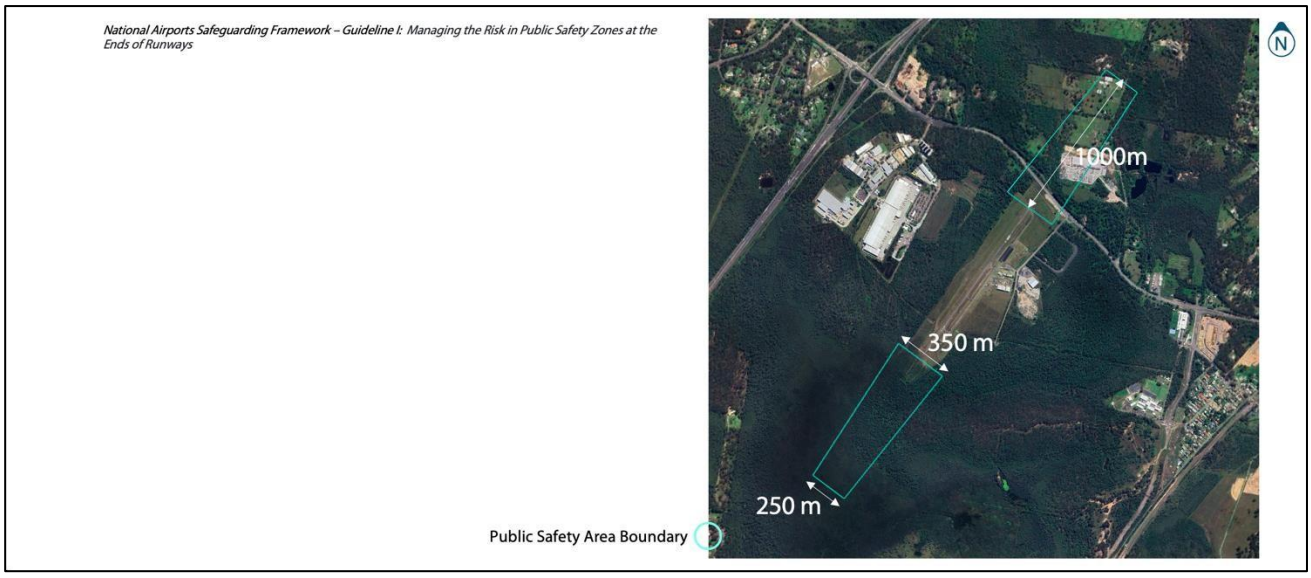


Figure 41 - NASF Public Safety Areas

8 10-year Master Plan

The 10-year Master Plan for CCA is presented below in two stages with areas identified for future investigation. It is based on the ultimate implementation of the preferred Scenario which provides the most capacity (land) for growth consistent with the 10-year planning horizon having regard to the constraints analysis. However, as stated in Section 10: Implementation Plan, the actual implementation and timing of proposed developments and upgrades will depend on demand triggers, an assessment of forecast market conditions, commercial discussions, and approval processes. As such, the stages are not necessarily mutually exclusive, and each would require their own detailed design.

8.1 Stage 1: Short Term

In Stage 1, the airport continues to operate as predominately a Recreational and General Aviation hub utilising vacant airside land on the eastern side of the Runway. Various facility enhancements are proposed, contained within the current aerodrome site area on the east side of the runway as shown in Figure 42, Figure 43 and Figure 44.

Importantly this stage includes upgrading the runway to Code 2B standards as outlined in Section 7.3.1.

Figure 42 - Master Plan Stage 1: Short Term

Figure 43 - Stage 1 Image (View 1)

Figure 44 - Stage 1 Image (View 2)

8.2 Stage 2: Medium Term

In Stage 2, the airport continues to develop on the east side of the Runway, and expands onto the land located on the eastern side of Jack Grant Avenue. This closely relates to Scenario 2, and is shown in Figure 45, Figure 46 and Figure 47.

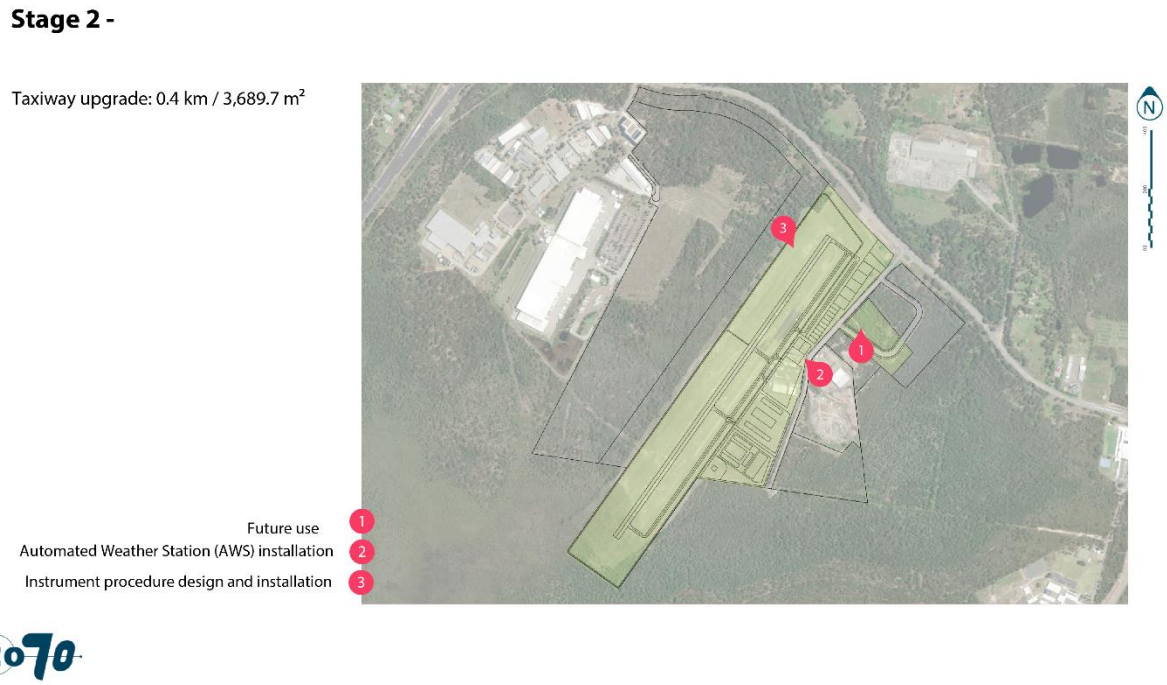


Figure 45 – Masterplan stage 2 - Medium Term

Figure 46 - Stage 2 Image (View 1)

Figure 47 - Stage 2 Image (View 2)

9 Master Plan Recommendations

Table 3 - Master Plan Recommendations

Ref.	Recommendation	Type
6.3	Future aerodrome facilities should be designed, and maintained, to meet Code 2B characteristics in accordance with MOS 139 requirements.	Technical
6.5	Ensure future runway and taxiway upgrades, provide a suitable strength rating for planned design aircraft to avoid pavement concessions and risk of runway damage.	Technical
6.6	All future aviation support and landside facilities will need to comply with CASA regulatory requirements, particularly MOS 139.	Technical
6.7	Ensure that airport operators monitor visitor access and prevent unauthorised persons accessing airside areas where their presence is not anticipated.	Security
6.8	A new updated OLS be prepared for CCA based on the revised and updated MOS 139 requirements.	Technical
6.8	Ensure all development on and surrounding CCA is undertaken in accordance with the airport's OLS chart.	Planning

6.9	An ANEF be prepared for CCA, and this should be submitted to Airservices for endorsement. N-contours should also be prepared for the airport at the same time as the ANEF is prepared.	Technical
7.3.1	Planning around the future development of the runway should be based on it being a Code 2B runway, 23 metres wide within an 80-metre-wide runway strip initially for non–instrument operations (however 150-metre-wide strip to be safeguarded for possible non-precision approach runway) and a 60-metre-long RESA (120m preferred).	Technical
7.3.2	Planning around the future development of taxiways should be based on minimum taxiway width of 10.5m, taxiway centreline to runway centreline of 82m (Safeguarding for non-precision instrument approach) and taxiway centreline to an object, structure, parked aircraft or road of 20m.	Technical
7.5	All development on the airport site must consider the findings and recommendations of the ecological assessments undertaken by AEP and de Witt Ecology.	Planning
7.6	If any cultural heritage sites or artifacts are found during any development activities, airport management should be immediately notified to ensure that appropriate measures can be taken to address any legislative requirements.	Technical
7.7.1	A new updated OLS be prepared for CCA based on the revised and updated MOS 139 requirements, for the purpose of CCLEP Clause 7.4.	Planning
7.7.2	The new ANEF, once endorsed by Airservices, be used the purpose of CCLEP Clause 7.5: Development in areas subject to aircraft noise.	Planning
7.7.2	The N-contours should be incorporated into the planning framework in a way that gives them proper and appropriate effect, at least as an additional strategic planning consideration over and above the ANEF contours and AS2021.	Planning
7.7.3	The NASF Guidelines B, C, E and I should be reflected in the CCLEP and/or CCDCP in accordance with the NASF principles, to ensure that the use and development of land surrounding the airport does not prejudice its ongoing operation.	Planning

10 Implementation Plan

This Master Plan provides Council with a strategic direction and guidelines for future development of CCA. It is a strategic document that aims to assist Council in planning for the next 15 years. Implementation of this plan will require a number of actions to be undertaken as outlined in the table below.

The timings are defined as:

- Immediate term: 0-12 months
- Short term: 1-5 years
- Medium term: 5-10 years

The actual implementation and timing of proposed developments and upgrades will depend on demand triggers, an assessment of forecast market conditions, commercial discussions, and approval processes. Council should liaise closely with aviation operators and other key stakeholders to discuss the timing and priority of investments. In terms of nonaviation developments, these will be aligned with market demand and opportunities which may arise.

The review of the Master Plan every five years will enable CCC to periodically reassess project priorities and timeframes, thereby validating forecasts and development requirements.

Table 4 - Implementation Plan

Action	Trigger	Timing
Release of draft Master Plan for public comment	Council approval to release the Draft Master Plan for community comment	Immediate term
Council to adopt final Master Plan	Following community comment	Immediate term
Commission an Australian Noise Exposure Forecast (ANEF) report and preparation of N contours. Obtain ANEF endorsement from Airservices Australia.	Adoption of Master Plan	Immediate term
Commission an updated OLS based on the revised and updated MOS 139 requirements	Adoption of Master Plan	Immediate term
NASF Guidelines B, C, E and I to be reflected in the CCLEP and/or CCDCP in accordance with the NASF principles	Adoption of Master Plan	Immediate term
Commence planning and implementation of Stage 1 upgrades (see **Figure 42**)	Adoption of Master Plan	Short term
Seek certification of the airport from CASA	Compliance with CASA requirements	Short-medium term
Master Plan review including consideration of future investigation areas	5 years from adoption	Medium term
Commence planning and implementation of Stage 2 upgrades (see **Figure 45**)	Completion of Stage 1 upgrades. Demand for additional airport land.	Medium term

to70

Brisbane *Melbourne*
Bangkok *Bengaluru* *Shanghai* *Singapore*
Brussels *Frankfurt* *Geneva* *London* *The Hague*
Montréal
Bogotá *São Paulo*