



# DEVELOPMENT MASTER PLAN 2016

## COOKTOWN AIRPORT

*Prepared for Cook Shire Council*



 **AVIATION PROJECTS**

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## EXECUTIVE SUMMARY

Cook Shire Council (CSC) has committed to developing the aviation industry in Cooktown with the long term goal of developing Cooktown Airport and the associated Aviation Park into a regionally significant aviation precinct servicing Cape York and the Asia Pacific region.

The preparation of a Development Master Plan (Master Plan) for Cooktown Airport is required to meet the needs of CSC in providing a guiding document that will achieve Council's long term goal in that it will provide a direction for the aerodrome in terms of future infrastructure development and cost recovery, these being balanced against the economic and social requirements and aspirations of the local community.

### Strategic objectives

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

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

A key aspect of the Master Plan will be the upgrading of the aerodrome as a code 3C airport and to protect this rating during the airport's and associated industrial estate expansion.

Specifically, the Master Plan addresses, to the extent possible, the following elements:

- Current airport characteristics;
- Airport standards and planning;
- Air traffic forecasts;
- Airport development plan; and
- Commercial and business opportunities.

### Planning horizons

The Master Plan nominally considers a planning horizon of 20 years, comprised of immediate, short term and longer term timeframes:

- Immediate – 12 months;
- Short term – one-five years; and
- Longer term Master Plan horizon – 20 years.

### Aviation demand forecasts

Annual passenger movements at the 20 year planning horizon are likely range between 15 000 and 25 000.

The main aircraft parking apron is not large enough to accommodate more than one large aircraft simultaneously, and given the potential for concurrent operations by passenger transport and/or charter/private/aeromedical or other aircraft, the higher strength main parking apron should be expanded to meet future needs.

Ultimately, a new terminal facility should be able to accommodate the arriving and departing passengers of up to two 68-74-seat aircraft such as the ATR72-600 or Dash 8-400, or a single 100-seat aircraft such as the F100 or Bae146. At 80% load factor, this equates to a range of approximately 120-160 passengers, along with associated meeters and greeters. A new passenger terminal could be designed to enable progressive expansion according to demand.

### **Aerodrome safeguarding**

The following aerodrome safeguarding issues have been explored and documented for the purpose of further investigation and resolution as applicable:

- Operational airspace;
- Lighting area buffer zone;
- Wildlife hazard buffer zone;
- Building restricted areas for aviation facilities;
- Public safety areas; and
- Aircraft noise.

### **Master Plan**

The Master Plan is characterised by progressive upgrades in three general stages as outlined below.

#### **Immediate recommended works**

The following works are recommended for immediate action:

1. Safety and security – airside and landside as required to ensure compliance;
2. Consider the requirement to formalise helicopter parking arrangements in front of the JetA1 refuelling facility;
3. Remove the sign over the drinking water basin in the passenger terminal;
4. Provide a potable water supply for public facilities (passenger terminal);
5. Manage safety risks associated with decommissioning the NDB and DME; and
6. Provide a broadcast function for the AWIS.



#### Short term

The following works are recommended for the short term period of 1-5 years:

1. Complete implementation of the Cooktown Airport Aviation Park (landside);
2. Construct taxiways to the Cooktown Airport Aviation Park (airside works);
3. Provide aeronautical facilities capable of supporting code 3C aircraft operations:
  - Increase the runway and taxiway pavement bearing strength at the next significant pavement overlay or maintenance activity; and
  - Protect the future obstacle limitation surfaces applicable to a fully compliant code 3C instrument non-precision aerodrome based on existing runway configuration;
4. Provide a functional and compliant passenger terminal;
5. Provide access roads and car parking in conjunction with the new passenger terminal;
6. Re-purpose the existing terminal as multi-use facility including for disaster response operations; and
7. Return the Airservices Australia lot to CSC.

#### Long term

The following works are recommended for completion by the end of the 20 year master planning period:

1. Provide aeronautical facilities capable of supporting code 3C aircraft operations:
  - Establish a fully compliant 150 m wide runway strip (requires significant planning, environmental and civil works, realignment of Endeavour Valley Road);
  - Protect the obstacle limitation surfaces applicable to a fully compliant code 3C instrument non-precision aerodrome OLS;
  - Expand the main parking apron according to demand, and reconfigure other aircraft parking arrangements as required;
  - Consolidate fuel storage and dispensing facilities;
  - Provide code B hangars in a precinct to the east of the main parking apron according to demand; and
  - Provide a parallel taxiway to the east of the main stub taxiway according to demand, and relocate the primary wind direction indicator and signal circle.

Copies of the Master Plan drawings are provided at Figure E 1, Figure E 2 and Figure E 3.

A full sized copy of the Development Master Plan is provided at **Annexure 1**.

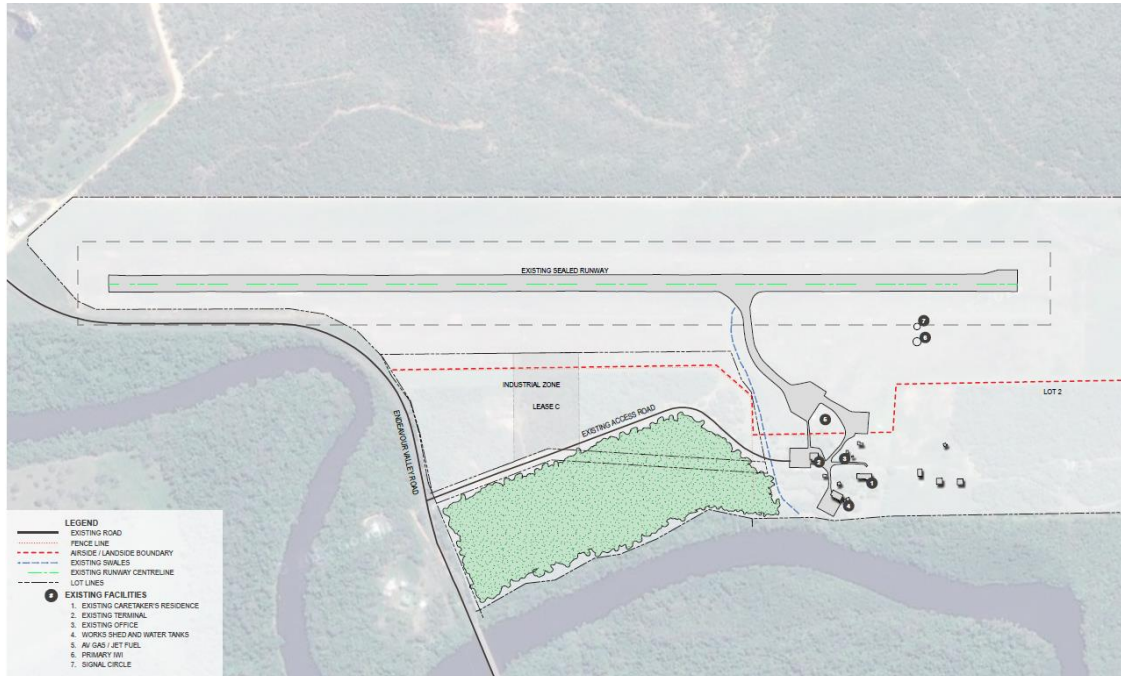


Figure E 1 Existing Airport Precinct

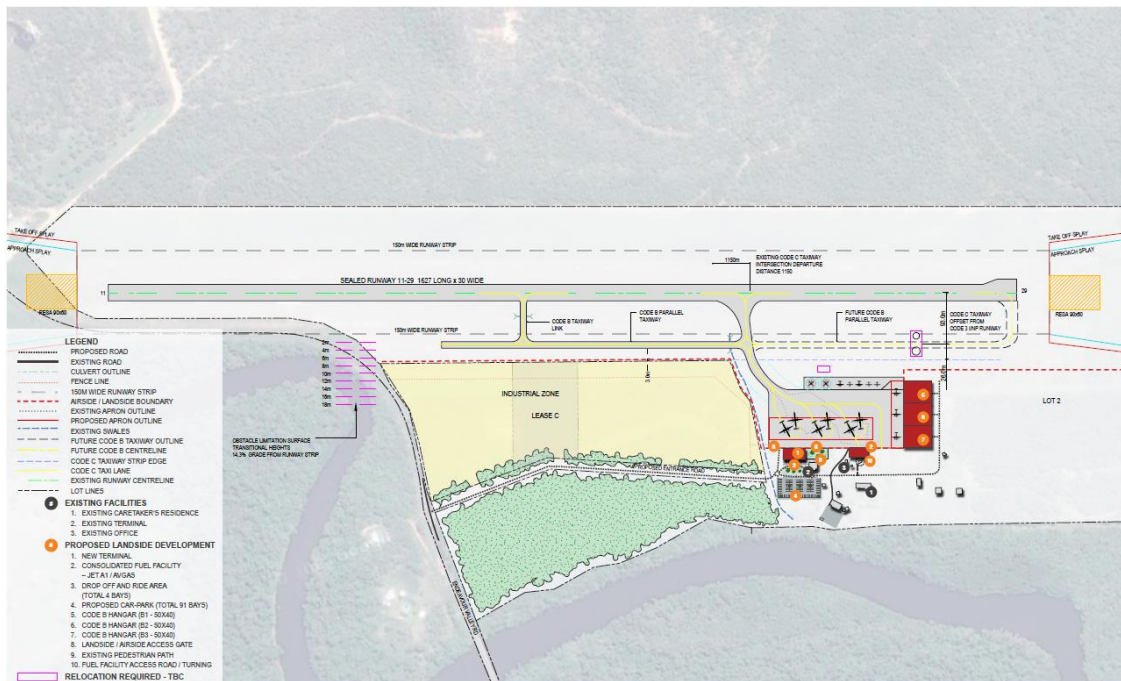


Figure E 2 Proposed Masterplan

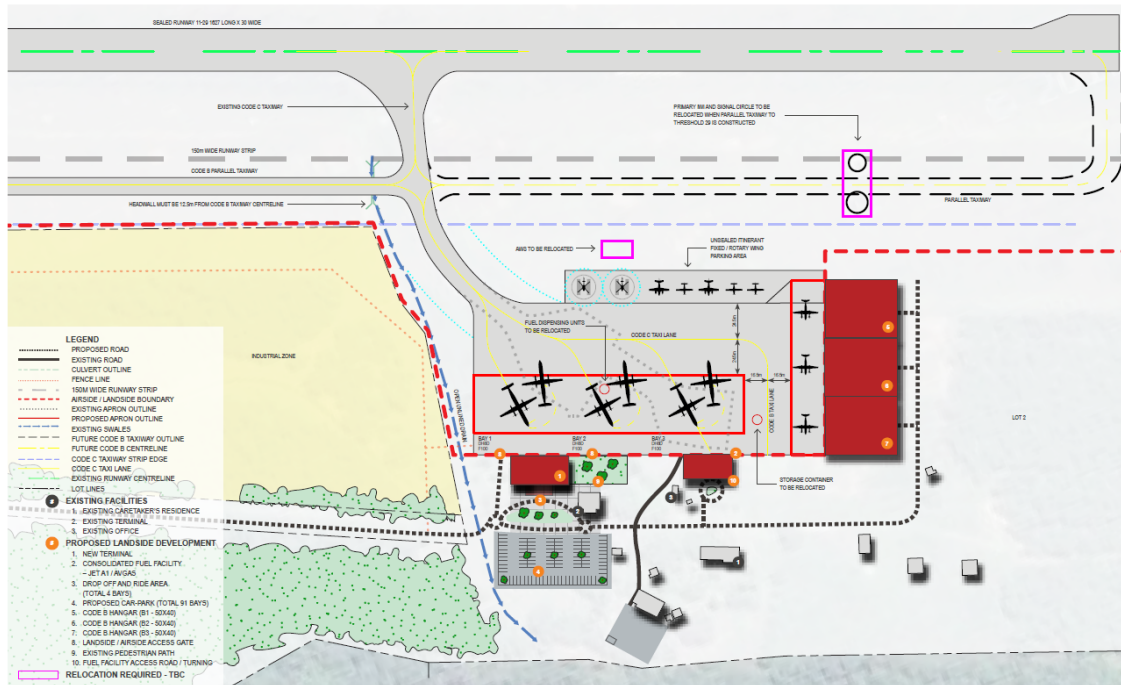


Figure E 3 Proposed Terminal Precinct Zone

## 1. PLANNING CONTEXT

### 1.1. Background

Cook Shire is the largest shire in Queensland in terms of land area. From the Bloomfield River in the south to just north of the Jardine River it covers over 100 000 square kilometres and occupies 80% of Cape York Peninsula.

The major centre of Cooktown is located in the south eastern corner of Cook Shire, on the east coast of Cape York Peninsula.

The relative location of Cooktown and Cook Shire is shown in Figure 1 (source: Qld Department of Local Government, Infrastructure and Planning, Queensland Local Government Areas Boundaries, 16 March 2016).

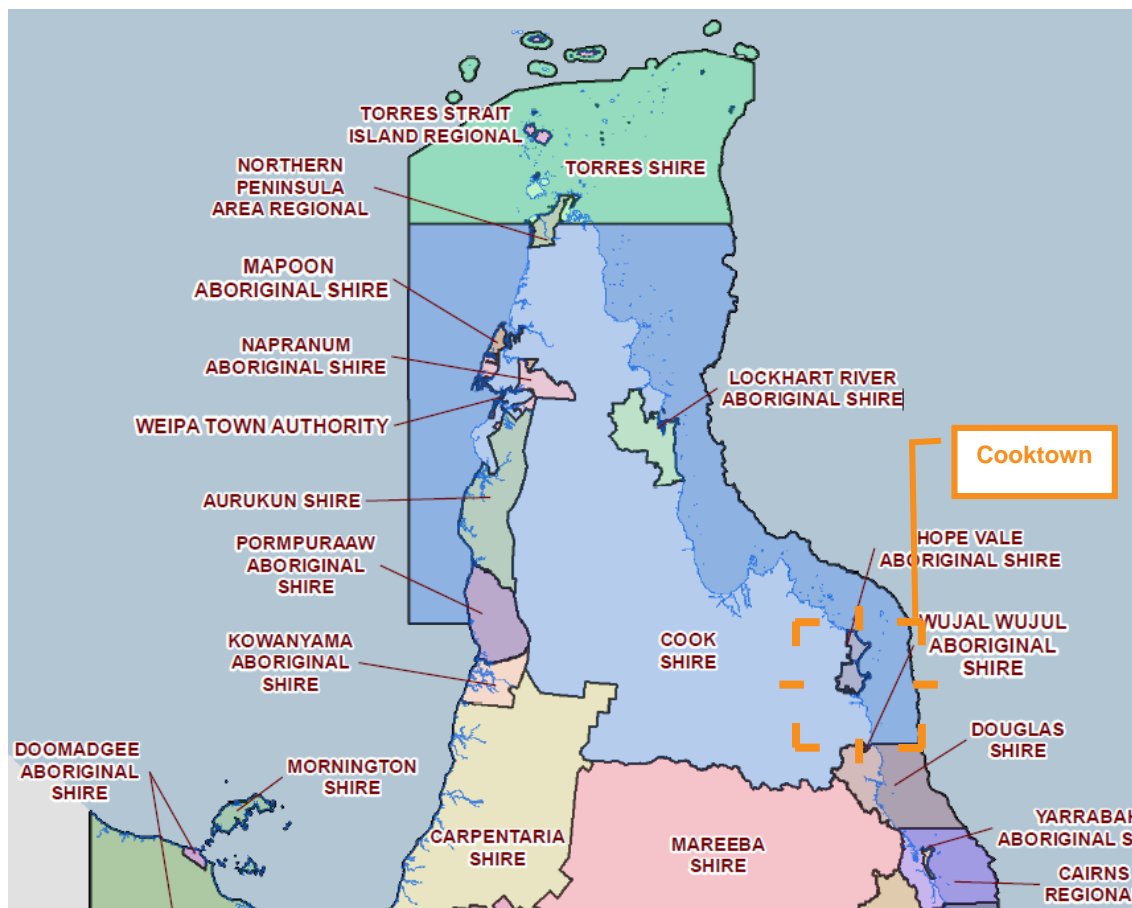


Figure 1 Cook Shire Council boundaries



Cooktown Airport is located to the west of Cooktown. A plan showing the location of the airport is shown in Figure 2 (source: Google Earth).



Figure 2 Location Plan

Cook Shire Council (CSC) has committed to developing the aviation industry in Cooktown with the long term goal of developing the Cooktown Airport and associated Aviation Park into a regionally significant aviation precinct servicing Cape York and the Asia Pacific region.

The Cooktown Airport Aviation Park has preliminary approvals already in place to encourage private investment into this industrial area and provide opportunities to further expand the aviation sector. The total land area on offer is 7.5 hectares (ha) within a 10-minute drive from the town centre.

CSC was successful in obtaining \$500,000 for the development of the Cooktown Airport Aviation Park through the Building our Regions Fund. CSC will support a range of uses that meet existing and future demands with the community and across a range of industries.

The preparation of a Development Master Plan (Master Plan) for Cooktown Airport is required to meet the needs of CSC in providing a guiding document that will achieve Council's long term goal in that it will provide a direction for the aerodrome in terms of future infrastructure development and cost recovery, these being balanced against the economic and social requirements and aspirations of the local community.

## 1.2. Site description

The existing airport site is comprised of Lots 1-3 on SP271395. A plan of the site is provided in Figure 3 (source: Google Earth and Qld Globe).



Figure 3 Site Plan

## 1.3. Regional characteristics

CSC Economic Profile 2015 provides some background information on the regional characteristics applicable to this planning study.

### 1.3.1. Population

As at 30 June 2013, the resident population of CSC's Local Government Area (LGA) was 4393. The percentage increase from June 2012 was 1.85%. According to the 2011 Census QuickStats (by all people, usual residents, State suburbs), the towns with the highest population in Cook Shire are Cooktown (2339), Coen (416) and Bloomfield (403, including Rossville).

### 1.3.2. Economy

CSC's Gross Regional Product has been growing at a steady rate despite the heavy impact of the global financial crisis and high unemployment rate.

The Shire's unemployment rate in September 2014 was 13.19%.

The largest changes by industry between 2006 and 2011 were seen in Public Administration and Safety, resulting from the construction of several major government department buildings. The next

census in 2016 will highlight some significant changes to this data which will reflect the amount of building approvals and a noticeable population increase.

Trade and Investment Queensland, in its Market Profile – Far North Queensland, nominates Aviation as one of the region’s economic strengths. It notes:

*The aviation industry has grown steadily over the past 20 years and continues to demonstrate strong growth, enhanced by the tourism industry. To support this, there are many supply chain industries that include flight catering, engineering, trucking, logistics and air transport. Equipment installation, maintenance and training have also been developed to service the industry.*

In its 2016 – 2020 Economic Development Plan, CSC nominated Aviation as an Emerging Industry, and commits to supporting projects that will create a precinct of service delivery companies to meet existing demand, across a range of industries. It notes:

*As a coastal hub servicing most of the Cape York region (106,168m2 land area), Cooktown is well positioned to offer new business and investment opportunities in this emerging industry.*

#### 1.3.3. Climate and meteorology

Cook Shire enjoys a mild tropical climate with the wet season running from January to March being the hottest time of the year. April to December brings a drier period with cooler weather and temperatures averaging around 27 degrees Celsius. In summer, Cooktown is usually 5 degrees cooler than Cairns.

#### 1.3.4. Regional aviation

Tourism and Events Queensland (TEQ) publishes the Tropical North Queensland (TNQ) Destination Tourism Plan (DTP). The DTP is used to align the strategies, available resources and the efforts of industry and all levels of government towards a set of unified long-term objectives.

The DTP states the following with respect to aviation in TNQ:

*The Primary Drivers of growth will be led through Touring, Events and Aviation. These priorities will only be successful if sufficient focus is also provided on Building the Context (Destination Image) and the Enabling Drivers. These will be required to raise the profile and further develop the capacity of the region to achieve and sustain the growth targets.*

The DTP informs that inbound and outbound aviation capacity is approximately 2.5 million for domestic and 533 000 international. Cairns Airport is the 7th busiest airport in Australia, and 6th busiest for international passengers. It is estimated that approximately 48% of domestic arrivals and 65% of international visitors used air services to access the region.

International travel is available at Cairns and Townsville airports in the region. A map of international destinations is shown in Figure 4.



Figure 4 International destinations from TNQ

The DTP identifies the opportunity, threats and trends with respect to the potential aviation in the region, which are provided in Table 1.



Table 1 TNQ DTP aviation opportunity, threats and trends

<i>Opportunities</i>	<i>Threats</i>	<i>Trend</i>
<b>Grow direct aviation capacity to Cairns to support increased demand from economic powerhouses in Asia, particularly China</b>	Increased global competition	Need to increase destination awareness in target markets Government support required to attract and maintain regular flights
	Region does not provide the required level of service and experience consistently across the region	Increasing customer service expectations and also the need to thoroughly understand and meet the different cultural needs of the Asian markets

Four airlines conduct domestic RPT operations in the area: Qantas Link (Sunstate Airlines), Skytrans, Regional Express (Rex) and Hinterland Aviation. Hinterland Aviation is the only RPT operator that has Cooktown Airport as a destination.

Qantas Link (Sunstate Airlines) operates daily in the region with de Havilland Dash 8 400 (74 seats) and Boeing 717-200 (up to 125 seats) aircraft in regular public transport (RPT) operations. The hubs for the region are Cairns and Townsville, and destinations in the region include Horn Island, Weipa, Cloncurry and Mount Isa.

Skytrans operates daily in the region with de Havilland Dash 8 200 (36 seats) in RPT operations. A map of Skytrans destinations is provided in Figure 5 (source: Skytrans website, retrieved 10 May 2016).

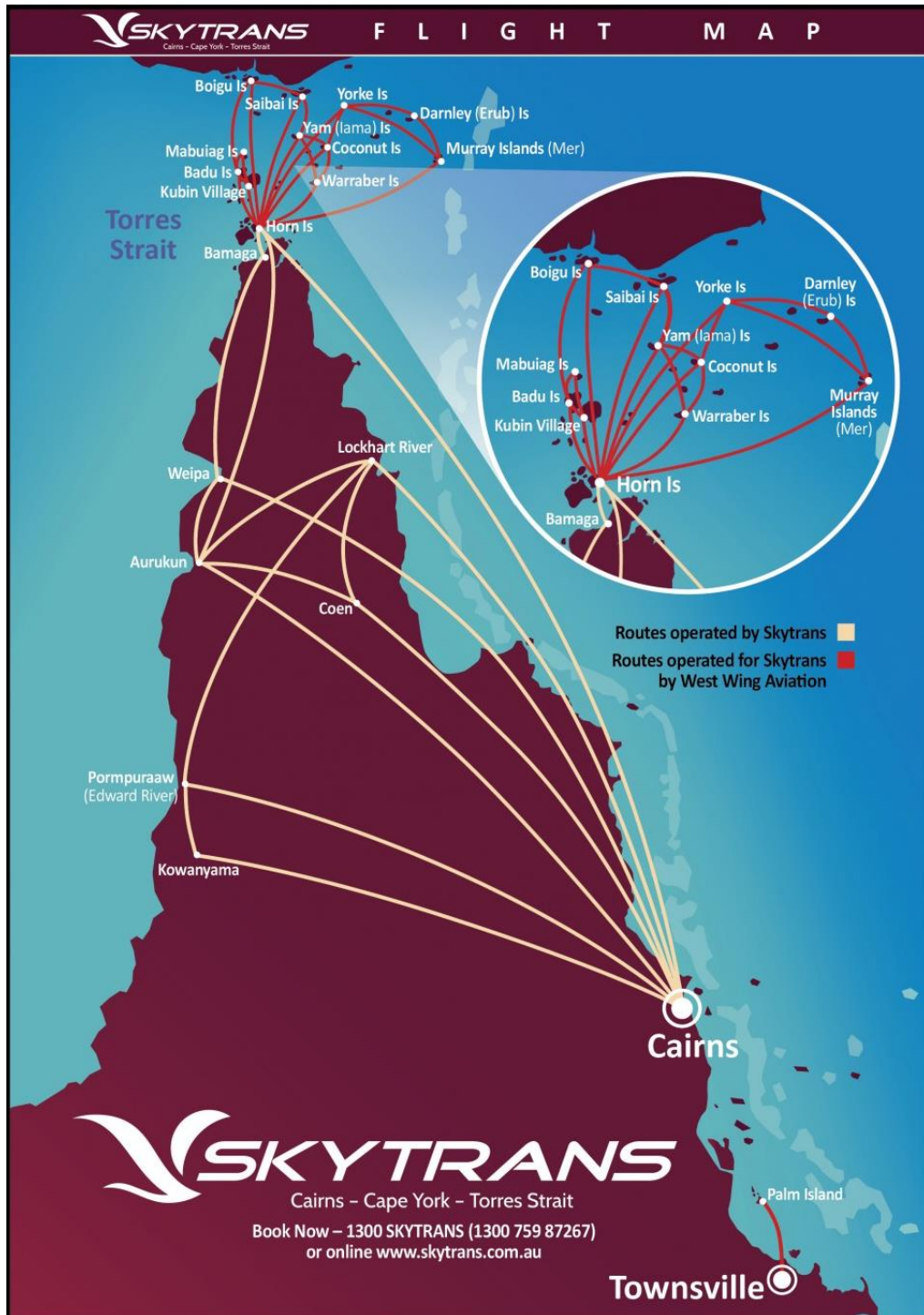


Figure 5 Skytrans route map

Rex operates daily in the region with SAAB 340 (34 seats) in RPT operations. A map of Rex destinations is provided in Figure 6 (source: Rex website, retrieved 10 May 2016).



Figure 6 Regional Express Queensland regulated routes

Hinterland Aviation operates 13 to 14 times per week between Cooktown and Cairns with Beechcraft King Air 200 (11 seats) or Cessna 208 (12 seats) aircraft. Cairns is a 40-minute direct flight to the major regional centre of Cairns. A map of the destinations is provided in Figure 7.



Figure 7 Hinterland Aviation destinations

Cooktown is strategically located to provide direct helicopter access to the tourist destination of Lizard Island, and fixed wing flights to the northern and western extents of the Cape York Peninsula as well as the nearby Asia Pacific region.

A map showing Cooktown Airport and other major airports in the region is provided at Figure 8 (source: OzRunways).

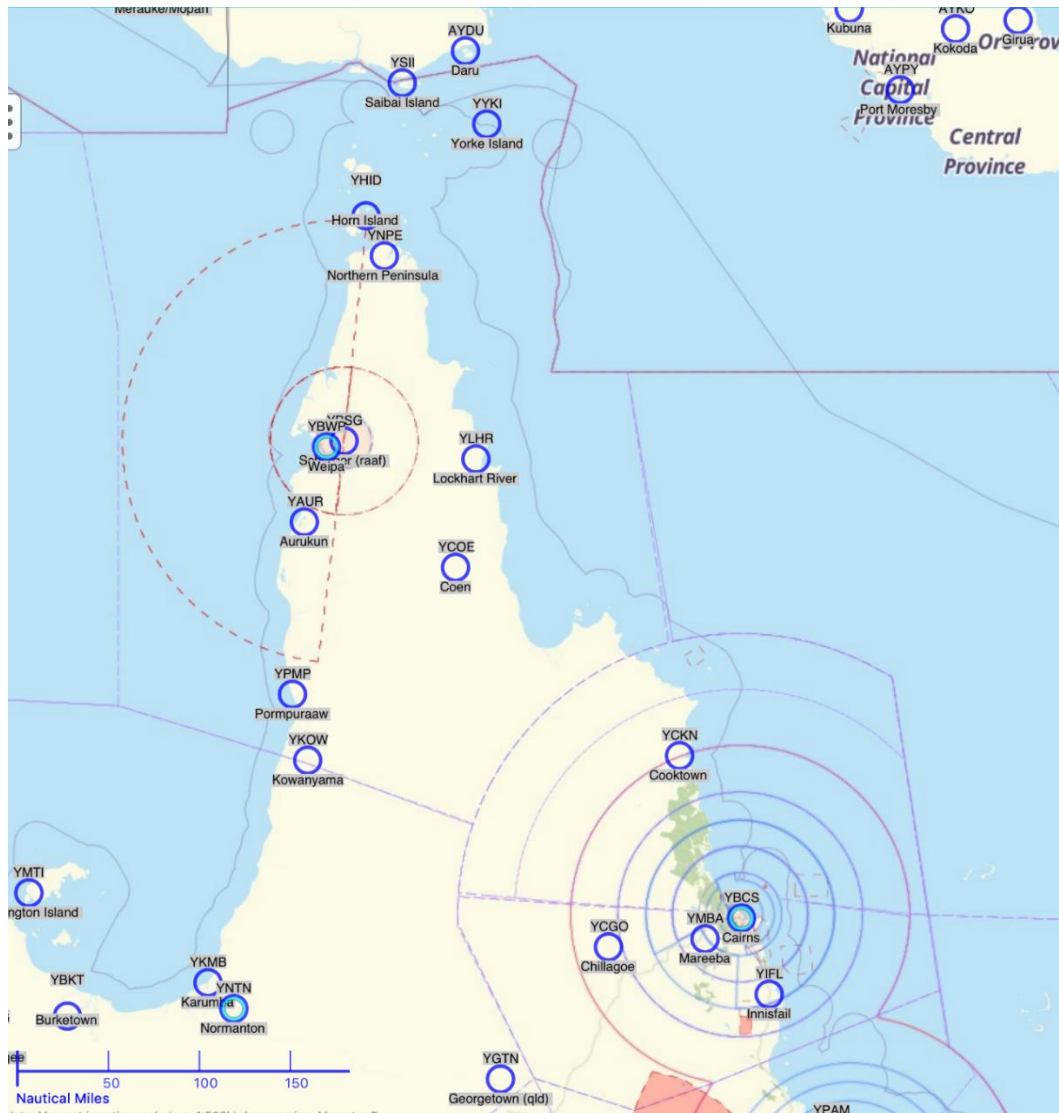


Figure 8 Regional aeronautical situation map

## 1.4. Role and history

The first aerodrome constructed was at a mission on the existing site and was used regularly as far back as the mid-1920s. This site is 17 km from town.

In 1936, CSC established a licensed aerodrome, 2 km west of the town on a low swampy area protected from flooding by a levee bank. The Department of Aviation took over this aerodrome on 1 January 1938 and remained in possession until 1949 when the aerodrome was decommissioned. During its brief life the aerodrome was flooded three times despite the levee bank protection.



The current site was taken over by the Royal Australian Air Force (RAAF) and the mission moved to Hopevale some 32 miles distant, where the RAAF constructed a runway for fighters and bombers.

The then Department of Civil Aviation (DCA) was given permissive occupancy in December 1944 and commenced to slowly develop the site which took on more impetus when the old town site was devastated by a cyclone and flooding.

Actual ownership of the aerodrome was not transferred to DCA until June 1958. On 01 March 1992 Cooktown Aerodrome transferred from the Department of Transport and Communications to the CSC.

### **1.5. Current operations**

Cooktown Airport is a certified aerodrome equipped with non-precision instrument approaches and aerodrome lighting capable of support aircraft under instrument flight rules day and night. The main runway 11/29 is 1627 m long and 30 m wide. It has a 90 m runway strip and is published as having code 2C instrument non-precision obstacle limitation surfaces (OLS).

Operations at the Cooktown Airport generally comprise of:

- regular public transport (RPT) services provided by Hinterland Aviation;
- commercial charter services;
- aeromedical retrieval by Royal Flying Doctor Service (RFDS) and Careflight Group (fixed and rotary wing); and
- other general aviation flying activities.

### **1.6. Strategic intent**

CSC has a long term goal of developing the Cooktown Airport and associated Aviation Park into a regionally significant aviation precinct servicing Cape York and the Asia Pacific region.

### **1.7. Purpose of master planning study**

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

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

### **1.8. Master planning outcomes**

The Master Plan will provide a direction for the aerodrome in terms of future infrastructure development and cost recovery, balanced against the economic and social requirements and aspirations of the local community.

A key aspect of the Master Plan will be the upgrading of the aerodrome as a code 3C airport and to protect this rating during the airport's and associated industrial estate expansion.

Specifically, the Master Plan will address, to the extent possible, the following elements:

- Current airport characteristics;
- Airport standards and planning;
- Air traffic forecasts;
- Airport development plan; and
- Commercial and business opportunities.

### **1.9. Planning horizons**

The Master Plan nominally considers a planning horizon of 20 years, comprised of immediate, short term and longer term timeframes:

- Immediate – 12 months;
- Short term – one-five years; and
- Longer term Master Plan horizon – 20 years.

### **1.10. Previous planning studies**

A number of planning studies have been conducted over the recent past:

- Cooktown Airport Development Plan February 2005; and
- Cook Shire Council Planning Scheme 2016.

### **1.11. Scope and Limitations**

The results of the master planning study were limited to various extents by the following issues:

- No detailed topographic survey data was available for evaluation;
- No geotechnical data or other pavement design/construction data was available for evaluation;
- No civil engineering aspects were required;
- A runway usability analysis was not performed;
- Aircraft noise impacts were not assessed; and
- No cost estimates or financial models were prepared.

### **1.12. Methodology**

This master planning study was undertaken using the following general methodology:

- Preliminary work defined important baseline information that informed the planning task and the work of the planning team;
- Once the concepts were developed, a summary of preliminary planning concepts and the constraints and limitations, opportunities and potential issues associated with various development scenarios were presented for client review;
- The First Draft Report and drawings/plans were prepared following review of the preliminary concepts; and
- A Final Draft Report and drawings/plans were submitted for client acceptance.

### **1.13. Stakeholder Consultation**

CSC Councillors and staff members are the principal stakeholders for the purpose of consultation activities undertaken during the preparation of the Master Plan, given the relative maturity of development plans already prepared for the site.

Consultation undertaken was therefore principally with CSC personnel.

The final draft version of this Development Master Plan was presented to a meeting of the Airport Development Community Forum at Cooktown Airport on 20 June 2016. Comments and recommendations made at that meeting have been incorporated in the final document as appropriate.

Other stakeholders, including State and Commonwealth government agencies and aviation and associated businesses based in Cooktown and/or Cairns were considered.



## 2. EXISTING AERODROME FACILITIES

### 2.1. Aeronautical infrastructure

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

Runway 11/29 is 1627 m x 30 m, with a 90 m wide runway strip.

Pavement bearing strength is noted in ERSA FAC as PCN 9/F/B/800 (116 PSI)/U Sealed.

Current runway declared distances are provided in Table 2 (source: ERSA RDS).

Table 2 Runway declared distances

	<i><b>TORA</b></i>	<i><b>TODA</b></i>	<i><b>ASDA</b></i>	<i><b>LDA</b></i>
<b>Runway 11</b>	1627	1687 (1.6%)	1627	1627
<b>Runway 29</b>	1627	1687 (2.5%)	1627	1627

A single 15 m wide taxiway connects the runway to the main parking apron.

The main parking apron provides a single parking position for up to Dash 8-300 sized aircraft. A small concrete pad is provided adjacent to the refuelling facility for helicopter parking. Note that there are no markings on this pad.

Beyond the main parking apron is a sealed and unsealed parking apron suitable for aircraft with maximum take-off weight (MTOW) <5700 kg.

The runway is equipped with low intensity runway edge lighting at 58 m longitudinal intervals, and the main stub taxiway is lit with edge lights.

Both sealed parking aprons are lit with floodlights.

### 2.2. Support facilities

Fuel storage and dispensing facilities are provided for both Jet A1 and avgas:

- Avgas – 10 000 L, and
- JetA1 – 30 000 L.

The airport is equipped with a non-directional beacon (NDB) and distance measuring equipment (DME), both of which are due to be decommissioned from 26 May 2016. The site on which the equipment is located is intended to be returned by Airservices Australia to CSC.

An automatic weather station is accessible by telephone but is not equipped with a broadcast capability.

There is no air traffic control tower service.

The airport is located outside controlled airspace, and has a common traffic advisory frequency (CTAF).

### **2.3. Landside development**

Landside facilities include the following buildings:

- Passenger terminal;
- Airport Manager Office;
- Airport works depot; and
- Airport Manager residence.

### **2.4. Ground transport**

Access to the airport is provided via a single sealed road originating at Endeavour Valley Road.

The existing main entrance road is a sealed, single lane road.

There are approximately 30 marked car parking spaces. Additional car parking is available in unmarked areas in and around the terminal precinct.

### 3. DEMAND

Infrastructure requirements can only be scoped once demand for individual elements can be quantified over the planning period. This then enables an integrated development strategy to be prepared.

Regional population growth, historical passenger demand, demand for aircraft parking and passenger terminal capacity requirements are explored in the following section.

#### 3.1. Regional population growth

At 30 June 2031, the population for the Cook Shire is projected to be 5527 persons. The population for the region is projected to increase by an average annual growth rate of 1.1 per cent over the 20 year period between 2011 and 2031.

Approved project developments as identified in the CSC Major Projects document could have a positive effect on population numbers and this growth rate is likely to increase.

Projected populations at 30 June for Cook Shire and Tropical North Queensland are provided in Table 3 (Source: Queensland Government Population Projections (2013 edition) and Queensland Treasury and Trade estimates).

Table 3 Projected populations by LGA, Cook Shire, 2011 to 2031

Local Government Area	2011	2016	2021	2026	2031	AAGR
Cook Shire	4409	4765	5037	5320	5527	1.1%
Tropical North Queensland	255 851	277 873	298 962	319 803	341 365	1.5%

#### 3.2. Historical passenger demand

Department of Infrastructure and Regional Development produces annual airport passenger and aircraft movements data. The passenger movements data for Cooktown Airport is provided in Figure 9 (source: *Airport Traffic Data 1985-86 to 2014-15 (xls format)*).

According to the data, the average annual growth rate (AAGR) for the previous five years was -2.0%, and -0.4% for the previous 20 years.

A maximum annual total of 18 184 passengers was achieved in 2007-08, just prior to the Global Financial Crisis (GFC).

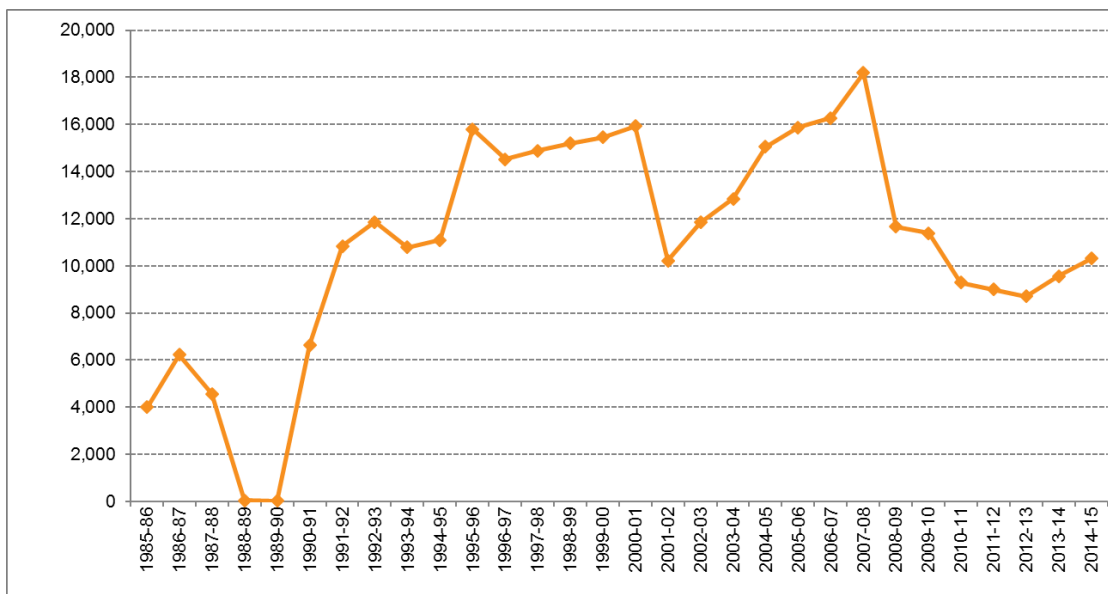


Figure 9 Annual passenger movements

### 3.3. Historical aircraft movement demand

Aircraft movements data for Cooktown Airport is provided in Figure 10 (source: *Airport Traffic Data 1985-86 to 2014-15 (xls format)*).

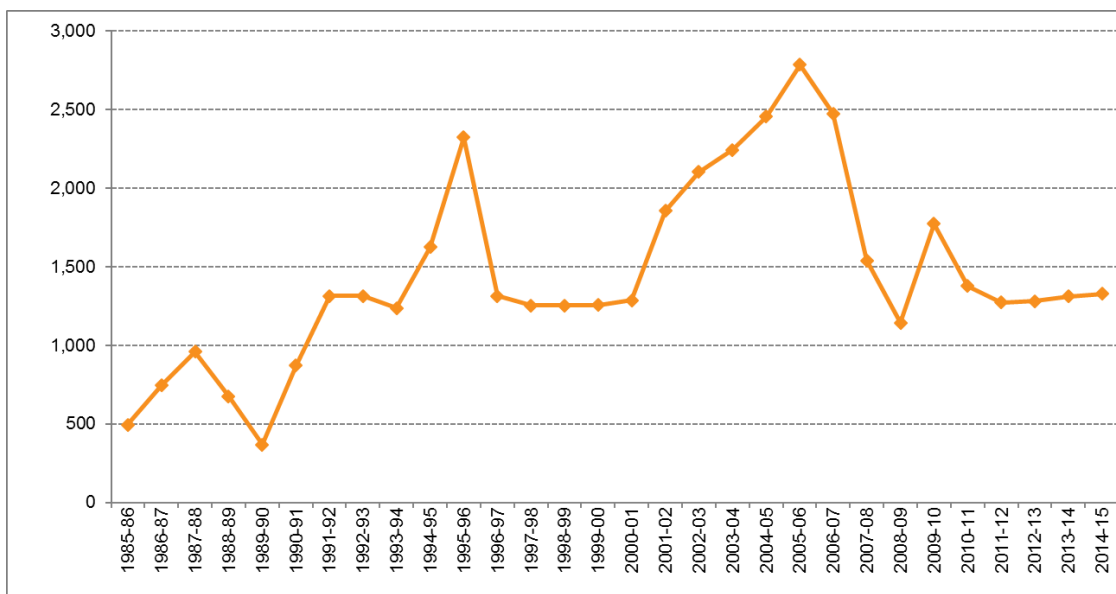


Figure 10 Annual aircraft movements

## 3.4. Forecast passenger demand

For the purpose of understanding potential future demand and infrastructure capacity requirements, the most recent annual passenger movements total (2014-15) has been projected at three indicative AGRs: 3%, 5% and 10%.

Historical and projected population figures have been plotted, along with four times multiple of projected population as a means of understanding the most likely maximum annual regular public transport passenger movements.

Generally, it can be reasonably concluded that annual passenger movements at the 20 year planning horizon are likely range between 15 000 and 25 000.

This analysis is shown graphically in Figure 11.

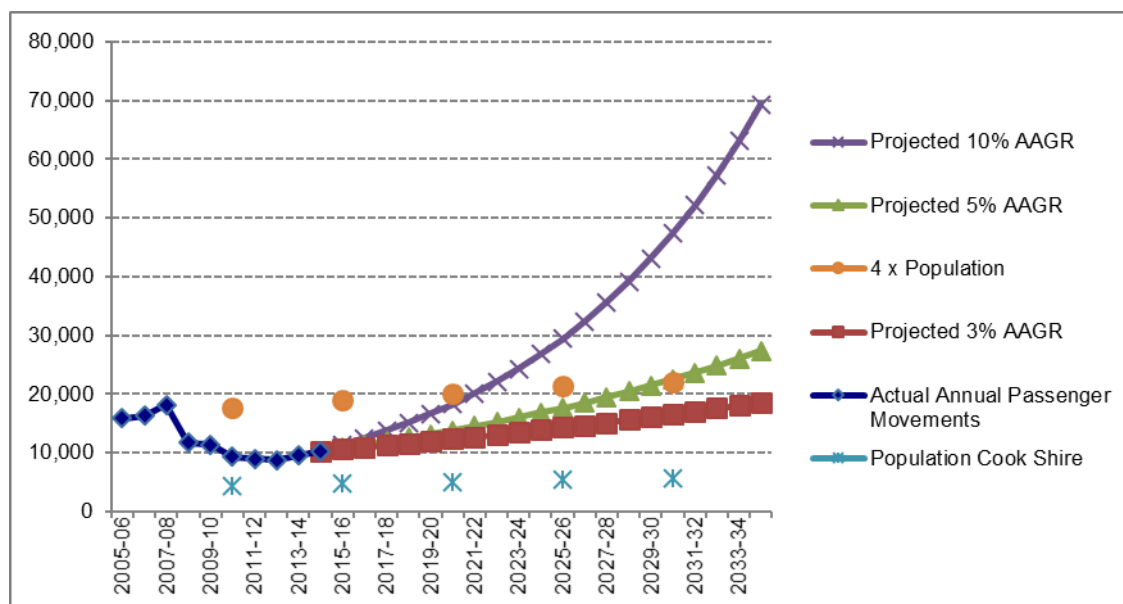


Figure 11 Passenger demand analysis

## 3.5. Aircraft parking capacity

The main parking apron provides sufficient capacity for a single design aircraft, or several smaller fixed and/or rotary wing aircraft.

The secondary apron provides adequate sealed parking space for day to day operations.

The unsealed parking apron provides adequate overflow parking space for larger numbers of short term itinerant operators.

The twice-daily operation of a Dash 8-400 aircraft at 80% load factor would produce 86 432 annual passenger movements – well above the high range (10% AAGR) passenger projection shown in Figure 11. Alternatively,

twice daily Dash 8-300 flights with the same load factor would produce 58 400 annual passenger movements. Based on this analysis, the main parking apron is adequate for the needs of RPT operations.

The apron is not large enough to accommodate more than one large aircraft simultaneously, and given the potential for concurrent operations by passenger transport and/or charter/private/aeromedical or other aircraft, the higher strength main parking apron should be expanded to meet future needs.

### **3.6. Passenger terminal capacity**

The passenger terminal is inadequate for existing needs, regardless of future passenger demand. It does not provide an appropriate level of customer service, nor enable best practice security outcomes.

Ultimately, a new terminal facility should be able to accommodate the arriving and departing passengers of up to two 68-74-seat aircraft such as the ATR72-600 or Dash 8-400, or a single 100-seat aircraft such as the F100 or Bae146. At 80% load factor, this equates to a range of approximately 120-160 passengers, along with associated meeters and greeters. A new passenger terminal could be designed to enable progressive expansion according to demand.

## 4. DEVELOPMENT CONSTRAINTS

### 4.1. Planning

According to the Cook Shire Planning Scheme, the main airport site is zoned 'Community Facility', whilst part of the site which is subject to lot reconfiguration is zoned 'Industry'.

A copy of the applicable Zone Map is provided at Figure 12 (source: CSC).

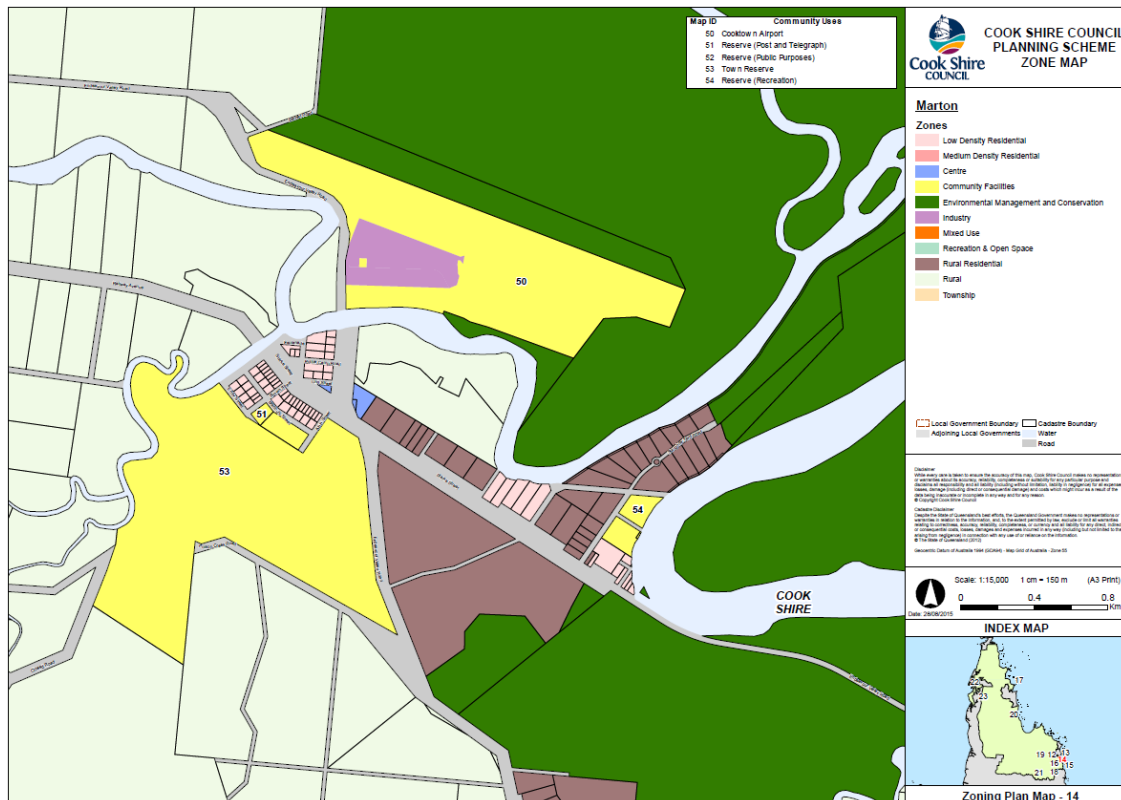


Figure 12 Cook Shire Council Planning Scheme Zone Map

The Marton Locality Code notes the following Overall Outcomes without specifying any Performance Criteria:

*The purpose of this code is to achieve the following overall outcomes for the Marton Locality:*

- The township of Marton provides a basic range of services and facilities to residents, tourists and to the surrounding rural area with higher order services and facilities being located in Cooktown;
- Marton provides limited opportunities for short-term visitor accommodation and for uses which support the operation of the nearby airport;
- New land uses and new buildings and structures do not compromise the operation of the airport;
- There is a general mix of land use typical of smaller townships, with non-residential uses being limited in scale and designed so as not to compromise residential amenity; and
- New buildings and land uses reflect the low density, spacious character and design of the existing township.

A copy of the Marton Locality map is provided at Figure 13 (source: Cook Shire Planning Scheme, 1 June 2007).

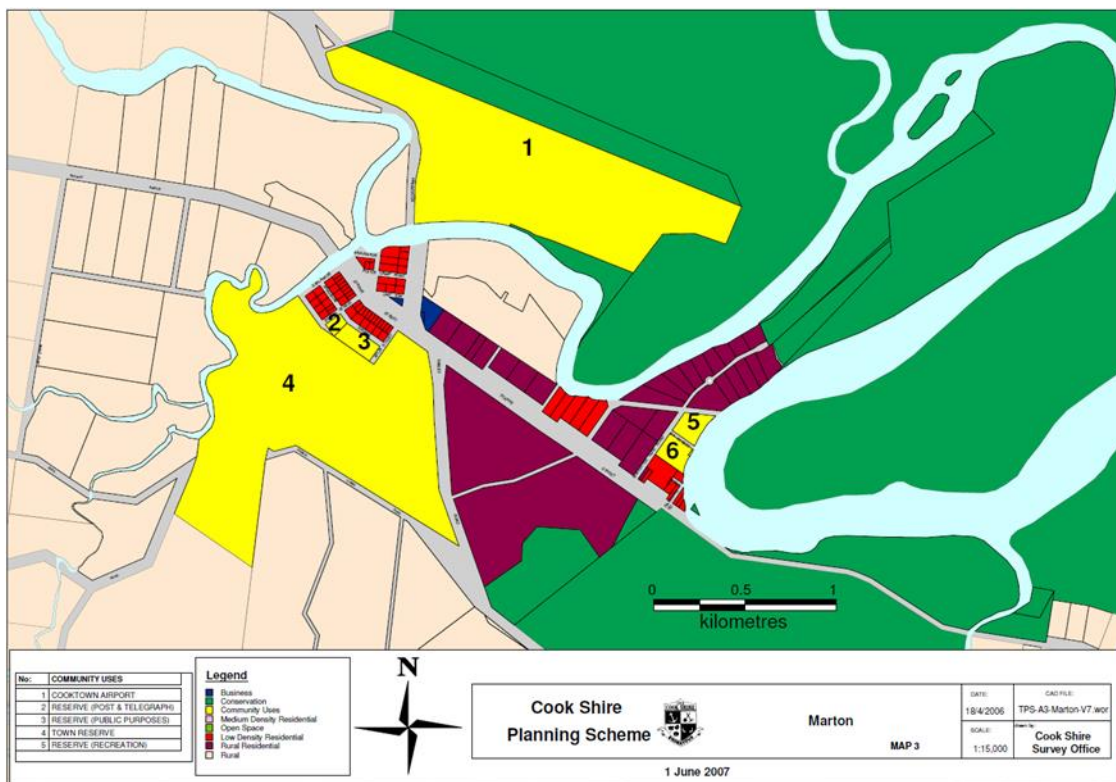


Figure 13 Marton Locality



At the time of preparing this Plan, in order to establish lots within the Aviation Park, it was proposed to consolidate the individual lots within the Aviation Park into Lot 1, and identify the applicable area as available for subdivision by metes and bounds descriptions according to relevant planning provisions/codes, as per Lease C within Lot 2 of RP 287154, depicted in Figure 14 (source: Cook Shire Council).

Development conditions and constraints may need to be established in applicable planning instruments and prospectus in order to ensure that development achieves the desired aviation purposes.

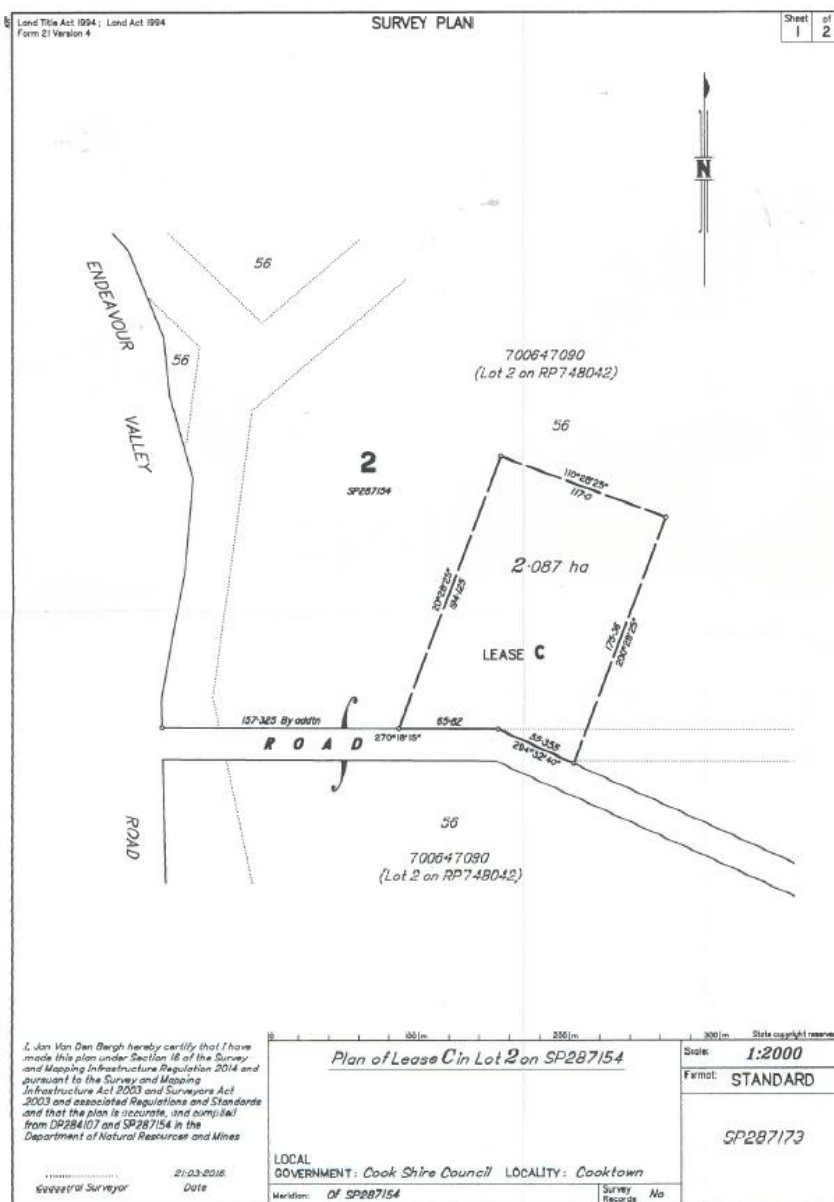


Figure 14 Lease C in Lot 2 RP 287154

## 4.2. Regulatory context

Current and future operations at Cooktown Airport are regulated according to the requirements set out in the section below.

### 4.2.1. Civil Aviation Safety Regulations 1998

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

### 4.2.2. Manual of Standards Part 139—*Aerodromes*

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

### 4.2.3. Aerodrome reference code

Australia has adopted the International Civil Aviation Organisation (ICAO) methodology of using a code system, known as the Aerodrome Reference Code, to specify the standards for individual aerodrome facilities which are suitable for use by aeroplanes within a range of performances and sizes. The Code is composed of two elements: element 1 is a number related to the aeroplane reference field length; and element 2 is a letter related to the aeroplane wingspan and outer main gear wheel span. Table 4 is a copy of MOS 139 Table 2.1-1: Aerodrome Reference Code.

Table 4 MOS 139 Table 2.2-1 Aerodrome Reference Code

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

### 4.3. Design Standards

CSC desires an aerodrome that will ultimately conform to standards applicable to code 3C instrument non-precision requirements as specified in MOS 139.

A summary of current and future physical characteristics and OLS requirements for code 3C instrument non-precision operations is provided in Table 5.

Table 5 Physical Characteristics and OLS Design Criteria

<b>ASPECT</b>		<i>Current Code 2C instrument non- precision</i>	<i>Master Plan Code 3C instrument non- precision</i>
Minimum runway length		1627 m	1627 m (as is)
Minimum runway width		30 m	30 m
Runway strip width - graded		80 m	90 m
Total runway strip width (includes flyover)		90 m	150 m
Runway strip length (beyond runway)		60 m	60 m
Runway end safety area		60 m	90 m
Taxiway separation from runway		63 m	93 m
Taxiway width		15 m	15 m
Taxiway strip width (total) each side of CL		26 m	26 m
Taxiway strip width (graded) each side of CL		12.5 m	12.5 m
Taxilane separation from object		24.5 m	24.5 m
Approach Surface	Width inner edge	90 m	150 m
	Divergence	15%	15%
	Length	2500 m	15 000 m
	Gradient	3.33%	3.3%
	Dist from threshold	60 m	60 m
T/O Climb Surface	Width inner edge	80 m	180 m
	Divergence	10%	12.5%
	Length	2500 m	15 000 m
	Gradient	4%	2%

#### **4.4. Environmental**

There are no environmental studies for this area; however, as part of the Queensland Government Department of Infrastructure, Local Government and Planning (DILGP) State Planning Policy (SPP), there are guidelines that involve vegetation clearing in general and particularly adjacent to river banks (40 m).

Consideration will need to be given to the potential for flooding, the close proximity of the site to adjacent waterways and sensitive vegetation such as mangroves, and the potential for effluent and other run-off to damage the Great Barrier Reef.

#### **4.5. Heritage**

There are no heritage studies available; however, as part of the SPP, there are guidelines that involve heritage issues. The SPP also references the UNESCO World Heritage Centre Interactive Mapping, which indicates that the area is part of the Wet Tropics of Queensland.

It should be recognised that there may be some indigenous culture and European heritage issues that will need to be investigated as part of future development, particularly on the southern side of the airport access road.

#### **4.6. Other development control measures**

Other development measures which should be considered include:

- The National Airport Safeguarding Framework; and
- State Planning Policy.

## 5. AIRCRAFT MOVEMENT AREAS

### 5.1. Runway

The runway in its current form is accepted as satisfactory for the master planning horizon and is not planned to be changed.

### 5.2. Runway pavements

The existing runway pavement may require strengthening in order to accommodate the larger and heavier code 3C design aircraft. Further detailed pavement design work, based on geotechnical investigation results, will inform the scope and cost of this work.

### 5.3. Runway usability

An important consideration in the orientation, siting and number of runways at an aerodrome is runway usability with respect to the distribution of wind. Runway usability was not formally investigated, but the current orientation is assumed to be acceptable.

### 5.4. Taxiways

The existing stub taxiway is acceptable for access to the main parking apron, but may require reconfiguration according to apron expansion requirements.

A new stub taxiway is planned for connection of the new development sites to the runway and a parallel taxiway that will join the existing stub taxiway.

### 5.5. Parking aprons

The existing parking aprons are not considered adequate for the number and various sizes of aircraft contemplated at the master plan horizon.

The main parking apron will require expansion and strengthening to accommodate up to three code 3C aircraft, along with a number of smaller code B aircraft within a co-located code B hangar precinct.

### 5.6. Hangar facilities

Three code B hangars are proposed alongside the expanded main parking apron.

### 5.7. Helicopter facilities

Helicopter parking stands are planned for the main parking apron in front of the refuelling facility and in the transient parking area to the front of the main apron area.

### **5.8. Aerodrome lighting**

The aerodrome ground lighting system is serviceable.

The primary illuminated wind direction indicator (IWDI) will ultimately need to be relocated when the parallel taxiway is extended to the east of the existing stub taxiway.

## 6. AVIATION SUPPORT FACILITIES

### 6.1. Fuel

The existing fuel dispensing system may need to be consolidated with storage facilities in a single compound to allow expansion of the main parking apron.

### 6.2. Ground support equipment

Ground support equipment is normally provided according to aircraft operator requirements and not considered applicable to this Master Plan.

### 6.3. Navigation and approach aids

The straight-in RNAV (GNSS) approaches currently available are considered adequate for the intended scope of operations.

### 6.4. Weather information service

The weather information service provides actual weather data via landline telephone connection.

Ideally the weather station should also broadcast weather information to pilots via an airband radio broadcast transmitter.

### 6.5. Aerodrome rescue and fire fighting services

CASR 1998 Part 139 Subpart H sets out the requirements applicable to provision of aerodrome rescue and fire fighting services (ARFFS). According to these regulations, ARFFS must be provided at an aerodrome from or to which an international passenger air service operates; and any other aerodrome through which more than 350 000 passengers passed on air transport flights during the previous financial year.

This situation is not expected during the master planning period.

### 6.6. Air traffic control and airspace

The aerodrome is currently located within non-controlled Class G airspace and no air traffic control (ATC) services are provided. There is no reason to expect this situation would change in the 20 year planning period.

### 6.7. Transport security

Cooktown Airport is a security controlled aerodrome. If an aircraft greater than 20 000 kg MTOW is scheduled to operate at Cooktown Airport or if the security threat level is raised by the relevant government agency, security screening will be required. Aviation Security Identification Cards must be displayed by personnel whilst airside.

## 7. PASSENGER FACILITIES

### 7.1. Aeromedical facilities

There is no requirement to provide any additional aeromedical facilities.

### 7.2. Passenger terminal

A new passenger terminal is recommended for construction to the west of the existing facility with direct airside access, sufficient to accommodate at least 120-160 arriving and departing passengers plus meeters and greeters.

The community desires preservation of the relaxed tropical feel of the terminal precinct and entrance statement through sensitive design and landscaping.



## 8. COMMERCIAL LAND USE AND DEVELOPMENT

### 8.1. Current leasing and charging regime

CSC is currently leasing industrial zoned land for aviation purposes along the northern boundary of the airport access road.

CSC sets the fees and charges for Cooktown Airport.

According to the schedule of Fees and Charges 2015-16, the following charges apply:

- Landing fee (fixed wing) per movement per tonne: \$13.00 including GST;
- Landing fee (helicopter) per movement per tonne: \$6.50 including GST;
- Car parking (nightly): \$6.50 incl GST; and
- Car parking (weekly): \$30.00 incl GST.

Car parking charges apply to secure car parking in the workshop compound only. Car parking in the terminal car park is free of charge.

CSC staff reported experiencing difficulty in enforcing and collecting the car parking fees.

### 8.2. Current airport management structure

The airport is owned and operated by CSC. An Airport Manager lives on site, and is assisted by aerodrome reporting officers and other CSC staff.

The current airport management structure is satisfactory for the short to medium term, but may require revision as and when the scope of operations changes in the future.

### 8.3. Future commercial and business prospects

The main opportunity for commercial development is additional hangars for business or private aircraft operations, whether in the Aviation Park or in the code B hangar precinct identified for development on the eastern side of the main parking apron.

Opportunities such as those listed below (source: 2016-2020 Economic Development Plan, draft) may arise in the future:

- Vehicle storage area – 4WD, RV, caravan, car (secure area);
- Vehicle hire – 4WD, car;
- Aircraft/ helicopter maintenance centre/ operator;
- Heavy vehicle/ car service centre;
- Bulk storage – domestic/ commercial storage;

- Business centre; and
- Training centre – aviation, indigenous training.

#### **8.4. Managing and implementing development plan**

Management of the Cooktown Airport Development Master Plan will be the responsibility of the Director of Infrastructure Services, Cook Shire Council.

From the Master Plan, a staged implementation plan will be developed with the aim of having the identified infrastructure and airport classification in place by 2026.

## 9. GROUND TRANSPORT SYSTEMS

### 9.1. External network

The external road network is considered adequate for the master planning horizon.

Endeavour Valley Road will need to be realigned in order to accommodate the full runway strip and associated OLS.

### 9.2. Internal network

The existing access road is proposed to be realigned to allow for the development of Lots 1 to 5 of the new Aviation Park.

### 9.3. Airside access

New airside access points will be provided near the new terminal building and refuelling compound.

### 9.4. Public car parking

A new sealed car park with 91 marked bays will accommodate forecast demand.

### 9.5. Rental car parking demand

Limited rental car parking space may be accommodated within the proposed new car park.

### 9.6. Buses

No specific provision is made for bus set-down/pick-up or parking, although it can be accommodated within the proposed road and carpark arrangements.

### 9.7. Taxis

Taxis operate to the airport on an ad-hoc basis.

### 9.8. Aviation fuel deliveries

The new aviation fuel compound will need a dedicated access road to enable access by bridger tanker.

## 10. UTILITIES AND CIVIL INFRASTRUCTURE

### 10.1. Water

There is no potable water on site. Water is currently sourced from rain water tanks.

A bore is located between proposed Lots 3 and 4. Its condition, quality and capacity are not known.

Assuming 120 000 L/day capacity, the bore should be sufficient to supply the Aviation Park in the first instance, and possibly the terminal precinct subject to treatment. Further analysis and consultation within CSC Water and Sewerage Department should be undertaken to determine whether or not the water is or can be made potable.

Consideration should also be given to determining and ensuring adequate water supplies for fire prevention and response.

### 10.2. Electricity

The quantity of supply of electricity to the airport site is assumed to be adequate, but should be investigated in anticipation of additional demand from future developments.

### 10.3. Sewer/septic

There is no reticulated sewerage system available on site therefore effluent is managed by provision of onsite systems.

### 10.4. Communications

Telephone services are provided via landline.

Internet services are not available due to the distance to the nearest exchange. National Broadband Network (NBN) fixed wireless broadband is expected to be available by December 2016.

A public telephone has been installed at the terminal building. Provision of Wi-Fi capability is being negotiated with Telstra.

### 10.5. Drainage

Drainage is considered adequate. Flooding is not expected to be a significant constraint to the upgraded infrastructure since no change in overall drainage infrastructure layout is proposed. The appropriate treatment of surface water run-off should be incorporated in any future detailed design activity.

### 10.6. Perimeter fencing

The operational (airside) areas of the airport are fenced to a satisfactory standard.

## 11. AERODROME SAFEGUARDING

State Planning Policy specifies aerodrome safeguarding requirements applicable to state strategic airports. A local planning scheme should ensure that the location of strategic airports and aviation facilities are identified in their local planning instrument and include airport environs overlay mapping.

Whilst Cooktown Airport is not nominated as a strategic airport for the purpose of compliance with this policy, it should be protected to the same extent as any other state strategic airport in order to protect its ability to meet the future needs of CSC.

Key issues are discussed in this section.

### 11.1. Operational airspace

The current operational airspace of Cooktown Airport is not protected in existing planning instruments, as the Aviation Facilities and Operational Airspace Overlay Code applies only to Weipa's operational airspace.

To provide for the future protection of Cooktown Airport's operational airspace, an OLS plan has been developed according to the ultimate requirement for a code 3 instrument non-precision aerodrome, to be published in the Cook Shire Planning Scheme. This plan should be used to inform the future development of all buildings on and within the vicinity of the airport, including hangars.

A copy of the OLS plan is provided at **Annexure 2**.

Similarly, a plan of current PANS-OPS surfaces should be retained for review during development application assessments.

### 11.2. Lighting area buffer zone

MOS 139 at Section 9.21 establishes a restriction to lighting within the vicinity of an airport which, by reason of its intensity, configuration or colour, might endanger the safety of an aircraft. The vicinity of the airport can be taken to be within a 6 km radius of the airport.

A plan of the airport showing the maximum lighting intensities applicable to each specified area should be developed and incorporated in the Cook Shire Planning Scheme.

### 11.3. Wildlife hazard buffer zone

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

Guideline C of the National Aviation Safeguarding Framework, *Managing the risk of wildlife strikes in the vicinity of airports* provides local government and proponents of development with further information about how to address risks to aviation safety posed by development.

#### **11.4. Building restricted areas for aviation facilities**

The Aviation Facilities and Operational Airspace Overlay Code in the Cook Shire Planning Scheme makes provision for protecting Aviation facilities, including the NDB near Cooktown Airport. This facility is due to be decommissioned in the short term, so applicable protection areas should be removed from the Cook Shire Planning Scheme once they are no longer required.

#### **11.5. Public safety areas**

The provisions of the State Planning Policy relating to the establishment of public safety areas are not strictly applicable Cooktown Airport; however, it is the Queensland Government's preferred model for restricting development within higher risk areas near an airport. These principles should be considered when assessing future development applications:

*Development should not increase the risk to public safety in a PSA. Any development involving a material change of use or reconfiguration of a lot in a PSA should avoid:*

- *increasing the numbers of people living, working or congregating in the PSA; and*
- *the use or storage of hazardous, explosive or flammable materials.*

#### **11.6. Aircraft noise**

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

Australian Noise Exposure Concept (ANEC) is a map, based on a hypothetical set of conditions of runways, aircraft types and so on, that may be produced during consideration of options for aerodrome development.

While no specific investigation has been conducted, it is assumed that noise levels created by proposed operations on the aerodrome will be acceptable.

## 12. MASTER PLAN RECOMMENDATIONS

Staging of infrastructure development for the Master Plan aligns with anticipated changes in demand and user requirements.

### 12.1. Immediate recommended works

The following works are recommended for immediate action:

1. Safety and security – airside and landside as required to ensure compliance;
2. Consider the requirement to formalise helicopter parking arrangements in front of the JetA1 refuelling facility;
3. Remove the sign over the drinking water basin in the passenger terminal;
4. Provide a potable water supply for public facilities (passenger terminal);
5. Manage safety risks associated with decommissioning the NDB and DME; and
6. Provide a broadcast function for the AWIS.

### 12.2. Short term

The following works are recommended for the short term period of 1-5 years:

1. Complete implementation of the Cooktown Airport Aviation Park (landside);
2. Construct taxiways to the Cooktown Airport Aviation Park (airside works);
3. Provide aeronautical facilities capable of supporting code 3C aircraft operations:
  - Increase the runway and taxiway pavement bearing strength at the next significant pavement overlay or maintenance activity; and
  - Protect the future obstacle limitation surfaces applicable to a fully compliant code 3C instrument non-precision aerodrome based on existing runway configuration;
4. Provide a functional and compliant passenger terminal;
5. Provide access roads and car parking in conjunction with the new passenger terminal;
6. Re-purpose the existing terminal as multi-use facility including for disaster response operations; and
7. Return the Airservices Australia lot to CSC.



### **12.3. Long term**

The following works are recommended for completion by the end of the 20 year master planning period:

1. Provide aeronautical facilities capable of supporting code 3C aircraft operations:
  - Establish a fully compliant 150 m wide runway strip (requires significant planning, environmental and civil works, realignment of Endeavour Valley Road);
  - Protect the obstacle limitation surfaces applicable to a fully compliant code 3C instrument non-precision aerodrome OLS;
  - Expand the main parking apron according to demand, and reconfigure other aircraft parking arrangements as required;
  - Consolidate fuel storage and dispensing facilities;
  - Provide code B hangars in a precinct to the east of the main parking apron according to demand; and
  - Provide a parallel taxiway to the east of the main stub taxiway according to demand, and relocate the primary wind direction indicator and signal circle.

A copy of the Development Master Plan is provided at **Annexure 1**.

## 13. REVENUE/COST ANALYSIS

A detailed analysis of revenues and costs has not been performed as part of the master planning activity. Notable issues that arose during the study are documented for further consideration.

### 13.1. Revenues

A detailed analysis of revenues associated with the staged upgrade of Cooktown Airport has not been prepared as part of the master planning activity.

A summary of aeronautical revenues (landing fees and fuel sales) per calendar year is presented at Table 6 (source: Cook Shire Council). Whilst revenue from landing fees has remained relatively stagnant, sales of Jet A1 fuel have increased 33% from 2011 to 2014.

Table 6 Aeronautical revenue

	2008	2009	2010	2011	2012	2013	2014	2015
Landing fees (\$)	161,543	149,425	130,637	105,117	106,879	105,543	105,575	102,687
Avgas sales (L)	41,575	40,773	37,920	33,436	36,209	29,193	34,029	41,644
Jet A1 sales (L)	44,227	40,548	70,649	52,282	54,242	68,006	69,877	77,368

Revenue from the Aviation Park when fully occupied (at today's value) is expected to be \$176,000 per annum plus rates of \$15,000 per annum.

Lease revenues from general aviation hangars and aircraft parking are expected to increase the revenue base of the airport enterprise.

### 13.2. Costs

A detailed cost plan for the staged upgrade of Cooktown Airport has not been prepared as part of the master planning activity. Further preliminary design work is required in order to adequately scope and specify the work required to deliver the various aspects of the overall plan before a cost estimate can be prepared.

## ACRONYMS AND ABBREVIATIONS

AAGR	average annual growth rate
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ARFFS	aerodrome rescue and fire fighting service
ATC	air traffic control
CAAP	Civil Aviation Advisory Publication
CAAP	Cooktown Airport Aviation Park
CAR	Civil Aviation Regulation 1988
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation 1998
CSC	Cook Shire Council
CTAF	common traffic advisory frequency
DCA	Department of Civil Aviation
DIGLP	Department of Infrastructure, Local Government and Planning
DME	distance measuring equipment
DTP	Destination Tourism Plan
GA	general aviation
GNSS	global navigation satellite system
GPS	global positioning system
GSE	ground support equipment
HLS	helicopter landing site
ICAO	International Civil Aviation Organization
INP	instrument non-precision
IWDI	illuminated wind direction indicator
LGA	local government authority
MOS	Manual of Standards

MTOW	maximum take-off weight
NASF	National Airports Safeguarding Framework
NDB	non-directional beacon
NBN	National Broadband Network
OLS	obstacle limitation surfaces
RAAF	Royal Australian Air Force
RFDS	Royal Flying Doctor Service
RNAV-GNSS	Area Navigation – Global Navigation Satellite System
RPT	regular public transport
SPP	State Planning Policy
TEQ	Tourism and Events Queensland
TNQ	Tropical North Queensland

## REFERENCES

References used or consulted in the preparation of this report include:

- Airservices Australia, Aeronautical Information Package; including En Route Supplement Australia (ERSA, DAP) effective 03 March 2016;
- Australian Bureau of Statistics, 3218.0 – Regional Population Growth, Australia, 2013-14;
- Civil Aviation Safety Authority, Civil Aviation Safety Regulation 1998 Manual of Standards Part 139 – Aerodromes version 1.13: dated March 2016;
- Cook Shire Council, 2016-2020 Economic Development Plan, draft;
- Cook Shire Council, Cook Shire Planning Scheme, 1 June 2007;
- Cook Shire Council, Economic Profile, 2015;
- Department of Infrastructure and Regional Development (C'th), *Airport Traffic Data 1985-86 to 2014-15 (xls format)*;
- Department of Infrastructure, Local Government and Planning, *State Planning Policy*, dated 29 April 2016;
- International Civil Aviation Organization, International Standards and Recommended Practices (SARPS) Annex 14 Aerodromes, Volume 1 *Aerodrome Design and Operations* and Volume II *Heliports*; and
- Trade and Investment Queensland, Market Profile, Far North Queensland, <http://www.tiq.qld.gov.au/wp-content/uploads/2014/08/TIQ-580-14-Market-Profile-Far-North-Queensland.pdf>, accessed 12 May 2016.

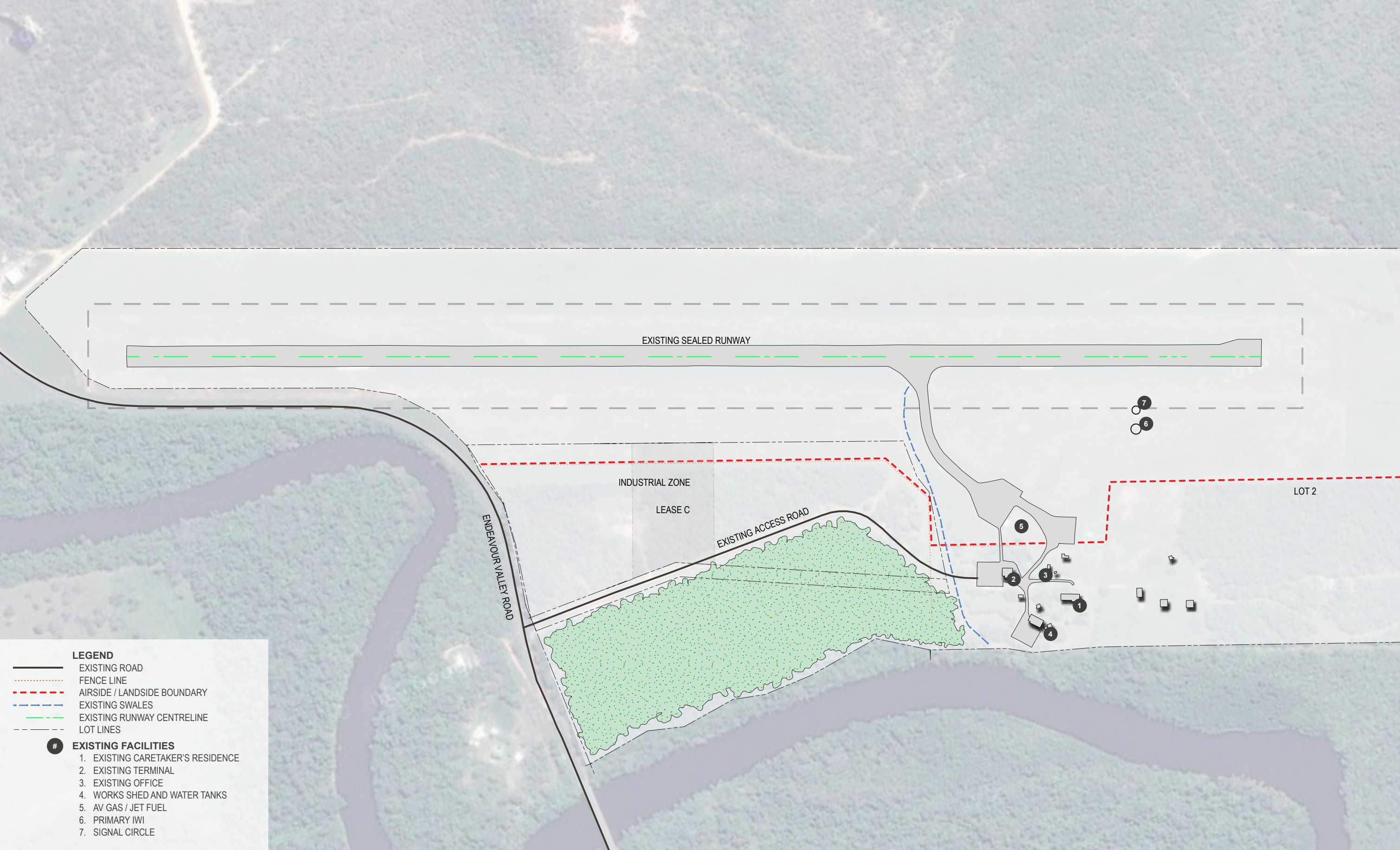
## ANNEXURES

1. Development Master Plan Drawings
2. Obstacle Limitation Surface Drawings

## **ANNEXURE 1 – DEVELOPMENT MASTER PLAN DRAWINGS**

1. DD-A-SK01, Cooktown Airport Existing Airport Precinct, P9 20 July 2016
2. DD-A-SK101, Cooktown Airport Proposed Masterplan, P9 20 July 2016
3. DD-A-SK201, Cooktown Airport Proposed Terminal Precinct Zone, P9 20 July 2016





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Cooktown Developmental Road, Cooktown QLD 4895

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Do not scale off this drawing.

**COOKTOWN AIRPORT**  
**EXISTING AIRPORT PRECINCT**

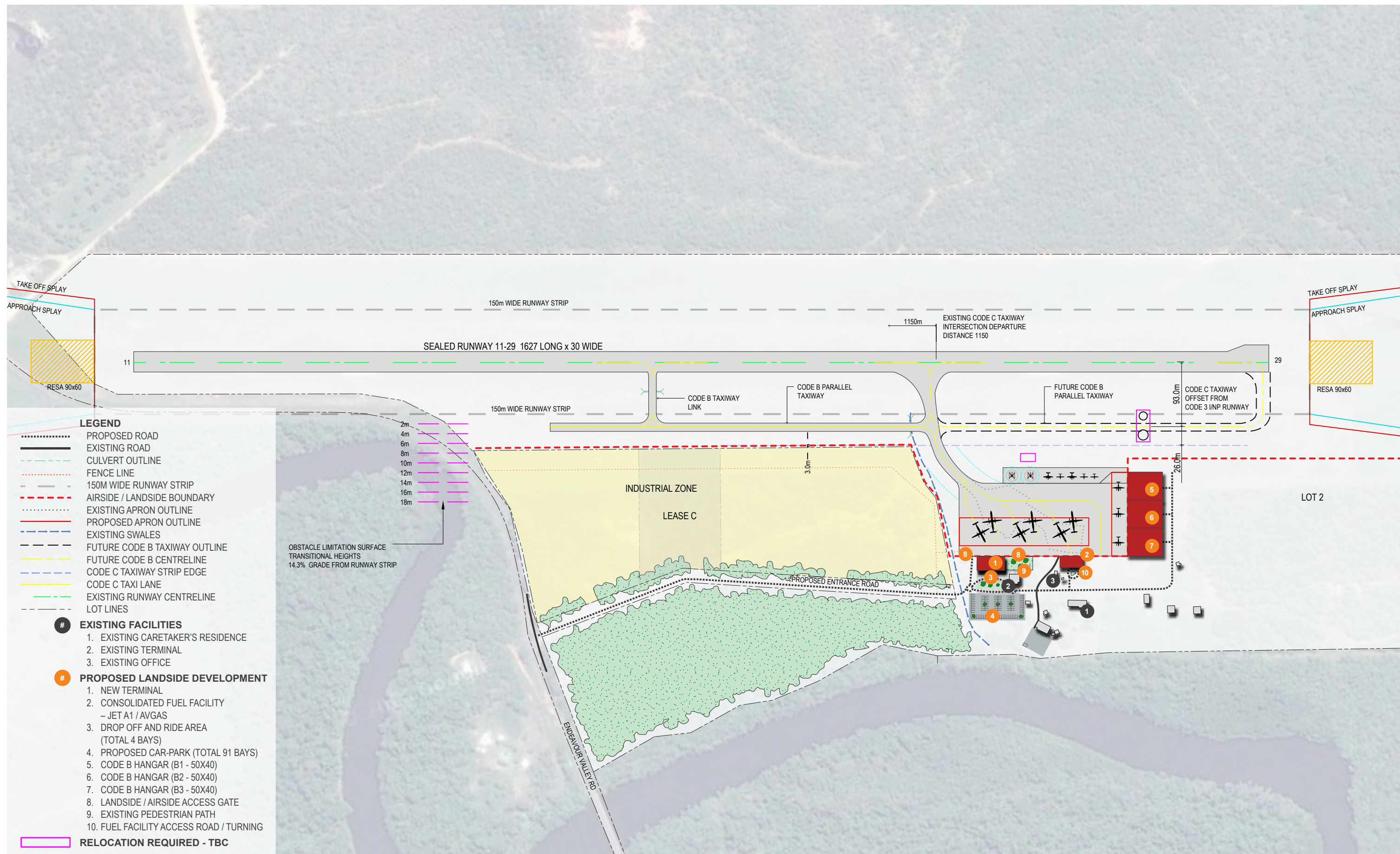


0 50 100 150 200

Project No: 15484BNE  
Date: 20/07/2016  
Scale: 1:5000 @A3  
Drawn / Check: CW / MR

DD-A-SK01 P9





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COOKTOWN AIRPORT  
Cooktown Developmental Road, Cooktown QLD 4895

**FINAL**

Do not scale off this drawing.

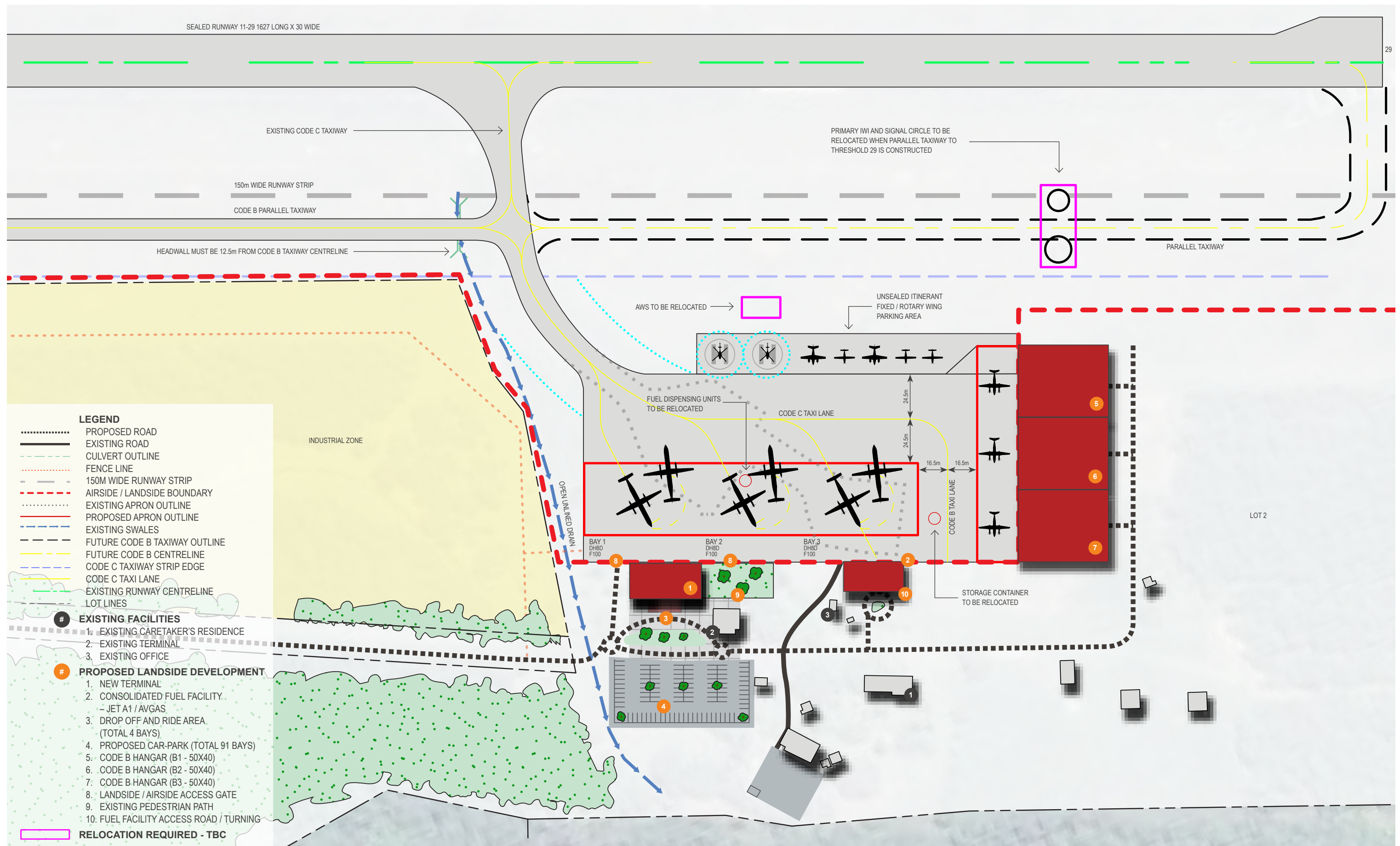
COOKTOWN AIRPORT  
**PROPOSED MASTERPLAN**



Project No: 15484BNE  
Date: 20/07/2016  
Scale: 1:5000 @A3  
Drawn / Check: CW / MR

DD-A-SK101 P9





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**COOKTOWN AIRPORT  
PROPOSED TERMINAL  
PRECINCT ZONE**



0 50 100 150 200

Project No: 15484BNE  
Date: 20/07/2016  
Scale: 1:5000 @A3  
Drawn / Check: CW / MR

DD-A-SK201 P9

## **ANNEXURE 2 – OBSTACLE LIMITATION SURFACE DRAWINGS**

1. DRG YCKN16AV-01-A Layout1 – Airport Protection Chart – Obstacle Limitation Surface – Full Extent
2. DRG YCKN16AV-01-A Layout2 – Airport Protection Chart – Obstacle Limitation Surface – Inner Approach/Take-off



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