Shire of Exmouth

Learmonth Airport Master Plan 2020

December 2020

Endorsed by Council at the Ordinary Council Meeting held 24 June 2021
(Council Decision 02-0621)

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Abbreviations

Abbreviation	Description
ºC	Degrees Celsius
A300	Airbus A300
A320	Airbus A320
A330	Airbus A330
AAA	Australian Airports Association
ADSL	Asymmetric Digital Subscriber Line
AFRU	Aerodrome Frequency Response Unit
AHD	Australian Height Datum
AIP	Aeronautical Information Package
ANEF	Australian Noise Exposure Forecast
AP3	AP-3C Orion
ARFF	Airport Rescue Firefighting
ARFFS	Airport Rescue and Fire Fighting Services
AsA	Airservices Australia
ATC	Air Traffic Control
ATSA	Aviation Transport Security Act
ATSR	Aviation Transport Security Regulations
AVGAS	Aviation Gasoline
AW138	AgustaWestland AW138
AW139	AgustaWestland AW139
B737	Boeing 737
B747	Boeing 747

Abbreviation	Description
B767	Boeing 767
B777	Boeing 777
BoM	Bureau of Meteorology
C130	Lockheed C-130 Hercules
CAA	Civil Aviation Act
CAF	Compressed Air Foam
CARs	Civil Aviation Regulations
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
CBR	California Bearing Ration
CHC	CHC Group LLC
COVID-19	Coronavirus Disease 2019
CTAF	Common Traffic Advisory Frequency
DME	Distance Measuring Equipment
DME – I	Distance Measuring Equipment International
DoD	Department of Defence
DoT	Department of Transport
EC225	Eurocopter EC225 Super Puma
ERSA	En Route Supplement Australia
F100	Fokker 100
FDS	The Royal Flying Doctor Service
FL	Flight Levels

Abbreviation	Description
FPSO	Floating Production Storage & Offloading
GA	General Aviation
GHD	GHD Pty Ltd
ha	Hectares
HIRL	High Intensity Runway Light
HMAS	Her Majesty's Australian Ship
ICAO	International Civil Aviation Organization
km	Kilometre
km/h	Kilometre per hour
L	Litre
LGT	Light/Lighting
LPS	Special Control Area
m	Metre
mAHD	Metre Australian Height Datum
mm	Millimetre
MOS	Manual of Standards
MTOW	Maximum Take-Off Weight
NASF	National Airports Safeguarding Framework
NBN	National Broadband Network
NDB	Non Directional Beacon
O&G	Oil and Gas
OLS	Obstacle Limitation Surfaces
OTS	Office of Transport Security

Abbreviation	Description
PA	Per Annum
PANS-OPS	Procedures for Air Navigational Services – Aircraft Operations
PAPI	Precision Approach Indicator Lights
Part 139 MOS	Part 139 (Aerodromes) Manual of Standards
PC9	Pilatus PC-9
PCN	Pavement Classification Number
PN	Prior Notice Required
psi	Pound per Square Inch
RAAF	Royal Australian Air Force
RFDS	Royal Flying Doctor Service
RPT	Regular Public Transport
RWY	Runway
SAAFMF	Strategic Airport Assets and Financial Management Framework
SCA	Security Controlled Airport
SGS	Satellite Ground Station
Shire	Shire of Exmouth
SWOT	Strength Weakness Opportunity Threat Analysis
TSP	Transport Security Plan
USA	United States of America
VHF	Very High Frequency
VOR	VHF Omni Range
WA	Western Australia

Abbreviation	Description
WAPC	Western Australia Planning Commission

Abbreviation	Description
WWII	World War 2

1. Introduction

1.1 Overview of the Airport

An airfield was established at Learmonth in the 1940's during WWII as part of military operation POTSHOT. In the 1950's it was redeveloped as a RAAF base to provide fighter defence for the Australian and USA troops based on the North West Cape. Learmonth Airport is named in honour of Wing Commander Charles Cuthbertson Learmonth, a decorated WWII RAAF pilot awarded a Distinguished Flying Cross (and bar) whilst leading the 22 Squadron RAAF during its attack on a Japanese destroyer in the Battle of the Bismarck Sea in March 1943. He also flew in the air search for HMAS Sydney, fought in the New Guinea air war and trained many other WWII RAAF pilots.

Wing Commander Learmonth died whilst commanding a 14 Squadron RAAF Beaufort Bomber during a training flight between Pearce and Rottnest Island on 6th January 1944. His account of the problems he encountered immediately prior to his fateful crash provided the answer as to why as many as 93 Beaufort Bombers had suffered similar crashes and fatalities prior, and it is for this that RAAF Learmonth base and Learmonth Airport is named in his honour.

The Shire of Exmouth operates the civil airport located within the RAAF Learmonth base. Learmonth Airport is situated on Commonwealth land and owned by the RAAF under the Department of Defence. The Shire leases Learmonth Airport from the Department of Defence under a Deed of Operation. The Learmonth Airport lease area covers 23.9 hectares (ha) and is a Security Controlled Airport (SCA) with a Classification 3 under the Federal Aviation Transport Safety Security Act 2004.

The airport is situated approximately 36km South of Exmouth and 120km North of Coral Bay and services Qantas passenger aircraft as well as helicopter operators supporting off-shore oil and gas operations.

The terminal, which opened on 3 December 1999, has won a number of Royal Australian Institute of Architects awards for its innovative design which represents a coral reef.[1]

[1] https://www.exmouth.wa.gov.au/aviation-services/learmonth-airport/about-learmonth-airport.aspx

Figure 1 Aerial Image of Learmonth Airport[2]

1.2 Purpose and Objectives of the Master Plan

This Master Plan has been prepared for a planning period from 2020 to 2040.

Whilst these is currently no formal, legislated requirement for a local Government run airport to produce a master plan, the Department of Transport advises that a master plan can form the basis for Regional Airport Development Scheme funding applications.

This Master Plan, consequent to its focus on the Civil Airport Site, seeks to provide;

- Airside planning statements for the expansion of taxiway and apron areas for envisaged future needs; and,
- Landside planning statements for expansion of terminal building, hangar sites and related activity areas.

Specific criteria established by the Shire of Exmouth to be addressed by this Master Plan are;

- An assessment of the contemporary passenger composition and the possible and significant changes to the overall composition on the Regular Public Transport (RPT)

[2] Google Earth 2020

services on the Exmouth to Perth and Exmouth to Broome routes over the next 10 years (Note: Exmouth to Broome services ceased in February 2013)

- Development site availability for a substantial regional (RPT) operator, with regard to hangar, maintenance and passenger lounge facilities, who may wish to establish and provide feeder services to and from Learmonth Airport to outlying areas
- Master Plan assessment and reviewing with stakeholder consultation

1.3 Methodology and Consultation

GHD undertook the following approach in completing the Master Plan for the Shire of Exmouth.

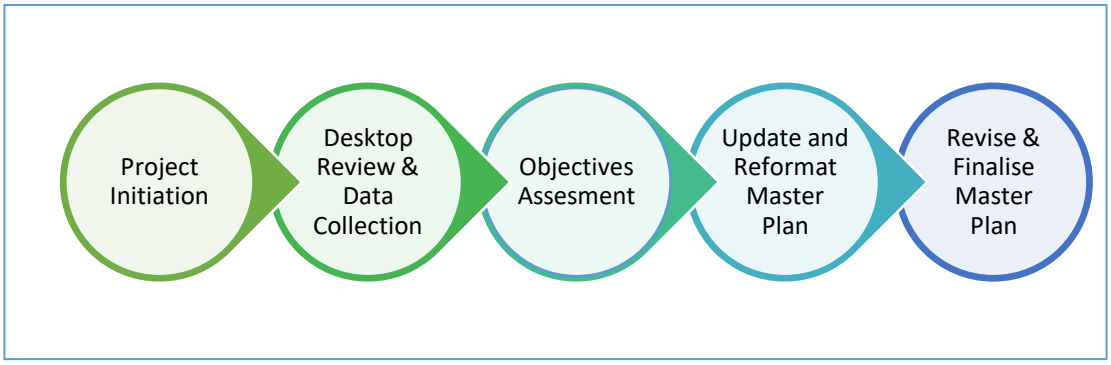


Figure 2 Master Plan Methodology

A breakdown of tasks undertook in each stage are as follows:

Project Initiation

- Start-up meeting with Shire of Exmouth
- Confirm project delivery program and site visit
- Confirm key stakeholders with Shire of Exmouth

Desktop Review & Data Collection

- Reviewing existing data and statistics in the 2010 Master Plan (most recently updated in 2014) and updating to suit current status. Forecast passenger growth shall be based on the current Master Plan rates in Figure 4.7, with amendments in line with any specific passenger figure growth from stakeholders.
- Conduct a desktop review of planning policy of the region
- Conduct site visit and gather on-site information
- Communicate with key stakeholders via email survey to identify their facilities, usage, and forecast objectives
- Collate stakeholder feedback and present to the Shire for discussion and agreement. RAAF related requirements shall be communicated to GHD by the Shire

Objectives Assessment

- Assessment of airside planning objectives, and updating to suit Shire plans and expectations
- Assessment of landside development planning objectives, and updating to suit Shire plans and expectations

Update and Reformat Master Plan

- Update of airport development plans as required
- Reformat the Master Plan to more closely align with the Australian Airports Association (AAA) guidelines for regional airport master plans, and to form part of the Department of Transport Strategic Airport Assets and Financial Management Framework (DoT SAAFMF)

Revise & Finalise Master Plan

- Submit a draft Master Plan to Shire of Exmouth for review
- Shire review of draft Master Plan
- Revise Master Plan to incorporate Shire comments

1.4 Report Structure

This Master Plan follows a similar format to that recommended in the AAA's Regional Airport Master Planning Guideline, Airport Practice Note 4, with main section headings as follows:

- Section 1 – Introduction
- Section 2 – Strategic Vision and Objectives
- Section 3 – Background Information
    - Master Plan Context
    - Current Situation
    - SWOT Analysis
- Section 4 - Critical Airport Planning Parameters
- Section 5 – Airport Master Plan
    - Movement Area Facilities Plan
    - Land Use Plan
    - Airport Safeguarding Plan
    - Implementation Plan

1.5 Supplied Documents

Table 1 lists reference documents provided by the Shire of Exmouth.

Table 1 Supplied Documents

Document	Author
Learmonth Masterplan	Forte Airport Management
Learmonth Airport Scheduled Flight Movements	Shire of Exmouth
Learmonth_Civil Lease Area-Master Plan (sheet 1 of 4)	Shire of Exmouth
Learmonth Stakeholders	Shire of Exmouth
Graphical RPT for Monthly Reports (DRAFT UPDATE)	Shire of Exmouth
Aviation Services Strategic Plan	Shire of Exmouth

1.6 Scope and Limitations

This report: has been prepared by GHD for Shire of Exmouth and may only be used and relied on by Shire of Exmouth for the purpose agreed between GHD and the Shire of Exmouth as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Shire of Exmouth arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Shire of Exmouth and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Strategic Vision and Objectives

2.1.1 Strategic Vision

The Shire of Exmouth will create a transport network that gets people to where they want to go and experience the wonders of the Ningaloo area utilising national networks and a strong but developing local aviation industry.

2.1.2 Objectives

The strategic objectives that have been identified for Learmonth Airport by Shire of Exmouth are categorised into Airside and Landside objectives as summarised below.

Airside Objectives

The Shire of Exmouth have expressed the following planning objectives for this Master Plan and stated the Learmonth Airport Master Plan is to provide directional guidance to development to ensure expansion occurs without compromise of primary aviation and non-aviation objectives as follows;

- Provision of additional apron area for future aviation growth.
- Provision of hangar sites for future aviation operations.
- Provision of sealed surfaces for surface access between aprons, hangars and terminals.
- Provision of additional flood lighting for new hangars and aprons.
- Provision of an extension to the existing lease area to the south to accommodate future building area and apron expansions
- Provision for permanent Airport Rescue and Fire Fighting Services (ARFFS).
- Provision for future Air Traffic Control (ATC).
- Provision for airside operating elements to include the taxiway system and civil apron areas.
- Provision for increased fuel storage and truck parking facilities.
- Provision for car park expansion.
- Provision of solar generation power supply.

These are further detailed in Section 4.1 with relevance to current operational requirements.

Landside Objectives

The Shire of Exmouth have expressed the following planning objectives for landside development planning for the Learmonth Airport.

- Car park expansion with the possibility of a secure parking compound.
- Refuelling depot relocation, including new storage and dispersing facilities for Jet A1 and Avgas.
- Provision for a freight office and possible cold storage facility.
- An airport maintenance shed.
- Terminal building expansion of existing airport terminal, including additional office spacing.
- Improvements to disability access to terminal.

- Land areas assigned for any future development and provision for commercial expansion to attract aviation businesses to the airport.

These are further detailed in Section 4.2 with relevance to current operational requirements.

In addition, the Department of Defence have indicated during lease negotiations that the Shire of Exmouth should work towards self-sustainability of utilities. As such, the following is also considered.

Consideration of independent power and water supply.

2.1.3 Development Approval and Restrictions

It is noted that any development airside or landside at Learmonth Airport requires review and approval by the Department of Defence and Airservices Australia prior to commencement of the development. Processes are in place to ensure relevant approvals are sought and consideration of such matters as safety, security, services, navigational aid protection, stormwater management, landscaping, communications, lighting and environmental controls are considered.

It is also acknowledged that Learmonth Airport and the surrounding areas are affected by building and structure height limits under the Defence [Areas Control] Regulations 1989. These regulations are applied by the Department of Defence when determining applications for buildings and structures in the area.

Lighting of buildings and structures within the vicinity of Learmonth Airport is informed by Section 9.21 of the Manual of Standards Part 139 with the intention of minimising the potential hazard to aircraft operations from the lighting. The requirements of ground lighting emission intensity limits will be advised to any party proposing to install a lighting system within the vicinity of Learmonth Airport and forms part of the Development Approval process.

3. Background Information

3.1 Master Plan Context

3.1.1 Historical Background

Learmonth Airport, located at Exmouth Gulf, Western Australia, was first established in 1943 as an operational air base during World War II. The war time buildings which were of a temporary nature have long since ceased to exist. Since World War II the Airport has been jointly used by civil and RAAF aircraft.

It is named after Wing Commander Charles Cuthbertson Learmonth, a WW II pilot, who died a hero near Rottnest Island in January 1944 after remaining in his bomber radioing events until it hit the water. This act of courage helped explain the cause of several earlier accidents.

The original Civil Terminal was a simple waiting shelter with toilets constructed for the comfort of transfer of employees of the Harold E Holt Naval Base.

In 1969 the Commonwealth approved an upgrade of Learmonth Airport which at the time comprised a runway of length 2,134 metres. The development provided for a runway extension out to current overall runway of 3,047 metres. In 1974 additional upgrade of facilities occurred to support operational and exercise deployments for the RAAF as a 'Bare Base'.

In 1971 Learmonth Airport was gazetted as a first point of entry airport by the Commonwealth enabling international flights on a restricted basis.

In 1982 a civil terminal with associated apron area was constructed. This building is presently in use as a heliport enabling offshore helicopter passenger transfers.

After the 1992 transfer of the Navy Communications Station Harold E Holt from the United States Navy to the Royal Australian Navy the American Government sold the majority of their residential property that had been constructed in Exmouth and donated $10 million dollars from the proceeds of these sales to the Exmouth Development Trust Fund, a part of which were committed to the upgrading the Learmonth Airport Terminal.

In March 1993 the Commonwealth leased the civil facilities area of the Learmonth Airport to the Shire of Exmouth for a term of 30 years.

In 1999 a new airport terminal with common user (domestic and international) capability was constructed at a cost of $6.4M together with a northern extension of the aircraft apron area with roadway interface for airside vehicle access.

In 2012 an expansion of the apron was undertaken to provide dedicated helicopter and GA aprons.

3.1.2 Regional Climate

The region has a hot, semiarid climate with summer temperatures often exceeding 40°C. Rain is most likely to fall between January and July with monsoonal showers from January to April. The period from August to December is generally dry.

RAAF Base Learmonth is situated in a highly cyclone-prone area. In March 1999, tropical cyclone Vance moved down the Exmouth Gulf causing winds recorded to 267 km/h, the highest ever wind gust measured on the Australian mainland.

Climate data has been obtained from the Bureau of Meteorology website for weather station number 005007, Learmonth Airport. Statistical information has been recorded at RAAF Base Learmonth since 1945.

Table 2 Climatic Data

Item	Annual
Mean max. temperature	31.9 degrees centigrade
Mean min. temperature	17.7 degrees centigrade
Mean rainfall	259 mm

The annual mean rainfall is presented in Figure 3. The data was obtained from the Bureau of Meteorology website for the Learmonth Airport Station (station 005007). The mean rainfall data ranged from 1945 to 2020.

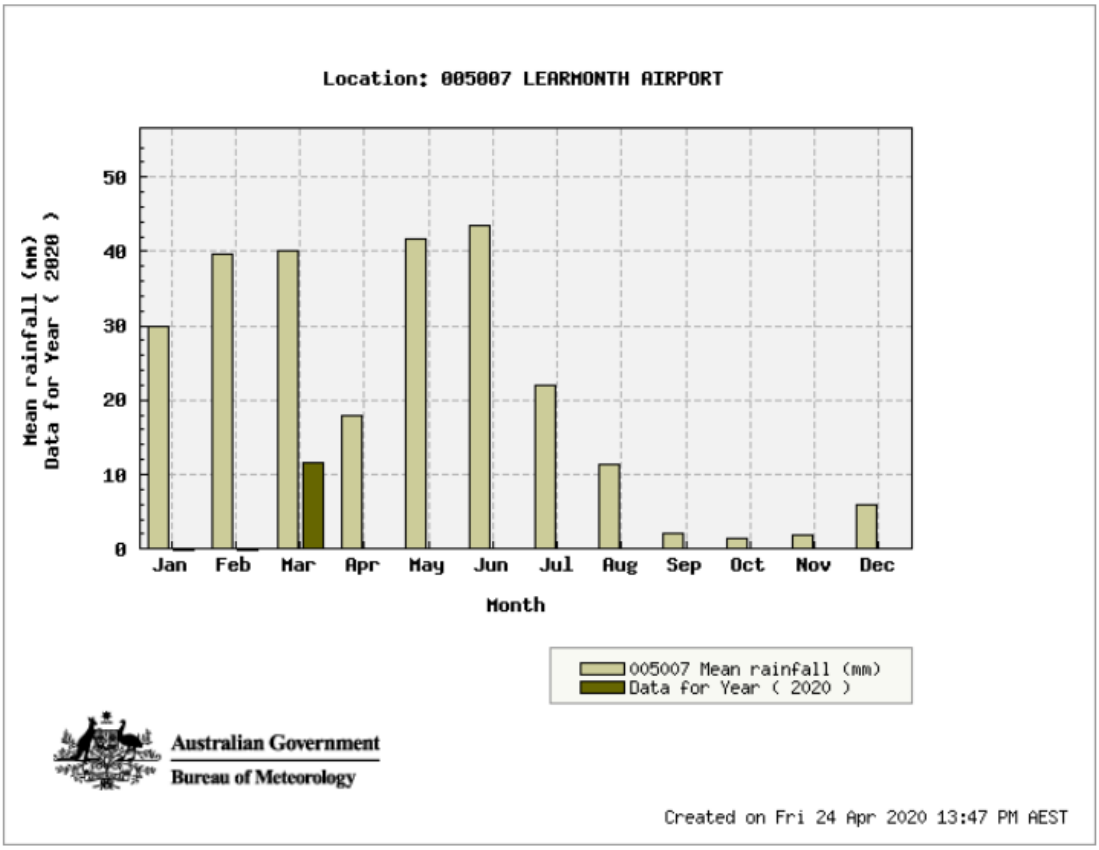


Figure 3 Learmonth Mean Rainfall

The prevailing winds at the Learmonth Base are predominantly from the south. A copy of the wind roses from the Bureau of Meteorology website are provided in Figure 4 and Figure 5. The wind roses are based on data from 1975 to 2020.

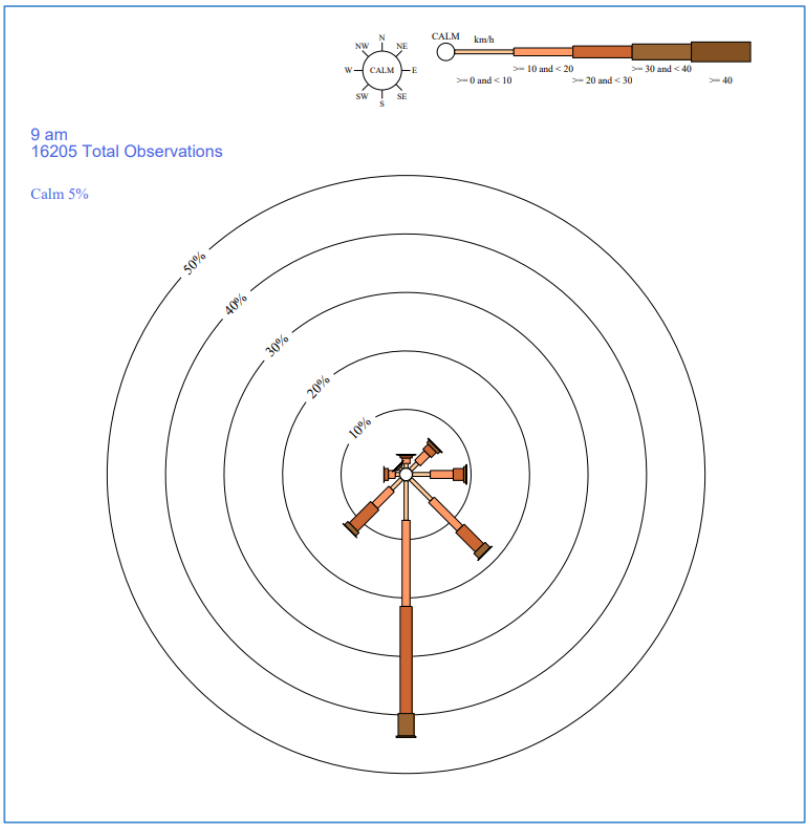


Figure 4 Wind Rose 9AM

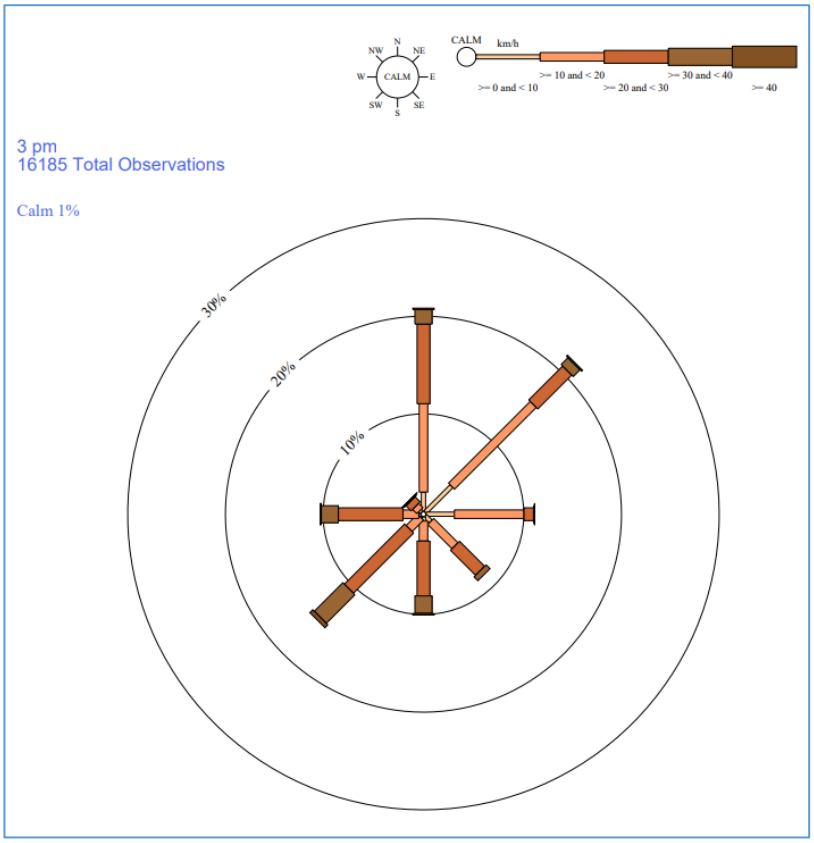


Figure 5 Wind Rose 3 PM

3.1.3 Regional Context

The name Exmouth is taken from the Exmouth Gulf which was named by Captain Phillip P. King when surveying the northern coastline on the 18th February 1818.

Named after Edward Pellew, First Viscount Exmouth (1758 -1833) who distinguished himself in the British Royal Navy from 1776, (Battle of Lake Champlain), until 1816 (bombardment of Algiers).

Many of the streets in Exmouth are named in honour of Australian and British servicemen who took part in World War II. Streets are also named after early residents and navy or military operations or craft. This gesture recognises the importance of naval/military history to the region.

Exmouth is located 1,270 kilometres north of Perth and it can be accessed within 12.5 hours by motor vehicle and approximately 16 hours by bus. Aircraft travel between Perth and Exmouth takes approximately 1 ¾ hours on a jet service.

Exmouth is a service centre for the Exmouth/Coral Bay region. It is surrounded by rural stations and has a number of other diverse industries drawn into the airport's catchment such as tourism, fishing, oil and gas industry and government agency business.

Learmonth Airport is approximately 35 km south of Exmouth and it supports General Aviation (GA) (inclusive of helicopter operations) and Regular Public Transport (RPT) civil aircraft operations. It is the main regional base for aircraft charter operators with the Ningaloo Marine Park and Whale Shark as the major international tourism attractions.

Significant Airports within proximity to Learmonth are Carnarvon 360 kilometres to the south, Karratha 600 kilometres and Broome 1,100 kilometres to the north.

3.1.4 Regional Economy

Exmouth and Learmonth Airport are strategically located at the northern end of the Northwest Cape.

The Northwest Cape covers a huge area with the Ningaloo Reef on its western side stretching 260 km from slightly north of Exmouth to Amherst Point, south of Coral Bay. The Exmouth Gulf forms its eastern boundary.

The town of Exmouth was originally established in 1964 as a support town for the communications base located at the North West Cape. While the base is still operating the town has established itself as the gateway to the Ningaloo Reef making it a top tourism destination to the extent that tourism is now the major industry contributor to the local economy.

The economy of Exmouth is also supported by oil & gas exploration/production, fishing, aquaculture and pastoral activity.

The Shire of Exmouth is situated within the Gascoyne Region, which is one of nine geographic regions within Western Australia.

The Gascoyne Region comprises the local government municipalities of Exmouth, Carnarvon, Shark Bay and Upper Gascoyne.

The Gascoyne in the north-west of Western Australia is a Region rich in resource and investment potential. It stretches along 600 km of Indian Ocean Coast, and inland 300 km through dramatic desert country beyond Mount Augustus.

It enjoys a moderate and tropical climate with 320 days of sunshine per year, and a wealth of attractions for the visitor including the Ningaloo Reef, Cape Range National Park and the outstanding natural values of the Shark Bay World Heritage Property.

The catchment area for Learmonth Airport is not just the Shire of Exmouth but also the upper section of the Gascoyne region including Coral Bay and east to include several pastoral stations and mining companies. The Shire of Exmouth has a population of around 2,800 but this increases to around 6,000 during the tourism season of April to October. Each year Exmouth welcomes over 100,000 visitors with an average length of stay of over seven nights. The Gascoyne Region has strong tourism appeal, sound record of environmental management, relatively good water resources and a broad economic base.

The Gascoyne Regional Development Plan provided a vision for the future growth of the region for the next ten years from 2010 to 2020.

Among its key priorities is growth of the population across the Gascoyne Region together with continued expansion of the tourism industry and improved air services both within and to the Region.

Significant public and private expenditure within the Gascoyne Region is envisaged over the period of this Master Plan focussing on community development, tourism, maritime, land development, health and water supplies.

All of these projects and a growing population will lead to greater utilisation of the air services.

3.1.5 Regulatory Context

CASA's primary function is to conduct the safety regulation of civil air operations in Australia and the operation of Australian aircraft overseas. It is also required to provide comprehensive safety education and training programmes, cooperate with the Australian Transport Safety Bureau, and administer certain features of Part IV of the Civil Aviation (Carriers' Liability) Act (CAA) 1959.

The Civil Aviation Regulations (CARs) 1988 and the Civil Aviation Safety Regulations (CASR) 1998, made under authority of the Civil Aviation Act (CAA) 1988, provide for general regulatory controls for the safety of air navigation. The CAA, CARs and CASR empower CASA to issue Civil Aviation Orders on detailed matters of regulation and to issue Manuals of Standards (MOS) which support the CASR by providing detailed technical material. Other relevant regulations include:

- Air Navigation Act 1920;
- Commonwealth Authorities and Companies Act 1997;
- Auditor-General Act 1997;
- Ombudsman Act 1976;
- Freedom of Information Act 1982;
- Privacy Act 1988;
- Administrative Appeals Tribunal Act 1975; and
- Administrative Decisions (Judicial Review) Act 1977.

The relevant regulations in Australia are the Civil Aviation Regulations 1988 (CARs), which are gradually being replaced by the Civil Aviation Safety Regulations 1998 (CASRs). CASR Part 139 prescribes the requirements for aerodromes used in air transport operations, in accordance with ICAO Annex 14 - Aerodromes. The Part 139 (Aerodromes) Manual of Standards (Part 139 MOS) is made pursuant to CASR Part 139. The Part 139 MOS sets out the detailed standards and operating procedures for aerodromes used in air transport operations in Australia.

It is also acknowledged that Learmonth Airport and the surrounding areas are affected by building and structure height limits under the Defence Areas Control Regulations 1989. These

regulations are applied by the Department of Defence when determining applications for buildings and structures in the area.

3.1.6 Policy Context

Under Part 3 of the Planning and Development Act 2005, State Planning Policies provide the highest level of planning policy control and guidance in Western Australia.

Different levels of local and federal have established policies to assist in the planning and safeguarding of the aviation industry. These policies are discussed in the following.

The Federation Aviation Policy provides Aviation aims and principles for the Australian industry. Relevant principals extracted from this policy being utilised in this Master Plan are:

- Recognise the importance of Australian airports to the economy
- Ensure that aviation security measures are risk based
- Reduction of noise at the source
- Noise abatement operational procedures

The Federal Aviation Policy White Paper 2009 is a long term policy and planning document that outlines the following objectives in planning an airport:

- Give aviation industry the certainty and incentive to plan and invest for the long term
- Maintain and improve Australia's excellent aviation safety record
- Give proper consideration to the interests of travellers and users of airports
- Better manage the effect of aviation activities on communities and the environment.

The State Government Policy and Regulation noted that the WA Government will continue to lightly regulate the Exmouth-Perth route (allowing multiple operators on the route) and monitor performance by requiring airlines operating RPT air services to:

- Report statistics and records to DoT
- Engage with stakeholders and communities to an adequate level

The Shire of Exmouth will implement the Local Planning Strategy through the new LPS 4

The Exmouth Learmonth (North West Cape) Structure Plan 1998 provides a planning framework for the whole of the North West Cape. A main objective of the plan is to locate on Commonwealth land adjoining the townsite activities that complement the Exmouth Townsite and do not conflict with defence activities (non-defence activities are not acceptable on the naval communications station). The Plan did promote the relocation of the wastewater treatment plant from within the townsite boundary onto Commonwealth land.

3.1.7 Previous and Current Master Plans

A Master Plan (Forte Airport Management 2014) has been adopted for the Learmonth RAAF Base which covers the Shire's civil lease area. The Master Plan identifies the proposed development within the 23.8 ha lease area, including a future lease expansion of 5.15 ha to the south of the existing lease boundary. The Master Plan documents proposed development including future apron development, hangars, long term car park, public car cark and airport storage north of existing buildings. Proposed development including an expansion to the helicopter apron reserve, hangar reserve, new road and airport storage is proposed south of the existing buildings.

3.1.8 Key Stakeholders

The following list of key stakeholders, provided by the Shire, were approached by GHD to inform this Master Plan.

- Shire of Exmouth
- Emergency services
- Airlines
- Charter services
- Helicopter operators
- GA operators
- Hire car companies
- Freight companies
- Local business owners

3.2 Current Situation

3.2.1 Ownership and Management

The Aviation Services department of the Shire of Exmouth oversees the management and operation of the airport.

The Shire of Exmouth has a lease with the Department of Defence for the civil lease area[3] until 7 March 2033. The lease, and associated Operating Deed, provides Council officers with delegated authority to approve a number of aircraft movement approval functions on behalf of Defence. Other more long-term operations require formal Defence approval which is provided on behalf of the operator to Defence. The Operating Deed also outlines the number of movements that can occur in the three operational status levels: Dormant, Military-in Use and Activated. The Department of Defence provides consent to all sub-leases and development within the civil lease area prior to execution/commencement.

There are three (3) areas of RAAF Learmonth being:

- The Military Area used as a RAAF base by Department of Defence (DoD);
- The Licenced Area which includes Runway 18/36 and Taxiway Whiskey and has common usage by the DoD, the Shire of Exmouth and others; and
- The Civil Airport Site, which is the lease area under management control of the Shire of Exmouth for the purposes of operating a civil aviation terminal and other aviation-related functions.

An Operating Deed forms an attachment to the Learmonth Airport Deed of Variation relating to the operations of civil aircraft and the use, access and management of the Licensed Area at Learmonth Airport. It maybe varied from time to time through a consultative process and the current Operating Deed must always be referenced.

Subject to the Lease and the Operating Deed the Shire of Exmouth has an obligation to:

- Comply with relevant legislation as if it were the operator of a certified Airport under the Civil Aviation Safety Regulations 1998; and

[3] Appendix A – Civil Site Lease Plan

- Comply with any conditions specified by the Civil Aviation Safety Authority pursuant to section 20 of the Civil Aviation Act 1988; and
- Impose similar obligations upon any sub-lease to comply with relevant legislation and conditions applied under the above.

In addition, under clause 14.3 of the Operating Deed the Shire of Exmouth are required to submit a Master Plan for the proposed development of the Civil Airport Site for approval by DoD whom must approve or reject the Master Plan in writing.

Under the terms of the lease the Master Plan may be amended at any time and it must have regard to:

- The actual and anticipated growth in, and pattern of, traffic demand for the Civil Airport Site;
- The quality standards reasonably expected of such an airport in Australia; and
- Good business practice as defined in sub-clause 1.1 of the Learmonth Airport Deed of Variation.

The Shire of Exmouth must ensure all development (clauses 14.8 to 14.19 of the Operating Deed apply) on the Civil Airport Site:

- Is carried out in accordance with the Master Plan as approved by DoD from time to time;
- Complies with all relevant legislation and all requirements of any relevant Government Authority; and
- Is carried out in a proper and workmanlike manner.

3.2.2 Site Description

Learmonth Airport is located off Minilya-Exmouth Road on a 23.8 ha leased portion of the defence base RAAF Learmonth. Within the Civil Airport Site lease, the Shire of Exmouth has two terminals (RPT and Heliport), three sheds, aprons (RPT, Helicopter and GA) and taxiway. A number of sub-leases are also in place, being the fuel storage facility (World Fuel Services), shed (Exmouth Aviation Services), navigational aid infrastructure (Airservices Australia), freight offices (Exmouth Freight Services and Colta Pty Ltd) as well as a number of subleases within the terminal building.

Learmonth Airport is approximately 35 kilometres south of the Exmouth township and services the Shire of Exmouth and the Upper Gascoyne region generally.

RAAF Base Learmonth is situated within a coastal plain and is generally flat. Elevations range between 0 and 20 m AHD. The land rises further west towards the coastal ranges to a height of 220 mAHD. The coastline east of RAAF Base Learmonth is comprised of sand dunes, which rise up to 9 mAHD. Between RAAF Base Learmonth and the dunes is a low lying area occupied by Wapet Creek and a wider salt pan area. This area displays signs of evaporation and formation of salt crusts. Salt-resistant plants including succulents and mangroves grow in this area. Wapet Creek discharges through a gap in the dunes to Exmouth Gulf

3.2.3 Security Requirements

The Office of Transport Security (OTS), a section of the Commonwealth's Department of Infrastructure and Regional Development, is responsible for ensuring that regulatory compliance to the Aviation Transport Security Act (ATSA) 2004 and Aviation Transport Security Regulations (ATSR) 2005 and any supporting documentation is implemented at airports across Australia. The ATSA and ATSR empower the Minister, Secretary and Transport Security Inspectors to approve and enforce the requirements of the ATSA and ATSR at airports as well as with airlines and other aviation industry partners.

OTS has seven levels of classification for RPT airports depending on the level of screening to be undertaken. Learmonth Airport is a Classification 3 airport which therefore requires security screening, security zones and a transport security program and security context risk statement for the airport. OTS Transport Security Inspectors annually audit the airports' security processes and procedures and regularly undertake systems audits of the screening point.

3.2.4 Surrounding Land

Surrounding the airport are pastoral lands, with the Exmouth town site to the North, a Solar Observatory, Bureau of Meteorology and the Exmouth Gulf to the East. While the West of the Airport is pastoral land, the southern land of the airport has various landfills and base supply borefield.

The land surrounding Learmonth Airport is depicted in the Exmouth South Structure Plan (October 2013), with a copy of Plan 9 – Structure Plan found in Appendix C.

According to the Local Planning Strategy for Shire of Exmouth, the indicative noise buffer for Learmonth Airport is classified as a Special Control Area within LPS 4. Any development proposed within the buffer zone is to be referred to the Department of Defence prior to determination.

3.2.5 Existing Activities

Learmonth Airport receives daily return Regular Public Transport (RPT) air services from Perth through Qantas. Qantas are the only public airline to service Learmonth Airport, since Virgin Australia Regional Airlines ceased operations in October 2014. Qantas fly twice daily Perth to Learmonth return services and a daily service on the weekends. Qantas most commonly operate the Fokker F100.

Learmonth Airport has several GA charter operators that provide private flying, charter flying and aerial work for clients at the airport. None of which have fixed base hangar facilities.

The regular GA operators include:

- Norwest Airwork
- Karratha Flying Services
- Tropic Air
- Skippers Aviation
- Maroomba Air Services
- Bristow Helicopters, who provide offshore passenger transport services to a consortium of companies operating offshore from Exmouth, utilising 18 seat 'Super Pumas', 10 seat 'Sikorski', 12 seat AW139 and 18 seat EC225 helicopters.
- CHC Helicopters, who provide occasional offshore passenger transport for Woodside Energy Limited and Shell Exploration, utilising 16 and 12 seater AW138 and AW139 helicopters.
- Network Aviation
- The Royal Flying Doctor Service (RFDS)

Flying training squadrons from RAAF Base Pearce regularly operate from the RAAF Base Learmonth. They fly the PC9 and Hawke training aircraft often staying on extended exercises conducting circuits and cross-country navigation exercises. C130 Hercules and AP3 Orion aircraft also use Learmonth Airport for training and staging operations on occasions throughout the year.

Learmonth Airport is currently classified as an alternate international airport with approval to be a first point of entry. With the Quarantine Act 1908 being replaced by the Biosecurity Act 2015 from 16 June 2016, designation of first point of entry has now been removed from RAAF Learmonth & Learmonth Airport and amended to temporary first point of entry to allow for ad-hoc international services (such as those defence aircraft coming from Cocos (Keeling) Islands) and alternate diversions. A number of international airline operators have received formal Defence approval to use of Learmonth Airport as an alternate in the event of weather requirements at Perth or onboard emergencies. As of March 2014, these airlines are Qantas, Emirates, Cobham Regional, Cobham Special Mission, Malaysian, Air Asia, Air Austral, Air Mauritius, Air New Zealand, Network, Qatar, Scoot, Singapore and Turkish Airlines.

The Oil and Gas industry (O&G) also utilise Learmonth Airport by moving their fly-in, fly-out workers from the airline services to helicopters to fly them out to their Floating Production Storage & Offloading (FPSO) facilities. There are currently three FPSO's located in waters off-shore the western side of Exmouth. Oil & Gas exploration is cyclic with decision regarding exploration drilling programs being influenced by a number of factors such as the global price of oil per barrel, current well (production) life and the world market. Production is the more stable operation, with known numbers of workers over the lifespan of the well. Woodside Energy Limited, BHP Billiton and Santos operate their FPSOs flying their staff out of Learmonth Airport to access these FPSOs. In 2012-13 at the height of the resources boom, around 26% of RPT passengers then travelled on helicopters off-shore, however in 2015-16, the average was down to 17% due to the extremely low oil price.

Aircraft Landings

Civilian aircraft movement records are kept by the Shire of Exmouth for all civil aviation activity at Learmonth Airport.

The table below lists recorded civil aircraft landings over the ten years, 2007/08 to 2016/17. It includes RPT, charter, general aviation, and rotary movements.

Table 3 Total Landings by Financial Year

Financial Year	Total Landings	Qantas	GA	Rotary	RFDS	Other
2007/08	3,134	0	260	1,587	59	1,228
2008/09	3,126	0	241	1,920	67	898
2009/10	4,227	0	296	2,868	103	960
2010/11	3,773	41	168	2,647	70	847
2011/12	3,599	390	144	2,401	103	561
2012/13	3,748	629	197	2,142	106	674
2013/14	3,487	627	304	1,872	121	563
2014/15	2,598	623	225	1,402	118	230
2015/16	2,181	626	171	1,200	108	76
2016/17	2,023	638	143	1,066	118	58
2017/18	*	*	*	*	*	*
2018/19	*	*	*	*	*	*

Note * data not available to GHD at time of writing.

Regular Public Transport (RPT) Passengers

RPT passenger numbers have remained relatively steady across 2014/15 to 2018/19. This is in line with the steady Oil and Gas industries, and local tourism. RPT passenger numbers in 2020 are expected to be severely impacted by the COVID-19 global pandemic. It can be reasonably expected that passenger numbers will increase back to averages as per 2014/15 to 2018/19 post-COVID-19 restrictions in Australia and the world, allowing tourism to recommence.

Table 4 RPT Passenger Number by Financial Year

Financial Year	RPT Passenger Numbers
2007/08	44,674
2008/09	43,210
2009/10	71,622
2010/11	78,821
2011/12	87,600
2012/13	92,851
2013/14	91,741
2014/15	85,705
2015/16	85,990
2016/17	80,017
2017/18	87,084
2018/19	85,922

3.2.6 Existing Facilities

Airport Particulars

The published Learmonth Airport details of movement area, navigation aids, air traffic services, ground services, public facilities available and special procedures are expressed in the Aeronautical Information Package En Route Supplement Australia (AIP ERSA). The abridged details are stated below:

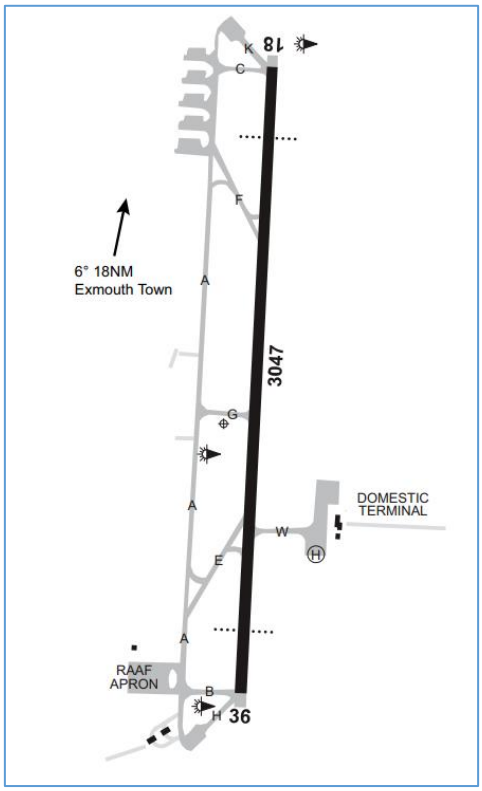


Figure 6 Learmonth Airport Layout[4]

[4] https://www.airservicesaustralia.com/aip/current/ersa/FAC_YPLM_27FEB2020.pdf

Runway designation.....	18/36
Runway bearing.....	183° Magnetic
Runway dimensions.....	3,047 m x 45 m sealed (259 m at the northern end, and 228 m at the southern end are concrete, the remainder is flexible / asphalt)
Runway pavement strength.....	PCN 43/F/A/1750 (254 psi) / T
Taxiway & apron pavement strength.....	PCN 43/F/A/1750 (254 psi) / T
Runway slope.....	0.06% down to N
Lighting.....	HIRL RWY 18/36 PAPI LGT for Civil Ops Manually Activated on PN to Reporting Agent
Navigational aids.....	NDB S22°14.5' E114°05.7' VOR/DME S22° 14.1' E114° 05.7' TAC S22° 13.5' E114° 05.5'
Control Zones.....	CTAF – AFRU 118.3 (R)
Ground Services.....	REPLEN World Fuel Services: Jet A1 H24
Civil Apron.....	Bays 1, 2 and 3 for RPT only. GA parking on 24 Prior Notice. H1, H2 & H3 for helicopters only

Apron and Taxiway Areas

The original civil apron was evaluated for pavement strength in 1995. The report identified the pavement comprised 330 mm of crushed rock overlying a high strength gravel subgrade exhibiting CBR soaked of 30%. Asphalt surfacing was 50 mm. This asphalt surface was subsequently overlaid by a further 50 mm of asphalt in 1999.

A third RPT parking bay and a GA parking area was added to the north of the existing apron in 1999 comprising 400 mm of crushed rock pavement and 50 mm asphalt.

The development plan at the time was for GA parking to be provided at the southern end of the apron but negotiations for the relocation or removal of a disused AVGAS tank failed. The GA apron parking for fixed wing aircraft consequently was provided to the north of the RPT apron.

Taxiway Whiskey is the only civil link to the civil apron area. Both the apron and taxiway have an assigned PCN 32/F/A/1750/U due to their similar construction, however a pavement condition assessment in August 2003 recommended that the PCN be amended to PCN 43/F/A/1750/T. The Shire of Exmouth is responsible for the assessment and issue, as appropriate, of occasional pavement concessions for civil aircraft operator access to apron parking areas.

Expansion of the helicopter bays to provide 3 operational bays and the GA parking area was completed in 2012.

Aviation Fuel

Hydrant refuelling points were removed during the apron upgrade and Mobil Oil positioned tanker refuelling, which provided greater flexibility for refuelling the range of aircraft type

operating. Jet A1 storage capacity is 190,000 litres in above ground, bunded tanks, managed now by World Fuel Services.

Up until late 2009 AVGAS was stored and dispensed by tanker. However, low volume sales resulted in the withdrawal of AVGAS product from Learmonth.

Terminal Building

The Civil Airport Site terminal building facilities are capable of handling simultaneous operations of domestic and international aircraft. Termed 'common user' the terminal has partitions to enable the separation of passengers for security and customs purposes.

The 'breezeway' (café) area was designed to accommodate up to 100 persons. The central departures and northern arrivals zones were designed for the B767 as the design aircraft, each with an area footprint of up to 150 persons. Entry to the central departure lounge is via passenger security screening for the jet service.

Officially opened on 3 December 1999 by the Deputy State Premier the Honourable Hendy Cowan, the terminal provides the travelling public with modern, comfortable facilities and the Exmouth community with a strong tourism entry statement. Learmonth Airport is a gateway to the Region facilitating transfer of persons arriving and departing by air.

The Shire of Exmouth embarked upon the terminal development project in recognition of the huge tourism potential of the Region and the need to facilitate both domestic and international visitor transfers.

Learmonth Airport is a Commonwealth declared Restricted International Airport, which enables international charter flights to occur, subject to prior notification to enable facilitation by Customs, Immigration and Quarantine agencies.

The Shire of Exmouth owns the check-in counters, baggage make up and arrival conveyors, passenger security screening equipment and checked bag security screening equipment associated with the airline transport operations within the terminal.

In 2010, the old terminal was used in part by the ground handling company for freight and storage. In recent times Bristow Helicopters Pty Ltd have sub-leased and modified the building to suit heliport passenger processing for offshore transfers. From January 2012, heliport operations were transferred to the Shire of Exmouth.

Car Park

The car park has an approximate 120 bay capacity. All areas are public paid parking and no secure parking areas exist. However, a number of these bays have been designated for disabled, rental cars and airport management.

Set down and pick areas exist in front of the terminal, although limited in area.

Utilities

Electricity at the RAAF Base is reticulated from the Exmouth town supply. A metered electrical distribution service exists from the RAAF Base to the Civil Airport Site. This supply is supported by emergency power in the event of mains power failure via generators located on the RAAF Base.

Water Supply to the Civil Airport Site is via the RAAF Base water bores. The supply has booster pumps when required for high pressure delivery from hydrant outlets.

Sewerage Services at the Civil Airport Site are by way of septic tanks located in the grass area between the terminal and the apron. A new septic system was installed at the time of terminal construction in 1999.

3.3 SWOT Analysis

Strengths and Advantages	Weaknesses and Constraints
- There is adequate area landside to expand parking, storage and other facilities. - There are no restrictions or noise abatement issues at the airport. - Proximity to Ningaloo Reef and associated tourism - Communication between RAAF , Shire of Exmouth, and Heliport Operators	- Learmonth is serviced by a single RPT operator reducing the opportunity for competition and negotiation. - Apron size currently does not support multiple Code 4C aircraft operations. - Adequate internet service to the airport is limited - No hangars available for aviation operators to utilise
Opportunities and Prospects	**Threats and Risks**
- Potential for intrastate WA flights to operate to promote tourism.[5] - Potential to support more Oil and Gas operations if helicopter facilities are expanded. - Reconfiguration of passenger security screening area in terminal expansion. - Potential for freight facilities and freight storage to be developed in the future. - Opportunity to construct additions to RPT apron and a new taxiway in conjunction with RAAF airside upgrade works	- COVID-19 impacts to tourism - Flooding of access road can close the airport

[5] Air Route Connectivity in Mid and North West of Western Australia Survey Data Analysis (2015)

4. Critical Planning Parameters

4.1 Critical Airside Planning Parameters

4.1.1 Forecast of Future Operations

The COVID-19 global pandemic has had a significant impact on the aviation industry, including all associated industries, such as tourism, mining, oil and gas. For example, the Woodside Scarborough gas field investment decision has been delayed until 2021, and the Western Australian borders are currently closed to non-essential travellers. This will cause a significant reduction in aircraft movements and passenger movements through Learmonth Airport throughout 2020. As such, growth of RPT passenger numbers at Learmonth Airport have been forecast with the assumption that passenger numbers will return to pre-2019/20 quantity by end of 2020/2021, and have been forecast with 5% and 10% per annum growth as per the 2014 Master Plan. As growth since the previous Master Plan has been 'flat' a lower growth rate of 2% has been included for comparison.

Table 5 Passengers per annum forecast growth (indicative only)

Financial Year	RPT Passenger Numbers	2% per annum growth	5% per annum growth	10% per annum growth
2018/19	85,922			
2019/20	40,000*			
2020/21	60,000*			
2021/22	85,000*	85,000	85,000	85,000
2022/23		86,700	89,250	93,500
2023/24		88,434	93,713	102,850
2024/25		90,203	98,398	113,135
2025/26		92,007	103,318	124,449
2026/27		93,847	108,484	136,893
2027/28		95,724	113,908	150,583
2028/29		97,638	119,604	165,641
2029/30		99,591	125,584	182,205
2030/31		101,583	131,863	200,426
2031/32		103,615	138,456	220,468
2032/33		105,687	145,379	242,515
2033/34		107,801	152,648	266,766
2034/35		109,957	160,280	293,443
2035/36		112,156	168,294	322,787
2036/37		114,399	176,709	355,066
2037/38		116,687	185,544	390,573
2038/39		119,021	194,822	429,630
2039/40		121,401	204,563	472,593

Note * 2019/20 to 2021/22 RPT Passenger Numbers estimated based on assumed recovery from COVID-19 pandemic.

No formal forecasting has been undertaken for this Master Plan and the above figures are for comparison purposes only and are not to be used for business forecasting or any other purpose.

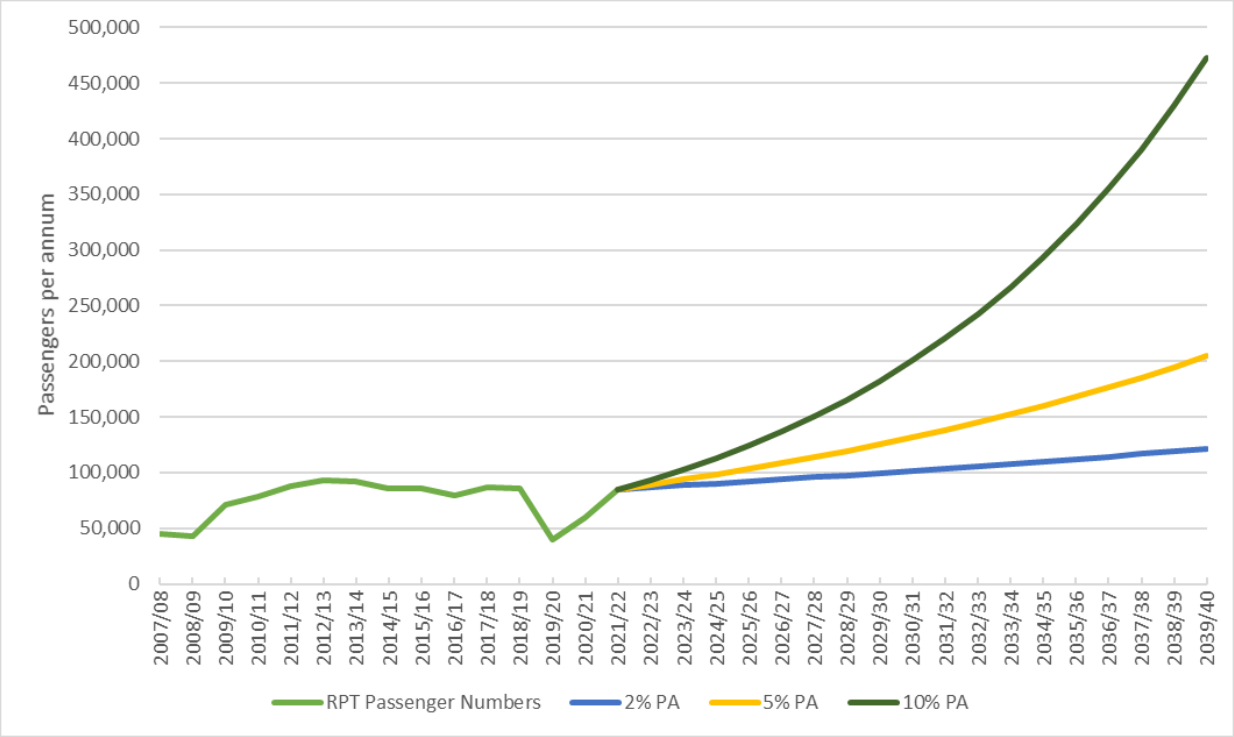


Figure 7 Passengers per annum forecast growth (indicative only)

4.1.2 Aerodrome Reference Code System

The Learmonth Airport Master Plan has the built runway as Code 4C. The number four indicates the runway length to be 1800 m or over. The C designates use for aircraft with a wing span of 24 m up to but not including 36 m, and the outer main gear wheel span to be six metres up to but not including nine metres. The Pavement Classification Number (PCN) of the runway is 43 which includes aircraft up to Airbus A320 and Boeing B737-800. Width is the final determining factor that can restrict aircraft operations.

Runway 18/36 is currently 45m wide which is acceptable for Code 4D and 4E aircraft, however, the runway (and Taxiway Whiskey) shoulders would need to be extended to 7.5 metres to meet the outer main gear width requirements for 4D and 4E aircraft such as the wide-bodied A300, A330 and B747 and B777 aircraft.

4.1.3 Navigation Systems

The airport site, although currently adequate, is severely constrained in some areas from future expansion by Airservices Australia (AsA) navigation aid infrastructure.

A VHF Omni Range (VOR) is situated approximately 300 metres from the northern boundary. The distance is a typical protection zone radii to be kept free of obstructions. AsA's siting directives state airport taxiways may be located closer than 300 metres, but not closer than 150 m, provided taxiways are used only for the movement of aircraft and large aircraft parking does not occur.

Approximately 150 m from the southern lease boundary there was a Distance Measuring Equipment Australia (DME-A) navigation aid. The DME requires approximately 100 m protection zone radii. Hence, the DME's location permitted a southern boundary expansion of approximately 50 m without interference with the DME. This DME-A was decommissioned in 1990 due to damage in Cyclone Vance and replaced with a Distance Measuring Equipment International (DME-I) which is now co-located at the VOR site.

Immediately adjoining the south-east corner of the airport lease boundary is a Non Directional Beacon (NDB). This navigation aid typically requires a 150 metre radii protection zone from buildings. The NDB protection zone radius actually overlaps into the Civil Airport Site by approximately 70 m. Whilst this matter was bought to the attention of AsA in 1999 during expansion of the terminal and apron area it is unclear as to the resolution of the overlapping lease with the Shire of Exmouth. Irrespective, the recent Deed of Variation of lease requires the Shire of Exmouth to accommodate the needs of AsA.

Future plans for the NDB are uncertain but technology changes are overtaking the need for NDB navigation aids and AsA at one time stated they were considering their decommissioning in the future. It is now understood that the NDB will be retained at this time. The land upon which the NDB is situated would be very suitable expansion land from the Civil Airport Site operator's perspective if it were to become available as the NDB severely constrains the use of the existing southern part of the lease at present. Irrespective of the above, the NDB underwent an upgrade in 2012 to improve signal service and power supply location.

Also enclosed by fencing and within the Civil Airport Site lease is AsA's Satellite Ground Station (SGS), which also underwent an upgrade in 2011/12 to install new VHF and fibre communications. The SGS provides air traffic surveillance capability at flight levels FL300 (above 30,000 feet). This abuts the southern end of the public car park. Together with the NDB it too compromises southern expansion of the public airport carpark.

Figure 8 Airservices Australia Satellite Ground Station

A sub-lease for the areas occupied by the NDB and SGS is close to being executed.

4.1.4 Terminal Reserve

The terminal reserve orientation must be such that it is central to the RPT apron parking area. Central orientation of the terminal requires spatial connection with both the RPT apron and taxiway and also ability to meet with future expansion needs of the terminal building.

As the Civil Airport Site is accessible from Runway 18/36 by a single stub Taxiway Whiskey it is important for the terminal reserve to be central to this primary taxiway link.

This primary infrastructure establishes the 'central' limits from which planning occurs.

4.1.5 Pavement Strength – Apron

The existing RPT apron in front of the terminal is high strength, and should be preserved for jet aircraft. Any apron expansions shall ensure that new pavement strength is aligned with the aircraft and helicopter type that is it intended to service.

4.1.6 GA Apron – Helicopters

General Aviation (GA) at Learmonth Airport is dominated by helicopter transfers associated with the offshore oil and gas resource sector. The current helicopter operators are moving an estimated 16,000 persons a year, predominantly offshore. Helicopter contracts are typically on a 3-5 year period and the business may well change hands in the future under commercial criteria.

It is quite feasible that two helicopter operators (CHC and Bristow) could establish for strategic reasons at Learmonth Airport over the master planning period to 2040.

Site selection for the helicopters at Learmonth Airport takes into account many airport planning criteria.

- Helicopters are rotary wing aircraft and they do not mix happily with fixed wing aircraft in their operations. Rotor wash is a readily understood characteristic of helicopter operations for example. However, a unique set of planning criteria and operational criteria are attached to both. With helicopter operations dominating traffic mix (55% in 2015/16 of traffic mix) it is essential that separation be established at an early stage of the investment life cycle to avoid expensive relocation costs.
- Site development to the south of the terminal reserve permits the multiple expansion of helicopter businesses away from the terminal and the public and fixed wing aircraft operations. A hangar reserve to the south which could accommodate up to two hangars are master planned.
- Siting of hangars with their opening away from the prevailing wind is a most desirable siting criteria for any hangar developer as it avoids the wind-borne dust and elements from entering. Hangars for rotary wing helicopters of the envisaged development standard at Learmonth Airport will be equipped for maintenance and overhaul.
- Siting of helicopters to the south of the terminal will permit, with DoD future approval, a secondary taxiway link to runway 18/36. An important planning initiative to not only retain the desired separation but also provide for future flexibility to exit the runway or apron, particularly when traffic volumes increase and apron capacity is at a premium.
- The provision of heliport facilities can be provided immediately adjoining or within the hangar development (preferred by some) or they can be incorporated into the future terminal expansion. This master plan allows flexibility for both scenarios with the land available to achieve the outcomes that best suit at the time.
- An important consideration in the helicopter siting and apron expansion is the proposed terminal building expansion to the south. The northern end is a ‘book end’ with established emergency vehicle access to the airside area and baggage reclaim across the northern end.

4.1.7 GA Apron – Fixed Wing

Presently fixed wing GA aircraft parking is at the northern end of the RPT apron. This is used daily by Norwest Airwork and occasionally by charter operators such as Karratha Flying Services, Coast Watch aircraft, RFDS and Perth tarmac operators.

There are no GA fixed base operators at Learmonth Airport. Norwest Airwork has established hangar facilities at Exmouth Aerodrome (previously the Exmouth Light Aircraft Strip). This company provides the majority of local charter services and is in essence Exmouth's GA charter provider. It may transpire that Norwest Airwork or a second entrant to the area responding to commercial needs applies for sub-lease of part of the Civil Lease Site.

4.1.8 Taxiways

The current taxiway configuration is considered adequate for current operations.

If hangar development occurs at the northern end of the lease area or there are additional A320 / B737 operations on the apron, an additional taxiway, suitable for those aircraft, connecting to the runway would be required to support increased traffic. Widening of the back of apron to accommodate through traffic from the RPT and Helicopter aprons, and movement of wide-body aircraft would also be required.

4.1.9 Air Traffic Control (ATC) and Airport Rescue and Firefighting (ARFF)

The provision of ATC and ARFF is at the determination of CASA when traffic levels increase to warrant separation and passengers protected following accident.

By way of example Karratha Airport has been established with ATC and ARFFS with RPT passengers at above 500,000 per annum and RPT aircraft movements above 4,000 per annum.

It is the mix of traffic and the size of the jets operating that are considered in a risk assessment by Airservices Australia that culminates in the determination.

Outside of the civil aircraft requirement for ATC the military activate temporary ATC facilities for exercises. The location is to the north of the VOR site. When ATC is enabled by the military all civil users of Learmonth Airport are also required to comply with ATC directives.

4.2 Critical Landside Planning Parameters

4.2.1 Passenger Terminal

The terminal building 'footprint' can be readily replicated south of the existing building.

The ability of the terminal 'footprint' to expand unhindered in a doubling sense and consume the old terminal building (now the Learmonth Heliport) is an important planning outcome to protect.

4.2.2 Hire Car Facilities

Hire car operators presently provide their services within the terminal building itself. All hire car parking is included as marked bays within the public carpark area.

Planning for hire car facilities is dependent on demand from the hire car companies. The companies at Learmonth Airport have expressed interest in upgrading and expanding their facilities at the airport. Currently there is constraints within the terminal building, and within the existing car park.

4.2.3 Car Parking

Expansion south of the existing public car park is constrained by AsA Satellite Ground Station (SGS). Incremental expansion to the east is achievable and is the appropriate initial area into which expansion should occur.

Expansion to the north is currently constrained by the fuel storage facility and the Telstra repeater station.

The arrivals bus pick-up area is currently constrained geometrically, and buses have difficulty manoeuvring through the turn-around. This is also constrained by the Telstra repeater station.

4.2.4 Fuel Storage

Facilities for fuel storage are presently adequate. However, as aviation traffic increase, particularly helicopter traffic, then it can be anticipated that requests for greater storage of bulk fuel tanks will arise. Indeed, following fires and floods in the vicinity of the airport in 2011, fuel supplies reached a critical level prompting a revision of storage capacity. The current fuel storage site is a constraining factor in many other land uses at Learmonth Airport.

4.2.5 Airport Maintenance Facilities

The Shire of Exmouth presently has two sheds which house the airport essential markers and a ride-on mower for ground maintenance. One is located to the south of the heliport terminal in the area designated 'Airport Storage' with the other immediately south of the SGS. The locations of these facilities should remain in easily accessible locations in respect to the various parts of the airport their stored equipment caters for.

4.2.6 Power Generation Facilities

With regard to mains power supply and emergency power back-up the supply authority is the Department of Defence via Learmonth RAAF Base and meter readings and sub-meter readings enable cost recovery.

4.2.7 Utility Services

Future development works will be required to be accompanied by an assessment of expansion need for associated engineering services. As the timeline for development work is not identified by this Master Plan it is not feasible to make judgement of future service upgrading requirements.

4.3 Aircraft Noise

The consideration of airport noise impact is an important factor in the development of individual Airport Master Plans. An understanding of the noise impact on land adjoining the airport can provide valuable information to local government authorities for development planning of adjacent land uses.

The principal means of assessment of potential noise exposure at a given site in Australia is based on the Australian Noise Exposure Forecast (ANEF) system. The ANEF system is a scientific measure of forecast aircraft noise exposure levels which takes into account a range of factors including frequency of aircraft movements, allocation of these movements to flight paths, aircraft noise signatures (intensity, duration and tonal content), together with detailed performance characteristics specific to each aircraft type. Following detailed analysis, ANEF maps are produced showing noise contour units around the airfield which are affected by the ANEF, which may be 20, 25, 30, 35 and 40 ANEF, for example. The higher the ANEF value the greater the exposure to aircraft noise in that area.

ANEF maps are generally for the ensuing 10 years and are based on future projections of operational activities. The RAAF previously prepared ANEF maps for Learmonth airport, however these are some decades old and of limited currency.

During the preparation of the Exmouth South Structure Plan[6], recent ANEF mapping for airports at Geraldton, Gold Coast (Queensland), Launceston (Tasmania), Darwin (a joint Civil and Military airport) and RAAF bases at Edinburgh (South Australia) and Williamtown (Victoria) were examined and an indicative aircraft noise buffer area was derived for Learmonth Airport[7]. This indicative buffer is regarded as an interim measure to assist in land use decision-making and avoiding encroachment of incompatible (noise sensitive) uses pending preparation of ANEF mapping and more detailed planning. The Exmouth South Structure Plan does not support urban development within the buffer zone.

For Learmonth Airport, full ANEF mapping should be a joint RAAF and Shire of Exmouth undertaking if deemed necessary and as there is no urban population aggregated underneath the flight paths into RAAF Learmonth its need is not realised at this time.

[6] Exmouth South Structure Plan (October 2013) – Prepared by TME Town Planning Management Engineering Pty Ltd for the Shire of Exmouth.

[7] Appendix C – Plan 7 Structure Plan of Exmouth South Structure Plan (October 2013). Indicative aircraft noise buffer shown as a dashed red line

5. Airport Master Plan

5.1 Movement Area Facilities Plan

5.1.1 RPT Apron Expansion and New Taxiway Connection

The current RPT apron configuration is adequate for current operations. However, with the general aviation growth, it was identified in 2010 that expansion of the apron in the immediate future to accommodate helicopter operations and GA fixed wing parking is required. Both of these expansions were undertaken in 2012 and have seen benefit in operational parking and alignment of aircraft schedules.

Further development to the RPT apron would be required if wide-bodied aircraft commenced operations at Learmonth Airport. Relocation of electrical sub-station 4 may be required to accommodate apron widening to ensure adequate aircraft movement clearances on the taxi lane. It is understood that RAAF are decommissioning this sub-station and will be commissioning a new sub-station elsewhere on the site.

RAAF are planning runway upgrades including resurfacing and increasing turning nodes in 2023, and it would be beneficial to utilise the mobilisation of a construction crew to construct the new taxiway link and apron expansion at the same time.

5.1.2 GA Apron Expansion – Helicopters

The current heliport is located on the south end of the apron. It is recommended to expand the GA apron for helicopters to the south to keep all helicopter operations in the same area. There is reasonable land available for the development of hangars for various helicopter operators south of the heliport. Helicopter operators indicated a desire to have access to hangars to perform maintenance and provide sheltered storage when helicopters become unserviceable.

5.1.3 GA Apron Expansion – Fixed Wing

An operator may find favour with basing at Learmonth and operating across the Exmouth Gulf to Onslow or across to Karratha for instance as business opportunities arise. Alternatively, a small regional airline operator may consider basing at Learmonth.

GA fixed wing hangar site development is identified to the north of the RPT apron, separated from helicopters and with proximity to the terminal reserve.

Within the land available by allocated Civil Lease Site there is potential for four GA fixed wing hangar sites and additional apron to service the hangars. This is deemed adequate for the 2033 planning period. Whilst Exmouth Aerodrome is the Shire of Exmouth's preferred location for GA operators, preservation of hangar sites within this Master Plan will ensure land availability if business opportunities develop.

5.1.4 Provision of ATC / ARFF

It is unlikely that Learmonth will require the provision of permanent ATC and ARFF until the end of the planning period to 2040. However, this decision is outside of the Shire of Exmouth's control.

The site provided for the future establishment is immediately north of the emergency and primary access to the airside. It may be utilised in the interim for alternative use, with clause provisions appropriately protecting the Shire's interest in the site.

ATC require line of sight vision across the Airport and this primary tier building site would enable the functions of the two aviation support entities to effectively operate.

5.2 Land Use Plan

5.2.1 Land Use Precinct Guidelines

A number of planning controls contained in the Shire of Exmouth Town Planning Scheme relate to Learmonth Airport and Exmouth Aerodrome. Airport related planning controls have been developed to ensure that operation and development of the airport and aerodrome receives due recognition within the statutory planning framework.

These planning controls are consistent with the Planning and Development Act 2005 and Planning and Development (Local Planning Schemes) Regulations 2015 and are overseen by the Minister for Planning (WA) and the Western Australia Planning Commission (WAPC).

Public Purpose Reserve

Learmonth Airport is classified as a Public Purpose Reserve. Public Purpose Reserve is land that is used for public purposes in line with the objectives which outline the ultimate purpose of that reserve.

5.2.2 Terminal Expansion

It is proposed that there be a new departures lounge, expanded arrivals area, new offices, airline lounges, new baggage make-up area and ground storage equipment hardstand.

The 'heart' of the building would remain as the check-in area as it presently exists.

The northern arrivals can potentially be combined with the present sterile lounge waiting area to increase arrival capacity. This area expansion will be required when a 'tee' extension of the conveyor is required and if international charter flights are again re-established with their requirement for Customs and Quarantine service provisions. An alternate diversion by an international flight aircraft would also benefit from this greater holding capacity.

Parallel scheduling of RPT aircraft flights is an aviation phenomenon. This is competition and will lead to the arrivals area being under pressure unless capacity is eased.

The present 'breezeway' area is envisaged to be expanded by a doubling of its size, in a southern direction and airside as required, to provide a climate managed secure lounge area with café facilities inside – this is to accommodate the growth anticipated into the future and for parallel schedules. It is noted that the 'breezeway' was enclosed in 2011.

Quite feasible and desired by some helicopter operators is heliport lounge areas integral with the forward departure lounge area, albeit separate for independent management. The security provisions are triggered by jet aircraft on the ground and from 2012 the trigger became all RPT aircraft above 20,000 MTOW aircraft irrespective if they are jet or turbo-propeller. These detailed design criteria are a matter for an implementation brief on terminal expansion.

Suffice to identify in the planning context that all departures by RPT aircraft will be security screened. Further, all helicopter passengers also will require security screening when departing within the time zone of the RPT aircraft, unless helicopter departures are sufficiently separate to be recognised by the airport's Transport Security Plan (TSP) to be operating from a sufficiently distant GA apron. This common share of RPT apron by helicopters will only be possible in the early planning cycle as the expected growth of RPT passengers and RPT aircraft will necessitate additional RPT parking bay allocations and displacement of helicopters to separate northern parking bays.

There are currently 5 check in desks with 2 in use by Qantas at Learmonth Airport. Whilst new technologies exist for check in such as kiosk, online and mobile check in which are rapidly reducing the infrastructure requirements and footprint at larger airports, it is likely that regional

airports such as Learmonth Airport will operate on the current semi-automated basis for several more years.

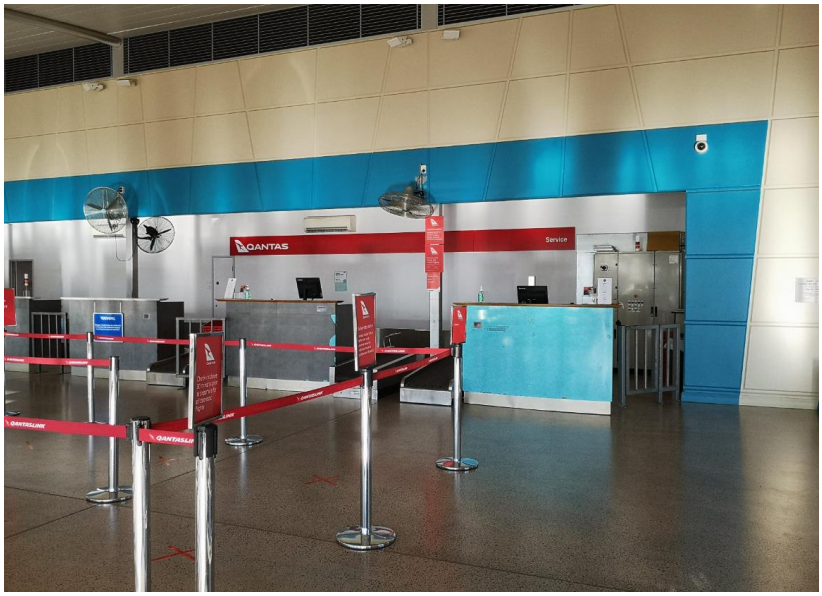


Figure 9 Existing Qantas check-in counters

Irrespective of the apron parking management and security provisions imposed by the Office of Transport Security, offshore helicopter passengers can readily cohabitate the terminal with the distance to walk to helicopter load out bays some 200-300 metres from the terminal.

The walk to helicopter from terminal distance has been broached with all major helicopter operators and this does not present an issue. After all the general travelling public are already well accustomed to walk distances of this order both within terminals and airside to embark aircraft at major domestic and international airport terminals. It is about the comfort afforded to the departing passenger within the terminal such that they are rested and ready to respond to the departure call.

The old terminal, now heliport, would need to be demolished to make way for the terminal expansion program, integrating all facilities presently provided in the zone. For instance, the baggage make-up would be conveyed to a point further south to the screening room and a make-up area at the southern end. This would form a new 'bookend' at the south. Adjoining would be airside access for freight consignment and primary airside access for emergency vehicles and services.

When the timing is appropriate to undertake expansion planning of the terminal this will need to be undertaken in consideration of and in conjunction with Defence future plans and undergo the required development approval processes.

5.2.3 Hire Car Operator Site Specific Development

Currently, all hire car operators provide their services within the terminal building at the arrivals gates. This is an optimum arrangement with the passenger/customer being met immediately on arrival. However, it can lead to capacity constraint within the terminal to the extent that dedicated facilities for hire car operators are often positioned external to the main building.

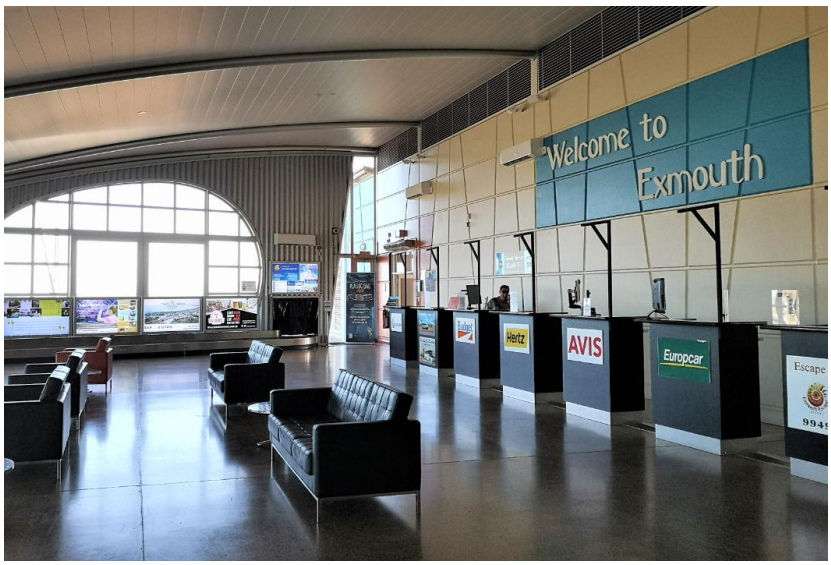


Figure 10 Current arrivals area with hire car operator desks

Good examples of these arrangements exist at Broome Airport and Hobart Airport where following on from bag collection good signage and walkways directs the passengers to the purpose-built hire car building/s. It enables greater numbers of operators to be established and their dedicated needs, and those of the customer, to be met. At Hobart the building is climate managed. At Broome the buildings are open to the climate.

The Master Plan Development plan 12525231-SK-001[8] has made provision for hire car operator site specific development.

The site is proximate to proposed additional car parking areas, which are envisaged to be required in the near future with demand on parking sites increasing. The commercial arrangement for hire car bay allocation is outside of the scope of the master plan but it is a means of the Shire of Exmouth to manage the allocation of sites and parking bays effectively. If commercial arrangements are agreed upon then the hire car operators will seek parking bays with good access and proximity to the terminal.

Future permanent car cleaning and servicing sites have been positioned alongside the access road into the airport. The advantage of the location is access without the need for future road construction. It is a timing and demand equation but once a major operator establishes then others will follow.

Development of one shared user-pays wash facility may be another consideration that would have less impact on land and water resources. As for other development, a detailed development approval plan would be required before any sites were constructed.

5.2.4 Car Park Expansion

New public car parking facilities to the north, as depicted by the development plan, is predicated upon the uptake of hangar sites. Similarly, the existing public car park could be developed to the east to abut the new access road once developed. Stormwater management would be a consideration should this occur. It is envisaged this would be a longer-term development.

Construction of a GA and/or helicopter hangar will place significant pressure on provision of car parking facilities with some 25 staff plus sub-contractors based locally.

The other trigger will be the car rental operators being provided with appropriate independent undercover facilities and their requirement for allocated bays in close proximity to the terminal.

[8] Appendix B – Learmonth Airport Development Plan

The development of access roads and undertaking site works is an early development project to meet demand in a timely manner.

5.2.5 Arrivals Bus Area

Relocation of the fuel storage facility and the Telstra repeater station would allow realignment of the arrivals bus turn around area. A larger radius and wider turning area, and a longer distance of contact along the face of the terminal would provide more appropriate movement area for buses accessing the arrivals area. These works could be completed at the same time as the car park expansion, and terminal expansion, provided the fuel storage facility and Telstra repeater station are relocated prior.

Figure 11 Existing arrivals bus loop

5.2.6 Fuel Storage

The aviation fuel dispensing business, like the hire car businesses, are robust commercial activities that benefit directly from the Shire of Exmouth's provision of suitable civil site facilities for the operation of RPT and GA aircraft.

It requires strong commercial agreements and this can be expressed by the cost of leasing or by throughput fees. Further, a sub-lease to a fuel company should be tested by tender to determine the value the business places upon operating out of Learmonth.

The fuel storage site is currently situated in a prime public area. Fuel is dispensed by tanker and the transport from depot to tarmac is a matter of timing.

This master plan has allocated a large site for future fuel storage to the south of the terminal reserve[9]. This is removed from the public domain and located on the airside boundary thus limiting potential access control breaches via the northern access gate.

Transportation to the apron areas would be along the apron edge. This will also allow fuel companies to avoid registration of their vehicles due to 'airside' only activity.

A new road reserve would be required to access the fuel storage site and restrict road train activity through the car park and in front of the terminals.

Aviation fuel product type at Learmonth Airport is envisaged to be limited to Jet A1 on the expectation that Exmouth Aerodrome will in the future have an Avgas supply outlet. Piston engine GA aircraft are typically light GA and will typically operate from this aerodrome, unless

[9] Appendix B 12525231-SK-001 – refer area marked 'Fuel Site'

providing charter services that connect with the RPT services, hence the appropriateness of development of an Avgas facility at Exmouth Aerodrome.

Consideration may also be given to small unleaded and diesel fuel supply being available within this site to service the hire car businesses and reduce the need for the hire car servicing sites having fuel storage and dispensing operations.

5.2.7 Airport Maintenance Facilities

It is proposed that when required new maintenance facility building/s be located in a similar area at the south-east corner of the Civil Site Lease, with due account for future access road needs to the helicopter hangar sites. The existing shed to the south of the SGS site would require relocation into this area due to the location of the road reserve for the fuel storage site.

Maintenance buildings are often located on a primary tier site (i.e. apron edge) due to the ease of access to the work location but with the limitation of land for future hangar sites and that major maintenance is not an obligation of the Shire of Exmouth on the airside runway and runway strip it is considered acceptable to be on a second tier site.

The ground handler also has a storage shed on a small sub-leased portion of land located within the proposed fuel site. This should be relocated to near or within the airport maintenance area.

5.2.8 Freight and Cold Storage Facility

With the expansion of the terminal building a dedicated freight area can be factored into the southern end. Freight at present is conveyed to and from the ground handling company in the mix with baggage carried generally.

As freight increases then a dedicated freight building or store maybe required. At Kalgoorlie-Boulder Airport for instance a dedicated freight transfer building on the airside interface has been constructed with gold as the primary air freighted item necessitating security guarding.

At Learmonth Airport air freight at present is predominantly general courier items that can be consigned in the mix of baggage on the RPT without special handling.

At the time of terminal expansion, the freight demand and characteristics should be further examined to determine the need, if any, for special storage or handling.

Cold storage is predicated upon air freight of significant volumes of perishable cargo. The seafood from Kailis is not air freighted overseas from Learmonth, rather consigned by road to Perth for airfreight.

The nature of air freight is such that it must be a high value product and it typically will travel in with general cargo of a passenger aircraft. This is because whole of aircraft for freight requires substantial product for viable operation.

5.2.9 Utility Services

Power

It is the Shire of Exmouth's desire to have an independent power supply line to the Civil Site and associated with this independence an emergency generated back-up supply. However, the ability to connect to the mains supply is subject to the state supply authority's capacity and capability to undertake. Independence would negate dependence upon Defence's central

emergency power system and with that avoid the consequences of potential load shed occurring from Defence's supply.

Self-generation of solar power may be a viable alternative to mains supply and as such a site has been identified for siting of a solar power generation plant. The proposed site is located in the north-east corner of the civil lease site and located away from airside development areas but close enough to the terminal to provide power reticulation to the terminal buildings and sub-leases. It will be subject to environmental and siting approvals by the Department of Defence.

Runway lighting will remain on mains power due to switching requirements between RAAF Learmonth and Learmonth Airport.

Sewage and effluent disposal

Consideration of sewerage and effluent disposal needs will be required when terminal building expansion is contemplated. The building has a peak design capacity for approximately 800 persons and a septic system to suit that was installed in 1999. Demand for a whole of civil site airport disposal system may not be warranted until passenger numbers exceed 300,000. This is a demand level that has typically triggered higher order investment in waste control featuring recycling of the liquid waste at other major regional airports.

For the foreseeable future each sub-lessee should be made responsible to provide within their lease area an independent sewerage disposal system.

Larger aircraft types may require servicing of on-board toilet systems at Learmonth Airport. This may be managed through toilet carts with effluent periodically collected by cartage operators for remote disposal. There may come a time, however, where an airside sewage connection point is required.

Water supply & firefighting systems

Water supply is mains quality from Learmonth RAAF Base. Existing and future operations at the civil site are not envisaged to have large water dependency. A 20,000L portable water tanker is available on site should Learmonth RAAF supply be unavailable.

Firefighting units installed at the airport have been modelled on the Compressed Air Foam (CAF) system whereby 20:1 (foam:water) ratio can be achieved. i.e. 200L of water will produce 4,000L of foam. On a demand basis it is not warranted for the Shire of Exmouth develop an independent water service.

Terminal redevelopment may necessitate dedicated fire service supply.

Stormwater management

Water catchment from buildings and roads with associated recycling are future considerations for the Shire of Exmouth for a potential second class water supply. With each development, management of storm water will be a development proposal consideration.

Communications infrastructure

Existing telecommunications is via a copper service provided directly from the Telstra repeater hut located within the Civil Lease Site. A second 36-strand service loops into the Civil Lease Site, although there is no availability on this supply. ADSL is not available at the site at this time.

Internet connection is available to the airport via microwave link from the Shire. This has been identified as being unstable and slow, however there is backup NBN installed.

Future land development will ensure service corridors are maintained for all utilities.

5.3 Airport Safeguarding Plan

5.3.1 National Airports Safeguarding Framework

The National Airports Safeguarding Framework (NASF) has been developed by the Australian Government to assist in improving planning outcomes on and near airports and under flight paths. The Framework aims to:

- Improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions;
- Improve community amenity by minimising noise sensitive developments near airports, including through the use of additional noise metrics; and
- Improve aircraft noise-disclosure mechanisms.

The NASF provides nine guidelines to assist State, Territory and Local Governments in regulating and managing:

- Impacts of aircraft noise (Guideline A)
- Risk of building generated windshear and turbulence at airports (Guideline B)
- Risk of wildlife strikes in the vicinity of airports (Guideline C)
- Risk of wind turbine farms as physical obstacles to air navigation (Guideline D)
- Risk of distractions to pilots from lighting in the vicinity of airports (Guideline E)
- Risk of intrusions into the protected airspace of airports (Guideline F)
- Protecting aviation facilities – communications, navigation and surveillance (Guideline G)
- Protecting strategically important helicopter landing sites (Guideline H)
- Risk in public safety areas at the ends of runways (Guideline I)

As the Framework applies to all airports in Australia, it is critical that it is considered when planning for and operating Learmonth Airport.

5.3.2 Airspace Protection Surfaces

International standards have been adopted which define two sets of invisible surfaces above the ground around an airport. The airspace above these surfaces forms the airport's protected airspace. These two surfaces are the:

- Obstacle Limitation Surface (OLS); and
- Procedures for Air Navigational Services—Aircraft Operations (PANS-OPS) surface.

The Department of Infrastructure and Regional Development describes the two surfaces as:

- The OLS as generally the lowest surface and is designed to provide protection for aircraft flying into or out of the airport when the pilot is flying by sight; and
- The PANS-OPS surface is generally above the OLS and is designed to safeguard an aircraft from collision with obstacles when the aircraft's flight may be guided solely by instruments, in conditions of poor visibility.

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

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

5.4 Implementation Plan

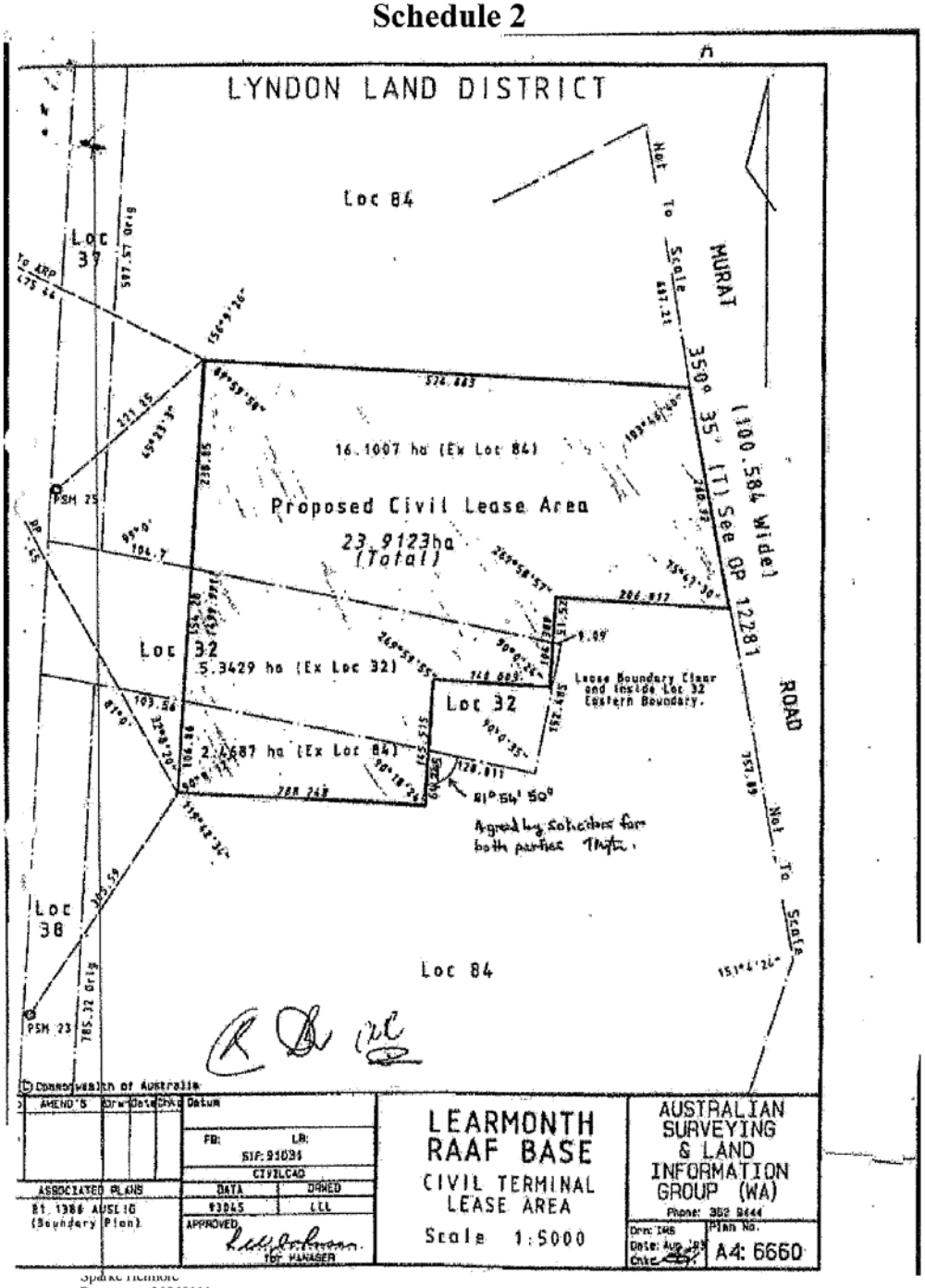
The following outlines the implementation plan for actions identified in the sections above.

Action	Report Section	Trigger Point	Indicative Timing
New taxiway to connect north end of apron to runway and expansion of RPT apron	5.1.1	Upon RAAF airside development, development of hangar sites or sufficient traffic to avoid congestion	< 5 years
Increase helicopter GA apron area	5.1.2	New helicopter operators requiring hangar facilities	5 - 10 years
GA fixed wing hangar site development and additional apron area	5.1.3	Interest from GA or small RPT operator	>10 years
Provision of ATC and ARFF	5.1.4	>500,000 passengers and >4,000 RPT movements per annum	> 10 years
Terminal expansion	5.2.2	>150,000 passengers per annum or regular concurrent Code 3C aircraft operations	5 - 10 years
Hire car operator site specific development	5.2.3	Upon demand	5 – 10 years
Car park expansion	5.2.4	Upon relocation of fuel facility with additional upon demand	< 5 years
Realignment of arrivals bus area	5.2.5	Upon relocation of fuel facility	< 5 years
Upgrade of airport maintenance facilities	5.2.7	Upon relocation of fuel facility with additional upon demand	< 5 years
Dedicated freight and cold storage facility	5.2.8	Upon demand	> 10 years
Independent power supply to Civil site	5.2.9	Upon completion of business case	< 5 years
Upgrade of sewerage and effluent disposal	5.2.9	Terminal expansion	5 - 10 years
Airside connection point for effluent disposal	5.2.9	Larger airframe operations	< 5 years

Appendices

Appendix A - Civil Site Lease Plan

Schedule 2



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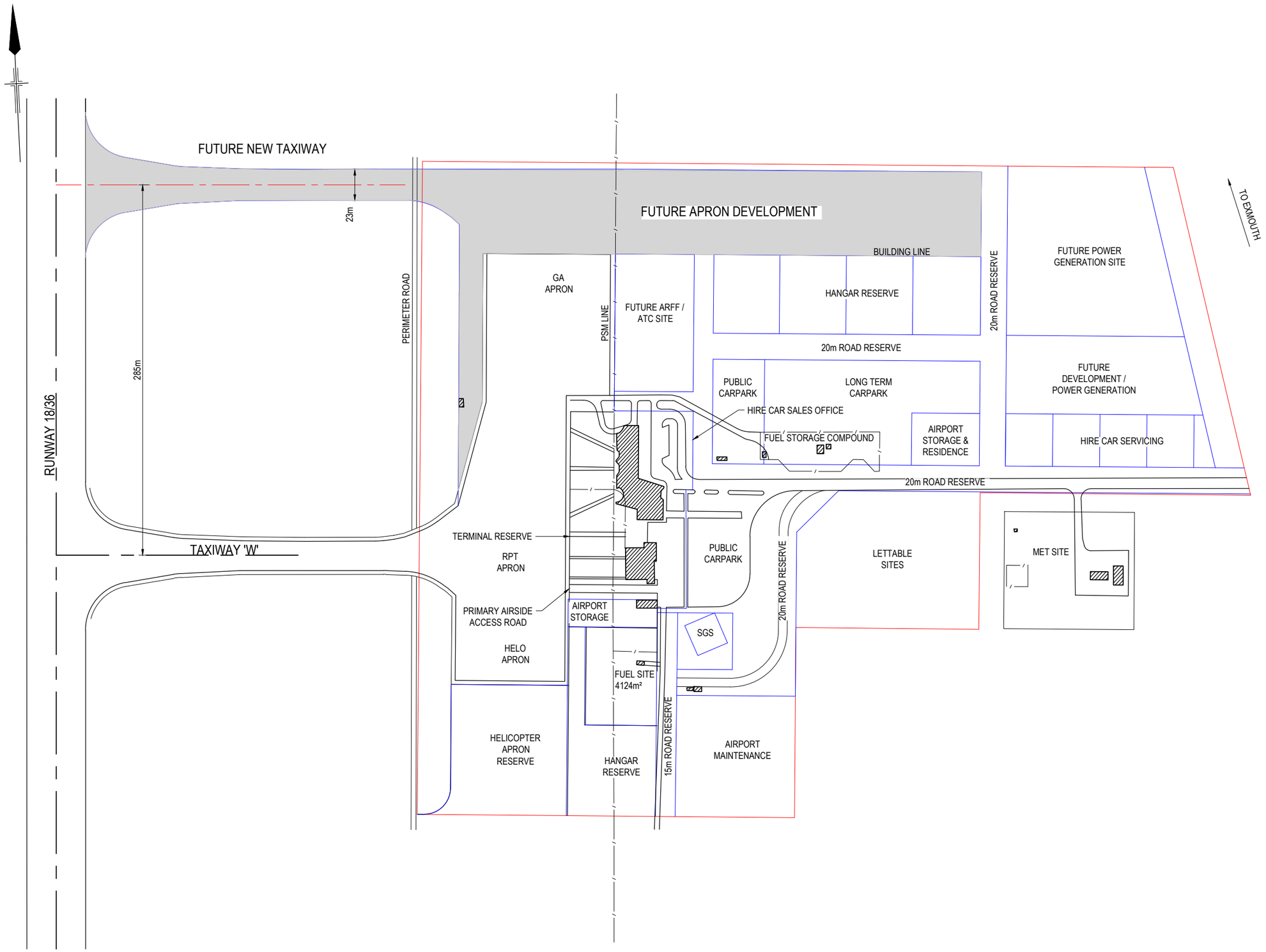
Author: SKL

Appendix B – Learmonth Airport Development Plan



LEGEND:

- CIVIL LEASE BOUNDARY
- PROPOSED LEASE BOUNDARY
- PROPOSED AIRCRAFT PAVEMENT

NOTES:

1. DIMENSIONS ARE PRELIMINARY

PRELIMINARY

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
A	ISSUED FOR CLIENT REVIEW		EH			

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Drawn	E. HARRIS	Designer	H. MARTIN
Drafting Check		Design Check	
Approved (Project Director)			
Date			
Scale	AS SHOWN	This Drawing must not be used for Construction unless signed as Approved	

Client **SHIRE OF EXMOUTH**
Project **LEARMONTH (RAAF) AERODROME**
Title **CIVIL LEASE AREA MASTER PLAN DEVELOPMENT**

Original Size **A1** Drawing No: **12525231-SK-001** Rev: **A**

Plot Date: 12 August 2020 - 3:27 PM Plotted by: Hayley Martin Cad File No: \\ghdnet.internal\ghd\AU\Perth\Projects\61\12525231\CADD\Drawings\12525231-SK-001.dwg

Appendix C – Exmouth South Structure Plan

LEGEND

- Structure plan boundary
- Commonwealth Land (Defence)
- Height limits apply (Defence [Areas Control] Regulations 1989)
- Public drinking water source protection (P1), limestone mining, conservation, landscape protection
- Mining haul road corridor
- Public drinking water source protection (P1), landscape protection, conservation, limestone mining investigations
- Public drinking water source protection (P1),
- Landscape protection corridor
- Rural - conservation and landscape protection
- Areas proposed for addition to the public conservation estate
- Proposed Conservation and Limestone Resource Management Reserve (CALM Act section 5(1)(h) Reserve)
- Pastoral land
- Pastoral, landscape significance, tourism and education investigations
- Public purposes
- Military heritage significance
- Marine supply base, lay-down area and general industry investigations
- Industry - special
- Proposed power station and indicative buffer
- Park, recreation and conservation opportunities
- Indicative aircraft noise buffer
- Aerodrome runway
- Aquaculture and marine based industry investigations
- Rural - residential
- Day use site (recreation and tourism)
- Tourism - wilderness camping investigation area
- Ocean
- Recommended marine protected area
- Drainage multiple use corridor
- 2 wd sealed road
- 2 wd unsealed road
- Proposed 4WD tourist track
- Bridle trail

PLAN 9

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Date:
October 2013

Scale:
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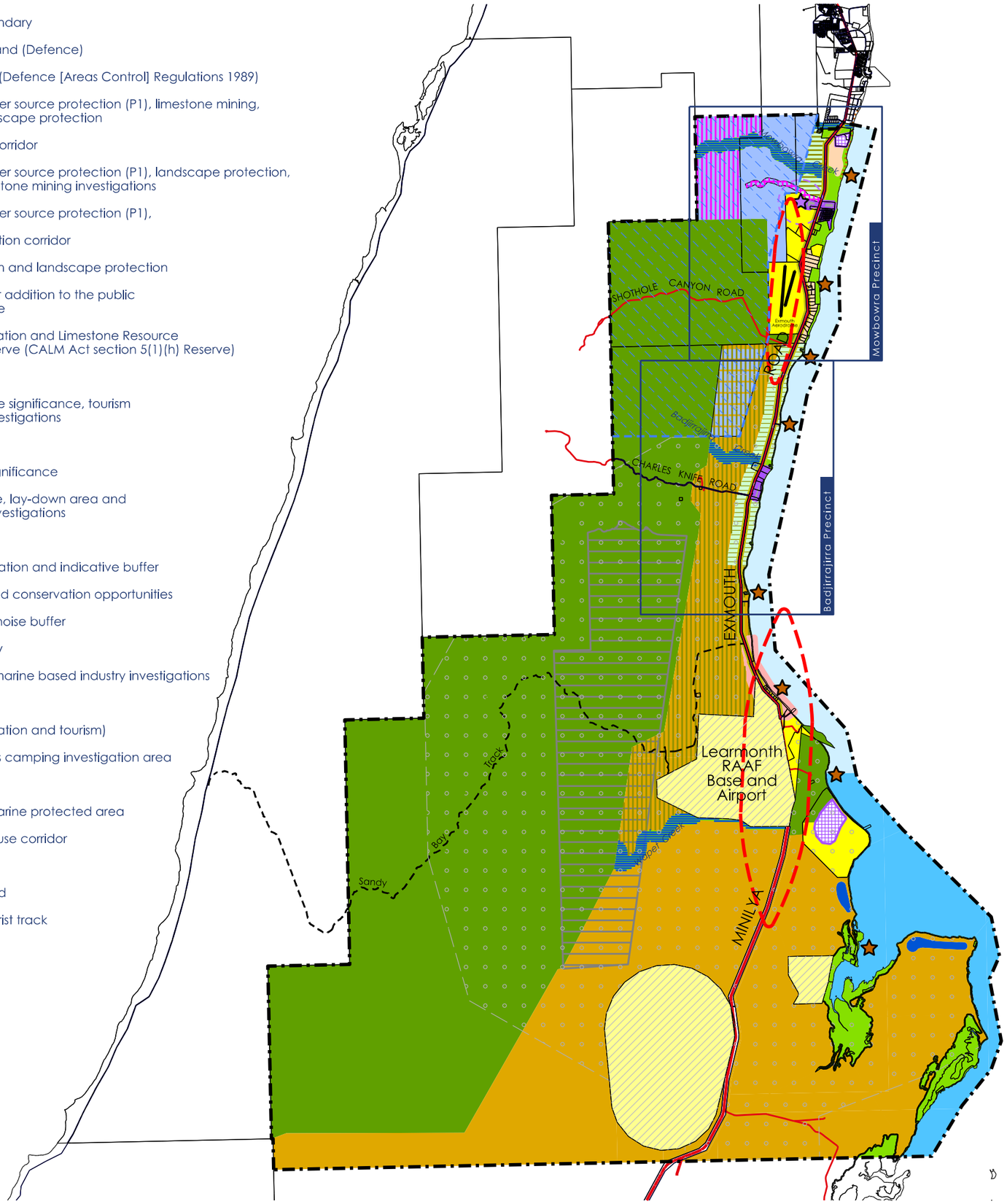
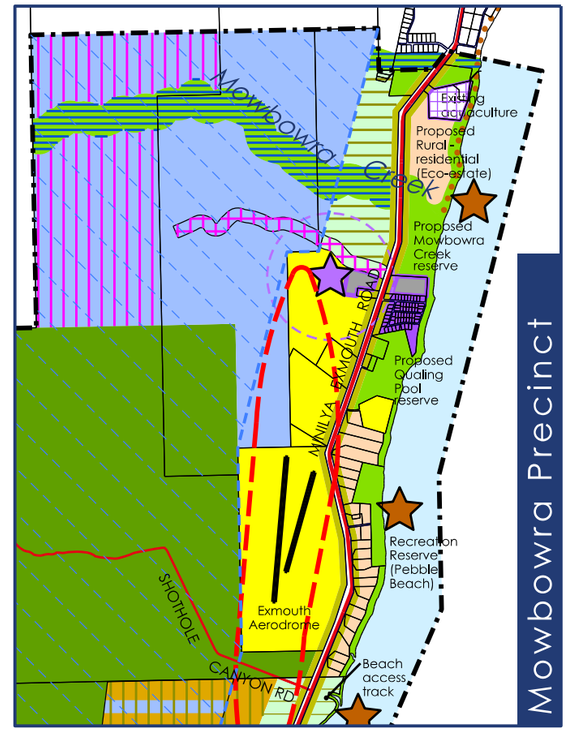
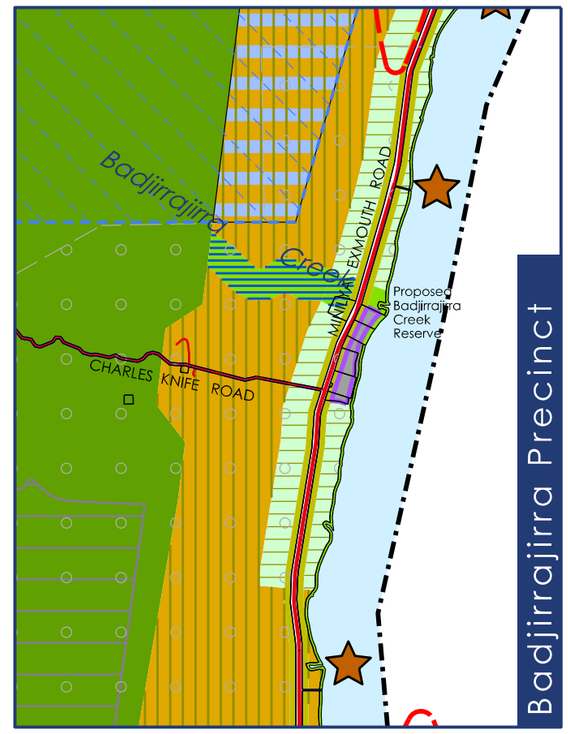
1:10 000 @ A1







EXMOUTH SOUTH
Structure Plan

TME

Structure Plan

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft A	H Martin, N Truong	N Hawley		N. Hawley		24 April 2020
0	H Martin, N Truong	N Hawley		N Hawley		22 December 2020

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