



**Townsville**  
Airport

# DRAFT MAJOR DEVELOPMENT PLAN

**TOWNSVILLE AIRPORT  
TERMINAL REDEVELOPMENT**

DATE: 12 05 2015  
Townsville Airport Pty Ltd  
Cnr Halifax Street and Stinson Avenue, Garbutt QLD 4810



# Table of Contents

Acronyms	4
Executive Summary	5
<b>1.0 Introduction</b>	<b>7</b>
1.1 Overview of the Proposal	7
1.2 Background	8
1.2.1 Project Justification	8
1.2.2 Project Objectives	9
1.3 Major Airport Development Approvals	11
1.3.1 Major Development Plan	11
1.3.2 Other Project Approvals	11
1.4 Structure of this MDP	13
1.5 Project Proponent	13
<b>2.0 Project Site</b>	<b>14</b>
<b>3.0 Proposed Development</b>	<b>16</b>
3.1 Existing Terminal	16
3.2 Proposed Design	16
3.2.1 Key Features	16
3.2.2 Built Form and Materials	16
3.2.3 Aviation Operation and Safety	17
3.2.4 Access to the Terminal	17
3.2.5 Services	17
3.2.6 Security	17
3.2.7 Fire Protection and Safety	17
3.2.8 Occupational Health and Safety	17
3.2.9 Equity of Access	18
3.3 Construction Phase Activities	19
3.3.1 Construction staging and timing	19
3.3.2 Transport and Access Arrangements	20
3.3.3 Airport Security	20
3.4 Operation of the Terminal	20
<b>4.0 Legislative and Policy Context</b>	<b>21</b>
4.1 Introduction	21
4.2 Consistency with Commonwealth Legislation	21
4.2.1 Airports Act 1996	21
4.2.2 Environment Protection and Biodiversity Conservation Act 1999	21
4.3 Consistency with Airport Lease	22
4.4 Consistency with the Townsville Airport Master Plan	23
4.5 Consistency with Townsville Airport Environmental Strategy	24
4.6 Consistency with State and Local Government Planning	25
4.6.1 State Planning Policy	25
4.6.2 Local Government Planning Schemes	27
4.7 Airport Development and Building Approvals	28
<b>5.0 Building Sustainability</b>	<b>29</b>
5.1.1 Energy Audit	29
5.1.2 Water Audit	30
5.1.3 Water and Energy Savings	30
<b>6.0 Assessment of Impacts</b>	<b>31</b>
6.1 Assessment Methodology	31
6.1.1 Scope of Assessment	31
6.1.2 Assessment Technique	33
6.1.3 Document Review	33
6.2 Aviation Operations and Safety	34

6.2.1	Windshear and Turbulence	34
6.2.2	Wildlife strikes	34
6.2.3	External Lighting	35
6.2.4	Obstacle Limitation Surface	35
6.2.5	Procedures for Air Navigation Services – Aircraft Operations	35
6.2.6	Airport Navigation Aids and Air Traffic Control Tower	36
6.2.7	Jet Blast	36
6.2.8	Pedestrian Safety	36
6.3	Traffic and Parking	36
6.3.1	Baseline Conditions	36
6.3.2	Assessment of Impacts	37
6.3.3	Mitigation Measures	39
6.4	Noise	39
6.4.1	Baseline Conditions	40
6.4.2	Assessment of Impacts	40
6.4.3	Management Measures	41
6.5	Air Quality	41
6.5.1	Meteorological Conditions	41
6.5.2	Assessment of Impacts	42
6.5.3	CASA Plume Rise Assessment	42
6.5.4	Management Measures	43
6.6	Waste Management	43
6.6.1	Baseline Conditions	43
6.6.2	Assessment of Impacts	44
6.6.3	Management Measures	45
6.7	Acid Sulfate Soil and Contaminated Land	46
6.7.1	Baseline Conditions	46
6.7.2	Assessment of Impacts	48
6.7.3	Management Measures	48
6.8	Stormwater Management	49
6.8.1	Baseline Conditions	49
6.8.2	Assessment of Impacts	49
6.8.3	Management Measures	50
6.9	Social and Economic Issues	51
6.9.1	Baseline Conditions	51
6.9.2	Assessment of Impacts	51
<b>7.0</b>	<b>Environmental Management</b>	<b>53</b>
7.1	Environmental Management Measures	53
7.1.1	Construction Environmental Management Plan	53
7.1.2	Operational Environmental Management Plan	53
<b>8.0</b>	<b>Community and Stakeholder Engagement</b>	<b>54</b>
8.1	Consultation Objectives	54
8.2	Exposure Draft MDP Consultation	54
8.3	Preliminary Draft MDP Consultation	54
8.4	Post Approval Consultation (Construction Phase)	55
<b>9.0</b>	<b>Conclusion</b>	<b>56</b>
<b>Appendix A</b>	<b>Existing Terminal Layout</b>	<b>57</b>
<b>Appendix B</b>	<b>Concept Plans</b>	<b>58</b>
<b>Appendix C</b>	<b>Development Limit Coordinates</b>	<b>59</b>
<b>Appendix D</b>	<b>MDP Checklist</b>	<b>60</b>

## Acronyms

Acronym	Description
ABC	Airport Building Controller
AEO	Airport Environmental Officer
AES	Airport Environmental Strategy
ANEF	Australia Noise Exposure Forecast
ASA	Airservices Australia
ASS	Acid Sulfate Soils
CACG	Community Aviation Consultation Group
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
DIRD	Department of Infrastructure and Regional Development
DoD	Department of Defence
DoE	Department of Environment
DoS	Degree of Saturation
EMP	Environmental Management Plan
EMS	Environmental Management Strategy
EPBC Act	Environment Protection and Biodiversity Act 1999
IHS	Inner Horizontal Surface
MDP	Major Development Plan
MoS	Aerodrome Manual of Standards
NASF	National Airport Safeguarding Framework
NES	National Environmental Significance
OEMP	Operational Environmental Management Plan
OLS	Obstacle Limitation Surface
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
TAES	Townsville Airport Environmental Strategy
TAPL	Townsville Airport Pty Ltd
TATR	Townsville Airport Terminal Redevelopment

## Executive Summary

Townsville Airport Pty Ltd (TAPL) has prepared this Major Development Plan (MDP) for the Townsville Airport Terminal Redevelopment. The need for this MDP is triggered by Section 89 of the *Airports Act 1996*.

### Proposed Development

TAPL proposes the redevelopment of its existing passenger terminal located on the eastern side of the Joint User Runway on Coral Sea Drive. Under the Townsville Airport Master Plan (2011) the internal redevelopment of the Townsville Airport terminal is a confirmed capital project scheduled for implementation 2011-2016.

The focus of this redevelopment is to rationalise the configuration of the existing terminal building to provide the safe, efficient and economic handling of domestic and international passengers. The development will:

- Reconfigure the existing terminal building to better manage, balance and respond to future changes in passenger profiles through the international/domestic swing lounge and increase the capacity of the terminal's baggage handling area
- Improve the movement of passengers throughout the existing terminal to overcome periods of severe congestion in the upper concourse which is a cause of frustration to passengers and presents a workplace health and safety risk
- Expand the security screening area, domestic arrivals/departures lounges and retail concessions space
- Provide an efficient, welcoming environment, harnessing the use of the latest technology, materials and a contemporary retail offering to deliver a superior customer experience

### Statutory and Policy Compliance

The proposed terminal building extension accounts for 3,300m<sup>2</sup> gross floor space that is an increase by approximately 20%. The proposal meets the definition of a "major airport development" under the *Airports Act 1996*. A MDP must be prepared (this document).

The purpose of a MDP in relation to an airport is to establish the details of major development that relates to the airport and is to ensure that a proposal is consistent with the airport lease and the master plan for the airport.

The approved Master Plan (2011) outlines the vision and strategic intent for the airport's future development over the next 20 years. With forecast passenger growth over the next 10 years, the Master Plan (2011) identifies the need for an additional 3,922m<sup>2</sup> of terminal space including expansions of the secure sterile area, passenger circulation and retail concessions space to ensure the safe, secure and efficient movement of passengers.

### Assessment of Impacts

Potential impacts associated with the proposed terminal redevelopment have been assessed in terms of both construction impacts and operational impacts. This assessment included consideration of aviation operations, consistency with state and local planning provisions and environmental issues. This includes acid sulfate soils, land contamination, stormwater management, air quality, noise, socio-economic benefits, traffic and waste management.

Key identified issues relate to:

- The management of airport security risk during construction
- How the terminal will continue to operate 'business as usual' during the 12 month construction period

The proposal incorporates mitigation measures to address the potential aviation and environmental issues. These will be specifically addressed through the preparation and implementation of a Construction Environment Management Plan (CEMP).

The construction and operation of the terminal redevelopment will result in a number of social benefits for the local area and provide direct and indirect employment opportunities during construction and operation.

The MDP demonstrates the proposed development and represents an acceptable balance between development of the airport and mitigation of potential impacts.

### Environmental Management

Construction activities have the potential to cause environmental impacts if not effectively monitored and controlled. Environmental management of construction and operational impacts will be undertaken in accordance with the Townsville Airport Environmental Strategy. Construction impacts will be specifically managed through the preparation and implementation of a CEMP. The CEMP will be prepared by the appointed contractor.

### Consultation Process

Communication and consultation with a broad range of stakeholders is a critical component in the delivery of a robust, transparent and effective MDP process under the *Airports Act 1996*. Members of the community are encouraged to consider this MDP through the statutory public exhibition period of 60 days.

In addition to the public exhibition period, TAPL is consulting on an ongoing basis with various Commonwealth, State and Local Government representatives as well as a range of other stakeholders with an interest in the terminal redevelopment at Townsville Airport.

Following public exhibition of the Preliminary Draft MDP, the document will be revised to take into consideration any public comments received. Submissions received and consultation outcomes will be summarised into a Supplementary Report and submitted with a Draft MDP to the Minister for Infrastructure and Regional Development for approval.



# 1.0 Introduction

## 1.1 Overview of the Proposal

TAPL has prepared this MDP for the **Townsville Airport Terminal Redevelopment**.

The need for this MDP is triggered by Section 89 of the *Airports Act 1996*. A MDP is required as the terminal redevelopment extends the building's gross floor space by more than 10%. The existing terminal has a total floor space of 16,700m<sup>2</sup> which will be increased to 20,000m<sup>2</sup>. The extension accounts for a total 3,300m<sup>2</sup> floor space representing an increase of approximately 20%.

Under the approved Townsville Airport Master Plan (2011) the internal redevelopment of the Townsville Airport terminal is a confirmed capital project scheduled for implementation between 2011-2016. The focus of this redevelopment is to rationalise the configuration of the terminal building to provide the safe, efficient and economic handling of passengers. In seeking approval for this MDP, TAPL want to preserve the terminal as the gateway to the Townsville and North Queensland Region, at the same time, modernising a facility to be sufficiently flexible to satisfy current and future passenger needs. The development provides the opportunity for Townsville Airport to integrate environmentally sustainable principles as a step towards attaining International Airport Carbon Accreditation.

The terminal building, which is the subject of this MDP, is located on the eastern side of the Joint User Runway on Coral Sea Drive.

The proposed development will comprise the following key features:

- Extension of the upper concourse to provide two new club lounge facilities
- Extension of the ground floor to relocate engineering offices
- Reconfiguration of the existing international departure lounge to function as a swing international/domestic lounge for arrivals/departures area
- Rationalisation of existing, underutilised office space to increase the overall capacity of the airside seating areas in the arrivals/departures area
- Upgrade and expansion of the security screening area to reduce landside congestion at the northern end of the terminal building
- Rationalisation of the existing check-in area to accommodate additional check-in kiosks
- New escalator for access to upper concourse level to improve circulation and safety
- Contemporary retail offering airside that aligns with the current customer profile demands which includes an increase in retail floor space to 1,545m<sup>2</sup> incorporating three additional retail facilities
- Extension of the ground floor to provide additional baggage handling facilities to relieve existing areas of congestion

The proposed development is shown in plans contained in **Appendix B**.

The proposed development seeks approval to expand the ground floor terminal building envelope by a total of 1,410m<sup>2</sup>. The construction of two new airport lounges on the upper concourse will increase the floor space by 1,890m<sup>2</sup>.

The timeframe for the proposed construction will be subject to approval of this MDP. It is planned to commence early 2016 with construction scheduled for approximately 12 months. The terminal will continue to operate throughout the construction period. Details of the proposed construction staging and management of construction is described in **Section 3.3**.

The final design, configuration and materials selection of the proposed development will be subject to detailed space planning investigations and construction feasibility by TAPL.

## 1.2 Background

### 1.2.1 Project Justification

Townsville Airport has experienced a variable, yet overall steady, growth in its operations for the past decade with no significant improvements to the core airport infrastructure since 2003. This growth of 5-6% per year has prompted TAPL to strategically plan how the airport terminal may best accommodate its passengers.

The airport terminal building caters primarily for domestic operations but has the capability to provide international services. Constructed in 1981 with upgrades in 1997 and 2003, the existing terminal building is an aging asset that needs significant layout and functional improvements to accommodate existing and projected passenger growth and address the capacity constraints.

Since 2003, passenger numbers at the airport have been growing at variable annual rates of between 2.3% and 11% to reach 1.6 million passengers in 2013/14. The forecast growth for the next 10 years has been estimated at 3-4% per annum to achieve 3.6 million passengers by 2030.

The entry of low cost and value carriers, significant increases in connecting flights from Townsville and fluctuations in the economic climate over the past 10 years have changed the composition of passengers since the terminal building was last upgraded. Looking forward, international commercial services at the airport are not expected to grow significantly, with the primary market being domestic services.

Long-term passenger and aircraft movement forecasts for Townsville Airport were considered under the Master Plan (2011) determining the future use of the passenger terminal and plan development for the terminal precinct. It was established within the Master Plan (2011) that the existing terminal footprint is underutilised. The international facility and large sections of the office areas are used infrequently whilst other parts of the terminal are experiencing severe passenger congestion.

Airbiz<sup>1</sup> undertook a study for TAPL in June 2014 to determine the existing terminal space capacity and busy hour passenger volumes. Results of this study are shown in **Table 1** overleaf. The data indicates that the key areas of congestion are the domestic departure lounge, currently at capacity, and the baggage make up and reclaim areas which are reaching capacity. Queuing space is also limited at the entrance to the secure screening area and a cause of congestion. These three key services are clustered at the northern end of the terminal building.

Customer feedback<sup>2</sup> has indicated that satisfaction levels with the terminal facilities are progressively declining. The lack of adequate space in the airport lounge facility, conflicting passenger flows in the upper concourse and limited offerings of food and beverage in airside areas are key items of dissatisfaction.

The operational requirements of major airlines are also evolving and the increasing numbers of corporate travellers are driving an increasing demand for facilities such as airport lounges and priority boarding services to improve the overall passenger experience.

Under the Master Plan (2011) the internal redevelopment of the Townsville Airport terminal is a confirmed capital project scheduled for 2011-2016. The capacity of airport infrastructure must be such that it provides the targeted levels of efficiency and customer service at the peak demand periods.

An internal redevelopment of the terminal is required to allow the building to function more efficiently and effectively, particularly during the peak travel times. The **Townsville Airport Terminal Redevelopment** described in this MDP will rationalise passenger flows and reduce congestion by improving utilisation across the terminal footprint as a whole. This will be achieved through reconfiguration of existing floor layouts and relatively modest volumes of first floor infill development, that does not substantially increase the overall building floor areas or impact on the scale and massing of the existing terminal.

<sup>1</sup> Airbiz (2014) Townsville Airport Terminal Planning, Kick-Off Workshop Presentation, 20 June 2014.

<sup>2</sup> Airport Service Quality Program, an Airports Council International Initiative, and annual passenger survey outcomes (2013/2014).



Facility	Facilities	Capacity	2014 Busy Hour	Comments
Check in				
Conventional counters	23 no.	900 pax/hr	392 pax/hr	67% of 585 pax (current busy hour)
Kiosks	10 no.	555 pax/hr	123 pax/hr	21% of 585 pax (current busy hour)
Security				
Security units	2 no.	742 pax/hr		Sufficient processing capacity however queuing space is limited
Departures Lounge				
Seats (including concourse)	380 no.	494 pax/hr	585 pax/hr	Currently at capacity
Area	788m <sup>2</sup>	536 pax/hr	645 pax/hr	Currently at capacity + boarding operations will further impact the use and availability of the upper level departure concourse
Baggage Make Up				
Make up positions	16 no.	4-5 code C departures in make up period	5 code C departures in make up period	Reaching capacity
Baggage Reclaim				
Reclaim units	2 x 35m	4-6 code C arrivals/hr	6 code C arrivals/hr	Currently at capacity
Arrivals Hall				
Area	1,000m <sup>2</sup>	788 pax/hr	679 pax/hr	Reaching capacity

Table 1. Current airport capacity for the 2014 busy hour

## 1.2.2 Project Objectives

The approved Master Plan (2011) outlines the vision and strategic intent for Townsville Airport's future development over the next 20 years. With forecast passenger growth over the next ten years, the Master Plan (2011) identifies the need for an additional 3,922m<sup>2</sup> of terminal space including expansions of the secure sterile area, passenger circulation and retail concessions space.

To achieve this, the Master Plan (2011) outlines a number of development objectives required by a proposal. These development objectives include:

- Maximise the use of existing assets and ensure the capacity and provision of Townsville Airport's infrastructure is commensurate with forecast growth in passenger and aircraft movement
- Ensure the safe, secure and efficient movement of passengers and aircraft
- Achieve an acceptable balance between the development of the airport and mitigation of environmental impacts including aircraft noise
- Protect the airport from the fluctuating aviation industry by diversifying revenue streams, capitalising on aviation compatible development potential of the airport site
- Deliver high levels of service, quality and facilities

In developing this proposal, TAPL has given consideration to the abovementioned development objectives and specific Terminal Precinct key development objectives set out in the Townsville Airport Master Plan (2011). In particular, the proposed development will:

- Reconfigure the existing terminal building to better manage, balance and respond to future changes in passenger profiles through the international/domestic swing lounge and increased capacity of baggage handling
- Improve the movement of passengers throughout the existing terminal to overcome severe congestion in the upper concourse that is the cause of frustration to passengers and presents a workplace health and safety risk
- Expand the security screening area, domestic arrivals/departures lounges and retail concessions space

- Provide an efficient, welcoming environment, harnessing the use of the latest technology, materials and a contemporary retail offering to deliver a superior customer experience
- Contribute towards Townsville Airport's commitment that all buildings achieve a minimum four-star (Greenstar) energy rating

## 1.3 Major Airport Development Approvals

### 1.3.1 Major Development Plan

In accordance with the *Airports Act 1996*, a MDP must be prepared where a major airport development is proposed and the various triggers are defined under Section 89 of the *Airports Act 1996*. The proposal falls within the definition of a “major airport development” under Section 89 as it involves:

*“(d) extending a building that is wholly or principally for use as a passenger terminal, where the extension increases the building’s gross floor space by more than 10%.”*

The existing terminal has a total floor space of 16,700m<sup>2</sup> which will be increased to 20,000m<sup>2</sup>. The extension accounts for a total 3,300m<sup>2</sup> floor space representing an increase of approximately 20%.

The purpose of a MDP in relation to an airport is to establish the details of major development that relates to the airport and is to ensure that proposal is consistent with the airport lease and the master plan for the airport. The MDP approvals process is detailed in **Figure 1**. There are a number of steps in the preparation of a MDP, as follows:

- 1) Prepare an Exposure Draft MDP, which is a comprehensive report about the project including, among other criteria:
  - A detailed outline of the development
  - Consistency with the approved Master Plan (2011), including the Environment Strategy
  - Consistency with state and local planning provisions within the relevant locality and justification for any inconsistencies
  - Where appropriate, the effect that the development is likely to have on noise levels/flight paths
  - An assessment of environmental impacts that might be associated with the development
- 2) Publicly exhibit the Preliminary Draft version of the MDP and revise the document in line with comments received.
- 3) Submit the Draft MDP to the Commonwealth Minister for Infrastructure and Regional Development. The Minister will then refer the Draft MDP to the relevant agencies and departments to receive advice prior to making a formal decision to approve or refuse the application. The Minister will take into consideration the views of the Civil Aviation Safety Authority and Airservices Australia in so far as they relate to safety aspects and operational aspects of the proposed development.

The proponent is required to comply with the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* in relation to environmental impact and assessment of projects on Commonwealth land and/or projects which may have a significant impact on a matter of national environmental significance.

### 1.3.2 Other Project Approvals

Subsequent to the finalisation of the MDP for the **Townsville Airport Terminal Redevelopment**, further approvals are required under the *Airports Act 1996*. These include:

- Acquisition of Building Permits, which are to be granted by the Airport Building Controller (ABC) in accordance with the *Airports (Building Control) Regulations 1996*
- Submission of Construction and Operational Environmental Management Plans (EMP) to the Airport Environment Officer (AEO)

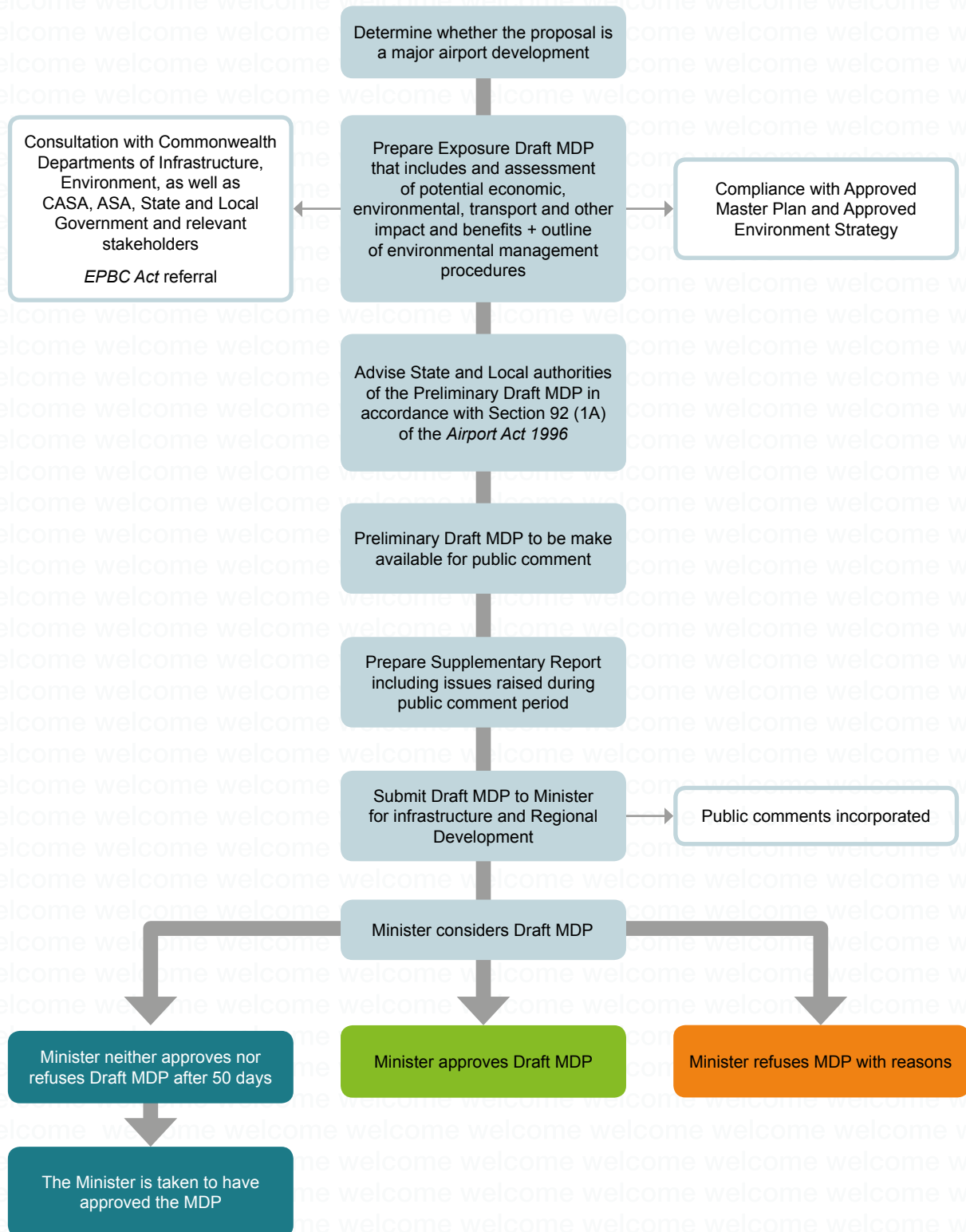


Figure 1. Major Development Plan Process

## 1.4 Structure of this MDP

This MDP is structured as follows:

- **Section 2.0** describes the site and surrounding environment
- **Section 3.0** describes the proposed development that is the subject of this MDP
- **Section 4.0** outlines the legislative context within which the project is being developed, having regard to relevant federal, state and local legislation and policy
- **Sections 5.0** outlines the sustainability elements of the design
- **Section 6.0** provides the aviation and environmental impact assessment and recommends mitigation measures to manage the potential effects of the proposal
- **Section 7.0** outlines how the environmental management plans will manage the effects of the proposal
- **Section 8.0** describes the consultation process for the MDP
- **Section 9.0** is a conclusion of the report.

**Appendix A** demonstrates the existing terminal layout, **Appendix B** contains the concept plan of the proposal, **Appendix C** demonstrates development limit coordinates and Appendix D presents the *Airports Act 1996* requirements for an MDP.

## 1.5 Project Proponent

Queensland Airports Limited (QAL) is the 100% owner and operator of Townsville, Gold Coast, Longreach and Mount Isa airports.

All works associated with the proposed development are on land located within the existing boundary of Townsville Airport.

Pursuant to Section 76 of the *Airports Act 1996*, Townsville Airport Pty Ltd is the airport lessee company for Townsville Airport. Townsville Airport Pty Ltd will be referred to in this MDP as the entity managing and operating Townsville Airport.

The proponent of the proposed development for the purposes of this MDP is:

Townsville Airport Pty Ltd  
PO Box 7636  
Garbutt, Queensland, 4814

The contact person in connection with this proposal is:

Mr Kyle Sherry  
Project Manager  
Queensland Airports Limited  
Phone: (07) 5589 1100

## 2.0 Project Site

Townsville Airport is situated on a coastal flood plain between Rowes Bay and the Bohle River. The airport is located approximately five kilometres west of the Townsville city centre. The northern end of the main runway is one kilometre from the coast, whilst the Townsville Airport terminal is approximately two and a half kilometres inland.

Townsville Airport is owned by the Commonwealth and is jointly operated by the Department of Defence and TAPL under terms of the Joint User Deed ratified on 9 June 1998.

The airport consists of the military area, civil area and joint user area. The civil area is managed by TAPL and the joint user area is controlled by the Department of Defence and used by both civil and Defence aircraft. **Figure 3 in Section 4.3** provides a map of the civil area, military area and joint user areas at Townsville Airport.

The proposed development is located within the existing passenger terminal (civil area) located on the eastern side of the Joint User Runway on Coral Sea Drive as illustrated in **Figure 2**. The real property description of the civil lease area is Lot 2 in RP 748023, Lot 21 in RP 748033 and Lot 7 in RP 802404.



Figure 2. Proposed Development Site (Source: Google Earth (2014))

The terminal building and associated car parking areas are defined as the Terminal Precinct and are accessed by Stinson Avenue from John Melton Black Drive or Halifax Street. The site is surrounded by commercial, freight and general aviation facilities. The entire site comprises constructed hard surfacing that has been heavily earth worked with no naturally occurring native vegetation or wildlife habitat in proximity to the terminal building. The existing terminal building was built in 1983 with a mixture of lightweight zinc-anneal sheeting / insulation and tilt panel and blockwork construction. Landscaped amenity gardens and grass areas exist within the terminal precinct.

Land uses adjacent to Townsville Airport include residential development to the south-east and industrial zoning to the south-west, approximately 200m from the terminal precinct.

Natural land features downstream of Townsville Airport include:

- Townsville Town Common Conservation Park – this is a seasonal wetland and protected area which is home to a number of vegetation communities and fauna species
- Bohle River Fish Habitat Area – an estuarine and wetland buffer zone containing extensive stands of mangroves, saltmarsh and unvegetated claypans which are home to several different species of marine life
- Cleveland Bay – this area has commercial, recreational, indigenous and fisheries values, as well as providing ecologically valuable marine habitats
- Great Barrier Reef Marine Park – TAPL recognises the Great Barrier Reef is also a receiving marine habitat area. This area is a World Heritage Site and of great ecological importance, supporting a varied diversity of life including many vulnerable and endangered species



## 3.0 Proposed Development

### 3.1 Existing Terminal

The existing terminal building has a gross floor area of 16,700m<sup>2</sup>. The ground floor of the terminal provides the majority of services including check in, security screening, international departure lounge and baggage collection, domestic departure lounge, Qantas club lounge and a limited retail offering. The total floor area of the ground floor is 13,400m<sup>2</sup>.

The first floor of the terminal is considered a mezzanine with an existing floor area of 3,300m<sup>2</sup>. This area functions as the domestic departure upper concourse.

### 3.2 Proposed Design

#### 3.2.1 Key Features

The proposed development will comprise the following key features:

- Extension of the upper concourse to provide two new lounge facilities (990m<sup>2</sup> and 900m<sup>2</sup> each respectively) on the mezzanine floor
- Extension of the ground floor building area by 410m<sup>2</sup> to relocate engineering offices
- Extension of the ground floor building by 1000m<sup>2</sup> to provide one additional baggage makeup carousel and one additional baggage claim carousel to relieve congestion
- Reconfiguration of the existing international departure lounge to function as a swing international/domestic lounge (total area 680m<sup>2</sup>) for arrivals/departures area
- Rationalisation of existing office space to increase capacity of the airside seating areas in arrivals/departures area
- Upgrade and expansion of the security screening from a total area of 125m<sup>2</sup> to 490m<sup>2</sup> to reduce landside congestion at the northern end of the terminal building
- Rationalisation of the existing check-in area to accommodate additional check-in kiosks
- New escalator stairs for access to upper concourse level to improve circulation and safety
- Contemporary retail offering airside that aligns with the current customer profile demands which includes an increase in retail floor space to 1,545m<sup>2</sup> incorporating three additional retail facilities
- Temporary construction areas and a dedicated construction compound will be development to support the redevelopment.

Concept design drawings showing the existing terminal layout and proposed development. These drawings are provided in **Appendix A** and **Appendix B**.

#### 3.2.2 Built Form and Materials

The terminal redevelopment will be accommodated within the single building structure. The total ground floor area extension will be a maximum of 1,410m<sup>2</sup> with a first floor area extension of 1,890m<sup>2</sup>. The total increase in floor area for the development will be 3,300m<sup>2</sup>, which constitutes 20% of the buildings gross floor space.

The ground floor extension for the baggage handling facilities at the north of the terminal and the engineering offices at the southwest of the terminal will be onto the existing apron. The development limits and coordinates are provided in **Appendix C**.

The roof extension will be consistent in height with the existing structure and extend 6m airside over the apron beyond the existing upper concourse roof canopy. The existing building height of 9m above the civil apron is lower than the maximum height requirements prescribed by the Obstacle Limitation Surface regulations and the Approved Master Plan (2011) (refer to **Section 6.2.3**). The building design of the terminal redevelopment has not been finalised to a detailed design level, however the materials and finishes proposed will be consistent with the existing terminal building. Materials and finishes will be of high quality, durable products appropriate for airport operations. External cladding will be non-reflective and will be selected to prevent glare to pilots and not interfere with the aviation function. All materials shall be in accordance with Australian Standards and consistent with National



Airports Safeguarding Framework (NASF) Guideline E. Internal materials selection and finishing treatments will be subject to detailed design however are envisaged to reinforce the overall branding identity of Townsville Airport as the “Gateway to North Queensland”.

### **3.2.3 Aviation Operation and Safety**

Throughout design, construction and operation of the terminal development, adherence will need to be maintained to any applicable Airservices Australia (ASA), Civil Aviation Safety Authority (CASA) and Townsville Airport’s operational requirements.

As this MDP includes expansion to the adjacent apron, any temporary or permanent reconfigurations of aircraft parking positions and circulation routes will need to be in full compliance with the relevant sections of Part 139 of the Aerodromes Manual of Standards (MOS).

### **3.2.4 Access to the Terminal**

There are no long-term proposed changes to access arrangements for the terminal building or parking facilities for passengers, staff or deliveries as part of this MDP. Construction related traffic and temporary access arrangements are detailed in **Section 3.3.2**.

### **3.2.5 Services**

The following services will require upgrading and/or extending into the terminal building to facilitate the redevelopment:

- Wastewater and sewage
- Water supply
- Stormwater drainage
- Power supply/electricity
- Telecommunications

Appropriate consultation with local servicing authorities will be conducted by TAPL during the detailed design phase to ensure continuity of service by the local utility networks. It will be a requirement of the Construction Environmental Management Plan that all relevant approvals be obtained from the relevant local authorities for these services.

### **3.2.6 Security**

A detailed review of the airport security risk assessment will be completed, subject to MDP approval, as part of project development to ensure incorporation of applicable front of house security measures.

### **3.2.7 Fire Protection and Safety**

The fire booster pump system is currently classed as being compliant with Australian Standards due to grandfather clauses relating to the existing terminal building. The proposal will nullify these grandfather clauses and the whole terminal building will need to be fully compliant with current Australian Standards and Building Codes. To meet current standards the existing fire ring main will need to be increased in size and additional water storage will need to be installed. The preferred location for this is close to the terminal building to reduce the load on the booster pumps pressurising the whole fire system. Further detailed planning will enable the detailed design of the upgraded fire systems.

### **3.2.8 Occupational Health and Safety**

Occupational health and safety requirements within and adjacent to the proposed development site will be in accordance with relevant TAPL standards and applicable statutory requirements.

Australian Standard (AS 2021-2000) ‘Acoustic Noise Intrusion – Building Siting and Construction’ (Standards Australia 2000) recommends that the maximum noise level from aircraft noise inside ‘commercial buildings, offices and shops’, specifically ‘shops, supermarkets and showrooms’ should be limited to 75dBA. The design and construction of the buildings on site will be consistent with the provisions of this standard.

### 3.2.9 Equity of Access

Provisions for People with Disabilities will comply with applicable codes and will include:

- Accessible toilets for People with Disabilities
- Generally uniform floor throughout the interior of the buildings
- Provisions for boarding and disembarking from aircraft

The requirements for People with Disabilities have been considered during the design phase and the appropriate measures incorporated into the concept design.

### 3.3 Construction Phase Activities

#### 3.3.1 Construction staging and timing

As a component of the project development phase, TAPL will prepare a detailed development program specifying milestones and completion dates for the critical design and construction processes. An indicative schedule for the major milestones is provided in **Table 2**.

Key Milestones	Timing
Assessment of Draft MDP and approval by the Minister	Q2 2015
Project development and design	Q2 2015 – Q4 2015
Construction	Q1 2016 - Q4 2016
Practical completion	Q4 2016

Table 2. Major Milestones and Timeframes

**Table 3** below outline the construction staging to demonstrate how TAPL intends to undertake construction works whilst keeping airport operations business as usual.

Stage	Main activities	Timing (Month)
1	<ul style="list-style-type: none"> <li>- Early works demolition of stairs, store and lift at southern end of terminal</li> <li>- Continuity of access to upper concourse provided via alternate existing escalator and lift</li> <li>- Offline construction of a mezzanine lounge and ground floor engineering offices</li> <li>- Open new a mezzanine lounge and engineering offices for operation</li> </ul>	1-4
2	<ul style="list-style-type: none"> <li>- Demolition of existing empty office space</li> <li>- Construction of new ground floor airside departure lounge and food/beverage retail (isolated from public access)</li> <li>- Passengers continue to use existing security screening and domestic departure lounge</li> </ul>	3-5
3	<ul style="list-style-type: none"> <li>- Offline construction of a mezzanine lounge</li> <li>- Open new a mezzanine lounge for operation</li> </ul>	4-7
4	<ul style="list-style-type: none"> <li>- Demolish existing ground floor Qantas Lounge and redevelop for domestic departure lounge and food/beverage retail</li> <li>- Close and redevelop international departure lounge for new security screening facilities</li> <li>- Redirection of approximately one charter flight/month from the international departures to alternative apron parking and process passengers through domestic departures</li> <li>- Open new security screening facilities and access to airside departure lounges and retail</li> <li>- Relocate Aromas Café and Newslink to new airside retail</li> </ul>	7-10
5	<ul style="list-style-type: none"> <li>- Demolish existing security screening and Aromas Café and Newslink for redevelopment</li> <li>- Continuity of access to the upper concourse will be provided at the southern end of the departure lounge</li> <li>- Construction and commissioning of baggage hall expansion</li> </ul>	11-13
6	<ul style="list-style-type: none"> <li>- Redevelop landside café, car rental offices (back of house) and toilet facilities adjacent to terminal entrance</li> </ul>	12-13

### 3.3.2 Transport and Access Arrangements

John Melton Black Drive will be the primary access route for all construction vehicles. This route currently functions at less than 30% capacity with the majority of passenger movements using Halifax Street.<sup>3</sup>

A construction compound will be established on the north-eastern corner lot of Stinson Avenue and John Melton Black Drive. The site is currently vacant with direct access via Stinson Avenue. This compound is planned to provide parking for the construction workforce, plant and equipment and material laydown. Due to the operation of a live airport, the contractor will be required to submit details of the proposed temporary lighting to Townsville Airport for approval. These details will be included in the Construction Environmental Management Plan. The Contractor is responsible for ensuring that the requirements as stipulated in Section 9 of the CASA Manual of Standards Part 139 are adhered to at all times during the works.

Traffic and parking are discussed in more detail in **Section 6.3**.

### 3.3.3 Airport Security

The proposed development is located within secure areas and aviation related operations. It is mandatory that all construction activities comply with *Aviation Transport Security Act 2004* and *Regulations 2005* in addition to the Townsville Airport's Transport Security Plan.

A detailed review of the airport security risk assessment will be completed, subject to MDP approval, as part of project development to ensure appropriate control of secure areas. The risk assessment will consider, as a minimum:

- The risk of construction related debris creating a Foreign Object Debris hazard to aircraft operations on the airfield/aprons
- Opportunities to establish perimeter security fencing between the site and the existing apron to allow for all construction to be conducted landside (unless otherwise fenced and zoned). All plans, specifications and full Scope of Work will be submitted to Airport Security Services for approval prior to any work commencing
- Vehicle access controls (routes and authorisations) to secure areas and Airside works as defined under the Townsville Airport's Transport Security Plan

## 3.4 Operation of the Terminal

During the construction phase, the terminal will operate business as usual. Temporary access and facilities will be provided to passengers to ensure continuity of service. Progressive use of new and refurbished facilities and lounges will be available to passengers throughout the construction period.

On completion of the proposed redevelopment, the terminal will provide a superior passenger experience with the provision of new airport lounges, priority boarding services, additional check-in kiosks, additional baggage carousels, refurbished office facilities and a contemporary retail offering.

<sup>3</sup> UDP Horman Traffic (2012) Townsville Airport Traffic Study, Garbutt. Report No:TIGI002/R01, 21 December 2012.

## 4.0 Legislative and Policy Context

### 4.1 Introduction

This section provides an overview of the relevant legislation and policy for the development of the proposed redevelopment.

Townsville Airport is operated by TAPL and is principally subject to Commonwealth law. The key pieces of Commonwealth legislation controlling the operation of Townsville Airport are the *Airports Act 1996*, *Airports (Environment Protection) Regulations 1997* and *Airports (Building Control) Regulations 1996*.

In detail, the following key statutes were considered during the preparation of this MDP:

- *Airports Act 1996*
- *Airports Regulations 1997*
- *Airports (Environment Protection) Regulations 1997*
- *Airports (Building Control) Regulations 1996*
- *Airports (Control of On-Airport Activities) Regulations 1997*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Aviation Transport Security Act 2004*
- Civil Aviation Safety Authority Manual of Standards – Part 139 Aerodromes
- *Environmental Protection Act 1994 (Queensland)*

### 4.2 Consistency with Commonwealth Legislation

#### 4.2.1 Airports Act 1996

The *Airports Act 1996* requires an MDP for a designated major development at a regulated airport. Section 89 of the *Airports Act 1996* prescribes those activities that are included as a 'major airport development'. The proposed development outlined in this MDP would be defined as a 'major development' by virtue of Section 89(1):

*(d) extending a building that is wholly or principally for use as a passenger terminal, where the extension increases the building's gross floor space by more than 10%*

The proposed development is not a "sensitive development" as defined in section 71A of the *Airports Act 1996*.

Section 90 of the *Airports Act 1996* provides that major airport developments must not be carried out except in accordance with an approved MDP. Section 91 of the *Airports Act 1996* defines the contents of a MDP.

The checklist provided in **Appendix D** lists each requirement of Section 91 of the *Airports Act 1996* and outlines within which section of this MDP each requirement has been addressed.

#### 4.2.2 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* provides protection to matters of National Environmental Significance (NES) which include:

- World Heritage properties
- National heritage properties
- Wetlands of international importance
- Nationally threatened species and communities
- Migratory species
- Commonwealth marine environment
- Nuclear actions (including uranium mines)
- The Great Barrier Reef Marine Park
- A water resource, in relation to coal seam gas development and large coal mining development

The *EPBC Act* also protects the environment on Commonwealth land and regulates those actions of Commonwealth departments and agencies that may have a significant impact on the environment. As Townsville Airport is located on Commonwealth land it is subject to the provisions of the *EPBC Act*.

Section 160 of the *EPBC Act* is also relevant to development on airport land as it provides a requirement for the Minister for Infrastructure and Regional Development to take account of advice from the Environment Minister on the MDP.

**Section 5.0** of this MDP provides the assessment of environmental impacts required for an MDP and determined that the proposed development will not have a significant impact on any matters of NES. As part of the submission of the Exposure Draft MDP to the Department of Infrastructure and Regional Development, the Department of Environment were consulted regarding the potential impacts of the proposed development on matters of NES. DoE were satisfied that the MDP would address and manage all environmental impacts of the proposed development. DoE will continue to have an opportunity to provide comments relating to the proposed development and its environmental impact as part of the broader consultation process.

### 4.3 Consistency with Airport Lease

Townsville Airport is owned by the Commonwealth Government and the runway and associated taxiway system is jointly operated by the Department of Defence (DoD) and TAPL under the terms of a Joint User Deed which was ratified on 9 June 1998. The Joint User Deed creates three areas within the Commonwealth site – the civil area, military area and joint user area as shown in **Figure 3**.

The civil area is managed by TAPL who occupies the civil area exclusively and the joint user area is controlled by the DoD and is utilised by both civil and defence aircraft. The DoD occupies the military area exclusively as a RAAF Base.

The proposed development is relevant to the civil area only which is solely managed by TAPL. Clause 13.1 Development of an Airport Site states,

Throughout the Term the Lessee must develop the Airport Site at its own cost and expense having regard to:

- (a) The actual and anticipated future growth in, and pattern of, traffic demand for the Airport Site;
- (b) The quality standards reasonably expected of such an airport in Australia; and
- (c) Good Business Practice.

The planning for development of the airport site is established through the approved Master Plan (2011) (as described in **Section 4.4**). The Master Plan (2011) has forecast average annual growth<sup>4</sup> to the end of financial year 2030 of 3.7% per annum. On the basis of this forecast passenger growth, the Master Plan (2011) identifies the need for an additional 3,922m<sup>2</sup> of terminal space, specifically expansions of the secure sterile area, passenger circulation and retail concessions space to ensure the safe, secure and efficient movement of passengers.

The **Townsville Airport Terminal Redevelopment** is a critical step in the implementation of the Master Plan (2011) and as such, is consistent with the airport lease.

Section 91(3) of the *Airports Act 1996* and Regulation 5.04 of the *Airports Regulations 1997* require a MDP to address the obligations of the airport-lessee company as sub-lessor under any sub-lease of the airport site concerned, and the rights of the sub-lessee under any such sub-lease. There are no contractual obligations or other rights and interests that are inconsistent with the proposed development. TAPL will ensure that any development works allowed under this MDP will not interfere with the rights granted under any pre-existing interest. Negotiations are underway with all airport lessee companies as part of the MDP approvals process.

<sup>4</sup> Base or medium case

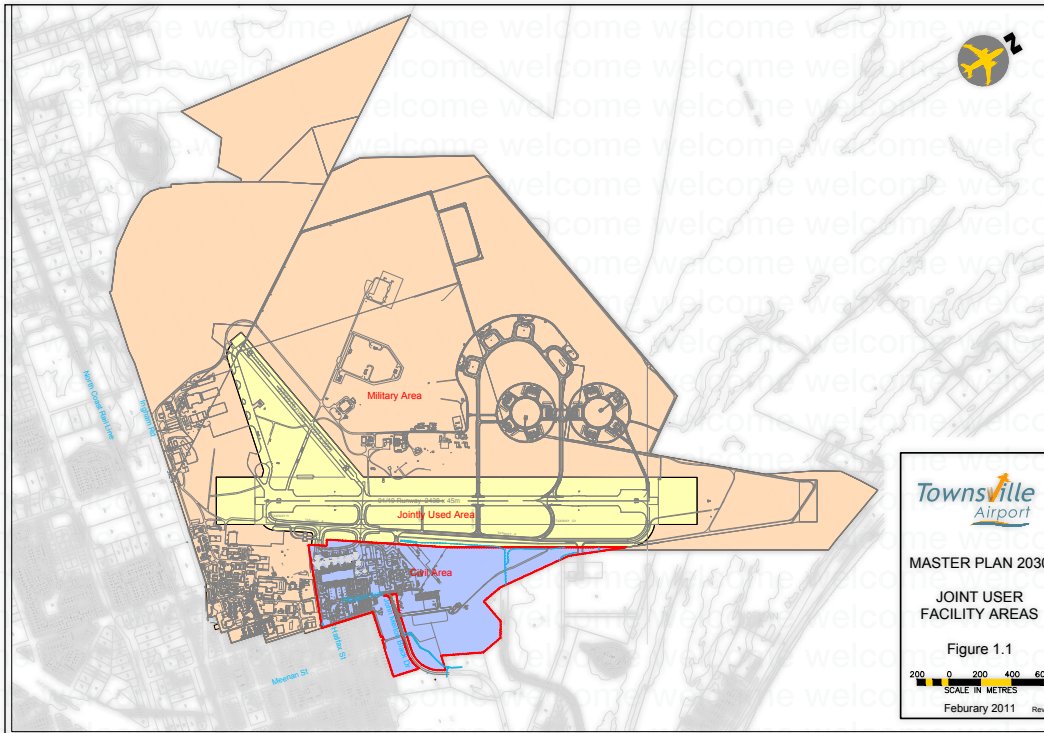


Figure 3. Joint User Facility Areas (Source Townsville Airport Master Plan 2011)

#### 4.4 Consistency with the Townsville Airport Master Plan

The Townsville Airport Master Plan (2011) was developed in accordance with Section 71(3) of the *Airports Act 1996* which requires that upon leasing and at five year intervals TAPL submit a 20 year Master Plan to the Minister for approval.

The purpose of the master plan is to establish the airport's strategic direction, ensure all development and intended uses are compatible with the uses of the airport and surrounding areas and are undertaken in accordance with relevant environmental legislation and standards. The master plan is a public document that provides all levels of Government, potential investors and the community with a statement of the way in which the airport intends to develop and grow. The Master Plan (2011) was approved by the previous Minister on 14 June 2011.

Development of the terminal precinct is specifically addressed in the Master Plan (2011) with key development objectives:

- The terminal is preserved as the public face of the Airport being a key tourist and business gateway
- Development provides safe, efficient and economic handling of passengers, freight and related support activities
- Development is sufficiently flexible to accommodate future changes associated with the dynamic and evolving nature of the aviation industry. The commercial viability of the airport is promoted by diversifying business activities on Airport
- Development is cognisant of the commercial outcomes sought by TAPL and the objectives contained within the Department of Defence Zone Plan
- Environmentally sustainable development principles, are fostered in development, where feasible

Section 5 and Table 5.1 of the Master Plan outlines the forecast growth, development opportunities and proposed land use for the terminal precinct for the next 20 years. The terminal redevelopment is identified as a development opportunity in the 0-5 year planning schedule as:

### Terminal and Related Infrastructure

Based on forecast passenger numbers, the internal redevelopment of the terminal will:

- Incorporate a swing international function for arrivals/ departures area
- Convert existing international area to be available for other uses
- Provide additional, and expansion of, office areas
- Increase airline lounge space, security sterile area, airside concessions

The proposal represents the implementation of this plan and is consistent with the key development objectives and design principles of the Terminal Precinct. In developing this proposal, TAPL has given consideration to the development objectives and specific Terminal Precinct key development objectives set out in the Master Plan (2011). In particular, the proposed development will:

- Reconfigure the existing terminal building to better manage, balance and respond to future changes in passenger profiles through the international/domestic swing lounge and increased capacity of baggage handling
- Improve the movement of passengers throughout the existing terminal to overcome severe congestion in the upper concourse that is the cause of frustration to passengers and presents a workplace health and safety risk
- Expand the security screening area, domestic arrivals/departures lounges and retail concessions space
- Provide an efficient, welcoming environment, harnessing the use of latest technology, materials and a contemporary retail offering to deliver a superior customer experience
- Contribute towards Townsville Airport's commitment that all buildings achieve a minimum four-star (Greenstar) energy rating

## 4.5 Consistency with Townsville Airport Environmental Strategy

The Townsville Airport Environmental Strategy 2009-2014 (TAES) was developed in accordance with the *Airports Act 1996*. The TAES addresses issues such as environmentally significant areas, potential sources of environmental impact and monitoring and mitigation.

Its purpose is to ensure (i) all airport operations are undertaken in accordance with relevant legislation and standards, (ii) establish a framework for assessing compliance with relevant legislation and standards and (iii) promote the continual improvement of environmental management at the airport.

Townsville Airport is a highly modified site with little undisturbed vegetation. The terminal redevelopment works are within the existing terminal building envelope, with the exception of the proposed baggage handling extension and new club lounge area which are extending onto part of the existing apron on the northern end of the building and a club lounge and airline engineering area extension at the southern end of the building, also on an area of existing hardstand within the airport complex. The works are consistent with the existing use with no major earthworks/excavation required in previously undisturbed areas. The terminal is not located on any known sites of land contamination.

While there are a number of buildings at Townsville Airport that date back to World War II, the terminal building itself does not have any recorded Indigenous or non-Indigenous cultural heritage.

The proposal would not directly impact on any areas of high conservation land uses adjacent to or downstream of the airport or on non-natural waterways on the site that drain into nearby catchments (see **Section 5.0**).



Sources of potential environmental impact identified in the TAES and that are relevant to the MDP:

- Operation of upgraded facilities should be in line with the Airport's environmental management system (this is discussed in the preceding paragraphs of this section)
- Air quality pollution from air conditioners, pumps and generators (this is assessed in **Section 6.2**)
- Storing and disposal of solid waste (this is assessed in **Section 6.6**)
- Water and energy use of the built facilities (this is assessed in **Section 5.0**)

The proposed development would be designed and operated in accordance with the management requirements identified in the TAES and would be consistent with the purpose of the TAES as outlined above. Additionally, the appointed construction contractor will be required to develop and submit a CEMP detailing how compliance with management requirements will be achieved.

## 4.6 Consistency with State and Local Government Planning

Townsville Airport is located on airport land which is owned by the Commonwealth Government. It is subject to Commonwealth legislation as identified in **Section 4.2**. It is not subject to planning and development controls under Queensland legislation such as the *Sustainable Planning Act 2009* administered by the State and Local governments.

However, under Section 91(4) of the *Airports Act 1996*, it is prescribed that an MDP must address the extent (if any) of consistency with planning schemes in force under a law of a State or Territory in which the airport is located. This requirement is addressed overleaf.

### 4.6.1 State Planning Policy

The State Planning Policy (SPP), July 2014, is a statutory planning instrument that guides matters of state interest in land use planning and development assessment in Queensland. The SPP outlines how these matters should be dealt with in making or amending a planning scheme or regional plan, council development assessment processes and in designating land for community infrastructure.

A state interest is defined under the *Sustainable Planning Act 2009* as:

- An interest that the Minister considers affects an economic or environmental interest of the state or a part of the state, including sustainable development; or
- An interest that the Minister considers affects the interest of ensuring there is an efficient, effective and accountable planning and development assessment system

TAPL (and Townsville RAAF Base) are identified in the SPP Part D: Planning for Infrastructure as a strategic airport and registered as of interest to the state. Strategic airports are considered essential elements of the national and state air transport networks and national defence system and the SPP aims to ensure that surrounding development does not impact on the safe and efficient operation of these facilities.

The SPP outlines requirements for Townsville City Council planning schemes to integrate state interests in relation to strategic airports. There are a number of performance outcomes outlined in the SPP code that relate to operational airspace, protection of aviation facilities, public safety areas and aircraft noise. The intent of the SPP code is as follows:

*SPP Code: Strategic airports and aviation facilities is to protect the safety, efficiency and operational integrity of strategic airports and aviation facilities by ensuring development:*

- Does not create incompatible intrusions, or compromise aircraft safety, in operational airspace
- Does not adversely affect the functioning of aviation facilities
- Avoids increasing risk to public safety in public safety areas
- Is compatible with forecast levels of aircraft noise within the 20 ANEF contour and greater

The SPP also outlines land uses associated with increases in wildlife strikes and sensitive land uses that are compatible within Australian Noise Exposure Forecast (ANEF) contours.

The SPP places the onus on Council planning to take into consideration the needs of airports and aviation facilities.

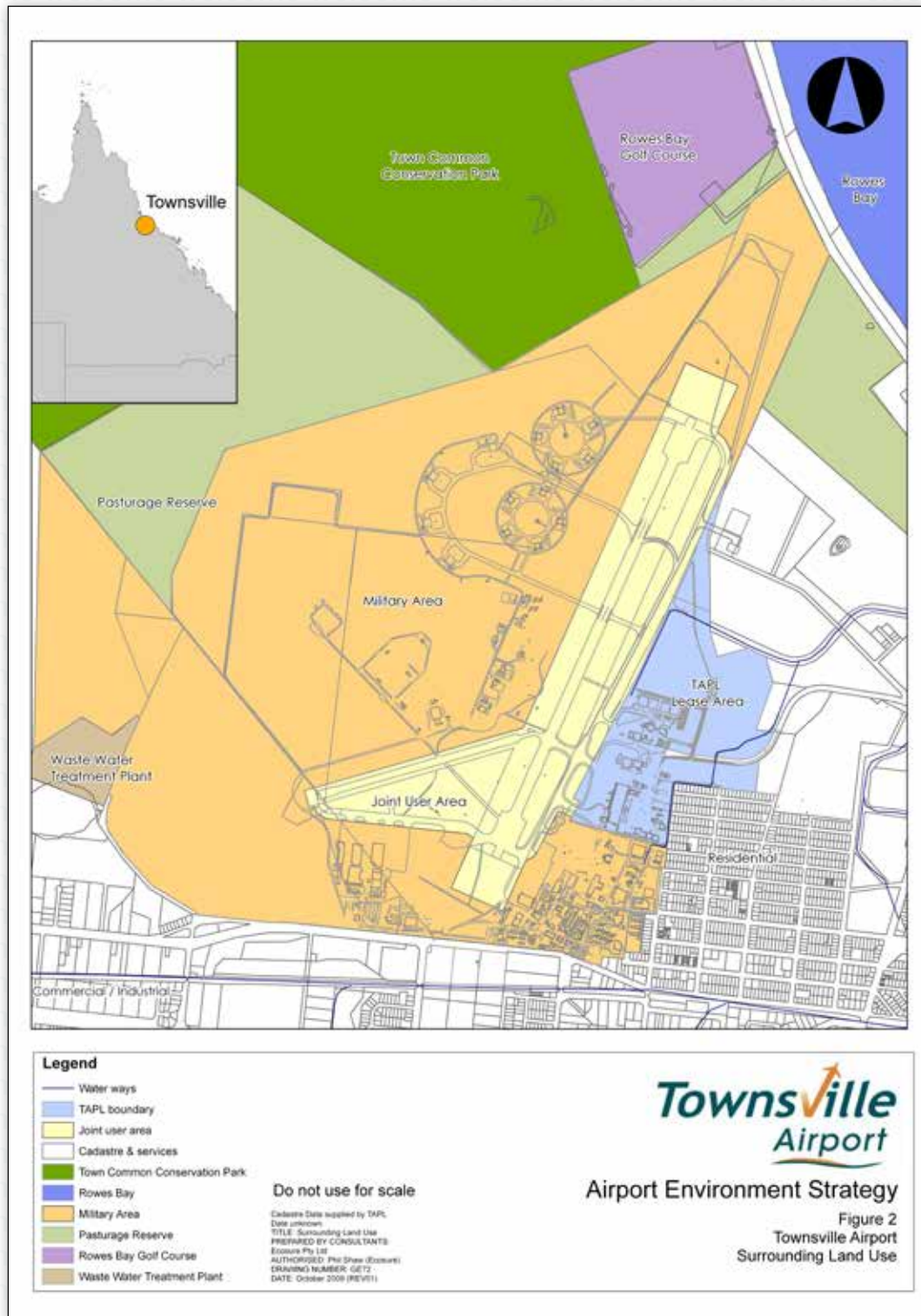


Figure 4. Surrounding Land Uses at the Airport

#### 4.6.2 Local Government Planning Schemes

Regulation of land use and development within the city of Townsville is achieved via the Townsville City Plan that was adopted by Council on 13 October 2014.

The Townsville City Plan identifies the Airport as providing key transport infrastructure that will contribute to developing Townsville as a second capital for Queensland. In addition, the Townsville City Plan recognises the Airport for having a strategic and economic value to the community.

The Townsville City Plan designates the airport land within a “Townsville Airport precinct” of a “Specialised Centre Zone” within its land use categories (**Figure 5**). A Specialised Centre Zone, as designated by the Townsville City Plan, is used for an area that is designated for a specialised use. The purpose of the zone is to accommodate large public, commercial, or institutional facilities which are significant to the economic and social well-being of Townsville but are not appropriately included in other zones. Some examples of uses within this zone include (but not limited to) major hospital facilities, major educational facilities, major defence facilities, airport and port facilities.

##### **Specific outcomes for the Townsville Airport precinct are:**

- The long-term operation and expansion of the Townsville Airport is supported for both Department of Defence purposes, and to satisfy the primary air transport needs of the Townsville and North Queensland regions
- The timely and cost-effective provision of aeronautical infrastructure is facilitated
- Aviation-related related businesses, research and technology industries and low impact industries are accommodated
- Development is not of a type or scale that undermines the successful operation of the principal centre (CBD) or major centres in Townsville
- Residential development is limited to short-term accommodation

As the proposal is for a redevelopment of the existing terminal building to provide a safe, efficient and economic handling of passengers, it is considered compliant with the specific outcomes of the Specialised Centre Zone and the Townsville Airport precinct. In addition, the Townsville City Plan acknowledges the importance the Master Plan plays in determining the appropriate land use on the site. The proposed development is compliant with the intent of the Master Plan.

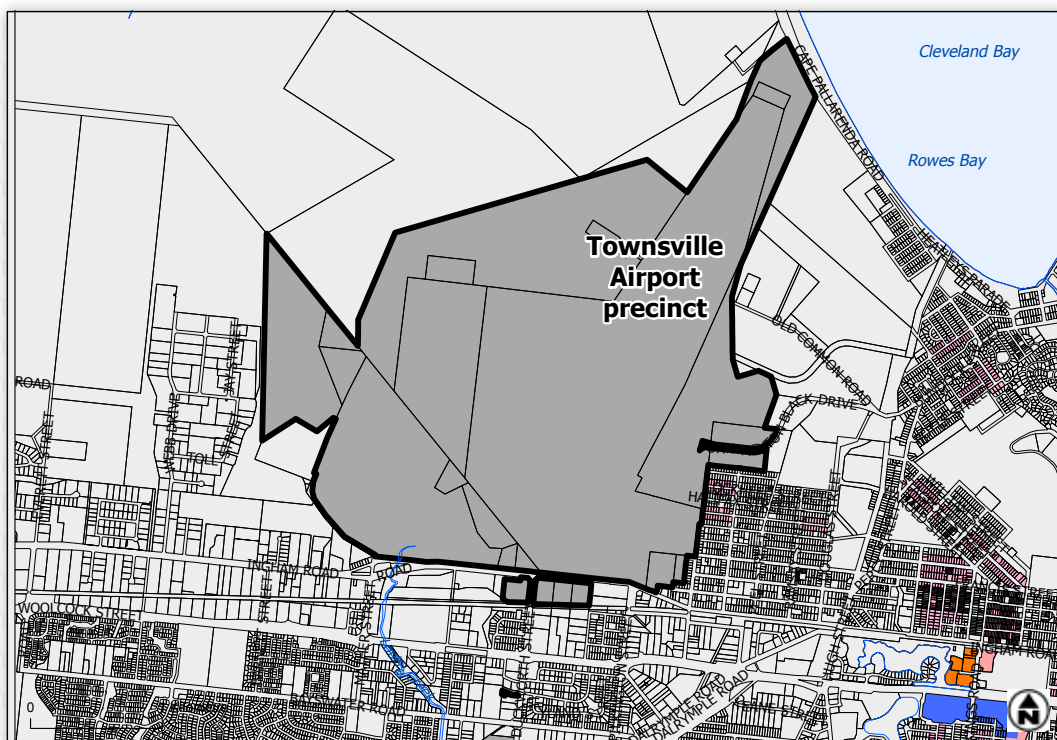


Figure 5. Townsville Airport Precinct

Zoning near the Airport within the Townsville City Plan is reflective of the current land use pattern, and includes: Community facilities, Low and Medium impact industry, Low density residential, Open space and Environmental management and conservation.

The Townsville City Plan includes a comprehensive “Airport Environs Overlay Code” that deals with all relevant airport and aircraft-related topics, including avoidance of adverse impacts of aircraft noise, protection against intrusions into the Airport’s airspace in the form of buildings or otherwise, as well as other potential effects on pilots of aircraft operating in the airspace. The Code is modelled on the mandatory requirements of the SPP.

The purpose of the Airport Environs Overlay Code is to “ensure that the safety and efficient operations of the airport, RAAF base and aviation facilities are protected”. The purpose of this code is achieved through the following overall outcomes:

- Development avoids adversely affecting the safety and efficiency of an airport’s operational airspace or the functioning of aviation facilities;
- Large increases in the numbers of people adversely affected by significant aircraft noise are avoided; and
- Development does not increase the risk to public safety near airport runways

The proposed development is compliant with the abovementioned overall outcomes and will have no impacts on zoning at and in the vicinity of the Airport. In addition the proposed development will not result in a change to the existing ANEF Contours, Bird and Bat Strike Zone, Light intensity, OLS penetration, and Public safety areas that impact the surrounding land use

## 4.7 Airport Development and Building Approvals

In addition to the preparation and approval of a MDP, the proposed development is subject to Airport Lessee Consent from the Airport Lessee Company and a Building Approval from the appointed ABC.

The Building Approval cannot be issued by the ABC without written consent from TAPL, confirming that the new development is consistent with:

- TAPL Master Plan
- TAPL Airport Environment Strategy
- Planning objectives for the Airport
- An approved MDP

## 5.0 Building Sustainability

TAPL is committed to responsible development across all areas of airport operation. This includes the efficient use of natural resources with a focus on fuel, energy and water.

TAPL are committed to meeting their resource efficiency targets as set out in the TAES and include:

- 20% of the energy supply to the TAPL lease area will be sourced from renewable energy sources by June 2014
- Investigate future water efficiency and re-use possibilities with the aim to recycle or re-use stormwater and rainwater
- Develop and commence implementation of an energy minimisation strategy and conduct Energy audit and implement recommendations from audit
- Develop and commence implementation of a strategy for the future monitoring of water consumption
- Investigate options to minimize the use of all water use on site (potable and non-potable) and implement recommendations from the 2008 Water Audit

### 5.1.1. Energy Audit

In 2013 Townsville Airport undertook an energy audit of the facility. From July 2012 to June 2013, the site consumed 6,387,640kWh of electrical energy an operating cost of \$1,124,154. Accordingly, the Carbon Dioxide (CO<sup>2</sup>-eq) emissions equivalent associated with the energy consumption is calculated at 2,845 Tonnes.

The report proposed a number of recommendations to improve energy efficiency. These included:

- Improved management practices
- Lighting retrofit to upgrade and replace existing system
- Hot water and appliance upgrades
- Innovative air conditioning plant to replace existing
- Building works to support the recommendations above
- Installation of roof mounted photovoltaic solar collection system
- Upgrade of mechanical services

The adoption of these recommendations will result in significantly reduced energy requirements and costs for Townsville Airport. Specifically, they would lead to:

- A demand savings of 37%, approximately 490kW
- An energy saving of 41%
- Operating cost saving of approximately 42% and
- An NPV (5%) over 25 year period in the order of \$11.7M

**Table 4** presents a comparison summary of the anticipated outcomes of the proposed energy reduction initiatives.

Item	Business as usual	Recommendations	Savings
Energy Consumption (kWh)	6,387,640	3,717,466	2,670,174
GHG Reduction (Tonnes CO <sup>2</sup> / pa)	2,845	1,710	1,135
Operating Cost (\$/pa +GST)	\$1,031,740	\$ 578,450	\$ 453,290
Estimated Maintenance Cost (\$/pa +GST)	\$121,000	\$ 133,860	-\$ 12,860

Table 4. Summary of outcomes from the proposed energy reduction initiatives

The proposed development provides an opportunity to incorporate energy efficiency measures and improve long term sustainability of Townsville Airport. These recommendations will be considered as part of the detailed planning and design development.

### 5.1.2 Water Audit

The financial year 2007-2008 provides baseline annual water consumption. In 2007-2008, Townsville Airport used a total of 91.57ML of Council supplied potable water, of which 47.76 ML/year were consumed in the terminal buildings (Sustainable Solutions International Pty, 2009). The major uses of this water were:

- Unaccounted uses (38.6%)
- Toilets (15.8%)
- Irrigation (12.3%)
- Cooling towers (8.3%)
- Construction works (8%)
- Other uses (14.7%)

Together they total 83% of the 92 ML of Council supplied potable water. Other uses between 1% and 5% account for the remaining 14.7%. These include leaks, commercial food preparation, dishwashers and showers, hand basins.

TAPL has a Water Efficiency Action Plan as part of on-going improvements to water efficiency. The proposed development is an opportunity to make a positive contribution to its water efficiency targets, specifically the upgrade of toilets, urinals, showers and taps at amenities as well as the detection and repair of leaks.

### 5.1.3 Water and Energy Savings

The proposed building design is consistent with the Master Plan Terminal Precinct Objective that the development within the terminal precinct is underpinned by environmental sustainability principles and practices. As a vital contribution to the achievement of energy and water reduction targets, the proposed development will incorporate, where practical, principles of environmentally sustainable design, including:

- Internal planning and façade systems optimised for landscape outlook, good passive solar design and natural ventilation
- Design of mixed mode ventilation that combines natural (passive) ventilation with mechanical (active) ventilation and cooling
- Large areas of shaded glazing allowing indirect natural light penetration reducing the demand for artificial light
- Provision of insulated walls and roof for thermal and acoustic protection
- Provision of a comprehensive Building Management System to monitor and manage all energy use, particularly over the daily peak and off-peak periods
- The use of 4-star energy rated appliances throughout
- Provision of water efficient devices and appliances throughout
- Provision of infrastructure for future connection to a rainwater storage reticulation system (or other water re-use system consistent with the 2008 Water Audit)
- Centralised electric boosted solar hot water plant
- Installation of symphonic roof water drainage system to most efficiently collect all roof water

In line with the TAPL Development Guidelines, these sustainable design and management principles will contribute towards Townsville Airports' commitment that all buildings achieve a minimum four-star (Greenstar) energy rating.

In its endeavour to address its future sustainability, Townsville Airport is striving for International Airport Carbon Accreditation by implementing a number of strategies focused on effective waste management, energy efficiency, noise management and aesthetics.

Also, to ensure appropriate and efficient use of water during construction, water conservation standards will be included in all tender and contract documentation. It will be requirement that the appointed construction contractor include provisions relating to the management of water and energy within the CEMP.

## 6.0 Assessment of Impacts

This section of the MDP provides an integrated, multi-disciplinary assessment of the potential impacts of the proposed terminal redevelopment at Townsville Airport. It includes aviation and environmental impacts.

The two key pieces of Commonwealth legislation that regulate environmental management at Townsville Airport are the *Airports Act 1996* and the *Airports (Environmental Protection) Regulations 1997 (AEPR)*.

The AEPR detail the general environmental duty requirements of Airport Lessee Companies. It also defines standards to determine the acceptable level of impact on the environment from airport development. The Airport's Environmental Management System and environmental policies include a commitment to comply with relevant environmental legislation and regulations and with other requirements to which the organisation subscribes.

To assist in meeting its obligations under the *Airports Act 1996*, TAPL has developed an Airport Environment Strategy 2009-2014 (AES), which describes the environmental responsibilities of TAPL under the *Airports Act 1996* and identifies how these obligations will be managed. The AES outlines legislative requirements, air quality and emissions, surface and groundwater, soil, biodiversity, waste, sustainability, cultural heritage, noise and potential environmental impacts as well as guidelines for environmental management (TAPL 2008). There are specific targets for each of the environmental aspects.

Townsville Airport is in close proximity to the Townsville Town Common Environment Park and World Heritage Listed Great Barrier Reef it is therefore committed to managing its environmental footprint which is reflected in its environmental vision "Demonstrated consistent, high level Airport environmental performance". Key components of this policy include:

- Compliance with statutory environmental requirements
- Endeavour to prevent air, soil and water pollution
- Protection of the biodiversity of the TAPL lease area
- Aim for continuous improvement
- Promote TAPL's environmental policy and achievements and actively participate in regional planning
- Encourage an environmentally responsible culture
- Annual review of policies and targets

This section discusses the potential environmental and socio-economic impacts of the proposed development during the construction and operational phases of the facility. Mitigation measures for minimising and/or managing these impacts are also included.

### 6.1 Assessment Methodology

#### 6.1.1 Scope of Assessment

Impact assessment and mitigation measures are MDP requirements under Section 91 of the *Airports Act 1996*. Specifically Section 91, Part 1, Item h of this Act requires the assessment of the environmental impacts that might reasonably be expected to be associated with the development. **Table 5** outlines the environmental and social factors that might be considered in an impact assessment with a justification as to whether, or not, they are relevant to this development. The environmental factors that are not expected to be associated with this development are not considered further in this assessment.

Works included in this environmental and social assessment are:

- Construction and operation of the proposed terminal redevelopment
- The preparation of the site including clearing and ground preparation
- The provision of services to the site

Factor	Justification	Relevant to this development
Geology, soils and topography	Townsville Airport is situated on a coastal flood plain and is considered to be a high risk area for acid sulphate soils.	Yes
Ecology	The site has been cleared and substantially modified as part of the construction of the domestic and international terminal complex. There are no native vegetation communities nor does the site constitute fauna habitat. There are no areas of environmental significance, in accordance with the <i>Airports Act 1996</i> , at the site.	No
Hydrology and water quality	There are no naturally occurring waterways on TAPL's leased area with stormwater drains receiving runoff from both the TAPL lease area and surrounding urban and industrial areas. Stormwater quality of the catchment is important, as it discharges to the downstream estuarine areas of Mundy Creek and eventually Rowes Bay.	Yes
Air quality and odour	Use of air-conditioners, pumps and generators is consistent with food and beverage retail. Building construction activities have the potential to generate temporary dust nuisance.	Yes
Noise and vibration	Construction activities will generate noise at various times throughout the redevelopment works. Scheduling of works will consider the potential effects on nearby residences, commercial and industrial premises.	Yes
Land use	The redevelopment of the terminal is consistent with the existing land use provisions.	No
Landscape	No development of new or existing landscaped gardens is included in the plan.	No
Social and economic issues	Airport operation is about moving people. Construction activities at the terminal can reasonably be expected to impact on airport staff and visitors.	Yes
Cultural heritage	The terminal building has no recorded Indigenous or non-Indigenous cultural heritage	No
Waste	Expansion of passenger lounges, food and beverage retail and toilet facilities are likely to change the volume and/or composition of waste generated on site.	Yes
Traffic and parking	The terminal redevelopment is designed to alleviate passenger congestion. Arrival and departure from the terminal building is integral to the function and layout of the terminal. Integration of construction traffic will be a consideration for passenger and staff access.	Yes
Aviation safety	All airport development must adhere to any applicable ASA, CASA and Townsville Airport's operational requirements.	Yes
Resource efficiency	TAES includes energy and water conservation programs that require the Environment Manager review all development works to ensure resource use is minimised where possible.	Yes

Table 5. Scope of environmental impact assessment



### 6.1.2 Assessment Technique

To assist in the assessment of potential impacts identified in this report and to ensure consistency between topics, Significance Criteria have been defined which follow the generic framework shown in Table 6. These have been used to guide the evaluation of potential environmental impacts unless otherwise stated.

Significance	Impact Classification	Criteria
High	Impact a major problem	Environmental effects are likely to be important considerations at a local scale but if adverse, are potential concerns to the project, depending upon the relative importance attached to the issue during the decision making process. Considerable adverse change to current amenity, lifestyle and everyday community activities. Mitigation measures and detailed design work are unlikely to remove all the effects upon the affected communities or interests. Residual effects would predominate.
Moderate	Impact moderate but liveable for most people	These effects, if adverse, while important at a local scale, are not likely to be key decision making issues. Nevertheless, the cumulative effects of such issues may lead to an increase in the overall effects upon a particular area or on a particular resource.  Noticeable adverse change to current amenity, lifestyle and everyday community activities but with scope for mitigation. They represent issues where effects would be experienced but mitigation measures and detailed design work may ameliorate/enhance some of the consequences upon affected communities or interests. Some residual effects would still arise.
Low	Impact recognisable but acceptable	These effects may be raised as local issues, but are unlikely to be of importance in the decision making process. Nevertheless, they are of relevance in enhancing the subsequent design of the project and consideration of mitigation measures. There may be localised or limited noticeable change to current amenity, lifestyle or everyday community activities.
Negligible	Minimal Change	No effects or those which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Table 6. Environmental and Social-Economic Significance Criteria

### 6.1.3 Document Review

Reference has been made to previous studies at the airport site to inform the description of the baseline environment for the purpose of this MDP. This includes desktop review and analysis of the following information:

- Townsville Airport Master Plan 2011
- Townsville Airport Environmental Strategy 2009-2014
- Townsville Airport Environmental Vision and Policy
- Townsville Airport Waste Management Master Plan 2013
- Sustainable Solutions International Pty Ltd Water Audit and Water Efficiency Report, Townsville Airport 2009
- Queensland Energy Alliance Pty Ltd Townsville Airport Energy Evaluation, Level 2, October 2013
- Queensland State Planning Policy
- Townsville Airport Pty Ltd Environmental Policy
- Townsville Airport Traffic Study (UDP Horman Traffic, 2012)
- Douglas Partners Report on Acid Sulfate Soil and Geotechnical Investigation, Proposed Bay 2 RPT Apron Pavement Repair, Townsville Airport, June 2012

## 6.2 Aviation Operations and Safety

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

- Improve community amenity by minimising aircraft noise-sensitive developments near airports including through the use of additional noise metrics and improved noise-disclosure mechanisms
- Improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues

The National Airports Safeguarding Framework is comprised of:

- Principles for national airports safeguarding framework
- Guideline A: Measure for managing impacts of aircraft noise
- Guideline B: Managing the risk of building generated windshear and turbulence at airport
- Guideline C: Managing the risk of wildlife strikes in the vicinity of airports
- Guideline D: Managing the risks of wind turbine farm as physical obstacles to air navigation
- Guideline E: Managing the risk of distractions to pilots from lighting the vicinity of airports
- Guideline F: Managing the risk of intrusions into the protected airspace of airports.

National Airports Safeguarding Framework – Guidelines	Section(s) of MDP
Guideline A: Measure for managing impacts of aircraft noise	Section 6.4
Guideline B: Managing the risk of building generated windshear and turbulence at airport	Section 6.2.1
Guideline C: Managing the risk of wildlife strikes in the vicinity of airports	Section 6.2.2
Guideline D: Managing the risks of wind turbine farm as physical obstacles to air navigation	Not applicable to this development
Guideline E: Managing the risk of distractions to pilots from lighting the vicinity of airports	Section 6.2.3
Guideline F: Managing the risk of intrusions into the protected airspace of airports	Section 6.2.4

Table 7. National Airports Safeguarding Framework – MDP Checklist

### 6.2.1 Windshear and Turbulence

Building generated turbulence windshear can become a safety issue when a significant obstacle, such as a building, is located in the path of a cross wind to an operational runway. The wind flow can be diverted around and over the buildings causing the cross-wind speed to vary along the runway.

The potential windshear effect of the proposed development has been considered as part of the development process. The redevelopment of the terminal has been designed in accordance with obstacle limitation surface requirements and Australia’s adopted windshear criterion. Australia’s windshear criterion proposes that buildings with a distance to the runway centre-line that is less than 35 times the height of the building (the 1:35 rule) should be subject to aerodynamic modelling. The 1:35 rule can be applied to rule out buildings that will clearly not pose a risk. The height of terminal building is 9m and will not be changed as a result of the proposed development. The terminal is located 440m from the runway, therefore complying with the 1:35 rule and will not pose a windshear risk.

### 6.2.2 Wildlife strikes

Australia’s international aviation safety obligations as a contracting state to the Convention on Civil Aviation include responsibilities to take action to manage the risk from wildlife hazards.

Most wildlife strikes occur on and in the vicinity of airports, where aircraft fly at lower elevations. The risk of a strike on airport relates to the level and form of wildlife activity both within the boundary of an airport and in surrounding areas. Wildlife attracted to land uses around airports can migrate onto the airport or across flight paths, increasing the risk of strikes.

Townsville Airport has undertaken specific measures to decrease the risk to aircraft operations by adopting measures to minimise the likelihood of collisions between wildlife and aircraft, including fencing, vegetation clearing and monitoring.

The proposed development is not anticipated to have any impact on the existing risk and likelihood of wildlife strikes. The current wildlife management measures and procedures will be adopted by the construction and operational environmental management plans.

### 6.2.3 External Lighting

The NASF Guideline E provides guidance to address the risk of distraction to pilots from lighting and light fixtures near airports. The proposed terminal redevelopment is consistent with the current use of the building and will continue to function under the existing hours of operation. The requirement for external lighting is to be determined as part of the detailed design, though it is unlikely to be required at locations where the ground floor building envelope is to be extended. Any consideration for additional external lighting will be designed to not emit upward waste light (0cd above the horizontal) in accordance with the Manual of Standards Part 139 Section 9.21.4.3 and NASF Guideline E to avoid glare for pilots.

### 6.2.4 Obstacle Limitation Surface

An obstacle limitation surface (OLS) for an Airport is a surface that is determined in accordance with the International Civil Aviation Organisation International Standards and Recommended Practices for Aerodromes.

The OLS surfaces define a volume of airspace in proximity to the airport which should be kept free of obstacles that may endanger aircraft visual operations, or during the visual stages of an instrument flight.

The OLS for Townsville Airport civil terminal precinct include building heights or other fixed objects so that they do not intrude into the airspace defined by the OLS for RAAF Base Townsville. The following OLS are applicable to this MDP:

- Inner horizontal surface (IHS)
- Transitional surface

The IHS is a horizontal plane that sits at an elevation of approximately 45m above the aerodrome reference point which is largely consistent with the elevation of the civil apron. The proposed height of the terminal roof will be approximately 9m above the civil apron and therefore not at risk of interference with the IHS.

A part of the western side of the terminal building, including the two club lounge facilities are within the Transitional Surface OLS. The remainder of the building is within the IHS OLS.

Crane operating heights will be limited to a maximum of 40m AHD for construction of the new northern mezzanine club and 45m AHD for construction of the new southern mezzanine club to ensure activities are contained within the IHS OLS.

Approval is required for any 'Controlled Activity' (cranes and permanent structures) which may penetrate the airports airspace surfaces under the *Airport Act 1996* and *Airports (Protection of Airspace) Regulations 1996*. Approval is also required from the DoD for any structures higher than 15m. TAPL will ensure all appropriate approvals are obtained prior to construction.

### 6.2.5 Procedures for Air Navigation Services – Aircraft Operations

Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) control surfaces are established to protect aircraft operating under instrument flight rules which requires a greater margin of error than the OLS. Consequently, the PANS-OPS surfaces are generally higher than the OLS. The terminal building is located below the OLS therefore there will be no impact on PANS-OPS.

### **6.2.6 Airport Navigation Aids and Air Traffic Control Tower**

The proposed development will not obstruct navigational aids and the control tower. The Airport's Non-Directional Beacon is located on the opposite side of the airfield approximately two (2) kilometres to the north-west of the terminal and will not be affected by the proposed development. As the proposed development is an extension of the existing terminal building, the line of sight between the tower and the airfield will not be affected.

### **6.2.7 Jet Blast**

According to the Manual of Standards Part 139 – Aerodromes (MOS), TAPL must protect people and property from the dangerous effects of jet blast. This applies to passengers that have to walk and are expected to congregate, public roads, personnel working near an aeroplane, apron equipment, light aeroplane parking areas, buildings and other structures. Specific to this proposal, all medium to large jet aircraft are pushed back and therefore there is no jet blast to people or property in relation to this development.

### **6.2.8 Pedestrian Safety**

The proposed development will require temporary aircraft parking arrangements across the Terminal, General Aviation and NAACEX precincts to accommodate the staged construction of the new Club lounges. These temporary arrangements will impact on the existing pedestrian access to aircraft.

Measures to ensure the protection of pedestrians that have to walk on the apron during the construction phase will be a mandatory requirement of the CEMP.

## **6.3 Traffic and Parking**

The terminal redevelopment is designed to alleviate existing passenger congestion at Townsville Airport. Given the nature of the works, the operational demands on current traffic and parking facilities are not expected to increase significantly. However, passenger access and egress to and from the terminal building is integral to the function and layout of the terminal. This assessment considers the current traffic and parking arrangements at Townsville Airport and demonstrates that the road networks can accommodate traffic flows during construction and operation.

### **6.3.1 Baseline Conditions**

The road network at Townsville Airport consists of two main roads providing access to the Terminal via John Melton Black Drive – Stinson Avenue from the north, and Halifax Street from the east. Both roads turn into Coral Sea Drive, a road loop providing direct access to the terminal, and short and long-term parking facilities. The Townsville Airport road network is illustrated in **Figure 7**.

John Melton Black Drive is intended as the main access road to Townsville Airport. However, only traffic from North Ward, Belgian Gardens, Rowes Bay, Pallarenda, Townsville CBD and possible South Townsville, access the airport via John Melton Black Drive. Halifax Street is the primary route via which people access the Townsville Airport (approximately 70% of all traffic). Coral Sea Drive operates as a clockwise one-way loop between Stinson Avenue, providing access to the pick-up / set-down area, taxi zones, bus parking, short and long-term parking, and the service road which provides access to the airport tarmac and the rear of the buildings fronting Halifax Street.

Stinson Avenue and Halifax Street are a single lane roads accommodating traffic in both directions. Stinson Avenue provides direct access and egress from the long-term car park on the eastern site, the rental car park on the western side, egress from the employee car park on the eastern side, as well as egress from the short and long-term car park bounded by Coral Sea Drive. As well as providing access to Coral Sea Drive, Halifax Street also provides connectivity between Townsville Airport and the adjacent residential area to the east.

Townsville Airport has one short-term car park and two long-term car parks. The short-term car park and one of the long-term car parks are bound by Coral Sea Drive and Stinson Avenue and provide approximately 260 spaces. The other long-term car park is located on the opposite side of Stinson Avenue, further to the east of the airport terminal.

### 6.3.2 Assessment of Impacts

In December 2012, a traffic study was undertaken<sup>5</sup> to understand congestion experienced on the Townsville Airport road network. Traffic counts at three locations (Coral Sea Drive and Stinson Avenue north and south) showed that traffic volumes are generally higher on weekdays, where a total of six peaks were observed throughout the day (Table 8). These peaks largely correspond with the airport flight schedule. The introduction of additional construction and service vehicles is likely to place additional pressure on the constrained road network if not managed appropriately.

Peak periods	Peak traffic volumes (vehicles/hour)
5:30am – 6:15am	240
8:45am – 9:15am	370
12:00pm – 12:15pm	460
3:00pm – 5:00pm	450
8:45pm – 9:15pm	517
10:45pm – 11:00pm	260

Table 8. Townsville Airport - Weekday average hourly traffic volumes

An assessment of operational performance and capacity was undertaken to understand the road network servicing Townsville Airport. Traffic data indicated that approximately 30% of vehicles access the airport via Stinson Avenue from John Melton Black Drive and 70% of airport traffic travels via Halifax Street. To understand the capacity and threshold of Townsville Airport road network the Degree of Saturation (DoS) was the ratio is calculated. DoS evaluates the volume of traffic observed making a particular movement compared to the theoretical capacity for that movement. A DoS of up to 0.6 is rated as excellent and a DoS of 1.0 or higher is rated as very poor. The road network providing access to Townsville Airport did not approach capacity during peak flow period with a DoS of 0.388. Modelling results reveal that the existing intersections should operate sufficiently following the terminal redevelopment however on-site observations suggest otherwise. This may be attributed to the high stress environment unfamiliar drivers typically experience at airports which reduces the decision making ability of drivers resulting in increased delay. Current congestion is becoming a capacity constraint on the road network, but that the road layout and intersections provide sufficient capacity for current and forecast growth.

As the terminal redevelopment is proposed to alleviate current capacity constraints within the terminal and not directly increase airport customers, it is not anticipated that the proposal would result in a significant increase in traffic volumes.

During construction, the integration of construction traffic will be a consideration for passenger and staff access to the existing terminal. The appointed construction contractor will be responsible for developing and implementing a traffic management strategy as part of the Environmental Management Plan to manage any temporary traffic impacts the construction activities may have. Traffic management will be undertaken in a manner consistent with quality standard expected of an airport in Australia and best practice outlined in Australia Standard 1742 Manual of uniform traffic control devices.

<sup>5</sup> UDP Horman Traffic (2012) Townsville Airport Traffic Study, Garbutt. Report No:TIGI002/R01, 21 December 2012.

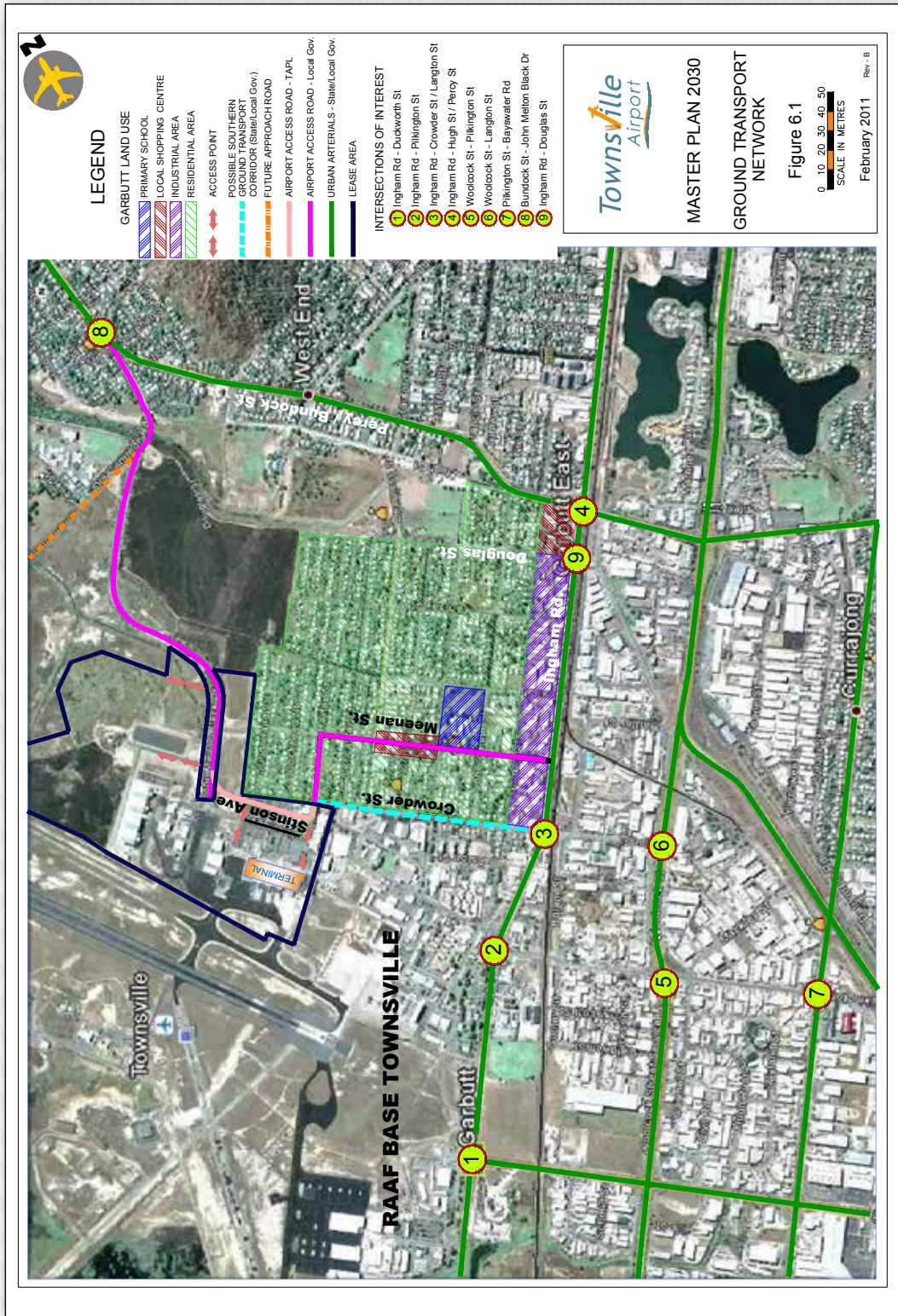


Figure 7. Townsville Airport road network

### 6.3.3 Mitigation Measures

The traffic scenario considered for this assessment does not result in a significant increase in traffic on the Townsville Airport road network. During construction, measures would be implemented to prevent any disruption to passenger access and egress to the terminal.

Awareness and role specific training will be undertaken by all Airport operators whose duties may pose a risk to increased impacts on traffic and road congestion. This training encompasses:

- Environmental inductions
- Compliance with traffic regulations
- Traffic management procedures
- Use of dedicated parking facilities and dedicated access paths
- Reporting procedures
- Potential impacts of traffic congestion and construction equipment on road networks.

Impacts from construction traffic will be mitigated through the following measures to be implemented by the construction contractor:

- Access routes will be defined for construction vehicles prior to the commencement of construction to ensure there is no interruption to other traffic in the precinct
- Construction vehicles will park in a dedicated area adjacent to the TATR Project site
- Construction deliveries and movement of equipment and materials will be timed so that deliveries are staggered throughout the day, outside of peak times, to prevent queuing on surrounding roads
- Exclusion zones will be developed to avoid areas already experiencing heavy traffic flows
- Existing road infrastructure will be managed to ensure is not degraded as part of the construction process
- Designated parking and storage areas will be developed to ensure construction related vehicles do not impact parking facilities available to the public

Overall, impacts on traffic during construction and operation of the terminal redevelopment are considered low adverse.

## 6.4 Noise

Ambient noise at Townsville Airport is regulated by a number of legislative instruments including:

- *Airports Act 1996 (Cth)*
- *Airports (Environmental Protection) Regulations 1997 (Cth)*
- *Environmental Protection Act 1994 (Qld)*
- Environmental Protection (Noise) Policy 2000 (Qld)
- Australian Standard AS 2021-2000 Acoustics – Aircraft noise intrusion – Building siting and construction
- National Standard for Occupational Noise [NOHSC: 1007(2000)]

Section 91 of the *Airports Act 1996* requires all airport MDPs identify if the development could affect noise exposure levels at the airport and the effect that the development would be likely to have on those levels. It is the responsibility of TAPL to ensure the proposed redevelopment will not cause an offensive noise either during construction or operation of the terminal.

According to Division 2.04 of the *Airports (Environmental Protection) Regulations 1997*, an offensive noise is defined as follows:

- (1) For these regulations noise is generated at a volume, or in a way, or under a circumstance, that, in the opinion of an airport environment officer, offensively intrudes on individual, community or commercial amenity.

- (2) In forming an opinion, an airport environment officer must have regard to:
- (a) the volume, tonality and impulsive character (if any) of the noise; and
  - (b) the time of day, and duration of the noise; and
  - (c) background noise levels at the time the noise is generated; and
  - (d) the location, in relation to the source of the noise, of:
    - (i) sensitive receptors; or
    - (ii) if there is no affected sensitive receptor – commercial receptors; and
  - (e) the excessive noise guidelines in Schedule 4

This section outlines the effect that the proposed development is likely to have on ground-based noise exposure levels.

#### 6.4.1 Baseline Conditions

The largest contributors to ground-based noise at the airport are:

- Ground running of aircraft engines
- Use of mechanical plant and aircraft servicing equipment
- Auxiliary power units and air cycle machines on aircraft
- Construction activities
- Use of vehicles

#### 6.4.2 Assessment of Impacts

The proposed development will have no effect on Townsville Airport's ANEF. The ANEF is a model based on aircraft movements and type. The ANEF will be reviewed as part of the next Master Plan. The terminal redevelopment is not expected to cause any increase or change to aircraft movements beyond current growth forecasts. The noise generated from aircraft operations when aircraft are in flight, landing, taking off or taxiing are will not be impacted. The current ANEF will be reviewed as part of the Master Plan process. This update will encompass both commercial and RAAF activities.

Daytime construction activities will be audible to passengers and commercial/retail operators within the terminal building. These activities will be temporary in nature and include demolition of existing building fabric, materials handling, use of compressors, generators and power tools and a contribution to traffic noise. It is assumed that some construction activities will take place after hours to ensure passenger and employee safety. These activities have the potential to affect nearby residences located within 500 metres of the construction site, on Sunderland Street, Lockheed Street, Halifax Street, Lancaster Street, Dearness Street, Clarke Street and Chandler Street.

It will be a requirement of the construction contractor to ensure noise during construction, daytime and after-hours, meets the requirements of Schedule 4 of the *Airports (Environmental Protection) Regulation 1997*, as presented in **Table 9**. Where after hours work is required, this would be specified in the EMP with further mitigation measures, if required.

Noise Source	Maximum allowable noise levels at sensitive receptors
Construction, maintenance and demolition	75 dB(A) L10 (15 min)
Road traffic	60 dB(A) Leq (24 hour) 55 dB(A) Leq (8 hour from 22:00 hours to 06:00 hours)

Table 9. Noise Limits

Noise impacts associated with the construction of the proposal have been assessed as low adverse.

Operational activities that could affect noise exposure levels are limited to the increased density of retail outlets, particularly food and beverage facilities, which may increase the demand and frequency of deliveries to the terminal. Given the changes to the terminal are aimed at achieving passenger comfort and improving the user experience, there are no significant change of use planned for the terminal and any changes to audible noise once the terminal redevelopment is complete will be **negligible**.



### 6.4.3 Management Measures

Activities that potentially impact on surface and ground water quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures. An Environmental Management System (EMS) is in place, which is consistent with the requirements contained in ISO 14001.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to surface water or groundwater. This training encompasses:

- Environmental inductions
- Noise management procedures
- Use of noise reduction and control devices
- Reporting procedures in the event of an incident involving noise
- Potential environmental impacts of excessive noise and noise pollution

TAPL will monitor and assess noise emissions from the site and take appropriate action should it be deemed to be excessive. This assessment will be jointly carried out by the contractor and airport's Environment Manager. The construction contractor will manage increased noise and vibration generated by equipment and vehicles during the construction phase in the following manner:

- Construction activities will be undertaken, assessed and managed in compliance with the CEMP
- All equipment will be appropriately serviced and maintained to ensure that noise levels associated with operation are as low as can reasonably be achieved
- Noise will be included in the contractor's weekly checklist to note any activities on site causing excessive noise and identify alternative construction methods or noise baffling if noise is deemed to be excessive
- Compliance with the requirements of relevant legislation for specific hours for construction work
- Work that may generate disruptive or excessive noise will be scheduled for periods of reduced passenger activity Noise levels will be monitored by the appointed construction contractor
- An environmental complaint procedure will be implemented during construction

## 6.5 Air Quality

The *Airports (Environmental Protection) Regulations 1997* detail the general environmental duty requirements of Airport Lessee Companies. It also defines standards to determine the acceptable level of impact on the environment from airport development.

For these regulations, air pollution has occurred when a pollutant is present in air in a quantity, way, or condition, or under a circumstance, in which:

- a) Harm is likely to be caused to the environment; or
- b) Unreasonable inconvenience is likely to be caused to a person:
  - i) At a place other than the immediate vicinity of the source of the pollutant; or
  - ii) If the source is in a place to which members of the public have access – in that place.

The definition and acceptable limits of air pollutants emitted from a stationary source are set out in Schedule 1, Part 1 of the regulation. The schedule does not define limits emitted from movable sources such as vehicles.

### 6.5.1 Meteorological Conditions

Rainfall and winds are the most important climatic factors relative to understanding the environment of the site and the potential for construction to affect the local air quality.

Townsville has a tropical climate that is characterised by warm, clear, winter days with hot and humid summers with "build-up" thunderstorms starting in late October or November.

Bursts of monsoon rains from late December though to early April deliver most of the annual rainfall and this wet-season is prone to Tropical Cyclones. The winter months are dominated by south east trade winds and mostly fine weather.

### 6.5.2 Assessment of Impacts

Residential development and the childcare facilities (Clarke Street) to the south-east of the airport are considered sensitive receptors to any development at Townsville Airport. Other commercial and industrial land uses to the south west are also considered for potential impacts on their operation.

The construction and operation activities that may generate gases, dust, fumes or odours are:

- Exhaust emissions from light vehicles and heavy plant equipment required for construction
- Decommissioning and disposal of existing internal structures, walls, flooring, ceiling, fixtures and fittings
- Storage and stockpile of building materials within the construction compound
- Painting / paint stripping
- Operation of the new food and beverage retail
- An increase in the number of facilities requiring refrigerant recovery/disposal

The emissions from vehicles and machinery during construction are primarily associated with the products of combustion of diesel and, to a lesser extent, unleaded fuel. The common pollutants resulting from combustion include:

- Particulate matter (as PM10 and PM2.5)
- CO
- NO<sup>2</sup>
- Sulfur dioxide (SO<sup>2</sup>)
- Volatile organic compounds (VOCs) and polyatomic aromatic hydrocarbons (PAHs)

The contribution of these pollutants from combustion of construction vehicles will be negligible as there are minimal earthworks required with the construction activities largely confined to the interior of the building.

Demolition and construction activities may generate nuisance dust that causes a reduction in visibility, respiratory discomfort and/or nuisance to passengers and commercial operators. These impacts will be temporary and localised, and will be managed through the CEMP to be developed by the appointed construction contractor.

The operation of the redeveloped terminal is not likely to affect air quality. The nature of the activities to be undertaken at the facility will not compromise air quality in the local area and are consistent with the current use of the facility. Operation of new food and beverage outlets will be restricted to cooked pre-heated and/or re-heated food offerings and therefore are not expected to generate odours at areas other than the immediate vicinity of the source. The TAES has established licencing requirements for refrigerant recovery/disposal that will be extended to include any new premises as part of this redevelopment.

In consideration of the existing and proposed function of the Airport terminal, the impact of the proposed expansion on air quality during operation of the terminal is considered **negligible**.

### 6.5.3 CASA Plume Rise Assessment

Proposed developments under the *Airports Act 1996* that are considered 'controlled activities' require a CASA Plume Risk Assessment. Section 182 of the *Airports Act 1996* states that "For the purpose of this division the following activities are controlled activities in relation to a prescribed airspace:

An activity that results in air turbulence, where:

- The level of turbulence exceeds the level ascertained in accordance with the guidelines
- The turbulence is capable of affecting the normal flight of aircraft operating in the prescribed airspace

The *Airports (Protection of Airspace) Regulations 1996* states in clause 6A “For subparagraph 182 (f)(i) of the act, the level of air turbulence caused by an emission from a stack or vent is upward vertical velocity of 4.3 metres per second at the point of emission”.

TAPL will ensure that all exhaust systems and stacks installed for the airside catering facilities do not give rise to exhaust plumes that exceed the exit velocities prescribed by the guidelines.

### **6.5.4 Management Measures**

Activities that potentially impact on air quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures. An EMS is in place, which is consistent with the requirements contained in ISO 14001.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to surface water or groundwater. This training encompasses:

- Environmental inductions
- Use of pollution control devices
- Reporting procedures in the event of a pollution event
- Potential environmental impacts of surface and ground water pollution.

The following management measures will be implemented by the construction contractor to ensure that air quality impacts are minimised:

- Construction activities will be undertaken assessed and managed in compliance with Townsville Airport’s Environmental Strategy and associated air quality management plans and procedures
- Ensuring airport operators provide documentary evidence of compliance with the Airport rules and relevant legislation
- Risk assessments and routine inspections will be undertaken
- Compliance with Townsville Airport air quality management protocol and procedures
- Access to the construction areas will be restricted for the public for health, safety and security
- All machinery and equipment used at the site will be maintained to relevant standards to minimise potentially harmful emissions
- Speed limits will be enforced for all construction equipment to reduce any potential dust generated
- Dust control measures incorporated into ‘Method of Work Plans’ and CEMP. An environmental complaint procedure will be implemented during construction

An environmental incident procedure will be in place during construction As part of the detailed design phase, further consideration will be given to ventilation air throughout the terminal, and with particular focus on the requirements for food and beverage outlets.

## **6.6 Waste Management**

### **6.6.1 Baseline Conditions**

The TAES supports the continual improvement of waste management at the airport. The focus is on understanding the type and volume of waste that is produced, educating airport users and lessees, and providing the right mix of waste facilities to cater for general wastes and encourage recycling.

The existing Public Place Recycling Program diverts some of the airport terminals waste into the 1200L co-mingled recycling facility, however the 2012 waste audit identified the program is limited and is not capturing the bulk of recyclable items which are disposed of within internal sub leases into lessees’ general waste bins. Further, not all lessees’ have waste bins or waste contracts therefore exploit other lessees’ bins.

The waste management issues currently experienced are:

- Insufficient room for industrial bins and the co-mingled recycling bin in the waste carrel
- Bins frequently left open that pose a FOD and wildlife hazard
- Unpleasant odour and visual amenity
- Not all lessees' have waste bins or contracts therefore exploit other lessees' bins

The Townsville Airport Terminal precinct has outgrown its existing waste facility. Currently, all solid waste generated by Airport operators is collected for off-site disposal, excepting toxic/hazardous waste which is disposed of by an accredited hazardous waste receiver. The waste management facility is close to capacity and alternative waste management options need to be developed to ensure effective waste management continues at Townsville Airport. In 2013, Townsville Airport developed the Townsville Airport Waste Management Plan which aims to provide a deeper understanding of the primary waste contributors, how the current lessees are using the existing waste facilities and future-proofing the waste management facilities such that it can continue to service the airport into the future. The terminal redevelopment is identified and considered within the Waste Management Plan including the potential for increase waste generated by the development.

The TAES includes several waste management targets which relate to this Master Plan. The storage and disposal of solid waste is a key performance indicator for the airports environmental management strategy with a targeted reduction in total terminal waste of 20% from 1999 to 2014.

The Townsville Airport Waste Management Plan is central to the achievement of the targets contained within the TAES. It presents a number of alternative management options and strategies focused on achieving required waste reductions and effective waste systems. These include expanding the current waste carrel to meet the needs of the airports future waste requirements, relocating the waste facility to the southern end of the terminal such that it can accept a greater number of industrial bins or replacing these bins with a compactor.

### **6.6.2 Assessment of Impacts**

Analysis of management alternatives concludes that the relocation of the waste facility to the southern end of the terminal and the purchase of an industrial compactor addresses all current waste issues and future proofs the new terminal both during and post construction. The compactor unit proposed allows multiple users on one contract as it has inbuilt weighing and recording features to facilitate for invoicing to occur. This alleviates existing issues relating to businesses within the terminal over capacitating existing waste management systems. The proposed development is large enough to effectively manage and process as waste to be generated during the construction phase and the operation of all new services provided following construction. Additionally, the new locations allows for users on the airside service road/freight road to utilise the facility, reducing impacts on the Regular Passenger Transport (RPT) apron landside. Both environmental and safety risk are reduced as a result of the relocation and upgrade of existing waste management systems. Assessment of Impacts

#### **Construction**

During the construction phase, the proposed development is expected to generate the following wastes:

- Construction and demolition wastes
- General wastes
- Small quantities of waste oils and paints (regulated wastes)

The potential impacts associated with wastes generated are:

- Health risks from inappropriate storage and handling of hazardous substances
- Potential contamination of land, surface water and ground water from inappropriate storage and handling of all forms of wastes
- Increased demand for raw materials during the construction process through lost opportunities for recycling construction materials
- Increased potential for environmental emergencies and incidents due to the handling of waste products

## Operation

The increased office and retail space (including food and beverage tenancies) will increase the solid waste volumes produced at the airport terminal. Appropriate general waste and co-mingled recycling facilities are necessary to ensure the proposed development does not exacerbate the current issues.

### 6.6.3 Management Measures

Activities that potentially generate waste or impact on waste management will undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures. An EMS is in place, which is consistent with the requirements contained in ISO 14001.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to waste management. This training encompasses:

- Environmental inductions
- Waste management procedures
- Use of pollution the compactor
- Waste reporting procedures
- Potential environmental impacts resulting from waste

Waste generated as a result of the TAPL development will be managed in accordance with the Townsville Airport Waste Management Master Plan. The newly located facilities at the southern end of the terminal and compactor will be used both during construction and into the operational phase of the project. The facilities have been designed taking into consideration the potential waste generated by the terminal redevelopment ensuring that the capacity of the facility is large enough to manage increased construction and operational waste. Whilst the upgrade to the airport waste management facility is separate to this MDP, the terminal redevelopment is an opportunity to address the recovery of bulk recyclable items and waste management behaviours of the lessees'. To ensure construction does not contribute to the already capacity constrained waste facility, the construction contractor will be required to develop a waste management plan which will form part of the broader CEMP. The contractor will be contractually required to remove and dispose of all general waste, construction waste and regulated waste to alternative facilities. The waste management plan will require provision relating to waste minimisation strategies, waste removal practices, waste transportation, waste storage recycling and waste separation.

It will be for the contractor to determine their preferred method and location of disposal which will be detailed in the CEMP. It will be a requirement that the plan includes provisions relating to waste separation, regulated waste and asbestos management. Asbestos will be managed in accordance with the demolition management plan to be developed by the appointed contractor.

In addition to the Waste Management Master Plan TAPL will implement a number of measures to manage, monitor and control waste impacts on-site:

- Regular maintenance of waste management areas and devices
- Targeted inspections and monitoring of waste management facilities and practices during construction
- On-going waste production monitoring

During operation, the general waste and co-mingled recycling arrangements made with the new lessees' will be compatible with the upgrade to the airport waste management facilities. It is recommended that TAPL consider integrating appropriate general waste and re-cycling solutions as a condition of the individual lease contracts. This may include:

- A commitment by each sub-lease to provide waste bins at their facility
- Obligation to commit to a single multi-user contract for the disposal of general and recyclable waste to the on-site waste facilities.

The overall impact of waste during construction and operations has been assessed and low adverse.

## 6.7 Acid Sulfate Soil and Contaminated Land

In assessing impacts on Acid Sulphate Soils at Townsville Airport the following documents have been referenced:

- Townsville Airport Environment Strategy 2009-2014
- Townsville Airport Environmental Vision and Policy
- Ecosure Water Quality Monitoring Program Water Quality Report 2011-12
- State Planning Policy 2/02.

According to the TAES, Acid Sulphate Soils are soils and sediments containing iron sulfides. When exposed to air due to drainage or disturbance, these soils produce sulfuric acid, often releasing toxic quantities of iron, aluminium and heavy metals. Proposed construction and earthworks activities can have potential environmental impacts due to contamination from disturbed Acid Sulphate Soils.

### 6.7.1 Baseline Conditions

#### Acid Sulphate Soils

Townsville Airport is situated on a coastal flood plain and is considered to be a high risk area for Acid Sulphate Soils. The airport has primarily been constructed on reclaimed land, which has been filled from both on-site and off-site sources.

The airport is dominated by solidized solonetz soil, characterised by thin sandy loam overlying heavy clay subsoil. The subsoil clays have poor drainage characteristics and are highly dispersive with adverse chemical properties causing corrosion of underground services. They have moderate to high salt content and contain iron sulphides which when exposed to air produce sulphuric acid, often releasing toxic quantities of iron, aluminium and heavy metals, commonly referred to as Acid Sulphate Soils.

#### Contamination

Some areas at the TAPL lease area have been identified in the Airports Environmental Site Register as containing contaminated land and are classified as being either - confirmed, probable and possible. Historical land use, including the previous intensive military occupation of the airport, may have led to persistent residues of contaminants in both the groundwater and soil. Given the nature of past and present activities undertaken on the airport, it is assumed that chemicals of potential concern in soil would include petroleum hydrocarbons, metals and other elements, pesticides and nutrients.

**Figure 8** includes some of the areas of known contamination listed on the Environmental Site Register. This indicates that the proposed terminal will be located outside of any suspected area of contamination. Monitoring results undertaken in 2011-12 indicated that there were no detectable hydrocarbon levels recorded, a major indicator for airport contamination.

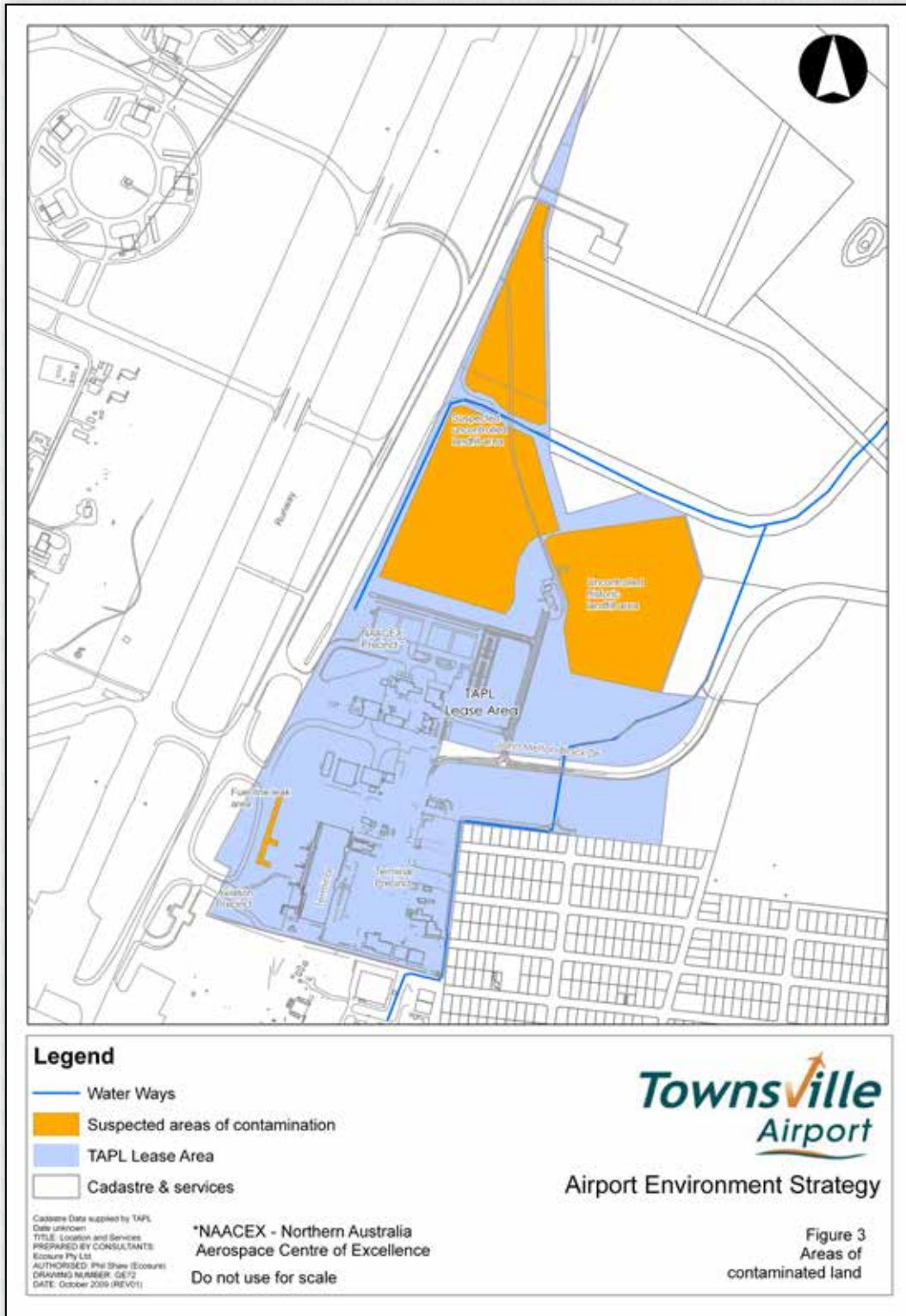


Figure 8. Potential Contaminated Land

### 6.7.2 Assessment of Impacts

Proposed construction and earthworks activities can have potential environmental impacts due to contamination from disturbed Acid Sulphate Soils. There is also the potential for disturbance of contaminated soils. Under State Planning Policy 2/02, excavating or otherwise removing 100m<sup>3</sup> or less soil or sediment will not necessarily trigger the requirement for an ASS Management Plan.

The terminal redevelopment works are within the existing terminal building envelope, with the exception new club lounge area which is extending onto part of the existing apron on the northern end of the building and a club lounge and airline engineering area extension at the southern end of the building, also on an area of existing hardstand within the airport complex. The works are consistent with the existing use with no major earthworks/excavation required in previously undisturbed areas.

The works are consistent with the existing use with no major earthworks/excavation required in previously undisturbed areas. Therefore the potential impact of the redevelopment on Acid Sulphate Soils is considered to be negligible. Appropriate precautions should to be taken if excavation of the subgrade soils occurs in connection with civil works at the site, to minimise the risk of harm to the environment.

As the proposed terminal will be located outside of any suspected area of contamination it is considered that there would be a negligible impact on contamination across the TAPL lease area.

### 6.7.3 Management Measures

Activities which may impact on airport soil quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures. Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to soil quality. This training encompasses:

- Spill response and operating procedures
- Risk assessments and routine inspection requirements
- General environmental awareness training
- Emergency response procedures for fuel and chemical spills
- Maintenance of Chemwatch program
- Other relevant procedures, e.g. liquid waste management, underground storage system management

TAPL implements a number of measures to manage, monitor and control activities with the potential to impact soil quality, including:

- Development of Construction Environmental Management Plans for projects with environmental risk
- Auditing of duties and activities that may affect soil quality
- Routine inspections and risk assessments of fuel, oil and chemical storage facilities
- Ensuring airport operators provide documentary evidence of compliance with the Airport rules and relevant legislation
- Ensuring external contractors declare a full list of hazardous substances prior to entering the Airport site
- Auditing construction/landscaping plans and activities
- Undertaking validation testing around infrastructure with the potential to contaminate soil.
- Development of an Acid Sulphate Soils Management Plan for any works with potential to disturb ASS, which covers determining the extent of impact and the level of remediation required

Areas of contamination are documented and maintained in the Townsville Airport Contaminated Site Register, with an inventory of known and potential contaminated sites. Sites of concern, including Acid Sulphate Soils, are managed or remediated at the time of ground disturbance. Any suspected contamination as a result of activities on the TAPL lease area is investigated by a suitably qualified environmental auditor.



Contractors are required to undergo site inductions and relevant environmental awareness training prior to commencing work at Townsville Airport. These inductions will highlight areas of known or suspected contaminated soil. During construction activities, appropriate controls must be implemented, including for sediment and erosion minimisation and managing ASS and contaminated soil.

## 6.8 Stormwater Management

Through the TAES, TAPL committed to implementing and maintaining an environmental monitoring program which provides for the monitoring of surface water and groundwater quality. The program is vital in the ongoing assessment of TAPL's performance against the stated TAES objective to "promote continual improvement of environmental management at the airport".

### 6.8.1 Baseline Conditions

Townsville Airport lies adjacent to Louisa Creek and Rowes Bay Canal at the eastern margin of the greater Bohle River catchment, on a low lying expanse of coastal wetlands. There are no naturally occurring waterways on TAPL's leased area with stormwater drains receiving runoff from both the TAPL lease area and surrounding urban and industrial areas.

A predominant water feature is the drain running along John Melton Black Drive. Stormwater quality of the catchment is important, as it discharges to the downstream estuarine areas of Mundy Creek and eventually Rowes Bay. These areas are part of the Great Barrier Reef World Heritage Area, which is listed as National Heritage under the *Environment Protection and Biodiversity Conservation Act 1999*.

Additionally, the ecosystem of Rowes Bay Canal has been recognised by Townsville City Council as being critical to maintaining water quality in the receiving waters of Cleveland Bay. Disconnected remnants of local vegetation communities remain including a mangrove community bordering adjacent stormwater drains, predominantly composed of *Avicennia marina*.

Stormwater data indicates that some levels of heavy metals, copper, lead, zinc and cadmium are "intrinsically" high and therefore non-compliant with legislation guidelines. It is thought that landform and tropical processes may have caused this effect as stormwater from nearby catchments shows similar tendencies in contaminants. Townsville experiences a moderate, tropical climate with seasonal rainfall and a wet period generally occurring between November and May, when almost 80% of the total rainfall is received. The transfer of potential pollutants from Townsville Airport infrastructure and operations is most likely to occur shortly following moderate levels of rainfall.

Groundwater and stormwater monitoring results from 2011-12 exceeded the *Airports (Environmental Protection) Regulations 1997* at all locations for some heavy metals, though the source of these elevated levels is still being investigated. It was concluded that the non-compliant results found were most likely representative of natural conditions and not directly attributable to airport activities.

### 6.8.2 Assessment of Impacts

Construction and earthworks activities may adversely impact upon surface water and groundwater on the TAPL lease area. Surface water and groundwater pollution from the future terminal activities may adversely impact on the environmental values of local waterways and the adjacent wetlands, with potential detrimental outcomes such as:

- Death of aquatic organisms
- Potentially toxic algal blooms
- Failure to meet water quality objectives and guidelines
- Risk to public health

The TAES states that "all future developments on site must not add to the current Airport site drainage coefficient." The terminal redevelopment works are within the existing terminal building envelope, with the exception of the new club lounge area which is extending onto part of the existing apron on the northern end of the building and a club lounge and airline engineering area extension at the southern end of the building, also on an area of existing hardstand within the airport complex.

The works are consistent with the existing use with no major earthworks/excavation required in previously undisturbed areas. The impact on the stormwater and the runoff co-efficient is therefore expected to be low although there are likely to be opportunities for improvement in stormwater management, for example through rainwater harvesting.

### 6.8.3 Management Measures

Activities that potentially impact on surface and ground water quality undergo a risk assessment to facilitate the development of appropriate training, monitoring and incident management and reporting procedures. An EMS is in place, which is consistent with the requirements contained in ISO 14001.

Awareness and role specific training is undertaken by all Airport operators whose duties may pose a risk to surface water or groundwater. This training encompasses:

- Environmental inductions
- Spill response procedures
- Use of pollution control devices
- Reporting procedures in the event of a pollution event
- Potential environmental impacts of surface and ground water pollution

TAPL implements a number of measures to manage, monitor and control the impacts of water pollution on-site and on adjacent catchment areas:

- Development of Construction Environmental Management Plans for projects with environmental risk
- Airport Operators are to provide documentary evidence of compliance with the Airport rules and relevant legislation
- Installation and regular maintenance of stormwater treatment devices
- Auditing of duties and activities that may affect water quality
- Development of spill response procedures
- Erosion and sediment control measures during construction and maintenance
- Targeted inspections and monitoring of 'high risk' contaminated sites such as landfill and active hydrant lines
- On-going surface water and groundwater quality monitoring. Groundwater monitoring is undertaken at the historic landfill site to monitor leachate and the airport tarmac. Surface water monitoring is undertaken in the stormwater drains at several locations around the airport

All Airport operators are required to report any incident involving the loss, spillage or disposal of solid or liquid hazardous material.

The environmental aspects likely to be significantly impacted by the activities undertaken at Townsville Airport are monitored and measured at regular intervals, or as warranted, in accordance with the Act and Regulations. TAPL's monitoring program for stormwater is summarised in **Table 10**.

Attribute	Parameter/s monitored	Frequency	Reporting Frequency
Routine site inspections	NA	Daily	Daily
Airport Operator Audits	Any activity with potential to harm the environment	High risk: Annually Medium risk: 2-3 years Low risk: every 5 years	High risk: Annually Medium risk: 2-3 years Low risk: every 5 years
Surface water (stormwater)	Physico-chemical parameters, Heavy Metals and Fuels	Up to 3 monitoring events in the wet season 1 event monitoring in the dry season	1 report after wet 1 report after dry
Groundwater	Heavy Metals and Fuels	Six monthly	Included in the above reports

Table 10. TAPL monitoring stormwater monitoring program

## 6.9 Social and Economic Issues

### 6.9.1 Baseline Conditions

The main socio-economic aspects of the proposal to be considered are:

- Economic benefits to State and local economies as a result of project costs and capital investments
- The potential employment benefits of construction and operation of the terminal redevelopment
- The effects of the terminal redevelopment on passengers and customers during operation and construction
- The effects of the redevelopment on other areas within the terminal
- Safety during construction for workers, airport staff and the public
- Long-term impact of the development on nearby residents

### 6.9.2 Assessment of Impacts

The proposed development is anticipated to have a project cost in excess of \$50 million. This investment will provide positive social and economic benefits within the State and local economies. In addition to this, improvements to food, beverage and retail facilities at the Airport are expected to generate further revenues leading to increased economic benefit.

The proposed expansion will generate increased employment opportunities for local people during construction and operation periods. Building on the existing objectives of the Master Plan (2011) to promote opportunities for employment, the proposed development will provide approximately 116 direct full time equivalent positions during the construction period.<sup>6</sup> The development will lead to increase local opportunities within the building and construction industry, engineering, architecture, project management and cost controlling fields. Additionally, as a result of increased provision of food, beverage and retail facilities approximately 54 direct full time equivalent positions during the operation phase. The proposal provides significant investment in the Townsville region as well as a positive impact on employment opportunities for local people.

The redevelopment of the Townsville Airport terminal will reduce existing congestion and passenger flow conflicts during peak times and provide an improved quality of service for Airport customers. The optimisation of internal space as well as the development of dedicated corporate lounge areas allows for the efficient and effective movement of customers within terminal. The provision of improved food, beverage and retail facilities will improve customer comfort levels and satisfaction.

Construction works are expected to take approximately 12 months. During the construction phase, the terminal will operate business as usual. Temporary disruptions to passenger flow are anticipated during the construction period and this will be managed by adopting a staged construction approach with strategies specified in the CEMP to ensure the efficient movement and safety of passengers throughout the construction period. These will include measures for temporary access and facilities to ensure continuity of service. Progressive use of new and refurbished facilities and lounges will be available to passengers throughout the construction period. **Section 3.3.1** provides further detail on construction staging and management.

The safety of employees and the public during construction and operation will be managed by the contractor under the applicable Workplace Health and Safety legislation. Construction activities will be undertaken assessed and managed in compliance with TAPL's Health and Safety Management System and associated management plans, protocols and procedures.

The airport plays a vital role in connecting communities, people and markets. Local residents recognise the positive benefits the airports provide, including connecting Townsville to other cities, employment opportunities and the role of the airport as a freight hub.

<sup>6</sup> Calculation made using the Queensland Treasury Office of Economic and Statistical Research Technical Note: Employment supported by final demand for construction services, June 2011.

Townsville Airport is an important facilitator of imports and exports for local businesses. The improvement of existing facilities and the optimisation of existing infrastructure focused on meeting customer needs will further facilitate the continued and prosperous use of Townsville Airport within Queensland interstate and globally. This will be positive for local businesses, and in turn, local communities.

Potential negative social and economic impacts to the wider community from the proposed development are considered unlikely. This project does not increase the capacity of the airport. No additional flights will be generated by the development and therefore ANEF levels would not be compromised. An assessment of impacts associated with noise is presented in **Section 6.4**.

It is considered that there would be an overall high beneficial social and economic impact for customers and airlines and will assist Townsville Airport comply with its obligations under the *Airports Act 1996*.

## 7.0 Environmental Management

### 7.1 Environmental Management Measures

TAPL accepts responsibility for ensuring the implementation of measures to mitigate environmental impacts identified in this MDP during construction and operation. The process and procedures for managing operational and construction related impacts at the airport are set out under the Airport Environment Strategy. The environmental management requirements relevant to the proposal are discussed below.

#### 7.1.1 Construction Environmental Management Plan

All development contractor(s) engaged in construction activity at the subject site will be required to prepare and submit a CEMP for approval by the Airport Environmental Officer (AEO). The purpose of a CEMP is to put in place measures to control and manage the construction process in order to avoid environmental impacts. The CEMP will cover all aspects of the construction of the proposed development and associated road works. It is a requirement that the CEMP addresses each of the potential environmental impacts identified within this MDP and makes a commitment to limit the impacts to the minimum necessary for the development. This plan must also include a monitoring, auditing and reporting system to be used throughout the duration of the project.

The CEMP will be submitted to the AEO and potential impacts will be addressed in the form of conditions placed on the project, which may, for example include monitoring of noise, sediment and erosion control, restrictions on times/days of operation and the types of plant and equipment to be used for the project. The CEMP will be reviewed and approved by TAPL prior to issue to the AEO.

The CEMP will be in place before the start of construction and all site personnel made aware of its requirements. The CEMP will detail the following:

- Responsibility for implementing the requirements of the CEMP and for regular site checks to ensure effectiveness
- Training and inductions for site personnel in the requirements of the CEMP
- Mitigation measures including but not limited to those outlined in this MDP
- Monitoring requirements during the construction phase (if required)
- Emergency management procedures for example in the event of a chemical spill at the site
- Complaints procedure for responding to grievances or issues relating to environmental nuisance
- Corrective actions in the event that a non-conformance is identified
- Reporting requirements, including monitoring results and any non-conformances to TAPL or the AEO

During operation of the terminal, TAPL is responsible for environmental management, monitoring and reporting. Regular site audits will be carried out by the AEO to ensure compliance with the approved CEMP.

#### 7.1.2 Operational Environmental Management Plan

Operational Environmental Management Plans (OEMPs) are required by all operators of significant facilities at Townsville Airport. As this MDP is for the redevelopment of an existing terminal, an OEMP is already in place. This OEMP sets out the strategies to manage potential environmental impacts as a result of operation and maintenance activities of the site. The OEMP will be updated to reflect the changes to the terminal building and approved by the AEO.

Ongoing annual auditing will evaluate the effectiveness of the management strategies prescribed in the OEMP and the compliance with the specified standards and procedures.

## 8.0 Community and Stakeholder Engagement

Communication and consultation is a critical component in delivering a robust, transparent and effective MDP process. By implementing an effective engagement program throughout the MDP process, the proposed development can be considerate of stakeholder views, explores issues and opportunities, and mitigate impacts during the construction phase of the project.

The consultation approach adopted by TAPL is based on meeting statutory obligations while also allowing for stakeholder dialogue about the proposal and to inform the MDP.

### 8.1 Consultation Objectives

TAPL is committed to maintaining an open and transparent relationship with local communities and stakeholders. This commitment is underpinned by a genuine desire for Townsville Airport to be positioned within the community as a responsible corporate citizen and meeting the requirements under the *Airports Act 1996* for community consultation. The proposed consultation activities will be undertaken in accordance with the Airport Development Consultation Guidelines.

General objectives for consultation on MDPs are to:

- Engage and inform key stakeholders about projects
- Achieve early identification of issues, develop appropriate management strategies and reduce the risk of project delay or project refusal
- Differentiate the proposed development from other infrastructure and planning projects being developed or proposed within the region
- Achieve high stakeholder satisfaction levels with the consultation process (e.g. providing timely and accurate information and ensuring the feedback process is accessible and inclusive)
- Maintain and enhance community and industry perceptions

### 8.2 Exposure Draft MDP Consultation

The following stakeholders have been consulted as part of the Exposure Draft MDP:

- Department of Infrastructure and Regional Development
- Department of Environment
- Department of Defence
- Office of Transport Security
- Qantas
- Virgin
- Airservices.

### 8.3 Preliminary Draft MDP Consultation

During the preparation and consultation period of the Preliminary Draft MDP, the following stakeholders have been briefed on the project, in accordance with Section 92(1A) of the *Airports Act 1996*:

- Commonwealth Government
  - Department of Infrastructure and Regional Development (DIRD)
  - Department of Defence
  - Department of Environment
  - State Government
    - Department of State Development, Infrastructure and Planning
    - Department of Environment and Heritage Protection.
- Townsville City Council
- Tourism and Transport Forum

- Chamber of Commerce
- Community Aviation Consultation Group (CACG)
- Townsville Airport Aviation Traffic Advisory Group
- Airservices Australia
- Airlines.

In accordance with Section 92(1) of the *Airports Act 1996*, TAPL will also:

- Publish a notice in a Queensland newspaper and community publications detailing the Preliminary Draft version of the MDP, extending an invitation for public comment and identifying such matters as the consultation period (60 business days) and place(s) where and how copies will be available for review
- Make copies of the MDP available for inspection and purchase by members of the public
- Make copies of the MDP available free of charge to members of the public on the TAPL website throughout the consultation period
- Invite members of the public to give written comments about the draft version to the company within the consultation period specified in the notice

Should the Commonwealth Minister for Infrastructure and Regional Development approve the MDP, other separate regulatory approvals for construction of the proposed development will be obtained, as detailed in **Section 1.3.2** of this MDP.

Following public exhibition of the Preliminary Draft MDP, the document will be revised by TAPL to take into consideration any public comments received. Submissions received and consultation outcomes will be given due regard and summarised into a report (i.e. Supplementary Report) and submitted with a Draft MDP to the Minister for approval. Table 11 summarises the public comment and assessment periods for MDPs under the *Airports Act 1996*.

Activity	Timeframe
Public comment of draft	60 business days
Assessment of draft	50 business days
Public comment on minor variation	15 business days
Assessment of minor variation	50 business days
Publication of approved final plan/ strategy or variation	50 business days

Table 11. Public comment and assessment periods - *Airports Act 1996* (Department of Infrastructure and Transport, 2012)

## 8.4 Post Approval Consultation (Construction Phase)

Subject to the approval of the MDP, the CEMP will need to include a specific section on consultation that will address the issue of keeping the community, relevant stakeholders and TAPL informed on the project using suitable communication and consultation tools and activities.

Stakeholder relationships and contacts will need to be maintained from the start of construction and feedback gained throughout the construction phase may need to be assessed to further improve on consultation throughout the construction and commissioning process.

### Works Notification

Contractors should identify nearby residents and businesses likely to be impacted by construction works, such as noise emissions. Consideration should be given to notifying surrounding residents and businesses of the duration, times, and types of works to be undertaken via a letter drop at least two weeks prior to commencement of works.

### Enquiries and Complaints

Contractors will be responsible for handling complaints and enquiries associated with construction works. A procedure to manage complaints will be developed as part of the CEMP and include the implementation of a complaints/enquiries register. Contractors should:

- Record complaints, immediately advise TAPL and ensure they have been addressed
- Specify procedures where TAPL may need to be involved in addressing the complaint

## 9.0 Conclusion

This MDP for the proposed **Townsville Airport Terminal Redevelopment** has been prepared in accordance with all relevant legislation and regulatory requirements including the *Airports Act 1996*.

The MDP sets out how the proposal promotes the orderly development of the airport site. It demonstrates the proposed development meets that stated objectives of the approved Master Plan (2011) for Townsville Airport as it will:

- Reconfigure the existing terminal building to better manage, balance and respond to future changes in passenger profiles through the international/domestic swing lounge and increased capacity of baggage handling
- Improve the movement of passengers throughout the existing terminal to overcome severe congestion in the upper concourse that is the cause of frustration to passengers and presents a workplace health and safety risk
- Expand the security screening area, domestic arrivals/departures lounges and retail concessions space
- Provide an efficient, welcoming environment, harnessing the use of the latest technology, materials and a contemporary retail offering to deliver a superior customer experience
- Contribute towards Townsville Airport's commitment that all buildings achieve a minimum four-star (Greenstar) energy rating

The construction and operation of the terminal redevelopment is likely to result in a number of social benefits for the local area and promote direct and indirect employment opportunities during construction and operation.

Potential impacts identified in this MDP will be mitigated through the implementation of the management measures identified. Where implemented, the overall environmental and social impacts from the proposal are considered to be low adverse to high beneficial.

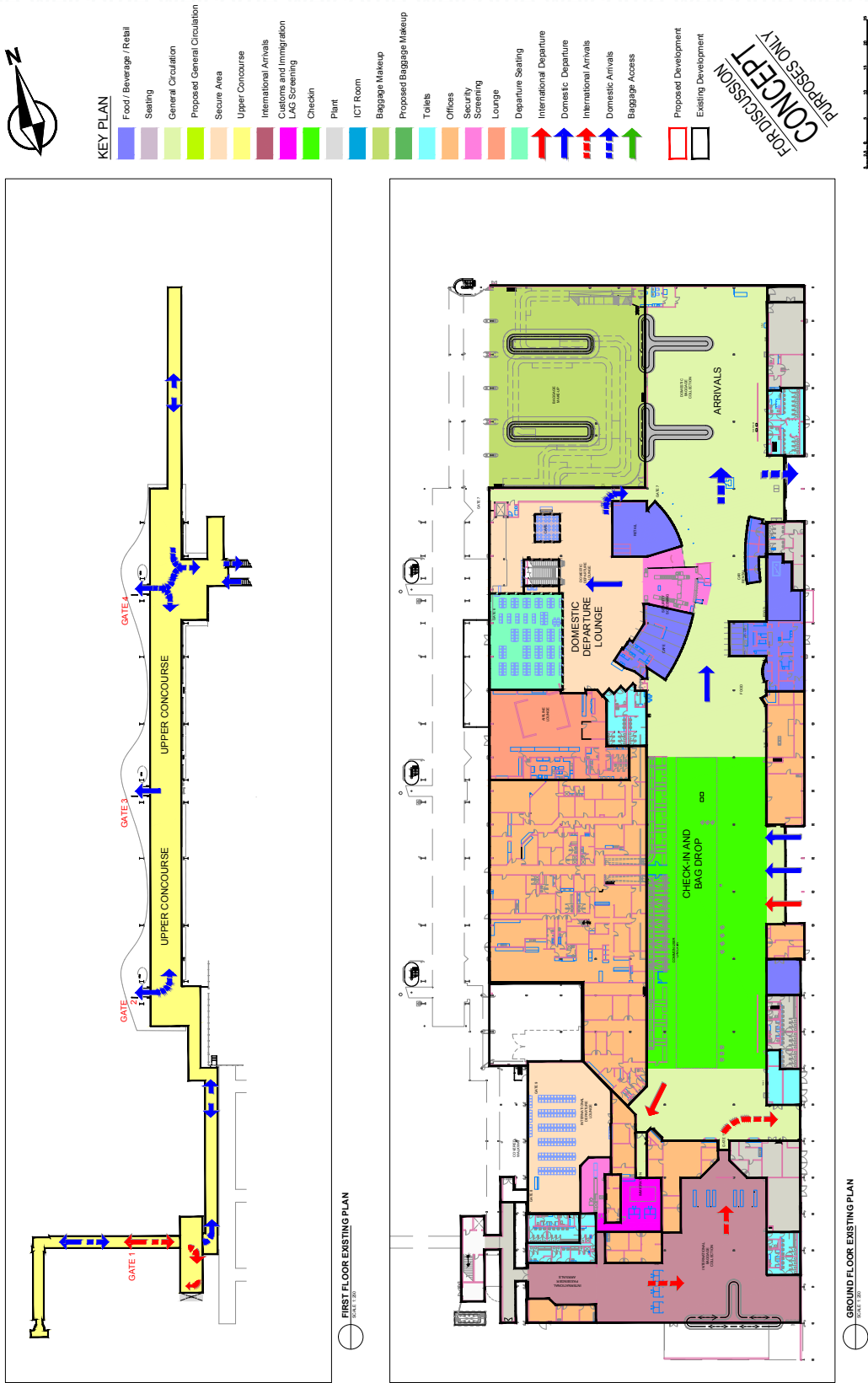
The MDP demonstrates the proposed development represents an acceptable balance between development of the airport and mitigation of potential environmental impacts. TAPL is committed to the management of these impacts in accordance with the Townsville Airport Environment Strategy and all other legislative obligations.

The **Townsville Airport Terminal Redevelopment** represents the strategically planned extension of the terminal building, as identified in the Townsville Airport Master Plan (2011). It will maximise the use of existing assets and ensure the capacity and provision of Townsville Airport's Infrastructure is commensurate with forecast growth in passenger and aircraft movement. Importantly, it will ensure the safe, secure and efficient movement of passengers and aircraft at Townsville Airport.



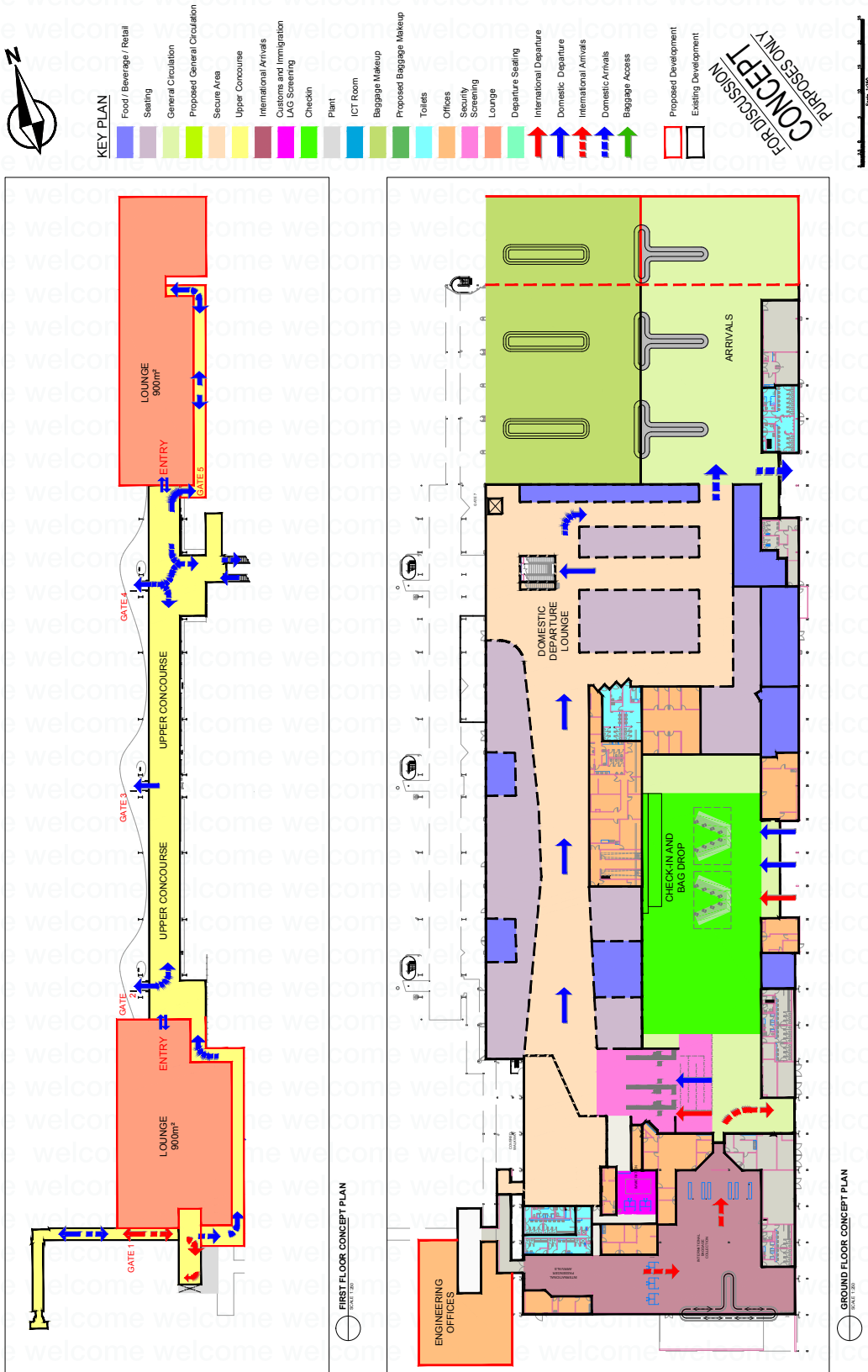
# Appendix A

## Existing Terminal Layout



# Appendix B

## Concept Plans

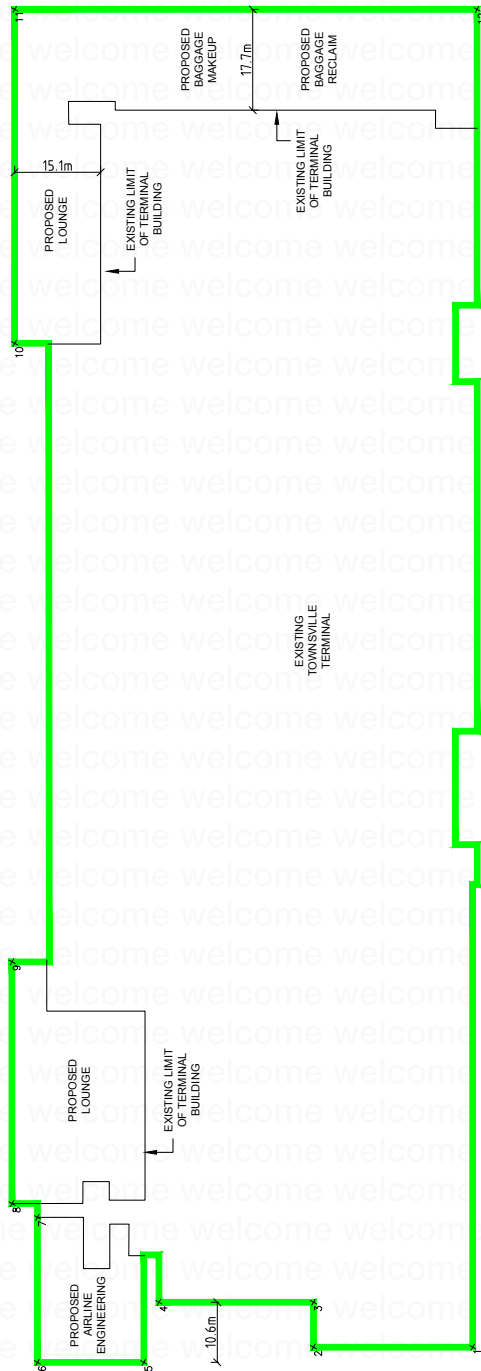


# Appendix C

## Development Limit Coordinates



FOR DISCUSSION  
CONCEPT  
PURPOSE ONLY



POINT No	EASTING	NORTHING
1	475696.6	7870068.0
2	475699.7	7870096.6
3	475677.8	7870705.3
4	475646.6	7870716.6
5	475640.2	7870701.2
6	475622.2	7870706.3
7	475629.1	7870730.8
8	475625.5	7870734.4
9	475617	7870775.3
10	475607	7870780.0
11	475688	7870936.5
12	475901.3	7870914.4

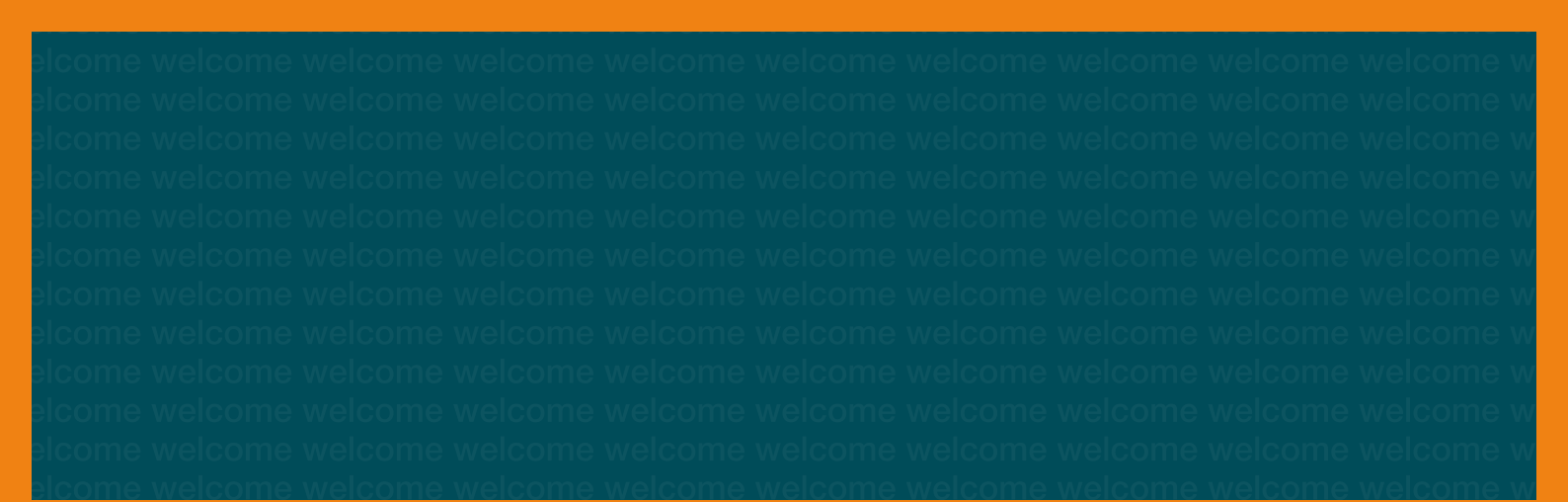
CONCEPT PLAN - DEVELOPMENT LIMIT IGA CO-ORDINATES

## Appendix D

### MDP Checklist

The following table comprises a checklist for the contents of a MDP as outlined in Section 91(1) of the *Airports Act 1996* and demonstrates that this MDP is consistent with these requirements.

Contents of a Major Development Plan	Section(s) of MDP
1) A major development plan, or a draft of such a plan, must set out:	
a) the airport-lessee company's objectives for the development; and	Section 1.2.2
b) the airport-lessee company's assessment of the extent to which the future needs of civil aviation users of the airport, and other users of the airport, will be met by the development; and	Section 1.2.1
c) a detailed outline of the development; and	Section 3.0
ca) whether or not the development is consistent with the airport lease for the airport; and	Section 4.3
d) if a final master plan for the airport is in force—whether or not the development is consistent with the final master plan; and	Section 4.4
e) if the development could affect noise exposure levels at the airport—the effect that the development would be likely to have on those levels; and	Section 6.4
ea) if the development could affect flight paths at the airport—the effect that the development would be likely to have on those flight paths; and	Section 6.2
f) the airport-lessee company's plans, developed following consultations with the airlines that use the airport, local government bodies in the vicinity of the airport and—if the airport is a joint user airport—the Defence Department, for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels; and	Section 6.4
g) an outline of the approvals that the airport-lessee company, or any other person, has sought, is seeking or proposes to seek under Division 5 or Part 12 in respect of elements of the development; and	Section 1.3 & Section 4.0
ga) the likely effect of the proposed developments that are set out in the major development plan, or the draft of the major development plan, on: <ul style="list-style-type: none"> <li>• traffic flows at the airport and surrounding the airport; and</li> <li>• employment levels at the airport; and</li> <li>• the local and regional economy and community, including an analysis of how the proposed developments fit within the local planning schemes for commercial and retail development in the adjacent area; and</li> </ul>	Section 6.3 Section 6.9 Sections 4.6 & Section 6.9
h) the airport-lessee company's assessment of the environmental impacts that might reasonably be expected to be associated with the development; and	Section 6.0
i) the airport-lessee company's plans for dealing with the environmental impacts mentioned in paragraph (h) (including plans for ameliorating or preventing environmental impacts); and	Section 6.0 and Section 7.0
j) if the plan relates to a sensitive development—the exceptional circumstances that the airport-lessee company claims will justify the development of the sensitive development at the airport; and	Not applicable (see Section 4.2.1)
k) such other matters (if any) as are specified in the regulations.	Not applicable



**Townsville**  
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