

Darwin International Airport
Master Plan

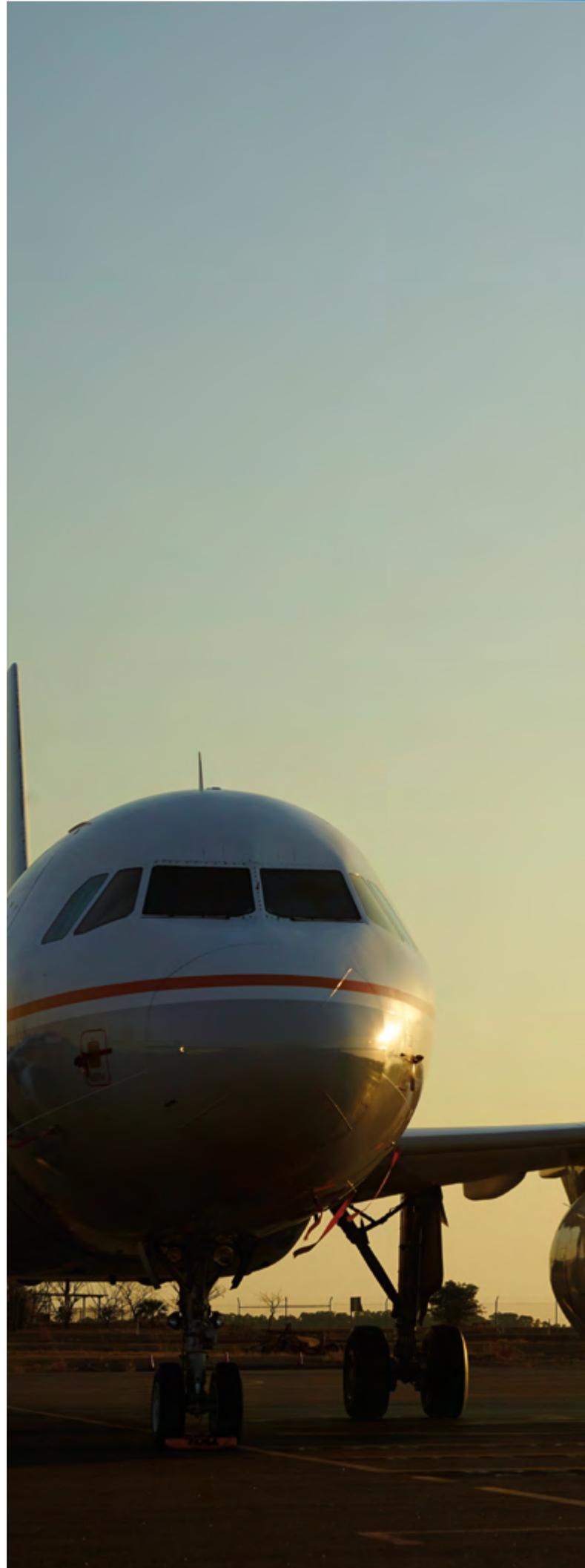
2017

SUMMARY DOCUMENT



CEO'S MESSAGE

A master plan must draw all these threads together – operational, economic, commercial, social and environmental – and lay them out in a coherent map for our staff, our clients, our partners and our community.



Darwin International Airport's (DIA) 2017 Master Plan is both a regulatory requirement and an important strategic planning tool that outlines our vision for projected growth over the next 20 years.

It is a blueprint that guides longer-range infrastructure investments while giving us the flexibility to adapt to emerging trends. At the same time, the master plan helps stakeholders understand the diversity of our business and our development plans by setting out the rationale for multiple land use precincts covering aviation, commercial, tourism, retail and conservation.

So what is an airport? One might think it's a place for planes and runways. Certainly our primary business is looking after passengers, freight, roads, car parks, security, arrival and departure halls and baggage carousels. At a high level, we might equally be described as providing critical transport infrastructure, an aviation gateway or as a profitable Australian business.

At Darwin International Airport, however, we prefer to see ourselves as a provider of services and experiences.

We are the front door to northern Australia and our facilities create first impressions for millions of travellers. Our terminal facilities are etched into the memories of Territorians' life events and written into the business plans of our clients.

We are the hub for thousands of journeys: the hugs of welcoming families, the sad farewells, business people making important connections, tourists on the trip of a lifetime and immigrants arriving to a new home. We are the small planes that act as 'aerial taxis' to remote and sparsely populated regions, the helicopters and aviation services that respond to medical and other emergencies in the region, and the Defence personnel posted away or arriving for military exercises.

We contribute to trouble-free journeys, provide attractive environs for people who fly, and invest in the infrastructure – if not the planes – that makes it easy for passengers to come and go, for our airline partners to deliver people, fresh food and general freight, and for our staff to feel proud of what they do.

We support the Northern Territory's trade and tourism growth, provide convenient commercial land and generate returns for our owners, who are ultimately thousands of Territorians through their superannuation funds.

At the same time, the airport is one of the Territory's largest employers, either directly or through the many businesses that operate on airport land.

We do all this on Larrakia country, near a unique wetland, monsoon forests and tropical woodlands. Being both developers and stewards of the environment, we have done our best to minimise our environmental and energy

footprints by investing in conservation zones, building the world's largest airside PV solar array and carefully managing the impacts of airport activities.

Of equal importance, we dedicate substantial time and effort to our social performance and relationships with the community in which we operate.

DIA sponsors arts and community groups and we proudly showcase many artists throughout the terminal and airport grounds. DIA recently sponsored a book on Darwin's rich and unique aviation history, covering tales of the airport's role as front door to aviation pioneers, wars, evacuations, immigration and Asian relations, interwoven with the airport's more recent history since privatisation in 1998.

A master plan must draw all these threads together: operational, economic, commercial, social and environmental – and lay them out in a coherent map that guides our planning and the experiences we create for our staff, our clients, our partners and our community.

The full 2017 Master Plan and Airport Environment Strategy are produced as part of our regulatory obligations under the *Airports Act 1996* and are available on our website. We have produced this shorter, non-technical summary to make the content more accessible and, we hope, makes it easier to provide feedback.

Ian Kew

*Chief Executive Officer
Darwin International Airport*





OVERVIEW

Darwin International Airport (DIA) 2017 Master Plan and Airport Environment Strategy was approved by the Federal Minister for Infrastructure and Transport on 6 September 2017.

The 2017 master plan is broadly similar to its 2010 master plan in terms of its land use zones and forecast growth. It is the fourth master plan developed by DIA since the airport was privatised in 1998.

Changes to proposed land use largely reflect projected aviation growth, the evolving needs of the airport's business partners and the potential to diversify airport income by expanding our property portfolio.

Key developments since the 2010 Master Plan include the \$75 million terminal expansion, a new international lounge, growth of Darwin Airport Central, the airport's 5.5MW solar project, upgraded aprons, taxiway and airfield lighting, construction of an aviation and medical retrieval facility, a new privately operated helicopter hangar, expanded car parking to accommodate general aviation growth and staff car parking for the INPEX project.

Background on Darwin International Airport

Darwin International Airport is a joint-user airport with the Department of Defence and has a 50-year lease with a 49-year option to renew from the Australian Government.

DIA's parent company is the Airport Development Group, which owns 100 per cent of Northern Territory Airports Pty Ltd (NTAPL). NTAPL in turn owns all of Darwin International Airport Pty Ltd (DIA) and Alice Springs Airport Pty Ltd, which hold leases over Darwin International Airport and Alice Springs Airport.

Since obtaining the Darwin lease in 1998, ADG has invested more than \$395 million in airport facilities, including the terminal expansion finished in 2015.

DIA plays a major role in Darwin's economic growth, including aviation facilities, roads and commercial activities, and is strategically important to the growth of the Northern Territory's tourism, trade, business and leisure activities.

Purpose of a master plan

The purpose of the master plan is to guide progressive and orderly development of airport land and aviation facilities.

It forecasts growth to ensure DIA is well-positioned to invest in aviation and commercial infrastructure, while taking account of operational, economic, commercial, social and environmental factors and describes current and proposed land use, areas earmarked for future aviation or commercial development and conservation zones.



The sections of the master plan cover:

- development objectives
- key growth and trends since the 2010 master plan
- social and economic contribution
- aviation activity forecasts for the next 20 years
- aviation support facilities
- aviation and non-aviation land use
- navigation, air safety and security
- noise management
- ground transport planning
- environmental management
- consultative mechanisms.

The Airport Environment Strategy at Appendix 1 of the Master Plan outlines potential environmental impacts and environmental action plans to ensure sustainable development on airport land.

The two documents provide the Australian Government with the information needed to make decisions on the adequacy of a master plan in meeting the airport's regulatory obligations under the *Airports Act 1996*.

Development objectives

DIA has established the following development objectives that guide its planning for aeronautical and non-aeronautical facilities and services.

- Planning supports long-term development as an airport with an optimal mix of aeronautical uses.
- Provide a safe, secure, reliable and sustainable airport operating environment.

- Enhance the airport's contribution to Northern Territory economic growth through developing the airport's aviation and property business and by facilitating the success of our business partners.
- Integrate environmental considerations into the development of facilities and services and seek to minimise their impact on the natural environment.
- Engage with key community, business and government stakeholders on airport related economic, social and environmental issues and be mindful of surrounding community interests.
- Provide airport infrastructure and facilities that are timely, cost effective, flexible in use and provide a good customer experience.
- Undertake developments that enhance value to our shareholders and the broader economic community.

Land use precincts

Supporting the master plan is a precinct map (see centre spread) that describes the various land uses as:

- aviation activities and facilities
- terminal and facilities
- aviation reservation (for future use)
- commercial
- service commercial
- tourist commercial
- conservation.

Regulatory context

All leased Federal airports (except Mount Isa and Tennant Creek) are subject to a planning framework set out in the *Airports Act 1996*. Airport lessee companies must prepare master plans that incorporate an environment strategy.

The master plan is a 20-year strategic vision for the airport site which is renewed every five years. It covers future land uses, types of permitted development and noise and environmental impacts. The environment strategy is a five-year plan covering the environmental management of DIA operations and conservation areas.

The DIA 2017 Master Plan was approved by the Federal Minister for Infrastructure and Transport on 6 September 2017, and will apply for five years.

Planning context

Land use planning as specified in the *Airports Act 1996* identifies precincts for various activities (see centre spread) and is fundamental to an airport master plan. The 2017 Master Plan is based on terminology and definitions consistent with the Northern Territory Planning Scheme as much as possible, with any variations identified.

Any development on airport land still needs to obtain Commonwealth planning approval.



ECONOMIC

The airport is an aviation gateway to Australia and Asia and key to an integrated transport network that covers road, rail, sea and air. In addition, its busy general aviation facilities provide vital links for passenger and freight services, aeromedical and essential services serving remote communities across northern Australia.

This aviation connectivity is a critical enabler of economic growth and investment attraction for Australia's north.

The airport is positioning itself as the hub for northern Australia, including services to the offshore oil and gas industry, providing tourism links to Asia and expanding choice for regional centres, many of which depend on flights that backtrack through other cities to fly north.

Growth in aeronautical activities has slowed since 2010 but the period has seen a diversification of aircraft flying through Darwin and a shift from predominantly low-cost airlines to more full-service airlines servicing Asian and Australian routes.

Highlights

- DIA is a key commercial, personal travel, essential services and military transport facility for northern Australia.
- Airport activities currently support 1800 workers (1500 full-time equivalents), which is 1.3% of the Territory's workforce.
- Commercial and aviation activities contribute \$270 million a year to Gross State Product (GSP), which is 1.2% of the Northern Territory's GSP.
- Air access is critical to the Territory's tourism industry, supporting 5000 jobs and an estimated \$500 million a year contribution to the NT economy.

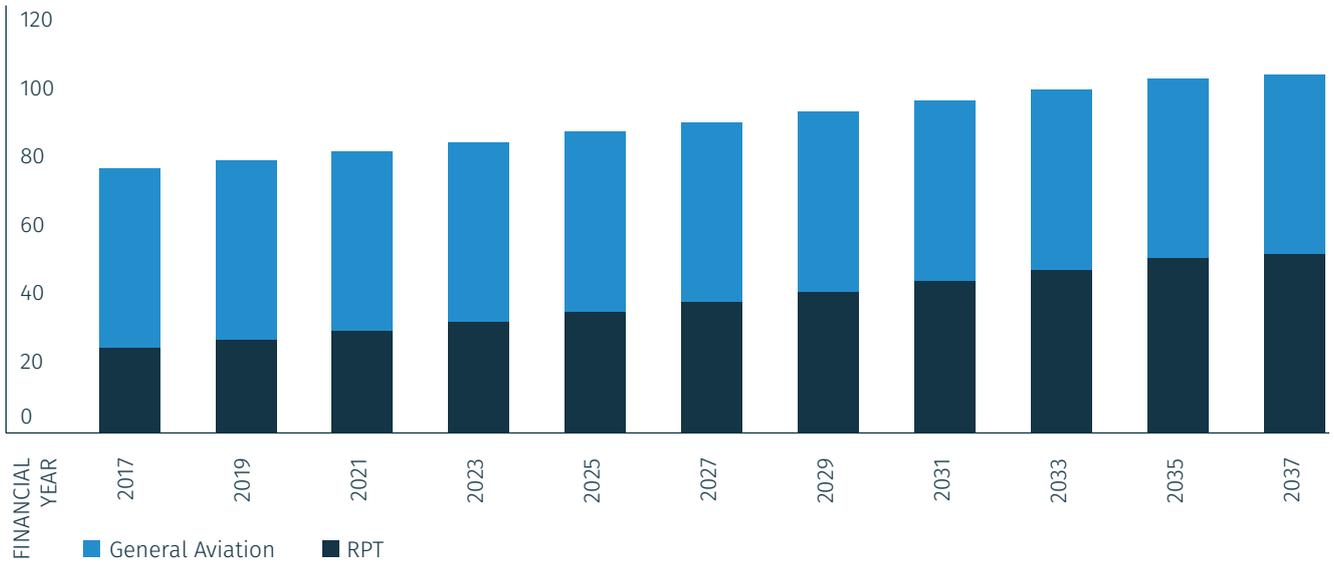
Projected growth

- In the next 20 years, DIA expects passengers through the airport to increase from two to six million, the number of jobs supported by airport businesses to rise to 3000 and contribution to GSP to double.



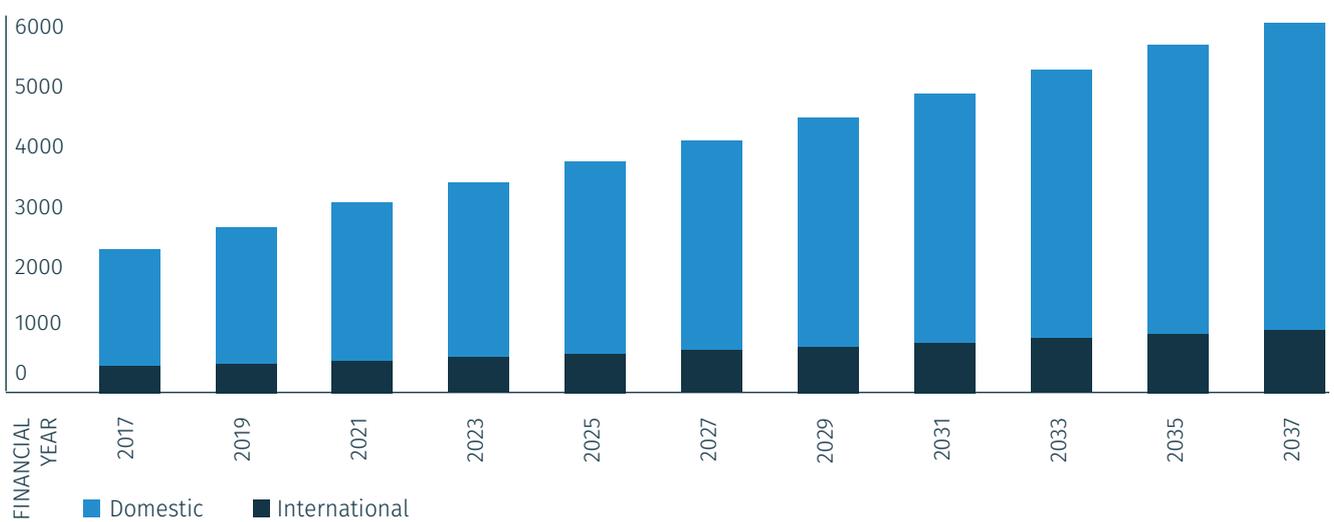
FORECAST AIRCRAFT MOVEMENTS

AIRCRAFT MOVEMENTS (000'S)



FORECAST PASSENGER MOVEMENTS

FORECAST PASSENGER MOVEMENTS (000'S)



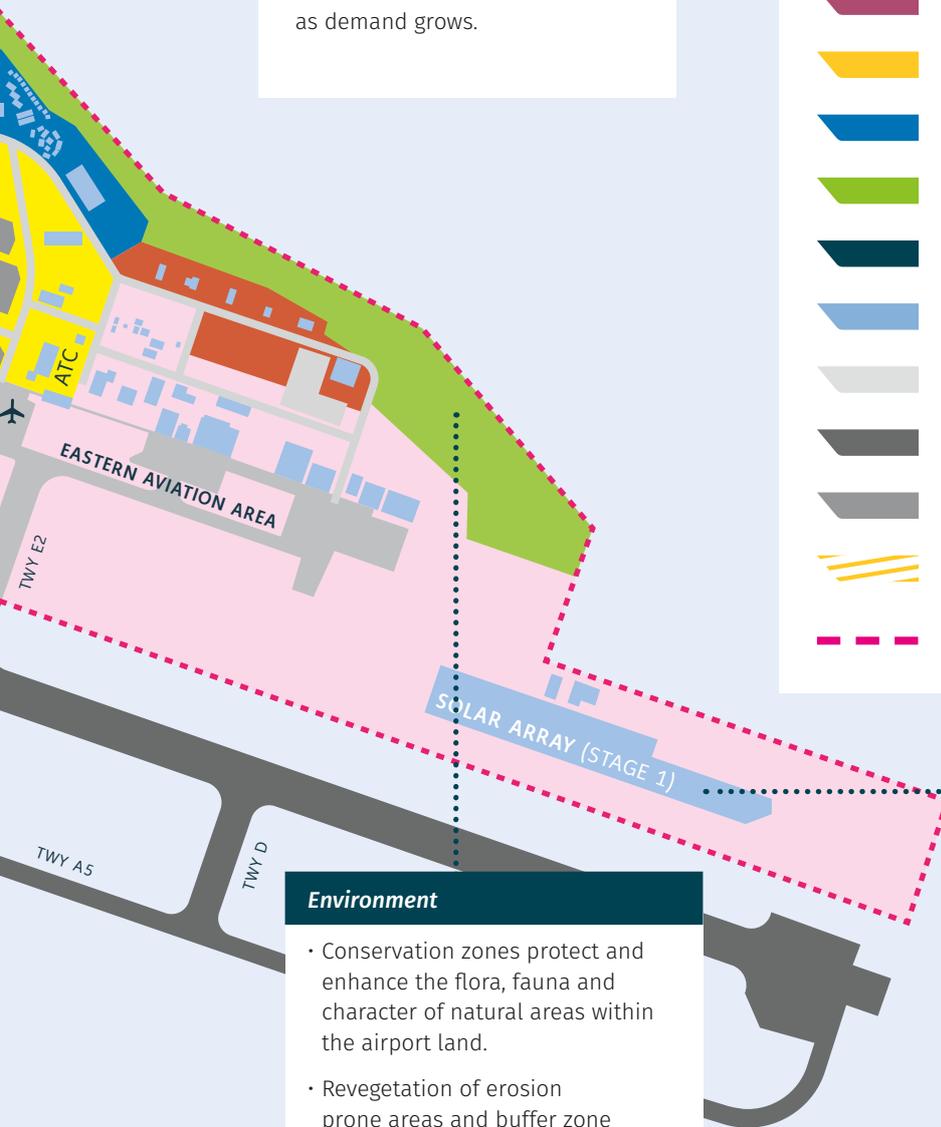
MCMILLANS ROAD

Ground Transport

- Daily vehicle trips to and from the airport are estimated to grow from 14,000 currently to 47,000 in 2037.
- The master plan envisages a number of improvements to external road access.
- Ground transport arrangements in the passenger terminal forecourt area will be refined as demand grows.

Land use zones

- Aviation Activities and Facilities
- Terminal and Facilities
- Aviation Reservation
- Commercial
- Service Commercial
- Tourist Commercial
- Conservation
- Terminal
- Buildings
- Streets/Ground Transport
- Taxiway/Apron DIA
- Taxiway/Runway Joint-user
- Possible Future Airport Land
- DIA lease boundary



Environment

- Conservation zones protect and enhance the flora, fauna and character of natural areas within the airport land.
- Revegetation of erosion prone areas and buffer zone implemented for Rapid Creek.
- Commitment to adopt flood mitigation measures in the DIA lease area to help reduce Rapid Creek flooding in Darwin's Northern suburbs.

Renewable energy

- DIA has constructed two solar PV arrays, generating 5.5MW of power to the airport.
- DIA was awarded the Airport Innovation and Excellence Award for Environmental Management by the Australian Airports Association in 2016.
- DIA is investigating further solar opportunities to extend the airport's pioneering commitment to renewable energy.



Safe, efficient aviation activities that meet diverse customer demands and provide a good passenger experience.

OPERATIONS

Airport operations prioritise safe, efficient aviation activities that meet diverse customer demands, and provide a good passenger experience while complying with aviation regulations.

At this stage, it is envisaged that all domestic and international flights will continue to operate from the existing terminal building. This doubled in size in 2015 with completion of a \$75 million terminal expansion, as well as refurbishing many areas of the original terminal building.

The timing of terminal growth beyond 2017 will depend on demand and will be accommodated by expanding the building within the terminal and facilities zone. Key areas driving future expansion include baggage make-up, baggage claim, and to some extent the domestic departure lounge and retail needs.

The existing runway system is regarded as adequate to cater for projected traffic and will be retained in its existing configuration. Lengthening of Runway 18/36 is not required for civilian operations even beyond the planning period. However enhancement of the taxiway system is needed to support increased regular passenger transport (RPT) services and general aviation traffic and to support new apron areas.

The RPT apron will expand in a linear way then wrap around the terminal to the north-west. When a pier development is needed to support terminal demand, the apron concept will alter accordingly.

General aviation facilities will be developed on a commercial basis to meet continued demand, with helicopter growth accommodated longer-term by moving operations further east.

The role of ground transport is to provide connectivity with the rest of the Northern Territory's transport infrastructure and efficient access to the terminal and other commercial activities. The airport's ground transport services cover parking, taxis and public transport, staff parking, road networks, pedestrians and cyclists.

About 80% of passengers arrive and depart from the airport by car. To accommodate this, DIA has restructured and expanded parking facilities and is considering issues such as the need for a multi-storey carpark, accommodating ride-sharing services, taxi services and facilities for cyclists.

Aviation and commercial growth, particularly along Osgood Drive, is expected to require internal road development and a new signalised intersection off McMillans Road between



Rapid Creek and Sabine Roads (see centre spread) to provide access to the Service Commercial Zone.

Other external road network plans envisaged include downgrading the intersection of McMillans Road and Charles Eaton Drive to allow only left-in and left-out traffic; increased capacity of Henry Wrigley Drive, north of Abala Road; increased turning movement and storage capacity at the intersection of McMillans Road, Rothdale Road and Henry Wrigley Drive; and possible improvements to the intersection of Bagot Road and Osgood Drive.

The approach to development of the internal road network is to maximise the use of existing road capacity, segregate passenger and non-passenger traffic, enhance the road system progressively in line with demand and facilitate aviation and commercial developments.

The Master Plan also covers a number of measures to protect aircraft operations, including protection of airspace required for safe operations, while the Department of Defence has statutory protection from intrusion into Defence airspace.

Highlights

- the airport is a key hub between Australia and Asia
- it has no curfew and operates 24/7
- it has capacity to grow
- it is a joint-user facility with the Department of Defence

Since the last master plan

Apron, taxiway and runway works

- expansion of the regular public transport (RPT) heavy aircraft apron
- taxiway pavement and airfield lighting upgrades
- enhanced eastern aviation area infrastructure

Terminal

- major expansion to the airport terminal, almost doubling its size to 27,000m²
- construction of the Catalina lounge, a premium lounge for international travellers
- replacement program of air handling units in the terminal
- IT upgrade to common user terminal equipment

Facilities

- construction of two solar PV arrays, with an output of 5.5 MW

Ground transport

- new and expanded car parks
- covered pedestrian walkways to provide sheltered access to passengers and staff
- rebranded public carparks to Short Stay & Pick Up, Long Stay Saver and Long Stay Plus (previously known as the general aviation car park)
- Henry Wrigley Drive resurfaced
- upgraded car parking equipment.

Projected growth

By 2037, DIA predicts significant growth in activities:

- passenger movements, including transit and transferring passengers, will increase from more than 2 million to almost 6 million passengers
- combined airline and general aviation will grow from 74,000 to more than 100,000 movements a year
- domestic air freight will still be carried mainly in the cargo hold of passenger services, with capacity increasing with the growth of domestic airline movements
- daily vehicle trips to and from the airport are estimated to grow from 14,000 currently to 47,000 in 2037 as a result of projected aviation growth and commercial development.



COMMERCIAL

The airport lease covers 311 hectares, with about 80 hectares (26%) available for non-aeronautical commercial development. This includes a 60 hectare Service Commercial Zone along the airport's northern boundary and a 20 hectare Commercial Zone.

Darwin Airport Central is the first integrated and planned commercial, entertainment and lifestyle precinct of its kind in the Northern Territory.

Bounded by two major external roads (Bagot Road and McMillans Road), the precinct's location offers premium and centrally located commercial and retail space including offices, Bunnings, a popular lifestyle and entertainment zone, retail, child care and a petrol station.

Land in the 46 hectare Aviation Reservation Zone, while set aside for aviation use, can be used for other commercial purposes in the short to medium-term.

Highlights

- DIA is one of the Northern Territory's largest commercial landholders
- Darwin Airport Central covers about 26% or 80 hectares of airport land not required for aviation purposes
- land use planning underpins effective management of the airport's growing property portfolio which in turn diversifies airport income.

Since the last master plan

- Darwin Airport Central marketing campaign launched in October 2016
- continued development in the Service Commercial Zone, including Kingpin family entertainment centre, Caltex service station, Flip Out indoor trampoline arena, Osgood South Commercial, Muzz Buzz drive-thru coffee and juice, and Little Flyers child care facility
- development of new aeronautical facilities
- upgraded commercial precinct infrastructure.

Projected growth

- a demand study for the greater Darwin region estimates a possible development of 153,000m² in the Service Commercial and Commercial zones over the next 20 years.

ENVIRONMENT

The Airport Environment Strategy (AES) is Appendix 1 to the 2017 Master Plan. The AES sets out an airport's commitment to manage environmental issues and is the means by which the Australian Government measures an airport's environmental performance.

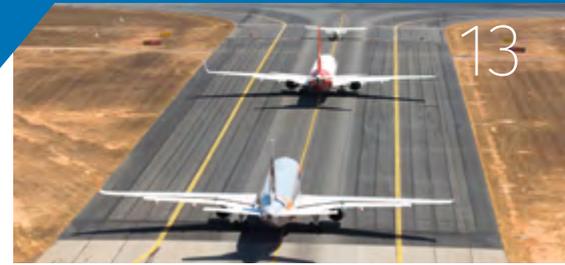
The key objectives of the AES are to demonstrate compliance with all relevant standards and legislation and guide continual improvement in environmental management at the airport.

The strategy outlines key environmental aspects arising from airport operations and development on airport land. The strategy includes a number of five-year action plans that set objectives for keeping the impact of our activities as low as reasonably possible and continuously improving our environmental performance.

Environmental management covers water, soil and land, biodiversity and conservation, air quality and emissions, noise, the use and storage of hazardous substances and dangerous goods, waste management, sustainable energy and resource management, heritage, development, tenant and contractor management; and working with community on environmental management issues.

An important element of environmental management is defining standards, with clear procedures and guidelines, including training for all staff working on airport land to ensure they understand and can meet their obligations.

Other objectives outlined in the AES include maintaining an environmental management system (EMS) and transitioning this to the updated international standard ISO 14001:2015, regular reviews of compliance and keeping abreast of legal and regulatory obligations.



AIRCRAFT NOISE

Key environmental initiatives since the 2010 Environmental Strategy include the airport's solar project, upgrading the Gurumbai Walking Trail, working with the Northern Territory Government on flood mitigation, energy-saving initiatives in the terminal and fencing Rapid Creek Reserve.

A key initiative is DIA's \$13 million investment in a 4 MW solar PV array in 2015-16 and 1.5 MW array in 2017. This 'solar farm' will produce enough energy to power more than 1000 average Australian homes, substantially reducing the airport's carbon footprint.

Highlights

- The Airport Environment Strategy (AES) establishes a framework for assessing environmental compliance with the relevant standards and legislation.
- It guides continual improvement of environmental management at the airport.
- Conservation zones protect and enhance the flora, fauna and character of natural areas within the airport land.
- Ongoing detailed environmental monitoring program

Since the last master plan

- significant investment in solar facilities to reduce carbon emissions
- Gurumbai walking trail upgrade
- carbon dioxide monitoring system installed so the terminal air conditioning responds to area occupancy

- building management system (BMS) expanded to help reduce power and water use
- commitment to adopt flood mitigation measures in the DIA lease area to help reduce Rapid Creek flooding in Darwin's Northern suburbs
- revegetation of erosion prone areas and buffer zone implemented for Rapid Creek
- a series of short films produced to communicate to the community about DIA's environmental initiatives, including Rapid Creek conservation and the airport's new PV solar arrays.

The future

- continue to maintain and improve DIA's environmental management systems
- implement an Environmental Assurance Program and ensure ongoing facilitation
- investigate further renewable energy opportunities for power generation on airport
- explore the adoption of emissions off-setting programs
- develop an 'environment by design' standard for DIA

As a joint-user facility, Darwin's airport supports both civil and military aircraft movements. As the civil operator, DIA has little direct control over aircraft noise except for the ground running of civil aircraft. Airspace management is controlled by the Department of Defence.

The key noise metric for the airport is the Australian Noise Exposure Forecast (ANEF), a set of contours showing future forecasted levels of exposure to aircraft noise for building control purposes.

The ANEF has status under the:

- *Northern Territory Planning Scheme* for land use planning and development consent off airport; and
- *Airports Act 1996* covering land use planning and development consent on airport land.

The Master Plan incorporates the endorsed 2042 joint civil-military ANEF which considers both a relatively stable number of civil flights throughout the year and more variable military movements, excluding peak exercise periods such as the biennial Exercise Pitch Black and annual Exercise Aces North.

The Master Plan includes N-Contour drawings, a complementary noise metric that shows the potential number of aircraft noise events above a certain decibel per day. It is more explanatory than the ANEF system as it shows noise in the way that people perceive it.



The airport's social performance includes sponsorships, a commitment to conservation, art and culture and creating a workplace where staff are proud to come to work.

SOCIAL

In addition to its environmental responsibilities, DIA takes seriously its social performance in the community in which it operates. This includes respect for the traditional owners of the land, the Larrakia people, as well as the cultural and social values of the Darwin community.

The airport's social performance includes sponsorships, a commitment to conservation, art and culture and creating a workplace where staff are proud to come to work.

Stakeholder relations and consultation are integral to DIA's social performance, including the airport's Community Consultation Group and Planning Coordination Forum.

Airport Community Consultation Group

The airport's Community Consultation Group provides feedback to DIA on community issues arising from airport operations and developments, such as:

- development and operations
- steps to develop and implement master plans
- environmental issues, including aviation noise
- ground transport and access issues
- improvements or changes to airport facilities
- relevant reports from Department of Infrastructure and Regional Development, Airservices Australia, Civil Aviation Safety Authority and Department of Defence
- the airport's contribution to local, regional and national economies.

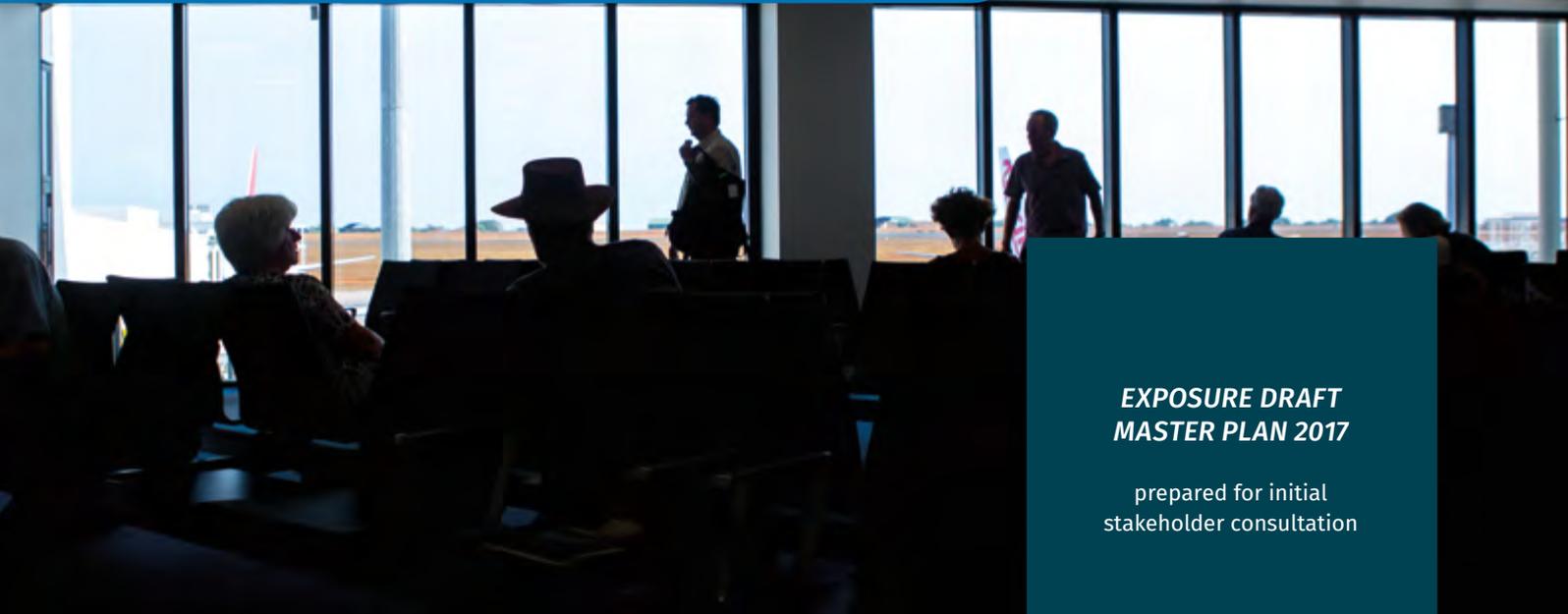
The Community Consultation Group does not resolve airport or aviation complaints, or commercial disputes.

Planning Coordination Forum

The role of the Planning Coordination Forum is to develop strategic partnerships between airport operators and the Australian, Northern Territory and local governments. The forum

discusses issues and exchanges information on airport planning and operations and the implications for DIA of development in the surrounding areas. Specific issues may include:

- consistency of airport planning with relevant urban and regional planning schemes (leased airports have a statutory obligation to address and justify any planning inconsistencies in their master plans)
- steps to develop or implement the airport's master plan
- ground transport issues including connectivity with off airport transport
- environmental issues arising from airport development and operations
- the off airport impacts of airport commercial development
- measures to address the impacts of airport operations, such as aircraft noise
- land use planning and development issues near the airport, including planning measures to safeguard airport operations
- government briefings on regulatory and policy developments.



EXPOSURE DRAFT MASTER PLAN 2017

prepared for initial
stakeholder consultation

CONSULTATION FOR THE MASTER PLAN

The 2017 Master Plan is based on detailed technical studies and stakeholder consultation to inform both long-range planning to 2037 and short-term development over the next five years.

DIA has consulted with stakeholders and community to explain elements of the master plan and to ensure the Master Plan and Environment Strategy address community and stakeholder priorities and any issues of concern.

The Preliminary Draft Master Plan was advertised for public comment for a period of 60 business days, from 7 March to 6 June 2017. As part of the public consultation process, DIA:

- made copies of the Preliminary Draft Master Plan available from the Darwin International Airport Management Centre and darwinairport.com.au
- undertook various discussions with NT Government and key stakeholders
- held two public information display events.

Written comments received during the public comment period were considered by the airport and the Federal Minister for Infrastructure and Transport when finalising the Master Plan.

PRELIMINARY DRAFT MASTER PLAN 2017

prepared and released for public
comment (60 business days)

DRAFT MASTER PLAN 2017

submitted to the Minister for
approval including details on
consultation (50 business days)

FINAL MASTER PLAN 2017 APPROVED FOR A 5 YEAR PERIOD



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