Gold Coast Airport has efficient and cost effective passenger processing and aircraft turn-around times that is underpinned by a strong focus on safety.

6.1 INTRODUCTION

This focus on safety and customer experience makes the Airport a very attractive proposition to Australian and international carriers. It is important that aviation infrastructure investment reflects the anticipated growth in passengers, aircraft movements and demand placed on the Airport. To ensure Gold Coast Airport remains competitive, it is essential that the Airport remains safe, efficient and reliable.

The typical airport master planning process is to first identify and prioritise solutions based on the airside component – identify gate requirements and locate aircraft parking positions and their supporting taxi lanes to optimise the overall efficiency of the airfield. Then the internal layout of the terminal building(s), landside curb and terminal roadway systems are developed.

The aviation development plan in this Master Plan improves safety, efficiency and capacity of the Airport to 2037. It also facilitates flexibility and adaptability of the airfield to respond to the constantly evolving aviation industry. The planned infrastructure is vital to support future passenger and aircraft movements through the Airport.

Figure 6.1 shows the Five-Year Airport Development Plan; Figure 6.2 shows the Twenty-Year Airport Development Plan. Sections 6.2 – 6.5 outline the key elements shown on the development plans.
Figure 6.2 Twenty-Year Airport Development Plan

**KEY**
1. Passenger Terminal
2. Apron
3. General Aviation Apron
4. Helicopter FATO
5. Airport Fire Service
6. Control Tower
7. ILS
8. GSE Storage / Maintenance
9. Freight / Maintenance
10. VOR / DME
11. NDB
12. Fire Training Area
13. Mallaraba Car Park
14. GCA NSW Lease Area

**LEGEND**
- GCA Commonwealth Boundary
- QLD / NSW State Border
- Passenger Terminal
- Car Parks (Existing)
- Airside Areas
- Aircraft Movement Areas (Existing / Proposed)
- Aviation Support
- Aviation Fuel
- Non Aviation
- Southern Cross University
- Landside Areas
- Road
- Light Rail (indicative only)
- Heavy Rail (indicative only)
- Airport Drainage

Figure 6.2 - 20 Year Development Plan
6.2 AIRFIELD DEVELOPMENT

The fundamental capacity constraint of an airport is its runway system. Careful consideration needs to be given to the airfield configuration to achieve maximum capacity. When considering future airfield developments, Australian and international legislative standards must be complied with.

Airport design standards and operating procedures are in accordance with Australia’s new Civil Aviation Safety Regulations Manual of Standards Part 139 as prescribed by CASA. These standards generally follow the ICAO standards and recommended practices for the safe and orderly development of international civil aviation.

The adopted design principles ensure safety, efficiency and regulatory conformance of the airfield and airspace is maintained.

Airfield development planning needs to take into consideration environmental and physical constraints that might impact on future development of the Airport. Broadly these types of constraints can be classified as:

» Physical infrastructure or facilities and land
» Access
» Planning, operational and environmental.

In developing the Master Plan, a constraints assessment was undertaken to identify features that may present a physical limitation to the future expansion of the Airport. This included features external to site to ensure that the safety of airport airspace is not compromised.

6.2.1 Runways

Gold Coast Airport has two runways. The primary runway (Runway 14/32), used by RPT aircraft, is 45 metres wide. The cross runway (Runway 17/35) is 18 metres wide and used by General Aviation aircraft.

6.2.2 Runway 14/32

Runway 14/32 has an available take-off length of 2,342 metres in the 14 direction and 2,492 metres in the 32 direction. Runway 32 has a 450 metre displaced landing threshold.

The runway lengths are adequate for current operations and target destinations in Australia, the Pacific and South East Asia.

Current improved aircraft performance means the runway length will be adequate for the life of this Master Plan. Consistent with master plans since 1994 and surrounding land use planning, protection is to be maintained for an ultimate runway length of 2,858 metres. This length may be required due to international demand for extended destinations.

Relocation of Runway 32 Landing Threshold

Consistent with the 2011 Master Plan, to improve safety and reliability for wide-body aircraft during adverse weather, it is intended to relocate the Runway 32 landing threshold approximately 300 metres to the south, see Figure 6.3. This is within the existing runway length and will result in a 150 metre displaced landing threshold. This is planned to occur during the first five-year period of the Master Plan.

In preparing the Master Plan, a technical investigation was undertaken to assess the impacts of moving the threshold by approximately 300 metres. The investigation has found that in the immediate vicinity of the Airport aircraft will be approximately 15 metres lower in altitude on approach from the south. As described in Chapter 5.0, the investigation has found that the changes in sound pressure at specific locations, due to aircraft altitude, are relatively small (between 0.3 dB(A) and 0.6 dB(A)). It is considered that changes in sound pressure of 3 dB(A) or lower are generally not noticeable. Therefore a minor change in sound pressure of between 0.3 dB(A) and 0.6 dB(A) is highly unlikely to be noticeable.

The proposed relocation of the threshold will not significantly change flight paths or levels of aircraft noise and does not significantly impact the community adjacent to the airport. It is considered that the proposed relocation of the threshold does not constitute a major airport development.

The 2047 ANEF in this Master Plan incorporates the revised Runway 32 landing to ensure potential impacts are included for planning consideration. This is described in more detail in Chapter 5.0. GCAPL will work closely with Airservices Australia and consult extensively with the community through the CACG and the ANACC.
6.2.3 Runway 17/35

Runway 17/35 has an available take-off and landing distance of 582 metres in both the 17 and 35 directions. Due to surrounding obstacle restrictions there is no ability to lengthen the existing runway length.

6.2.4 Taxiways

The primary runway is served by a partial length parallel taxiway connecting the main RPT apron. Various stub taxiways connect to the runway providing additional efficiency to reduce redundancy for the taxiway system.

An extension to the partial-length parallel taxiway, between Taxiway A and D, is planned during the first five-year period of the Master Plan. This will provide a full-length parallel taxiway, which will provide additional connections to the proposed expanded RPT apron to the south to accommodate demand.

An additional General Aviation taxiway link is proposed between Runway 14/32 and the northern end of the existing General Aviation apron. This will improve efficiency, provide redundancy to the existing single taxiway and connect with a planned run-up bay.

6.2.5 Regular Public Transport Apron

The existing RPT apron accommodates international and domestic aircraft operations.

As part of the Project LIFT terminal expansion, an additional five stands will be added along with the associated terminal development.

The busy-hour stand demand developed in Chapter 4.0 and shown in Table 6-1, provides the required number of parking positions through to the twenty-year horizon.
Please note, in Table 6-1, the combined number of aircraft apron parking stands is not the sum of the numbers of international and domestic stands.

Figure 6.1 shows the development of the apron and expansion of the terminal to the south. This forms part of the Project LIFT terminal redevelopment and incorporates the first five years of the Master Plan. Figure 6.2 shows the 2037 aircraft parking layout.

It is also planned to expand a remote parking apron at the northern end to provide an additional multiple aircraft ramp stand. This would be available for freight, itinerant and overnighting aircraft.

**General Aviation Apron**

Works proposed in the General Aviation Precinct include providing additional aircraft apron and taxiways. The works proposed within the first five years of this Master Plan include:

- A new taxiway link to Runway 14/32 at the northern end of the General Aviation precinct
- Realignment of the existing Code C Taxiway to Runway 14/32 and new apron areas for aircraft parking. The development will also provide a helicopter final approach and take-off area and wash down facility.

This arrangement is shown in the Five-Year Airport Development Plan (Figure 6.1).

### 6.3 WESTERN ENTERPRISE PRECINCT

The Western Enterprise Precinct is identified as an area available for long-term aviation and airport related development. This precinct could supply additional building area and apron capacity to meet future aviation demand, such as General Aviation expansion and freight and maintenance facilities.

Future development of this precinct is reliant on the ability to decommission or relocate existing Airservices Australia navigational aids and communication installations. Further assessment will be required to identify suitable and viable land uses. Airservices Australia has advised that there are no short-term (five-year) plans to decommission or relocate these installations. Facilities such as the VOR/DME (distance measuring equipment) and NDB are a component of the Australian Backup Navigation Network and are required for operational purposes. The retention or removal of the VOR/DME and NDB would be based on navigation requirements, aircraft avionics fit, and national industry-agreed ground-based navigational aid requirements.

Any potential for development in the Western Enterprise Precinct can only be assessed if the NDB and VOR are removed within the twenty-year planning horizon. GCAPL will continue to liaise with Airservices Australia on the future requirements for these installations. In the event that the navigational aids are decommissioned in this precinct, any development will require coordination with Airservices Australia to assess impacts on remaining communications facilities and navigational aids.

Long-term development plans may include a new apron area. This would be a remote stand capable of accommodating a mixture of Code E and Code C aircraft stands and potentially General Aviation. This is in addition to options to include appropriate industrial and aviation-related businesses to support the intended economic enterprise intent for the precinct.

Development of the Western Enterprise Precinct would require a new taxiway system connecting the primary runway to a new western apron and building area.

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>2022</th>
<th>2037</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Domestic</td>
<td>2</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Combined</td>
<td>4</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>
6.4 TERMINAL

6.4.1 Design Principles

It is recognised that Gold Coast Airport has become a significant gateway to the region, facilitating over six million passengers per annum. For many visitors Gold Coast Airport is the first and last experience of a trip to the region. It is essential it appropriately reflects the tourism experience available on the Gold Coast, Tweed Shire and beyond.

The existing terminal building expansion, approved as part of Project LIFT, will improve customer experience for the Airport and will include:

» Expanded terminal building
» Expansion of the existing terminal building to accommodate aerobridges
» Five additional aircraft parking stands up to Code E aircraft.

Future terminal planning will be in accordance with International Air Transport Association’s Optimum Level of Service, which sets the standard for service and comfort. Design principles are to be in accordance with International Air Transport Association standards, Airports (Building Control) Regulations 1996, customs, immigration and quarantine processing requirements, DIRD aviation security requirements, disability access requirements and other regulatory requirements.
6.4.2 Development Concept — Short Term (2017–2022)

The existing integrated international and domestic common use terminal (Terminal 1) has capacity for six million arriving and departing passengers per annum. The terminal expansion is required to accommodate the continual growth experienced by Gold Coast Airport.

Gold Coast Airport is undertaking new building works to extend the southern end of the terminal and will support the airside expansion of the RPT apron and additional aircraft stands.

6.4.3 Development Concept — Long Term (up to 2037)

The long-term development of the terminal will focus on improved pedestrian connectivity between landside developments and the terminal to both activate the proposed plaza and promote good links across the Terminal Precinct.

Future planning for the Airport will need to evolve and respond to passenger and airline requirements and to advancements in construction technology and aviation standards. Any expansion to the terminal will be staged to ensure that the Airport remains operational at all times.

The ultimate terminal layout will be achieved in a multi-staged and progressive development responding to forecast growth in passenger numbers.
6.5 AVIATION SUPPORT FACILITIES

6.5.1 Fuel Storage
All jet and turboprop aircraft types use aviation turbine fuel. The fuel is dispensed to domestic and international aircraft at the stands via an under-pavement hydrant system. Tanker trucks are primarily used to refuel regional and General Aviation turboprop and jet types.

The existing JUHI has a storage capacity of 4.0 million litres. The fuel facility site has sufficient area to double the storage requirements to 7.76 million litres to meet the seven days’ supply for 2037 fuel demand requirements.

6.5.2 Freight
Freight facilities for freight transported in the belly-holds of the passenger aircraft are located in the Terminal Precinct adjoining Terminal 2.

Freight capacity at Gold Coast Airport is expected to increase as international air traffic movement increases, particularly with carriers seeking to enhance their commercial returns by using spare hold capacity for freight. An area in the Terminal Precinct has been identified to expand the current freight facilities, this would provide a multiple use facility to respond to market requirements.
6.5.3 Ground Servicing Equipment

Ground servicing is provided by third-party operators contracted to the airlines. Operators are licensed by the Airport and are provided with adequate area to store, park and stage equipment for all of the aircraft parking positions.

GCAPL meet regularly with these operators at the Aerodrome Safety Committee to discuss safety, security and operational requirements.

6.5.4 Aircraft Maintenance

Aircraft maintenance facilities are limited to General Aviation maintenance and the requirements of some small corporate jets.

Demand for aviation maintenance facilities is highly dependent on several factors:
» Requirements of operating airlines to service or maintain aircraft at an airport;
» Establishment of maintenance facilities by third-party operators;
» Government incentives for establishment of aircraft maintenance facilities or aircraft manufacturing.
The future demand for aircraft maintenance facilities cannot be made based on air traffic projections.

While it is planned to retain the current General Aviation maintenance facilities, additional sites can be made available as required. General Aviation facilities may become available to new operators if existing operators migrate to smaller General Aviation airports in the region.

6.5.5 Airport Maintenance

An airport maintenance facility is located in the General Aviation Precinct between Oceania Aviation and Complete Avionics. To maintain the Airport to the required high standards, the facility provides a depot from which maintenance activities are undertaken. The facility also accommodates servicing aerodrome vehicles and mobile and fixed equipment and is used to store materials and equipment.

The facility is anticipated to be relocated in the twenty-year horizon of the Master Plan. Planning for growth of the facility will be assessed based on demand.

6.5.6 Navigational Aids

Airservices Australia provides air traffic control, aviation rescue firefighting and navigational services to Gold Coast Airport. To deliver these services Airservices Australia have the following facilities:

- Air traffic control tower, maintenance and office complex
- Aviation rescue firefighting station and training ground (on the western side of the airfield)
- Navigational aids: VOR/DME and NDB.

In January 2016 the Commonwealth Government gave regulatory approval to install an ILS on Runway 14 at Gold Coast Airport. An ILS will supplement RNP, the existing satellite-based landing system and non-precision approach procedures. An ILS will provide the additional benefit allowing aircraft to land in all but the most severe weather.

Within the first five years of the Master Plan, Gold Coast Airport proposes installing a high-intensity approach lighting system at the end of Runway 32 to enable safer aircraft landings in adverse weather, such as fog and heavy rain. As depicted in Figure 6.4, the system will be on the New South Wales state land leased by Gold Coast Airport. The system construction may require approvals under state
laws. Gold Coast Airport will work collaboratively with the Tweed Shire Council and Airservices Australia to locate the system at the end of Runway 32. Gold Coast Airport will also work with the City of Gold Coast Council and Airservices Australia to investigate the possibility of locating a high-intensity approach lighting system at the end of Runway 14.

GCAPL will continue to work collaboratively with Airservices on the implementation of the ILS as well as the introduction of complementary approach systems and new technology such as Ground Based Augmentation System (GBAS) capable of supporting lower minima to further improve the reliability of operations at Gold Coast Airport.

6.6 Summary of Future Airport Developments

The developments proposed in Table 6-2 are based on the requirements as forecast at the time of issue of the Master Plan. Changing economic conditions and uncertainties in the aviation and tourism industries makes it difficult to plan the timing of infrastructure projects accurately. Although the table identifies future strategic proposals, this does not constitute a commitment by GCAPL to the delivery of any specific project.

Table 6-2 Future Airport Developments

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>Description</th>
<th>Trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport Development within first five years (2017–2022) of this Master Plan</td>
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</table>
| Stage 1 terminal and apron redevelopment | » Extend the existing southern end of Terminal 1 accommodating aerobridges  
» Refurbishment of the existing terminal building  
» Five additional aircraft parking stands up to Code E aircraft. | Project LIFT |
| Taxiway extension between taxiway A and D | Extension to existing taxiways to provide a full-length parallel taxiway to Runway 14/32. | Subject to airside capacity requirements |
| General Aviation taxiway link | New taxiway link at the north end of the General Aviation apron to Runway 14/32. | Subject to airside capacity requirements |
| General Aviation aircraft parking and Helicopter final approach and take-off area | Re-alignment of the existing Code C taxiway and new apron for aircraft parking | Subject to airside capacity requirements |
| Multiple aircraft ramp stand | Expansion of existing apron areas at northern end of Terminal 1 to provide capacity for freight or overnight aircraft. | Subject to airside capacity requirements |
| Freight facility and combined aviation support | Conversion of existing buildings to provide multiple use facility responding to market requirements. | Subject to airside capacity requirements |
| Runway lighting | Installation of approach lighting at the end of Runway 32 | Subject to airport safety requirements |
| Relocation of the Runway 32 Landing Threshold | Relocation of the Runway 32 Landing Threshold by approximately 300 metres | Subject to airport safety requirements |