
Sydney
Airport
The right future.
Starting now.

4.0 DEVELOPMENT PLAN OVERVIEW

4.0 DEVELOPMENT PLAN OVERVIEW

Key points

- The development plan:
  - Benefits all passengers through the more balanced use of the airport's roads, terminals and airfield
  - Increases the productivity, flexibility and capacity of the airport
  - Results in significantly improved road and intersection performance in and around the airport in 2018 and 2033
  - Includes new major international terminal infrastructure to be developed north of Terminal 3; resulting in up to 16 additional A380 type international contact gates – almost doubling[1] the number of A380 gates from previous master plans
  - Includes the capability to deliver up to 30 swing gates across the terminals that can be used for international and domestic/regional aircraft
  - Preserves the Terminal 1 international freight and aviation fuel facilities on-airport, providing increased long term certainty, which will support investment in productivity and capacity
  - Enhances the airfield safety and efficiency, and therefore improves on-time performance
  - Will reduce the number of inter-precinct transfers by 65% and improves the transfer passenger experience for the remaining 3% of passengers who transfer inter-precinct
- The development plan is the result of extensive consultation with stakeholders to understand their priorities:
  - The details of the development plan can be further refined to reflect changing airline needs, new technology and ongoing operational improvements
- The development plan presented in this Master Plan is designed to ensure Sydney Airport can facilitate the growth of tourism and trade well beyond the 2033 horizon of this Master Plan, within the existing regulatory framework

The development plan in the Master Plan is the best infrastructure plan for the airport as it can accommodate a wide range of future air traffic scenarios and benefits all passengers.

As Australia's largest airport and its major international gateway, Sydney Airport will remain the premier airport for passengers and freight servicing Sydney, NSW and Australia. For this reason, it is important to optimise the use of Sydney Airport by ensuring that it operates safely and efficiently and can grow to its maximum practical operational capacity.[2]

Sydney Airport's development plan included in this Master Plan is based on the following objectives for the airport:

- Maintain a safe, secure and reliable airport operating environment
- Provide for an improved quality customer experience for the travelling public and airport visitors
- Plan and develop airport capacity to cater for the forecast growth and in a manner that provides greatest flexibility and adaptability to meet airline, passenger and other stakeholder requirements
- Operate and develop the airport to enhance and optimise the productivity and efficiency of existing and new infrastructure
- Be a sustainable business which is a valued member of the community and a key economic driver for Sydney, NSW and Australia

1 The 2009 Master Plan included 18 A380 type international contact gates

2 Joint study "Key Findings and Directions", pages 6 and 9-10

- Operate the airport in an environmentally sustainable and responsible manner

The development plan is designed to ensure that Sydney Airport will continue to facilitate the growth of tourism and trade well beyond the 2033 horizon of the Master Plan.

This Master Plan (including the Airport Environment Strategy) complies with all relevant laws (including the Airports Act). The Master Plan is consistent with Sydney Airport's obligations under existing leases, including those in respect of the environment, development, planning and building works.

The development plan establishes the strategic direction of the airport. It was developed following extensive consultation with the airlines and other stakeholders to understand their priorities, and will continue to be refined to incorporate new technologies, improvements as they are identified, and changing priorities.

The development plan for two integrated international, domestic and regional terminal precincts is a key feature of this Master Plan. Creating integrated terminal precincts rather than retaining the existing segregated terminal precincts will ensure Sydney Airport has the ability to be responsive and flexible in the future development and use of its facilities. This flexibility enables it to accommodate an ever-changing landscape of airlines and associated passenger services.

In particular, the ability to share swing gates between international and domestic/regional aircraft operations provides Sydney Airport with significant advantages. It enables Sydney Airport to respond to fluctuations in actual demand between international, domestic and regional airline operations. By making this fundamental step change, the development plan is, to a large degree, future proofed against variances in the forecast market share between international, domestic or regional services over the planning period.

Sydney Airport has also undertaken a sensitivity analysis to understand how the development plan responds to differing levels of demand, particularly in relation to aircraft gauge. This analysis demonstrates that the development plan is able to respond to and accommodate a wide range of demand forecasts and is superior to previous plans under a wide range of demand scenarios.

The development plan:

- Creates integrated precincts with terminals and aprons for international, domestic and regional passenger operations, including development of swing gates that can be used for international and domestic/regional passengers at different times during the day
- Provides for the development of multiple engineering precincts which may accommodate multiple airlines in the long term
- Optimises the use of the total land area, by expanding the terminal facilities into the area north of Terminal 3 (T3) and north east of Terminal 2 (T2)
- Preserves on-airport freight in both the Terminal 1 (T1) and T2/T3 precincts
- Preserves future terminal expansion areas for capacity expansion beyond the 20 year master planning period
- Provides additional aircraft stand capacity, enabling it to be implemented in a staged and controlled manner
- Provides for improvements in airfield infrastructure to facilitate safe and efficient aircraft movements

- Provides layover apron capacity to meet the respective terminal demand on the same side of the main runway, reducing substantially the need to tow aircraft across the main runway
- Creates transport interchanges, well located to the terminal precincts, to facilitate fast, affordable and reliable access to multiple transport options
- Includes a number of road traffic improvement projects
- Incorporates sustainable environmental initiatives into the new terminal developments

Once complete, the development plan will meet a wide variety of user needs by:

- Significantly improving the door-to-door passenger experience, including improved traffic flows on roads in and around both terminal precincts
- Enhancing efficiency on the airfield and in the terminals through taxiway enhancements, the development of dual taxilane aprons and the provision of terminal swing gates
- Using swing gates to maximise flexibility across the day, week and year to meet changing aviation demand, thus embedding adaptability within the development plan
- Minimising the need for the disruptive towing of aircraft across the main runway
- Increasing the apron and terminal capacity of the airport within the planning period, particularly for large aircraft such as the A380, as well as preserving future zones for expansion of terminals and aprons beyond the planning period
- Increasing the ground transport capacity within the airport precinct and the capacity of road intersections at the entry and exit points of the precincts
- Improving the international, domestic and regional passenger experience and connectivity by reducing the need for inter-precinct transfers for connecting passengers
- Retaining the existing freight precinct adjacent to T1, which facilitates the current access to aprons and improved landside access which are delivered as part of the overall ground transport plan
- Making allowance in areas east of T2 and north of T3 for new freight facilities to cater for the relocation of any existing freight facilities, impacted by terminal developments, that need to access passenger aircraft operations
- Allowing for additional areas to facilitate existing or new logistics activities in the airport's South East Sectors and Northern Airport precinct
- Retaining the existing aviation fuel facility adjacent to T1, including allowance for additional fuel infrastructure
- Providing the required sites for development of engineering facilities in the mid-field South East Sectors and in the North East precinct adjacent to the proposed terminal development. The proposed sites meet the requested demand and will improve the operation of the airfield by reducing the need for towing aircraft across the main runway

The development plan does not include any sensitive developments as defined under section 71A of the Airports Act.

4.1 Overview of the development plan

Central to the development plan is the development of a new international terminal to provide significant international contact gate capacity. The primary features of the development plan are:

- Both T1 and T2/T3 precincts will be expanded, with the largest expansion to the north of T3 and east of T2
- Both T1 and T2/T3 precincts will become integrated terminals for international, domestic and regional airlines
- T2 and T3 will be integrated by linking the two terminals
- Both precincts will include swing gates which can be used for either international or domestic/regional operations at different times of the day
- Existing aviation fuel facility locations can be retained for the period of the Master Plan
- The existing T1 freight precinct can be retained for the period of the Master Plan
- The South East and North East Sectors of the airport will be developed to accommodate additional apron parking and engineering facilities
- Taxiway extensions and significant airfield developments, including the extension of Taxiway B to the east of the main runway

The indicative airport layout plan is set out at **Figure 4.2**.

More detail is provided in Chapters 5 to 12, with information on the staging of the development in Chapter 15. In addition, the development plan includes road and other land transport improvements, which are illustrated in Chapter 7.

4.2 Benefits of the development plan

The development plan makes the most of the airport by enhancing the passenger experience, increasing airline efficiency and maximising infrastructure productivity.

The development plan for Sydney Airport in this Master Plan is considered superior to those in previously approved master plans under a wide range of demand scenarios. The benefits of the development plan in this Master Plan arise from a number of areas, including those discussed below.

4.2.1 All passengers will benefit from the more balanced use of the airport's roads, terminals and airfield

The integration of international, domestic and regional terminals results in a more even distribution of activity across the airport and improves the experience for all passengers.

Today during some peak hour periods it is common to have 80% of aircraft movements in the T2/T3 precinct with only 20% occurring in the T1 precinct. This development plan rebalances this activity to an improved 66:34 split.

Similarly, there is an imbalance today in the total number of annual passengers handled in each precinct, with 66% occurring in the T2/T3 precinct and 34% in the T1 precinct. Under this development plan this improves to a more balanced split of 57:43.

The more balanced activity will benefit all passengers by reducing congestion on the roads, taxiways and runways, and in the terminals.

4.2.2 Introduction of swing gates increases the productivity, flexibility and capacity of the airport

The development plan includes the capability for up to 30 swing gates. The introduction of swing gates will make more productive use of the existing and proposed infrastructure, and increase the ultimate capacity of the airport. Swing gates are facilities where a single aircraft stand can flexibly accommodate international and domestic/regional aircraft at different times, often by the aerobridge link and ramps being able to serve three levels of the terminal (for domestic, international arrivals and international departures).

The development plan takes advantage of the different peaks in the international and domestic/regional operations to increase the efficiency of use of the facilities. As shown in **Figure 4.1**, there is no overlap between the busiest three international hours and the busiest four domestic/regional hours.

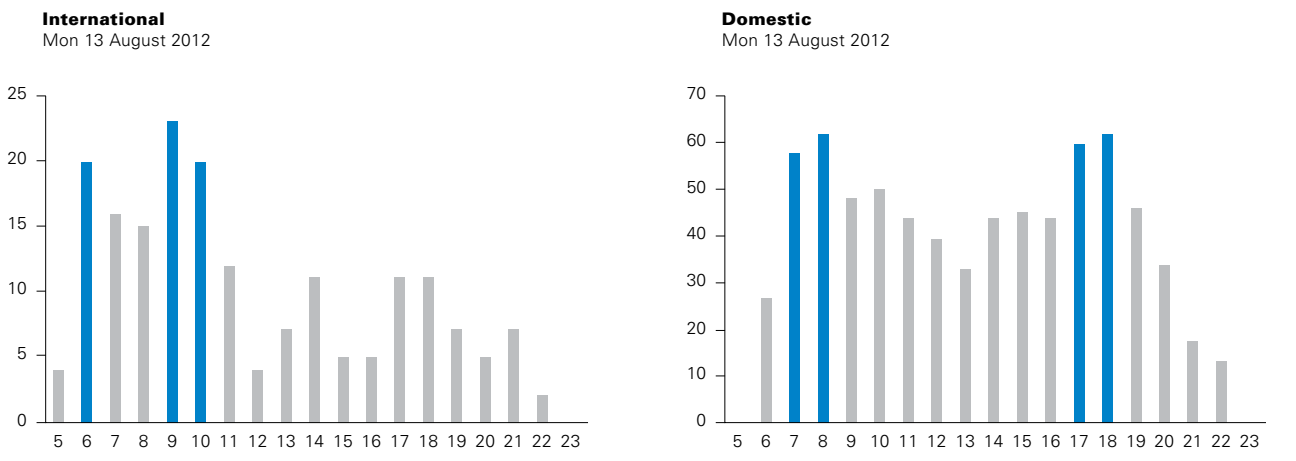
Swing gates also provide substantial flexibility for variations in the market share of international and domestic/regional services over the planning period. They enable airlines to mix their international and domestic fleets. For example, an aircraft could arrive from a domestic route in the morning peak and depart during the off-peak to an international destination, providing airlines with more flexibility for route planning, and facilitating the introduction of larger domestic aircraft.

Figure 4.3 shows an example of the swing gate potential at T1, with the swing gates shown as the locations where the red and blue lines overlap.

4.2.3 International A380 contact gate capability is almost doubled

The expansion of T3 to the north and T2 to the east provides the potential to deliver 16 more A380-type contact gates than under the previous 2009 Master Plan. In addition to providing substantial potential for future capacity, the additional contact gates will reduce or eliminate bussing of international passengers between the aircraft and the terminal.

Figure 4.1 International and domestic busy day aircraft movements by hour



Source: Sydney Airport

Figure 4.2
Development Plan

This drawing has been prepared to illustrate the Sydney Airport Master Plan and is not intended to serve any other purpose. The drawing must be read in conjunction with the Master Plan.

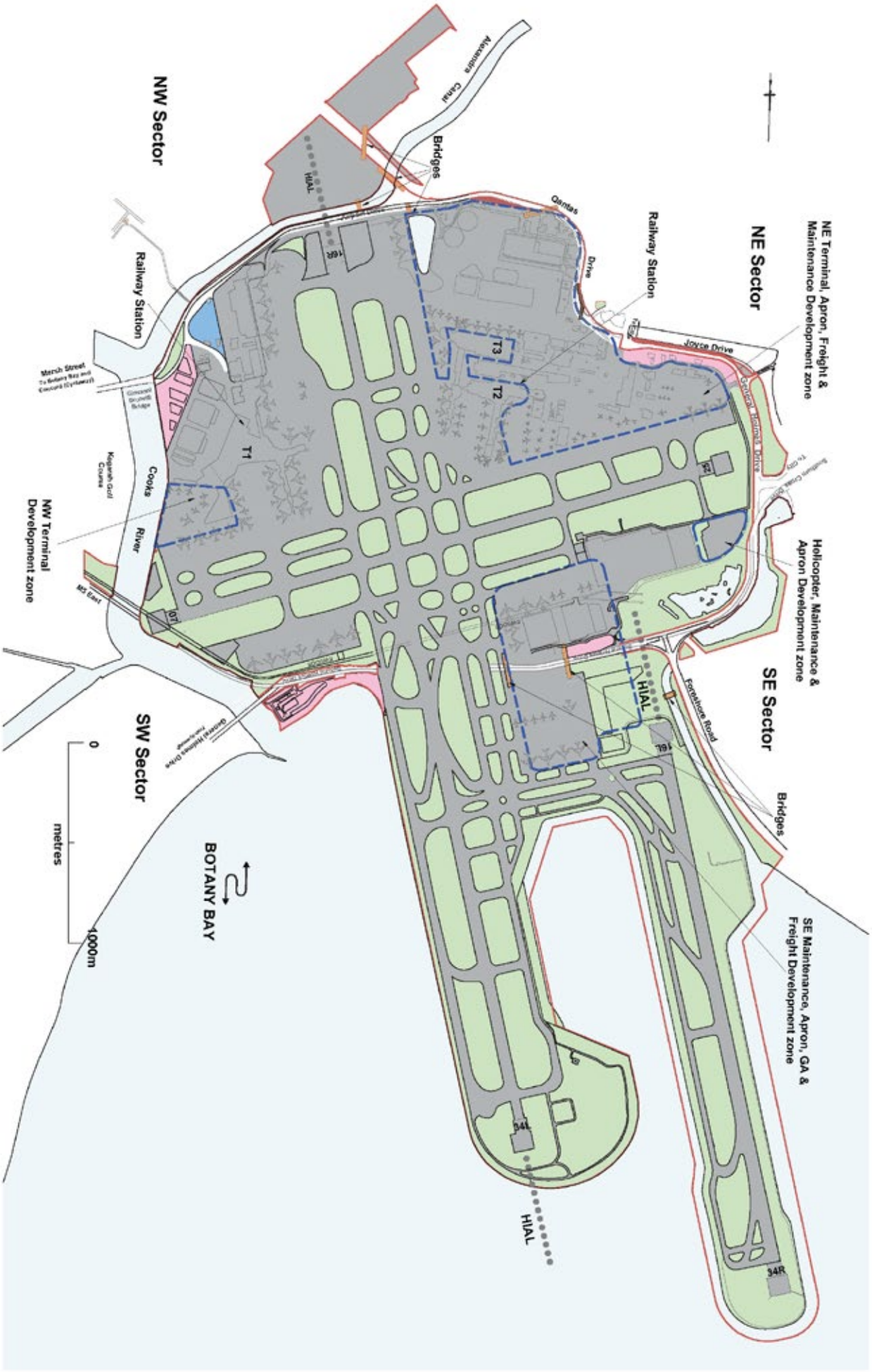
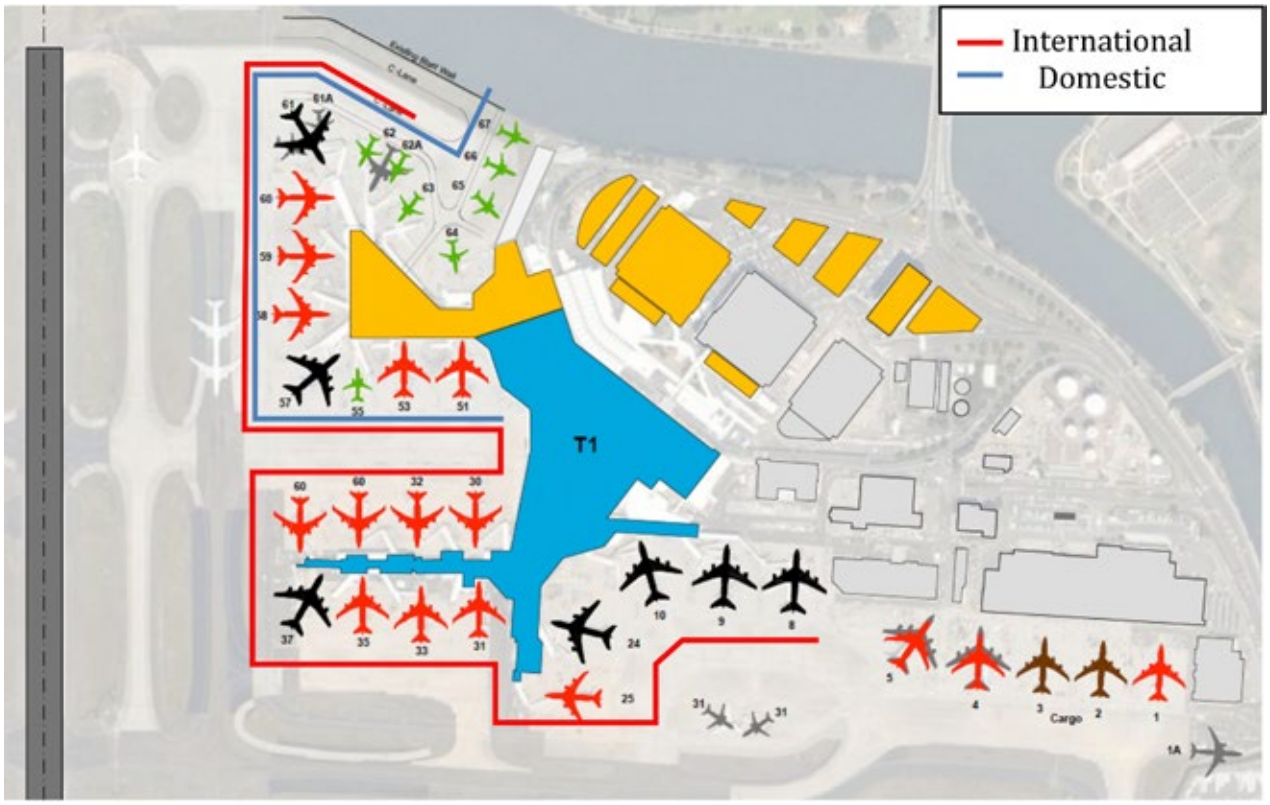


Figure 4.3 Example of potential T1 swing gate capability



4.2.4 The development plan is designed to facilitate improved ground transport access

The proposed ground transport solutions will result in better road and intersection performance in 2018 than today and comfortably support the forecast traffic associated with the airport. These solutions were developed in consultation with the NSW Government transport agencies, and complement the broader state infrastructure strategy prepared by Infrastructure NSW.

The creation of integrated international, domestic and regional terminal precincts will also result in a substantial reduction in the number of passengers transferring by road between the terminal precincts. In addition it will result in a better distribution of road traffic across the terminal precincts because of the complementary nature of domestic and international arrival and departure peaks.

Sydney Airport is working closely with the NSW Government and is advocating for improved public transport access to the airport. In the short term, we advocate for removal or reduction of the station access fee and new bus routes (the benefits of which are not relied upon in this Master Plan but if implemented would result in further improvements), and traffic flow improvements on O'Riordan Street and Robey Street as well as the widening of Joyce Drive and General Holmes Drive.

4.2.5 The development plan is designed to improve airfield safety, efficiency and on-time performance

Towed aircraft crossings of active runways will be substantially reduced due to the location of engineering facilities and layover aprons relative to the terminals. Reduced towed aircraft runway crossings provide the opportunity for improved airline on-time performance, reduce delays, reduce carbon and air emissions, and enhance safety.

The proposed extension of Taxiway B to the south will also enhance airfield efficiency and eliminate the need for jet aircraft operating at the T2/T3 precinct to cross the main runway for departures to the north. The modelling indicates that the remaining powered runway crossings, including from T1 to Runway 16L/34R, has no impact on the airport capacity and does not generate taxiway congestion.

Other airfield enhancements, designed in consultation with Airservices, will relieve the existing and potential points of congestion, and ensure that aircraft are able to taxi between the runways and terminal aprons without delay. The Civil Aviation Safety Authority (CASA) has confirmed the airfield will comply with Manual of Standards Part 139 (MOS139).

4.2.6 The development plan will improve the transfer passenger experience

Creating integrated terminal precincts where international, domestic and regional services are co-located will make the passenger transfer process simpler, easier and faster for passengers, and will provide the opportunity for improved airline on-time performance.

There are forecast to be 7.1 million domestic-international transfer passengers[2] in 2033. By mixing international and domestic/regional passengers within integrated terminals, the development plan reduces the forecast inter-precinct transfer passengers to 2.5 million. As a result 4.6 million transfer passengers will no longer have to travel from one side of the airport to the other.

The remaining inter-precinct transfer passengers will represent approximately 3% of total passengers – an average of 15 departing passengers each way every 10 minutes. These passengers will benefit from an airside corridor linking the T1 and T2/T3 precincts (currently only Qantas provides an airside transfer link).

4.2.7 The development plan is designed to support growth of the already significant contribution to the economy and tourism made by Sydney Airport

The development plan will grow Sydney Airport's contribution to tourism, jobs and the economy. As noted in Chapter 2, direct and indirect activity at Sydney Airport generates and facilitates the equivalent of 6% of the NSW economy and generates almost 300,000 jobs. Growth of the airport will increase this contribution – for example with an additional daily A380 service from China contributing an estimated $388 million to Australian GDP, $233 million to Australia's household income, and 5,000 jobs.

The development plan, by improving airline efficiency and ensuring sufficient airport capacity, will support the growth of Sydney Airport's contribution to the economy and tourism. It also improves the transfer process between regional and international flights.

Further, the new aircraft engineering facilities will allow for retention and up-skilling of aircraft engineering and support jobs in Sydney.

4.2.8 The development plan is the best proposal

Independent modelling by Airbiz (undertaken in consultation with Airservices Australia and peer reviewed by Landrum and Brown) confirms that the development plan has sufficient airfield capacity and aircraft stands to accommodate forecast demand, under a variety of air traffic scenarios. The Airbiz modelling also demonstrates the productivity, flexibility, capacity and other benefits of the development plan.

While other infrastructure proposals could deliver some benefits, the development plan is able to meet a broader range of objectives and provide benefits to all passengers. For example, retention of the existing segregated terminals would:

- Require approximately three times as many passengers to transfer between terminal precincts, and even with an expensive airside transfer system for passengers, would not enable the efficient transfer of bags between international and domestic flights
- Require the removal and relocation of the existing aviation fuel and international freight facilities
- Result in many international passengers being bussed to their aircraft
- Require continued towing of international aircraft across active runways, reducing airfield safety and efficiency and reducing on-time performance
- Provide no flexibility for changes in actual demand between international, domestic and regional airline operations

2 3.5 million arriving and 3.5 million departing transfer passengers