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Airport**

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5.0

TERMINAL DEVELOPMENT PLAN



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Key points

- The development plan in the Master Plan includes the expansion of terminal infrastructure, creating integrated terminals for international, domestic and regional passenger operations in the North East (today known as the Qantas Jet Base) and North West Sectors
- Two expanded integrated terminal precincts servicing a mix of international, domestic and regional passengers will:
 - Provide a more even distribution of activity across the airport
 - Optimise the use of terminal infrastructure by introducing swing gates that can accommodate international and domestic/regional aircraft
 - Be capable of delivering up to 30 swing gates across the terminal precincts
 - Be capable of delivering 16 additional A380 contact gates, almost double the number in the 2009 Master Plan, by developing new infrastructure north of Terminal 3 and east of Terminal 2
 - Maximise airport capacity over the planning period by developing enhanced terminal apron and airfield infrastructure to increase efficiency and throughput
 - Improve the door-to-door experience for all passengers, including enhanced ground transport access
 - Improve passenger connectivity by reducing inter-precinct transfers
 - Enhance airline efficiency in the terminal by reducing minimum connection times and improving aircraft utilisation
 - Increase the flexibility of the infrastructure to respond to changing airline business models
- Investment in next-generation technologies will enhance the passenger experience, improve total journey times and increase the efficiency of passenger processing



The terminal development plan provides almost double the A380-type contact gate capability at Sydney Airport, and is capable of delivering up to 30 swing gates that can service international and domestic/regional aircraft

Sydney Airport has developed a plan that is flexible and adaptable in order to meet passenger expectations and the changing requirements of its airline partners. This will ensure that Sydney Airport remains Australia's international gateway and continues to attract global aviation business.

After significant consultation with stakeholders' the Sydney Airport development plan reconfigures and expands the existing terminals and precincts to create two integrated terminal precincts for international, domestic and regional operations.

Sydney Airport has demonstrated that the proposed terminal plan can accommodate the projected passenger, aircraft and ground transport traffic flows over the planning period.

The passenger experience will be improved through enhancements to ground transport, terminal and



passenger processing facilities. In particular those transferring between international and domestic/regional flights will benefit from improved connectivity with a 65% reduction in the total number of inter-precinct transfer passengers by 2033, providing a single terminal experience for 97% of passengers. An inter-precinct airside transport corridor will be provided for the remaining 3% of passengers requiring inter-precinct transfers in 2033, equating to less than 6,800 passengers per day.

The development plan includes dedicated transfer lounges for these passengers as well as maintaining alternate landside transfer options.

The terminal plan also delivers other tangible improvements through enhancement of the multimode transport facilities in the terminal precincts to provide airport user access to reliable transport options. Further information is provided in Chapter 7.

One of the key benefits of the development plan is the ability to service aircraft demand through the use of swing gates that can accommodate both international and domestic/regional aircraft in each of the two terminal precincts. This provides the airport the ability to easily respond to fluctuations in actual demand between its international, domestic and regional operations.

By facilitating Code F international aircraft (such as the A380) operations in the North East Sector as well as the current North West Sector, Sydney Airport will have the ability to deliver almost twice the Code F contact gates compared to the previous master plan and deliver the ability to facilitate Code F aircraft well beyond the Master Plan planning period.

Further, the ability to provide swing gates at both of the proposed terminal precincts provides additional opportunities to efficiently increase Sydney Airport's capacity to handle the growing demand for Code E (such as A330 and B787) aircraft. Where feasible the larger gates will also be configured to accommodate multiple smaller aircraft, so if demand presents differently, multiple smaller Code C aircraft (such as A320 and B737) can be accommodated on the same infrastructure.

Significant improvements will be made to the road flows in and around both terminal precincts as a result of the reconfiguration and expansion of the terminal facilities. The rebalancing of passenger numbers as outlined in Chapter 4 between the terminal precincts is predicted to ease congestion inside and outside the terminals.

The proposed development plan for the expansion of the terminals will:

- Improve the experience for all passengers through enhancements to ground transport, terminal and passenger processing facilities
- Improve service levels through the provision of additional contact gate capacity
- Increase the capacity and flexibility of the two terminal precincts to accommodate larger Code E and F aircraft on contact gates
- Reduce transfer times and promote the efficient use of infrastructure through mixing of international, domestic and regional passengers

- Improve gate utilisation, flexibility and increase airline aircraft utilisation by incorporating swing international/domestic/regional gates
- Enhance and maximise flexibility of existing facilities and infrastructure by promoting common use principles while supporting specific product differentiation requirements from our airline partners
- Increase the flexibility to accommodate multiple smaller aircraft on larger category/code stands
- Adopt new technologies for passenger processing to improve the passenger experience and reduce processing times
- Integrate sustainable technologies, design and operations that deliver environmental solutions, particularly energy and water efficiencies, and enhance passenger experience and comfort

Significant benefits from reduction in inter-precinct transfers

The current system of inter-precinct transfers has the potential to impact on airport operations in a number of ways. On the airfield, the current transfer process may contribute to delays to aircraft flight schedules given the time required for passengers and bags to move between the precincts. In addition, millions of people transferring landside during the peak periods each year contribute to road congestion in and around the airport.

Some airlines provide a passenger transfer operation between the terminal precincts. Passengers not travelling with these airlines currently use the Sydney Airport TBus or public transport modes such as rail, bus or taxi to transfer between the domestic and international precincts.

A primary benefit of the terminals plan is the reduction in inter-precinct transfers. The ability to transfer passengers and baggage within the same terminal facility is considered to be the most reliable, convenient and efficient method of transfer, reducing the minimum connect time to transfer passengers between flights.

Under this Master Plan the number of inter-precinct transfer passengers is projected to reduce by 65% to approximately 3% of all passengers in 2033, due to the benefits of creating the integrated precincts. In the absence of the two integrated precincts it is forecast that inter-precinct transfers would increase to approximately 7.1 million in 2033¹.

5.1 Inter-precinct transfer process improved

While the vast majority of transfers will be intra-precinct under the development plan, an airside transfer product is proposed for the 3% of passengers and baggage still requiring an inter-precinct transfer.

An airside transport corridor is proposed between the terminal precincts, which will be able to accommodate buses or other modes of transport. Transfer lounges are proposed in each terminal precinct. An airside inter-precinct transfer product provides a reliable service as well as avoiding the need for passengers to be processed twice.

The existing landside pedestrian links to the international and domestic train stations and between Terminal 1 (T1) and Terminal 2/Terminal3 (T2/T3) respectively are planned to be maintained and enhanced.

Sydney Airport will work with the NSW Government and the private infrastructure owners of the airport rail link stations to investigate options that could be undertaken to make better use of the existing rail link between T1 and T2/T3.

5.1.1 Enhanced landside services and facilities associated with T2/T3

The concept is designed to provide for the connection of the integrated terminals to a redeveloped ground transport interchange, expanded multi-level car parking facility, hotel and other commercial buildings.

These improvements in passenger facilitation are expected to contribute to enhancing the overall passenger experience at Sydney Airport. Further details on ground transport and commercial developments are provided in Chapters 7 and 10 respectively.

5.2 Proposed terminal plans

This section provides details of the proposed future terminal developments at Sydney Airport.

Efficiency improvements including the introduction of new technologies and service systems are expected to occur over the next few years, offering passengers greater choice and improved service level standards. Such systems are also envisaged to assist airlines in offering product differentiation and achieve operational efficiencies.

The terminal developments are proposed to be equipped with the technology required to offer improved passenger facilitation and choice. The security and border control facilities are likely to also see ongoing improvements in technology and automation which should facilitate improvements in efficiency and passenger processing times.

In the same way that automation and technology improvements are seen as important customer service initiatives, the advent and roll-out of these systems also provides greater opportunity to achieve improved building floor space efficiencies and minimise the requirement to undertake capital-intensive terminal expansions.

¹ 3.5 million arriving transfer passengers and 3.5 million departing transfer passengers

5.2.1 Terminal 1 plan – international, domestic and regional passenger precinct

Under the proposed terminal plan, domestic and regional aircraft operations will be incorporated into T1.

The plan provides for changes to the terminal infrastructure, improvements to passenger facilitation and supports the changing needs of airline partners.

Changes to terminal infrastructure

- Reconfiguration of the existing T1 Pier C to facilitate handling of international and domestic/regional passengers
- Development of a new terminal pier by extending T1 to the south west to provide additional capacity and flexibility
- Development of international-domestic swing gates, while meeting passenger segregation requirements
- Development of multiple-aircraft ramp system (MARS) gates that can service multiple aircraft types
- Apron reconfiguration to cater for the greater variety of operating aircraft, including implementation of a dual Code C taxiway to increase the handling capacity and enhance safety for domestic and regional aircraft operation
- Improved contact gate capacity across the airport to accommodate the larger international Code F aircraft and increased flexibility to accommodate the up-gauging of domestic aircraft to Code E

Passenger facilitation improvements

- Additional passenger and baggage processing facilities
- Segregated security processing for international and domestic/regional passengers
- Improved check-in systems
- Infrastructure to streamline domestic and regional passenger flows and processing
- Opportunities to share terminal infrastructure between international and domestic/regional operation
- More efficient use of gates for passengers

Supporting aircraft utilisation and airline service delivery

- Accommodating airline product differentiation
- Improved capacity of the terminal to accommodate contact gates, minimising the need to bus aircraft, particularly in peak periods

Departing passengers plan

The development plan allows departing passengers to directly access the terminal from new multi-level car

parking facilities. Multiple public transport options are also provided, with facilities in close proximity to the terminal.

Provision is included for the introduction of new technology check-in facilities, reducing the future growth in demand for development of more traditional check-in counters. Introduction of domestic and regional passengers into T1 is likely to see a change in demand for check-in facilities. Efficiencies and improved processing rates at the check-in are likely to require provision to be made for expansion of the baggage handling system.

The layout provides for enhanced emigration and security facilities to manage future international passenger demand, including the use of new technologies assisting border control processes. All current known security requirements, such as body scanning, have been taken into account in the proposed terminal plans. Any future security requirements involving passenger or non-passenger screening point design including enhanced inspection points, changed technology, screening facilitation or intervention rates could result in different spatial outcomes, although it is envisaged that any such different spatial outcomes should be able to be accommodated within the proposed expanded footprints of the terminals.

An additional domestic screening point is envisaged to facilitate domestic and regional passengers into a segregated domestic/regional airside zone.

Once through security, it is planned that all passengers will proceed through to retail area offerings, other services, airline lounges and gate lounges.

Arriving passengers plan

The separation of arriving and departing international passengers is planned to continue in order to meet security and border control requirements. Border control facilities will be expanded and it is expected that new border control technologies will improve efficiency and processing times.

It is proposed to work with the government agencies to accommodate the customs and quarantine processing requirements to meet forecast demand.

Border control, customs and quarantine processing facilities are the responsibility of government agencies. Those services grow in line with passenger demand. The Master Plan does not anticipate growth ahead of forecast. However the physical location of services may be required to be enhanced.

Domestic and regional passengers are proposed to be segregated from international passengers and be provided with streamlined facilitation, as they currently enjoy, with inbound security screening required for transferring passengers entering the terminal from unscreened destinations.

The baggage reclaim hall is proposed to be enhanced with new baggage reclaim units being added to meet demand within this planning period and incorporate segregated domestic operations.

Transfer facilities for passengers transferring between international and domestic/regional flights for passengers other than those that will be transferring between these services within T1 are planned to remain (see Section 5.2) immediately adjacent to the terminal. Arriving passengers will continue to have the full choice of transport modes including trains, buses, taxis, limousines, rental cars and public parking facilities.

The terminal development plan has been integrated with the proposed landside developments.

Inter-terminal transfer passenger plan

Inter-terminal transfer facilities for international travellers transferring or transiting within T1 will use transit screening points within Pier B and Pier C, with facilities being enhanced as required to meet future demand. Passengers transferring between international and domestic/regional flights operating from the T1 precinct shall transfer internally within the integrated terminal. Inbound security screening is required for passengers transferring through T1 from unscreened destinations.

5.2.2 Terminals 2/3 plan – international, domestic and regional passenger precinct

Under the proposed development plan international operations will be incorporated into the expanded T2/T3 precinct.

The plan proposes to develop new terminal capacity to the north of T3 and east of T2 providing significant international and domestic/regional swing contact gate capacity, offering a far greater benefit to all passengers over the previous 2009 Master Plan under a wide range of future air traffic scenarios. Over the planning period the infrastructure as proposed in the development plan has been developed to be capable of and flexible in accommodating a range of different airline grouping scenarios between the two integrated terminal precincts.

The plan provides for changes to the terminal infrastructure, improvements to passenger facilitation and supports the changing needs of airline partners.

Changes to terminal infrastructure

- A new international terminal to cater for the processing of international passengers with extensive contact gate capacity for international operations
- Linking of the two existing T2/T3 terminal cores on the western side to facilities domestic/regional passenger and new larger aircraft gates on the western link

- Refurbishment and upgrading of passenger facilities in T2 and T3
- A new swing domestic/international passenger pier north of T3 to cater for the larger Code E and F aircraft
- New T2 swing domestic/international Piers C and D to the east of the current T2 Pier A to cater for Code C and larger Code E/F aircraft
- A link between the proposed new international terminal and T2 Pier C on the eastern side, providing passenger and baggage handling facilitation for international and domestic/regional passengers
- New transfer facilities within the expanded T2/T3 terminal
- Development of MARS gates that can service multiple codes of aircraft such as a large Code E or Code C aircraft
- Development of swing gates capable of handling international and domestic/regional aircraft while maintaining segregation requirements between international and domestic passengers
- Apron reconfiguration to cater for the greater variety of operating aircraft, including implementation of Code E and dual Code F taxiways to increase the handling capacity and enhancing safety for international and domestic/regional aircraft operation
- Integration of sustainable technologies, design and operations that deliver environmental solutions, particularly energy and water efficiencies, and enhance passenger experience and comfort

Passenger facilitation improvements

- More contact gate capacity
- Additional passenger and baggage processing facilities
- Additional and improved check-in systems
- Centralised immigration and baggage examination lines for international passengers
- More efficient use of gates and logical flow paths for passengers
- Augmentation of existing terminal facilities to incorporate international operations into the terminals
- Opportunities to share terminal infrastructure between international, domestic and regional operations
- Improved transfer facilities for inter-terminal and between terminal precinct passenger transfers

Supporting airline aircraft utilisation and service delivery

- Opportunities for airline product differentiation
- Sufficient area to develop the terminal to provide the required processing facilities for projected peak hour operations

Departing passenger plan

The development plan allows departing passengers to access the terminals from existing and new roadways and multi-level car parking facilities. Multiple public transport options are also provided, with facilities in close proximity to the terminal. It is envisaged that the new international terminal will allow departing passengers to directly access the terminal from multi-level car parking and public transport facilities.

At the departures level, introduction of international passengers into the precinct will see the development of new international processing facilities such as check-in, baggage handling facilities, security screening and emigration.

To ensure passengers can transfer between terminals before and after the check-in and security processes, the landside and airside concourses of each terminal are proposed to be linked at the western and eastern ends.

The proposed plan provides for centralised emigration and security facilities to manage future international passenger demand, including the use of new technologies assisting border control processes.

It is envisaged that domestic and regional passengers will continue to be processed in an improved streamlined manner through T2 and T3.

All current known security requirements have been taken into account in the proposed terminal plans. Any future security requirements involving passenger or non-passenger screening point design including enhanced inspection points, changed technology, screening facilitation or intervention rates could result in different spatial outcomes, although it is envisaged that any such different spatial outcomes should be able to be accommodated within the proposed expanded footprints of the terminals.

Once through security, it is planned that all passengers will proceed through to retail and food offerings, other services, airline lounges and their gate lounges.

Arriving passenger plan

The separation of arriving and departing international passengers is planned to continue in order to meet security and border control requirements. Border control, customs and quarantine processing facilities are also proposed for the international passenger facilitation. It is proposed to work with the various agencies to deliver an efficient service.

Domestic and regional passengers will continue to be processed through T2 and T3 and be provided with streamlined facilitation, with inbound security screening required for passengers transferring through the terminal from unscreened destinations.

Baggage reclaim halls are proposed to be expanded with new baggage reclaim units being added to meet demand within this planning period for domestic operations and new facilities developed for international operations.

The development plan incorporates a reservation for a proposed airside transport corridor to provide a direct airside link between the two terminal precincts apron areas. The proposed corridor may also allow for the movement of passengers and baggage between the two terminal precincts.

Transfer facilities for passengers transferring between international, domestic and regional flights for passengers other than those that will be transferring between these services within the new international, T2 and T3 are planned to be kept (see Section 5.1) immediately adjacent to the terminal, arriving passengers will continue to have the full choice of transport modes including railway, buses, taxis, limousines, rental cars and public parking facilities. New transfer facilities are proposed to be developed at T2/T3 to enhance the capacity and facilitation of passengers transferring to/from T1 and the T2/T3 precinct.

The terminal plan has been integrated with the proposed landside developments.

Inter-terminal transfer passenger plan

New inter-terminal transfer facilities will be incorporated into the proposed terminal expansion for international travellers transferring or transiting within the T2/T3 precinct. Passengers transferring between international and domestic/regional flights within the T2/T3 precinct will transfer within the integrated terminals, with proposed new airside and landside links provided between the T2/T3 terminal buildings.