APPENDIX B

APPENDIX B HISTORY OF SYDNEY AIRPORT AND EXISTING FACILITIES

1.0 Key stages in the development of Sydney Airport

Key stages in the development of Sydney Airport are set out in **Table B1**.

Table B1 – Development of Sydney Airport

	Year	Activity	Master Plan implications
Pre-aviation		The land on which the airport is sited – the northern shore of Botany Bay – is within the traditional country of the Eora people, the name given to the coastal Aborigines around Sydney.	A number of studies have been undertaken and have indicated that there are no Aboriginal archaeological sites or areas of potential archaeological sensitivity within the airport.
	19th century	Freshwater supply for Port Jackson sourced from ponds on eastern side of airport site (1835). Construction of Alexandra Canal which was planned to connect Botany Bay with Port Jackson. During late 19th and early 20th centuries, airport site is used for industrial buildings including textile and flour mills.	The Engine and Mill Ponds are identified as environmentally significant areas in the Airport Environment Strategy – in recognition of pre-aviation uses of the airport site.
Early airport development	1911	The first flight occurs when an aircraft took off from the former Ascot Racecourse (now part of the airport site).	Environmentally significant remnant fig trees remain within the area.
	1920s	Mascot Aerodrome officially opened and Commonwealth Government acquires the aerodrome.	This is part of a program to develop a nationwide airport network.
	1930s	Additional land is purchased, the main runway is surfaced with gravel and two ancillary grass runways are laid out.	These early runways were located in the vicinity of what is now the T2/T3 and Qantas Jet Base.
	1940-45	New passenger terminal opened and airport is further developed during World War II to enhance its civilian and military facilities.	Elements of this building remain in the T2/T3 precinct and have been identified as having heritage significance.
	Post 1945	Cooks River is diverted and two new runways are built.	Key elements of existing airport laid out – in particular the runway.
Into the jet era	1959	Arrival of B707 and other jet and turbo-prop aircraft ushers in rapid growth in air travel.	Curfew at Sydney Airport first introduced after the government decided that these older noisy jet aircraft "will not be scheduled to take off or land during the quiet hours of the night".
	1968	Main north-south runway (16R/34L) is extended by land reclamation into Botany Bay to cater for long-haul international jets.	Curfew remains a key operating influence for Sydney Airport.
	1970	First stage of international terminal opens on current site.	Location of General Holmes Drive under the runway and diversion of the southern and western suburbs ocean outfall sewers.
	1970s	Further expansion of the international and domestic terminals. In 1972, Runway 16/34 is extended into Botany Bay to its present length of 3,962m.	The long term operating plan commences in 1997. Noise insulation program commenced and completed by the late 1990s.

Major airport expansion	1992	Major expansion of International terminal adds eight gates for B747-400 aircraft.	
	1994	The parallel runway (16L/34R) opens at its current length of 2,438m. New flight paths added.	
	1996	Current control tower opens.	Complements parallel runways.
	1997	Aircraft movement cap of 80 flights per hour legislated.	
	2000	International and domestic terminals significantly upgraded and expanded.	
	2000	Significant ground access infrastructure developed – the Airport Rail Link, the Eastern Distributor and M5 East Motorway.	
Post-privatisation	2002	Sale of Sydney Airport to Southern Cross Airports Corporation is completed.	Statutory requirement for development of a 20 year Master Plan for the airport.
	2004	Sydney Airport Master Plan 03/04 approved.	Sets out planning proposals for Sydney Airport for a 20 year period to 2023/24.
	2007	The first ever commercial flight by the new generation quieter A380 lands at Sydney Airport. Sydney Airport would soon become one of the busiest A380 airports in the world.	
	2009	Sydney Airport Master Plan 2009 approved.	Sets out planning proposals for Sydney Airport for a 20 year period to 2029.
	2011	Sydney Airport announced New Vision that will see terminal precincts transformed into integrated international, domestic and regional precincts by 2019 without any change to operating restrictions.	The feedback and comments received during consultation on the New Vision have informed the preparation of the development concept in this PDMP.
	2002–2013	Over $2 billion of investments and other initiatives during the past decade have led to increased service levels, enhanced safety and security, delivered environmental improvements and increased capacity to meet demand. Key projects include terminal upgrades, new car parks, new checked baggage screening facilities, runway end safety areas and making Sydney Airport ready for larger, quieter, cleaner and more fuel efficient aircraft.	

2.0 Existing facilities

2.1 Existing terminals

Passenger terminals serve the needs of different types of users by:

- Processing check-in, security, border controls, aircraft boarding and disembarking, and baggage handling for travellers
- Providing for passengers waiting for or transferring between flights
- Providing passengers and airport visitors with facilities including food and beverage, toilets, shopping and other activities

Associated activities and infrastructure such as landside access, car parking and utilities support the operation of the terminals and facilitate the passenger experience.

Over many years, there has been substantial investment in the terminals at Sydney Airport. Terminal 1 (T1) and Terminal 2 (T2) are respectively the common user international and domestic facilities. Terminal 3 (T3) is currently a dedicated Qantas owned and operated domestic terminal servicing Qantas mainline operations.

2.1.1 Terminal 1

Opened in 1970, it is the current international terminal located in the North West Sector of the airport. Since that time, the terminal has been extensively modified and expanded.

T1 is a four level structure, with vertically separated arrival and departure passenger concourses currently supporting 24 contact aircraft gates with aerobridges and a walk-up gate, together with other bussed and layover stands in a number of locations on the airfield.

The current total floor area is approximately 254,000 square metres. Major functional elements include:

- 212 departure check-in counters
- 15 check-in kiosks
- integrated outbound baggage handling and security screening system
- 38 departure passport control positions
- passenger and hand baggage screening facilities
- 24 conventional passport control positions and 6 smart gate positions in Pier B, and 20 conventional passport control positions and 9 smart gate positions in Pier C
- Transfer passenger and baggage screening facilities
- 12 baggage reclaim units
- inbound baggage screening facilities
- extensive retail and related facilities.

2.1.2 Terminals 2 and 3

The current domestic terminal complex is located in the North East Sector of the airport and comprises two adjacent but currently unconnected buildings –T2 and T3.

T2, owned by Sydney Airport, is a three-level structure which supports two single-level arrival/departure pier type concourses. Currently, the piers, after the recent expansion of Pier A, serve up to a total 23 contact aircraft gates and a number of stand-off bussed aircraft positions.

T3, operated by Qantas, is a three-level structure which is integrated with a single-level linear and satellite type arrival/departure passenger concourse. Currently, the concourse provides a nominal 16 contact aircraft gates with aerobridges and several stand-off bussed aircraft positions. The terminal is currently undergoing a reconfiguration to provide greater Code E handling capacity. The lease on T3 expires in 2019.

T2 and T3 are not physically linked at terminal level, although underground pedestrian access between the terminal baggage halls is available via the links to the airport rail link domestic terminal station. Together, T2 and T3 have a gross floor in excess of 100,000 square metres. The existing terminal facilities provide good levels of service at current traffic levels. Major functional elements include:

- 38 check-in counters/no bag drops/37 kiosks at T2
- 10 check-in counters/24 bag drops/36 kiosks/passenger and hand baggage screening facilities at T3
- Transfer passenger and baggage screening facilities
- Integrated outbound baggage handling and security screening system
- A combined 11 baggage reclaim units.

2.2 Existing movement areas

The existing airfield layout is shown on **Figure 11.3** in Chapter 11.

2.2.1 Runways

Sydney Airport has three runways. The dimensions and declared distances of these runways are given in **Table B2**.

Runways 16R/34L and 16L/34R are parallel on an approximate north-south alignment separated by a distance of 1,037m. Runway 16R/34L is suitable for heavy long haul departures. Runway 07/25 crosses Runway 16R/34L and is on an approximate east-west alignment. Weather requires the exclusive use of Runway 07/25 for a limited number of hours per year when strong winds preclude the use of the north/south runways.

Runways 16R/34L and 07/25 and their supporting taxiways currently accommodate operations by Code F aircraft.

Sydney Airport has sophisticated equipment to assist with safe take-off and landing during low visibility conditions. This allows the airport to remain operational during a wide range of weather conditions:

- All runways are provided with precision approach path indicator systems (PAPIS) to provide visual approach slope guidance to aircraft.
- Transmissometer units are operational on all runways and provide accurate visibility assessments to aircraft crews when operating in low visibility conditions. This technology facilitates increased aircraft movements in those conditions
- Stop bars have been commissioned at Sydney Airport to enhance runway safety and better facilitate low visibility operations
- Runways 16L and 16R are currently equipped with Cat 1 high intensity approach lighting (HIAL) systems
- All runways are equipped with instrument landing systems (ILS) to permit aircraft to conduct precision approaches in poor weather. Instrument landing systems are classified according to their ability to facilitate landings in poor weather conditions. Runways 16L and 16R currently facilitate approaches in visibility conditions down to 550 metres
- All runways have complying runway end safety areas (RESAs).

Table B2 Runway data

Runaway Direction	Length (m)	Width (m)	Take-off run available (m)	Take-off distance available (m)	Accelerate stop distance available (m)	Landing distance available (m)
16R	3962	45	3962	4052	3992	3877
34L	3962	45	3962	4052	3962	3962
16L	2438	45	2438	2528	2438	2207
34R	2438	45	2438	2498	2438	2400
07	2530	45	2530	2620	2560	2530
25	2530	45	2530	2590	2530	2429

2.2.2 Taxiways

Runways are supported by a comprehensive taxiway system designed to facilitate the efficient movement of aircraft between the runways and terminal areas. Rapid exit taxiways are provided on the parallel runways to minimise runway occupancy time.

2.2.3 Aprons and stands

Apron areas are provided to facilitate aircraft parking. The parking position is known as an aircraft stand (or gate). Existing aprons at Sydney Airport accommodate operations by the full range of aircraft types. Currently there are approximately 100 aircraft stands dedicated to supporting international, domestic, regional and freight operations.

There are a number of additional parking positions on the aprons within the general aviation area for aircraft of various sizes and Qantas currently provides parking positions for its own use within the engineering facilities north of T3 in the North East Sector of the airfield.

Apron areas also support activities associated with the servicing of aircraft such as baggage, freight, refuelling and flight catering and utilise a variety of ground support equipment (GSE) operated by third parties. A network of airside roads provides for GSE and other vehicle movements.

2.2.4 Engineering facilities

The engineering facilities are located in the North East Sector of the airport north of Terminal 3. The area comprises a lease area of approximately 30 hectares. The engineering facilities are used by Qantas for aircraft maintenance, layover parking and also contain a variety of aviation support facilities.

During the master planning period it is planned that a maintenance and engineering precinct will be developed in the South East Sector of the airfield and that potentially there will be a reconfiguration of facilities in the North East Sector.

2.2.5 General aviation

The general aviation parking area is located in the North East Sector, adjacent to the Runway 25 threshold. The area provides aircraft parking for a number of freight, corporate and private aircraft as well as a variety of aviation support facilities such as maintenance hangars, freight handling and administrative buildings.

2.2.6 Helicopters

A helicopter precinct is located in the South East Sector adjacent to the Runway 25 threshold. The area includes a touch down and lift off (TLOF) area, taxiways, parking pads, storage/maintenance hangars and administrative buildings.

2.2.7 Emergency facilities

Sydney Airport has two marshalling areas for the staging of emergency vehicles and associated communication and coordination facilities located adjacent to the aviation rescue and fire fighting (ARFF) services facilities. There are also two emergency evacuation facilities for marine rescue and recovery located adjacent to the parallel runways within Botany Bay.

2.3 Existing support systems

2.3.1 Airservices Australia facilities

Airservices Australia is responsible for the provision of air traffic control (ATC), ARFF and the provision and maintenance of radio navigation aids and systems.

The control tower is situated mid-way between runways 16R/34L and 16L/34R and south of Runway 07/25. The primary responsibility of ATC staff is the processing and separation of air traffic in both the initial and final stages of flight. ATC also provides surface movement control to aircraft and vehicles on the runways and taxiways.

Sydney Airport is equipped with an advanced surface movement guidance and control system (ASMGCS) to assist with identification and management of all aircraft and vehicles on the airport manoeuvring area. ASMGCS consists of an enhanced surface movement radar (SMR) combined with a multilateration system to track aircraft and vehicles on the airport surface (see Section 6.8).

The wide area multilateration system (WAM) is a surveillance technology with a high update rate, which permits ATC to accurately undertake precision runway monitoring for aircraft on approach to the parallel runway system in poor weather conditions. It is critical to maintaining runway capacity in these conditions.

The terminal area radar provides a primary radar surveillance capability out to a radius of 50 nautical miles from Sydney Airport. It provides secondary radar coverage to about 175 nautical miles. This system is augmented by the wide area multilateration and automatic dependent surveillance broadcast system.

Surveillance and navigation systems rely on the transmission of radio waves that must be protected from any structures or obstacles that could cause signal refraction or interference. Consequently, areas located either on-airport or off-airport surrounding these facilities may have development restrictions imposed through Sydney Airport's development approval assessment process (see Appendix F).

The ARFF service has two on-airport fire stations and currently provides ICAO Category 9 standard during hours of flight operations, upgrading to Category 10 as required to facilitate A380 operations. The ARFF service is also equipped to undertake marine rescue within Botany Bay. A fire training area is located to the north of the ARFF facility near Runway 16L.

2.3.2 Bureau of Meteorology facilities

The Bureau of Meteorology (BOM) has a number of airport facilities to support aircraft operations. These include:

- A weather balloon-launching station
- Instrument enclosure
- A vertical wind profiler
- Visibility sensors
- Observation office.

2.4 Overview existing freight facilities and service providers

The existing airside and landside cargo terminal facilities at Sydney Airport are occupied by and the responsibility of various service providers or CTOs.

There are currently four international CTOs and two domestic CTOs operating at Sydney Airport, providing a broad range of services. The international CTOs are Qantas Freight, Toll/Dnata, Australian Air Express and Menzies. The domestic CTOs are Australian air Express and Toll Aviation. DHL operates as an independent express operator. The area dedicated to freight operations/international and domestic CTOs is 11.5 hectares.

The airside terminal facilities are located on land leased from Sydney Airport. These are primarily located in the Link Road precinct for international air freight handling and domestic air freight handling located within the passenger terminal precinct of T2 and T3.

Livestock handling facilities are provided at Sydney Airport in accordance with Australian quarantine requirements in the current international precinct.

Off-site, there are around 130 forwarders, logistics providers and integrators located within a five kilometre radius of Sydney Airport. These operations range in scale, complexity and degree of service from major operations to small owner-operators offering very basic services.

Sydney Airport air freight volumes are dominated by imported goods and associated handling requirements. As a hub airport, air freight to and from Sydney is transhipped via domestic routes, which produces different handling characteristics for airlines.

Freight terminal capacity requirements are a consequence of terminal and ground handling productivity, efficiency and handling requirements. Based on average airport-wide productivity of 12 tonnes per square metre per annum the capacity of existing on airport facilities is around 450,000 to 500,000 tonnes per annum for international and 80,000 tonnes per annum for domestic. Future demand will be met through improved handling efficiencies, higher productivity and increased focus on time critical products on airport by service providers.