

## Chapter 2 Strategic context and need

This chapter provides an overview of the strategic context and need for this project.

Western Sydney is one of Australia's fastest growing regions and is Australia's third-largest economy. Two million people currently live in Western Sydney with the expectation of another million people moving into the region by the 2030s. WSI will help support this population growth, as well as growth in business activities. Capacity constraints at existing airports in the Sydney Basin is also increasing, as well as demand for aviation services, in particular Western Sydney. The strategic context and need for WSI has been documented in the 2016 EIS. This chapter focuses more on the strategic context and need relevant to this project (the airspace and flight path design component).

This chapter also provides details on the forecast aircraft activity and fleet mix, and explains the benefits of the project.

### 2.1 Need and role of WSI

#### 2.1.1 Role of the airport

Western Sydney is one of Australia's fastest growing regions. It is Australia's third-largest economy and Australia's fourth-largest city (DITRDCA, n.d.). Two million people live in Western Sydney and another million people are expected to move into the region by the 2030s (DITRDCA, n.d.). The need for an airport in Western Sydney was established in the 2016 EIS and is driven by a continued growth in demand for aviation services in Western Sydney and the Greater Sydney region more broadly. To ensure that Sydney stays an international commercial and financial centre, as well as one of Australia's foremost tourist destinations, there needs to be efficient access to air services for travel by passengers and freight.

The *2012 Joint Study on Aviation Capacity in the Sydney Region* (the Joint Study) identified growing airport capacity constraints in the Sydney Basin (Department of Infrastructure and Transport, 2012). The Joint Study found that while Sydney (Kingsford Smith) Airport would remain an important airport for the Sydney Basin and Australia, it would be unable to meet the increasing demand in the Sydney Basin and an additional airport would be required by around 2030 (Department of Infrastructure and Transport, 2012). The Joint Study found that without significant additional aviation capacity in the Sydney Basin, the domestic airline sector would become increasingly constrained and new services from international markets could not be accommodated (Department of Infrastructure and Transport, 2012).

The physical constraints at Sydney (Kingsford Smith) Airport limits the ability to handle further passenger growth. Any further extension to Sydney Airport is limited by existing urban development, Botany Bay, Port Botany and the Cooks River. Further, the size of the airport site limits the ability for any significant upgrade or reconfiguration of the runways, taxiways and apron systems that would be required to respond to aviation demand. These limitations are apparent at peak times and are likely to become more noticeable in the future. Demand for aviation services in the Sydney region is forecast to double from 2015 to 2035 (Department of Infrastructure and Transport, 2012). Even if operational restrictions were removed at Sydney (Kingsford Smith) Airport, it could not meet Sydney's long term aviation needs (Department of Infrastructure and Transport, 2012).

There is expected to be an increase in the demand for aviation services to meet the needs of population growth, as well as the growth in business activities, generally within the Sydney Basin. There are several key industries in the area that depend on air transport services.

The Commonwealth-owned land at Badgerys Creek was selected as the site for the proposed airport after extensive investigation of a range of location options between the Central Coast and Wollongong. Among a range of other considerations, Badgerys Creek was chosen as the preferred site due to its proximity to the predicted growing aviation demand within Western Sydney, as well as other factors such as its proximity to road and potential rail transport links,

and the existing planning controls on surrounding lands. It was also found to provide additional benefits such as offering the potential for increased employment and economic opportunities for the Western Sydney community and to be a catalyst for the much needed supply of housing.

This is reflected in the *Western City District Plan – connecting communities* (Greater Sydney Commission, 2018a) which seeks to leverage off the opportunity of WSI and the associated Aerotropolis (a new proposed economic and commercial precinct within Western Sydney centring on aerospace and defence, manufacturing, healthcare, freight and logistics, agribusiness, education and research industries). The new airport will act as an anchor for the Western Economic Corridor, broadening the employment opportunities for the region. WSI will also create opportunities to grow the Western City District’s visitor economy through improved connections for international and domestic visitors to Western Sydney and the Greater Blue Mountains World Heritage Area (Greater Sydney Commission, 2018a).

Alternatives to developing a new airport in Western Sydney were documented as part of the 2016 EIS in Section 2.6 (Strategic alternatives). More detail on this can be found in the 2016 EIS.

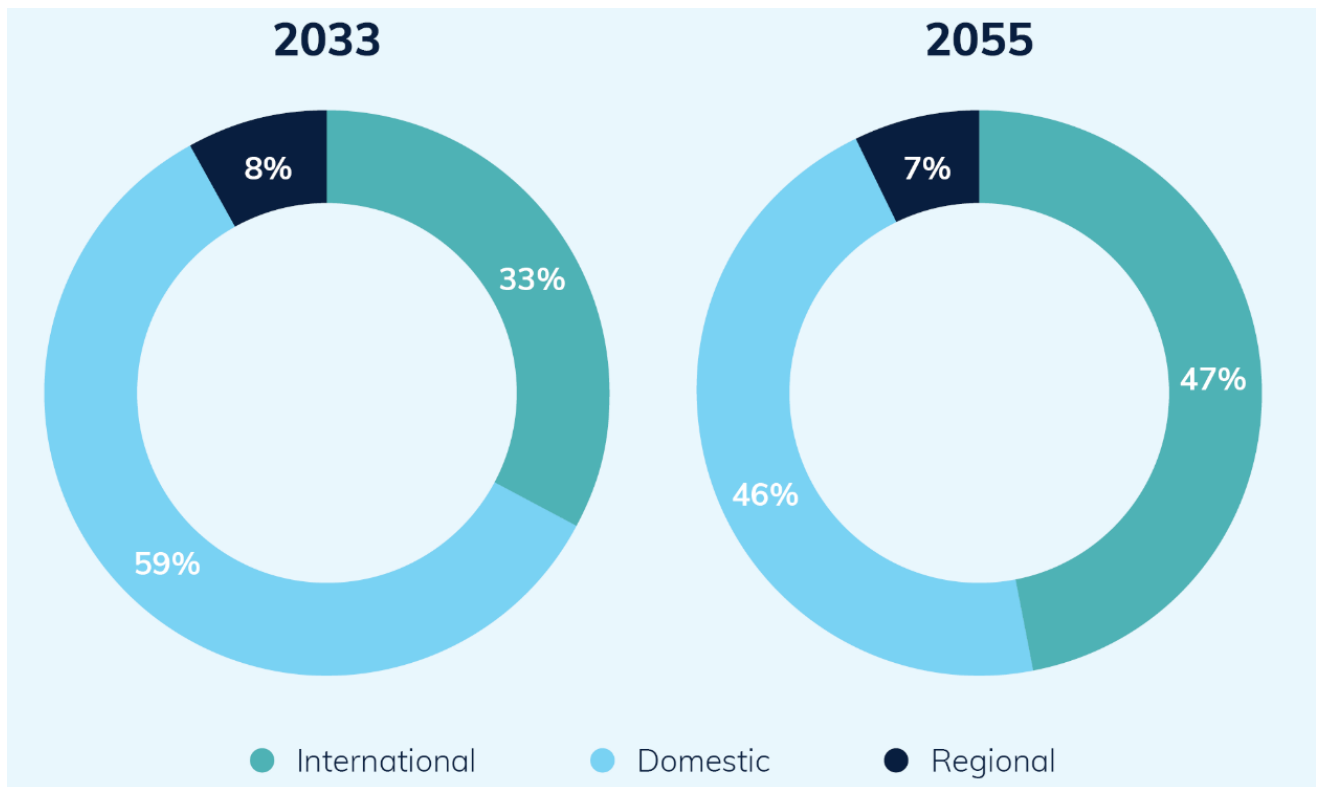
### 2.1.2 Forecast aircraft activity and movements

WSI will be capable of catering for domestic and international passengers and freight service.

WSI will have capacity to handle up to 10 million annual passengers and around 81,000 air traffic movements by 2033 including freight operations. This capability would incrementally increase with airport facility expansion to handle up to 37 million annual passengers and around 226,000 air traffic movements to meet demand expected by around 2055. WSI will ultimately serve all types of commercial aviation traffic, including full-service carriers, low-cost carriers, international, domestic, connecting and regional traffic.

The volume and profile of passengers that WSI is expected to serve will evolve over time.

It is expected that in the early years, around 67 per cent of passenger demand at WSI will be for domestic travel (refer to Figure 2.1). This proportion will decrease to around 53 per cent by 2055 as the international passenger demand increases. Domestic demand is likely to be focused on capital city services including Melbourne, Brisbane, Perth and Gold Coast (DITRDC, 2021).

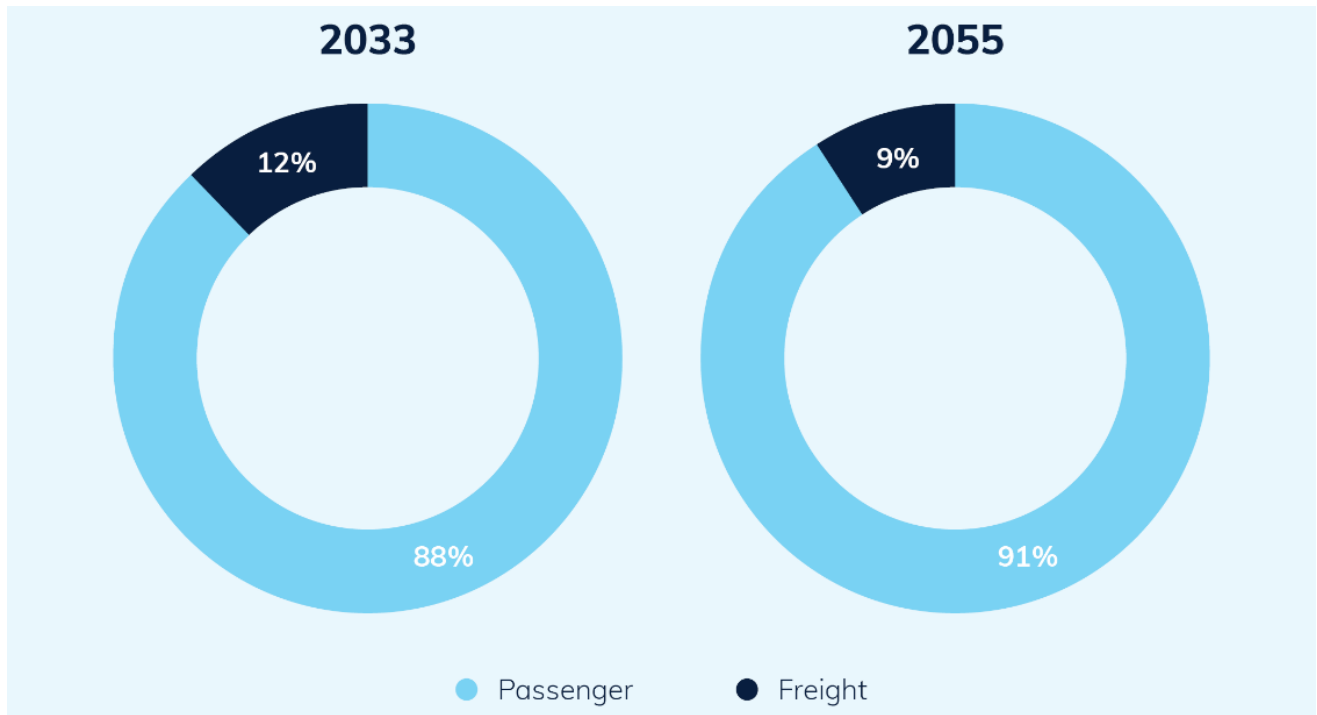


**Figure 2.1 Domestic, regional and international passenger demand at WSI in 2033 and 2055**

The international connections to Asia, the Middle-East and North America are an important traffic segment for WSI, as are dedicated freight operations.

Over time, it is expected that WSI will experience greater demand, with growth particularly strong in international regular public transport as the remaining available capacity at Sydney (Kingsford Smith) Airport is exhausted (DITRDC, 2021). By this time, the domestic-international traffic split at WSI could be approximately 53 per cent domestic and 47 per cent international.

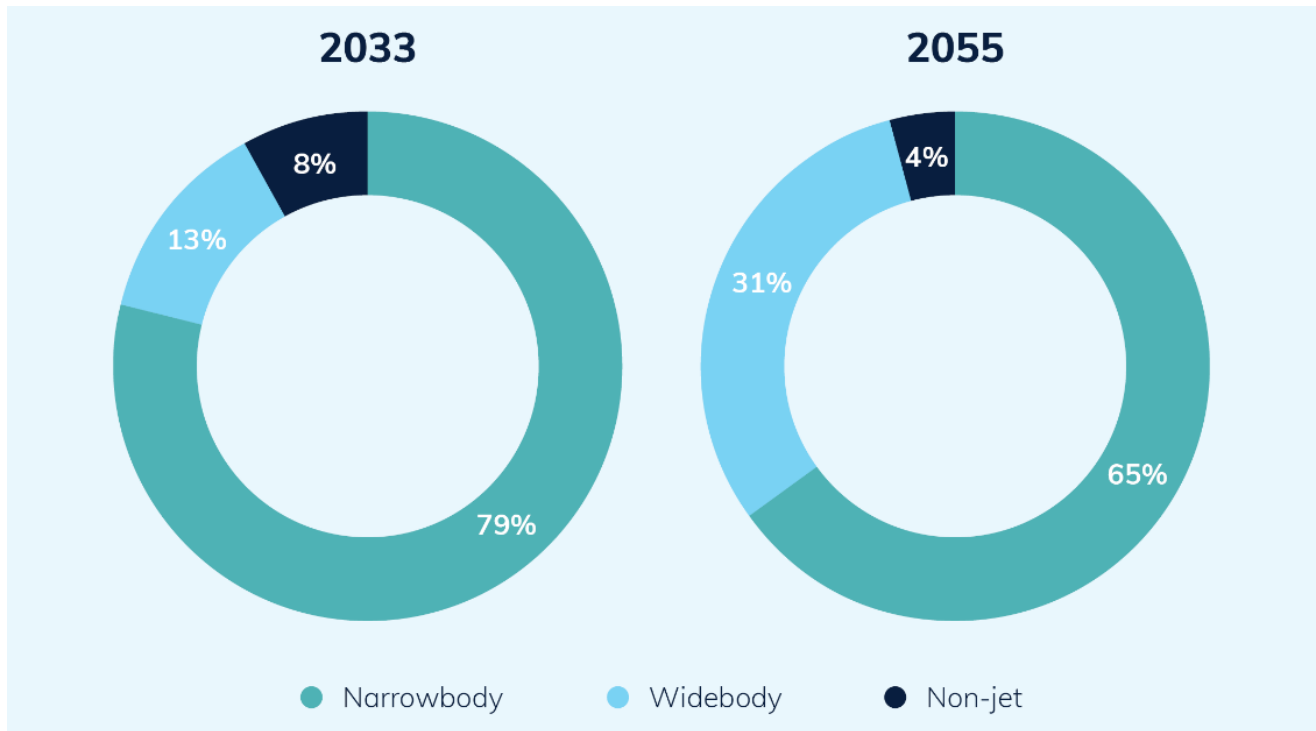
Freight aircraft will also operate at WSI. Dedicated freight aircraft accounts for around 12 per cent of total air traffic movements (less than 10,000 freighter air traffic movements) by 2033 (refer to Figure 2.2). As WSI approaches full capacity for single runway operations in 2055, it is anticipated that freight aircraft movements will account for around 9 per cent of total air movements per year (nearly 20,000 dedicated freight movements).



**Figure 2.2** Passenger and freight movements at WSI in 2033 and 2055

### 2.1.3 Aircraft fleet mix

Most aircraft, nearly 80 per cent, at WSI are anticipated to be narrow-body (single aisle, twin-engine) jets (seating between 150 and 250 passengers), with the remainder consisting of wide-body (twin aisle, twin-engine) jets and non-jet (turbo-prop) aircraft (refer to Figure 2.3). The proportion of wide-body jets operating in the fleet mix at WSI is expected to increase by approximately 18 per cent between 2033 and 2055 (from 13 per cent to 31 per cent of all movements).



**Figure 2.3 Aircraft fleet mix in 2033 and 2055**

Aircraft are classified into aircraft types to determine whether a certain aircraft is able to use a particular aerodrome. The International Civil Aviation Organization (ICAO) Aerodrome Reference Code classifies aircraft by the aeroplane reference field length (being the minimum take-off distance in certain conditions) and by a combination of the aircraft wingspan and outer main gear wheel span (grouped by code letter). The code letter has direct relevance to detailed airport design.

The anticipated aircraft fleet mix at WSI would consist mainly of Code C (narrow-body jets and turbo-props) and E, with some Code B and F aircraft (DITRDC, 2021).

Table 2.1 outlines the fleet mix categories and provides an example of each type. Figure 2.4 provides a visual depiction of the range of representative aircraft types at WSI.

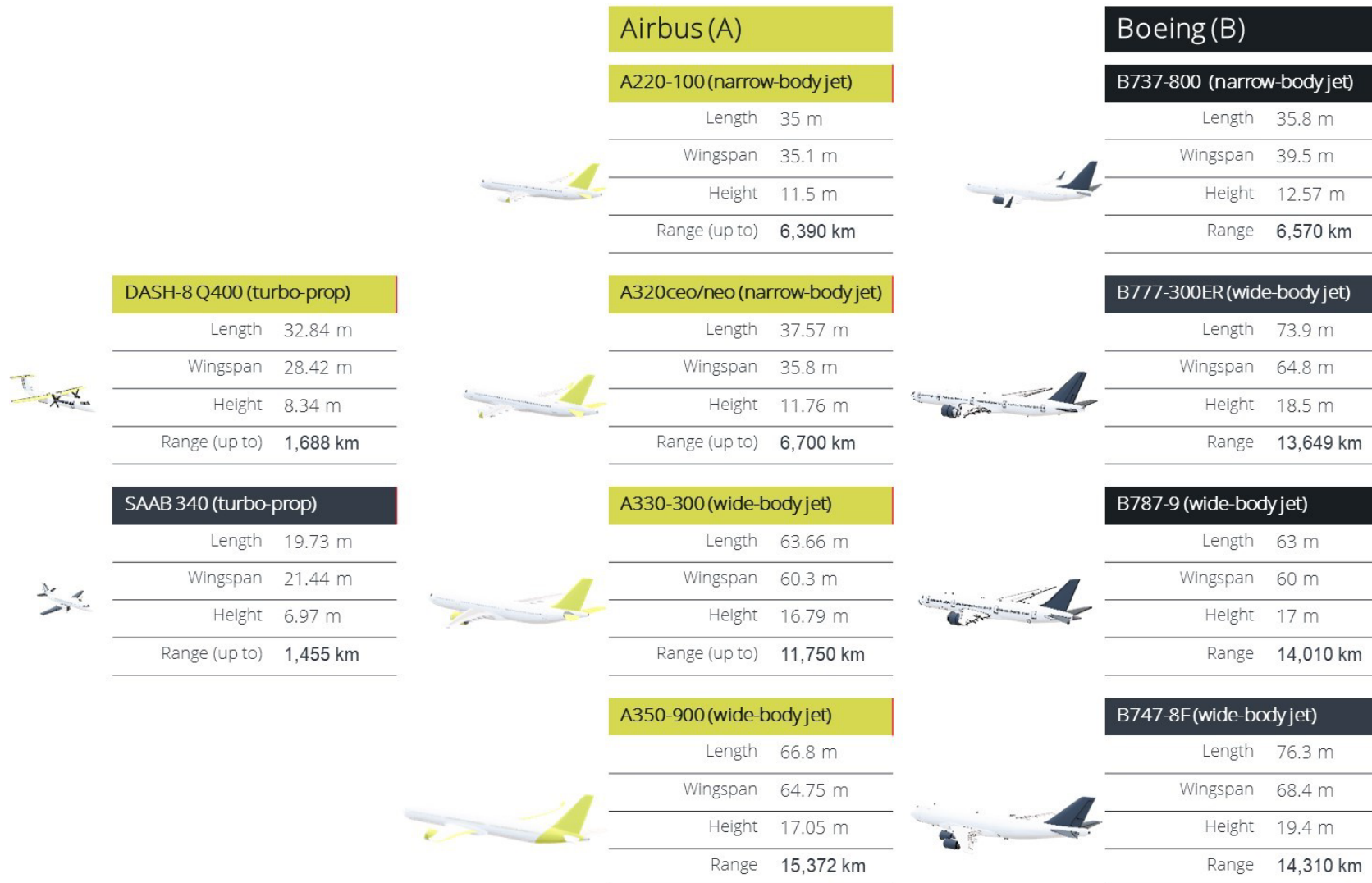
Code C aircraft are expected to account for all domestic operations at WSI in the early years up to 2033 and in the long term to 2055.

Code C aircraft are expected to represent approximately 60 per cent of the international fleet mix at WSI in the early years, and Code E approximately 39 per cent. In the long term, Code E aircraft could represent approximately 66 per cent of international fleet mix and international air traffic movements.

The freight aircraft fleet mix assumes all dedicated domestic freight activity is served by Code C aircraft with approximately 83 per cent of international freight activity served by the larger Code E and Code F aircraft.

**Table 2.1** Types of aircraft by code

ICAO aircraft reference code letter	Wingspan	Example aircraft
A	Less than 15 metres	Beechcraft Baron (Be58) Cessna 404 Titan (C404)
B	15 metres but less than 24 metres	SAAB 340 Cessna Caravan (C208) Beechcraft King Air B200
C	24 metres but less than 36 metres	Embraer 190 Bombardier Dash 8 Airbus A220 Airbus A320 Fokker 100 (F100) Boeing 737
D	36 metres but less than 52 metres	Airbus A310 Boeing 767
E	52 metres but less than 65 metres	Airbus A330 Airbus A350 Boeing 777 Boeing 787
F	65 metres but less than 80 metres	Boeing 747-8



**Figure 2.4** Size comparison of selected representative aircraft at WSI

## 2.2 Benefits of the project

The project is an integral part of WSI, ensuring that the benefits of the airport are realised.

WSI will be a major catalyst for investment and jobs growth in the Western Sydney region and will deliver benefits to the Australian economy more broadly.

Demand for passenger journeys in the Sydney region is forecast to more than double from 2015 to 2035 (DITRDC, 2021). WSI will increase aviation capacity for Sydney, meaning more passenger and freight services and less congestion for travellers. WSI will cater for domestic, international and freight flights with airport terminal facilities designed for both low cost and full-service carriers. This will also provide the growing communities of Western Sydney with better access to aviation services. Access today to an airport for Western Sydney residents can involve a 2-hour commute (DITRDC, 2021).

The development and operation of WSI will support the population and economic growth in the Western Sydney region and broaden employment opportunities. It is estimated that an airport in Western Sydney would generate \$24.6 billion in direct expenditure by 2060 and contribute a \$23.9 billion increase in Gross Domestic Product (GDP) to the national economy (DITRDC, 2021). It will also support almost 28,000 direct and indirect jobs by 2031 and increasing to around 47,000 direct and indirect jobs by 2041 (Ernst and Young, 2017). These job opportunities would span aviation, supporting services and non-aviation industries (DITRDC, 2021).

WSI will provide direct connections to the world, allowing opportunities for residents and the community to enhance Western Sydney's connection to world economies. Tourism will also be boosted, with WSI providing better accessibility to destinations across Western Sydney and the Blue Mountains. New or upgraded transport infrastructure that would be built to service the airport would also provide benefit to local communities.

