

24. Economic

The construction and operation of the proposed airport is expected to have significant benefits on the local and regional economy. These benefits will grow commensurate with the forecast increase passenger demand over time. Overall, the Western Sydney region is expected to experience a significant share of the economic and employment benefits generated by the proposed airport.

Over the construction period (notionally scheduled to occur from 2016 to 2024), the Stage 1 development is forecast to generate a number of economic and employment benefits, including:

- direct construction employment would peak at 758 full-time equivalent (FTE) jobs in 2022 in Western Sydney, with approximately 3,200 cumulative person-years over the construction period. In addition, there would be indirect jobs for Western Sydney and the broader region; and
- the generation of \$1.9 billion in value-add across Western Sydney and a further \$400 million in the rest of Sydney.

During operation of the Stage 1 development, the proposed airport is expected to continue its role as a substantial source of economic and employment opportunities in the region. In particular, the proposed airport would:

- generate 8,730 FTE jobs in airport operations and a further 4,440 FTE jobs in the expected commercial development in business parks on the airport site in 2031;
- generate approximately \$77 million in value-add for Western Sydney and a further \$145 million in value-add for the rest of Sydney in 2031; and
- drive growth in business profits, productivity and household income.

24.1. Introduction

This chapter provides a review of the potential economic effects that could be expected as a result of the construction and operation of the Stage 1 development. The chapter draws on the findings of an analysis of economic impacts undertaken to inform this EIS and addresses the requirements of the EIS Guidelines. The economic analysis is included in Appendix P1.

The EIS Guidelines include a requirement to assess both the positive and negative economic impacts associated with the proposed airport. This includes consideration at the local, regional and national level of the expected economic costs and benefits and employment opportunities likely to be generated during construction and operation.

The following analyses were undertaken for the construction and operational phases:

- construction – An economic contribution analysis of the construction of the Stage 1 development; and
- operations – Land use modelling of the operation of the Stage 1 development.

24.2. Methodology

24.2.1. Construction

The economic impact assessment adopted the following employment sector general descriptions of construction activities to analyse the potential direct and flow-on economic contributions:

- non-residential building construction – construction of non-residential buildings, which in this case includes the terminal and other aviation and service buildings;
- heavy and civil engineering construction – construction of infrastructure, which in this case includes construction of roads on the site, the northern runway and parking lots; and
- construction services – a range of services provided as part of construction activities, including installation, finishing, management, etc.

The analysis identifies the ‘direct jobs’ and the ‘value-add’ associated with the proposed airport within these employment sectors. The analysis also measures the flow-on impacts upon jobs and value-add in other sectors along the supply chain, as well as consumption impacts through additional household expenditure.

The following definitions apply to the economic contributions analysis:

- value-add: this is the value of production outputs for each industry (both direct and flow-on) minus the value of inputs sourced from other sectors. The sum of value-add across all industry sectors in a specific region is known as the Gross Regional Product (GRP);
- direct jobs and direct value-add: this is the number of jobs and amount of value-add directly related to the construction activities on-site. It includes the construction and fitting out of the airport, terminal buildings, the business park and associated infrastructure; and
- indirect jobs and indirect value-add: this is the change in economic activity (i.e. jobs and value-add) across other industry sectors as a result of the activity (the proposed airport) and is often called the ‘multiplier effect’ or ‘indirect economic contribution’. It has two components; the ‘industrial’ effect (demand for goods and services by businesses providing inputs to the activity) and the ‘consumption’ effect (demand for goods and services by people employed within the activity).

The combined direct and indirect effect changes are the ‘economic footprint’ of the proposal.

24.2.2. Operation

The SCGE model was used to identify the potential economic impacts of the proposed airport on the wider economy. The SCGE model assists in the translation of benefits and costs into real economic impacts accrued through time, cost savings to individuals and businesses, and accessibility gains into area-specific changes in wages, productivity, incomes, value add, and prices. Metrics to describe the economic impact of the proposed airport through the SCGE model include:

- Increased value add – value add is the value of output produced less the cost of intermediate inputs used in the production of that output and expresses the net wealth generated by the activity. The proposed airport will result in higher value-add per year by supporting productivity and growth, delivering benefits to businesses and workers alike;
- Gross business profits – the share of an increase in value-add that is retained as real returns to owners, investors and other who finance businesses;
- Gross household labour incomes – the share of an increase in value-add that is enjoyed by households through an increase real wages;
- Enhanced productivity per worker – this is change in real value-add per worker per year. The proposed airport enables workers in Sydney to be more productive due to a reduction in the cost of aviation services; and
- Net imports – the balance of the real value of exports and imports in a region, representing both domestic, inter-regional trade and international trade.

The SCGE model is intended to represent transactions taking place between individuals, businesses and government agencies in terms of consumption, labour, capital, real estate and trade. Households provide labour and capital to firms and use the income to purchase goods and services. Firms use inputs sourced from other firms, as well as labour and capital, to produce goods and services, which are in turn sold to households and to other firms. These transactions are represented across four spatial areas: Western Sydney, Rest of Sydney, the Rest of NSW, and the Rest of Australia.

24.3. Existing environment

The airport site is located in the localities of Badgerys Creek and Luddenham in the Liverpool local government areas (LGA). The northern boundary of the airport site adjoins the Penrith LGA boundary at Elizabeth Drive. The study area is situated about 50 kilometres west-southwest of the Sydney CBD. The locality of Badgerys Creek can be accessed from the north via Elizabeth Drive or from the south via The Northern Road, both of which are main roads in this area. Kemps Creek and Luddenham are the closest retail centres.

At present, Western Sydney has relatively low incomes, with average household income only around 90 per cent of the Greater Sydney Metropolitan area average.

Strategic planning documents for Western Sydney, including the South West Priority Growth Area and the Western Sydney Employment Area, identify the significant population growth and change over recent decades, and propose measures to adapt to continued growth over the next several decades.

As outlined in the NSW Government *A Plan for Growing Sydney* (Department of Planning 2014) Parramatta is recognised as Sydney's second CBD and will be supported by regional cities at Liverpool, Campbelltown-Macarthur and Penrith. These centres will provide a major focus for jobs, transport and services in Western Sydney communities.

For the purposes of this assessment, Western Sydney is defined as the combination of the following subregions:

- Sydney South West – Liverpool, Fairfield, Camden, Campbelltown and Wollondilly;
- Sydney West – Penrith, Hawkesbury and Blue Mountains; and
- Sydney West Central – Auburn, Bankstown, Blacktown, Holroyd, Parramatta and the Hills Shire.

24.4. Assessment of impacts during construction

24.4.1. Economic contribution – employment

Western Sydney

The number of full time equivalent (FTE) jobs expected to be generated within each construction sector, by type of activity and for each financial year during the construction of Stage 1, is presented in Table 24–1. These employment figures are based on the level of work required to construct the Stage 1 development over the indicative construction schedule as outlined in Chapter 6.

Based on the estimated direct FTE jobs required for construction, Table 24–2 presents the number of indirect-on jobs expected to be generated in the Western Sydney region in each year during construction.

The construction of the Stage 1 development would be expected to generate up to 758 direct FTE jobs on site at its peak in 2022. A further 1,902 FTE indirect jobs are also expected to be generated in 2022, with up to 1,238 FTE jobs created in the supply chain through the industrial effect, and up to 664 jobs created through consumption effects. Over the construction period, the Stage 1 development is forecast to generate up to 3,231 FTE person years of employment in Western Sydney.

Table 24–1 – Stage 1 construction employment estimates

Employment type	2017	2018	2019	2020	2021	2022	2023	2024	Total
Site preparation (Civil)	52	141	103	15	26	61	28	-	427
Aviation (Civil)	-	-	27	159	128	114	74	104	605
Site preparation (Contract administration)	4	14	22	23	21	12	2	-	97
Site preparation (Supervisory and management)	16	48	78	80	73	44	7	-	346
Aviation (Contract administration)	-	-	3	40	97	113	107	60	419
Aviation (Supervisory and management)	-	-	4	55	135	157	148	84	583
Aviation (Building)	-	-	-	74	124	256	217	82	754
TOTAL	72	203	236	446	605	758	583	330	3,231

Table 24–2 – Potential jobs generated in the Western Sydney region during construction

Effects (FTE jobs per year)	2017	2018	2019	2020	2021	2022	2023	2024	Total
Direct jobs	72	203	236	446	605	758	583	330	3,231
Indirect jobs									
Industrial effect	117	331	386	729	988	1,238	953	540	5,281
Consumption effect	63	178	207	391	530	664	511	290	2,834
TOTAL	251	712	828	1,565	2,123	2,660	2,047	1,160	11,346

The expected annual contribution to employment in Western Sydney over the construction period is shown Figure 24–1.

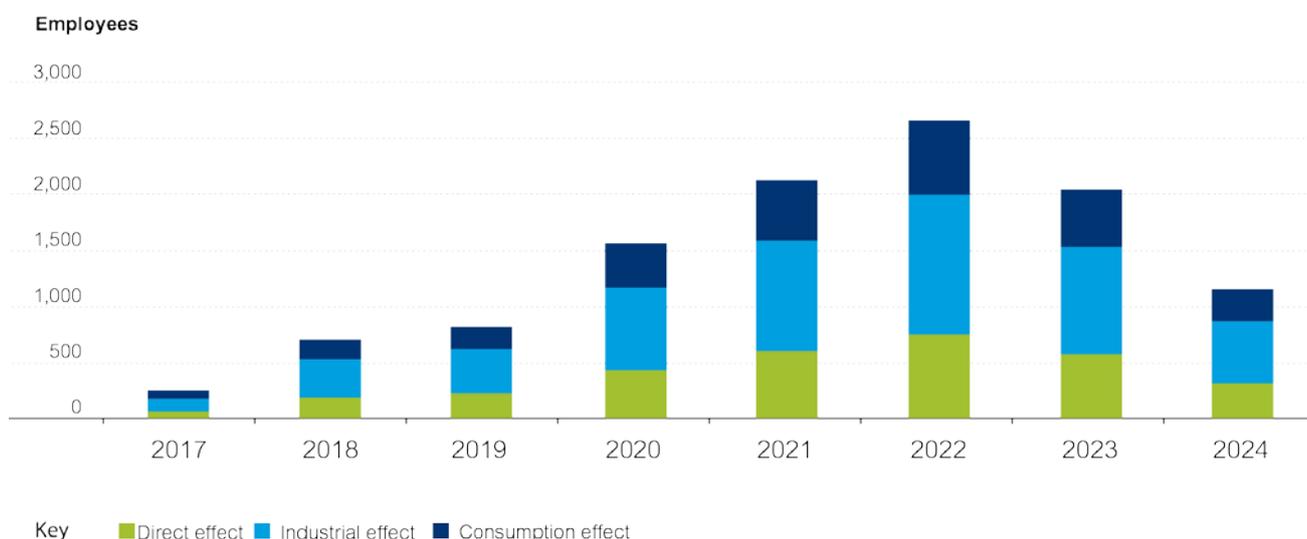


Figure 24–1 – Expected annual contribution to employment in Western Sydney (FTE jobs per year)

Greater Sydney

The potential economic footprint across the greater Sydney region, which includes Western Sydney, associated with the construction of the Stage 1 development is summarised in Table 24–3. The table presents the number of FTE jobs expected to be generated in the greater Sydney region in each financial year during the construction period.

Table 24–3 – Potential jobs generated across the Greater Sydney Region (including Western Sydney) during construction

Effects (FTE jobs per year)	2017	2018	2019	2020	2021	2022	2023	2024	Total
Direct jobs	72	203	236	446	605	758	583	330	3,231
Indirect jobs									
Industrial effect	130	369	429	810	1,099	1,377	1,060	600	5,874
Consumption effect	99	179	325	614	833	1,043	803	455	4,451
TOTAL	300	850	990	1,870	2,537	3,178	2,446	1,386	13,556

Across the greater Sydney region, the expected employment footprint associated with the construction of the Stage 1 Development would be greater because larger shares of potential indirect jobs are captured within this larger geographical area. The greater Sydney employment footprint could be expected to reach up to 3,178 jobs during the construction peak in 2022, and up to 13,556 FTE job-years generated in total during construction.

Over the construction period, the Stage 1 development is forecast to generate up to 2,210 FTE indirect jobs outside of Western Sydney. This means that approximately 84 per cent of all direct and indirect jobs generated by the proposed airport during construction are forecast to be located in Western Sydney.

The expected annual contribution to employment in the greater Sydney region over the construction period is shown in Figure 24–2.

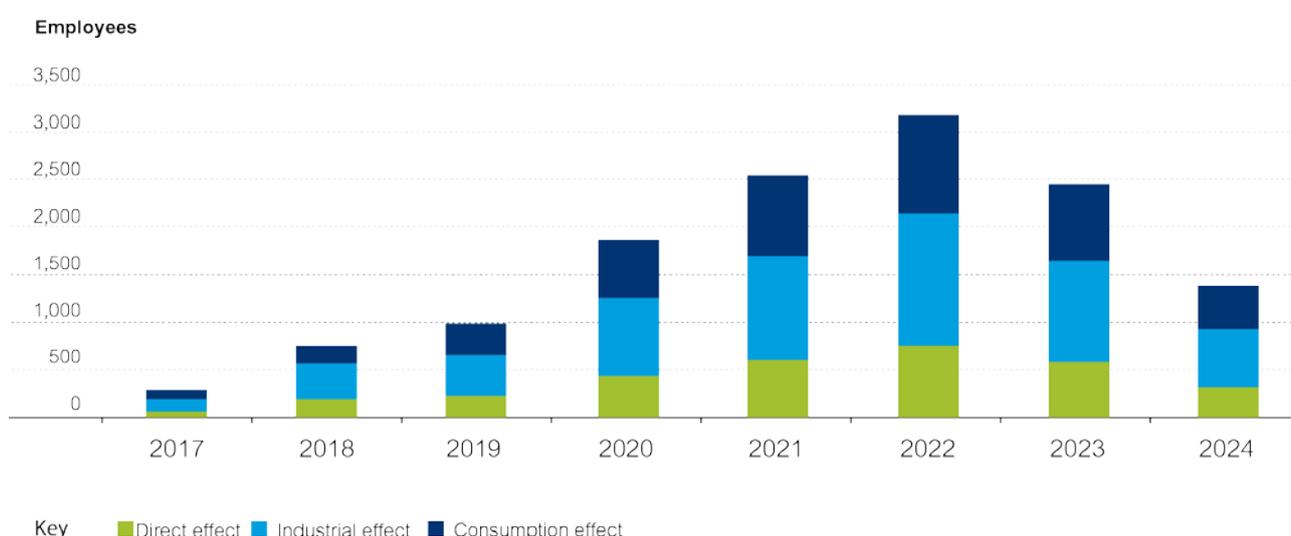


Figure 24–2 – Expected annual contribution to employment – greater Sydney, including Western Sydney (FTE jobs per year)

24.4.2. Economic contribution – value add

Western Sydney

The potential economic footprint related to the construction of the Stage 1 development in terms of value-add is summarised in Table 24–4. The table presents the forecast economic contribution expected for the Western Sydney region in each year in terms of millions of dollars of value-add.

Table 24–4 – Potential economic contribution to the Western Sydney region

Effects (millions of dollars per year)	2017	2018	2019	2020	2021	2022	2023	2024	Total
Direct contribution	16	44	52	98	132	166	128	72	707
Indirect contribution									
Industrial effect	17	47	55	104	141	176	136	77	751
Consumption effect	10	28	33	62	84	105	81	46	446
TOTAL	42	119	139	263	356	446	344	195	1,904

Direct on-site value-add during construction of Stage 1 could be expected to reach up to \$166 million during the busiest construction period in 2022, generating another \$176 million and \$105 million indirectly (through industrial and consumption effects). The total Western Sydney value-add footprint could be expected to reach up to \$446 million in 2022 with a total value-add over the construction period of up to \$1.9 billion (undiscounted).

The expected annual contribution to value-add over time for the Western Sydney region is shown in Figure 24–3.

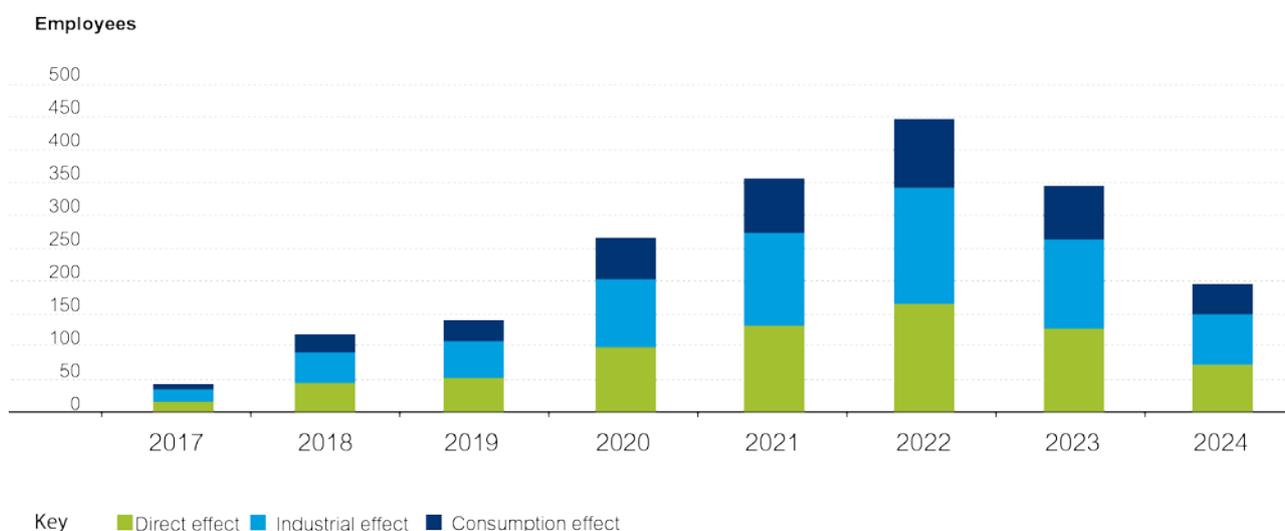


Figure 24–3 – Value-add annual contribution – Western Sydney (millions of dollars per year)

Greater Sydney

The potential economic footprint across the greater Sydney region associated with the construction of the Stage 1 development is summarised in Table 24–5. The table presents the economic contribution expected for the greater Sydney region in each year in terms of millions of dollars.

Table 24–5 – Potential economic contribution to the Greater Sydney region (millions of dollars per year)

Effects (millions of dollars per year)	2017	2018	2019	2020	2021	2022	2023	2024	Total
Direct contribution	16	44	52	98	132	166	128	72	707
Indirect contribution									
Industrial effect	19	55	64	121	165	206	159	90	880
Consumption effect	16	45	52	99	134	168	129	73	716
TOTAL	51	145	168	318	431	540	416	235	2,304

Similar to employment impacts, the greater Sydney value-add footprint would be of a greater magnitude than for Western Sydney, reaching up to \$540 million in 2022 and up to \$2.3 billion (undiscounted) over the construction period. The Stage 1 development is forecast to generate \$400 million in value-add outside of Western Sydney over the construction period. This means that approximately 83 per cent of all value-add generated by the proposed airport during construction is forecast to be in Western Sydney.

The expected annual contribution to value-add over time for the Greater Sydney region is shown in Figure 24–4.

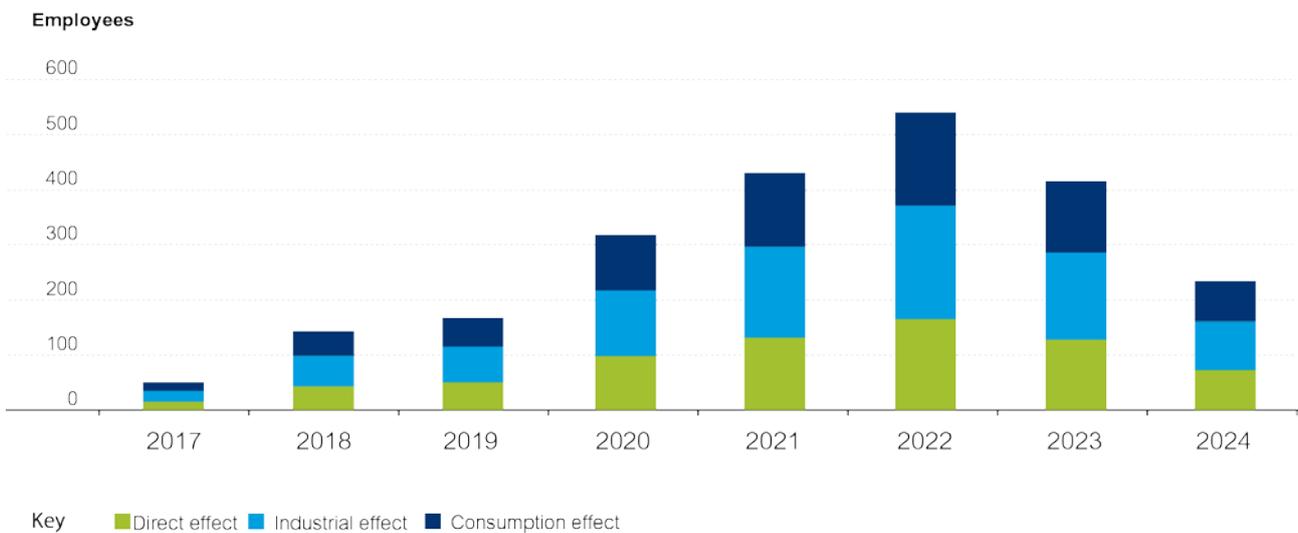


Figure 24–4 – Value-add annual contribution – greater Sydney, including Western Sydney (millions of dollars per year)

24.5. Assessment of impacts during operation

24.5.1. Economic impacts of Stage 1

The Stage 1 development of the proposed airport would result in economic benefits for Western Sydney and the wider region. Benefits would be accrued beyond the aviation industry, and extend to businesses and employees in industries such as construction, utilities, trade, transport, accommodation, retail professional services, tourism and hospitality, and administration. These benefits would have flow-on effects to individuals through increased household income and greater access to employment opportunities.

The economic benefits associated with the Stage 1 development are commensurate with the 10 million annual passengers expected to be accommodated by 2030. As the proposed airport grows beyond 10 million annual passengers it is expected that the economic benefits would also increase. An overview of the potential economic benefits associated with the long term development is presented in Chapter 39.

Table 24–6 provides an overview of the economic impacts associated with the Stage 1 development. The figures presented are for the year 2031, the year after Stage 1 development. The use of 2031 was necessary to ensure consistency with data provided by external sources.

Table 24–6 – Stage 1 economic impacts, in 2031 (undiscounted 2015 real values)

Metric (per year)	Western Sydney	Rest of Sydney	Rest of NSW	Rest of Australia	Total
Value add (\$ millions)	\$77	\$145	\$23	-\$39	\$205
Business profits (\$ millions)	\$27	\$42	\$11	-\$8	\$73
Productivity per worker (\$/worker)	\$90	\$95	\$20	-\$4	\$17
Household income (\$ millions)	\$44	\$50	\$15	\$32	\$140

In 2031 the operation of the proposed airport could generate an additional \$205 million in value-add per year across Australia. Of this, approximately \$77 million would be generated in Western Sydney alone. There is a reduction in value-add in the Rest of Australia (outside NSW), reflecting the proposed airport’s role in attracting economic activity to the region. The increase in value-add is supported by increases in productivity per worker, averaging \$90 in Western Sydney and \$95 per worker in Rest of Sydney.

The operation of the Stage 1 development would also result in economic benefits for business in the regions surrounding the airport site. In 2031 the proposed airport would generate an additional \$27 million in profits for businesses in Western Sydney and \$42 million in increased profits for businesses in the rest of Sydney. There are smaller positive benefits to the rest of NSW and a negative impact on the Rest of Australia, again reflecting the proposed airport’s role in redistributing economic activity to Western Sydney and the broader metropolitan area.

In relation to household income, the proposed airport would generate \$44 million and \$50 million in additional household income for Western Sydney and the Rest of Sydney. It is expected there would be significant regional spill-overs, with a substantial share of the total gains falling to rest of Australia.

24.5.2. Employment growth at the airport

The proposed airport is expected to support a number of jobs on the airport site. Specifically, these jobs can be divided into direct airport jobs and non-aeronautical jobs at the proposed on-site business park.

In 2031 the operation of the Stage 1 development is expected to generate a total of 11,940 jobs on the airport site. This would include approximately 8,730 jobs directly associated with the operation of the proposed airport, and 4,440 jobs in the manufacturing, business services and consumer services sectors as part of the non-aeronautical developments on the airport site. There is also expected to be an associated reduction in employment growth at Sydney Airport as demand for aviation services shifts to Western Sydney.

A breakdown of the expected employment can be seen in Table 24–7.

Table 24–7 – Stage 1 onsite employment impacts in 2031

Category	Employment impact in 2031
Direct airport jobs	8,730
On-site business park	4,440
Total	13,170

24.5.3. Employment impacts of Stage 1

Potential changes in employment growth in the region associated with the development of the proposed airport are expected to be driven by:

- changes in access to new or relocated firms (measured by the number of jobs) resulting from the redistribution of employment to areas around the airport site;
- changes in access to workers and customers resulting from the change in population associated with the development of the proposed airport; and
- increases in employment zones in the area surrounding the proposed airport due to changes in land use and increased commercial and business development areas.

The results below only consider and incorporate changes to employment opportunities outside the airport site, and do not incorporate the number of employees that are expected to be employed at the proposed airport during the Stage 1 development. This is similar to the population model, because the proposed airport would only be operating for about 5 years up until 2030, it is assumed that there would be no net new employment in Sydney as a result of the Stage 1 development. Instead, employment is presumed to be redistributed across Sydney after following development of the proposed airport and the associated changes in liveability and accessibility around the airport site.

The estimated change in employment is formulated on the base case of no airport. Therefore, areas that see a reduction in employment in the analysis do not necessarily decline in absolute terms, rather they do not grow by as much as they otherwise would have without the proposed airport.

The analysis found that in 2031, the Stage 1 development would facilitate an additional increase of 6,930 FTE jobs in Western Sydney (above the natural growth that would be expected without the development of the proposed airport). These jobs would be redistributed to Western Sydney from other areas of Sydney.

A summary of the expected effects of the proposed airport on employment in the Western Sydney region is presented in Table 24–8. Cumulative employment growth between 2016 and 2031 for each Western Sydney subregion is presented for the base case with no airport development. In addition the table shows the employment impact for each of the Western Sydney subregions due to the proposed airport for the year 2031. This only shows the results for a particular year and does not show the cumulative employment impact over an extended period of time. However, as the proposed airport is anticipated to commence operations in the mid-2020s, by 2031 it is expected that the airport would have only been operational for around five years.

With the operation of the Stage 1 development, the Sydney West subregion is anticipated to see the largest increase in employment across the broader Western Sydney region in 2031. The Sydney South West and Sydney West Central subregions are also likely to experience employment increases over and above that which would be expected without the development of the proposed airport.

Table 24–8 – Western Sydney employment growth (FTE jobs)

Area	Additional employment in 2031 associated with the proposed airport
Sydney South West	2,042
Sydney West	3,020
Sydney West Central	1,869
Total Western Sydney	6,930

Western Sydney would be expected to see increases in employment in areas surrounding the airport driven by increased access to workers and business opportunities. Areas around the airport site that currently have very little employment would see large proportional increases.

Outside of Western Sydney, there is expected to be a slowing or small reduction in employment growth in other areas Sydney. The LGAs closest to Sydney Airport are likely to have the greatest proportional slowing in employment growth, as transport and logistics jobs are redistributed towards Western Sydney. Similar to the previous table, Table 24–9 presents the employment impact for the year 2031 due to the Stage 1 development. This time, the results are for the LGAs in Sydney that are expected to see the largest slowing down in job growth in the year 2031 due to the proposed airport.

Table 24–9 – Selected LGAs in rest of Sydney – employment effects

Selected LGA	Employment change in 2031 associated with the proposed airport
City of Sydney	-3,832
Botany Bay	-1,333
Rockdale	-231
North Sydney	-335
Randwick	-259

24.5.4. Population impacts of Stage 1

As the proposed airport is scheduled to commence operation in the mid-2020s, it is expected that the proposed airport would have only been operating for around 5 years up until 2030. Therefore, the majority of economic and employment impacts associated with the operation of the proposed airport will occur beyond 2030 and so are considered outside the scope of the Stage 1 assessment. However, a preliminary analysis of land use changes associated with the proposed airport have been included in the draft EIS to provide an indication of the impacts likely to result from the operation of the Stage 1 development.

Potential changes in population distribution in the region associated with the introduction of the proposed airport could broadly be driven by:

- changes in access to jobs as a result of increased employment opportunities in the region;
- increased attractiveness of travel zones that would be closer to a major airport (with the introduction of the proposed airport), and
- the amenity impacts of introducing an airport to the immediate surrounding area (noise, visual, and other amenity issues) and the likely change in surrounding land use may result in a reduction in population densities in areas within five kilometres of the proposed airport.

For the purposes of this assessment, it was assumed that there would be no net additional population in Sydney as a result of the Stage 1 development. However, there is expected to be some redistribution of population across the Sydney region associated towards Western Sydney with increased employment opportunities and changes in accessibility to a major airport.

The estimated change in population is expected to be incremental compared to a base case of not developing the proposed airport. Areas that see a reduction in population in the analysis would not necessarily decline in absolute terms. Rather they would not grow as much as they otherwise would have without the development of the proposed airport.

The analysis indicated that by 2031, the Stage 1 development would result in an additional population of 17,823 residents in Western Sydney. The strongest population growth is estimated to occur in the following LGAs:

- Penrith;
- Blue Mountains;
- Blacktown;
- Wollondilly
- Camden; and
- Liverpool.

A summary of the potential effects of the proposed airport on population in the Western Sydney region in 2031 is provided in Table 24–10. The potential effects on population across the rest of the Sydney region are presented in Table 24–11. These tables only show the results for a particular year and do not show the cumulative additional population impact over an extended period of time. However, as the proposed airport is anticipated to commence operations in the mid-2020s, by 2031 it is expected that the airport would have only been operational for around five years.

The subregion of Sydney West is anticipated to see the largest increase in population across the broader Western Sydney region in 2031 as a result of the Stage 1 development. This strong growth would be expected as a result of some redistribution of population from the rest of Sydney, the rest of NSW, and the Sydney West Central subregion. This redistribution would be linked to the increased attractiveness of the area around the airport site in terms of employment opportunities and accessibility to aviation services following the development of the proposed airport. As a result of the redistribution of population, the City of Sydney, Parramatta, Bankstown and Hornsby are forecast to experience a slower population growth.

Table 24–10 – Western Sydney population changes in 2031 (people)

Subregion	Population change in 2031 associated with the proposed airport
Sydney South West	4,856
Sydney West	16,184
Sydney West Central	-3,217
Total Western Sydney	17,823

Table 24–11 – Selected LGAs in rest of Sydney – population changes in 2031 (people)

Selected LGA	Population change in 2031 associated with the proposed airport
City of Sydney	-821
Canterbury	-1,017
Parramatta	-1,234
Randwick	-1,166
Bankstown	-1,220
The Hills	-1,234
Hornsby	-1,009

A significant increase in population would be expected near the airport site of up to nine per cent. However there would also be negative impacts in the immediate vicinity of the proposed airport, due to a combination of the airport development and the changing land uses. The relative population increases would be less pronounced with further distance to the proposed airport.

There is predicted to be slower population growth around Sydney (Kingsford Smith) (Sydney Airport) relative to the base case of not developing Western Sydney Airport. This is likely because there may be slower job growth at Sydney Airport compared to the increased opportunities in the Western Sydney region associated with the Stage 1 development. There may also be small population growth reductions elsewhere (less than one per cent) as population is redistributed towards Western Sydney.

24.6. Conclusion

The construction and operation of the Stage 1 development would have significant positive impacts on the Western Sydney and the greater Sydney regional economies.

The assessment of the economic contribution of the construction of Stage 1 finds that, at the peak of construction activity, there would be an additional 758 jobs generated on site, with an associated employment footprint of up to 2,660 full time equivalent jobs in Western Sydney and an additional 520 jobs across the rest of Sydney. Over the construction period, the total employment footprint would be up to 13,556 FTE jobs for the greater Sydney region with approximately 84 per cent of those jobs being based in Western Sydney. In terms of value-add, the construction period would generate a total economic footprint of approximately \$2.3 billion in the greater Sydney region, with Western Sydney expected to benefit from \$1.9 billion or approximately 83 per cent of all value-add generated by the proposed airport.

During the operation of the proposed airport, Western Sydney is expected to see increases in population and employment driven by increased access to aviation services, economic and employment opportunities. Manufacturing and consumer service sectors are likely to see the largest changes in response to improved accessibility. This is expected to result in a redistribution of population and employment to Western Sydney from other parts of Sydney.

Due to employment opportunities, there is expected to be a significant increase in population near the airport site of up to nine per cent. However there would be some negative impacts in the immediate vicinity of the airport site due to a combination of the airport development and the changing land uses. The expected population increases would be likely to reduce with as distance from the airport site increases.