

37 Social and economic

37.1 Introduction

This chapter considers the long term social and economic impacts of the proposed airport. Specifically, it considers how the operation of a potential long term development could affect existing population, employment and land use across Sydney, particularly Western Sydney.

This chapter draws on the social impact assessment and economic analysis undertaken (see Appendix P1 and Appendix P3 (Volume 4)), plus a range of other specialty technical assessments.

The potential long term development of the proposed airport would result in significant opportunities for regional economic benefits through direct, indirect and induced spending. 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.

The operation of the long term development would result in further impacts to social amenity and lifestyle of communities, both around the airport site and in the region more broadly. Long term impacts on the amenity and lifestyle of communities in Western Sydney would increase as operations expand at the proposed airport and are expected to vary between communities, depending on proximity to the airport site, and their location with respect to flight paths.

37.2 Methodology

37.2.1 Social

The social impact assessment has been undertaken in accordance with the EIS guidelines and industry guidelines developed by the International Association for Impact Assessment, namely the *International Principles for Social Impact Assessment* (Vanclay 2003) and *Guidance for Assessing and Managing Social Impacts of Projects* (Vanclay 2015). The assessment involved the following:

- definition of the study area, incorporating potential affected communities;
- detailed literature review of guidelines, social statistics and strategic planning documents;
- documentation of the social baseline, including targeted stakeholder consultation;
- identification and assessment of potential social benefits and impacts; and
- development of measures to enhance social benefits and manage social impacts.

The findings of other technical assessments were also a key input into the social impact assessment, including the aircraft overflight noise assessment (Appendix E1 (Volume 4)), airport ground based noise assessment (Appendix E2 (Volume 4)), local air quality assessment (Appendix F1 (Volume 4)), regional air quality assessment (Appendix F2 (Volume 4)), human health assessment (Appendix G (Volume 4)), surface transport and access assessment (Appendix J (Volume 4)), planning and land use assessment (Appendix N (Volume 4)), landscape character and visual assessment (Appendix O (Volume 4)), property values assessment (Appendix P2 (Volume 4)) and economic impact assessment (Appendix P3 (Volume 4)).

The methodology of the social impact assessment is summarised in more detail in Chapter 23 (Volume 2a) and the comprehensive social impact assessment in Appendix P1 (Volume 4).

37.3 Assessment of impacts

The long term development of the proposed airport would generate a similar range of positive and negative social impacts as outlined for the Stage 1 development. There would be impacts to economic value-add and employment, population redistribution and housing, social amenity and lifestyle (associated with noise, air quality, and other impacts), human health, social infrastructure and emergency services. In most cases, both positive and negative social impacts associated with the long term operation of the proposed airport are predicted to be greater than the impacts associated with the Stage 1 development.

37.3.1 Economic value-add and employment

37.3.1.1 Economic value-add

The long term development of the proposed airport would result in significant economic benefits for Western Sydney and the wider region. Benefits would 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.

Table 37–1 summarises the predicted economic impacts associated with the long term development.

Table 37–1 Long term economic impacts in 2063 (undiscounted 2015 real values)

Metric (per year)	Western Sydney	Rest of Sydney	Rest of NSW	Rest of Australia	Total
Value add (\$ millions)	\$1,507	\$4,640	\$506	-\$815	\$5,838
Business profits (\$ millions)	\$541	\$1,372	\$248	-\$138	\$2,023
Productivity per worker (\$/worker)	\$941	\$1,613	\$225	-\$42	\$252
Household income (\$ millions)	\$869	\$1,580	\$333	\$670	\$3,452
Net imports (\$ millions)	\$660	\$-1,015	\$372	\$1,389	\$1,406

In 2063, the proposed airport would generate an additional \$5.8 billion in value-add. Approximately \$1.5 billion of this value-add would be generated in Western Sydney. There is a reduction in value-add in the rest of Australia (outside NSW), reflecting the proposed airport's role in attracting economic activity. The overall net increase in value-add is supported by increases in productivity per worker, averaging \$941 in Western Sydney and \$1,613 per worker in the rest of Sydney.

The increased value-add in Western Sydney, the rest of Sydney and the rest of NSW, as well as a reduction in value-add for the rest of Australia, reflects the economic activity that is attracted to Sydney and NSW from all over the country and the widespread economic impacts generated by the proposed airport development. It should be noted that it is not possible for the economic modelling to predict the sources of this redistributed economic activity, particularly as it would depend on numerous economic factors at the time of operation. However, this redistribution of economic activity is not considered likely to affect any one particular region or community. It is also important to note that the proposed airport is nonetheless predicted to generate net economic benefit for Western Sydney, Greater Sydney and Australia. As such, the social implications of the redistribution of economic activity are not considered to be significant.

The long term development would also result in significant economic benefits for business in the regions surrounding the airport site. In 2063, the proposed airport would generate an additional \$541 million in profits for businesses in Western Sydney and nearly \$1.4 billion in profits for the rest of Sydney. There also smaller positive benefits to the rest of NSW with some of these benefits potentially drawn from the rest of Australia, 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 \$869 million and nearly \$1.6 billion 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 the rest of Australia. The proposed airport would also stimulate domestic and international trade, which is reflected in the net increase in imports in Western Sydney, NSW and Australia.

37.3.1.2 Employment redistribution

In 2063, the proposed airport is expected to support around 88,500 direct full-time jobs at the airport site. This would include around 61,500 jobs directly involved in the operation of the proposed airport, and another 27,150 jobs that could be generated at the airport site should a future airport lessee company choose to develop a business park. The development of a business park on the airport site is outside the scope of the EIS and would be subject to separate approvals.

A land use econometric model was used to assess the impact of the proposed airport on the distribution of employment growth across Sydney. The model seeks to understand how the proposed airport and surrounding land use development in Western Sydney would serve to redistribute population and employment growth. As the model assumes employment as a whole is predicted to grow in the future, areas shown to have a reduction in employment would not see a net loss in employment but rather a slowed rate of employment growth.

For the purposes of the assessment, the following Western Sydney districts are defined according to local government areas:

- Sydney South West: Liverpool, Fairfield, Camden, Campbelltown, Wollondilly;
- Sydney West: Penrith, Hawkesbury, Blue Mountains; and
- Sydney West Central: Blacktown, Canterbury-Bankstown (part), Cumberland, Parramatta and The Hills.

The analysis found that by 2063, the proposed airport would redistribute 29,200 jobs to Western Sydney. The Sydney West district is anticipated to see the largest increase with additional employment of 14,300 jobs. The Sydney South West and West Central districts would also receive substantial additional employment. These increases would largely be the result of redistribution of population and employment growth from the rest of Sydney.

Table 37–2 Long term employment changes in 2063 as a result of the proposed airport

Region/Year	Employment growth in 2063
Total Western Sydney	29,200
Sydney South West	10,600
Sydney West	14,300
Sydney West Central	4,300
Rest of Sydney	-29,800
Rest of NSW	600

Across Sydney, the strongest increases in employment growth associated with the long term development are predicted to occur within the following local government areas:

- Penrith;
- Wollondilly; and
- Blue Mountains.

The actual location of employment growth changes over the long term are likely to be shaped by regional planning and policy directions from government agencies, as well as the decisions of private businesses and individuals.

The long term development would therefore present opportunities for improvement in the quality of life, living conditions, and job satisfaction for those either directly employed or otherwise indirectly economically affected by the proposed airport.

The economic and employment benefits of the proposed airport would boost household incomes that could improve quality of life and living conditions of those affected. The diversity and scale of jobs created by the proposed airport in the long term would provide options for job seekers to gain employment in their preferred industry, rather than other avenues of employment.

Around 30 per cent of Western Sydney's workforce currently travel to other parts of Sydney for work. The proposed airport would also potentially reduce long travel times experienced by many residents by creating job opportunities closer to their place of residence. This would represent a lifestyle improvement as it would provide workers with more time to engage in other activities. The reduction in travel times may also represent a saving in living expenses for those affected.

Lastly, business activity and infrastructure investment attracted to Western Sydney by the proposed airport may also improve the quality and variety of social services and infrastructure available to residents.

37.3.2 Population redistribution and housing

37.3.2.1 Population redistribution

As with the regional employment growth analysis, the regional population analysis assumed that there would be no net population increase (i.e. no additional population) in Sydney as a result of the proposed airport. Instead, the land use econometric model was used to calculate the redistribution of population growth caused by changes in the desirability of places to live, largely from proximity to jobs and services, that the proposed airport is expected to generate.

Because the model's base case (i.e. if there is no airport) factors in projected future population growth in Sydney, areas that see a reduction in population growth in the analysis do not necessarily have a decline in population in absolute terms. Rather, the population of these areas would not grow by as much as they would have if there were no airport.

As outlined in Table 37–4, the Sydney West district is anticipated to see the largest additional increase in population due to the long term development of the proposed airport. In 2063, Sydney West is expected to have an additional 63,400 people. Sydney South West is also anticipated to see strong growth relative to the base case with an additional 31,100 people in 2063. These population increases would be redistributed away from the rest of Sydney, the rest of NSW, and Sydney West Central. As mentioned earlier, the rest of Sydney, the rest of NSW and Sydney West Central would not experience a decline in population. Rather, they would not grow by as much as they otherwise would have without the proposed airport.

Table 37–3 Long term population changes in 2063 as a result of the proposed airport

Region	Long term population changes in 2063
Wester Sydney	76,300
Sydney South West	31,100
Sydney West	63,400
Sydney West Central	-18,200
Rest of Sydney	-59,500
Rest of NSW	-16,800

Across Sydney, the strongest population growth associated with the proposed airport development is estimated to occur within the following LGAs:

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

The actual location of population growth changes over the long term are likely to be shaped by regional planning and policy directions from government agencies, as well as the decisions of private businesses and residents.

Population redistribution into Western Sydney would likely increase demographic and cultural diversity in the region. To some extent, this process is already occurring with the movement of young people, particularly young families, to Western Sydney. Demographic changes may be particularly pronounced in areas to the west of the airport site, where many communities have relatively low cultural diversity.

37.3.2.1 Housing and accommodation

The urbanisation of Western Sydney, of which the proposed airport is a part, would create significant additional demand for housing and accommodation. This increase in demand coupled with potential change in average property values has the potential to generate housing availability and affordability issues, particularly for already disadvantaged groups. A number of strategic planning initiatives – including significant housing development – are planned in Western Sydney to deal with the current and anticipated future demand for housing.

37.3.3 Social amenity and lifestyle

This section considers the potential impacts of the long term development on lifestyle and social amenity as a result of a range of other impacts, including:

- Noise (see Chapter 31);
- Air quality (see Chapter 32);
- Traffic, transport and access (see Chapter 33);
- Planning and land use (see Chapter 35); and
- Landscape and visual amenity (see Chapter 36).

37.3.3.1 Noise

The communities that have the potential to be most impacted as a result of the indicative long term noise scenarios include Luddenham, Badgerys Creek, Bringelly, Greendale, St Marys, Erskine Park, Greendale, Silverdale, Horsley Park, and parts of Blacktown.

The broad area of exposure to aircraft noise includes a range of social infrastructure including childcare centres, schools, churches, parks and recreation facilities, hospitals and other health care facilities, particularly in Luddenham and Mulgoa.

Noise has the potential to reduce the social amenity and lifestyle experienced by affected communities. Particularly during the day and evening, noise could intermittently interrupt conversation or other activities such as watching television or listening to the radio. Noise during the night would also have the potential to affect sleep to varying degrees.

Noise would also potentially impact the attentiveness and enjoyment of children during hours of education, and hence their cognitive development. It is also reasonable to assume that noise at churches, parks or recreation facilities would degrade their utility and the value the community placed upon such social infrastructure.

Even if it does not interrupt particular activities, noise or the prospect of noise has the potential to cause annoyance, stress and anxiety. These psychological effects can have flow on effects into other areas of life within the family and community. These impacts are unpredictable in the sense they affect people differently (or not at all) and can be highly subjective.

Aside from frequency or intensity of the noise, the seriousness of the impact and the response of individuals would be dependent on a range of factors, some also subjective. These include:

- prior exposure to aircraft noise;
- lifestyle and work factors; and
- habituation over time.

Prior exposure to aircraft noise would potentially reduce the perceived seriousness of the impact. The emergence of aircraft noise where there previously was none would more reasonably be expected to trigger a negative response than an increase in flights on an existing flight path.

Lifestyle factors such as place of work, work hours and the nature of work would also be relevant. For people who work away from home, noise may be experienced solely in the work or the home environment. Noise could more reasonably be expected to trigger a negative response in the home – particularly at time of rest or recreation – but also for people who work at home. Shift workers may also be particularly affected by the level and frequency of noise events.

Airports necessarily occur in proximity to urban development. As such, there are numerous examples around the world of communities that are affected by aircraft noise. The responses of individuals to increased noise would vary. People may choose to close windows or doors in order to reduce ambient noise levels. It is reasonable to assume that, over period of time, residents who are genuinely less sensitive to noise move into noise affected areas whereas those who are more sensitive to noise tend to move out. This means that communities in noise affected areas are generally less sensitive to noise than communities in quieter areas.

The potential impacts of noise from ground operations and aircraft overflights are nonetheless a considerable potential impact of the proposed airport.

The noise assessment for the long term development is discussed in more detail in Chapter 31.

37.3.3.2 Air quality

Long term development could lead to changes in air quality for communities close to the airport site, including Luddenham, Wallacia, Greendale, Badgerys Creek, Rossmore, Mount Vernon and Kemps Creek. This predicted change in air quality may affect places where people live, work or visit including residences, workplaces and social infrastructure.

Dispersion modelling of airport emissions during the operation of the long term development indicated that there would be some exceedances of relevant air quality criteria for nitrogen oxides and particulate matter at seven sensitive receptors and fifteen sensitive receptors, respectively. Predicted ozone concentrations were also anticipated to exceed the relevant air quality criteria whether or not the proposed airport is developed, owing to the high levels of predicted background ozone. The results of the air quality assessment are discussed further in Chapter 32.

The primary social impact of emissions to air relates to human health. This potential impacts includes both the direct human health effects caused by inhalation of emissions over extended periods of time and the stress and anxiety the knowledge of these potential impacts can cause. These potential impacts are discussed in Section 35.3.4.

Aside from the potential human health impacts, the potential impacts of emissions to air on social amenity and lifestyle in affected communities are limited. Emissions to air would not be expected to directly disrupt the day to day activities comprising life, work and recreation in Western Sydney.

Some changes in behaviour could be expected as a result of perceived changes in air quality, due to the proposed airport and more generally the broader urbanisation of the region. This process of urbanisation would be gradual and, by the time of the operation of the long term development, is expected to be well advanced. Changes in behaviour would also be expected to be gradual and could include residents choosing to keep windows or doors of their residences closed to reduce their exposure to air pollution. The gradual nature of changes in air quality would not be expected to influence the choice of individuals planning to relocate to or from Western Sydney.

It is noted that improvements in emissions standards over coming decades, for both aircraft and road vehicles, would have the potential to further improve air quality at the local and regional scale.

37.3.3.3 Traffic and transport

The long term development would lead to an increase in traffic on roads in Western Sydney, which along with future population growth, may lead to road capacity issues if planning is not undertaken sufficiently early. This would require future planning beyond current road upgrade plans. Future decisions about timing and rail service options, both directly to the airport site and within the Western Sydney region, would be relevant to any such planning and assessment.

The primary social impact of increased traffic is increased commute times and potential inconvenience due to planned transport infrastructure work. Increased commute times could affect residents travelling to and from home, work, school, health care facilities or other social infrastructure. The increased commute times could represent an inconvenience to residents in transit and their families, dependants, colleagues or others depending on the circumstances. The degree of these impacts would largely depend on the implementation of strategic transport initiatives to cope with the expected growth and urbanisation of Western Sydney, of which the proposed airport would be a component.

It is also important to note that a large proportion of the population from the Western Sydney region currently undertake long commutes on a daily basis to access work opportunities. Employment opportunities created by the long term development would potentially reduce travel times, offering prospects for improved lifestyle by allowing workers more time for leisure activities and family.

The traffic, transport and access assessment is discussed in more detail in Chapter 33.

37.3.3.4 Land use, landscape character and visual impacts

The planning and land use impacts of the long term development would essentially involve the continued growth of regional centres and further transition of surrounding rural residential and agricultural lands to more developed land uses.

By the time the long term development is in operation, changes are likely to be well advanced given predicted growth and urbanisation in Western Sydney. It is important to note that the proposed airport development is only a part of the broader transition of Western Sydney, which will have wide-ranging effects on the lives of many people.



In tandem with the predicted land use changes, the long term development would represent an incremental increase in visual impacts on the Stage 1 development, given the expansion of aviation infrastructure required and the increase in aircraft overflights. The exact location of these impacts, particularly overflights, would be dependent on further detailed analysis undertaken as part of the determination of flight paths under a future approval process.

The ongoing transition of Western Sydney, and the land use, landscape and visual impacts of the airport, would have social amenity and lifestyle impacts. In particular, these changes would result in a progressive transition in communities from quiet, rural or village lifestyles to more urban lifestyles commensurate with urban development and population growth.

Impacts to landscape character and visual amenity have a social dimension in the sense they can reduce the amenity of spaces where people live and work or visit for recreation. Visual impacts could reduce people's enjoyment of these places and the value they place on them.

Individual experience of these changes would be largely subjective. Established or long term residents who have experienced the change first hand would be more likely to regard it negatively than more recent residents or others who travel to Western Sydney for work or otherwise.

There will be residents, both long term and recent arrivals, who would view the transition of land use and landscape character as a positive, or be indifferent to it, given the associated social and economic benefits of living in an urbanised area with better access to employment, shops, services, and social infrastructure.

The planning and land use assessment is discussed in more detail in Chapter 35 and the landscape and visual amenity assessment is discussed in more detail in Chapter 36.

37.3.4 Human health

As discussed in Chapter 39, the long term development would potentially affect the health of those living in the region primarily through noise and air emissions.

The health risks due to the long term development are generally higher than those for the Stage 1 development. As discussed in Section 39.8.1, the health risks due to air emissions are highest in suburbs in the vicinity of the airport site, with the risks from ozone most pronounced to the south and south-west of the airport site. The highest health risk would be from nitrogen dioxide due to aircraft emissions. In relation to noise, the long term development is predicted to increase sleep disturbance from both aircraft overflight and airport ground-based noise, with the impact greatest in Luddenham, Greendale, Horsley Park and Kemps Creek. The assessment found that noise is not predicted to increase the risk of cardiovascular disease and noise impacts on learning and cognitive development in children are largely within acceptable limits. In relation to ground based operation noise, the assessment finds that only Luddenham Primary School, of all the educational institutions assessed, would exceed the relevant hazard quotient for indoor noise.

Although the predicted increase in health risks for the community due to the long term development are largely within acceptable limits, it is possible that a combination of actual and perceived impacts from noise, air quality and associated health risks may lead to social impacts.

Some residents may make choices such as where to live and where to send their children to school based on actual and perceived impacts. Health impacts from noise such as annoyance and sleep disturbance have the potential to change some people's behaviour. This could lead to changes in how people react to certain situations and potentially strain family and social relations. The potential amenity impacts on social infrastructure are discussed further in Section 35.3.5.

As a catalyst for development and change in Western Sydney, the proposed airport may have a long term impact on the social determinants of health for some community members. The social determinants of health are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life (WHO, 2016).

In addition to the negative impacts on health outlined above, the proposed airport may also result in reduced lifestyle and social amenity for some community members, particularly those living in areas close to the airport site. These reductions in social amenity and lifestyle may have a negative impact on the health and wellbeing of community members. Lifestyle and amenity impacts can lead to stress and anxiety for community members and result in negative impacts on community health.

The proposed airport may be the catalyst for increased employment opportunities and higher incomes, the urbanisation of formerly rural and suburban areas, improved transport infrastructure, and increased social infrastructure, including health services, in Western Sydney. Collectively, these factors could provide socio-economic benefits to some community members, and therefore lead to positive community wellbeing and health outcomes.

Potential impacts on human health are discussed further in Chapter 39.

37.3.5 Social infrastructure

Social infrastructure may include health care facilities, educational institutions and recreational facilities. This infrastructure is often provided by a variety of government agencies, local councils, non-government organisations, community groups, and private industry.

The workforce at the airport site during the long term development, coupled with the projected increase in population, would result in additional demand on social infrastructure in areas near the airport. This may affect access to services and facilities by nearby residents. However, it is anticipated that by 2063 there will be more social infrastructure facilities and services available in Western Sydney to cater for the population increase in the area.

37.3.5.5 Recreational assets

The following recreational spaces are identified to be within the regional study area:

- Twin Creeks Country Club;
- Ropes Creek Reserve (Erskine Park);
- Eastern Creek Raceway;
- Sydney International Equestrian Centre (Horsley Park);
- Western Sydney Parklands (Horsley Park);
- Calmsley Hill City Farm (Abbotsbury);
- Sales Park (Luddenham);

- Bent Basin State Conservation Area (Greendale);
- Burratorang Recreation Area (Silverdale);
- Gulguer Nature Reserve (Greendale);
- Mulgoa Nature Reserve;
- Warragamba Sportsground; and
- the Blue Mountains.

The long term operation of the proposed airport, and associated increases in overflight noise, may reduce the amenity of these recreational areas over time.

Residents and visitors to the Blue Mountains value the quiet and peaceful nature of the area. An increase in the frequency and intensity of noise in the area would potentially disturb the serenity of the area and disrupt enjoyment of the natural landscape. As aircraft overflights in the Greater Blue Mountains Area will be at relatively high altitude (typically over 5000 feet), maximum noise levels are not anticipated to exceed 55 dBA. Although audible, these noise levels would be lower than those levels predicted for areas closer to the proposed airport that could interrupt conversation or daily activities such as watching television.

Noise levels may also be reasonably expected to reduce over time as a result of improved aircraft engine design and technology advancements, which would further limit potential amenity impacts.

37.3.5.6 Emergency services

The long term development may incrementally increase demand for emergency services. Increases in the number of flights, passengers and employees on the airport site would increase the potential for incidents requiring an emergency response. In addition, increased traffic on the surrounding road network and the health issues discussed in Section 30.3.4 are factors that may increase the demand for emergency services. It is assumed that emergency services will adapt and respond to the needs of the Western Sydney community as it grows. The proposed airport is not expected to place excessive pressure on emergency services.

37.4 Summary of findings

The long term development of the proposed airport would result in both positive and negative social impacts. There would be significant economic, employment and social opportunities for the Western Sydney region, as well as wider benefits to other areas of Sydney, NSW and Australia. Economic benefits would accrue beyond the aviation industry, and extend to business and employees in industries such as construction, utilities, trade, transport, accommodation, retail professional services and administration.

The proposed airport would also make it more attractive for people to live in Western Sydney by virtue of having a greater access to jobs and wanting to be closer to an airport. This would lead to a relatively higher population density in areas like Penrith, the Blue Mountains, Blacktown, Wollondilly and Camden. These people would otherwise have continued living in the rest of Sydney, in places like Randwick, Hornsby and Canterbury, and also other parts of Western Sydney such as Parramatta and Bankstown.

The proposed airport would also create better business development opportunities in Western Sydney as employers would have access to a large labour pool and proximity to international and domestic markets and supporting businesses. There would be relatively higher employment densities in areas like Penrith and Blacktown, but also in Liverpool, Fairfield and Camden and across the rest of Western Sydney.

At the same time the long term development would have impacts on the social amenity and lifestyle of communities. The proposed airport would support the continued growth of regional centres and the transition of surrounding rural residential and agricultural lands to more developed land uses. Increases in aircraft overflights would generate noise and visual impacts that would affect the community and may reduce the amenity of places where people live, work or visit for recreation. As part of the broader urbanisation of Western Sydney, the long term development will contribute to increased demand for social infrastructure, whilst also stimulating investment in better quality social infrastructure and services in the region.