

23 Social

The Western Sydney region is diverse, with densely populated and highly urbanised areas, as well as semi-rural, recreational and natural areas. The region is culturally diverse, with strong heritage values (both Indigenous and non-Indigenous), cohesive communities, natural and recreational values, and connections to the employment hubs of the Parramatta and Sydney CBDs.

The major employment, residential and transport infrastructure projects proposed for Western Sydney demonstrate the critical role the Western Sydney region plays in Sydney's future. The proposed airport will be a significant catalyst for increased and faster growth for Western Sydney, as well as growth more broadly in the Greater Sydney metropolitan area.

The proposed airport has the potential to bring significant benefits to the people and economy of Western Sydney. Many of the benefits for the Western Sydney and Greater Sydney communities are expected to relate to economic development and employment opportunities. The project would create jobs for many types of workers of various skills and qualifications, contributing to increased incomes across the Western Sydney region.

As a facilitator of growth and change in Western Sydney, the proposed airport would stimulate further development in regional and local centres, contributing to providing better quality social infrastructure, such as shops, health services, recreation and leisure services. To maximise economic benefits for local residents an Australian Industry Participation Plan and an equal opportunity strategy will be developed to promote the utilisation of local labour, goods and services during the construction and operation of the proposed airport. Additionally, the development of training opportunities in the region undertaken by the NSW Government and local governments would encourage innovation and the creation of new small and large businesses supporting the proposed airport development.

The construction and operation of the proposed airport would likely result in changes to the social amenity and lifestyle of communities both in the vicinity of the airport site, and in Western Sydney more broadly. The rural character of the area would change with the development of the airport, while the amenity of nearby properties and communities (such as Luddenham) would be potentially impacted, particularly by noise.

Measures are proposed to enhance the social and economic opportunities and benefits presented by the construction and operation of the proposed Stage 1 development. These measures would work in parallel with measures proposed in other assessments to mitigate and manage potential amenity impacts including from noise and air emissions.

When considered with other employment initiatives taking place in the region, the opportunities for positive change and improved socio-economic outcomes for Western Sydney are significant.

23.1 Introduction

This chapter assesses the likely social impacts of the construction and operation of the Stage 1 development. This chapter draws on other technical assessments completed, in particular the social impact assessment (Appendix P1 (Volume 4)), property values assessment (Appendix P2 (Volume 4)) and economic assessment (Appendix P3 (Volume 4)).

The assessment has been carried out in accordance with the *Guidelines for the Content of a Draft Environmental Impact Statement – Western Sydney Airport* (EIS guidelines). The potential social impacts of the Stage 1 development on surrounding communities are assessed and measures to mitigate and manage those impacts are identified.

23.2 Methodology

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 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.

23.2.1 Definition of study area

The study area for the social impact assessment was defined at multiple scales, including the:

- Local study area – communities directly surrounding the airport site that may be directly affected by the proposed airport, such as Arndell Park, Austral, Badgerys Creek, Bringelly, Chatsworth, Cobbitty, Eastern Creek, Erskine Park, Glenfield, Greendale, Horsley Park, Kemps Creek, Leppington, Luddenham, Mount Vernon, Mulgoa, North St Marys, Orchard Hills, Penrith, Prospect, Rossmore, Silverdale, South Penrith, St Clair, St Marys, Theresa Park, Wallacia, Werombi and Werrington;
- Regional study area – Local government areas surrounding the airport site that may experience high social interaction with the proposed airport, but may not be as directly affected. The regional study area is divided into three districts as defined by the NSW Department of Planning and Environment:
 - South West – Camden, Campbelltown, Fairfield, Liverpool, Wollondilly;
 - West – Blue Mountains, Hawkesbury, Penrith; and
 - West Central – Blacktown, Canterbury-Bankstown (part of), Cumberland, Parramatta and The Hills.
- Greater Sydney study area – the wider Sydney area which may be influenced by the proposed airport, predominantly affected in terms of procurement of goods, services and workforce.

23.2.2 Literature review

A detailed literature review was undertaken to inform the social baseline. Literature that was reviewed included guidelines, social statistics and strategic planning documents such as:

- relevant guidelines including;
 - EIS guidelines for Western Sydney Airport;
 - *International Principles for Social Impact Assessment*; and
 - *Guidance for Assessing and Managing Social Impacts of Projects*.
- local government publications such as local environmental plans;

- NSW Government publications, including *A Plan for Growing Sydney*;
- Australian Government publications, including the *Western Sydney Infrastructure Plan*;
- Census 2011 data from the Australian Bureau of Statistics; and
- previous environmental impact assessments for the airport site and other major projects.

23.2.3 Social baseline

A social baseline is a description of the study area that includes a range of information including things like statistics on population and employment as well as community values. It is important to develop a social baseline in order to better identify, explain and provide context to the social impacts that are identified and assessed in a social impact assessment.

The social baseline was researched and documented as a product of the literature review and additional tasks including the development of population forecasts and stakeholder consultation.

Population forecasts were required to realistically assess the potential social impacts of the proposed airport into the future. The population forecasts were sourced from the *Western Sydney Population and Demographic Analysis* (SGS Economics and Planning 2015).

Stakeholder consultation was undertaken to supplement information collected through the literature review. Stakeholder consultation involved communications with a variety of stakeholders including:

- NSW Government agencies and emergency services;
- local councils in the region of the proposed airport; and
- other regional organisations such as the Western Sydney Business Chamber.

23.2.4 Social benefits and impacts

Social benefits and impacts were assessed with consideration of the findings of the literature review and development of the social baseline and the guidance provided in the *International Principles for Social Impact Assessment* (Vanclay 2003) and *Guidance for Assessing and Managing Social Impacts of Projects* (Vanclay 2015).

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)), community health assessment (Appendix G (Volume 4)), surface transport and access assessment (Appendix J (Volume 4)), planning and land use (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 identified social benefits and impacts were classified within a risk framework as per industry standard practice. The framework and risk ratings are discussed in Appendix P1 (Volume 4).

23.2.5 Mitigation and management measures

Measures to enhance social benefits and manage social impacts were selected based on the identified social benefits and impacts. The measures were identified based on industry standard practice. The measures will be reviewed and modified as necessary to accommodate social change or emergent social issues in accordance with the principles of adaptive management. These principles are reflected in the environmental management plans for the construction and operation of the proposed airport.

The social impact assessment also makes reference to measures to mitigate and manage various amenity impacts identified in other technical assessments as stated in Section 23.2.4.

23.3 Existing environment

23.3.1 Airport site

The airport site is located at Badgerys Creek in the Liverpool local government area. The northern boundary of the airport site adjoins the Penrith local government area. The study area is situated about 50 kilometres west-southwest of the Sydney CBD. The suburb of Badgerys Creek can be accessed via Elizabeth Drive or The Northern Road, both of which are main roads in this area. Kemps Creek and Luddenham are the closest townships.

23.3.2 Land ownership

The airport site is approximately 1,780 hectares in size and located on land acquired by the Australian Government in the 1980s and 1990s. Since the land was acquired, the Australian Government has been leasing properties to private tenants, with a property management agency contracted to manage the properties. Short-term leases have been in place for a number of the properties, as there has been a long-standing possibility of an airport development occurring.

23.3.3 Existing land use

The key existing land uses on the airport site, prior to tenant relocation, are outlined below:

- 139 residential tenancies ranging in area from approximately one to 40 hectares each;
- 16 agricultural tenancies including market gardens growing cucumber, strawberry, Asian herbs and tomatoes, and livestock farming including poultry and cattle grazing;
- eight commercial tenancies including the operator of a shale quarry, vineyard and a Christmas tree farm;
- the former Badgerys Creek Primary School, which was closed by the NSW Department of Education and Communities in December 2014;
- Badgerys Creek Park;
- two cemeteries (St Johns Anglican Church and Badgerys Creek Uniting Church); and
- a Scout hall located on Elizabeth Drive.

23.3.3.1 Social characteristics

Consistent with the semi-rural location of the site, and the Australian Bureau of Statistics (ABS) data for Badgerys Creek, dwellings on the residential tenancies were generally separate houses. The tenancies included a range of household types, including families with children, couples without children, and single households. Tenants were primarily from English speaking backgrounds, with some people from Italian and Maltese backgrounds.

Some tenants were over 65 years of age, a proportion of which were on aged pensions or disability pensions. This is reflected in the lower rate of labour force participation for Badgerys Creek (49 per cent) compared to the wider Liverpool local government area (58 per cent).

Of the 139 residential tenancies, 38 were long term tenants who had been living in the same property for 20 years or more and six tenancies were original land owners who had been leasing properties on the site since they sold to the Australian Government.

The occupations of tenants varied, from those who were self-employed and worked from home, or worked on the land (i.e. agriculture), to professionals, contractors and truck drivers. This is reflected by the employment profile for Badgerys Creek at the 2011 Census, with the top industries of employment being construction (13.3 per cent), agriculture (9.8 per cent) and transport and warehousing (9.2 per cent). The top occupations were managers (18.5 per cent), labourers (16.8 per cent) and technicians and trades (16.8 per cent).

23.3.4 Western Sydney

The existing communities of Western Sydney which make up the regional study area are diverse; from densely populated and highly urbanised areas, to semi-rural, recreational and natural areas. Many communities are known for their cultural diversity, heritage (both Aboriginal and European), strong and cohesive character, and recreational values. The regional study area has a number of employment hubs, such as the regional centres of Penrith and Liverpool, and has major transport connections within the region and to other parts of Greater Sydney.

Western Sydney is undergoing a major transition to a more highly urbanised region. This transition will be accelerated by the various major employment, residential and transport infrastructure projects identified for Western Sydney in addition to the proposed airport (see Section 23.3.6)

The proposed airport, in combination with other major projects and planning initiatives, has the potential to accelerate the investment in employment, housing and transport along with associated changes to communities in Western Sydney.

23.3.5 Population and employment growth

Many areas in Western Sydney have experienced high levels of urban development and population growth over recent years. This is expected to continue, as new areas in Western Sydney are developed, and population density increases around regional and town centres.

The population of Western Sydney is expected to grow significantly. The population is expected to grow 29 per cent by 2030, bringing in the order of one million people into the region (SGS 2015).

A Plan for Growing Sydney (DP&E 2014) focuses heavily on the role of Western Sydney in driving the growth of Sydney and NSW over the coming decades. Along with the development of the region more broadly, the emergence of Parramatta as Sydney's second CBD will further increase

Western Sydney's national and metropolitan influence. The NSW Government proposes that, as well as an employment hub, Parramatta will become an education hub. The Western Sydney University is currently developing a new campus in Parramatta and is planning to increase the capacity of its campus at Rydalmere. Adjacent to Parramatta, the Westmead Health Precinct is one of the largest integrated health, research, education and training precincts in the world. Parramatta CBD will be part of the Global Economic Corridor which will link Port Botany and Sydney (Kingsford Smith) Airport to employment hubs at Norwest and Sydney Olympic Park.

Providing more jobs in Western Sydney is important for creating and maintaining liveable and healthy communities. Although half of Sydney's population lives in Western Sydney, only a third of Sydney's jobs are located in the region, leading to long commutes for many workers. This will be particularly important given the demand for employment in Western Sydney is expected to increase faster than overall demand for employment in Greater Sydney.

As shown in Table 23–1, the labour forces in Western Sydney and Greater Sydney are predicted to grow markedly in the future. In particular, the labour force in Western Sydney is predicted to grow by 66 per cent between 2025 and 2065 while the labour force in Greater Sydney is predicted to grow by 52 per cent over the same period of time.

Table 23–1 Predicted labour force

Area	2025	2030	2065
Western Sydney	1,609,401	1,744,955	2,664,991
Greater Sydney	3,297,664	3,522,912	5,016,069

Employment areas will be key contributors to providing new jobs to meet this projected demand. A number of strategic planning initiatives are planned for Western Sydney (see Section 23.3.6). These areas have been established to provide businesses with land for industry and employment, particularly transport and logistics, warehousing and office space. The areas are located close to major transport and utility services, and are intended to encourage compatible developments near the proposed airport.

23.3.6 Urban growth and major projects

Significant new development is required to support expected population growth. A number of strategic planning initiatives and associated land release areas are planned for Western Sydney that would facilitate urban growth. These include:

- Western Sydney Priority Growth Area;
- Western Sydney Employment Area;
- South West Priority Growth Area;
- North West Priority Growth Area; and
- Greater Macarthur Priority Growth Area.

23.3.6.1 Western Sydney Priority Growth Area

The Western Sydney Priority Growth Area is a strategic planning initiative that aims to provide jobs, homes and services in the land around the proposed airport. A key priority for the Western Sydney Priority Growth Area will be to coordinate the development of employment and housing lands in a way that is compatible with operations at the proposed airport.

An accompanying Land Use and Infrastructure Strategy is under development to guide infrastructure investment in the Western Sydney Priority Growth Area. A key aim of the strategy will be to connect the proposed airport with the regional centres of Penrith and Liverpool.

23.3.6.2 Western Sydney Employment Area

The Western Sydney Employment Area is a strategic planning initiative that aims to provide businesses in Western Sydney with land for industry and employment including transport, logistics, warehousing and office space.

Previously the NSW Government had intended to extend the Western Sydney Employment Area to the south, including the area which is now the airport site. Following the Australian Government announcement in April 2014 to locate an airport at Badgerys Creek, the plans for the extension of the Western Sydney Employment Area were replaced with the introduction of the Western Sydney Priority Growth Area which will be focussed on ensuring compatible employment and housing development around the airport site.

23.3.6.3 South West Priority Growth Area

The South West Priority Growth Area is a strategic planning initiative dedicated to providing housing in Western Sydney. The supply of housing generated by the initiative is also expected to place downward pressure on housing costs.

The South West Priority Growth Area involves development of communities in precincts including Oran Park, Turner Road, East Leppington, Austral, Leppington North, Edmondson Park and Catherine Fields. Collectively the developments would create around 40,000 residences along with local amenities such as schools, public parks, employment areas and town centres. Planning is ongoing for other precincts such as Lowes Creek and Marylands.

23.3.6.4 North West Priority Growth Area

The North West Priority Growth Area is a strategic planning initiative dedicated to providing housing in Western Sydney. The supply of housing generated by the initiative is expected to put downward pressure on housing costs.

The North West Priority Growth Area involves development of communities in precincts including Alex Avenue, Riverstone, Marsden Park, Box Hill, Colebee, Cudgegong Road Station, North Kellyville and Schofields. Collectively the developments would create around 47,000 new residences along with local amenities such as schools, public parks, employment areas and town centres. Planning is ongoing for other new precincts such as Riverstone East, Vineyard, Marsden Park North and West Schofields.

23.3.6.5 Greater Macarthur Priority Growth Area

The Greater Macarthur Priority Growth Area is a strategic planning initiative for urban renewal, land release and infrastructure development around the Campbelltown-Macarthur Regional City.

The area would create opportunities for jobs and homes in Menangle Park and Mount Gilead as well as a new town centre at Wilton and is expected to provide up to 33,000 new homes and 30,000 readily accessible jobs. The area would also facilitate the urban renewal of seven train station precincts from Glenfield to Macarthur.

23.3.6.6 Urban renewal projects

The renewal of established areas is also a key strategy for the NSW Government to provide increased housing and jobs in Sydney, with the focus on transport corridors and around strategic centres. A number of areas in Western Sydney have been identified as priority urban renewal areas including:

- Glenfield to Macarthur Urban Renewal Corridor – located in Campbelltown local government area, with the area around seven train stations being investigated for redevelopment and provision of new homes. The corridor will form part of the planning for the Glenfield Macarthur Priority Growth Area (see Section 23.3.6);
- Greater Parramatta to Olympic Peninsula Urban Renewal Area – largely located across City of Parramatta Council, work has already begun on revitalising Wentworth Point and Carter Street, and plans are being developed for Camellia; and
- Sydney Metro Northwest Priority Urban Renewal Corridor – located between the Cherrybrook and Cudgegong Road stations of the planned Sydney Metro line. The corridor will form part of the planning for the Northwest Priority Growth Area (see Section 23.3.6).

23.3.6.7 Major transport infrastructure projects

A number of major transport projects are in various stages of planning and construction throughout Greater Sydney, which will connect communities in Western Sydney to various centres and the central business districts of Parramatta and Sydney City.

Joint Scoping Study of Rail Needs for Western Sydney

The Australian and NSW governments are undertaking a Joint Scoping Study of Rail Needs for Western Sydney, including the proposed airport. The Scoping Study will consider the best options for future rail links, including decisions about timing and rail service options, both directly to the airport site and within the Western Sydney region. The Scoping Study will also address the question of providing rail to the airport site in time for the Stage 1 development.

Planning for rail connections at the airport is being undertaken in close consultation with Transport for NSW. This will ensure that airport infrastructure considerations are aligned with Transport for NSW's planning for its rail network, including the proposed extension of the South West Rail Link.

Subject to the findings of the Scoping Study, a final rail alignment to the airport will be determined in consultation with the NSW Government. Depending on the alignment and preferred timing to develop rail services, work may be required during the Stage 1 Development to either commence construction or to future-proof the corridor. Any such work is expected to be subject to a separate approval process.

Western Sydney Infrastructure Plan

Under the Western Sydney Infrastructure Plan, the Australian and NSW governments are investing \$3.6 billion in a number of road upgrades and new roads in Western Sydney to support the proposed airport and improve road connections in Western Sydney. The package includes:

- upgrade of The Northern Road to a minimum of four lanes from Narellan to Jamison Road;
- construction of the M12 Motorway running east-west between the M7 Motorway and The Northern Road;
- upgrade of Bringelly Road to a minimum of four lanes between The Northern Road and Camden Valley Way;
- construction of the Werrington Arterial Road between the M4 Motorway and the Great Western Highway;
- upgrade of Ross Street and the Great Western Highway intersection at Glenbrook; and
- a \$200 million package for local roads upgrades.

Together, the package of new roads and upgrades aims to ease congestion and relieve pressure on existing roads while improving connections between major hubs (DIRD 2015).

Outer Sydney Orbital

The Outer Sydney Orbital is a corridor being investigated by the NSW Government to provide a north-south connection for a future motorway, freight rail, and where practical a passenger rail line. The corridor would provide increased capacity for the road network to improve accessibility to housing and employment, and the freight rail would connect from Port Kembla to the South Line, Western Line and Northern Line. The area under investigation starts at the North West Priority Growth Area in the north, finishes in the south near Picton in the Wollondilly local government area, and is located to the west of the airport site.

WestConnex

The WestConnex project includes road widening and tunnel works over 33 kilometres to provide faster and more reliable transport between Western Sydney, central Sydney, Sydney (Kingsford Smith) Airport and Port Botany. The project is planned to reduce congestion on Parramatta Road, provide greater capacity for freight and passenger movements across Sydney, and allow for urban renewal of this corridor.

23.4 Assessment of impacts during construction

Construction of the Stage 1 development would generate a range of positive and negative social impacts, including economic value-add and employment, population redistribution and housing, social amenity and lifestyle (associated with noise, air quality, and other impacts), community health, social infrastructure and emergency services.

Due to the scale and nature of the development, in most cases construction impacts are not predicted to result in significant social impacts.

23.4.1 Economic value-add and employment

Construction of the Stage 1 development is predicted to generate a range of economic and employment impacts directly through investment and employment, and indirectly through demand generated by the proposed airport and the workforce on the airport site. The economic and employment impacts of the proposed airport are summarised in more detail in Chapter 24.

The economic impacts can be expressed in terms of value-add, which is the dollar value of outputs minus the dollar value of inputs. Construction of the Stage 1 development would value-add about \$2.3 billion to the Greater Sydney economy over the construction period with about 83 per cent or \$1.9 billion of that in the economy of Western Sydney. These values include direct investment as well as indirect effects produced by demand from the proposed airport and the workforce on the airport site. This beneficial increase in economic activity would attract business activity from other parts of Greater Sydney, NSW and Australia.

The employment impacts can be expressed in terms of jobs required directly for the construction effort and indirect jobs supported by demand for goods and services generated by the proposed airport and the workforce at the airport site. During the peak year of construction, the proposed airport would directly support around 760 full-time equivalent jobs and indirect support around another 2,420 full-time equivalent jobs throughout Greater Sydney. The majority – about 84 per cent – of these jobs would be in Western Sydney.

The economic and employment impacts of the proposed airport would likely have beneficial effects on household incomes that could improve quality of life and living conditions. 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. These positive social benefits would be expected to continue into the operation of the Stage 1 development.

The diversity of jobs created by the operation of the proposed Stage 1 development would also provide options for job seekers to gain employment in their preferred industry, rather than other avenues of employment. In this way the construction of the Stage 1 development would present opportunities to increase job satisfaction for those either directly or indirectly employed as a result.

23.4.2 Population redistribution and housing

23.4.2.1 Population redistribution

The construction of the proposed airport is expected to occur against a background of significant population growth as discussed in Section 23.3.3. The construction of the proposed airport would contribute to this growth. The associated redistribution of population growth into Western Sydney from elsewhere in Sydney, NSW and the rest of Australia is discussed in Section 23.5.2.2.

23.4.2.2 Housing and accommodation

Employment directly created by the proposed airport is not expected to affect availability of housing and accommodation substantially. However, it is likely that the broader urbanisation of Western Sydney including the proposed airport would create significant additional demand for housing. A number of strategic planning initiatives by the NSW Government are planned in Western Sydney to deal with the anticipated demand. It is expected that such regional planning initiatives would accommodate increases in housing demand attributable to the proposed airport.

23.4.3 Social amenity and lifestyle

This section considers the potential impacts of construction of the Stage 1 development on social amenity and lifestyle with reference to impacts identified in other assessments, including:

- noise and vibration (see Chapter 11);
- air quality (see Chapter 12);
- traffic, transport and access (see Chapter 15);
- planning and land use (see Chapter 21); and
- landscape and visual amenity (see Chapter 22).

23.4.3.1 Noise and vibration

Noise and vibration impacts can reduce the amenity of spaces where people live and work or visit for recreation. Noise generated by construction would be centred on the airport site, while vehicles travelling to and from the airport site would also generate noise on the external road network and surrounding area. Modelling for the EIS shows that increased noise from construction traffic is predicted to be less than 2 dBA. This change in noise level is unlikely to be discernible.

Construction of the Stage 1 development is not expected to generate noise levels at residences outside the airport site in excess of limits defined in the Airports (Environment Protection) Regulations 1997 (AEPR). Noise and any consequential amenity impacts associated with construction activities would be transitory and vary depending on location and timing of works.

Although noise in excess of the limits defined in the AEPR is not predicted, noise would be audible at offsite locations near where construction activities are being conducted. Even if it does not interrupt certain activities, noise or the prospect of noise has the potential to cause annoyance, stress and anxiety. As a result, construction noise may reduce social amenity and the rural/semi-rural residential lifestyle for areas close to the airport site. However, these impacts are unpredictable in the sense they affect people differently (or not at all) and can be highly subjective.

Vibration resulting from pile driving or rock blasting would be managed to ensure the comfort and amenity of surrounding residents. Relevant standards that would apply to the conduct of these activities are identified in Chapter 11.

A Noise and Vibration Construction Environmental Management Plan would be developed and approved prior to commencement of Main Construction Works for the proposed airport. This plan will address requirements for notifying residents of construction activities with the potential to affect their amenity due to noise and vibration. The construction noise assessment, including proposed noise and vibration mitigation measures, is discussed in more detail in Chapter 11.

23.4.3.2 Air quality

Air quality impacts can reduce the amenity of spaces where people live and work or visit for recreation. Construction emissions are expected to be temporary and isolated in nature and would be readily controlled with the implementation of standard mitigation and management measures. The air quality assessment and mitigation measures are discussed in more detail in Chapter 12.



The main source of air emissions during construction would be dust from bulk earthworks and construction of infrastructure for the Stage 1 development. Dispersion modelling of construction dust from bulk earthworks and construction of infrastructure indicated that emissions would meet the relevant air quality criteria at all identified sensitive receptors outside the airport site. Emissions would also be readily controlled with the implementation of standard measures such as the watering of exposed surfaces and covering of stockpiled material. The movement of construction vehicles on the external road network could also generate dust emissions from tyres or uncovered loads. Additional measures such as speed controls would be included to control dust emissions from vehicles.

Although dust is not expected to exceed air quality criteria at identified sensitive receptors, there is potential for dust to be noticed on occasion or accumulate on surfaces such as cars or furniture. The physical evidence of dust or the potential for dust could affect residents and their lifestyle, leading to behaviours such as closing windows or doors to reduce exposure to dust. The potential for these social amenity and lifestyle impacts to occur would be effectively minimised with the implementation of air quality mitigation measures, as outlined in Chapter 12.

23.4.3.3 Traffic, transport and access

The major roads surrounding and connecting to the airport site include the M7 Motorway, The Northern Road, Elizabeth Drive, Bringelly Road, Badgerys Creek Road, Adams Road and Mamre Road. The existing road network can experience capacity constraints during peak times but is not seriously congested, ranging between Level of Service A (free flowing) and Level of Service D (close to the limit of stable flow).

The construction phase would lead to an increase in traffic of around 1,254 additional vehicle movements per day on the road network surrounding the airport site. Traffic modelling indicates this would equate to about 150 to 160 additional vehicles per hour during peak periods on Elizabeth Drive, which is expected to be the primary access route for construction traffic.

Predicted increases in traffic are not expected to deteriorate the level of service on Elizabeth Drive or the broader strategic road network; however, minor decreases in level of service are predicted on stretches of Cowpasture Road and Luddenham Road. Temporary road closures may also be required to facilitate safe movement of oversized vehicles during construction.

Impacts on level of service are not expected to be sufficient to destabilise the flow of traffic and as such are not expected to represent a serious inconvenience to local residents. Although temporary road closures have the potential to inconvenience local residents, this inconvenience would be brief and alternate routes would be available to destinations outside of the airport site.

The primary social impact would be inconvenience from the increase in construction traffic which may in turn increase commute times. Increased commute times could affect residents travelling to and from home, work, school, health care facilities or other places. The increased commute times could represent an inconvenience to residents in transit and their families, dependants, colleagues or others depending on the circumstances.

Potential impacts would be mitigated and managed through a Traffic and Access Construction Environmental Management Plan. This plan will address requirements for notifying residents and commuters of planned temporary road closures or disruptions. The traffic, transport and access assessment, including proposed mitigation measures, is discussed in more detail in Chapter 15.

23.4.3.4 *Land use, landscape character and visual impact*

The planning and land use impacts of the Stage 1 development would essentially involve the transition of the airport site and surrounding area from rural residential and agricultural lands to more developed land uses. The construction of the proposed airport is expected to occur against a background of significant urban development as discussed in Section 23.3.3. The construction of the proposed airport would contribute to this development and the transformation of the landscape character of the region – from rural residential and agricultural landscape to a more urbanised and commercial setting. Planning and land use impacts and associated mitigation measures are discussed in further detail in Chapter 21 and landscape character and visual impacts and mitigation measures are discussed in Chapter 22.

The land use, landscape character and visual impacts would occur as part of a broader transition of Western Sydney which has been taking place for a number of decades and is represented in the various strategic planning initiatives discussed in Section 23.3.4. The social implications of the transition are discussed in Section 23.5.3.

The level of visual impact experienced at a particular location would depend on various factors including its distance from the airport site, its elevation and its sensitivity to change including its cultural or recreational value. Construction would likely have greater visual impact at receivers to the north of the airport site such as Luddenham and Elizabeth Drive due to their proximity to airport infrastructure. Rural residential areas at higher elevations such as Mount Vernon, Silverdale and Rossmore would experience moderate to low visual impact due to their views of the airport site.

Impacts to land use, 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 in particular could reduce people's enjoyment of these places and the value they place on them. Social amenity and lifestyle impacts would be mitigated and managed during construction to the extent practicable through implementation of measures outlined in Chapter 21 and Chapter 22.

The overall impact to social amenity and lifestyle would persist as the airport proceeds into operation and the broader region undergoes widespread development. The persistence of these impacts into operation is discussed in Section 23.5.6.

23.4.4 **Human Health**

The health risk assessment discussed in Chapter 13 identifies the predicted health risks associated with construction of the Stage 1 development. There are a number of potential pathways by which the airport development may influence human health, and the assessment focusses on the key issues of air quality, surface water and groundwater.

The health risk assessment concludes that there would be minimal impacts on human health during construction. Increased health risks due to particulate matter would be very low. Construction noise is predicted to be well below acceptable limits and the level of health risks associated with ground and surface water would be low. Given the relatively short time period for construction, the predicted health risks are unlikely to be realised. Further to this, mitigation measures proposed in the EIS would further minimise any potential health impacts.

Despite the generally low level of health risk posed by the proposed airport, the perception of these or other health risks may trigger stress and anxiety in people. These effects may occur in parallel with annoyance, stress and anxiety over other potential impacts to social amenity and lifestyle (see Section 30.3.1 (Volume 3)). These concerns highlight the importance of community engagement regarding health and other key issues prior to the construction and operation of the Stage 1 development.

Measures regarding ongoing community engagement are discussed in Section 23.7, while potential health impacts are discussed further in Chapter 13.

23.4.5 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 construction of the proposed airport is expected to occur against a background of significant population growth and urban development as discussed in Section 23.3.3. The construction of the proposed airport would contribute to this growth and as such would contribute to growing demands on social infrastructure. This potential impact would be realised over a significant period of time and is discussed in Section 23.5.5 with regards to the operation of the Stage 1 development.

Overall, the forecast increase in construction workers during construction of the proposed airport is unlikely to lead to demand for social infrastructure in areas near the proposed airport (e.g. child care, emergency services, medical services, schools). It is anticipated that construction workers would largely be residents of Western Sydney or Greater Sydney and would continue to access social infrastructure in their area of residence. Any increase in demand is expected to be small and would be temporary due to the nature of the construction work. As such, substantial impacts to other users of social infrastructure are not expected.

23.4.5.1 Recreational assets

The construction of the proposed airport would involve the removal of Badgerys Creek Park which is located on the airport site. Impacts at other recreational assets are not expected to occur during construction of the Stage 1 development given its temporary timeframe and localised impacts.

23.4.6 Emergency services

The construction of the proposed airport, including the presence of a relatively large workforce at the airport site, could require responses from emergency services in the event of an incident.

The lead construction contractor of the airport would be expected to develop and implement safety protocols including an emergency response plan in collaboration with all NSW emergency services to guide the response in the event of an incident occurring. It is anticipated that the emergency response plan would cover the immediate emergency response, provision of basic medical services and first aid and as well as preventive activities such as fire management.

The Department of Infrastructure and Regional Development has prepared a Bushfire Management Plan to guide management activities at the site in the interim period prior to construction. It is expected that management practices established at the site through this plan would be carried forward as necessary through construction and operation.

23.5 Assessment of impacts during operation

Operation of the Stage 1 development would generate a similar range of positive and negative social impacts as outlined for construction. Impacts would include 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 social impacts (both positive and negative) associated with operation of the proposed airport are predicted to be larger than impacts associated with construction.

23.5.1 Economic value-add and employment

Operation of the Stage 1 development is predicted to generate a range of economic and employment impacts directly through investment and employment, and indirectly through demand generated by the proposed airport and the workforce at the airport site. These impacts are expected to benefit the region as it will shape growth in Greater Sydney to be more balanced, sustainable and inclusive of Western Sydney and its regions. The economic assessment is summarised in more detail in Chapter 24.

The economic impacts are presented for the year 2031 in order to ensure consistency with data provided by external sources as described in Appendix P3 (Volume 4).

As outlined in Chapter 24, operation of the Stage 1 development in 2031 alone would value-add about \$77 million in Western Sydney, \$145 million in the rest of Greater Sydney and \$23 million in the rest of NSW. These values would include about \$140 million in household income in 2031.

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 Stage 1 development would impact on other industries in Western Sydney, potentially diminishing agriculture and manufacturing due to competition for land and cost of labour and increasing tourism and demand of accommodation (hotels/motels) in the region.

Airports are one of the most important employment hubs in Australia, generating diverse employment opportunities, including jobs in transport, postage, warehousing, administration, safety, retail, accommodation, food services, manufacturing, professional and technical services, information media and telecommunications (BITRE 2013). These jobs tend to be evenly stratified across jobs classifications and educational qualifications.

As outlined in Chapter 24, the operation of the Stage 1 development in 2031 would directly support around 8,730 direct full-time equivalent jobs in airport operations. A further 4,440 direct full-time equivalent jobs could also be generated from commercial activities at the business park areas on the airport site should an 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. The availability of jobs and increase in economic activity are expected to drive economic and employment growth in Western Sydney.

The operation of the Stage 1 development would 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 of jobs created by the operation of the Stage 1 development would also 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 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. Multiple developments are in various stages of planning and development as part of initiatives such as the Australian Government's *Western Sydney Infrastructure Plan* and NSW Government's *A Plan for Growing Sydney*.

23.5.2 Population redistribution and housing

23.5.2.1 Population redistribution

The operation of the proposed airport is expected to occur against a background of significant population growth as discussed in Section 23.3.3. The operation of the proposed airport would contribute to this growth. The population distribution analysis undertaken as part of the economic assessment in Chapter 24 indicated that by 2031, land use changes resulting from the Stage 1 development would redistribute an additional 17,900 residents to Western Sydney.



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. The changes in cultural diversity may be particularly pronounced in areas to the west of the airport site, where many communities presently have relatively low cultural diversity.

23.5.2.2 Housing and accommodation

The workforce directly employed in the operation of the Stage 1 development is not expected to substantially affect availability of housing and accommodation in the region. The majority of the Stage 1 development workforce are expected to be residents of the Western Sydney or Greater Sydney region who would commute to work from their existing residences.

It is not possible to accurately predict exactly how many workers and their families would move to the area specifically due to work opportunities at the proposed airport versus those who would move to the region for the other opportunities afforded by the general development and growth of Western Sydney. However, as the total workforce required for the proposed airport during the Stage 1 development is only a proportion of the total labour pool available and forecast for the Western Sydney region, it can be assumed that there would be a small number of workers at the proposed airport who may choose to move to the region. This would generate a small demand for long term housing in Western Sydney. It is possible that this small demand for housing from the proposed airport Stage 1 operational workforce could be absorbed by the significant amount of housing development proposed for the Western Sydney region.

As identified in the social impact assessment, Western Sydney offers housing that is more affordable compared to the rest of Sydney. It is likely that the overall population growth in Western Sydney (with the proposed airport as a catalyst) may increase overall demand for long term housing potentially creating housing availability and affordability issues, which may particularly disadvantaged groups who are already vulnerable. A number of strategic planning initiatives, including significant housing developments, are planned in Western Sydney to deal with the anticipated demand. The increase in demand for housing coupled with potential change in average property values (see Section 23.5.2.3) has the potential to generate housing availability and affordability issues, particularly for already disadvantaged groups.

23.5.2.3 Property values

The potential effect on property prices associated with aircraft noise (among other factors) is documented in a number of Australian and international studies. The property values assessment presented in Appendix P2 (Volume 4) provides a comprehensive assessment of potential property price effects on lower density, large-lot land holdings similar to those found at Badgerys Creek. Comparable examples including Melbourne (Tullamarine and Avalon) and Perth airports were analysed for a potential relationship between price and noise effects.

The property values assessment failed to establish a statistically significant relationship between noise exposure and property prices of large lot land. Possible reasons for this might include the lesser significance of the dwelling in the context of large land areas, land used for primary production may be less affected by noise and/or the wider range of factors influencing price that cannot be analysed.

A potential reduction in property values could affect a range of properties given the nature of the development and the scale of the noise envelope. The effect would differ depending on location and individual circumstances. Analysis of long run house prices in Sydney since 1991 found no appreciable difference in growth rate between median prices in suburbs subject to noise in excess of 20 ANEF and those in similar areas not exposed to aircraft noise.

In the 12-month period following the Australian Government announcement that Badgerys Creek was the preferred site for a new airport for Western Sydney, there was a spike in house prices in areas closer to the airport site. Analysis of long term growth rates of residential sales in the suburbs around Badgerys Creek between 1991 and 2015 indicates that despite short-term fluctuations, property prices have increased at a similar rate to dwellings across Sydney. Rather than suffering a slowing of growth as a result of concerns relating to environmental impacts, residential prices in the suburbs around Badgerys Creek grew strongly in the period following the Australian Government announcement, increasing by almost 24 per cent, which was substantially greater than the average increase in both Western Sydney and the Sydney metropolitan region.

These general trends of increasing property values in Western Sydney are likely to be contributing to housing stress and affordability issues for local communities. The increase in property values shown to occur since the announcement of the proposed airport further contribute to these issues.

23.5.3 Social amenity and lifestyle

This section considers the potential impacts of the Stage 1 development on social amenity and lifestyle with reference to impacts identified in other assessments, including:

- noise and vibration (see Chapters 10 and 11);
- air quality (see Chapter 12);
- traffic, transport and access (see Chapter 15);
- planning and land use (see Chapter 21); and
- landscape and visual amenity (see Chapter 22).

23.5.3.1 Noise

Based on the findings of the aircraft overflight noise assessment (see Chapter 10) and the ground-based operations noise assessment (see Chapter 11), the proposed airport could impact the existing lifestyle and social amenity of some communities across Western Sydney depending on the design, availability and use of alternative airport operating modes and strategies.

Communities potentially most impacted by aircraft overflight noise include Badgerys Creek, Luddenham, Bringelly, St Marys, Erskine Park, Greendale, Silverdale, Horsley Park, and parts of Blacktown. Many of these areas—particularly Luddenham, Greendale, Silverdale, Kemps Creek, Mount Vernon and Horsley Park—are semi-rural large-lot suburbs with low population densities.

Ground-based noise from the proposed airport would also affect communities in proximity to the airport site, particularly Luddenham, Bringelly and Greendale. These localities are all semi-rural or small townships with lower population densities compared to other parts of the Liverpool and Penrith local government areas.



An indicative 'worst case' representation of the operational noise envelope is shown in Figure 23–1, including ground noise and overflight noise. The analysis uses the following noise metrics:

- N70 noise contour (with 5–10 flights during the day and night period exceeding 70 dBA);
- N60 noise contour (with 5–10 flights during the night period exceeding 60 dBA); and
- engine run-up with no noise enclosure during the Stage 1 development.

It is noted that N70 and N60 contours are more extensive than would occur during actual operations as they are a composite of the 'Prefer 05' and 'Prefer 23' operating strategies developed for the aircraft overflight noise assessment. The selected strategy determines the preferred end of the runway for aircraft take-off and landing. The contours represent a worst case scenario in this sense, showing a larger area of impact than would be expected from actual operations based on the indicative flight path design.

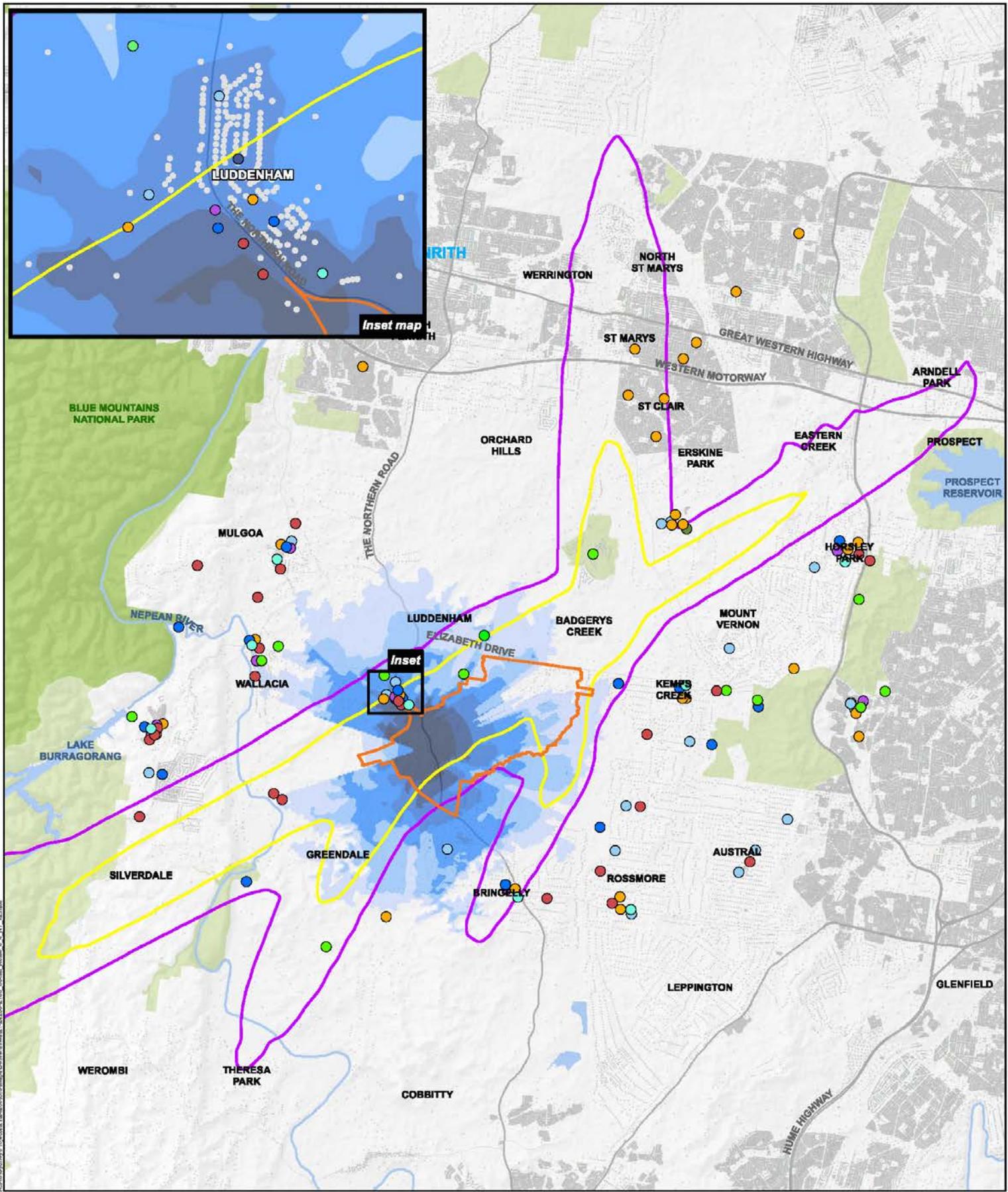


Figure 23-1 - Social infrastructure and residences potentially affected by worst case operational noise envelope – Stage 1 operations



Noise has the potential to adversely affect the social amenity and lifestyle experienced by communities in the vicinity of the proposed airport and its arrival and departure flight paths. Noise could intermittently interrupt conversation or other activities such as television viewing or listening to the radio. Night-time noise would also have the potential to disturb sleep to varying degrees.

Noise would also potentially impact the attentiveness and enjoyment of children during school hours, and hence their cognitive development. High noise exposure levels at churches, parks or recreation facilities may diminish the value the community places 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 trigger a negative response in people at home, particularly at times of rest or recreation, but also in people who work at home. Shift workers may also be affected by the level and frequency of noise events during the daytime.

Airports necessarily are located in proximity to urban development. As such, there are numerous examples around the world of communities that are affected by aircraft noise. The response of individuals to increased noise varies. People may choose to close windows or doors in order to reduce ambient noise levels, which would in some cases be unlike their current semi-rural practices where they would leave the windows open for light and fresh air.

Actual or perceived issues may cause individuals to move away from an area affected by aircraft noise. They may also influence the choice of those planning to relocate to areas subject to aircraft noise. It is reasonable to assume that, over a period of time, residents who are more sensitive to noise tend to move out of noise affected areas, to be replaced by individuals who are genuinely less sensitive to noise or who are willing, on balance, to accept higher noise levels. There would, nevertheless, be individuals unable to relocate and who would continue to be annoyed by aircraft overflight noise over time.

Actual or perceived noise issues may affect behaviours, including the patronage at social infrastructure. Noise impacts would also diminish the value people attach to the use of recreational spaces, as increased noise would disturb the peace and serenity of some areas. The Bents Basin State Conservation Area and Gulguer Nature Reserve are recreational areas predicted to experience several overflights each day above 60 dBA.

The mitigation and management of noise impacts from aircraft overflights and ground-based operations are important considerations for the detailed planning and operational phases of the proposed airport development. The future airspace and flight path design process will optimise flight paths taking into account the safety of all aircraft and airspace users across the Sydney basin, aircraft operation efficiency and opportunities to minimise noise and amenity impacts on all potentially affected communities, sensitive receivers and the environment. All feasible noise abatement and noise respite opportunities will be assessed throughout the design process. Mitigation measures to address aircraft overflight noise and ground-based operations noise are described in detail in Chapter 10 and Chapter 11 respectively.

23.5.3.2 Air quality

This section outlines the social and amenity issues associated with the predicted air quality impacts from the operation of the Stage 1 development. The assessment of social impacts is based on the local air quality assessment and regional air quality assessment which are discussed in detail in Chapter 12.

Air quality impacts can reduce the amenity of spaces where people live and work or visit for recreation. The operation of the proposed airport may lead to minor reductions in air quality for communities close to the airport site, including the townships and surrounding areas of Luddenham, Wallacia, Mulgoa, Greendale, Badgerys Creek, Rossmore, Mount Vernon, Kemps Creek and Badgerys Creek. Air emissions from the Stage 1 development have been assessed with reference to a range of criteria, including those established for the protection of human health.

In general, the main source of emissions would be exhaust emissions from increased background road traffic associated with the broader urbanisation of Western Sydney, depending on the pollutant. These background emissions are largely independent of the proposed airport. In terms of emissions from the airport site itself, aircraft movements are predicted to be the largest on-site source of emissions, followed by the operation of auxiliary power units (APUs) and ground support equipment (GSE). Road traffic generated by trips to and from the airport site would form a relatively small proportion of emissions.

Dispersion modelling of airport emissions during the operation of the Stage 1 development indicated that air quality would meet current air quality criteria at all identified sensitive receptors for the assessed pollutants, including nitrogen oxides, particulate matter, carbon monoxide, sulfur dioxide and air toxics. Odour from aircraft exhaust was similarly predicted to be below detection levels. Predicted concentrations of particulate matter (PM_{2.5}) did however exceed a planned NEPM-AAQ objective for 2025 at a number of sensitive receptors – however this is primarily attributable to background concentrations independent of the proposed airport.

Ozone is another key emission of the proposed airport and is a recognised air quality issue in the Western Sydney. The regional air quality assessment predicted that the operation of the Stage 1 development would contribute to ozone concentration levels, although this contribution is predicted to be marginal given existing ozone levels. The assessment indicated that ozone would exceed the relevant air quality criteria for ozone of 100 parts per billion whether or not the proposed airport was developed.

Actual or perceived air quality issues associated with the proposed airport and the broader urbanisation of Western Sydney do have the potential to affect social amenity and lifestyle in Western Sydney. The primary social impact of air emissions relates to human health. This potential impact 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 further in Section 23.5.4.

Aside from the potential human health impacts, social amenity and lifestyle impacts on affected communities are limited. Emissions to air are not 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. Changes in behaviour could include residents choosing to keep windows or doors of their residences 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.

Overall, social amenity and lifestyle impacts associated with air quality emissions from operation of the proposed airport are expected to be minimal. Mitigation measures outlined in Chapter 12 will reduce air quality impacts and, by extension, the associated social amenity and lifestyle impacts. 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.

23.5.3.3 Traffic and access

Operation of the Stage 1 development would lead to an increase in traffic on roads surrounding the site. These impacts are outlined in detail in the traffic, transport and access assessment outlined in Chapter 15. Traffic impacts would be expected to affect the social amenity and lifestyle of these semi-rural areas. It is important to note that the increases would occur in combination with substantial increases in background traffic attributable to the broader urbanisation of Western Sydney that would occur independently of the proposed airport.

The primary social impact of increased traffic is increased commute times. 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 social 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. This includes the development of transport infrastructure, including road and rail, the provision of public transport services, and long term transport and urban planning. With the implementation of these initiatives, serious road capacity issues, and associated social amenity and lifestyle impacts, would be minimised.

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. As outlined in Section 23.5.1, employment opportunities created by the Stage 1 development would potentially reduce travel times, offering prospects for improved lifestyle by allowing workers more time for leisure activities and family.

23.5.3.4 Land use, landscape character and visual impacts

This section outlines the social amenity and lifestyle impacts that would be associated with the impacts of the Stage 1 development on planning and land use (discussed in Chapter 21) and landscape character and visual (discussed in Chapter 22).

In general, the operation of the proposed airport is expected to occur against a background of significant urban development as discussed in Section 23.3.3. The operation of the proposed airport would contribute to this development and the transformation of the landscape character of the region – from rural residential and agricultural landscape to a more urbanised and commercial setting.

The planning and land use impacts of the Stage 1 development would essentially involve the continued growth of regional centres and transition of surrounding rural residential and agricultural lands to more developed land uses. This transition is represented in a number of current strategic planning initiatives discussed in Section 23.3.4.

In addition to these planning initiatives, development surrounding the airport would be shaped by long standing planning restrictions in place to prohibit incompatible development. Restrictions of this type have been reflected in planning by successive Australian, State and local governments given the long standing commitment to develop an airport at the airport site.

The proposed airport would contribute to these land use transitions. Furthermore, the realisation of the business development land use zones in the airport site land use plan (see Chapter 4 (Volume 1)) would provide additional supply for development a range of employment oriented land uses.

The level of visual impact experienced at a particular location would depend on various factors including its distance from the airport site, runways, lighting and flight paths as well as its elevation and its sensitivity to change including its cultural or recreational value.

Key findings from the visual assessment include that:

- the proposed airport development would substantially modify the existing rural landscape and visual quality of the area to a more urbanised character;
- most visual impacts would be on areas to the immediate north such as Luddenham and Badgerys Creek due to their relative proximity to the airport as well as areas to the south of the airport such as Bringelly, Greendale and Bents Basin due to aircraft overflights;
- surrounding rural residential areas at higher elevations such as Mount Vernon, Silverdale and Rossmore would experience moderate to low visual impact due to views of the airport site. The impact would, however, be increased by aircraft overflights; and
- visual impacts at selected important cultural and recreational areas, such as the Bents Basin State Recreation Area, would range from moderate to high due to the high sensitivity ratings of the viewpoints and the effect of aircraft overflights.

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 other who travel to Western Sydney for work or otherwise. In particular, some residents, both long term and relatively recent, may also view the transition of land use and landscape character as positive, or be indifferent to it, given the associated benefits of social and economic benefits of living in an urbanised area with better access to employment, shops, services, and social infrastructure.

23.5.4 Human health

Human health risks associated with air quality, noise and water quality impacts from operation of the proposed airport are discussed in Chapter 13. The predicted increases in health risks would generally be within or at the upper bound of national and international standards of acceptability, with the exception of the health risks associated with NO₂. As noted in the air quality assessment in Chapter 12, a significantly large contributor to air quality impacts, and therefore health risks, is background emissions from urban development and road vehicles external to the airport site. In addition, the health risks are very small when compared to those from existing air pollution.

In relation to noise, the health risk is generally low and within acceptable limits. The assessment indicates that noise from aircraft overflight and ground operations may lead to a small increase in sleep disturbance for communities around the airport site. The assessment found that noise is not predicted to increase the risk of cardiovascular disease and that noise impacts on learning and cognitive development in children are largely within acceptable limits.

Although the predicted increase in health risks for the community are low and 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 different housing choices such as moving to other areas where health impacts are perceived to be lower, subject to housing availability, affordability and other considerations. It is also possible that parents of children attending education institutions and child care facilities impacted by ground operation and aircraft noise may be concerned about the impacts and consider other options for schooling in the area. Real and perceived health risks have the potential to change how people react to certain situations and strain family and social relations.

As part of the development and change of 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. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems (WHO, 2016).

In addition to the negative impacts on health as outlined above and in Chapter 13, 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 (see Section 23.5.3). Such amenity and lifestyle impacts may also affect the health and wellbeing of community members.

However, as outlined earlier, the proposed airport is predicted to increase employment opportunities and household incomes, improve access to transport infrastructure and increase access to social infrastructure including health services. Collectively, these factors could provide socio-economic benefits to some community members, and therefore also lead to positive community wellbeing and health impacts.

23.5.5 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 economic assessment (see Chapter 24) found that operation of the proposed airport would lead to a redistribution of population growth across Greater Sydney. In particular, the proposed airport would lead to a modest population increase in Western Sydney as residents who would have otherwise lived in other parts of Sydney, move to Western Sydney to be located closer to employment and services associated with the proposed airport.

Projected increases in population would result in additional demand on social infrastructure in areas near the airport site. Consultation with the NSW Department of Education and Communities in particular indicated that some workers at the proposed airport may prefer for their children to attend schools close to their workplace. Workers at the proposed airport may also choose to utilise medical services, child care facilities, exercise facilities and the like in the vicinity of their place of employment.

The amenity impacts discussed in Section 23.5.3 such as noise, air quality, traffic and visual impacts, would potentially occur at social infrastructure such as education institutions and health care facilities.

Potential impacts on social infrastructure would likely be offset by the expansion of social infrastructure as part of the broader urbanisation of Western Sydney. Furthermore, the predicted urban growth in Western Sydney, of which the proposed airport is a part, has the potential to improve the availability and quality of social infrastructure over time.

23.5.5.1 Recreational assets

Flight paths may result in visual and noise impacts on some recreational reserves in the Western Sydney region. Stakeholder consultation during the preparation of the EIS identified that some recreational areas may be more sensitive to aircraft noise and visual impacts.

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

- Twin Creeks Golf and 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);
- Burragorang Recreation Area (Silverdale);
- Gulguer Nature Reserve;
- Mulgoa Nature Reserve;
- Warragamba Sportsground; and
- the Blue Mountains.

These recreational areas are valued for their environmental and amenity values, and these values may be impacted by overflight noise. Areas such as the Bents Basin Recreational Area in Greendale, Burragorang State Conservation Area and a small part of the Western Sydney Parklands and Prospect Nature Reserve would be located under standard departure and arrival flight paths and are predicted to experience a relatively high number of overflights each day. The amenity of these areas, in rural or more isolated locations, is likely to be reduced for users.

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 the enjoyment of the natural environment. As aircraft overflights in the Blue Mountains 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.

23.5.6 Emergency services

As a major airport and transport gateway, the Stage 1 development is expected to increase demand for emergency services. The increase in demand may occur as a result of incidents at the proposed airport, increased traffic on the surrounding road network, or health issues discussed in Section 23.5.4. Emergency services will be required to adapt and respond to the need of the community of Western Sydney as it grows. This increased demand would occur within the context of larger demand increases associated with the broader development of Western Sydney. As such, the proposed airport is not expected to place excessive pressure on emergency services.

Operational safety protocols including an Emergency Response Plan would be developed and implemented for the proposed airport. It is anticipated this would occur in collaboration with relevant Australian and NSW emergency services to cover emergency response, first aid and basic medical services, fire prevention, firefighting equipment and security.

An Airservices Australia Aviation Rescue Fire Fighting Service station is proposed for the Stage 1 development, with a mutual aid agreement with the Rural Fire Service expected to be in place before airport operations commence. Should local resources be required to assist with an emergency situation at the proposed airport, it is likely NSW Fire and Rescue would manage and re-distribute its resources as appropriate. NSW Ambulance does not expect an onsite station to be provided at the airport site and does not expect airport operations to directly impact its ability to service the local community.

23.6 Summary of key social benefits and impacts

The key social and economic benefits and impacts arising from the construction and operation of the Stage 1 development are summarised in Table 23–2 and Table 23–3.

Table 23–2 Summary of social and economic benefits

Social and economic benefits	Construction	Operation
Construction of the Stage 1 development would value-add an estimated \$2.3 billion to the economy of Greater Sydney, with about 83 per cent or \$1.9 billion generated in Western Sydney.	✓	✓
Operation of the Stage 1 development would value-add an estimated \$77 million to the economy of Western Sydney, \$145 million across the rest of Greater Sydney and \$23 million elsewhere in NSW in 2031 alone. Increasing economic benefits would be generated in subsequent years of operation, commensurate with growing annual passenger patronage.		
The proposed airport development would generate a number of jobs in Western Sydney and Greater Sydney, including: <ul style="list-style-type: none"> About 3,180 person years of employment directly and indirectly in Greater Sydney during construction, with about 64 percent or 2,660 generated in Western Sydney; and About 13,170 FTE jobs at the airport and onsite business park during operation and an additional 6,900 FTE jobs in Western Sydney attributable to flow-on economic effects. 	✓	✓
Business growth and development in other industry sectors such as construction, utilities, trade, transport and services, accommodation, retail, professional services and public administration is forecast. This is anticipated to occur from the sourcing of goods and services for the proposed airport as well as through indirect and induced economic impacts.	✓	✓
New areas of land surrounding the airport site may become available for transport and logistics, warehousing and office space. This may lead to economic growth and Western Sydney becoming more attractive to businesses.	-	✓
The proposed airport will provide employment opportunities closer to home for the residents of Western Sydney, reducing their travel time and offering improved lifestyle and amenity.	✓	✓
The proposed airport may contribute to population growth of an additional 17,900 persons in Western Sydney by 2031. The regional population will continue to grow with new residents likely to be younger people attracted to employment opportunities and more affordable housing opportunities.	-	✓
Change to a more urban character and urbanised lifestyle may attract people from culturally diverse backgrounds, altering the existing demographic profile of some areas of Western Sydney which may currently have lower levels of diversity.	-	✓
There is a potential for increasing demand for accommodation facilities (hotels/motels) and associated services (entertainment) close to the proposed airport. Stakeholder consultation has indicated that Western Sydney has the capacity to develop these to meet demand.	-	✓
The majority of the construction and operational workforce is expected to be sourced from Western Sydney and Greater Sydney. Some technical specialists may be sourced from other parts of Australia or internationally, and may require temporary short or long term accommodation. It is expected that existing or proposed accommodation in Western Sydney would accommodate this demand.	✓	✓
Some workers at the airport may choose to move from other parts of Sydney or outside of Sydney to areas in Western Sydney, resulting in a small increase in demand for housing.	-	✓

Social and economic benefits

Construction Operation

The forecast increase in workers may result in increased demand for social infrastructure in areas near the proposed airport (e.g. child care, emergency services, medical services, schools) stimulating further growth in the region. It is anticipated that future social infrastructure provision should have capacity to meet future demand as a result of the long timeframe of development allowing appropriate planning by service providers.

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✓

Table 23–3 Summary of social impacts

Social impacts

Construction Operation

Changes to land use in Western Sydney due to the Stage 1 development and broader urbanisation may result in competition for land and labour and a consequential decline in industry sectors such as agriculture and manufacturing. Trends show these industries are in decline in Western Sydney.

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✓

Increase in housing prices associated with the announcement of the proposed airport may lead to increased rental prices which may lead to housing affordability issues in parts of Western Sydney.

✓

✓

Communities may experience a reduction in amenity as a result of aircraft overflight noise and/or airport operational noise. Amenity impacts will depend on a number of factors including, but not limited to: the future operating strategy of the proposed airport, the distance of a community from the airport, the height of aircraft over a community, the frequency of aircraft overflights, and the existing lifestyle and amenity characteristics.

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✓

Aircraft overflight noise and visual intrusion may reduce the recreational or wilderness values of areas such as Bents Basin State Recreation Area, as well as impact on the Greater Blue Mountains World Heritage Area.

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✓

Reduced social amenity and change to the rural and semi-rural residential lifestyle may occur for areas close to the airport site as a result of construction and/or operational ground-based noise.

✓

✓

Reduced amenity of sensitive social infrastructure may occur as a result of operational ground-based noise in areas close to airport site including Bringelly Child Care Centre.

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✓

The uncertainty over the location of flight paths and airport operating modes that may be adopted could cause anxiety among the local community. This could be exacerbated due to the timeframes required to develop and certify a comprehensive airspace design for the proposed airport.

✓

-

Reduced air quality at semi-rural communities close to the airport site may occur. However, emissions from airport operations will be within permissible levels.

-

✓

Most air quality impacts as a result of construction activities would be contained within the airport site boundary. Vehicles travelling on unsealed roads and transporting materials onto the road network may lead to temporary air quality impacts.

✓

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Increase in traffic on roads surrounding the site, road closures and diversions during construction may lead to inconvenience, congestion and delays for local road users.

✓

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Increase in traffic on roads surrounding the airport site may occur during Stage 1 operations. However, with the planned upgrades of roads and introduction of new roads in areas surrounding the site, the increase in traffic is not expected to result in capacity issues.

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✓

Reduced visual amenity for areas that are close to the airport site and close to improved road infrastructure may occur due to a permanent change in the landscape from semi-rural to a more urbanised character.

✓

✓

Reduced amenity for areas to the north and south of the site may occur due to visual impacts from the proximity of overflights.

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✓

Social impacts	Construction	Operation
Reduced amenity for recreational areas surrounding the airport site due to aircraft noise.	-	✓
The Stage 1 development would present health risks associated with exposure to air pollutants and noise, including respiratory disease, cardiovascular disease, sleep disturbance and impacts on childhood learning and cognitive development.	-	✓
Concerns about health impacts may lead to some residents making different housing choices. Parents may also choose to move children from educational institutions near the site.	-	✓
Decreasing housing availability and affordability issues in some areas, potentially due to the proposed airport and broader urbanisation of Western Sydney, may lead to inadequate affordable housing options for socially disadvantaged groups.	-	✓

23.7 Mitigation and management measures

This section identifies proposed measures to enhance the social and economic opportunities and benefits presented by the construction and operation of the Stage 1 development.

A Community and Stakeholder Engagement Plan would be prepared prior to Main Construction Works and operation of the Stage 1 development respectively. Local communities, particularly those nearest the proposed airport, would be a focus of community and stakeholder engagement given their potential for concerns about potential impacts including noise. The plans would collate the mitigation and management measures discussed in this section and itemised in Table 23–4. These and other environmental management plans are discussed in further detail in Chapter 28 (Volume 2b).

The purpose of the mitigation and management measures presented in Table 23–4 is to maximise the social and economic benefits of the proposed airport and to minimise negative social impacts outlined in this chapter. These measures would be in addition to the implementation of measures proposed in other assessments including the noise assessments (see Chapter 10 and Chapter 11), air quality assessment (see Chapter 12), health risk assessment (see Chapter 13), the planning and land use assessment (see Chapter 21), and the visual impact assessment (see Chapter 22).

Table 23–4 Mitigation measure

Issue	Recommended mitigation measure	Timing
Stakeholder engagement on social impacts	<p>Engagement will occur with relevant government agencies and organisations to inform their planning allocation of funding to programmes that may be impacted by operation activities. Relevant government agencies and organisations may include local councils, state government agencies, educational facilities, agencies and organisations responsible for affordable housing and other social services, emergency services, and peak bodies representing businesses and non-government organisations.</p> <p>This will include engagement on issues such as:</p> <ul style="list-style-type: none"> • potential housing and accommodation requirements for the operation workforce and potential effects on housing and other social services; • potential employment opportunities for local residents; • potential business opportunities for local businesses; and • plans for development on the airport site and how this might impact local and state government land use planning around the airport site. 	<p>Pre-construction Construction Pre-operations Operation</p>
Process for complaints	<p>To enable members of the community to make a complaint, the following measures will be taken:</p> <ul style="list-style-type: none"> • an airport website will be established to provide the community with up-to-date information on operation activities and provide the name and contact details for the person(s) responsible for managing complaints; • the name and contact details of the person(s) responsible for managing complaints will be displayed on signs at multiple locations along the airport site boundary; and • multiple channels will be established to allow for complaints to be made including a 1800 toll free number, email, online form, and postal address. 	<p>Construction Operations</p>
Complaints response protocol	<p>A complaints response protocol will be developed to ensure that complaints are adequately responded to within a reasonable amount of time. The protocol will ensure that:</p> <ul style="list-style-type: none"> • complaints are responded to within 48 hours of receipt, whenever possible; • complaints are investigated in an appropriate manner and timeframe; • any trends are identified so they can better inform corrective actions; • the complainant is informed about the outcomes of the investigation and any corrective action implemented; and • complaints made in relation to aircraft noise are directed to the Airservices Australia Noise Complaints and Information Service. 	<p>Construction Operations</p>
Complaints register	<p>A complaints register will be established to record all complaints made about construction and operation activities and their impacts. The complaints register will include the following information:</p> <ul style="list-style-type: none"> • the nature of the complaint, including the event or activity which is the basis of the complaint; • the response provided to the complainant; and • any corrective action or further environmental measures taken. <p>The complaints register will be made available to the Department of Infrastructure and Regional Development when asked.</p> <p>Complaints made in relation to aircraft noise will be directed to the Airservices Australia Noise Complaints and Information Service for consideration and action and will be recorded in the complaints register as such.</p>	<p>Construction Operations</p>

Issue	Recommended mitigation measure	Timing
Local employment	<p>To maximise local employment and business opportunities throughout construction and operation, the following measures will be implemented:</p> <ul style="list-style-type: none"> • an Australian Industry Participation Plan that includes consideration of local industry participation; and • an equal opportunity policy that includes training and suitable employment opportunities for Indigenous people and people with disadvantages. 	<p>Construction</p> <p>Operation</p>

23.8 Conclusion

The construction and operation of the proposed airport would result in both positive and negative social impacts. The Stage 1 development is predicted to result in significant economic and employment opportunities for the Western Sydney region, as well as wider economic benefits throughout the Greater Sydney area. 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 and administration.

The rural character of the local area would transition to a more urban character with the development of the airport and the implementation of various strategic and regional planning initiatives. Noise from aircraft overflights and ground-based operations at the airport would affect the amenity currently experienced by local communities. Impacts on the social amenity and lifestyle of the people of Western Sydney more broadly would vary between communities, depending on proximity to the airport site, and their location with respect to flight paths.

The future airspace and flight path design process will optimise flight paths taking into account the safety of all aircraft and airspace users across the Sydney basin, aircraft operation efficiency and opportunities to minimise noise and amenity impacts on all potentially affected communities, sensitive receivers and the environment.

Social infrastructure may be put under stress during the construction of the proposed airport and during the early stages of operation. However, as urbanisation advances in the region, additional services would be expected to come online to meet demand.

Mitigation and management measures have been proposed to maximise the social and economic benefits of the proposed airport and to minimise negative social impacts. These measures would be in addition to the implementation of measures proposed in other assessments and would be incorporated into the Environmental Management Framework through community and stakeholder engagement measures and sustainability measures as outlined in Chapter 28 (Volume 2b).