

21. Planning and land use

The site for the proposed Western Sydney Airport is located within Badgerys Creek and Luddenham, in the Liverpool local government area. The Australian Government acquired approximately 1,700 hectares of land for the proposed airport over the period 1986-1991. Planning for the airport development and surrounding land uses has been ongoing for a number of decades, across all levels of government.

Following the development of the proposed Western Sydney Airport, existing rural residential, agricultural, recreational, community and extractive industry land uses on the airport site would be removed (where required to support the development of the airport). Surrounding land uses could be expected to transition from rural to urban both as a result of airport operations, and as strategic land use planning under the Western Sydney Employment Area and the South West Priority Growth Area takes effect. Infrastructure improvements to main roads and railways would also facilitate land use change in the region.

Measures to manage land use and planning impacts are proposed, including mitigation measures for employment land use conflict, zoning rationalisation, operational airspace controls, aircraft noise and infrastructure corridor protection. Through successful implementation of these measures, the airport and its surrounds would become a focus for employment generating land uses in Western Sydney, creating jobs for the new residents of the South West Priority Area and Greater Western Sydney.

21.1. Introduction

This chapter assesses the planning and land use impacts of Stage 1 of the Western Sydney Airport proposal.

The construction and operation of the proposed Western Sydney Airport (the airport) would affect the existing land uses and potential future uses of surrounding lands for the purposes for which they are zoned.

Consideration of the need and potential location for a second Sydney airport has been ongoing for a number of decades. Planning for land use change by the Australian and NSW governments, and surrounding local councils, has therefore considered the potential impacts of an airport at Badgerys Creek.

The proposed Western Sydney Airport raises the prospect of rezoning some surrounding land, or making additional land use controls, to deal with potential land use conflicts between Western Sydney Airport and surrounding land.

This assessment builds upon previous studies and considers how the proposed airport would affect rural, agricultural, employment and recreational lands. Development controls are considered for the management of aircraft safety, noise, lighting and air quality impacts anticipated to occur from operations at the proposed airport. The need for local traffic and transport improvements is identified.

21.2. Methodology

A specialist report on planning and land use impacts of the Western Sydney Airport proposal was prepared for this EIS (refer to Appendix N). The broad methodology adopted for the preparation of the planning and land use assessment included:

- inspection and analysis of the key characteristics of the airport site and surrounding land;
- review of existing Commonwealth and NSW legislation applying to the airport site and surrounding land;
- review of strategic land use plans relevant to the airport site and surrounding land to identify NSW Government objectives for development of the area;
- consultation with planning staff in local councils within the vicinity of the airport site to confirm applicable land use plans, policies and assessment considerations;
- review of relevant sections of other technical reports prepared for the EIS;
- assessment of the likely impacts of the airport proposal on surrounding land uses; and
- recommendations for mitigation measures to minimise the impacts of the proposal.

The planning and land use assessment has been prepared in accordance with the Australian Government Department of the Environment assessment guidelines for the airport proposal issued in January 2015.

21.3. Existing environment

The airport site is located within the localities of Badgerys Creek and Luddenham, within the Liverpool local government area (LGA). The northern boundary of the airport site adjoins the Penrith LGA boundary. The study area is situated about 50 kilometres west of the Sydney central business district and Sydney (Kingsford-Smith) Airport.

Commencing in the mid-1980s the Australian Government acquired approximately 1,700 hectares of land for the airport site. The current Australian Government land holding comprises over 20 lots, with the majority of the land located on a consolidated title (1,667 hectares).

21.4. Existing land uses

21.4.1. Airport site

The majority of the airport site comprises low density rural residential and agricultural land uses. Rural residential tenancies range from approximately 1 to 40 hectares in area. Agricultural land uses include cattle grazing and horticulture.

In addition to rural residential and agricultural land uses, the following built features are also found on the airport site:

- the former Badgerys Creek Primary School (closed in December 2014);
- Badgerys Creek Park;

- four gravesites (St Johns Anglican Church, Badgerys Creek Uniting Church, Anschau family grave (Luddenham), and St Francis Xavier Church);
- a quarry (Blue Sky Mining); and
- scout hall.

Badgerys Creek flows along the southern and eastern boundary of the airport site, and Oaky Creek originates in the centre of the site and flows northwards. Both creeks drain to South Creek and the Hawkesbury River.

The airport site is contained within the 'Cumberland Plain' Mitchell Landscape. This landscape comprises low rolling hills and valleys in a rain shadow area between the Blue Mountains and the coast, with vegetation characterised by grassy woodlands and open forest dominated by Grey Box (*Eucalyptus moluccana*) and Forest Red Gum (*Eucalyptus tereticornis*) and poorly drained valley floors with forests of Cabbage Gum (*Eucalyptus amplifolia*) and Swamp Oak (*Casuarina glauca*).

The airport site contains a number of internal roads, all of which (except for The Northern Road) were compulsorily acquired by the Australian Government in July 1991. The following roads within the site are currently maintained by Liverpool Council under an agreement with the Australian Government:

- | | |
|-----------------------|-------------------|
| • Anton Road | • Leggo Street |
| • Badgerys Creek Road | • Longleys Road |
| • Ferndale Road | • Pitt Street |
| • Fuller Street | • Taylors Road |
| • Gardiner Road | • Vicar Park Lane |
| • Jackson Road | • Winston Close |
| • Jagelman Road | |

It is noted that Willowdene Avenue also crosses the site in part. This road is not owned by the Commonwealth or proposed to be acquired.

The arterial roads that currently service the site are:

- Elizabeth Drive – a classified road which forms the northern border of the airport site;
- The Northern Road – a classified road which intersects the western part of the airport site on a north-west to south-east alignment; and
- Badgerys Creek Road – a local road which intersects the eastern part of the airport site on a north to south alignment, connecting Elizabeth Drive to The Northern Road.

21.4.2. Surrounding land

The airport site is located within Liverpool LGA, with the northern airport site boundary coinciding with the Penrith LGA southern boundary at Elizabeth Drive. Beyond the immediate LGAs, Blue Mountains LGA lies to the west; Wollondilly, Camden and Campbelltown LGAs lie generally to the south; and Bankstown, Fairfield and Blacktown LGAs lie generally to the east of the airport site.

21.4.3. Liverpool local government area

The village of Luddenham is located immediately west of the airport site, generally straddling The Northern Road between Park Road and Adams Road. As of 2012, Luddenham village contained 224 properties with a population of 819 (Liverpool Council). Luddenham village comprises neighbourhood retail shops and low density residential housing with average lot sizes of around 500 square metres.

Luddenham also has two large recreation reserves (Luddenham Showground and Sales Park) and two primary schools (Holy Family Primary School and Luddenham Public School). The Hubertus Country Club directly adjoins the north-western boundary of the airport site. Rural residential properties of up to 10 hectares surround the village.

To the northeast/east of the airport site are the localities of Badgerys Creek and Kemps Creek. The Badgerys Creek riparian corridor defines the eastern boundary of the site. The land to the east of Badgerys Creek is largely used for agriculture, including the Ingham's Multiplication Farm (poultry farm). The recreational areas of Kemps Creek Nature Reserve and the Western Sydney Parklands are also located to the east of the airport site.

Southwest of the airport site in the locality of Greendale, land use is predominantly large lot rural-residential. Some agricultural activities are present, including the Leppington Pastoral Company and the University of Sydney Research Farms. The area contains the largest landholdings within Liverpool LGA with many properties exceeding 40 hectares in area (Liverpool Council 2012).

Bringelly is located 3.5 kilometres south of the airport site and is characterised by large lot residential properties. The 2012 Liverpool Rural Lands Study recommended 775 hectares of land be converted from RU1 to RU4 in order to further limit fragmentation of the land in Bringelly, with a minimum lot size of 10 hectares. A decommissioned Royal Australian Air Force Telecommunications facility and the Boral Bringelly Brickworks are also located in Bringelly.

21.4.4. Penrith local government area

Land uses are predominantly rural residential in the vicinity of Badgerys Creek to the north of the site. Adjoining the northern boundary of the airport site, north of Elizabeth Drive, is a cattle grazing farm adjacent to a landfill facility. The area north of the airport is drained by two creeks, Cosgroves Creek and Badgerys Creek, which are identified as 'Environmental Conservation' areas in the *Penrith Local Environmental Plan 2010* (Penrith LEP).

About three kilometres north of the airport site is the proposed Sydney Science Park. The area was rezoned in July 2015 from RU2 Rural Landscape to B7 Business Park, B4 Mixed Use and RE1 Public Recreation. The objectives of the rezoning are to accommodate research and development employment, education and supporting retail, and residential uses. The Sydney Science Park would form part of the Broader Western Sydney Employment Areas (refer to Section 21.5.4) for further details.

About five kilometres north of the airport site is the Twin Creeks estate. The 340 hectare estate comprises an 18-hole golf course, function centre, restaurant and more than 200 dwellings.

The localities of Kemps Creek and Mount Vernon are located to the northeast of the airport site. These localities largely comprise rural residential dwellings with average lot sizes of 10 hectares. Lot sizes decrease in the eastern part of Mount Vernon, east of Mamre Road. These localities are drained by two creeks, South Creek and Kemps Creek, which are identified as an 'Environmental Conservation' area in the Penrith LEP.

The Defence Establishment Orchard Hills is located approximately nine kilometres north of the airport site and is utilised for storage, distribution and Defence explosive ordnance training.

21.5. Planning for Western Sydney Airport and surrounds

21.5.1. Australian Government legislation and regulation

21.5.1.1. Environment Protection and Biodiversity Conservation Act 1999

The Department of Infrastructure and Regional Development submitted a referral under the EPBC Act for the development of the proposed airport on 4 December 2014. The Department of the Environment invited public comment on the referral for 12 business days.

On 23 December 2014, a delegate of the Minister for the Environment determined the proposed Western Sydney Airport to be a controlled action. The referral decision instrument identifies the following controlling provisions under the EPBC Act as being relevant for this proposal:

- world heritage properties (sections 12 and 15A);
- national heritage places (sections 15B and 15C);
- listed threatened species and communities (sections 18 & 18A); and
- Commonwealth actions (section 28).

The delegate also determined that the proposed airport development would be assessed by the preparation of an EIS. As a result of recent amendments to the *Airports Act 1996* (Airports Act), approval decision under Part 9 of the EPBC Act is not required, but the EIS for the proposed airport must be prepared and an Airport Plan for the proposed Airport must be determined before the proposed airport can proceed.

21.5.1.2. Airports Act 1996

The proposed Western Sydney Airport would be developed and operated under the Airports Act. The Airports Act has been amended to provide for an Airport Plan which is a transitional planning instrument for the initial development of Western Sydney Airport as a greenfield airport site. This amendment provides a single and transparent environment and development approval for the Western Sydney Airport proposal. The Airports Act amendment provides for the preparation of an Airport Plan which is determined by the Minister for Infrastructure and Regional Development.

In determining the Airport Plan the Minister for Infrastructure and Regional Development must accept any environmental conditions proposed by the Minister for the Environment, taking into account the EIS.



An airport lease would in due course be granted by the Commonwealth to an airport lessee company which would then become responsible for the airport site. Leased federal airports are subject to a planning framework set out in the Airports Act. As part of the planning framework, airports are required to prepare a Master Plan that incorporates an Environment Strategy.

A Master Plan is a 20-year strategic vision for the airport site which is renewed every five years. It addresses future land uses, types of permitted development, and noise and includes an environment strategy. A Master Plan must also address the likely effect of the proposed development on the local and regional economy and community. This includes an analysis of how the proposed development fits within the planning schemes for commercial and retail development in the area that is adjacent to the airport.

The Environment Strategy sets out the airport's strategy to manage environmental issues within a five-year period and beyond. It is the basis on which the Commonwealth measures the environmental performance of airports and the document by which airport tenants would determine their environmental responsibilities. Leased federal airports are subject to a planning framework set out in the Airports Act. As part of the planning framework, airports are required to prepare a Master Plan that incorporates an Environment Strategy.

21.5.1.3. Australian Standard 2021

The Australian Standard 2021:2015 – Acoustics – Aircraft noise intrusion – Building siting and construction (Australian Standard 2015) provides guidance on the siting and construction of buildings in the vicinity of airports to minimise aircraft noise intrusion. The guidance provided by AS2021 is based on the level of potential aircraft noise exposure at a given site using the Australian Noise Exposure Forecast (ANEF) system.

The NSW Government and local councils give effect to AS 2021 in land use planning for new development in environmental planning instruments, and as a necessary consideration in building siting and design as part of the assessment of new development applications within the noise impact zone of airports.

Airservices Australia provides air traffic control, aviation rescue and firefighting as well as other related services to the aviation industry. This includes maintaining technology used by the industry for navigation and surveillance and aircraft noise monitoring.

Actions and processes under Airservices Australia's policy on aircraft noise management are aligned to the International Civil Aviation Organization's Balanced Approach to Noise Management. Four key elements of this approach are:

- reduction of noise at source – e.g. quieter planes, noise standards;
- land use planning and management – e.g. zoning, easements and building standards;
- noise abatement operational procedures – e.g. noise-preferred flight routes and runways; and
- operating restrictions on aircraft – e.g. flight curfews and quotas.

21.5.2. National Airport Safeguarding Framework

The National Airports Safeguarding Framework (NASF) is a national land use planning framework, agreed to by Commonwealth, State and Territory Ministers in 2012. The NASF recognises that responsibility for land use planning rests with State and local governments, but that a national approach can assist in improving planning outcomes on and near airports and flight paths. The framework aims to:

- Improve community amenity by minimising aircraft noise-sensitive developments near airports including through the use of additional noise metrics and improved noise-disclosure mechanisms; and
- Improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.

The NASF comprises seven key planning principles:

- Principle 1: The safety, efficiency and operational integrity of airports should be protected by all governments, recognising their economic, defence and social significance;
- Principle 2: Airports, governments and local communities should share responsibility to ensure that airport planning is integrated with local and regional planning;
- Principle 3: Governments at all levels should align land use planning and building requirements in the vicinity of airports;
- Principle 4: Land use planning processes should balance and protect both airport and aviation operations as well as community safety and amenity expectations;
- Principle 5: Governments will protect operational airspace around airports in the interests of both aviation and community safety;
- Principle 6: Strategic and statutory planning frameworks should address aircraft noise by applying a comprehensive suite of noise measures; and
- Principle 7: Airports should work with governments to provide comprehensive and understandable information to local communities on their operations concerning noise impacts and airspace requirements.

The NASF guidelines provide comprehensive information and recommendations relating to six airport safeguarding matters. The NASF guidelines are:

- Guideline A: Measures for Managing Impacts of Aircraft Noise;
- Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports;
- Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports;
- Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation;
- Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports; and
- Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports.

Additional guidelines for the protection of Public Safety Zones and Communication, Navigation and Surveillance infrastructure are proposed to be developed by National Airports Safeguarding Advisory Group in the near future.

21.5.3. Protection of Operational Airspace Surfaces

Protecting immediate airspace around airports is essential to ensuring and maintaining a safe operating environment and to provide for future growth.

Obstacle Limitation Surfaces (OLS) are a series of surfaces that define the airspace to be protected for aircraft operations during the initial and final stages of flight. The OLS are generally the lowest surfaces and are designed to provide protection for aircraft flying into or out of an airport when the pilot is flying by sight.

The Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) provide for the establishment of surfaces to protect aircraft during take-off, landing or manoeuvring and when aircraft are operating in non-visual conditions. The PANS-OPS surfaces are generally above the OLS and are designed to safeguard an aircraft from collision with obstacles when an aircraft's flight may be guided solely by instruments, in conditions of poor visibility.

Structures, trees or other activities that intrude into these surfaces are potential obstacles to aircraft, and therefore a potential safety hazard, and must be controlled.

Both OLS and PANS-OPS would be prepared for the proposed airport.

21.5.4. NSW Government Legislation

The NSW planning legislative framework consists primarily of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* and the following three key instruments which are made under the EP&A Act:

- State environmental planning policies (SEPPs) – these policies outline the NSW Government's approach to dealing with particular planning issues. They can be either site or subject specific. Often SEPPs would provide land zoning and development controls, designate particular types of development for State or regional planning governance, or add specific requirements for existing development processes.
- local environmental plans (LEPs) – each local government area has a LEP to guide development and protect natural resources within local government areas. LEPs are prepared by local councils and made by the NSW Minister for Planning. Most follow a standard form and include mainly standard provisions, which are applied to the particular circumstances of the relevant LGA.
- local planning directions, issued by the Minister for Planning under section 117 of the EP&A Act, provide direction on matters which planning proposals need to address.

21.5.5. State Environmental Planning Policies

A summary of SEPPs that are relevant to planning and land use around the proposed airport is presented in Table 21–1.

Table 21–1 – Applicable State environmental planning policies

State environmental planning policy	Provision
<i>State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i> (Growth Centres SEPP)	This policy aims to coordinate the release of land for residential, employment and other urban development in the North West and South West Growth Centres of Sydney. The proposed airport site is located adjacent to the South West Growth Centre. The Growth Centres SEPP provides development controls for the land in the vicinity of the airport site.
<i>State Environmental Planning Policy (Infrastructure) 2007</i> (Infrastructure SEPP)	This policy aims to facilitate the effective delivery of infrastructure across the State.
<i>State Environmental Planning Policy (Western Sydney Employment Area) 2009</i> (WSEA SEPP)	This policy establishes the Western Sydney Employment Area (WSEA) to provide businesses in Western Sydney with land for industry and employment generating uses, including transport and logistics, warehousing and commercial office space. The WSEA lies to the north of the airport site.

21.5.6. Local planning directions

Under section 117(2) of the EP&A Act the NSW Government issues directions which the relevant consent authority should consider when preparing a planning proposal for a new (or amending) LEP. Relevant section 117 Directions are listed in Table 21–2.

Table 21–2 – Applicable section 117 directions

Direction	Objective	Requirement
3.5 Development near licensed aerodromes (issued July 2009)	The objective of this Direction is to ensure the effective and safe operation of aerodromes, uncompromised by development. It is also to ensure development for residential purposes incorporates appropriate mitigation measures so that the development is not adversely affected by aircraft noise.	A planning proposal that rezones land in the vicinity of an airport must include a provision to ensure that development meets AS 2021 regarding interior noise levels. The planning authority must also consult with the Commonwealth and take into account relevant development standards such as height limitations. Development which is compatible with the operation of an aerodrome must be permissible with consent.
5.8 Second Sydney Airport: Badgerys Creek (Issued in 2005. Re-issued July 2009)	The objective of this direction is to avoid incompatible development in the vicinity of any future second Sydney Airport at Badgerys Creek.	Planning proposals must not contain provisions that enable the carrying out of development, either with or without development consent, which could hinder the potential for development of a Second Sydney Airport. It should be noted that this direction was made by the minister in 2005, prior to the consolidation of section 117 directions in July 2009. This direction applies to land within the boundaries of the proposed airport site and the 20 ANEF contour of the 1985 Second Sydney Airport Draft EIS within Fairfield, Liverpool, Penrith and Wollondilly local government areas.

21.5.7. Strategic documents

21.5.7.1. A Plan for Growing Sydney

A Plan for Growing Sydney (the Metropolitan Plan) (DP&E 2014) is the NSW Government's 20-year strategic development plan for the Sydney Metropolitan Area. It provides direction for Sydney's productivity, environmental management, and liveability. To deliver upon these directions, the Metropolitan Plan identifies the location of future housing, employment, infrastructure and open space areas. An element of the Metropolitan Plan outlines how the proposed airport would transform Western Sydney.

Action 1.4.1 of the Metropolitan Plan aims to improve transport links and create a new services centre and industrial precinct to support the growth of the proposed Western Sydney Airport. The proposed airport would transform and drive future investment and jobs growth in Western Sydney. In order to protect and promote the proposed airport, the NSW Government plans to:

- ensure adequate development controls are provided for areas affected by aircraft noise and airspace to provide for future aviation needs;
- preserve land for complementary airport-related activity including a jet fuel pipeline to service the proposed airport and freight-related uses; and
- identify and preserve future transport and infrastructure corridors and related sites in the Western Sydney Airport precinct.

Accordingly, the proposed Western Sydney Airport is appropriately identified in and compatible with the broader strategic planning for Sydney.

The NSW Government seeks to develop strategic employment corridors to service the proposed airport to capitalise on the airport development. In order to promote employment growth, under Action 1.4.2 of the Metropolitan Plan the NSW Government will:

- facilitate an enterprise corridor from Leppington to the proposed Western Sydney Airport along Bringelly Road, potentially linked to a future extension of the South West Rail Link. A flexible and innovative regulatory environment will be developed to enable a wide range of commercial activities to take advantage of transport access to this precinct and its proximity to the airport, Leppington and the future population of the South West Growth Centre;
- facilitate development opportunities that can leverage off improved transport connections, including improvements to Elizabeth Drive, The Northern Road and Bringelly Road;
- investigate how improved transport connections, associated with the proposed South West Rail Link extension between the proposed Western Sydney Airport to the western line will influence land use planning; and
- preserve the land needed for a major intermodal terminal and for a related Western Sydney Freight Line between Port Botany and the Western Sydney Employment Area.

21.5.7.2. South West Priority Growth Area

The NSW Government established the South West Growth Centre (refer to Figure 21–1) in 2005 to encourage a sustainable plan for Sydney’s greenfield land development on its urban edge. Planning for the South West Growth Centre is delivered primarily through *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP). It is now referred to as the South West Priority Growth Area.

The South West Priority Growth Area is located directly to the southeast and east of the airport site, with Badgerys Creek as the border. The area is about 17,000 hectares in size and incorporates land in Liverpool, Camden and Campbelltown LGAs. The South West Priority Growth Area comprises 18 precincts that are being progressively released for urban development. Seven of these precincts have already been rezoned since 2005 (Figure 21–1). The South West Priority Growth Area will ultimately provide 110,000 new dwellings and capacity for at least 22,000 jobs. The proposed extension of the South West Rail Link from Leppington to the airport and further north to the Western Line would also pass through the South West Priority Growth Area.

The area directly south and southeast of the airport site is identified in the South West Priority Growth Area Structure Plan as future industrial/employment lands. Further detailed planning for this area is being undertaken by the Department of Planning and Environment (DP&E). Detailed precinct plans are yet to be publicly released.

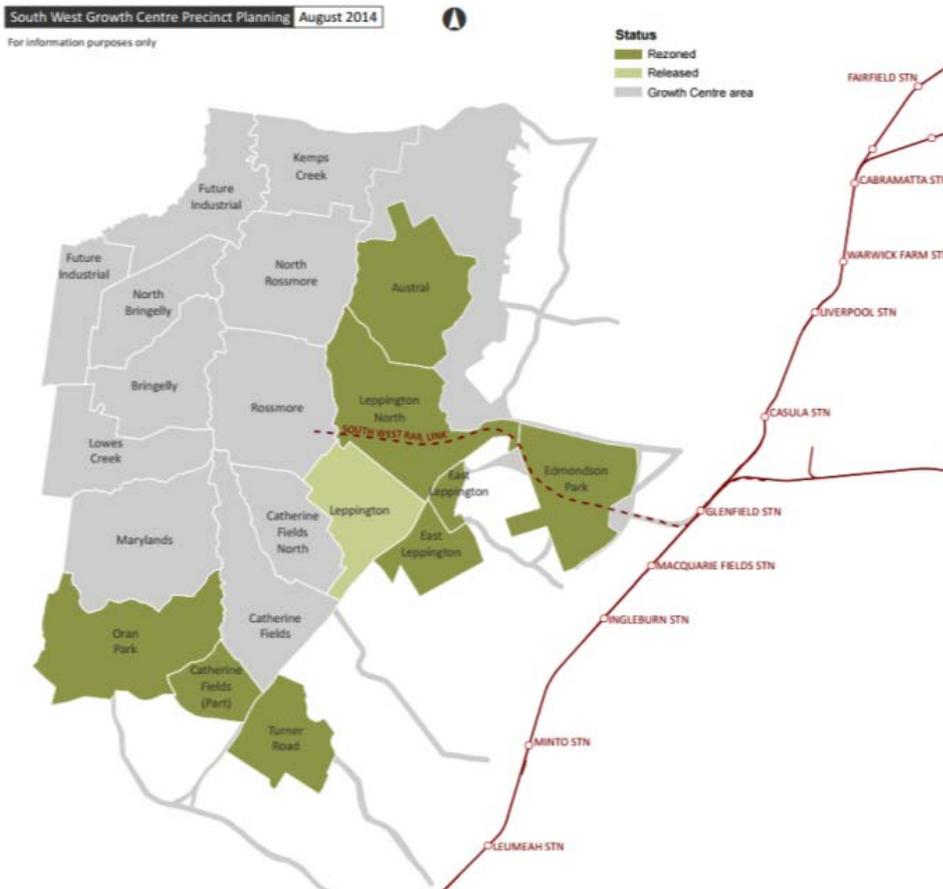


Figure 21–1 – South West Priority Growth Area (DP&E)

21.5.7.3. Western Sydney Employment Area

The NSW Government established the Western Sydney Employment Area (WSEA) to provide businesses in Western Sydney with land for industry and employment generating uses, including transport and logistics, warehousing and commercial office space (refer to Figure 21–2). The NSW Government forecasts the population of Western Sydney to rise from 2.1 million in 2011 to 2.9 million in 2031. The Western Sydney Employment Area has been developed to help provide employment opportunities to support this growth.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 is the environmental planning instrument which outlines development controls for the Western Sydney Employment Area. In January 2015, the WSEA SEPP was amended to extend the boundaries to include land adjacent to the airport site (known as the Broader Western Sydney Employment Area). The Broader Western Sydney Employment Area amendment allows for even closer linkages between employment generating land uses and the proposed airport. The amendment identifies a further 4,573 hectares of land for future employment uses. The Broader Western Sydney Employment Area is expected to accommodate more than 36,000 industrial jobs and 21,000 office jobs over the next thirty years.

The Broader WSEA now comprises over 10,690 hectares of land, spanning four LGAs: Penrith, Blacktown, Liverpool and Fairfield. Most of the land in the newly identified employment area is zoned rural, allowing rural residential and/or agricultural uses. Other zoning in the area includes special uses for the Australian Department of Defence and environmental conservation areas.

Land within the more established northern portion of Western Sydney Employment Area has already been rezoned to industrial. The Broader Western Sydney Employment Area confirms the NSW Government's intention for additional future employment land uses and provides certainty for infrastructure agencies, landowners and businesses of intended future development objectives.

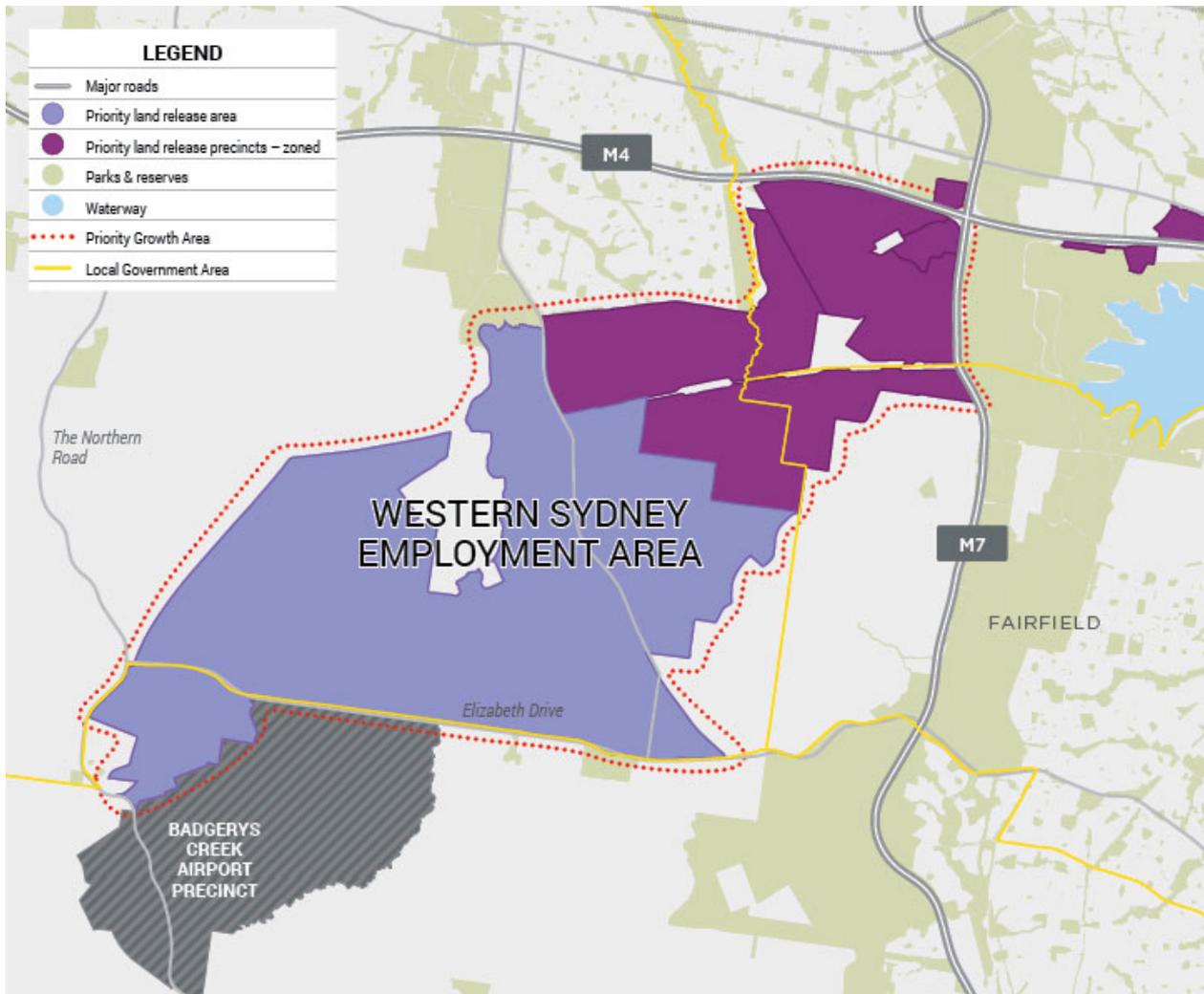


Figure 21–2 – Western Sydney Employment Area (DP&E)

21.5.8. Infrastructure projects

21.5.8.1. Western Sydney Infrastructure Plan

The Australian and NSW Governments are currently delivering a plan to improve transport infrastructure in Western Sydney. The Western Sydney Infrastructure Plan seeks to ensure that the proposed Western Sydney Airport would be supported by high quality transport infrastructure for the efficient movement of passengers, employees and freight. The Australian Government’s contribution of \$2.9 billion to the Western Sydney Infrastructure Plan includes funding for the following works:

- upgrade of The Northern Road to a minimum of four lanes from Narellan to Jamison Road, including realignment of the road around the western boundary of the airport site;
- construction of a new four-lane motorway between the M7 Motorway and The Northern Road;
- upgrade of Bringelly Road to a minimum of four lanes from Camden Valley Way to The Northern Road;

- improvement of interchanges connecting The Northern Road and a new motorway at Elizabeth Drive and Bringelly Road;
- building the Werrington Arterial Road between the M4 Motorway and the Great Western Highway;
- upgrade of Ross Street and Great Western Highway intersection at Glenbrook; and
- a \$200 million local roads package.

21.5.9. Infrastructure projects

21.5.9.1. South West Rail Link Extension

The NSW Government is in the process of protecting a future public transport corridor that would extend the South West Rail Link which was opened for operation in February 2015. The proposed corridor extends from Leppington to Bringelly and then heads in two directions: south to Narellan and north to the Western Line near St Marys.

In the context of the South West Rail Link Extension, rail services would be required at the proposed airport initially through a connection to the Sydney metropolitan network and in the longer term, a dedicated airport express rail service from a key transport node. The rail line would be predominantly underground through the airport site to avoid critical infrastructure, and also preserves flexibility for a station(s) in the terminal precinct.

The Stage 1 development does not currently include a rail service as the forecast demand would not require rail access. However, planning for the airport preserves flexibility for two types of possible rail alignment options. These alignments would follow either a corridor under the terminal at 90 degrees to the runways, or along the airport site ground transport access corridor parallel to the runways, or a combination of both.

A final rail alignment would be determined in consultation with the NSW Government. Depending on the final alignment and preferred timing to develop rail services, some enabling work may be required during the Stage 1 airport development to future-proof the corridor. Any such work is expected to be subject to a separate approval process.

21.5.9.2. Outer Sydney Orbital

Transport for NSW is investigating suitable corridors for the Outer Sydney Orbital. The Outer Sydney Orbital would provide a north-south connection for a future motorway, freight rail, and where practical, may be co-located with the South West Rail Link Extension.

The proposed alignment would be located to the west of the airport site, possibly connecting the M5 South West Motorway to the M4 Western Motorway.

The proposed airport development is to the immediate east of the corridor investigation area. Transport for NSW has committed to take into consideration the development of the future airport by coordinating and working closely with relevant government agencies in assessing corridor options for the Outer Sydney Orbital. The corridor provides the opportunity for multimodal linkages for employment, freight and passenger movements directly related to the proposed airport.

21.5.10. Local government

21.5.10.1. Liverpool

Land use zones

The airport site is located within the Liverpool LGA. The *Liverpool Local Environmental Plan 2008* (Liverpool LEP) sets out the land use controls and matters for consideration for development within the Liverpool LGA, and follows the Standard Instrument format.

The majority of the airport site is zoned SP1 – Special Activities (Commonwealth) under the Liverpool LEP.

Surrounding land zones are RU1 – Primary Production (east and west), RU4 Primary Production Small Lots (south east) and R5 – Large Lot Residential (south). These lots allow for rural and residential land uses.

Noise management

Liverpool LEP, it included a provision (clause 7.18) for development in areas subject to potential aircraft noise from the proposed airport. This clause responds to the Minister's section 117 direction for noise management. Under clause 7.18:

- development consent is required for the erection of a building on land where the ANEF shown on the Liverpool LEP Airport Noise Map exceeds 20 if it is erected for residential purposes or for any other purpose involving regular human occupation;
- the following development is prohibited unless it meets the requirements of AS 2021 with respect to interior noise levels:
 - residential accommodation on land where forecast noise exposure levels exceed 20 ANEF; and
 - business premises, entertainment facilities, office premises, public administration buildings, retail premises and tourist and visitor accommodation on land where forecast noise exposure levels exceed 25 ANEF.
- the following development is prohibited:
 - educational establishments, hospitals and places of public worship on land where forecast noise exposure levels exceed 20 ANEF;
 - dwellings on land where forecast noise exposure levels exceed 25 ANEF (other than development consisting of the alteration, extension or replacement of an existing dwelling house where the development is consistent with the objectives of this clause); and
 - business premises, entertainment facilities, office premises, public administration buildings, retail premises and tourist and visitor accommodation on land where forecast noise exposure levels exceed 30 ANEF.

21.5.10.2. Penrith

Land use zoning

Penrith Local Environmental Plan 2010 (Penrith LEP) sets out the land use controls and matters for consideration for development within the Penrith LGA, and follows the Standard Instrument format. Surrounding land to the north of the airport site is zoned RU2 Rural landscape under the Penrith LEP.

There are three urban settlements in close proximity to the project area within the Penrith LGA. These are at Luddenham, Twin Creeks and Kemps Creek. Development under the Broader Western Sydney Employment Area would likely lead to land use transition in the Luddenham village (refer to Section 21.5.4).

- To the west of the site is Luddenham village, which spans Penrith and Liverpool LGAs. The applicable land use zones for the Luddenham village under the Penrith LEP are: R5 Large Lot Residential;
- R2 Low Density Residential;
- RU5 Village;
- B1 Neighbourhood Centre; and
- RE1 Public Recreation.

Twin Creeks Golf and Country Club is located about five kilometres north of the airport site. This locality comprises 200 large-lot residential dwellings and a golf course, and is zoned E4 Environmental Living.

Kemps Creek is to the north/northeast of the site, with a small village cluster within the RU4 Rural Small Holdings zoned land and a cluster of smaller lot rural residential properties in the E4 Environmental Living zone at Mount Vernon.

Oaky Creek and Badgerys Creek to the north of the site are zoned E2 Environmental Conservation.

Noise management

Clause 7.9 of Penrith LEP adopts provisions for noise management (similar to the Liverpool LEP). Under this clause development in the vicinity of the airport site must have regard to the use or potential future use of the site as an airport, and must not have an adverse impact on the development or operation of an airport.

Clause 7.9 applies to development that is on land near the airport site and is in an ANEF contour of 20 or greater. Prior to determining a development application to which this clause applies, Penrith Council must:

- consider whether the development would result in an increase in the number of dwellings or people affected by aircraft noise;
- consider the location of the development in relation to recommended development types within ANEF zones, as outlined in the AS 2021; and

- be satisfied that the development would meet AS 2021 with respect to interior noise levels for the purposes of:
 - if the development will be in an ANEF contour of 20 or greater—child care centres, educational establishments, entertainment facilities, hospitals, places of public worship, public administration buildings or residential accommodation; and
 - if the development will be in an ANEF contour of 25 or greater—commercial premises, hostels or hotel or motel accommodation.

21.5.10.3. Fairfield

Noise management

Whilst Fairfield City Council is yet to adopt any LEP controls for the management of aviation noise, Council adopted an interim policy in May 2014. The interim policy sets out 'deemed to comply' requirements for acoustic proofing measures for residential development in Horsley Park and Cecil Park.

These requirements apply to all forms of new residential accommodation (as defined under the Fairfield LEP 2013) permitted in zones RU1 – Primary Production, RU2 – Rural Landscape, RU4 – Primary Production Small Lots, RU5 – Village. The requirements also apply to alterations and additions to existing residential accommodation.

21.6. Assessment of impacts during construction

The incidental land use and planning impacts which may occur during the construction phase of the proposal are assessed in the relevant (noise, air quality and traffic) impact assessment chapters of this draft EIS (chapters 10, 11, 12 and 15).

Changes to land uses within the footprint of the airport site would occur with the commencement of construction of the proposed airport and continue throughout the operation of the airport. Potential impacts associated with land use changes at the airport site are discussed in the following section on operational impacts.

21.7. Assessment of impacts during operation

Having regard to the existing environment, strategic planning at the local and regional scale, and the scope of the proposal, the following likely impacts on land use and planning from the proposed airport have been assessed.

21.7.1. Land use impacts

21.7.1.1. Rural residential lands

Since the mid-1990s, land use planning controls have been in place to protect against the likely impacts of a potential airport at Badgerys Creek. The impacts of the proposed airport on sensitive surrounding land uses would likely be reduced by the considered application of land use zones and development controls that are largely already in place through planning instruments for the South West Priority Growth Area, Western Sydney Employment Area and local council planning controls.

With the development of the airport site, a change in character of the surrounding area is inevitable. The proposed airport is expected to accelerate the transition from rural-residential to urban land uses. This is already underway due to the planning intentions of the NSW Government in the expansion of the Western Sydney Employment Area and the South West Priority Growth Area. The proposed airport would increase passenger and freight road traffic, and result in increased aircraft noise and air quality impacts. The social impact assessment provides further details on these impacts and the socio-economic benefits expected from the proposed development (refer to Chapter 23).

21.7.1.2. Agricultural lands

Construction and operation of the proposed airport and associated urban expansion in Western Sydney over the next few decades would necessitate the loss of productive agricultural land that is close to the Sydney market. This loss of agricultural activity would occur both within the direct footprint of the proposed airport itself and within surrounding lands as land uses transition from rural to urban. Ongoing regional urbanisation is facilitated by the NSW Government's Metropolitan Plan which recognises the role of the proposed airport in transforming and driving future investment and jobs in Western Sydney.

Existing agricultural activities located in the Cumberland Basin are provided a competitive advantage of proximity to the Sydney market. Locational factors of agricultural activities in Western Sydney are seldom related to environmental or other factors of production. Agricultural activities which are currently located in areas affected by urban transition in Western Sydney would be displaced to alternate urban fringe locations. The Metropolitan Plan identifies other rural lands within or close to the Sydney metropolitan area which may be used as alternate agricultural sites. The Department of Primary Industries is also managing this transition, and released an Industry Action Plan for Agriculture in November 2014 which includes considerations in this regard.

21.7.1.3. Employment lands

The Broader WSEA was established directly in response to the announcement by the Australian Government in 2014 that the site for the proposed Western Sydney Airport would be the Commonwealth-owned land at Badgerys Creek. The extension of the boundary south to Elizabeth Drive and to include land west of the airport site resulted in over 4,500 more hectares being dedicated to employment growth in the area.

The proposed airport development supports the future development of the adjacent South West Priority Growth Area employment lands. The proposed airport would be a mutually beneficial land use creating demand for employment generating activities and transport infrastructure required for freight and logistics.

The Land Use Plan in the draft Airport Plan identifies land use zones for retail and commercial development within the airport site. Though specific businesses/activities are yet to be confirmed, the impacts of these proposals on the proposed airport and surrounding lands would be subject to a separate approval process under the *Airports Act 1996*. This may include a requirement for a Major Development Plan to be prepared, depending on the nature of proposed development.

21.7.1.4. Recreational lands

Badgerys Creek Park would be removed as part of the development of the airport.

Aircraft overflights may result in visual and noise impacts on the following recreational reserves:

- North – Twin Creeks Country Club, Ropes Creek Reserve (Erskine Park), Eastern Creek Raceway, Sydney International Equestrian Centre (Horsley Park), Western Sydney Parklands (Horsley Park), and Calmsley Hill City Farm (Abbotsbury); and
- South – Sales Park (Luddenham), Bents Basin State Conservation Area (Greendale), and Burrarang Recreation Area (Silverdale).

The Twin Creeks Golf Course could be exposed to more than 10 noise events above 70 dBA on average each day and Bents Basin Conservation Area could experience night time noise levels above 60 dBA, which could affect camping amenity, based on Stage 1 noise modelling (refer to Chapter 10). However, analysis has shown that noise exposure levels from aircraft overflights in these locations would generally not be significant for Stage 1 operations. Impacts on recreational lands are not currently addressed under AS2021.

Impacts on the Greater Blue Mountains World Heritage Area are assessed in Chapter 26.

21.7.1.5. Airport site land use zone

Most of the airport site is currently zoned SP1 – Commonwealth Activities under state planning instruments.

The Department of Infrastructure and Regional Development would liaise with the Department of Planning and Environment to ensure that all land which is to be incorporated into the airport site be rezoned to SP1 – Commonwealth Activities to provide clarity and certainty for the future use of the land and a consistency of zoning approach.

21.7.2. Airport operations

21.7.2.1. Airspace development controls

Protecting airspace on and around airports is essential to maintaining a safe operating environment. Obstacle Limitation Surfaces (OLS) and the Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) surfaces would be identified for the proposed airport as part of ongoing operations planning.



OLS are a series of theoretical surfaces in the airspaces established under International Civil Aviation Organization guidelines. The OLS defines the airspace to be protected from protrusion by natural or man-made structures which might cause a safety hazard for aircraft during the initial and final stages of flight. The OLS serves as a first filter for assessing the operational impact of an obstacle. Subject to an assessment, obstacles may need to be lowered, removed or marked and/or lit and noted in aeronautical publications.

PANS-OPS are established to protect stages of flight during take-off, landing or manoeuvring and when aircraft are operating in non-visual conditions. Obstacles cannot be permitted into the PANS-OPS. If an obstacle were within the PANS-OPS, the published approach or departure procedure would need to be withdrawn and redesigned to ensure safe operation of aircraft.

The OLS and PANS-OPS for the proposed airport would be prescribed airspace under the *Airports (Protection of Airspace) Regulations 1996*. Part 12 of the *Airports Act 1996* regulates building and other activities within prescribed air space. The Department of Infrastructure and Regional Development would liaise with the NSW Department of Planning and Environment and relevant local councils to seek the adoption of the necessary OLS and PANS-OPS designs in applicable State environmental planning instruments to ensure future development does not impede safe aircraft operations in accordance with the National Airport Safeguarding Framework.

21.7.2.2. Aircraft noise

Land use planning by the NSW Government and local councils over the last two decades has had a high regard to the potential for aircraft noise from a proposed airport at Badgerys Creek. Planning for the South West Priority Growth Area anticipated the potential impacts of aircraft noise by locating a substantial buffer of employment-generating development areas against the airport site's south-eastern boundary.

As discussed previously, the NSW Minister for Planning's section 117 directions have required the adoption of planning controls in local environmental plans based on the 1985 EIS noise forecast. Following this approach, Liverpool Council prepared a Rural Lands Strategy in 2012 that recommended not expanding Luddenham village beyond its current extent as it may be impacted by aircraft noise from the proposed Western Sydney Airport.

For land use planning purposes, aircraft noise impacts are measured using the Australian Noise Exposure Forecast (ANEF) measure (refer to Chapters 10 and 11). The noise technical report prepared for the EIS provides Australian Noise Exposure Concept (ANEC) noise contour maps, which show forecast aircraft noise exposure levels for hypothetical future scenarios, based on indicative flight tracks and airport operating modes. It is expected that an endorsed ANEF noise exposure chart would be produced prior to the commencement of operations at the proposed airport. This would provide an updated noise exposure map to guide future land use planning. Table 21-3 identifies the recommended development types within ANEF zones, as outlined in AS2021.

Table 21–3 – Building Site Acceptability Based on ANEF zone (AS 2021)

Building Type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
House, home unit, flat, caravan park	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 35 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF		

A number of areas surrounding the airport site are identified as affected by noise generated by aircraft overflights and airport operations and are within ANEC contours. The NSW Department of Planning and Environment and relevant local councils would be consulted to ensure applicable environmental planning instruments are amended to include the revised ANEF forecast and supporting AS2021 building siting and development controls.

The implementation of *Guideline A: Measures for Managing Impacts of Aircraft Noise* under the NASF would be instrumental in managing potential future operational noise impacts for future land use planning and development around the airport.

21.7.2.3. Lighting

The proposed runway orientation limits the possible areas that could be affected by airport approach lighting and runway lighting. The location of the infrastructure buildings between the two runways also provides a buffer for the potential impact of the airport buildings' lighting on surrounding sensitive land uses. LED apron lighting and directional external lighting would minimise potential impacts to surrounding land. The proposed airport lighting would likely have minimal impact to the surrounding land uses.

Refer to Chapter 22 for further details relating to the assessment of light spill and sky glow.

21.7.2.4. Air quality

An air quality assessment prepared for the EIS provides a forecast of the air quality impacts to the surrounding areas. Potential impacts from the proposed airport include those on local and regional air quality, and human health (refer to Chapters 12 and 13 for further details).

Land use zoning under local environmental planning instruments, South West Sydney Priority Growth Area, and the Western Sydney Employment Area for employment generation and other less sensitive land uses are likely to avoid long term local air quality impacts on future sensitive receivers in the vicinity of the airport site.

The regional impact on air quality from operations at the proposed airport would be a cumulative effect of aircraft operations, road traffic, industrial emissions and other regional sources. The discrete direct impact of airport operations is not likely to be significant.

21.7.2.5. Traffic and transport

As outlined in the traffic and transport assessment (refer to Chapter 15), several local road improvements are planned for or underway in the vicinity of the airport site. Badgerys Creek Road would be partially closed as part of the development of the airport site.

The current alignment of The Northern Road would be partially acquired for the construction of the proposed airport. Investigations are proposed under the Western Sydney Infrastructure Plan to upgrade and realign The Northern Road to outside the western boundary of the airport site. In addition, Roads and Maritime Services and Transport for NSW are undertaking corridor studies for a new M12 motorway between The Northern Road and the M7 Westlink Motorway.

Planning for the proposed South West Rail Link Extension is expected to include a possible railway station to service the airport site. Opportunities for corridor protection are being considered in planning for the proposed airport and ongoing consultations with Transport for NSW, the Department of Planning and Environment and local councils are proposed.

21.7.3. Additional land acquisition

Although much of the land required for the construction of the airport has been acquired by the Australian Government, a small amount of additional land may be needed to meet operational safety and construction requirements.

The draft Land Use Plan for the proposed airport identifies parcels of land that may be acquired prior to the commencement of substantial works on the airport site.

A jet fuel pipeline may service the proposed airport in the future. It is important to note that a fuel pipeline corridor has not yet been identified. Consultation is underway between the Department of Infrastructure and Regional Development and the NSW Department of Planning and Environment to identify a potential future corridor and seek to preserve the corridor through relevant planning controls. Arrangements for access to the fuel pipeline, which may involve an easement, are required along the pipeline corridor alignment to ensure maintenance access and as a public safety measure. This may include planning controls restricting development on and adjacent to the pipeline.

21.8. Mitigation and management measures

Having regard to the planning and land use impact assessment, Table 21–4 summarises the mitigation measures identified in this report for the construction and operation of the airport site.

Table 21–4 – Mitigation measures

ID	Issue	Mitigation measure	Timing
21.1	Corridor protection – road	Liaise with relevant State and local government agencies regarding future access arrangements from The Northern Road and Elizabeth Drive.	Pre-construction
21.2	Land use zoning	Liaise with the relevant State and local government agencies to seek the appropriate adjustment to zoning of the airport site under applicable environmental planning instruments.	Construction
21.3	Operational airspace	Liaise with relevant State and local government agencies to identify appropriate environmental planning instruments to reflect protected airspace under the Airports (Protection of Airspace) Regulations 1997.	Pre-operation
21.4	Noise	Liaise with the relevant State and local government agencies to identify appropriate noise management controls in applicable environmental planning instruments with reference to <i>AS2021-2000 Acoustics Aircraft noise intrusion – Building siting and construction</i> and noise guidelines under the National Airports Safeguarding Framework.	Pre-operation
21.5	Corridor protection – rail	Liaise with the relevant State government agencies to identify opportunities for corridor protection for the provision of future rail connection to the airport site.	Pre-operation
21.6	Corridor protection – fuel pipeline	Liaise with the relevant State and local government agencies to identify opportunities for protection of a corridor for a future fuel pipeline.	Pre-operation

21.9. Conclusion

The development of the proposed airport would change the rural character of Badgerys Creek and surrounding lands. This land use outcome has been anticipated in Commonwealth, NSW and local government strategic planning for the area over several decades. The Australian Government will continue to work closely with State government agencies and local councils to ensure regional and local land use planning complements the future operation of the proposed airport and limits incompatible land uses in the vicinity of the airport site.

The proposed airport development would be a catalyst for a range of infrastructure projects flagged by government to support Western Sydney’s growth into the future. The proposed airport development would also be a focus for employment generating development in Western Sydney, creating jobs for the new residents of the South West Priority Growth Area.



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