

Appendix N

Planning and land use





Western Sydney Airport

Planning and Land Use Impact Assessment

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Contents

EXECUTIVE SUMMARY	1
TERMS AND ABBREVIATIONS	3
1 INTRODUCTION	4
1.1 Methodology	5
1.2 Limitations and assumptions.....	5
2 EXISTING ENVIRONMENT	6
2.1 Airport site description	6
2.2 Existing land uses	8
2.3 Surrounding existing land uses.....	10
3 LAND USE AND PLANNING	13
3.1 Australian Government.....	13
3.2 NSW Government	18
3.3 Local Government	26
3.4 Industry guidelines.....	29
4 AIRPORT PROPOSAL	30
4.1 Summary of the proposal	30
4.2 Airport Plan	30
5 IMPACT ASSESSMENT	33
5.1 Land use impacts	33
5.2 Airport operations	35
6 RECOMMENDED MITIGATION MEASURES.....	39
7 CONCLUSION	41
8 REFERENCES	42

Tables

TABLE 1 SITE DESCRIPTION	6
TABLE 2 SECTION 117 DIRECTIONS	19
TABLE 3 SUMMARY OF AIRPORT PLAN PROPOSED LAND USES	31
TABLE 4 BUILDING SITE ACCEPTABILITY BASED ON ANEF ZONE (AS2021).....	36
TABLE 5 MITIGATION MEASURES	39

Figures

FIGURE 1 AIRPORT SITE (GHD, 2015)	7
FIGURE 2 REGIONAL SITE PLAN AND TRANSPORT MAP (GHD, 2015)	12
FIGURE 3 WESTERN SYDNEY INFRASTRUCTURE PLAN (DIRD, 2015).....	17
FIGURE 4 INFRASTRUCTURE AND LAND USE PLANNING UNDER THE METROPOLITAN PLAN (DP&E, 2015)	21
FIGURE 5 SOUTH WEST PRIORITY GROWTH AREA PRECINCTS (DP&E, 2015).....	22
FIGURE 6 WESTERN SYDNEY EMPLOYMENT AREA LOCATION MAP (DP&E, 2015).....	23
FIGURE 7 SOUTH WEST RAIL LINK EXTENSION (TRANSPORT FOR NSW, 2015).....	24
FIGURE 8 OUTER SYDNEY ORBITAL INVESTIGATION AREA, SHOWN IN PURPLE (TRANSPORT FOR NSW, 2015).....	25
FIGURE 9 AIRPORT SITE AND SURROUNDING LANDS ZONING MAP (GHD, 2015)	27

Plates

PLATE 1 HORTICULTURE GREENHOUSES	8
PLATE 2 POULTRY SHED.....	8
PLATE 3 EXISTING CEMETERY (ST JOHNS ANGLICAN CHURCH CEMETERY, PITT STREET)	8
PLATE 4 FORMER BADGERYS CREEK PRIMARY SCHOOL	8
PLATE 5 EXISTING LOCAL ROAD	9
PLATE 6 CLEARED CATTLE GRAZING LANDS	9

Executive Summary

Western Sydney Airport proposal

The Australian Government is undertaking detailed planning and investigations for the proposed Western Sydney Airport (the airport) at Badgerys Creek. The airport is to service both domestic and international air traffic, with development staged in response to passenger demand.

The initial development (Stage 1) of the airport would include a single, 3,700 metre runway coupled with landside and airside facilities such as passenger terminals, cargo and maintenance areas, car parks and navigational instrumentation. Initially it would be capable of facilitating the safe and efficient movement of up to 10 million passengers per year. In the longer term, approximately 40 years after the initial airport development, the airport could include parallel runways and additional passenger and ground transport facilities to service around 82 million passengers per year. To maximise the potential of the site, the airport is proposed to operate on a 24 hour basis.

Methodology

This planning and land use report has been prepared as a component of an environmental impact statement (EIS) which addresses the environmental impacts of the airport in accordance with the Environment Protection and Biodiversity Conservation Act 1999 and the Australian Department of the Environment's guidelines for the EIS. Planning for a second airport for Sydney has been undertaken since 1946. This land use and planning assessment builds upon previous studies and addresses the potential planning and land use impacts of the proposed airport, and recommends mitigation measures to minimise impacts.

Land use and planning

Over the last two decades, planning by the Australian and NSW governments, and surrounding local councils for land use change in the South West Priority Growth Area and the Western Sydney Employment Area has taken into account the likely impacts of the proposed airport. The majority of land for the construction and operation of the proposed airport has been acquired by the Australian Government. Some additional minor acquisitions may be undertaken prior to operations.

Impact assessment

The report considers how the proposed airport would affect rural, agricultural, employment and recreational lands. Development controls are considered for the management of aircraft safety and noise. Lighting and air quality impacts from airport operations are considered in the context of surrounding planning and land use. The need for local traffic and transport improvements are identified, and considerations for future land acquisition are recommended.

Recommendations and mitigation measures

The Commonwealth Airports Act 1996 has been amended to provide for an Airport Plan which is a transitional planning instrument for the initial development of the airport as a greenfield airport site. The Airport Plan, once determined by the Infrastructure Minister will authorise the carrying out of specific developments detailed in the plan. It is anticipated the Minister would have regard to potential neighbouring employment land uses in exercising this authority, and in determining any future airport master plans and major development plans prepared for the airport site.

Prior to the commencement of Stage 1 operations, it is recommended that the Department of Infrastructure and Regional Development (DIRD) liaise with the NSW Department of Planning and Environment (DP&E) and local councils to seek:

- to ensure Local Environment Plans (LEPs), have regard to any new noise exposure forecasts prepared for the proposed airport based on the Australian Noise Exposure Forecast (ANEF) system and include relevant provisions for considering noise mitigation in the assessment of development applications. Whilst the EIS provides preliminary predictions of future aircraft noise exposure, an official ANEF contour map is expected to be prepared prior to the commencement of operations, taking account of detailed airspace design and airport operations planning. This process should be undertaken in accordance with the National Airports Safeguarding Framework (NASF) guidelines for noise management. A State environmental planning policy may be the most efficient and effective means to ensure consistency across local government planning instruments;
- to ensure LEPs incorporate relevant obstacle limitation surfaces (OLS) and procedures for air navigation systems operations surface (PANS-OPS), to restrict development heights and other potentially incompatible activities (such as exhaust plumes from vent outlets) for proposed developments within the vicinity of the airport; and
- rezoning of all land which forms part of the airport site to a uniform zone such as Special Uses 1 – Commonwealth under the NSW Standard Instrument LEP.

In addition, it is recommended that DIRD continue to consult with Transport for NSW, Roads and Maritime Services (RMS), local councils and affected landowners to undertake corridor protection for proposed future road and rail corridors and fuel pipelines, well in advance of their forecast need to ensure the growth of the airport is not constrained in the future.

Terms and abbreviations

Airports Act	Commonwealth <i>Airports Act 1996</i>
airport site	The airport site is the total of all properties that may become part of the proposed Western Sydney Airport. The airport site includes existing Commonwealth land and land that may be acquired by the Commonwealth, such as The Northern Road.
DIRD	Australian Department of Infrastructure and Regional Development
DP&E	NSW Department of Planning and the Environment
EIS	environmental impact statement
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
initial development	The initial stage in the development of the airport, including a single runway and capacity to handle 10 million annual passenger movements (nominally occurring in 2030). Also referred to as Stage 1 development
LEP	local environmental plan
LGA	local government area
Liverpool LEP	<i>Liverpool Local Environmental Plan 2008</i>
longer term development	The longer term development potential of Western Sydney Airport includes two runways and would facilitate approximately 82 million annual passenger movements. The Western Sydney Airport EIS forecasts that this patronage level may be reached around 2063. Any future stages of development beyond the initial (Stage 1) development would be subject to the relevant approvals process of the Commonwealth <i>Airports Act 1996</i> .
NSW	New South Wales
OLS	obstacle limitation surface
PANS-OPS	procedures for air navigation systems operations surface
Penrith LEP	<i>Penrith Local Environmental Plan 2010</i>
PSZ	public safety zone
RAAF	Royal Australian Air Force
RMS	NSW Roads and Maritime Services
SEPP	State environmental planning policy
Stage 1	Refer to 'initial development'.

1 Introduction

Planning investigations to identify a site for a second Sydney airport first commenced in 1946 with a number of comprehensive studies—including two previous environmental impact statements for a site at Badgerys Creek—having been completed over the last 30 years.

More recently, the *Joint Study on Aviation Capacity in the Sydney Region* (Department of Infrastructure and Transport, 2012) and *A Study of Wilton and RAAF Base Richmond for civil aviation operations* (Department of Infrastructure and Transport, 2013) led to the Australian Government announcement on 15 April 2014 that Badgerys Creek will be the site of a new airport for Western Sydney. The airport is proposed to be developed on approximately 1,700 hectares of land acquired by the Commonwealth in the 1980s and 1990s. Construction could commence as early as 2016, with airport operations commencing in the mid-2020s.

The proposed airport would provide both domestic and international services, with development staged in response to demand. The initial development of the proposed airport would include a single, 3,700 metre runway coupled with landside and airside facilities such as passenger terminals, cargo and maintenance areas, car parks and navigational instrumentation capable of facilitating the safe and efficient movement of up to 10 million passengers per year. While the proposed Stage 1 development does not currently include a rail service, planning for the proposed airport preserves flexibility for several possible rail alignments including a potential express service. A final alignment will be determined in consultation with the New South Wales Government, with any enabling work required during Stage 1 subject to a separate approval and environmental assessment process.

In the longer term, approximately 40 years after operations commence and in accordance with relevant planning processes, the airport development could include parallel runways and additional passenger and transport facilities for around 82 million passenger movements per year. To maximise the potential of the site, the airport is proposed to operate on a 24 hour basis. Consistent with the practice at all federally leased airports, non-aeronautical commercial uses could be permitted on the airport site.

On 23 December 2014, the Australian Government Minister for the Environment determined that the construction and operation of the proposed airport would require assessment in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). Guidelines for the content of an environmental impact statement (EIS) were issued in January 2015. Approval for the construction and operation of the proposed airport will be controlled by the *Airports Act 1996* (Cth) (Airports Act). The Airports Act provides for the preparation of an Airport Plan which will serve as the authorisation for the development of the proposed airport.

The Australian Government Department of Infrastructure and Regional Development is undertaking detailed planning and investigations for the proposed airport, including the development of an Airport Plan. The draft Airport Plan is the primary source of reference for, and companion document to, the EIS. The draft Airport Plan identifies a staged development of the proposed airport. It provides details of the initial development being authorised, referred to as Stage 1, as well as a long-term vision of the airport's development. This enables preliminary consideration of the implications of longer term airport operations. Any stages of airport development beyond Stage 1 would be managed in accordance with the Airports Act. This includes a requirement that for major developments (as defined in the Airports Act), a major development plan be approved by the Australian Government Minister for Infrastructure and Regional Development following a referral under the EPBC Act.

The Airport Plan will be required to include any conditions notified by the Environment Minister following this EIS. Any subsequent approvals for future stages of the development will form part of the airport lessee company's responsibilities in accordance with the relevant legislation.

1.1 Methodology

This planning and land use report has been prepared as a technical study for the preparation of an EIS which addresses the overall environmental impacts of the proposed airport as required by the EPBC Act. The purpose of this report is to address key necessary planning and land use considerations of the proposed airport, and to recommend any necessary mitigation measures to minimise impacts during construction and operation.

This report responds to and has been prepared in accordance with the Department of the Environment's assessment guidelines (EPBC 2014/7391) for the preparation of an EIS for the proposed Western Sydney Airport. This report considers two key stages of airport development and operations:

- construction and operation of the initial phase with one runway (Stage 1, nominally in 2030); and
- operation with two runways (nominally in 2063), referred to as the longer term development.

This report considers land use and planning impacts not only for Stage 1 but also for the longer term, to ensure opportunities and constraints are identified early for consideration of early implementation measures where reasonable and feasible.

In preparing this land use and planning report RPS has:

- inspected and analysed the key characteristics of the airport site and surrounding land;
- reviewed existing Commonwealth and NSW legislation applying to the airport site and surrounding land;
- reviewed strategic land use plans relevant to the airport site and surrounding land to identify NSW Government objectives for development of the area;
- consulted planning staff in local councils within the vicinity of the airport site to confirm applicable land use plans, policies and assessment considerations;
- reviewed relevant sections of other technical reports prepared for the EIS;
- assessed the likely impacts of the airport proposal on surrounding land uses; and
- recommended mitigation measures to reduce the impacts of the proposal.

1.2 Limitations and assumptions

This technical report has been prepared in accordance with the scope of work set out in the contract between the Australian Government and GHD. In preparing this technical report, RPS has relied on concept plans and data provided by GHD and the Australian Government, and an understanding of the scope of other technical studies (but not access to the actual studies) relating to noise and vibration, air quality, hazard and risks, traffic and transport, flooding and visual impact undertaken as part of the preparation of the EIS.

This report is part of a broader EIS and should be read in conjunction with other parts of the EIS where detailed analysis of specific issues are presented.

2 Existing environment

2.1 Airport site description

The airport site is located within the suburbs 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 60 kilometres west-southwest of the Sydney CBD and about 50 kilometres west of Sydney Airport. The site terrain comprises low lying hills with several watercourses and dams.

Over the period 1986 to 1991 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 land title (1,667 hectares). A map of the airport site is provided in Figure 1. The following table provides the legal description of the lots and their size followed by a figure of the airport site.

Table 1 Site description

Legal Description	Description	Area (ha)	Ownership
Lot 1 DP 838361	Main site	1,667.3	Commonwealth
Lot 1 DP 851626	2215 The Northern Road	11.9	Commonwealth
Lot 22 DP 258581	400 Willowdene Ave	10.0	Commonwealth
Lot 17 DP 258581	335 Willowdene Ave	10.0	Commonwealth
Lot 23 DP 259698	355 Willowdene Ave	10.1	Commonwealth
Lot 33 DP 259698	5 Vicar Park Lane	10.1	Commonwealth
Lot 32 DP 259698	15 Vicar Park Lane	10.1	Commonwealth
Lot 15 DP 229293	221 Greendale Road	4.7	Commonwealth
Lot 2 Sect. C DP 1451	10 Jackson Road	4.8	Commonwealth
Lot 8 DP 3050	105 Lawson Road	4.7	Commonwealth
Lot 7DP 3050	95 Lawson Road	2.0	Commonwealth
Lot 9 DP 226448	45 Martin Road	2.0	Commonwealth
Lot 9 DP 226448	20 Martin Road	2.1	Commonwealth
Lot 11 DP 226448	1932 Elizabeth Drive	0.1	Commonwealth
Lot 1 DP 129674	Elizabeth Drive property 1	0.1	Commonwealth
Lot 1 DP 129675	Elizabeth Drive property 2	0.1	Commonwealth
Lot 1 DP 996420	Elizabeth Drive property 3	0.1	Commonwealth
Lot 2 DP 996420	Elizabeth Drive property 4	0.1	Commonwealth
Lot 28 DP 217001	Elizabeth Drive property 5	0.1	Commonwealth
Lot 1 DP 996379	Elizabeth Drive property 6	0.1	Commonwealth
Lot 2 DP 996379	Elizabeth Drive property 7	10.4	Commonwealth
To be determined	The part of The Northern Road which bisects the site. See survey description next to this table.	2.5	Liverpool Council & NSW Government

Prior to commencement of Stage 1 operations, the Australian Government may consider acquisition of additional land or interests in land (such as easements) for properties which are located within the footprint of the airport proposal and are yet to be acquired (or where otherwise appropriate for airport operational matters such as for aircraft navigational safety).

The requirement for additional land acquisition/easements is discussed further in Section 5 of this report.

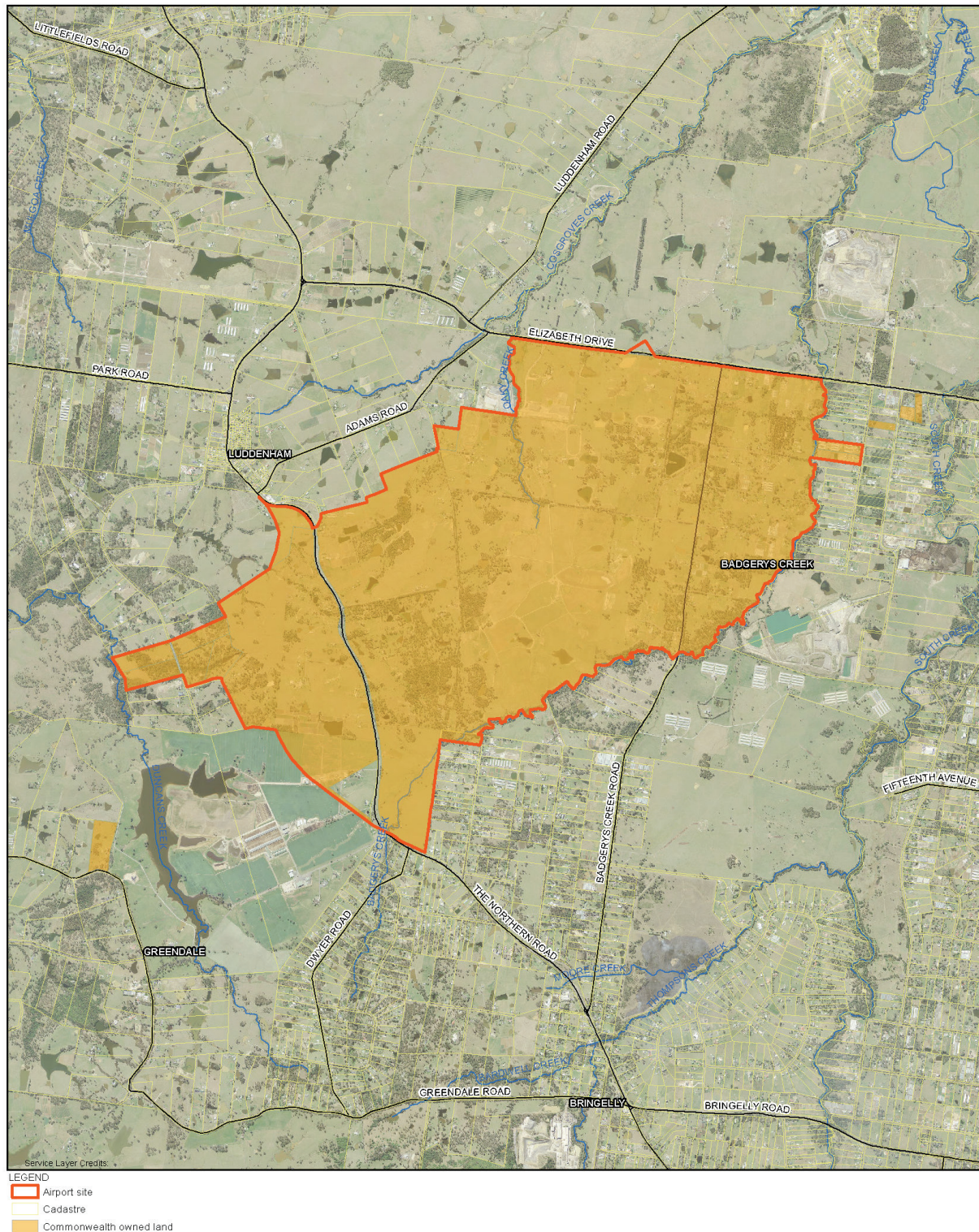


Figure 1 Airport site (GHD, 2015)

2.2 Existing land uses

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

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

- 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);
- Quarry (Blue Sky Mining)
- Scout hall

The following photos provide examples of existing built features and existing land uses on the airport site.



Plate 1 Horticulture greenhouses



Plate 2 Poultry shed



Plate 3 Existing cemetery (St Johns Anglican Church cemetery, Pitt Street)



Plate 4 Former Badgerys Creek Primary School



Plate 5 Existing local road



Plate 6 Cleared cattle grazing lands

Flora and Fauna

The flora and fauna on the site have been assessed in detail in the Biodiversity technical study prepared by GHD.

In summary, the airport site supports a variety of vegetation types on the Cumberland Plain. 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*).

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.

Road and transport network

The existing road and transport network have been assessed in detail in the Traffic and Transport technical study prepared by GHD.

In summary, 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 | ▪ Jackson Road | ▪ Pitt Street |
| ▪ Badgerys Creek Road | ▪ Jagelman Road | ▪ Taylors Road |
| ▪ Ferndale Road | ▪ Leggo Street | ▪ Vicar Park Lane |
| ▪ Fuller Street | ▪ Longleys Road | ▪ Winston Close |
| ▪ Gardiner 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 major roads in the vicinity of the site are:

- Elizabeth Drive – which runs along the northern border of the airport site
- The Northern Road – which intersects the airport site north to south in the western part of the site; and
- Badgerys Creek Road – which intersects the airport site north to south in the eastern part of the site.

2.3 Surrounding existing land uses

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.

The regional context of the airport proposal is identified in Figure 2 and surrounding land uses are discussed briefly below.

Liverpool local government area

The village of Luddenham is located 3 kilometres 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 lots 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 Cultural Club directly adjoins the north-western boundary of the airport site. Rural residential properties of up to 10 hectares surround the village.

To the 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).

Five kilometres south of the airport site is the town of Bringelly. Bringelly is largely characterised by large lot residential properties. The 2012 Liverpool Rural Lands Study recommended 775 hectares of land be converted from Rural – RU1 – Primary Production (east and west) to Rural – RU4 – Primary Production Small Lots (south east) 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.

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 3 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 area is proposed to provide for 440,000 square metres of employment and education floor space, 30,000 square metres of retail space, 3,000 dwellings and accommodation for up to 400 students.

About 5 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 about 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 9 kilometres north of the airport site. The RAAF utilises this site for storage and distribution and Defence Explosive Ordnance Training.



Figure 2 Regional site plan and transport map (GHD, 2015)

3 Land use and planning

Land use planning in Western Sydney for the last two decades has incorporated considerations for an airport at Badgerys Creek. This chapter considers the applicable legislation, plans and strategies at the Australian, NSW and local government levels as they apply to land use and planning for the airport site and surrounding land.

3.1 Australian Government

Legislation and related frameworks

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 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 action (section 28).

At the same time the delegate decided that the proposed airport development would be assessed by preparation of an EIS. As a result of recent amendments to the *Airports Act 1996* (Airports Act), approval for the proposed airport under Part 9 of the EPBC Act is not required. However an 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.

Airports Act 1996

Western Sydney Airport will be developed and operated under the Airports Act. An airport lease will in due course be granted by the Commonwealth to an airport lessee company which will then become responsible for the Airport Site.

A Master Plan is a 20 year strategic vision for the airport site which is renewed every five years. The Master Plan includes future land uses, types of permitted development, and noise and environmental impacts. The 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 will determine their environmental responsibilities.

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 project. 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. 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.

Convention Concerning the Protection of the World Cultural and Natural Heritage

Australia is a member of the World Heritage Convention which aims to promote cooperation to protect heritage around the world that is of outstanding universal value. The World Heritage Convention is administered by a World Heritage Committee, which among other functions, establishes a list of properties that have outstanding universal value, called the World Heritage List.

The Greater Blue Mountains World Heritage Area (GBMWA) was listed on the World Heritage List in 2000. Nations that are parties to the World Heritage Convention agree to use their own resources to protect their World Heritage properties as far as possible.

Australian Standard 2021

The Australian Standard 2021:2015 – Acoustics – Aircraft noise intrusion – Building siting and construction (AS 2021) 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 fire fighting 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.

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.

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 in the airspaces established by the international Civil Aviation Organisation. The OLS defines the airspace to be protected for aircraft operation 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 the airport when the pilot is flying by sight.

Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS) provide for the establishment of surfaces to protect stages of flight during take-off, landing or manoeuvring and when aircraft is 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 the 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 will be prepared for the proposed airport.

Infrastructure projects

Western Sydney Infrastructure Plan

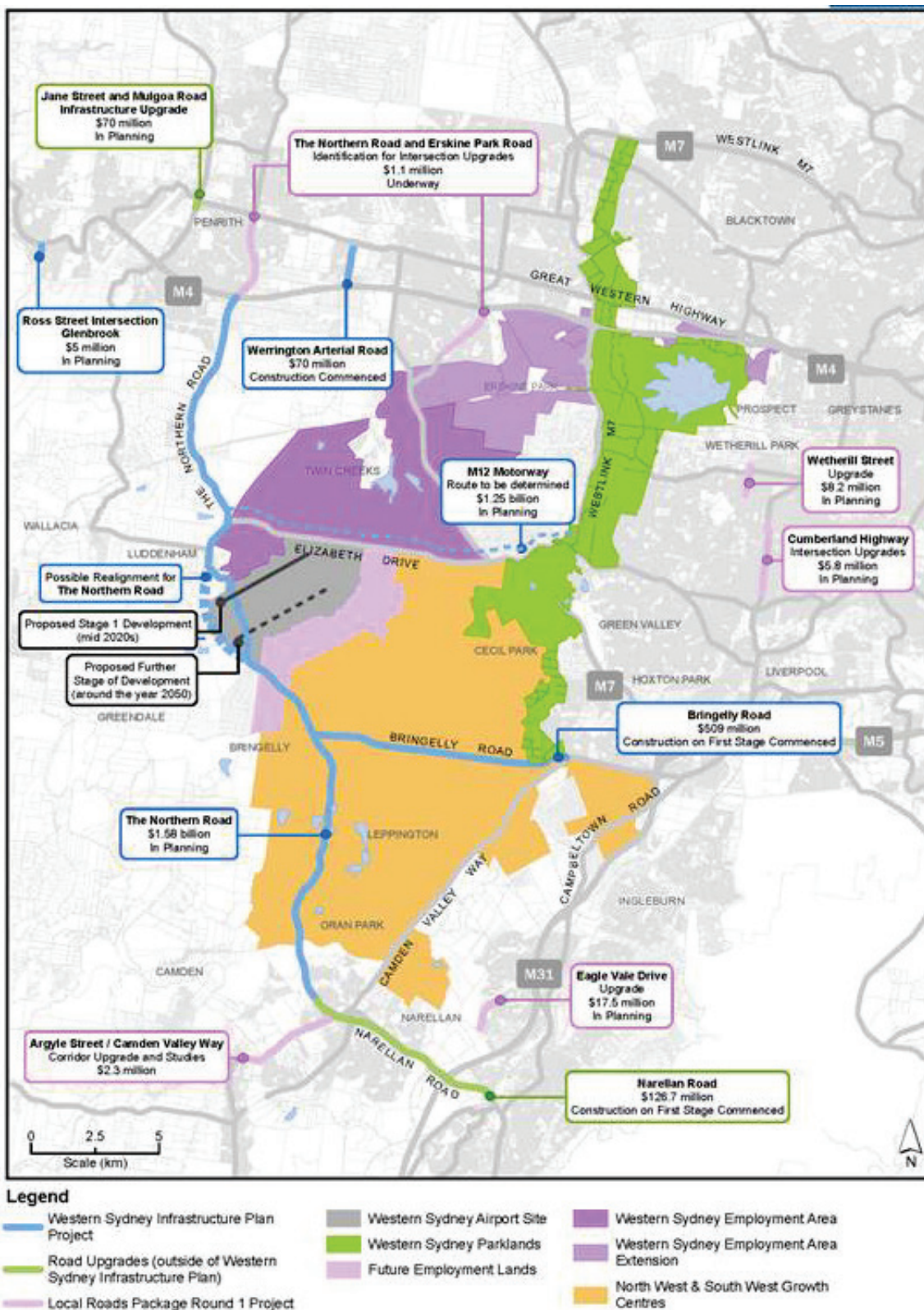


Figure 3 Western Sydney Infrastructure Plan (DIRD, 2015)

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 to ensure the efficient movement of passengers, employees and freight. The Western Sydney Infrastructure Plan includes consideration of 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, generally along the Elizabeth Drive corridor;
- upgrade of Bringelly Road to a minimum of four lanes from Camden Valley Way to The Northern Road;
- construction of the Werrington Arterial Road between the M4 Motorway and the Great Western Highway;
- improvement of interchanges connecting The Northern Road and a new motorway at Elizabeth Drive and Bringelly Road;
- upgrade of Ross Street and Great Western highway intersection at Glenbrook; and
- a \$200 million local roads package.

Refer to Figure 3 for the Western Sydney Infrastructure Plan summary.

3.2 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*. Within this structure are the following three key instruments:

- State environmental planning policies (SEPPs): which outline the NSW Government's approach to dealing with more specific planning issues. These can be either site or issue specific, and may control land zoning and development controls, or establish a development process.
- Local environmental plans (LEPs): each local government area has an LEP to guide development and protect natural resources within local government areas. LEPs are prepared by local councils.
- 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.

State Environmental Planning Policies

State Environmental Planning Policy (Sydney Region Growth Centre) 2006

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 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 area in the vicinity of the site. This is further explored within Chapter 3.2 South West Priority Growth Areas.

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

Under clause 22 of the Infrastructure SEPP, development for the purposes of an airport may be carried out by or on behalf of a public authority without consent within the project area. It is noted however that the proposal is to be assessed under Commonwealth legislation, and therefore the process for approval is not subject to the Infrastructure SEPP.

State Environmental Planning Policy (Western Sydney Employment Area) 2009

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.

Local planning directions

Under section 117(2) of the 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 2.

Table 2 Section 117 directions

Direction	Objective	What a relevant planning authority must do if this direction applies
3.5 Development near Licenced 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 and reissued in 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.

Strategic Documents

A Plan for Growing Sydney

The DP&E publication *A Plan for Growing Sydney* (the Metropolitan Plan) is a 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 will 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 will 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:

- protect the future operating capacity of the proposed Western Sydney Airport by ensuring adequate buffers 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.

As part of employment growth with the proposed airport development, the NSW Government seeks to develop strategic employment corridors to service the proposed airport. The airport would be the single largest infrastructure catalyst for employment in Western Sydney. 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 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 population growth 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.

South West Priority Growth Area

The NSW Government established the South West Growth Centre 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 (refer to Figure 5). The Growth Area will ultimately provide 110,000 new dwellings and capacity for at least 22,000 jobs. The possible future extension of the South West Rail Link from Leppington to the airport and further north to the Western Line will also pass through the 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 DP&E and detailed precinct plans are yet to be publicly released.

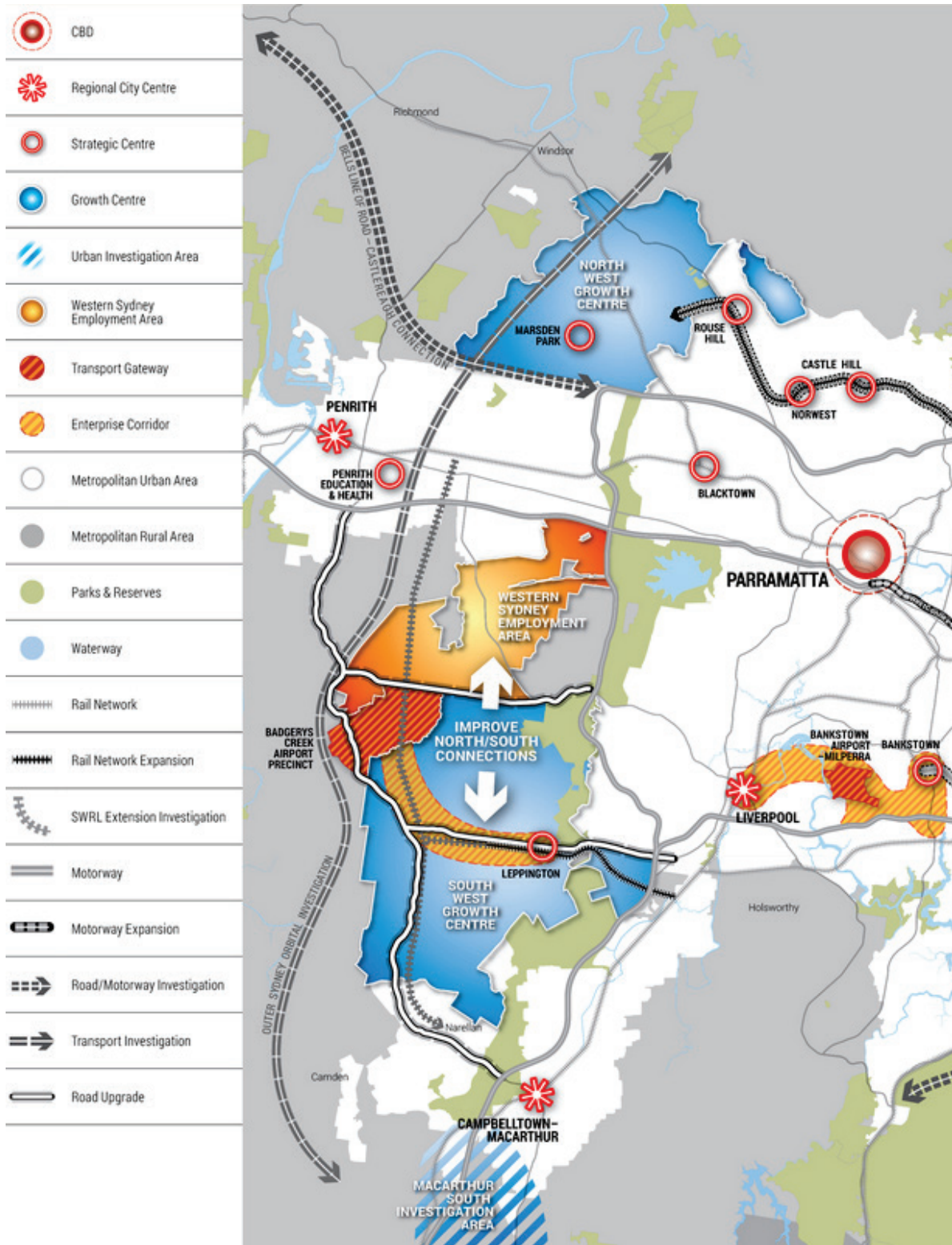


Figure 4 Infrastructure and land use planning under the Metropolitan Plan (DP&E, 2015)

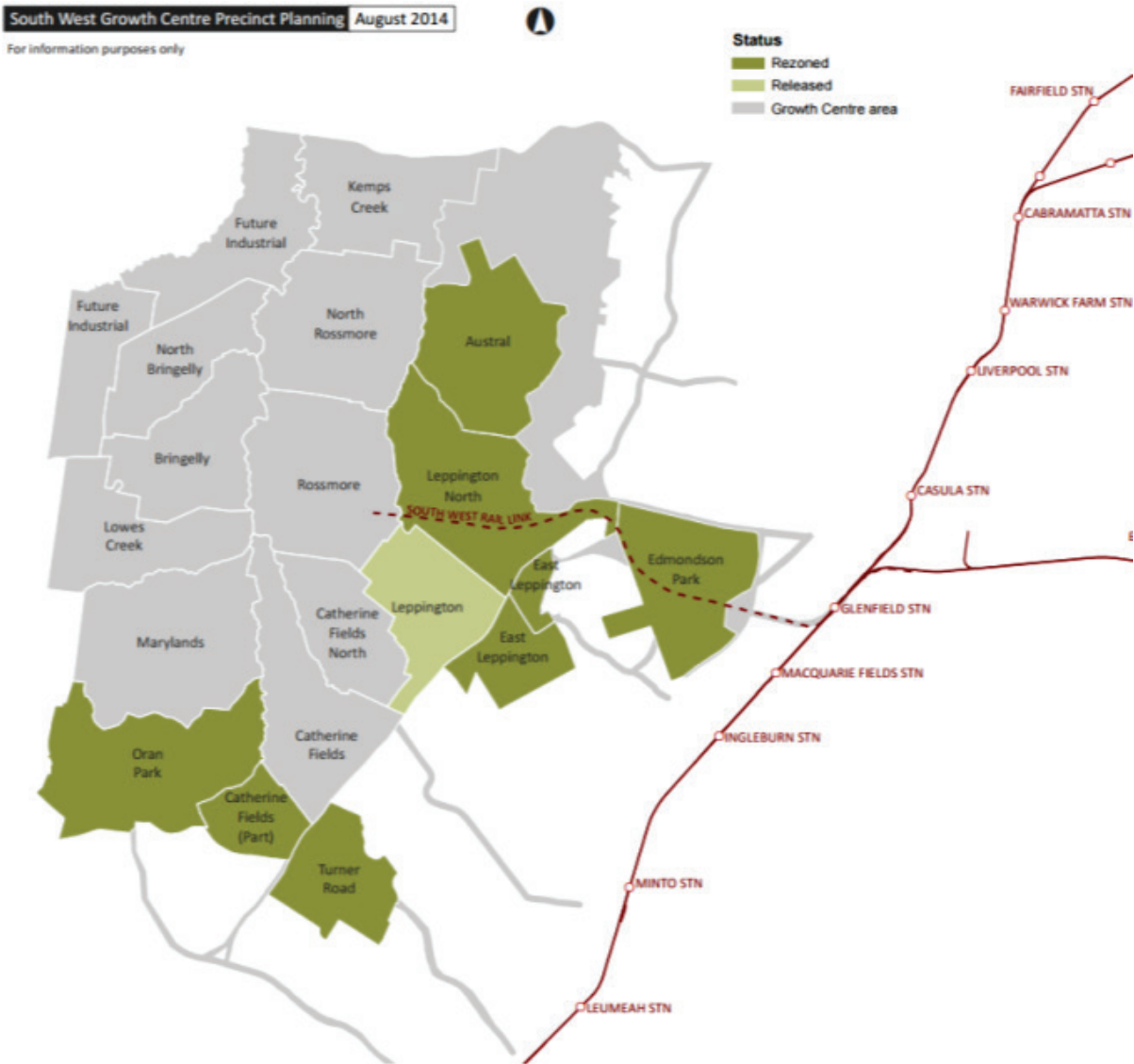


Figure 5 South West Priority Growth Area precincts (DP&E, 2015)

Western Sydney Employment Area

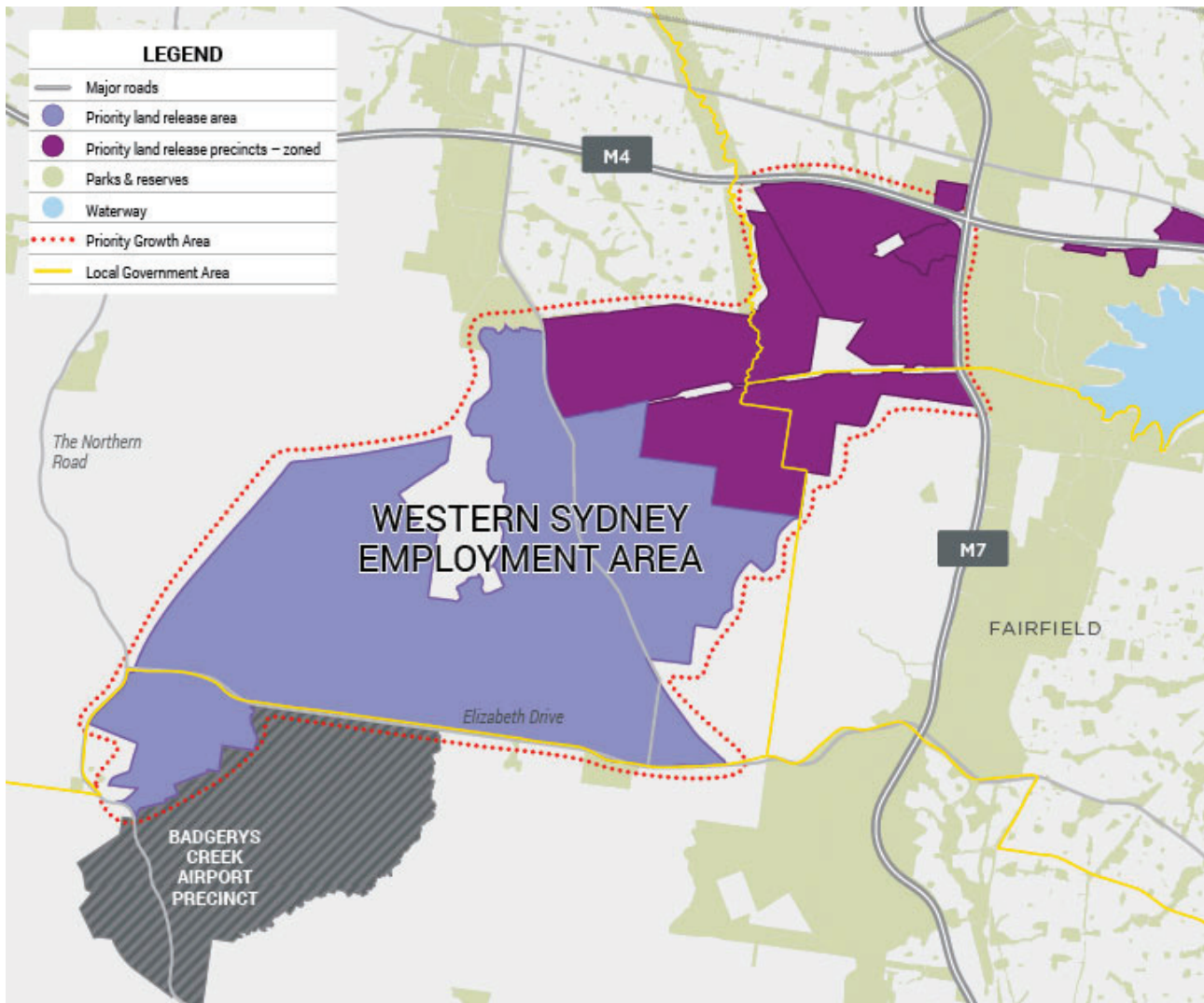


Figure 6 Western Sydney Employment Area Location Map (DP&E, 2015)

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. The NSW Government forecasts the population of Western Sydney to rise from 2.1 million in 2011 to 2.9 million in 2031. The WSEA has been developed to help provide employment opportunities to support this growth. The WSEA is identified in Figure 6.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP) is the environmental planning instrument which outlines development controls for WSEA. In January 2015, the WSEA SEPP was amended to extend the boundaries to include land adjacent to the airport site (known as the Broader WSEA). The Broader WSEA 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, and the Broader WSEA area is expected to deliver 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 Broader WSEA is currently 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 WSEA has already been rezoned to industrial. The Broader WSEA 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.

Infrastructure projects

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 Mary's. As part of the northern extension, the corridor is expected to provide a station at the airport site.

A specific alignment or station location for the airport rail link is yet to be confirmed, however planning for the airport preserves flexibility to accommodate several possible rail alignments. This would be resolved as part of the future design and planning for the proposed airport in conjunction with Transport for NSW and DP&E. The indicative South West Rail Link Extension alignment is identified in Figure 7.

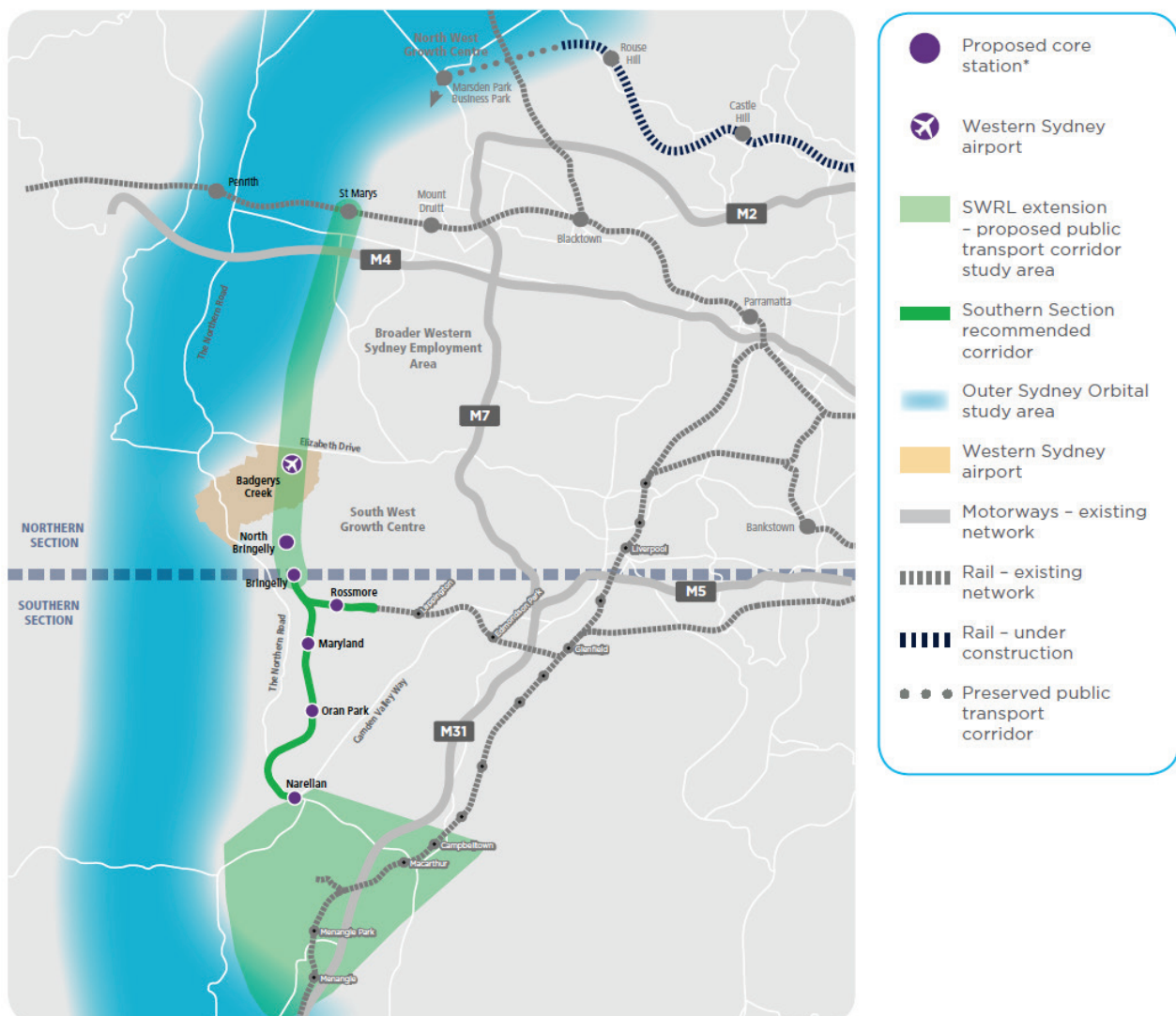


Figure 7 South West Rail Link Extension (Transport for NSW, 2015)

Outer Sydney Orbital

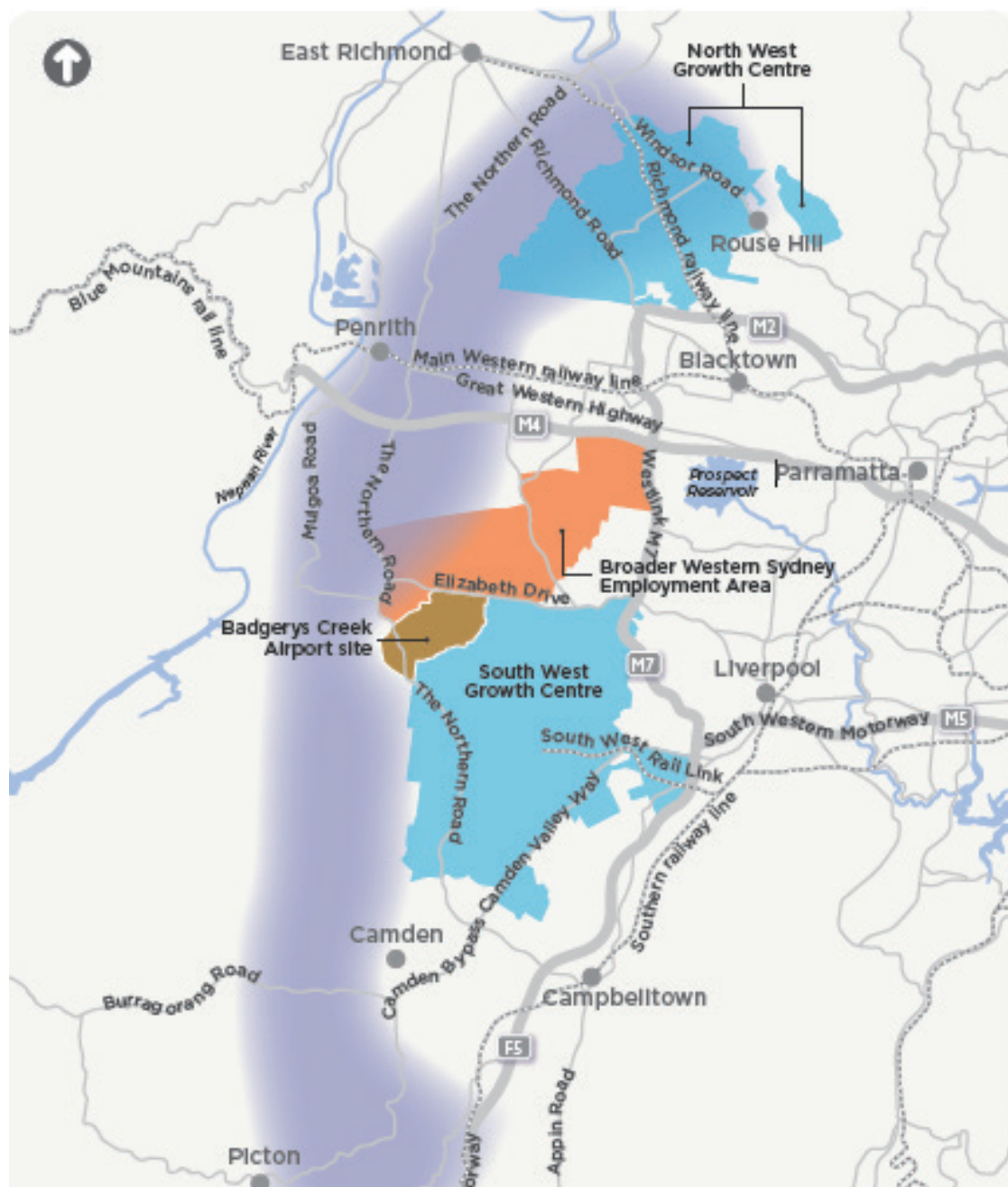


Figure 8 Outer Sydney Orbital investigation area, shown in purple (Transport for NSW, 2015)

Transport for NSW is investigating suitable corridors for the Outer Sydney Orbital (OSO). The OSO will 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 will be located to the west of the airport site, possibly connecting the M5 South West Motorway to the M4 Western Motorway. The OSO investigation area is identified in Figure 8.

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 OSO. The corridor provides the opportunity for multimodal linkages to employment, freight and passenger movements directly related to the proposed airport.

3.3 Local Government

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 its council boundaries.

The majority of the airport site is zoned SP1 – Special Activities (Commonwealth) under the Liverpool LEP. Surrounding land zones are Rural – RU1 – Primary Production (east and west) and RU4 Primary Production Small Lots (south east). The applicable land use zones are identified in Figure 9.

Noise management

When Liverpool Council adopted the Standard Instrument LEP in August 2008, it included a provision (clause 7.18) for development in areas subject to potential aircraft noise from the proposed airport. Under clause 7.18 of the Liverpool LEP:

- 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,
 - 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.

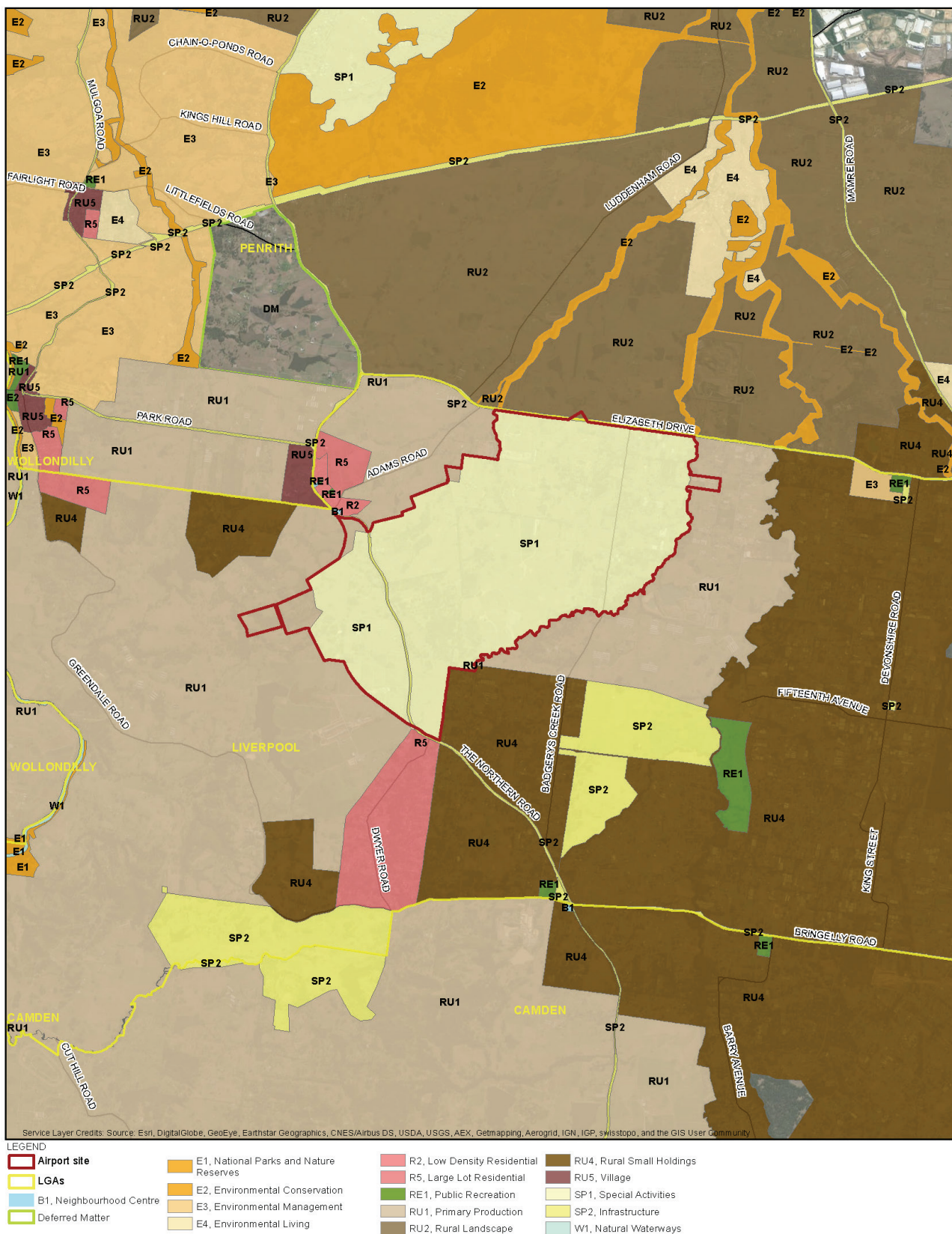


Figure 9 Airport site and surrounding lands zoning map (GHD, 2015)

Penrith

Land use zoning

Penrith Council adopted the Standard Instrument LEP in 2010. 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.

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
- RE1 Public Recreation

North of the site is Twin Creeks Golf and Country Club, which is zoned E4 Environmental Living. This locality comprises 200 large lot residential dwellings and a golf course.

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 will result in an increase in the number of dwellings or people affected by aircraft noise;
- must consider the location of the development in relation to recommended development types within ANEF zones, as outlined in the AS 2021 (see Table 4 below); and
- must be satisfied that the development will 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
 - if the development will be in an ANEF contour of 25 or greater—commercial premises, hostels or hotel or motel accommodation.

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.

3.4 Industry guidelines

Australian Airports Association Practice Notes

The Australian Airports Association (AAA) is a national representative group for airports in Australia.

Practice Note 5 – Planning around Airports provides guidance for planning around airports. It includes consideration of NASF, Public Safety Zones and broader planning considerations of surface access to airports.

4 Airport proposal

4.1 Summary of the proposal

The airport is proposed to be developed on approximately 1,700 hectares of land which was acquired by the Australian Government in the 1980s and 1990s. Construction could commence as early as 2016, with airport operations commencing in the mid-2020s. The airport would service both domestic and international air traffic, with development staged in response to passenger demand.

The initial development of the airport would include a single 3,700 metre runway coupled with landside and airside facilities such as passenger terminals, cargo and maintenance areas, car parks and navigational instrumentation capable of facilitating the safe and efficient movement of up to 10 million passengers per year.

In the longer term, approximately 40 years after operations commence and in accordance with relevant assessment processes, the airport development could include parallel runways and additional passenger and rail transport facilities for around 82 million passenger movements per year. To maximise the potential of the site, the airport is proposed to operate on a 24 hour basis. Consistent with the practice at all federally leased airports, non-aeronautical commercial uses could be permitted on the site.

Further details relating to the scope of works of the airport proposal is available in Chapter 5 of the EIS.

4.2 Airport Plan

Accompanying the EIS as a companion document is a draft Airport Plan which described the Stage 1 development and also includes proposals for land use and related development of the airport site.

The categories of development associated with the initial and longer term land use plans for the proposed airport are shown in Table 3. Note, these proposed land uses are indicative only and may be altered prior to determination of the Airport Plan.

Table 3 Summary of Airport Plan proposed land uses

Land use Area	Proposed permissible uses	Stage 1 area (hectares)	Longer term area (hectares)
Aviation Activity	Agriculture, aviation activity, detention pond, earthworks, environmental protection works, extractive industry, liquid fuel depot and distribution facility, navigational aids, public administration facility, public utility undertaking, road, signage (other than an advertisement), telecommunications facility, temporary structure, and works depot.	322	672
Terminal and Support Services	Agriculture, amusement centre, animal boarding, aviation activity, aviation support facility, business premises, car park and parking spaces, childcare centre, convenience store, detention pond, earthworks, environmental protection works, extractive industry, food and drink premises, freight handling and transport facility, hotel or motel accommodation, kiosks, liquid fuel depot and distribution facility, markets, navigational aids, office premises, passenger transport facility, public administration facility, public utility undertaking, road, shop, signage, telecommunications facility, temporary structure, terminal, transfer corridor, vehicle hire premises, and works depot.	204	527
Aviation Logistics and Support	Agriculture, animal boarding, aviation activity, aviation support facility, business premises, car park and parking facilities, detention pond, earthworks, extractive industries, food and drink premises, freight handling and transport facility, light industry, liquid fuel depot and distribution facility, navigational aids, office premises, public administration facility, public utility undertaking, retail – low intensity, road, signage, telecommunications facility, temporary structure, transport depot, and works depot.	221	231
Aviation Reservation	Agriculture, animal boarding, aviation activity, aviation support facility, detention pond, earth works, environmental protection works, extractive industry, navigational aids, passenger transport facility, public utility undertaking, public administration facility, retail – low intensity, road, shop, signage, telecommunication facility, temporary structure, terminal, waste or resource management facility and works depot.	530	–
Business Development	Agriculture, animal boarding, aviation activity, aviation educational facility, aviation support facility, business premises, car park and parking spaces, child care centre, earth works, extractive industry, freight handling and protection works, hotel or motel accommodation, medical centre, navigational aids, office premises, passenger transport facility, public utility undertaking, public administration facility, recreational facility (indoor), retail premises, road, service station, shop, signage, telecommunication facility, temporary structure, vehicle hire premises, warehouse and distribution centre, and works depot.	167	170

Land use Area	Proposed permissible uses	Stage 1 area (hectares)	Longer term area (hectares)
Business Development (Reservation)	Agriculture, animal boarding, aviation activity, aviation education facility, aviation support facility, business premises, car park and parking spaces, child care centre, earth works, extractive industry, freight handling and transport facility, hotel or motel accommodation, medical centre, navigational aids, office premises, passenger transport facility, public utility undertaking, public administration facility, recreational facility (indoor), retail premises, road, service station, shop, signage, telecommunication facility, temporary structure, vehicle hire premises, warehouse and distribution centre, and works depot.	148	–
Environmental Conservation	Environmental protection works, public utility undertaking and permissible land uses determined as part of the Environmental Impact Statement.	129	129

5 Impact assessment

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

5.1 Land use impacts

Rural residential lands

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

The development of the proposed Western Sydney Airport is a key part of the transformation of Western Sydney. If the proposal proceeds, what is currently a, semi-rural area would change into an urban landscape as the frontier of suburban Western Sydney is extended. The airport would generate passenger traffic and increase freight road traffic, and result in increased aircraft noise and air quality impacts. The Social Impact Assessment undertaken by GHD in the EIS provides further details on these types of impacts.

Agricultural lands

The construction and operation of the proposed airport and associated urban expansion in Western Sydney will necessitate the loss of some land currently being used for agricultural purposes.

The 1999 Supplement to the 1997 Draft EIS identified the loss to agricultural production from an airport at the site as relatively small (being up to 0.23 percent of total regional agricultural production), with any production losses likely to be replaced by agricultural activity elsewhere in the region or State.

The Liverpool Rural Lands Study 2012 considered the pressures affecting Liverpool's rural areas. The study reflected the growth of development in the South West Priority Precincts and in relation to planning at that time for a second Sydney airport (for which Badgerys Creek had been ruled out). At that time the majority of the study area was not being used for economic agricultural production. Relevant findings of the report include:

- Prominent agricultural industries in Liverpool generally included those relating to poultry, dairy, market gardening and horse activities.
- Between the 1994 and 2007, agriculture was in decline – re-investment of capital into farming machinery and structures had reduced and therefore so had efficiency of operation.
- Recreational activities, particularly equestrian, were an increasing trend.

Whilst acknowledging the importance of agricultural production close to the Sydney market, the Metropolitan Plan confirms the NSW Government's support for the delivery of the Western Sydney Airport as it would transform and drive future investment and jobs in Western Sydney. The Metropolitan Plan identifies other rural lands within the Sydney metropolitan area which may be used as alternate agricultural sites.

Employment lands

The New South Wales Government established the Western Sydney Employment Area (WSEA) to provide the region with substantial land for industry and employment growth, catering for transport and logistics, warehousing and office space. WSEA capitalises on access to roads and utility services close to the proposed airport. The Western Sydney Employment Area Extension is proposed to extend the current Western Sydney Employment Area boundary south to Elizabeth Drive and includes some land west of the airport site. A draft Structure Plan was released in June 2013. It outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. The NSW Government is revising the draft Structure Plan to take into account of the proposed airport. This revision is anticipated to be completed by the close of 2015.

The proposed airport development also 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 facilitating the provision of transport infrastructure required for freight and logistics. Extend

The land use plan contained in the draft Airport Plan identifies land use areas for retail and commercial development within the airport site. Though specific activities are yet to be confirmed, the impacts of these proposals on the airport and surrounding lands will be assessed in accordance with the requirements of the Airports Act, including the preparation of major development plans for major proposed developments.

Recreational lands

Badgerys Creek Park would be removed as part of the Stage 1 development of the airport.

There are extensive recreational areas located within the vicinity of the site. Aircraft flight paths may result in visual and noise impacts on the following recreational reserves:

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

The proximity of aircraft accompanied by loud noise may be audible by people engaged in recreational activities such as organised sport, walking, cycling, boating or camping. It is understood the noise impact assessment technical report prepared by Wilkinson Murray assesses the predicted impact on these areas.

It is noted that impacts on recreational lands are not currently addressed under ANEF/AS 2021 requirements.

Impacts on recreational lands are also addressed in Chapters 10, 11, 31 (noise) and 26 (Greater Blue Mountains) of the EIS.

Consolidation of Commonwealth land holding

As discussed in section 2.1, much of the land required for the proposed construction of the airport has already been acquired by the Australian Government. Despite this, a small amount of additional land may be required.

The Australian Government may consider acquiring the portion of land that is within the identified public safety zone (PSZ). Alternatively, opportunities to include the PSZ within the existing site boundary will be further explored during detailed design.

Airport site land use zone

The use of the site as an airport is permissible under the current SP1 – Special Activities (Commonwealth) zoning for the majority of the site.

Additionally, the Airports Act was recently amended to clarify that the land owned by the Commonwealth at Badgerys Creek is a declared airport site; but also to clarify that even where the Commonwealth does not own the land it may be declared part of an airport site for the purposes of the Airports Act. This means that the Airport Master Plan, Major Development Plan and building approvals process set out under the Airports Act will be required for development of the proposed airport.

Nevertheless it is recommended that to provide clarity and certainty for the future use of the land, DIRD liaise with DP&E and Liverpool Council to ensure that all land which is to be incorporated into the airport site be rezoned to a consistent zone under the relevant LEP (such as the existing SP1 – Special Activities (Commonwealth) zone).

5.2 Airport operations

Airspace development controls

Protecting airspace on and around airports is essential to maintaining a safe operating environment. The Airports Act provides for the Commonwealth to take steps under the Airports (Protection of Airspace) Regulations 1997 to regulate certain incursions in the airspace around airports. These incursions include breaches of the Obstacle Limitation Surfaces (OLS) and the Procedures for Air Navigation Systems Operations Surface (PANS-OPS) which 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 Organisation 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.

PANS-OPS are established to protect aircraft during take-off, landing or manoeuvring and when aircraft are operating in non-visual conditions. OLS and PANS-OPS are discussed in more detail in Section 3.1.

DIRD will need to liaise with DP&E and relevant local councils to ensure OLS and PANS-OPS requirements are applied in applicable environmental planning instruments.

Public safety zones

The Australian Government is working with the states and territories on the development of a national standard for public safety zones to be incorporated into the NASF. Public safety zones (PSZs) are an area of approximately 1,000 metres x 250 metres at the ends of runways in which development is constrained. They are based on runway use statistics correlated against international crash data. PSZs minimise the risk of damage by aircraft during landing or take off by ensuring any development within the zone does not add unduly to existing levels of risk.

Where a PSZ is identified, additional scrutiny might be considered for new developments that:

- increase residential use and population density in the zone;
- attract large numbers of people, such as retail or entertainment developments;
- involve institutional uses, such as schools and hospitals;
- involve the manufacture or depot storage of noxious and hazardous materials; and

- attract significant static traffic.

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. 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.

Liverpool Council's Rural Lands Strategy 2012 recommended not to expand Luddenham village beyond its current extent as it may be impacted by aircraft noise from the future Western Sydney Airport.

In Australia aircraft noise exposures for land use planning are derived using the Australian Noise Exposure Forecast (ANEF) measure. The noise technical report provides noise exposure contour maps which depict the aircraft noise levels forecast to exist as a result of the assumed airport operations.

The Australian Noise Exposure Concept (ANEC), which is based on indicative data on aircraft types, aircraft operations and flight zones, is used to provide a measure of aircraft noise impacts in an EIS. The methods used to derive an ANEC are exactly the same as that used to derive an ANEF, but the ANEC is indicative and not endorsed by Airservices Australia.

Table 4 identifies the recommended development types within ANEF zones, as outlined in the AS 2021.

Table 4 Building Site Acceptability Based on ANEF Zone (AS2021)

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 30 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		

We are advised that the Wilkinson Murray report prepared as part of this EIS includes predicted aircraft noise impact mapping. Areas around the airport, including those generally aligned with the proposed runways and GBMWA will be subjected to varying levels of aircraft noise depending on factors such as time of day, number of aircraft movements and wind speed.

It is recommended that DIRD liaise with DP&E and relevant local councils to ensure applicable environmental planning instruments have regard to the noise exposure forecasts presented in the EIS and supporting AS 2021 building siting and development controls.

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

Lighting

The proposed runway orientation has limited the possible areas that could be affected by the approach lighting and runway lighting. The proposed location of buildings between the two runways also provides a buffer for the potential impact of the buildings' lighting. LED apron lighting and directional external lighting would minimise potential impacts to surrounding land. The Visual Impact Assessment technical report by RPS concludes that the proposed airport lighting would likely have minimal impact to the surrounding lands.

Air quality

It is understood that the EIS air quality assessment undertaken as part of this EIS has provided a forecast of the air quality impacts on surrounding areas.

Land use zoning for employment generation and other less sensitive land uses is recommended as a means of reducing local air quality impacts on sensitive receivers in the vicinity of the airport site. Reference should be made to that report for detail of areas likely to be affected.

The regional impact on air quality from the airport operations are a cumulative effect of aircraft operations, road traffic, industrial emissions and other regional sources. Again, the air quality assessment report should be referred to for details of areas affected.

Fuel pipeline

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.

It is recommended that DIRD facilitate liaison between commercial parties operating the airport and DP&E to identify potential future corridors and seek to preserve the corridor alignment well in advance of the need through relevant planning controls, both to ensure public safety and that future fuel supply is not a constraint to airport development.

The timing of the fuel pipeline will be based on a number of factors however is not currently proposed as part of the initial development of the airport.

Traffic and transport

As outlined in the EIS Traffic and Transport Assessment, several local road improvements are required in the vicinity of the airport site. Badgerys Creek Road is also expected to be partially closed as part of the initial development of the airport site. The current alignment of The Northern Road is to be acquired for construction of the proposed airport. Investigations are underway Plan to upgrade and realign The Northern Road to outside the western boundary of the proposed airport. In addition, RMS and Transport for NSW are undertaking corridor studies for a new motorway along the general alignment of Elizabeth Drive between The Northern Road and the M7 Westlink Motorway.

Local roads within the Commonwealth landholdings, not within the Stage 1 construction footprint, are expected to remain open for public access. As longer term development proceeds, these roads would progressively be decommissioned.

The proposed South West Rail Link Extension is expected to provide a railway station for the airport site. A specific alignment or station location is yet to be confirmed. Although the rail line may not be constructed for some years after the opening of the airport, opportunities for corridor protection should be pursued with Transport for NSW, DP&E and local councils.

6 Recommended mitigation measures

Having regard to the planning and land use impact assessment, Table 5 summarises the recommended mitigation measures identified in this report for implementation prior to commencement of operation of Stage 1 of the airport site.

Table 5 Mitigation measures

Issue	Recommended mitigation measure	Primary Party for DIRD to liaise with	Comment
Land use zoning	1. 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.	DP&E	Whilst most of the existing Australian Government landholdings are already zoned SP1 – Special Activities (Commonwealth), some existing/future landholdings should be zoned SP1 – Special Activities (Commonwealth) to reconcile the airport uses with planning controls.
Operational airspace	2. Liaise with the relevant State and local government agencies to implement appropriate OLS and PANS-OPS requirements in applicable environmental planning instruments to reflect protected airspace under the Airports (Protection of Airspace) Regulations 1997.	DP&E	Once the operational airspace requirements have been finalised, DIRD should liaise with Airservices, DP&E and relevant local councils to ensure OLS and PAN-OPS requirements are implemented in applicable environmental planning instruments.
Noise	3. Liaise with the relevant State and local government agencies to implement 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.	DP&E	Whilst Penrith and Liverpool Councils have existing controls, these may need to be amended to reflect revised ANEF. Relevant controls also need to be considered for Wollondilly, Camden, Blacktown and Fairfield Councils.
Corridor protection – Rail	4. Liaise with the relevant State and local government agencies to identify opportunities for corridor protection for the provision of a future rail connection to the airport site.	Transport for NSW	Rail corridors are the responsibility of the State Government. Corridor protection opportunities may take the form of land acquisition, easements or zoning/development controls in relevant environmental planning instruments. Zoning and land use control outside the airport site is within State and local control.

Issue	Recommended mitigation measure	Primary Party for DIRD to liaise with	Comment
Corridor protection – road	5. Liaise with the relevant State and local government agencies regarding future access arrangements from The Northern Road and Elizabeth Drive.	NSW Roads and Maritime Services	Off site roads are the responsibility of State and local government. Corridor protection opportunities may take the form of land acquisition, easements or zoning/development controls in relevant environmental planning instruments. Zoning and land use control outside the airport site is within State and local control.
Corridor protection – fuel pipeline	6. Liaise with the relevant State and local government agencies to identify opportunities for protection of a corridor for a future fuel pipeline.	DP&E	Corridor protection opportunities may take the form of land acquisition, easements or zoning/development controls in relevant environmental planning instruments. Zoning and land use control outside the airport site is within State and local control and will require liaison between DIRD and local and State authorities.

7 Conclusion

Construction and operation 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 identified by the Australian and NSW governments to support Western Sydney's growth into the future. The proposed airport development would also be a key focus for employment generating development in Western Sydney, creating jobs for the new residents of the South West Priority Area.

This report has assessed the likely land use and planning impacts and makes recommendations for mitigation measures to minimise impacts. Many of these will be dependent upon the outcomes of subsequent design and regulatory processes before they can be implemented.

8 References

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