Chapter 3
Project location and setting

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3 Project location and setting

This chapter describes the location and setting of the project for the purpose of the Environmental Impact Statement.

3.1 Project setting and local area

The local setting for the project is discussed in the following sections, with reference to the off-airport and on-airport land respectively. An overview of the local area identifying the boundary between off-airport and on-airport land is shown in Figure 3-1.

3.1.1 Off-airport

Location

The project is located within the Penrith and Liverpool Local Government Areas (LGAs), between the T1 Western Line at St Marys in the north and the Aerotropolis Core precinct in the south, via Western Sydney International. The off-airport project comprises areas to the north of Western Sydney International (from the northern airport boundary to the T1 Western Line at St Marys) and land south of the airport (from the southern airport boundary to the Aerotropolis Core precinct).

Biophysical setting

The topography along the project alignment is relatively flat from St Marys, with higher ground towards Claremont Meadows and slightly lower lying areas along Blaxland Creek. Through Orchard Hills, Badgerys Creek and Bringelly, the valley and floodplain of South Creek and its tributaries dominate the gently undulating topography. The topography to the east and west of the project is more elevated.

The project is located within the Hawkesbury-Nepean catchment and the South Creek sub-catchment. The South Creek sub-catchment encompasses the majority of the Cumberland Plain of Western Sydney. Watercourses and low-lying floodplain areas are primarily associated with South Creek and its tributaries. South Creek is a 400-square kilometre creek system that has its headwaters in the Camden area and flows 70 kilometres north to the Hawkesbury River. Tributaries of South Creek within the area include Ropes Creek, Blaxland Creek, Cosgroves Creek and Badgerys Creek.

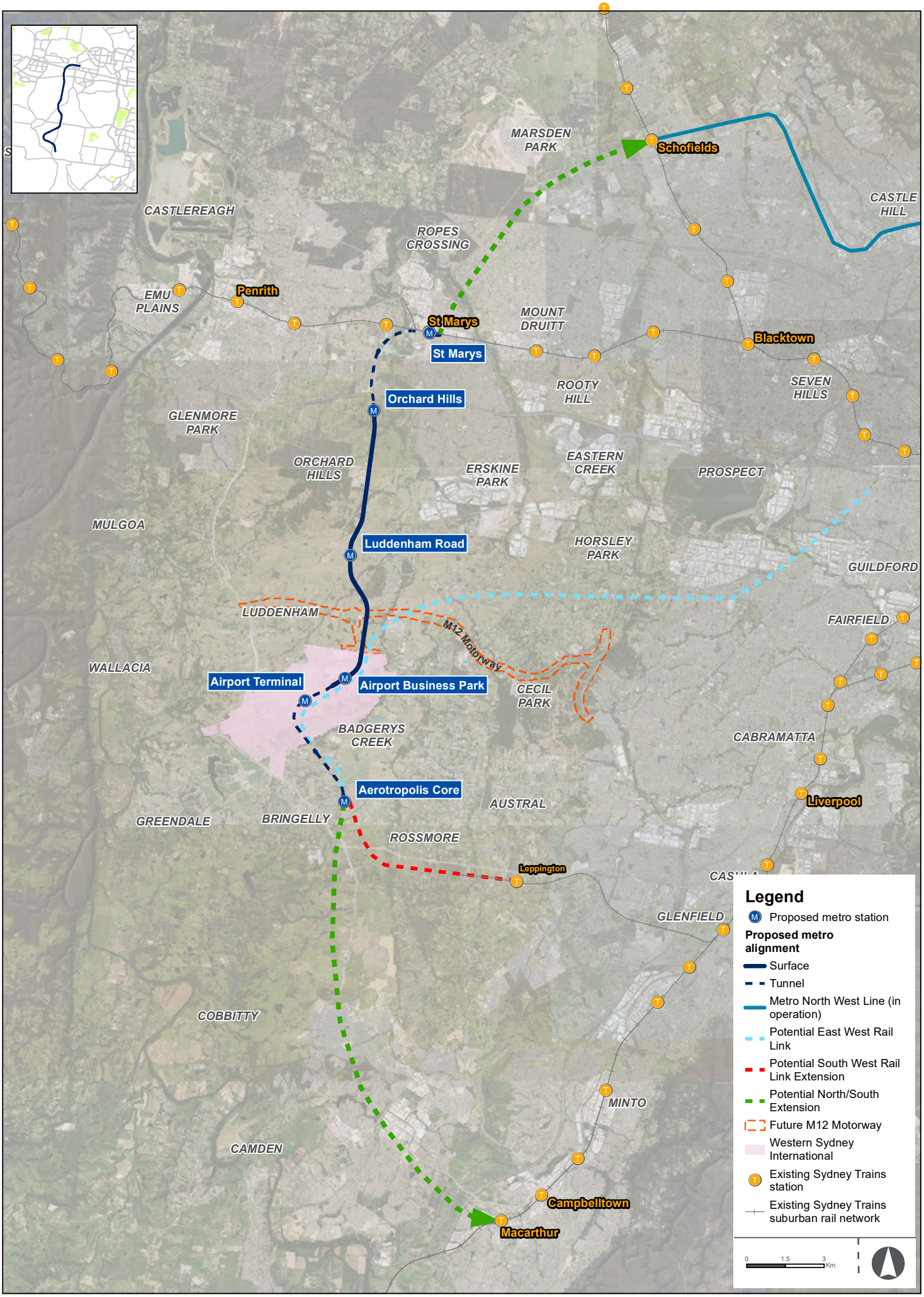
The setting of the project north of the M4 Western Motorway is characterised by low density residential dwellings in St Marys, Claremont Meadows, Caddens and Kingswood, with some medium density residential development around the edges of St Marys Town Centre (including south of the Great Western Highway). The Greater Penrith health and education precinct contains wide open spaces between commercial buildings, particularly at Western Sydney University's Penrith campus (at Kingswood and Werrington), Nepean College of TAFE Allied Health Facility and Werrington Park.

The landscape to the south of the M4 Western Motorway is a mix of rural residential development and farmland, as well as undeveloped land in the northern and eastern parts of the Defence Establishment Orchard Hills site.

Farmland in Orchard Hills, Luddenham, Badgerys Creek and Bringelly comprises mostly rural industries, rural-residential properties and agricultural land, with native vegetation generally remaining only along the banks of creeks, low-lying areas and some roadsides.

Some vulnerable and endangered vegetation listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and the *Biodiversity Conservation Act 2016* (NSW) (BC Act) is located close to the project alignment, generally associated with major creek lines including Blaxland Creek, Cosgroves Creek and Badgerys Creek, as well as some larger remnant patches within the Defence Establishment Orchard Hills, centred on Lansdowne Road and to the south of Patons Lane in Orchard Hills.

South Creek forms a green north–south corridor, particularly through St Marys, where parks and recreational facilities are located next to the creek.



Sydney Metro – Western Sydney Airport

Indicative only, subject to design development

Project context and location

Figure 3-1

Around Orchard Hills, Luddenham, Badgerys Creek and Bringelly, the surrounding area is characterised by a predominantly cleared and disturbed rural landscape with interspersed stands of native vegetation, mostly located around waterways.

Socio-cultural setting

The Western Sydney region is diverse, with higher density, urbanised areas, as well as semirural, recreational and natural areas. The region has strong heritage values, cohesive communities, natural and recreational values and connections to employment hubs in Parramatta and the Sydney central business district (CBD). The region is more culturally diverse than Greater Sydney, with relatively high proportions of people born overseas, people who speak a language other than English at home and people who do not speak English well or at all.

At the 2016 Census, there were about 50,000 people living in North St Marys, St Marys, Kingswood, Werrington, Claremont Meadows, Orchard Hills, Erskine Park, Luddenham, Kemps Creek, Badgerys Creek and Bringelly (Australian Bureau of Statistics, 2016). The majority of these residents lived in St Marys and Claremont Meadows. Projections for the Penrith and Liverpool LGAs indicate the population will increase by around 200,000 people by 2036, to a total of around 600,000 people (Department of Planning, Industry and Environment, 2016), demonstrating a predicted rapid population growth.

The suburbs intersected by the project generally have a relatively young population compared to the Greater Sydney region. In contrast, the proportion of people aged over 70 years is relatively low compared to Greater Sydney, with lower proportions of people aged 65 years and over in St Marys, Werrington, Claremont Meadows, and Luddenham.

In 2016, 93 per cent of the total labour force in Western Sydney was employed, which is similar to the 94 per cent employment level for the Greater Sydney statistical area. Journey to work data for the Penrith and Liverpool LGAs shows that around 75 per cent of commuters travel to work by car, compared to 60 per cent for the Greater Sydney statistical area (Australian Bureau of Statistics, 2017).

There are a number of local businesses in the off-airport environment including clusters of businesses or similar business types in the St Marys Town Centre, Greater Penrith health and education precinct, and suburbs of Luddenham, Badgerys Creek and Bringelly. St Marys Town Centre is one of the two main retail/commercial centres in the Penrith LGA. The Queen Street shopping strip forms the central spine of the town centre, which has a total commercial and retail floor area of around 80,000 square metres. The main catchment area for the town centre comprises the suburbs of St Marys, Colyton, Oxley Park, Claremont Meadows, Erskine Park, Ropes Crossing and St Clair.

The Greater Penrith health and education precinct includes Nepean Hospital, Western Sydney University's Penrith campus (at Kingswood and Werrington) and Nepean College of TAFE Allied Health Facility. The Sydney Medical School Nepean is at Nepean Hospital and is one of eight clinical schools of the University of Sydney.

Luddenham, Badgerys Creek and Bringelly are serviced by the main retail and commercial centres at St Marys and Penrith. There are local retail facilities at Kelvin Park and Bringelly village. Near the airport site is a shale quarry and waste management facility on Badgerys Creek Road, as well as a number of intensive agriculture facilities including chicken farms.

Future setting

Western Sydney is undergoing a transition to a more highly urbanised region which will be accelerated by the strategic planning initiatives discussed in Chapter 2 (Strategic need and justification). The off-airport environment forms part of the Western Parkland City as envisaged by the *Greater Sydney Region Plan*.

Strategic planning initiatives, along with Western Sydney International and the significant transport infrastructure investment proposed as part of the Western Sydney Infrastructure Plan (WSIP), will result in changes to the social and economic environment of Western Sydney in the future. The Western Parkland City population is forecast to increase from about one million people in 2016 to about 1.5 million by 2036 (NSW Government, 2018).

The operation of Western Sydney International in combination with strategic planning initiatives (including the *Western Sydney Aerotropolis Plan* (NSW Government, 2020)) will be the catalyst for the establishment of a range of businesses related to the airport which are likely to be located in the Aerotropolis.

There are also a number of strategic planning initiatives underway for the area north of the Aerotropolis. This includes planning underway for the Greater Penrith to Eastern Creek Growth Investigation Area, which provides the opportunity to integrate land use and transport planning. The growth area includes activity nodes such as the Penrith CBD, the Greater Penrith health and education precinct as well as the centre at St Marys.

The *Western Sydney City Deal* (NSW Government, 2018) aims to contribute up to 200,000 new jobs to the Western Parkland City by 2036, including in specialised areas such as defence and aerospace, agribusiness, health, education and tourism. The Aerotropolis will also include residential land to be developed as medium density terrace housing and low to medium rise units. Residential development would be located outside of the Australian Noise Exposure Forecast (ANEF) noise contours associated with Western Sydney International.

A number of road projects in the off-airport environment are being delivered as part of the WSIP, including the future M12 Motorway and upgrades to The Northern Road. The objective of the WSIP is to deliver major road infrastructure upgrades to support an integrated transport solution for Western Sydney and capitalise on the economic benefits from developing Western Sydney International.

Refer to Chapter 2 (Strategic need and justification) and Chapter 19 (Land use and property) for further information regarding future land use in the area around the project. The integration of the project with land use changes in the Western Parkland City is described in Section 3.2.1.

3.1.2 On-airport

Location

The on-airport site comprises approximately 1,780 hectares of land adjacent to Badgerys Creek as illustrated in Figure 1-2.

Biophysical setting

The on-airport environment is historically typified by a gently undulating landform within a highly modified landscape. Historically, the overall landscape character has been open and rural, with expansive views possible from surrounding hill tops and higher elevations to the west.

Previous land uses in this area included rural residential, agricultural, community and extractive industry land uses, however these land uses have since been removed as part of preparatory works for Western Sydney International Stage 1.

Construction of Stage 1 of Western Sydney International has commenced, and significant earthworks are underway to prepare the site for development. As a result, the landscape in parts of the airport site reflects its status as a construction site.

There is an Environmental Conservation Zone (ECZ) located along the southeast boundary of the airport site which generally corresponds to the riparian corridor for Badgerys Creek. There are additional areas of Environmental Conservation Zone in the northwest corner of the site along Oaky Creek, and to the southwest of the site. Badgerys Creek is the primary watercourse in the area, with a number of tributaries and dams located generally to the west and north of the creek. The local topography gently undulates and slopes towards Badgerys Creek.

The environment consists of remnant patches of grassy woodland and narrow corridors of riparian forest around Badgerys Creek with extensive areas of derived grassland, cropland, cleared and developed land. The condition of native vegetation is generally poor and there is moderate to severe weed infestation. However, within the ECZ there is some vulnerable and endangered vegetation listed under the EPBC Act and the BC Act.

The Badgerys Creek riparian corridor and immediate surrounds have Aboriginal heritage significance including a number of recorded Aboriginal heritage sites as discussed in Chapter 13 (Aboriginal heritage). All areas of non-Aboriginal heritage have been cleared as part of preparatory works for Western Sydney International Stage 1.

Socio-cultural setting

The airport site is located within the social and economic context of Western Sydney, as described in Section 3.1.1.

The construction and operation of Stage 1 of Western Sydney International would create thousands of jobs directly and indirectly in Greater Sydney. Approximately 84 per cent of construction jobs would be created in Western Sydney.

Future setting

Western Sydney International would be developed in stages in response to demand. Stage 1 comprises a single runway, a terminal and other relevant facilities, to accommodate approximately 10 million annual passengers as well as freight traffic. Stage 1 of Western Sydney International is planned to open in 2026.

Western Sydney International is anticipated to bring significant benefits to the people and economy of Western Sydney in relation to economic development and employment opportunities for a variety of workers. Western Sydney International is anticipated to stimulate further development in existing and future regional and local centres within and outside the on-airport environment. It is anticipated this would contribute to the provision of better quality social infrastructure such as shops, health services, and recreation and leisure services.

The operation of Stage 1 of Western Sydney International (at day of opening) is expected to create thousands of direct onsite jobs and generate additional onsite jobs within the Airport Business Park. The airport is anticipated to generate around $77 million in added value for Western Sydney and around $145 million in added value for the rest of Greater Sydney (Department of Infrastructure and Regional Development, 2016b).

3.2 Integration of the project with wider area

3.2.1 Integration with the Western Parkland City

The *Western City District Plan* (Greater Sydney Commission, 2018b) sets the vision and strategy for the Western Parkland City to have efficient and easier access to jobs and a range of housing and activities consistent with the overarching *Greater Sydney Region Plan*. The plan identifies the project as being integral to achieving the vision of the Western Parkland City and significantly contributing to the Western Economic Corridor. The plan also notes that the project would form the mass transit ‘spine’ of the Western Parkland City.

A significant benefit of the project is that it will provide long-term certainty for planning and development including:

- certainty regarding station locations and configurations to allow effective urban development around the station precincts and effective transport integration
- certainty regarding rail corridor alignment, allowing for suitable land use planning to minimise amenity impacts and community severance
- certainty regarding project vertical alignment, providing early guidance on the location of future cross-corridor transport connections.

More generally, the early confirmation of project details will allow for strategic land use planning to create appropriate land use and densities to:

- maximise transport accessibility
- optimise residential amenity
- facilitate effective employment accessibility in the Western Parkland City.

3.2.2 Integration with Western Sydney International

The Western Sydney International Stage 1 Construction Impact Zone is shown in Figure 1-2. Construction activities for the project would be carried out within and outside the Western Sydney International Stage 1 Construction Impact Zone.

Construction activities for Stage 1 of Western Sydney International are being carried out in three major phases:

- site preparation activities including clearing and earthworks. The earthworks include relocation of around 1.9 million cubic metres of topsoil and 22 million cubic metres of subsoil and rock to create a level site
- aviation infrastructure activities such as construction of the runway, taxiways, apron areas, internal road network, the terminal complex, air traffic control tower, freight, cargo and maintenance facilities and a fuel farm
- site commissioning activities at the completion of the aviation infrastructure activities, involving testing and commissioning of all facilities in readiness for the operation of the airport.

Site preparation activities including clearing and earthworks for Western Sydney International would generally be completed or almost completed when construction activities for the project commence in 2021. To the extent required, all vegetation would be removed from the Western Sydney International Stage 1 Construction Impact Zone.

Construction activities for the project would primarily overlap with construction of aviation infrastructure at Western Sydney International. Construction of the project within the Western Sydney International Stage 1 Construction Impact Zone would therefore commence in the context of a cleared and level site during the construction of permanent aviation infrastructure.

Outside the Western Sydney International Stage 1 Construction Impact Zone, the land would be cleared of buildings as part of the airport development prior to construction of the project; however, existing road infrastructure and vegetation would remain.

Construction planning for the project has involved consultation with Western Sydney Airport to avoid construction conflicts where possible and to minimise cumulative construction impacts. Consultation would be ongoing through to the project's detailed design and construction phases.

Refer to Chapter 8 (Project description - construction) for a detailed construction program for all components of the project.

Once construction of Western Sydney International Stage 1 is completed, the environment would be characterised by permanent airport infrastructure including a runway, taxiways, car parking and buildings for terminal support and business development.

The layout of permanent airport infrastructure has been considered in the ongoing design development of the project to ensure integration with the airport.

The project would provide two stations within the Western Sydney International site. One station would be provided within the Airport Business Park, and a second station located at the Airport Terminal. The stations within the Western Sydney International site would be designed to be consistent with the agreed transport corridor and design intention for the Airport Business Park and Airport Terminal areas.