

# Chapter 19

## Land use and property

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## 19 Land use and property

**This chapter considers the potential land use and property impacts (including property acquisition requirements) of constructing and operating the project and identifies mitigation measures to minimise these impacts. It also describes the future land use context as a result of strategic land use planning.**

### 19.1 Overview

The project supports the implementation of State and Commonwealth strategic land use policies for the development of Greater Sydney particularly the Western Parkland City, the Western Sydney Aerotropolis and the Western Sydney International.

The land uses across the project off-airport are consistent with the generally urbanised character of St Marys and semi-rural/agricultural nature of areas to the south covering residential, mixed use, enterprise corridor, transport infrastructure, education, public recreation and environment uses. Commonwealth land on-airport consists of Western Sydney International Stage 1 and associated land uses. Much of the land to the north and south of the airport is located within the future Western Sydney Aerotropolis, for which the *Western Sydney Aerotropolis Plan* (NSW Government, 2020) provides a strategic plan for future urban growth as part of the development of the Western Parkland City.

The design of the Project has sought to minimise the need to acquire properties, in particular north of the M4 Western Motorway and south of Western Sydney International, where the project would be located in tunnel. Property acquisition on NSW land would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW). The construction of the project requires private property acquisition and temporary leasing of public land. This includes around 28 full property acquisitions, 33 partial property acquisitions and 11 temporary leases.

The design development also included a focus on avoiding and/or minimising potential impacts on property and land use. This included minimising the extent of construction sites and the need for private property acquisition. Where possible, existing Government owned land is being used to avoid or reduce the need for private property acquisition.

Once operational, the project would support planned urban growth and be a key element of the future Western Sydney Aerotropolis by improving access to public transport infrastructure.

### 19.2 Legislative and policy context

#### 19.2.1 Off-airport

The project supports the implementation of the following strategic land use planning policies:

- *Western City District Plan* (Greater Sydney Commission, 2018b)
- Western Sydney Aerotropolis Plan
- *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* (WSA SEPP).

These strategic plans and policies provide goals and objectives for land use planning of relevance to the project area over the next 20 years, particularly regarding the establishment of future land use, accommodating planned population and employment growth and ensuring the coordination of land use and transport infrastructure. Further discussion on the planning strategies that have guided the development of the project, and that inform the future land use context of the study area, are discussed in Chapter 2 (Strategic need and justification).

In addition, the *Draft Cumberland Plain Conservation Plan* (CPCP) (Department of Planning, Industry and Environment, 2020b) has been developed to protect Western Sydney's threatened native plants and animals in the long term. The project located off-airport to the north of Western Sydney International is subject to the provisions of the Draft CPCP. The Draft CPCP covers an area of around 200,000 hectares in Western Sydney and spans areas within the Cumberland subregion. Under the Draft CPCP, environmental conservation zoning will be established by the relevant place based

Environmental Planning Instrument, such as the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP). Further information on the provisions of the CPCP is provided in Chapter 11 (Biodiversity) and Technical Paper 3 (Biodiversity Development Assessment Report).

As described in Chapter 7 (Project description – operation) and Chapter 8 (Project description – construction), the project would require property acquisition and other interests (leases, licences, easements etc) along the project alignment both temporarily during construction and permanently during operation. Most of the land to be acquired is currently freehold private land. Property acquisition is currently underway and is being managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms announced by the NSW Government, which can be viewed online at ([www.propertyacquisition.nsw.gov.au/](http://www.propertyacquisition.nsw.gov.au/)). Sydney Metro has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process. It would also be necessary to acquire subsurface stratum for the tunnel sections of the project alignment in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*, for underground rail facilities as provided for in the *Transport Administration Act 1988*.

Land at the Aerotropolis Core construction site is Commonwealth land in the process of being transferred to the State Government under the Western Sydney City Deal.

### 19.2.2 On-airport

The key legislation guiding land use for the on-airport components of the project is the *Airports Act 1996* (Cth) (Airports Act). For Western Sydney International, a transitional planning instrument, the *Western Sydney Airport – Airport Plan* (Department of Infrastructure and Regional Development, 2016a) (Airport Plan) has been approved under the Airports Act to guide development on the site until an airport master plan is developed and approved. Further discussion related to the Airports Act is provided in Chapter 4 (Planning and assessment process).

In addition to the strategic plans identified in Section 19.2.1, the project also aims to be consistent with the Airport Plan as varied (refer to Section 4.1.2).

Further discussion on the planning strategies that have guided the development of the project is provided in Chapter 2 (Strategic need and justification).

## 19.3 Assessment approach

The study area for the purposes of the land use assessment includes the construction and operational footprint of the project as well as the properties adjacent to the construction and operational footprint.

### 19.3.1 Off-airport

The assessment of potential off-airport land use impacts associated with the construction and operation of the project involved:

- describing the (current) existing environment of the study area with reference to existing land uses, property ownership and planning controls based on a review of aerial photography, land use zones specified by applicable local environmental plans, and a site visit
- reviewing key strategic land use planning policies and documents relevant to the study area, to understand the future land use context within which the project is likely to operate
- assessing the potential impacts of construction and operation on existing and likely planned land uses and properties
- identifying the land acquisition requirements for the project
- identifying mitigation and management measures to minimise the impacts and maximise the benefits of the project on property and land use.

### 19.3.2 On-airport

The assessment of potential on-airport land use impacts associated with the construction and operation of the project involved:

- describing the existing environment with reference to the Western Sydney International Stage 1 development
- assessing the potential interaction of construction and operation of the project on proposed planned land use associated with the Western Sydney International Stage 1 development
- identifying mitigation measures to avoid or manage the impacts identified and to maximise benefits of the project on property and land use.

## 19.4 Existing environment

### 19.4.1 Off-airport

For the purposes of describing off-airport land uses, the alignment has been divided into four sections, based on the existing corridor characteristics:

- St Marys to M4 Western Motorway
- Orchard Hills to Warragamba to Prospect Water Supply Pipelines
- Warragamba to Prospect Water Supply Pipelines to Elizabeth Drive
- Bringelly and Aerotropolis Core.

The current land uses across the project off-airport are consistent with the generally urbanised character of St Marys and semi-rural/agricultural nature of areas to the south covering residential, mixed use, enterprise corridor, transport infrastructure, education, public recreation and environment uses.

For the project north of the Warragamba to Prospect Water Supply Pipelines, land use planning controls are established by the *Penrith Local Environmental Plan (LEP) 2010* and development controls are provided by the *Penrith Development Control Plan 2014*. The Greater Penrith to Eastern Creek Growth Investigation Area will also support and manage land release development and urban renewal in association with investment in transport infrastructure throughout this area.

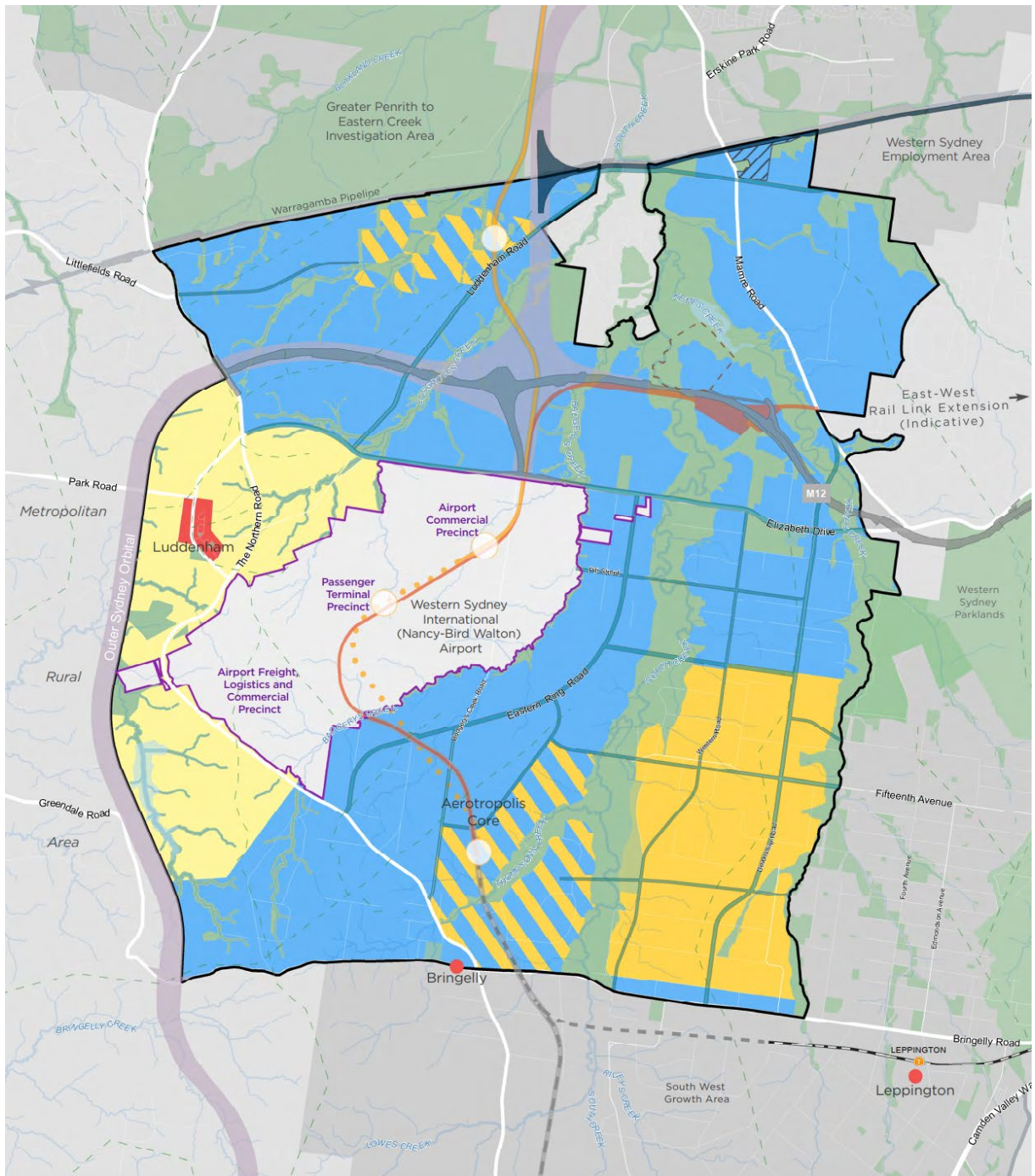
Much of the project alignment south of the Warragamba to Prospect Water Supply Pipelines is located within the future Western Sydney Aerotropolis, for which the Western Sydney Aerotropolis Plan provides a strategic plan for future urban growth as part of the development of the Western Parkland City. The Western Sydney Aerotropolis Structure Plan is shown in Figure 19-1 and shows the long-term vision for the Aerotropolis including planned land uses, environmental assets and transport infrastructure.

Statutory land use planning controls within the Western Sydney Aerotropolis in the proximity of the project alignment are established by the WSA SEPP. LEPs (and therefore LEP zoning) does not apply to the area governed by the WSA SEPP. The WSA SEPP also establishes key land use controls for the Western Sydney Aerotropolis including those relating to:

- obstacle limitation surface
- noise exposure
- public safety areas
- flood planning
- high biodiversity value areas
- heritage
- transport corridors.

The Western Sydney Aerotropolis Development Control Plan (DCP) Phase 1 will guide precinct planning within the Aerotropolis.





### Structure Plan

#### Western Sydney Aerotropolis

- Western Sydney Aerotropolis
- Western Sydney International (Nancy-Bird Walton) Airport
- Key Network Upgrade
- M12 Motorway Corridor
- Proposed Transport Corridor Potential
- Intermodal Terminal
- Upper South Creek Advanced Water Recycling Centre

- Metro Station
- Sydney Metro - Western Sydney Airport
- Sydney Metro - Western Sydney Airport Tunnel Alignment
- Proposed Future Rail Links
- Potential East-West Rail Link and Stabling
- Western Sydney Freight Line Corridor
- North South Rail Line Corridor

- Centre
- Topographic Ridgeline
- Luddenham Village
- Agribusiness
- Environment and Recreation
- Enterprise
- Urban Land
- Mixed Use



Figure 19-1 Western Sydney Aerotropolis Plan – Structure Plan (NSW Government, 2020)

### **St Marys to M4 Western Motorway**

St Marys Town Centre is one of the two main retail/commercial centres in the Penrith local government area (LGA). The town centre is surrounded primarily by residential, education and open space and recreation areas adjacent to South Creek in the west. A mix of low to medium density, multi-unit residential developments are located in the vicinity of the existing St Marys Station and to the east of the town centre.

Outside the town centre, land uses transition to a more residential urban setting around the suburbs of Werrington, Claremont Meadows and Caddens. Werrington comprises a mix of educational, low density residential, plus industrial and recreation uses interspersed with vacant rural land.

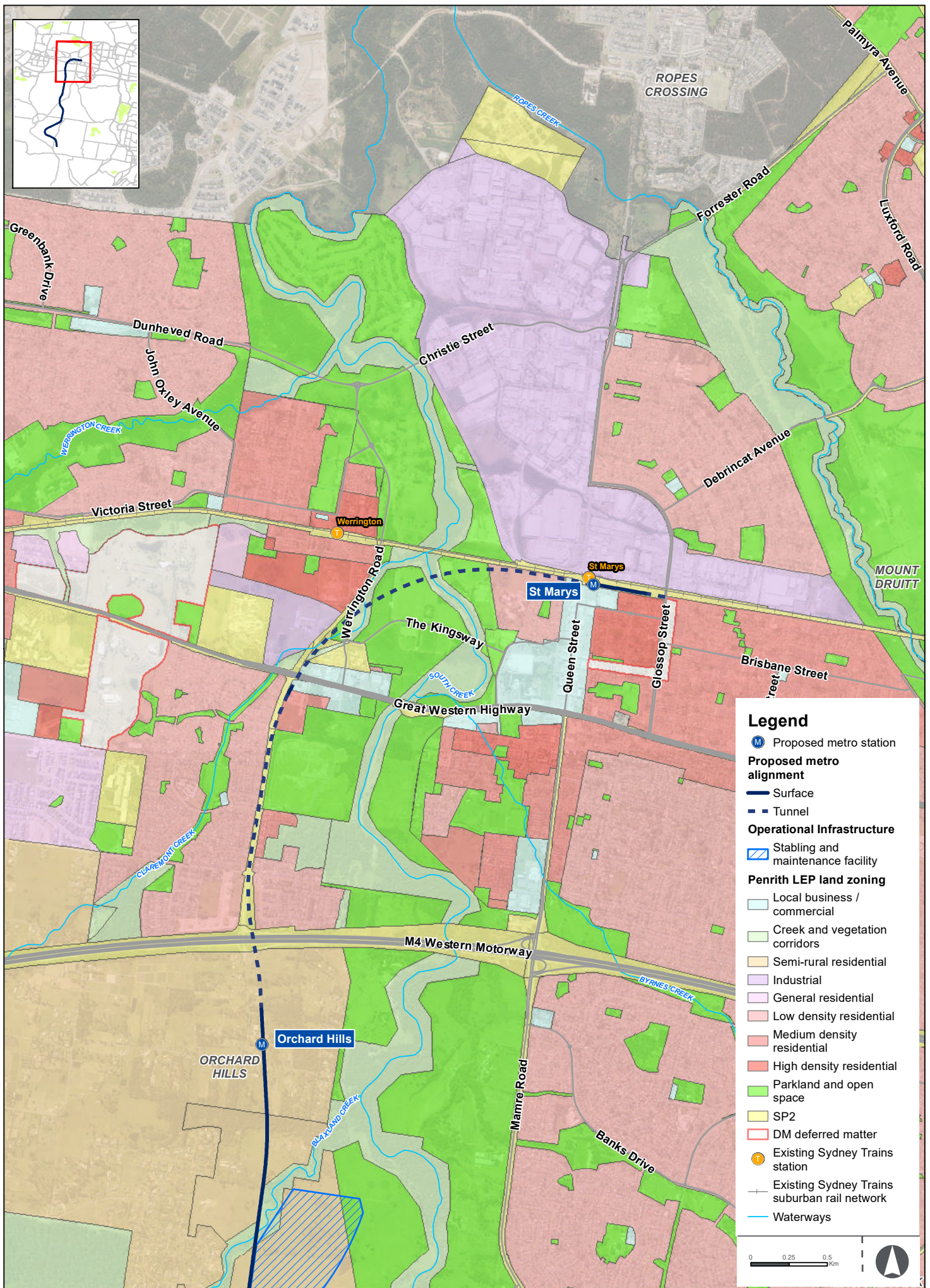
Patches of bushland and open space are also interspersed with some smaller rural land uses. The former Gipps Street landfill site is located between the Great Western Highway and the M4 Western Motorway.

The Penrith LEP defines the land use zoning for this section of the alignment, and currently applies to existing and future development. The land zoning identified between St Marys and the M4 Western Motorway is shown in Figure 19-2.

The vision outlined in the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018a) and Western City District Plan for the Western Parkland City is being realised through a number of strategic planning initiatives including the development of the Greater Penrith to Eastern Creek Growth Investigation Area, discussed further in Chapter 2 (Strategic need and justification). The Greater Penrith to Eastern Creek Growth Investigation Area includes St Marys, Orchard Hills, Werrington, Claremont Meadows and Caddens. The NSW Government is currently planning to provide for a range of new housing integrated with new infrastructure such as schools, health care and transport in this area.

St Marys is identified as a strategic centre in the Western City District Plan with the project creating an opportunity for a western economic corridor and unlocking development opportunities for urban renewal and housing diversity. Penrith City Council has also identified St Marys to be one of the two core centres within the Penrith LGA in the Penrith Local Strategic Planning Statement (Penrith City Council, 2020). A planning priority of the Penrith Local Strategic Planning Statement is to enhance and grow Penrith's 'economic triangle', which will be a key area of employment for Penrith.





Land zoning - St Marys to M4 Western Motorway (Penrith LEP 2010)

Figure 19-2

Indicative only, subject to design development



### **Orchard Hills to Warragamba to Prospect Water Supply Pipelines**

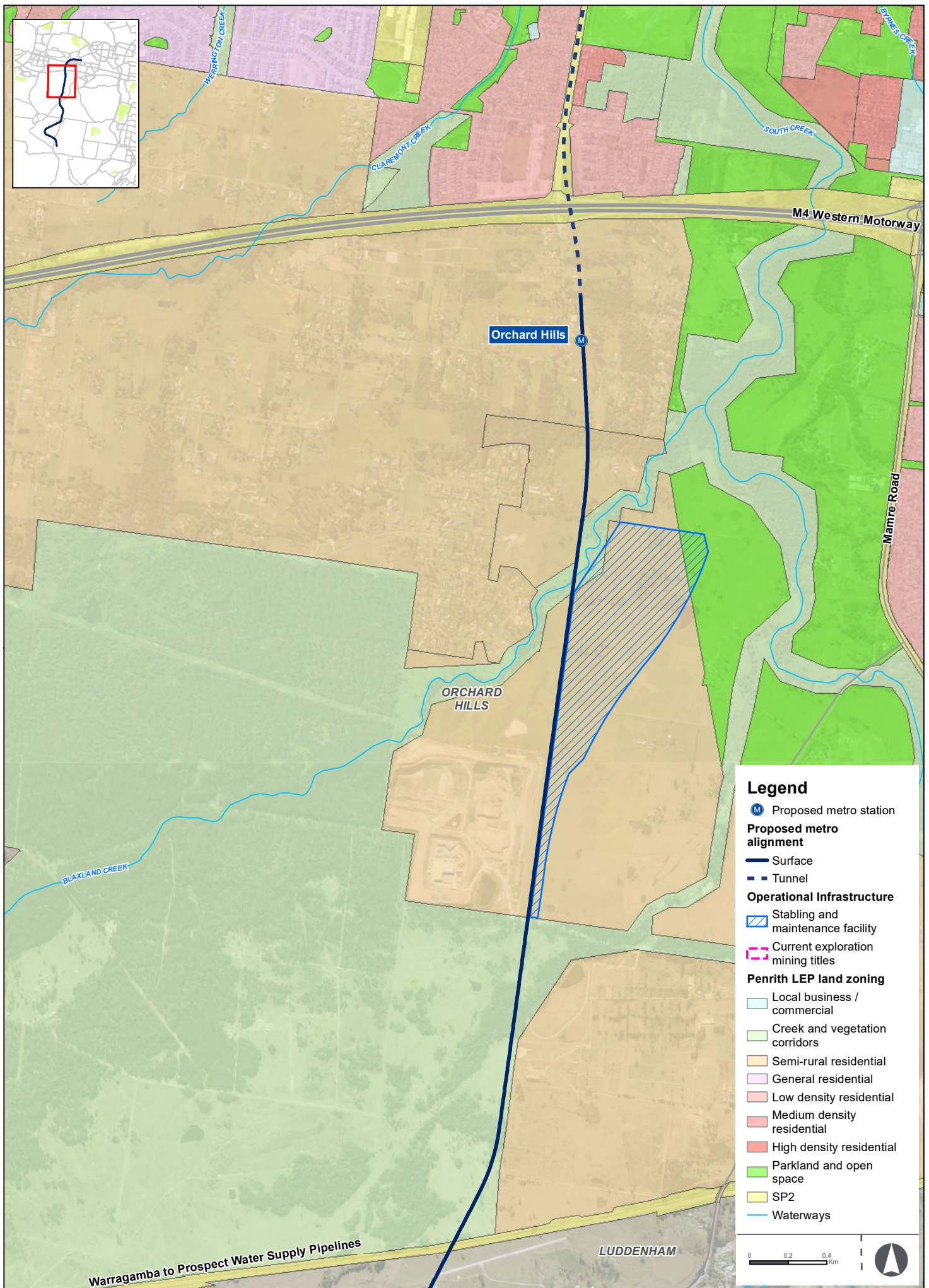
Areas of Orchard Hills north of Blaxland Creek comprise semi-rural residential properties with some small scale agricultural land uses and patches of bushland present, in particular around South Creek and Blaxland Creek.

South of Blaxland Creek, existing land uses transition into generally rural uses combined with rural-residential properties, large scale horticultural uses and a waste management facility on Patons Lane at a former quarry site. The rural land uses are traversed by a number of infrastructure elements including the Warragamba to Prospect Water Supply Pipelines, a series of high voltage powerline corridors and Luddenham Road.

Orchard Hills includes Defence Establishment Orchard Hills, which is owned by the Department of Defence (Commonwealth land) and is primarily used for munitions storage, maintenance and testing. The site is about 1,650 hectares in size and is bounded by The Northern Road to the west and the Warragamba to Prospect Water Supply Pipelines to the south.

The Penrith LEP provides planning controls to promote Orchard Hills as a rural landscape buffer area. The land zoning identified between Orchard Hills and Warragamba to Prospect Water Supply Pipelines is shown in Figure 19-3.

As with the area north of the M4 Western Motorway, Orchard Hills is identified as part of the Greater Penrith to Eastern Creek Growth Investigation Area. Detailed planning for future land uses within Orchard Hills is still underway; however, it is expected that the delivery of an efficient and reliable transport network through the area such as this project would service a future residential, commercial and mixed use precinct and would help transform the area into a compact high-amenity and walkable new community.



Land zoning - Orchard Hills to Warragamba to Prospect Water Supply Pipelines (Penrith LEP 2010)

Figure 19-3

Indicative only, subject to design development

### **Warragamba to Prospect Water Supply Pipelines to Elizabeth Drive**

This area includes the suburbs of Luddenham, Badgerys Creek and Kemps Creek, located to the north and east of Western Sydney International. The land uses in this area include large rural properties with some semi-rural residential properties bordering Luddenham Road within an open, rural landscape. The area also includes a number of agricultural uses including equine and poultry facilities and market gardens. There is a waste management facility on the eastern side of Badgerys Creek.

The University of Sydney owns and operates two commercial farms in Badgerys Creek and Kemps Creek that provide agricultural teaching and learning opportunities.

Other land uses along this section of the project alignment include the Twin Creeks residential golf course estate and an existing private airfield located adjacent to the southern side of the Warragamba to Prospect Water Supply Pipelines.

A series of vegetated watercourses also run in a generally north–south direction and include South Creek, Badgerys Creek, Cosgroves Creek and Oakey Creek.

The project alignment between Warragamba to Prospect Water Supply Pipelines and Elizabeth Drive would be on land zoned as Enterprise, Mixed Use and Environmental and Recreation under the WSA SEPP as shown in Figure 19-4.

As part of the Northern Gateway Precinct of the Western Sydney Aerotropolis Plan, the area between Warragamba to Prospect Water Supply Pipelines and Elizabeth Drive is intended to transition from a semi-rural landscape to more intensive urban development (see Figure 19-5). The area around Luddenham is intended to comprise flexible employment and mixed flexible employment and urban land.

Other significant transport infrastructure is also planned as part of the Northern Gateway Precinct, including the future M12 Motorway (see Figure 19-5).

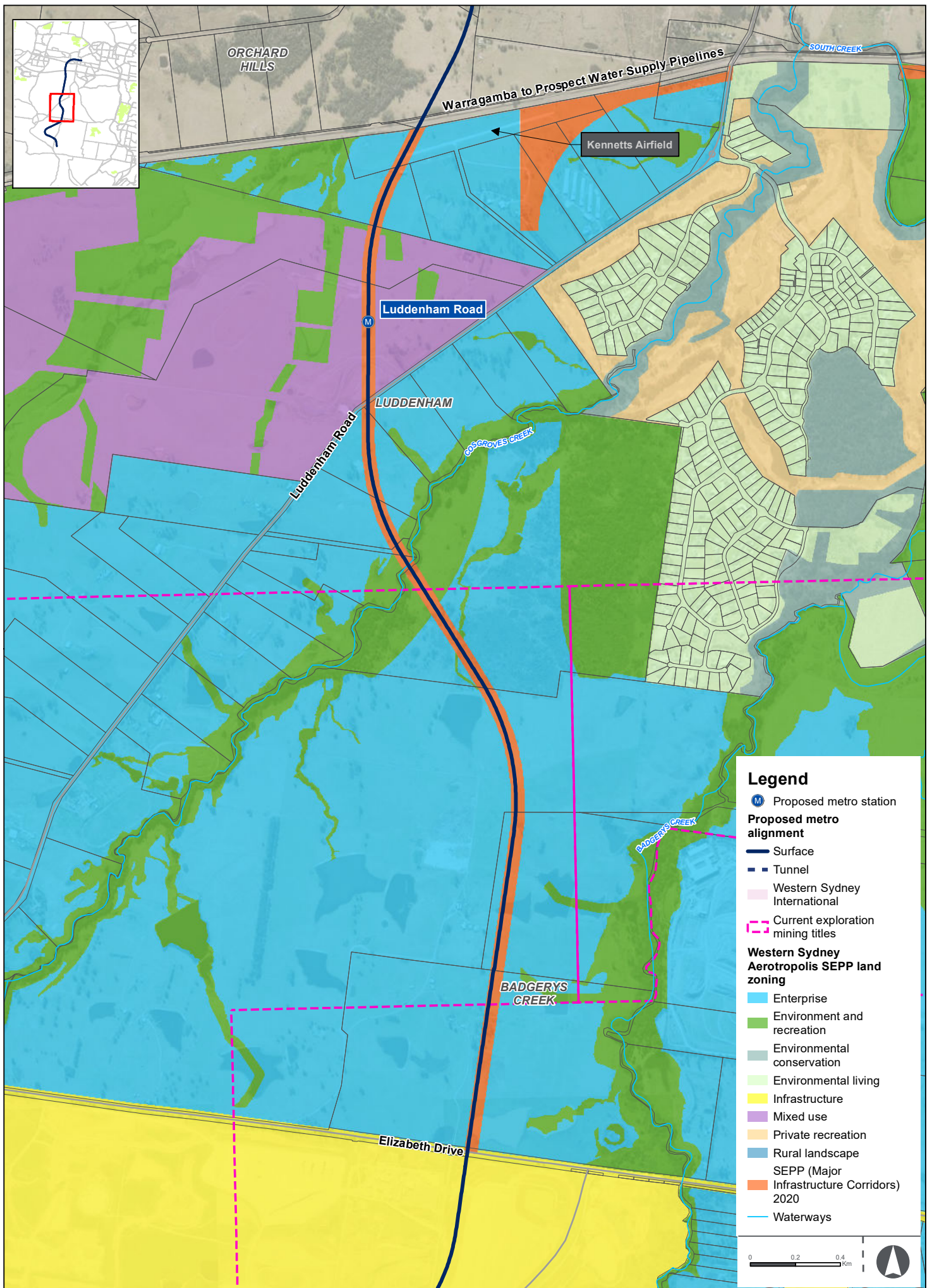
Anticipated forecasts of future aircraft noise are being developed using the Australian Noise Exposure Concept (ANEC) as part of the airspace design process in accordance with the Airport Plan to ensure that aircraft noise impacts associated with the development of Western Sydney International are taken into consideration in strategic planning and individual development proposals in areas impacted by the ANEC contours. New residential development will be located outside the ANEC 20 and above contours.

The Northern Gateway Precinct is expected to evolve as a centre focused on high technology, incorporating health, education, knowledge and research. Within the Precinct, there is a proposal for a 287 hectare Sydney Science Park identified in the Penrith Development Control Plan 2014. The Sydney Science Park would comprise employment, retail and residential uses.

The future M12 Motorway alignment traverses the project area to the north of Western Sydney International as shown in Figure 19-5. Construction is expected to conclude in 2025 prior to the opening of Western Sydney International.

The NSW Government is also investigating improvements to Elizabeth Drive between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham to increase capacity for projected growth associated with the development of Western Sydney.





Land zoning - Warragamba to Prospect Water Supply Pipelines to Elizabeth Drive (WSA SEPP 2020)

Figure 19-4

Indicative only, subject to design development

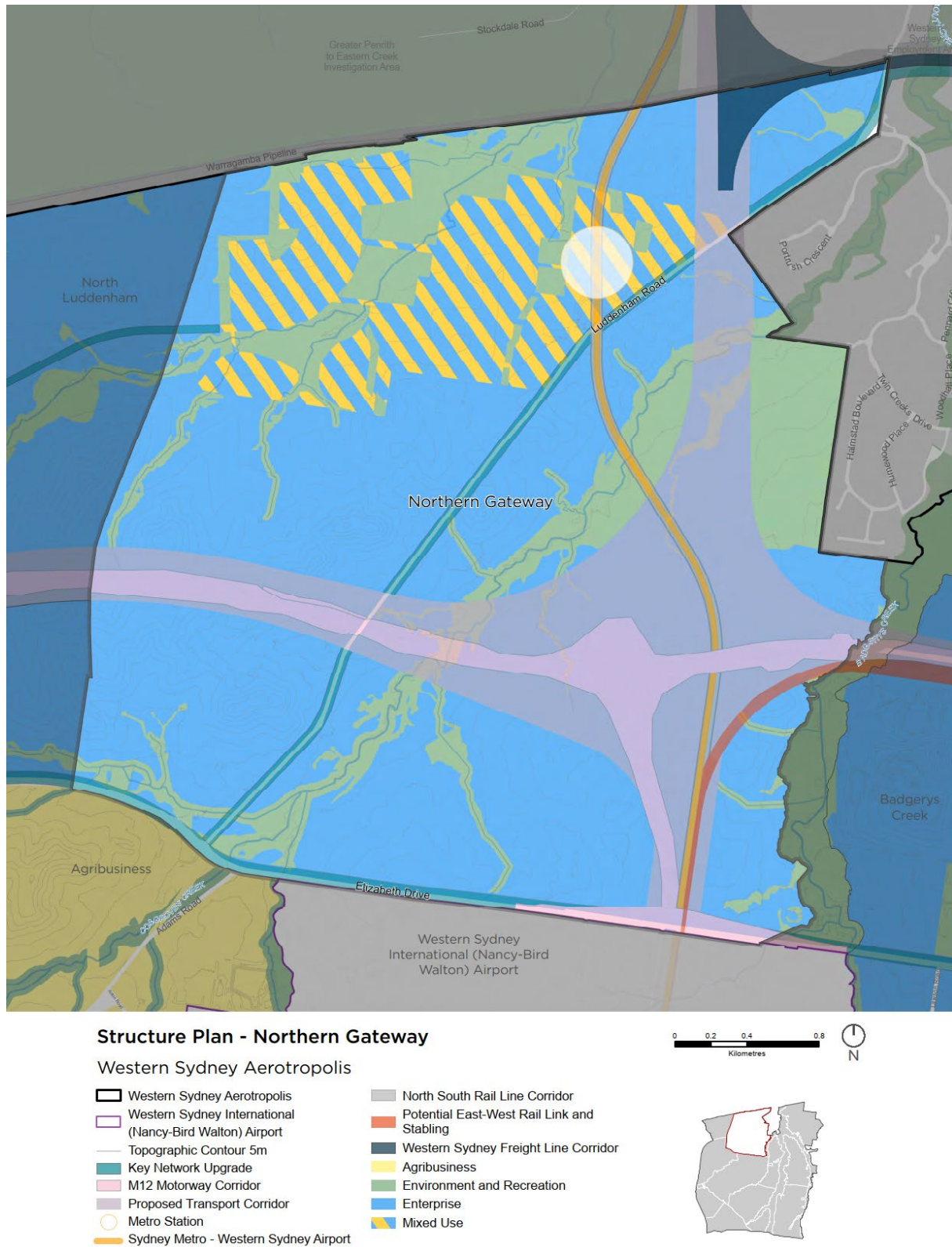


Figure 19-5 Western Sydney Aerotropolis Plan – Northern Gateway Structure Plan (NSW Government, 2020)



### **Bringelly and Aerotropolis Core**

To the south of Badgerys Creek and Western Sydney International are the suburbs of Bringelly and Rossmore. Existing land uses in this area comprise a mixture of rural industries and rural-residential properties. Land use to the west of South Creek is predominantly rural, with a rural-residential subdivision at Kelvin Park.

The former Royal Australian Air Force site (Commonwealth land in the process of being transferred to State ownership under the Western Sydney City Deal) is located towards the southern end of the project alignment.

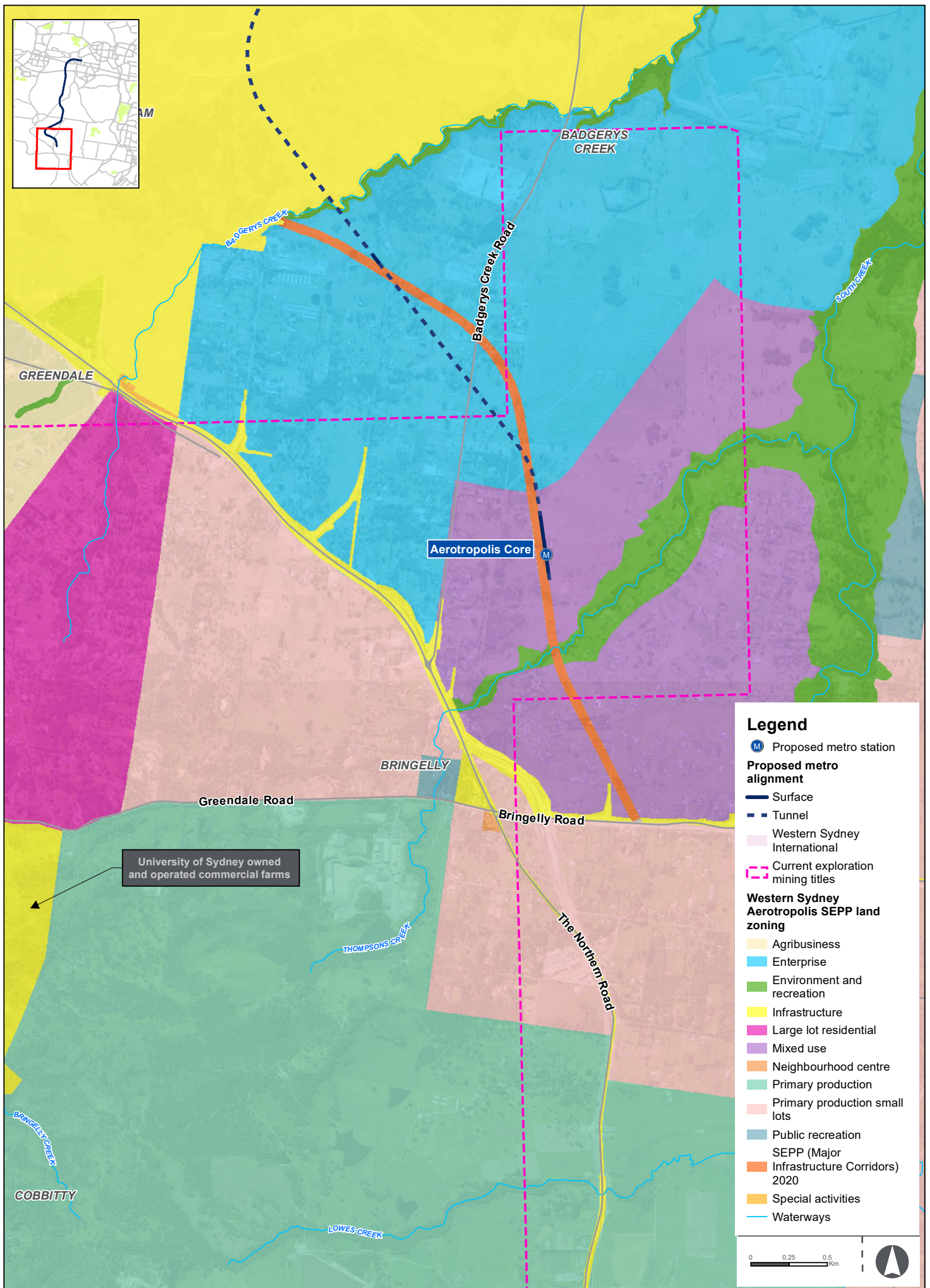
South of Western Sydney International, the project is subject to land zoning under the WSA SEPP and would be on land zoned Enterprise as shown in Figure 19-6.

The Aerotropolis Core Precinct identified within the Western Sydney Aerotropolis Plan will be centred around the new Aerotropolis Core Station and be supported by retail, creative industries, civil and cultural facilities, and public open spaces.

Within the Aerotropolis Core Precinct, land use will transition from its current semi-rural landscape to a city centre (see Figure 19-7). The Aerotropolis Core Precinct is planned to comprise land uses including advanced manufacturing, defence and aerospace, research, business and creative hubs, as well as residential to create a new city centre. Within the Western Sydney Aerotropolis Precinct, the Wianamatta–South Creek corridor is proposed to create a new ‘green spine’ network which will be integrated with local services, retail and commercial development.

The structure plan for the Aerotropolis Core Precinct also identifies an indicative proposed metro station and alignment (see Figure 19-7).





Land zoning - Bringelly and Aerotropolis Core (WSA SEPP 2020)

Figure 19-6

Indicative only, subject to design development

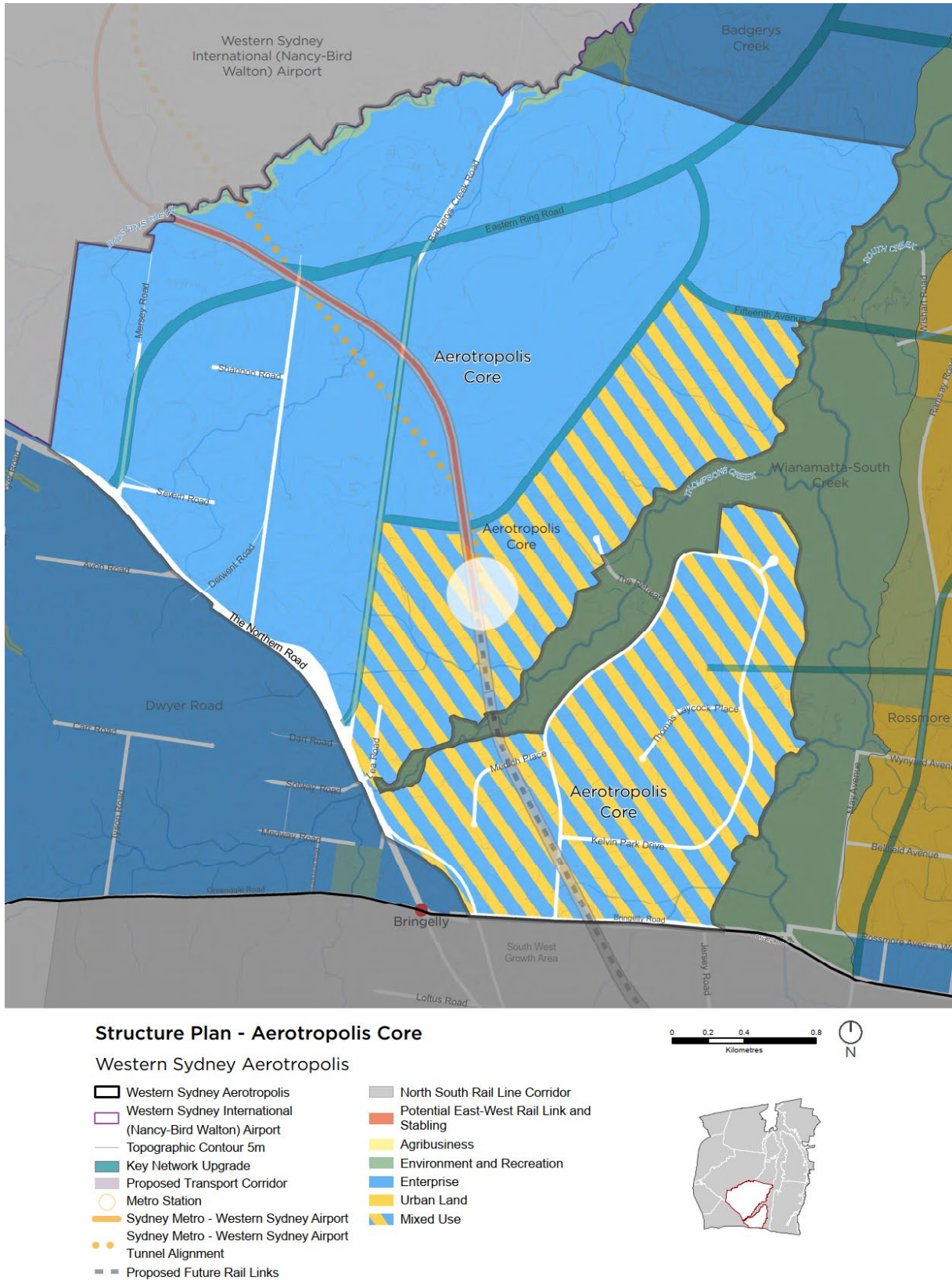


Figure 19-7 Western Sydney Aerotropolis Plan - Aerotropolis Core Structure Plan (NSW Government, 2020)



#### 19.4.2 On-airport

Commonwealth land on-airport consists of Western Sydney International Stage 1 and associated land uses, which are currently under construction.

Planning on the airport site is controlled under the Airports Act.

Western Sydney International is expected to be developed in stages to match demand and include planning for services and amenities that are easily expandable over time, providing scalable capacity for aircraft, passengers, cargo and vehicle movements. The land use plan for the Stage 1 development of the airport site as presented in the Airport Plan is shown in Figure 19-8. Currently, Stage 1 of Western Sydney International is under construction.

Further detail of the Airport Plan is provided in Section 4.1.2 of Chapter 4 (Planning and assessment process).

For the commencement of operation of the project, Stage 1 of Western Sydney International is expected to be completed consistent with the land use plan and include a single 3.7 kilometre runway located in the north western portion of the airport site, a terminal and other support facilities to provide for the anticipated operational capacity. Construction on the land outside of the Western Sydney International Stage 1 Construction Impact Zone has not yet commenced.

As demand grows over time and subject to future regulatory approvals, Western Sydney International is expected to include an expanded terminal, further supporting passenger and commercial facilities and ultimately a second runway. A rail corridor has also been preserved through the airport site in developing the airport site layout, zoned as Business Development. An Environmental Conservation Zone is also located along the south eastern boundary of the airport site (which would be retained as part of the development of the airport) on land outside of the Western Sydney International Stage 1 Construction Impact Zone. An indicative long-term land use plan for the airport site is shown in Figure 19-9.

A 'passenger transport facility' is defined in the Airport Plan as a permissible use in the following zones:

- AD2 – Terminal and Support Services
- BD1 – Business Development
- BD2 – Business Development (Reservation).



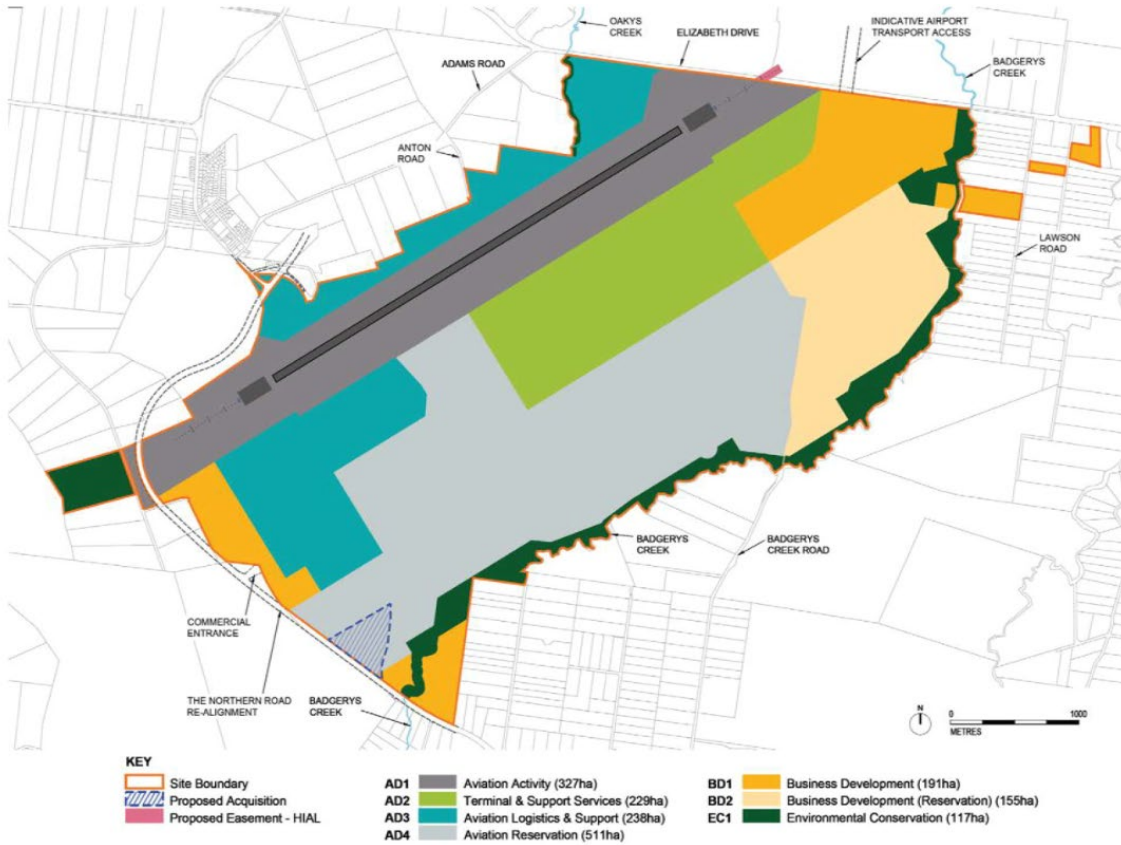


Figure 19-8 Western Sydney International land use zones (Stage 1) (Airport Plan)



Figure 19-9 Western Sydney International land use zones (Long Term) (Airport Plan)

## **19.5 Potential impacts - construction**

### **19.5.1 Off-airport**

#### **Existing land use**

During construction, the project would result in temporary direct impacts on land use from the siting of construction compounds and ancillary facilities within the construction footprint for the project. Once established as a construction zone, current land uses would cease.

The construction footprint would directly impact around 416 hectares of land, of which the predominant land uses currently consist of rural and semi-rural residential (mainly around Orchard Hills) and rural and agricultural lands. Around five hectares of land within the construction footprint (less than one per cent) comprises urban uses, which mainly includes land around the St Marys Town Centre and existing St Marys Station.

For the surface sections, the project would result in impacts on the land uses within the identified construction footprint. The land use change would be in place for the duration of the construction works at each site (noting that a majority of this area would also be permanently impacted by the built form of the operational project). The construction period would vary at each site depending on the construction timetable and methodologies employed (refer to Chapter 8 (Project description – construction)).

At St Marys, there would be a change in land use from retail properties to a metropolitan transport interchange. The construction footprint at St Marys is presented in Figure 8-1a in Chapter 8 (Project description – construction).

#### **Planned land uses**

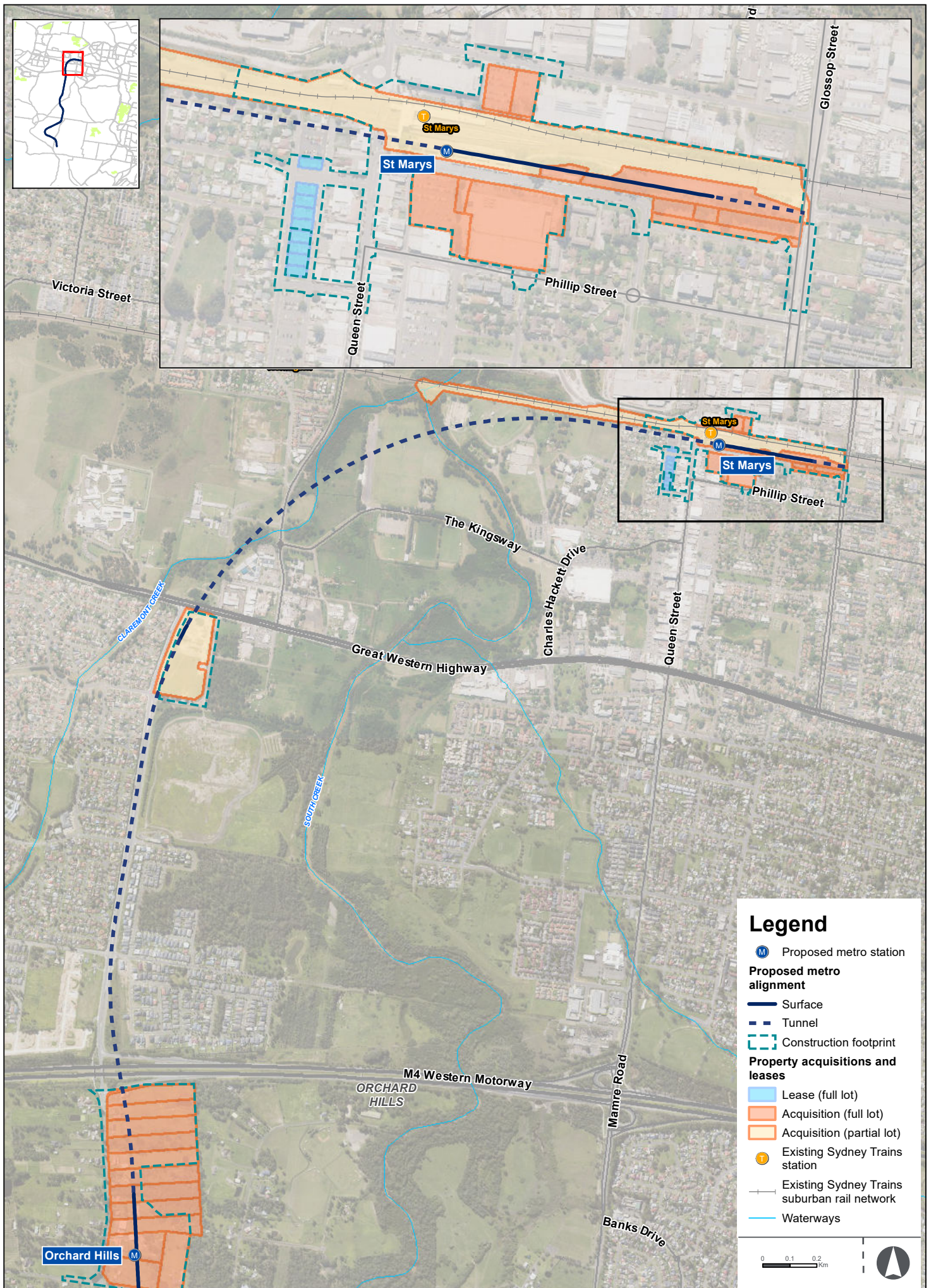
The construction phase of the project is not expected to adversely impact on known planned land uses proposed in the Western Parkland City, given that the proposed land uses are likely to emerge over the medium to long term, in part as a consequence of the project and the infrastructure it delivers.

#### **Property acquisition and leasing**

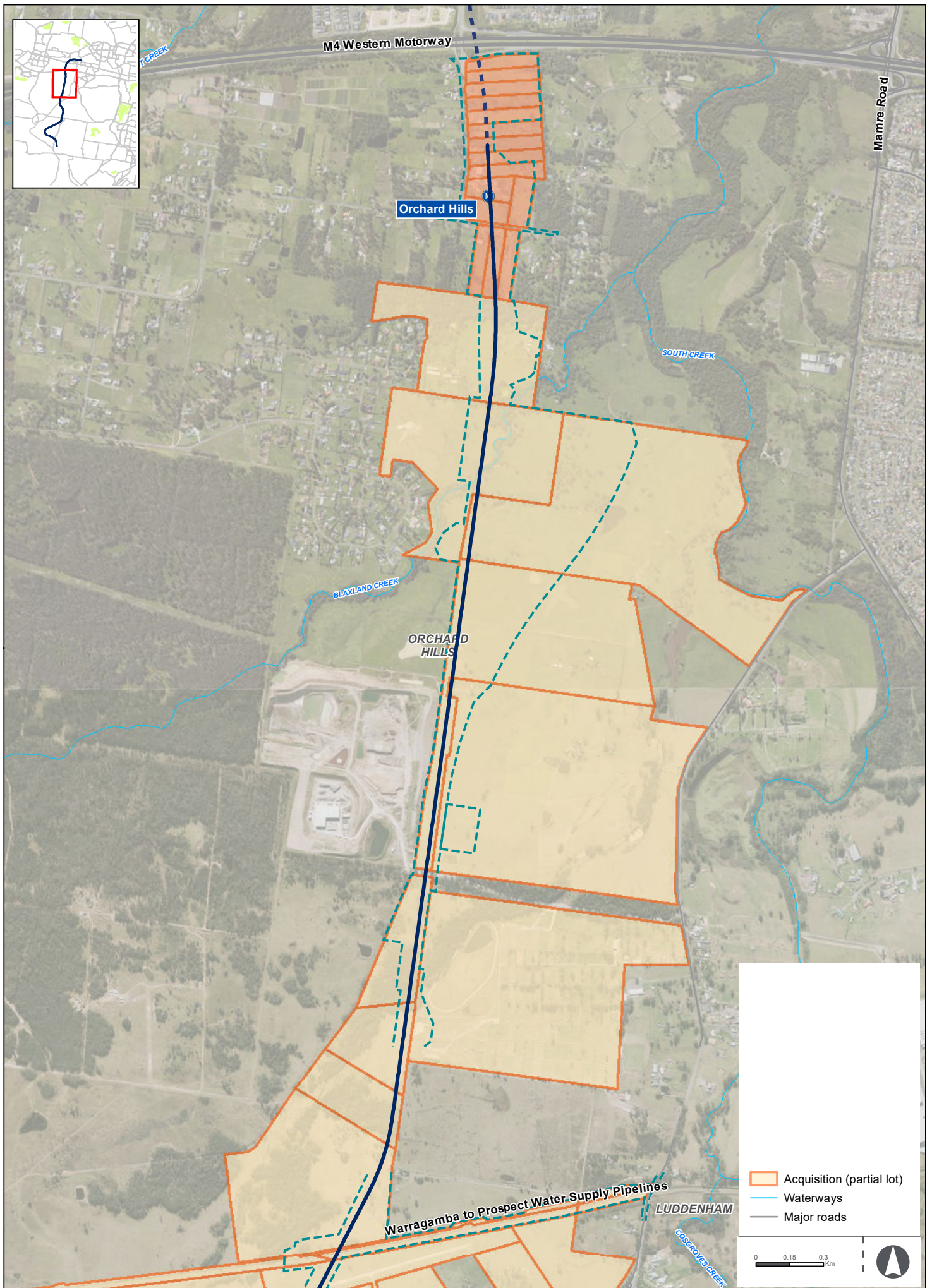
The design development included a focus on avoiding and/or minimising potential impacts on property and land use. Construction of the project would require property acquisition and temporary leasing of public land and land held in government ownership for construction sites proposed for tunnel and station excavation, service facilities and the stabling and maintenance facility. The design of the project has sought to minimise the need to acquire properties, in particular north of the M4 Western Motorway and south of Western Sydney International, where the project would be located in tunnel. This has included minimising the extent of construction that would require private property acquisition. Where possible, existing Government owned land is being used to avoid or reduce the need for private property acquisition.

Table 19-1 summarises the indicative permanent property acquisition and temporary leases that would be required to accommodate the construction and operation of the project. The proposed locations of the indicative permanent acquisitions and/or leased areas are shown in Figure 19-10. While these figures show the entire extent of lots to be acquired, in some locations acquisition of the whole property would not be required. Where properties are only partly affected by the project, partial acquisition would be proposed where appropriate. In some circumstances, Sydney Metro may give consideration to full acquisition of property that is only partially affected by the project.

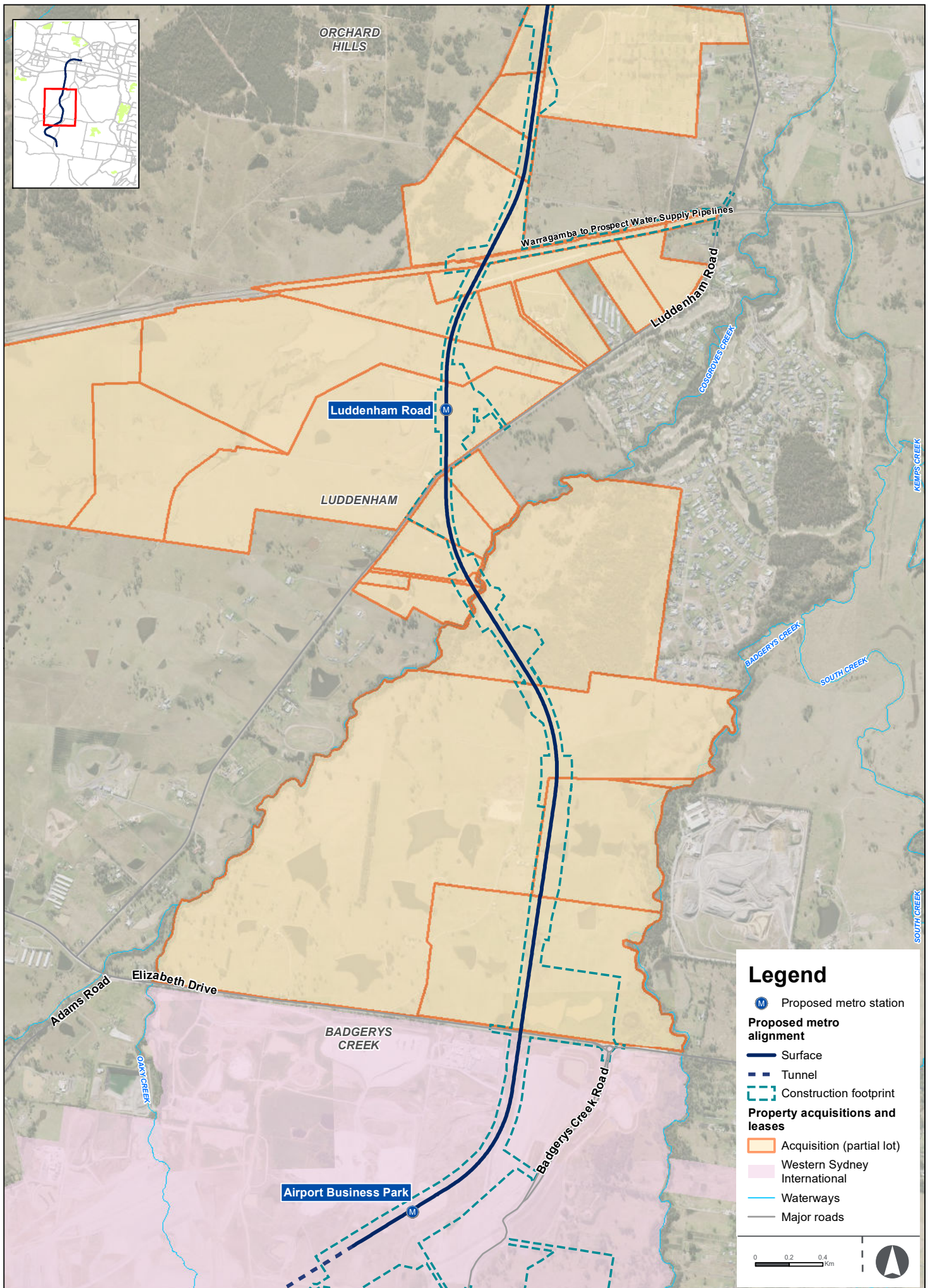




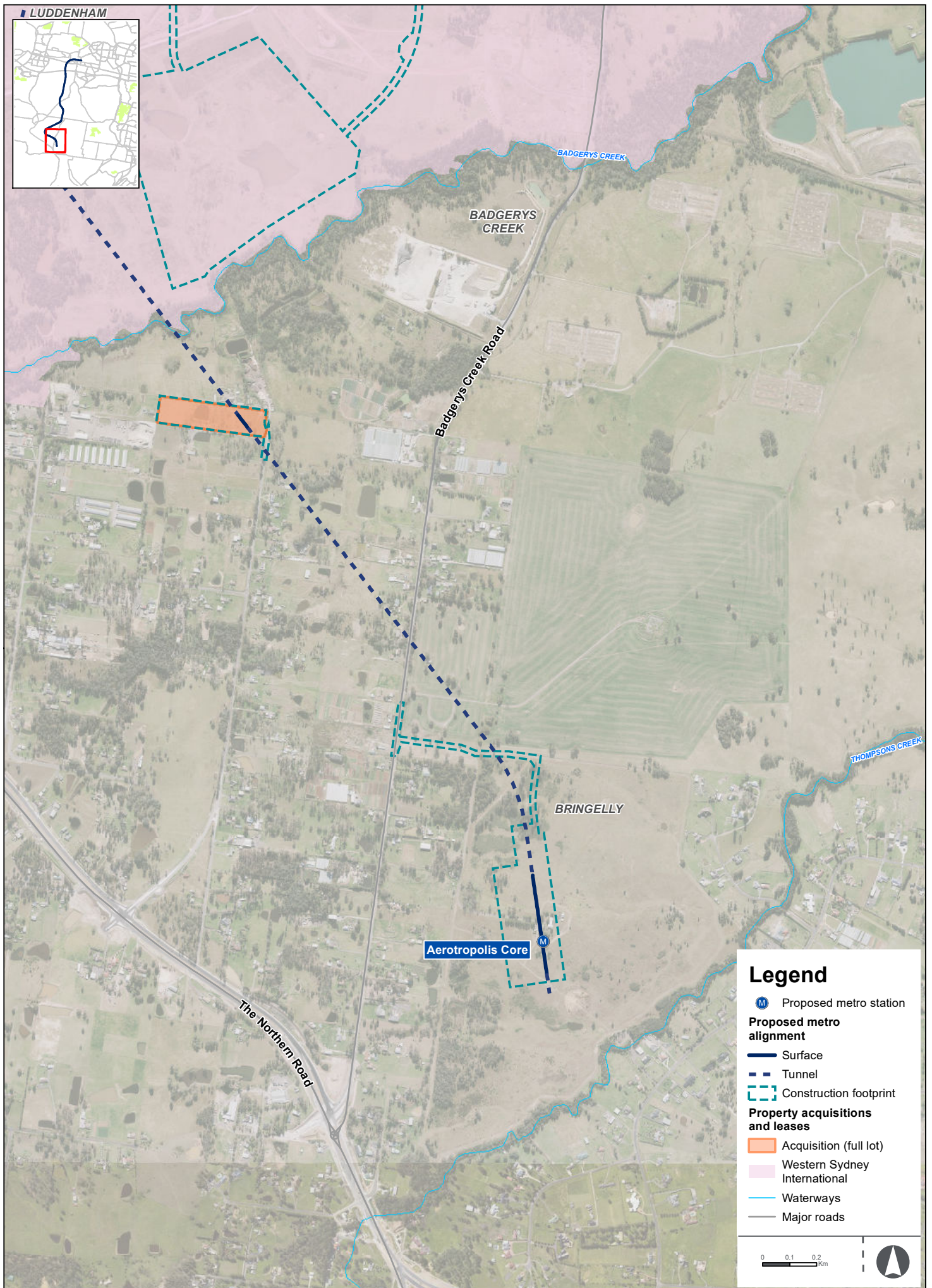














**Table 19-1 Property acquisition or leasing requirements**

Land use	Number of partial acquisitions	Number of full acquisitions	Number of leases
Enterprise corridor	17	1	-
Environmental	3	1	-
Environmental – open space	1	4	-
Industrial	-	3	2
Infrastructure	3	-	-
Mixed use	4	3	9
Rural residential	5	16	-
<b>Total</b>	<b>33</b>	<b>28</b>	<b>11</b>

The process of acquisition to transfer the identified properties to Sydney Metro has commenced and would continue as part of the ongoing delivery of the project.

Property acquisition on NSW land would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. This legislation encourages the acquisition of land in a transparent manner through agreement with property owners rather than by compulsory acquisition, wherever possible. Every effort would be made to acquire the affected properties through negotiated purchase. Such negotiated purchases nevertheless require appropriate compensation to be paid including associated legal costs, valuation fees, relocation and removal expenses, and mortgage costs.

Sydney Metro is working collaboratively with property owners to ensure that the acquisition process is fair and reasonable and has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process.

### Property access

The temporary possession of land for construction purposes (e.g. construction access and laydown areas) would have the potential to affect access to and within affected properties. Where required, alternative accesses would need to be provided.

Measures to address maintaining access to existing properties during construction are outlined in Chapter 9 (Transport).

### Severance and fragmentation

The project alignment (including the horizontal and vertical alignment) has considered potential severance of properties and land fragmentation and has avoided or minimised these impacts where possible as described in Section 6.10 of Chapter 6 (Project development and alternatives).

Where the construction of the project would result in potential severance of a roadway (such as along Lansdowne Road at Orchard Hills), temporary access tracks would be provided to maintain connectivity prior to removal of the access.

For the aboveground sections of the project, construction activities have the potential to physically divide areas through the establishment of site fencing and hoardings. This is particularly relevant for the surface sections of the project alignment from Orchard Hills to Elizabeth Drive, where it would be necessary to establish a linear construction worksite (the off-airport construction corridor, described in Section 8.7.4). In this area, agricultural operations may be potentially impacted during construction as a result of temporary changes in access to properties or farm infrastructure such as fencing near the construction footprint. Where property adjustments have the potential to impact farm infrastructure (such as fencing and dams) or local access to properties, consultation with affected property owners would be carried out prior to these works occurring.

Existing movements across the off-airport construction corridor would be restricted to allow for the construction of the project. However, given the existing land use pattern and primary travel routes, this potential impact is likely to be minimal.

In some circumstances, properties which are only partially acquired may have areas of land within their lot (outside the construction footprint) also acquired subject to negotiation with land owners to help manage access and potential associated land fragmentation impacts. However, for properties owned by businesses where portions of land may be divided by a construction site, access may be temporarily affected. This would be managed in consultation with the contractor during construction.

For underground land, it would be necessary to acquire land below the surface of properties for the construction of the tunnels. This is referred to as substratum acquisition and is undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

This subsurface layer (or substratum) would be an acquisition envelope around the tunnels, including an allowance for any rock anchors to enable safe construction and long term protection of the tunnels. Figure 19-11 illustrates how subsurface acquisition works. The project alignment is generally shallowest at stations and at the tunnel portal with depth typically increasing between stations.

Following approval of the project, development applications on land subject to substratum acquisition would be referred to Sydney Metro for concurrence so that Sydney Metro – Western Sydney Airport infrastructure is not impacted by future development activities. In most cases, subsurface acquisition does not affect the continued existing uses or intended future uses of property at the surface. Subject to Council regulations and other relevant environmental planning instruments, as well as the geotechnical profile of the relevant land, landowners would generally be able to excavate foundations for a new dwelling or for second storey additions or carry out improvements such as installing a swimming pool. Based on proposed tunnel depths there would be a minor impact with respect to limiting future development potential above Sydney Metro – Western Sydney Airport infrastructure.

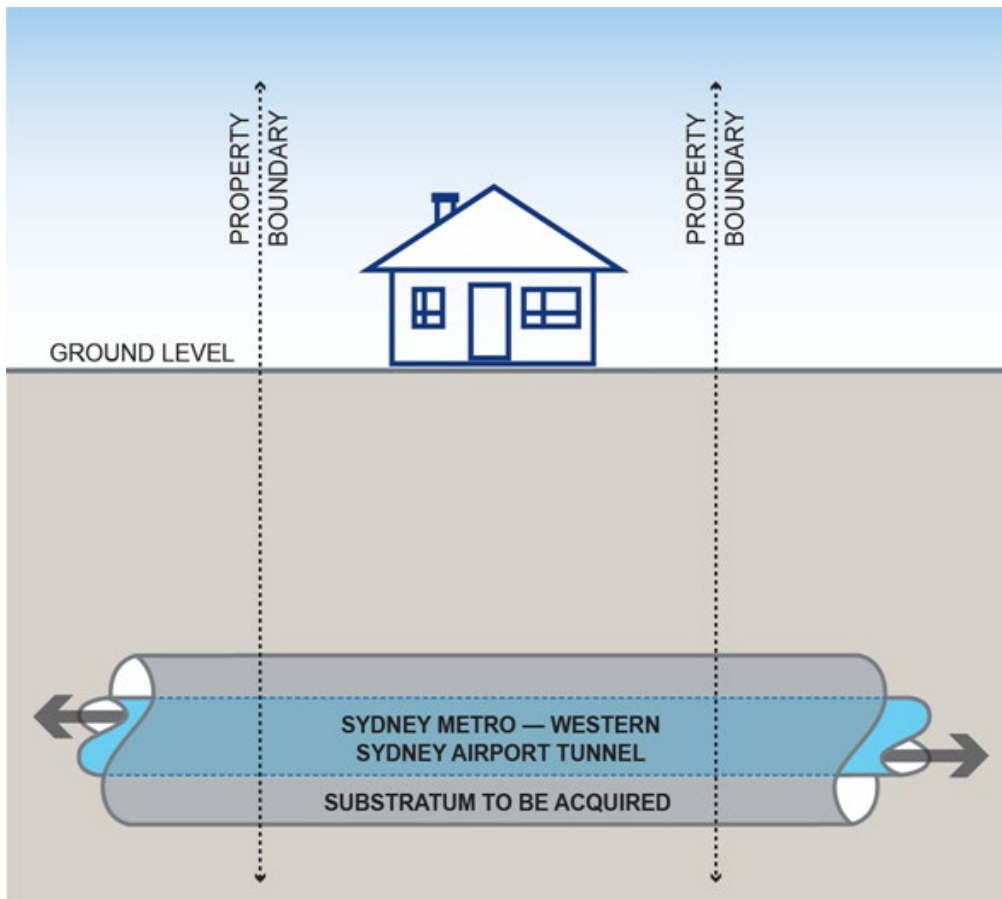


Figure 19-11 Example of substratum acquisition

## Settlement

Settlement refers to a localised lowering of the ground level due to construction activities and associated ground movement. It can affect nearby buildings and other structures. The total ground movement experienced at the surface would potentially be associated with both excavation of tunnels and stations and groundwater drawdown. This has the potential to impact the structural integrity of property and infrastructure (such as buildings and farm dams) at the surface. The potential impacts of each of these movements and mitigation measures to manage potential ground movement are outlined in Chapter 15 (Groundwater and geology).

### 19.5.2 On-airport

Construction of the project is being planned to occur at the same time as construction of Western Sydney International and it is expected that the project would be operational in time for the commencement of airport operations. Given construction planning of the project would align with construction planning of Western Sydney International, potential impacts on land use or property associated with the Western Sydney International during construction would be managed in coordination with Western Sydney Airport.

An Airport and Rail Integration Deed would be established between Sydney Metro, Transport for NSW, Western Sydney Airport and the Commonwealth, which would address integration issues including providing for a temporary licence regime to enable Sydney Metro to undertake construction of the project within the Western Sydney International site.

The construction interface, final alignment and land requirements for the project are currently being refined by Sydney Metro in consultation with Western Sydney Airport and the Commonwealth.

## 19.6 Potential impacts – operation

### 19.6.1 Off-airport

#### Existing land uses

Following construction, the project would permanently change the land uses within the operational footprint (generally at stations and surface rail alignment). At the completion of construction, Transport for NSW would review opportunities for the appropriate reuse of residual land (land required for construction purposes that is not required for operation of the project) in consultation with the relevant council.

#### Planned land uses

During operation, the project would support planned land use changes by improving access to public transport infrastructure. Planned land uses developed consistently with the Western Sydney Aerotropolis Plan and strategic planning for the Greater Penrith to Eastern Creek Growth Investigation Area would be required to respond to the project and appropriately define land use types and development form and location. Land use changes would occur largely in response to the introduction of new metro stations at St Marys, Orchard Hills, Luddenham Road and Aerotropolis Core.

A significant benefit of the project is that it would 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, early confirmation of project details would 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.

### **Severance and fragmentation**

The project alignment (including the horizontal and vertical alignment) has considered potential property severance and land fragmentation and has been optimised to avoid or minimise these impacts where possible, as discussed in Section 6.10 of Chapter 6 (Project development and alternatives).

No permanent property severance impacts are anticipated where the project would be in tunnel (between St Marys and Orchard Hills and south of Western Sydney International). Access to existing services is therefore not anticipated to be impacted by the project in these areas.

Property access would be maintained to all remaining properties along the project alignment during operation. Where necessary, alternative access arrangements would be provided to maintain access. Where this cannot be achieved, property acquisition of the affected property would be required.

During operation, there is the potential for permanent land fragmentation as a result of land severance for some properties. This may result in impacts to access and an inability to continue activities that currently occur on this land. For example, the efficiency of existing property management and/or farming operations on rural properties may be affected where the project would pass through large areas of existing rural or open space at surface level, in particular north of Elizabeth Drive. The future M12 Motorway corridor is also to be located in this area. The potential cumulative impacts of the project and the future M12 Motorway are assessed in Chapter 24 (Cumulative impacts).

The design and location of the project would not preclude the provision of any future cross-corridor connection opportunities as part of planned developments.

For sections of viaduct or other elevated structures, connectivity would be maintained underneath the viaduct sections where possible to minimise severance across land uses. The viaduct structures proposed over creek crossings would not preclude future active transport movement along these proposed open space corridors as outlined in the Western Sydney Aerotropolis Plan.

### **Exploration activities**

The project partially extends onto land subject to a current exploration licence (EL8429). This exploration licence covers an area of around 128 square kilometres, in which exploration activities for clay and shale minerals are currently carried out. The project alignment extends into less than one per cent of EL8429 in the area between the Warragamba to Prospect Water Supply Pipelines and Elizabeth Drive for a distance of around 1.8 kilometres.

EL8429 is due to expire on 20 April 2021. If the exploration licence is renewed, the land subject to exploration would generally be reduced by around half as exploration licences are generally required to be reduced by 50 per cent on each renewal (Section 114(6) of the *Mining Act 1992* (NSW)) unless special circumstances are met. Considering this, and the minor extent of the exploration licence area that would be affected by the project, it is anticipated that the project would have a negligible impact on EL8429.

Consultation would be undertaken with the exploration licence holder and/or operator during design development to manage potential access impacts to the exploration area.

#### **19.6.2 On-airport**

Western Sydney Airport has developed an airport site layout as shown in Figure 1-3 which has preserved a rail corridor.

Operation of the project is not expected to impact on the operational activities associated with Western Sydney International. The design development of Western Sydney International and the project would be coordinated.

The majority of the on-airport project alignment has been designed as in-tunnel to minimise surface disturbance within the airport site and allow for the full realisation of the Airport Plan (see Figure 19-9). The tunnelled section would continue under the Western Sydney International and associated infrastructure and Badgerys Creek to minimise impacts on the environmental values of the Environmental Conservation Zone identified by the Airport Plan.

The Airport and Rail Integration Deed established between Sydney Metro, Transport for NSW, Western Sydney Airport and the Commonwealth would represent an agreement between the parties that would establish a regime to address responsibility for the ongoing operations of the project on-airport, with a permanent easement granted for this purpose. In effect this would mean that for operations there would be a single compliance and governance regime for the project.

## 19.7 Proposed management and mitigation measures

Environmental management for the project would be undertaken through an environmental management approach as detailed in Chapter 25 (Environmental management and mitigation). The construction and operational environmental management frameworks are discussed in Sections 25.2 and 25.3 respectively.

### 19.7.1 Mitigation measures

A Construction Environmental Management Framework (CEMF) (Appendix F) describes the approach to environmental management, monitoring and reporting during construction. Specifically, it lists the requirements to be addressed by the construction contractor in developing the Construction Environmental Management Plans (CEMP), sub-plans and other supporting documentation for each specific environmental aspect.

Mitigation measures that would be implemented to address potential land use and property impacts are listed in Table 19-2.

**Table 19-2 Land use and property mitigation measures**

Ref	Mitigation measures	Applicable location(s)
<b>Construction</b>		
LU1	Areas of land leased for the purposes of construction would be reinstated at the end of the lease to at least equivalent standard in consultation with the landowner	All
LU2	Where required property adjustments have the potential to impact farm infrastructure (such as fencing or dams) or local access to properties. Consultation with affected property owners would be carried out prior to these works occurring, in order to determine reasonable, feasible and acceptable solutions with affected property owners	All

### 19.7.2 Consideration of the interaction between measures

Mitigation measures in other chapters that are relevant to the management of potential land use and property impacts include:

- Chapter 9 (Transport), specifically measures that address maintaining access to existing properties during construction
- Chapter 15 (Groundwater and geology), specifically measures that address the management of potential ground movement
- Chapter 20 (Landscape and visual), specifically measures that address the management of potential visual impacts
- Chapter 22 (Air quality), specifically measures that address management of potential air quality impacts (including dust, other emissions and odour) during construction.