

Chapter

20

Chapter 20

Land use and property

January 2020



20 Land use and property

This chapter considers the potential impacts of the project on land use and property from the construction and operation of the project.

The Secretary's environmental assessment requirements as they relate to land use and property, and where in the environmental impact statement these have been addressed, are detailed in Table 20-1.

The proposed environmental management measures relevant to land use and property are included in Section 20.5.

Table 20-1 Secretary's environmental assessment requirements – Land use and property

Secretary's requirement	Where addressed in EIS
Environmental Impact Statement	
<p>1. The EIS must include, but not necessarily be limited to, the following:</p> <ul style="list-style-type: none"> b. a description of the project and all components and activities (including ancillary components and activities) required to construct and operate it, including: <ul style="list-style-type: none"> - land use changes as a result of the proposal and the acquisition of privately owned, Council and Crown lands, and impacts to Council and Crown lands. 	<p>Impacts to properties, including property acquisitions and future land uses during construction and operation is discussed in Section 20.4.</p>
Socio-economic, Land Use and Property	
<p>1. The Proponent must assess social and economic impacts (of all phases of the project) in accordance with the current guidelines (including cumulative construction and operational impacts of the proposal and major projects in the vicinity of the project) and in consultation with relevant landowners (such as the Ports Authority of NSW and those landowners whose property is being acquired).</p>	<p>Socio economic impacts as a result of the project are presented in Section 21.4 and Section 21.5 of Chapter 21 (Socio-economics). Chapter 27 (Cumulative impacts) assesses the cumulative construction and operational impacts of the proposal and major projects in the vicinity of the project.</p>
<p>2. The Proponent must assess impacts from construction and operation on potentially affected properties, businesses, recreational users and land and water users (including potential cumulative impacts associated with use of Glebe Island and White Bay in consideration of other major developments in the precinct), including amenity impacts (including from cumulative and extended construction time frames and construction fatigue), property acquisitions/adjustments, future land uses, access, relevant statutory rights, and community severance and barrier impacts resulting from the project.</p>	<p>Impacts to properties, including property acquisitions and future land uses during construction and operation is discussed in Section 20.4. Sections 21.4 and Section 21.5 present the socio-economic impacts as a result of the project. Chapter 27 (Cumulative impacts) assesses the cumulative construction and operational impacts of the proposal and major projects in the vicinity of the project.</p>

Secretary's requirement	Where addressed in EIS
<p>3. Where an immersed tube method (IMT) of construction is proposed for use in Sydney Harbour, the Proponent must:</p> <p>a. provide details of how reductions to current Harbour depths will be avoided;</p>	<p>The immersed tube tunnel construction methodology is presented in Chapter 6 (Construction works). Details of the alternatives considered for the immersed tube tunnel are detailed in Chapter 4 (Project development alternations).</p>
<p>b. provide details confirming the level of protection for the IMTs will be similar to or better than that of the existing Sydney Harbour Tunnel;</p>	<p>Chapter 6 (Construction work) provides details confirming the level of detail of protection for the immersed tube tunnels.</p>
<p>c. identify impacts to ship scheduling in consultation with the Harbour Master;</p>	<p>Chapter 8 (Construction traffic and transport) and Chapter 9 (Construction traffic and transport) describes the impacts related to the construction and operation of the immersed tube tunnel. Chapter 8 also specifies the consultation requirements with the Harbour Master to minimise impacts during construction.</p> <p>Section 21.4, Section 21.5 and Appendix U (Technical working paper: Socio-economic Assessment) discuss impacts to ship scheduling.</p>
<p>d. assess the impact to the Viva supply chain for fuel oils at Gore Cove; and</p>	<p>Chapter 8 (Construction traffic and transport) assesses the impacts related to construction activities in Sydney Harbour.</p>
<p>e. provide details of full mission simulation which takes in account, but is not necessarily limited to:</p> <ul style="list-style-type: none"> - movement and placement of the IMTs; and - identification of weather restrictions and towage requirements for the safe movement of seagoing ships to and from berths in Glebe Island, White Bay, Gore Cove and past proposed Project work areas in Glebe Island and White Bay, and Birchgrove to Waverton. 	<p>Chapter 8 (Construction traffic and transport) presents the outcomes of the simulation report which shows that movements would be feasible and would be able to be carried out safely.</p>
<p>4. The Proponent must assess potential impacts on utilities (including communications, electricity, gas, fuel and water and sewerage) and the relocation of these utilities.</p>	<p>Chapter 6 (Construction work), details utilities impacted during construction. Chapter 5 (Project description) outlines utilities and services management for the project and Appendix D (Utilities management strategy) provides a detailed description of utilities likely to be impacted and a framework for utility installations, relocations, adjustments and protection.</p>

Secretary's requirement	Where addressed in EIS
5. Where the project is predicted to impact on utilities the Proponent must undertake a utilities management strategy, identifying management options, including relocation or adjustment of the utilities.	Appendix D (Utilities management strategy) provides a detailed description of utilities likely to be impacted and a framework for utility.
6. A draft Community Consultation Framework must be prepared identifying relevant stakeholders, procedures for distributing information and receiving/responding to feedback and procedures for resolving stakeholder and community complaints during construction and operation. Key issues that must be addressed in the draft Framework include, but are not limited to: <ol style="list-style-type: none"> traffic management (including property access, pedestrian access); landscaping/urban design matters; construction activities including out of hours work; and noise and vibration mitigation and management. 	Chapter 7 (Stakeholder and community engagement) provides the content for the framework and a draft Community consultation framework is provided in Appendix E .

20.1 Legislative and policy framework

The assessment of land use and property impacts has been carried out taking into account the following legislation, policies and strategic planning documents:

- *The Native Title Act 1993* (Commonwealth) and *Aboriginal Land Rights Act 1983* (NSW) provide a framework for the protection of native title rights on certain Crown lands. There are no Crown lands subject to a native title claim within the project footprint
- *Greater Sydney Region Plan: A Metropolis of Three Cities – Connecting People* (Greater Sydney Commission, 2018a)
- *Our Greater Sydney 2056: North District Plan – Connecting Communities* (Greater Sydney Commission, 2018b)
- *Our Greater Sydney 2056: Eastern City District Plan – Connecting Communities* (Greater Sydney Commission, 2018c).

These policies and strategic planning documents are further described in Chapter 3 (Strategic justification and project need).

The following plans are also relevant to current and future land use in the project footprint:

- *Informing the Bays Precinct, Sydney Transformation Plan* (UrbanGrowth, 2015a)
- *North Sydney Centre Review* (North Sydney Council, 2015)
- *Waverton Peninsula Strategic Masterplan* (North Sydney Council, 1999)
- *Ward Street Precinct Masterplan* (North Sydney Council, 2018a)
- *St Leonards Park Landscape Masterplan* (North Sydney Council, 2018b).

The *Informing the Bays Precinct, Sydney Transformation Plan* identifies key objectives that apply to the transformation of the Bays Precinct and actions to shape the development program for the

precinct. The plan has been informed by community engagement processes carried out by the NSW Government. These include the release of the Discussion Paper: *Transforming City Living: The Bays Precinct* (UrbanGrowth, 2015b) and launch of a *Call for Great Ideas*. The Plan is further discussed in Section 20.4.2.

The *Waverton Peninsula Strategic Masterplan* sets out strategies for the development of key sites on the Waverton Peninsula for the development of public open space and for working waterfront land uses. These sites include the former Coal Loader and Caltex site and former industrial sites associated with BP (now known as Carradah Park). This Masterplan is further discussed in Section 20.4.2.

The *North Sydney Centre Review* was carried out by North Sydney Council and aims to identify and implement policies and strategies to ensure North Sydney strengthens its role as a key component of Sydney's global economic arc. The review included studies covering traffic and pedestrian management, public domain, late night trading, capacity and land use, and marketing and promotion for the North Sydney centre. The Review is further discussed in Section 20.4.2.

The *Ward Street Precinct Masterplan* sets out a strategy for redevelopment of the area located within the block bounded by Miller Street, McLaren Street, Walker Street and Berry Street in North Sydney, including Ward Street. The Masterplan focuses on balancing the delivery of commercial space with public space and community facilities, with pedestrian connections to the new Victoria Cross Metro station. The Masterplan is further discussed in Section 20.4.2.

The *St Leonards Park Landscape Masterplan* is designed to guide future upgrade works in recognition of the park's recreational and heritage values. The Masterplan includes restoration works for key heritage items within the park and the provision of new and improved recreational facilities, including active transport pathways, playground and sporting equipment. The Masterplan is further discussed in Section 20.4.2.

20.2 Assessment methodology

The assessment methodology for impacts on land use and property included the following key tasks:

- Review of key strategic planning policies and documents relevant to in and around the project footprint to identify future land uses, planning controls and developments
- Review of the local environment and identifying existing land uses and properties in and around the project footprint
- Assessing the potential impacts on properties including those that would need to be acquired to construct and operate the project
- Assessing the potential impacts on existing and likely future land uses during construction and operation of the project
- Identifying measures to avoid, minimise and manage impacts on land use and property
- Identifying potential future uses of land required for construction but not required for operation.

20.3 Existing environment

20.3.1 Overview

The project would traverse the Inner West and Lower North Shore region of metropolitan Sydney within the Inner West, North Sydney and Willoughby local government areas. A diverse range of development types and land use zones are currently located within and around the project footprint including residential, commercial, mixed uses, industrial and maritime, infrastructure and recreational open space.

The land use zones within the project footprint are defined under the following environmental planning instruments and are shown in Figure 20-1 to Figure 20-5:

- Leichhardt Local Environmental Plan 2013 (Leichhardt LEP 2013) (now part of the Inner West local government area)
- North Sydney Local Environmental Plan 2013 (North Sydney LEP 2013)
- Willoughby Local Environmental Plan 2012 (Willoughby LEP 2012)
- Sydney Regional Environmental Plan No 26 – City West (SREP 26)
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Sydney Harbour SREP).

Low density residential land uses are prominent in the suburbs of Rozelle, Balmain, Birchgrove and Waverton. Medium and high density residential land uses are generally located along the Warringah Freeway corridor in the suburbs of North Sydney, Neutral Bay, Crows Nest and Cammeray.

Commercial and other mixed land uses are located in North Sydney, particularly on the western side of the Warringah Freeway corridor, and in parts of Rozelle, including Victoria Road and Darling Street.

Industrial and maritime land uses characterise the foreshore areas of White Bay and Glebe Island in Rozelle and at Berrys Bay in Waverton. Commercial and recreational maritime activities are carried out on Sydney Harbour.

There are a number of private and public recreation areas located within the project footprint. The largest of these are located in Birchgrove (Yurulbin Park), Waverton (Balls Head), North Sydney (St Leonards Park), and Cammeray (ANZAC Park, Cammeray Park and Cammeray Golf Course). Parts of Sydney Harbour within and around the project footprint are used for recreational activities and commercial and government operations. There are several existing moorings within Snails Bay and Berrys Bay.

Social infrastructure in the vicinity of the project is discussed in more detail in Chapter 21 (Socio-economics).

20.3.2 Rozelle Interchange and surrounds

Existing land use

The approved Rozelle Interchange, forming part of the M4-M5 Link project, is to be located within parts of Rozelle, Annandale and Lilyfield on land within and adjacent to Rozelle Rail Yards. The Rozelle Rail Yards were previously used for industrial, rail and ports related activities. Site management works carried out by Transport for NSW (formerly Roads and Maritime Services) (under a separate environmental assessment and approval) has facilitated the future use of the Rozelle Rail Yards for construction and infrastructure purposes. The M4-M5 Link project will include areas of new open space within the Rozelle Rail Yards site at the completion of

construction. Redevelopment of The Rozelle Rail Yards is identified in the *Informing the Bays Precinct, Sydney Transformation Plan* as a long-term priority.

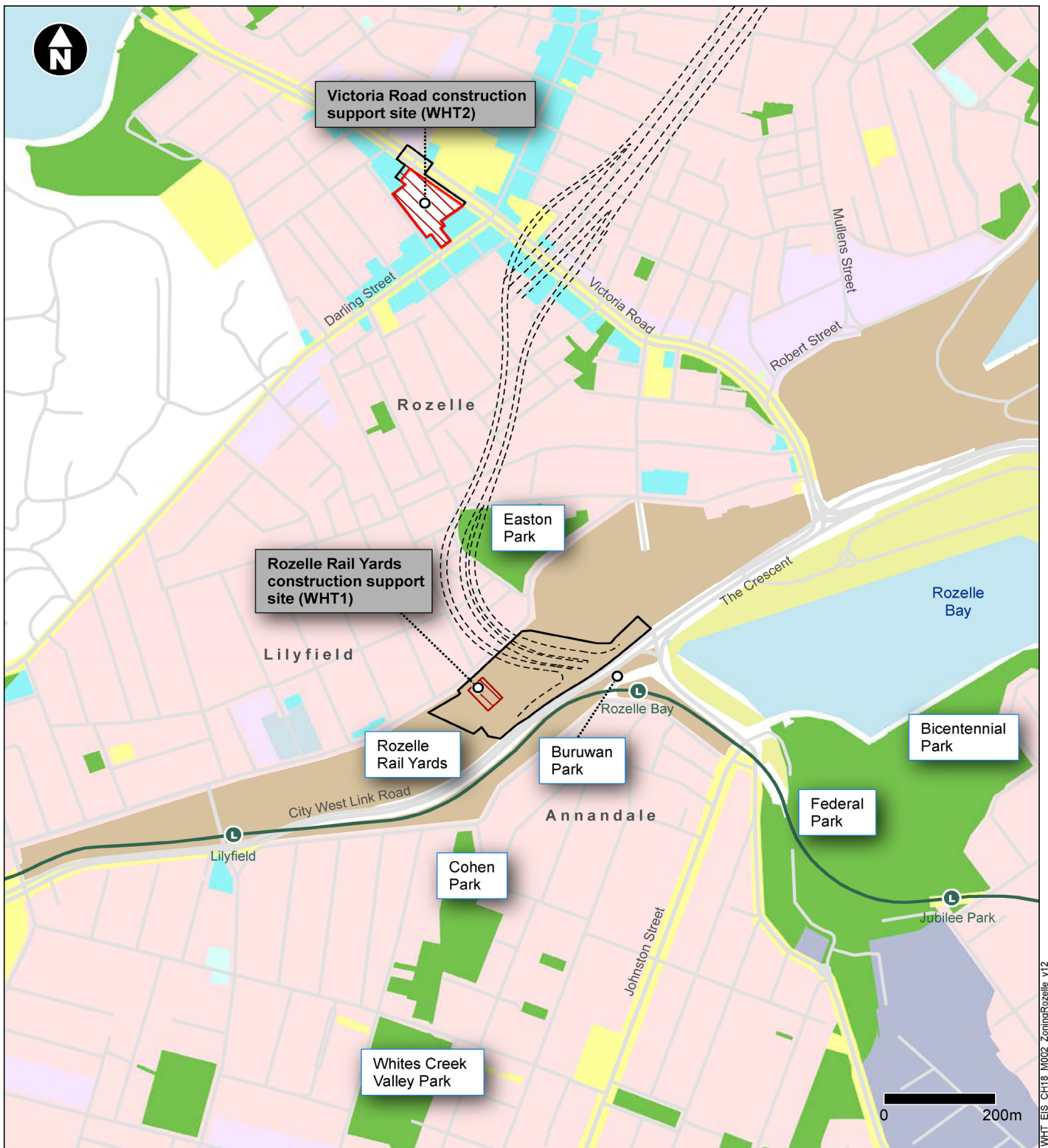
Existing land use around the Rozelle Interchange is characterised by low density residential development, generally comprising detached dwellings and townhouses. There are several small neighbourhood centres comprising of local businesses to the north of the Rozelle Rail Yards. Some businesses are also located along the foreshore to the north of The Crescent such as boat hire and hardware stores.

Public recreation areas near the construction footprint at the Rozelle Interchange include Easton Park in Rozelle, Buruwan Park (being replaced by operational road infrastructure as part of the approved M4-M5 Link (refer to Figure 20-1)), Cohen Park and Whites Creek Valley Park in Annandale, and Bicentennial Park in Glebe.

Major road and rail infrastructure in the area includes the City West Link, The Crescent, Victoria Road, Johnston Street, and the Sydney light rail with stops at Lilyfield and Rozelle Bay.

Land use zoning

Land use zones in and around the Rozelle Interchange are defined under the SREP 26 and Leichhardt LEP 2013 and are shown in Figure 20-1.



Indicative only - subject to design development

Legend

Operational features

- Western Harbour
- Tunnel (tunnel section)

Construction features

- Construction footprint
- Construction support site

— Sydney Light Rail

SREP 26

- Port and employment
- Waterfront use

Land use zoning

- B1 Neighbourhood Centre
- B2 Local Centre
- B4 Mixed Use

B7 Business Park

- IN2 Light Industrial
- R1 General Residential
- RE1 Public Recreation
- RE2 Private Recreation
- SP2 Infrastructure
- DM Deferred Matter

Figure 20-1 Land use and zoning – Rozelle Interchange and surrounds

20.3.3 Rozelle to Birchgrove

Existing land use

Existing land use in the area from Rozelle to Birchgrove is characterised by low density residential development in the suburbs of Rozelle, Balmain and Birchgrove. This area also includes the White Bay and Glebe Island foreshore, which is characterised by industrial and maritime land uses.

Key existing arterial and local road infrastructure in the area includes the City West Link and Victoria Road with Robert Street, Terry Street, Evans Street and Darling Street providing access into Balmain and Rozelle from Victoria Road.

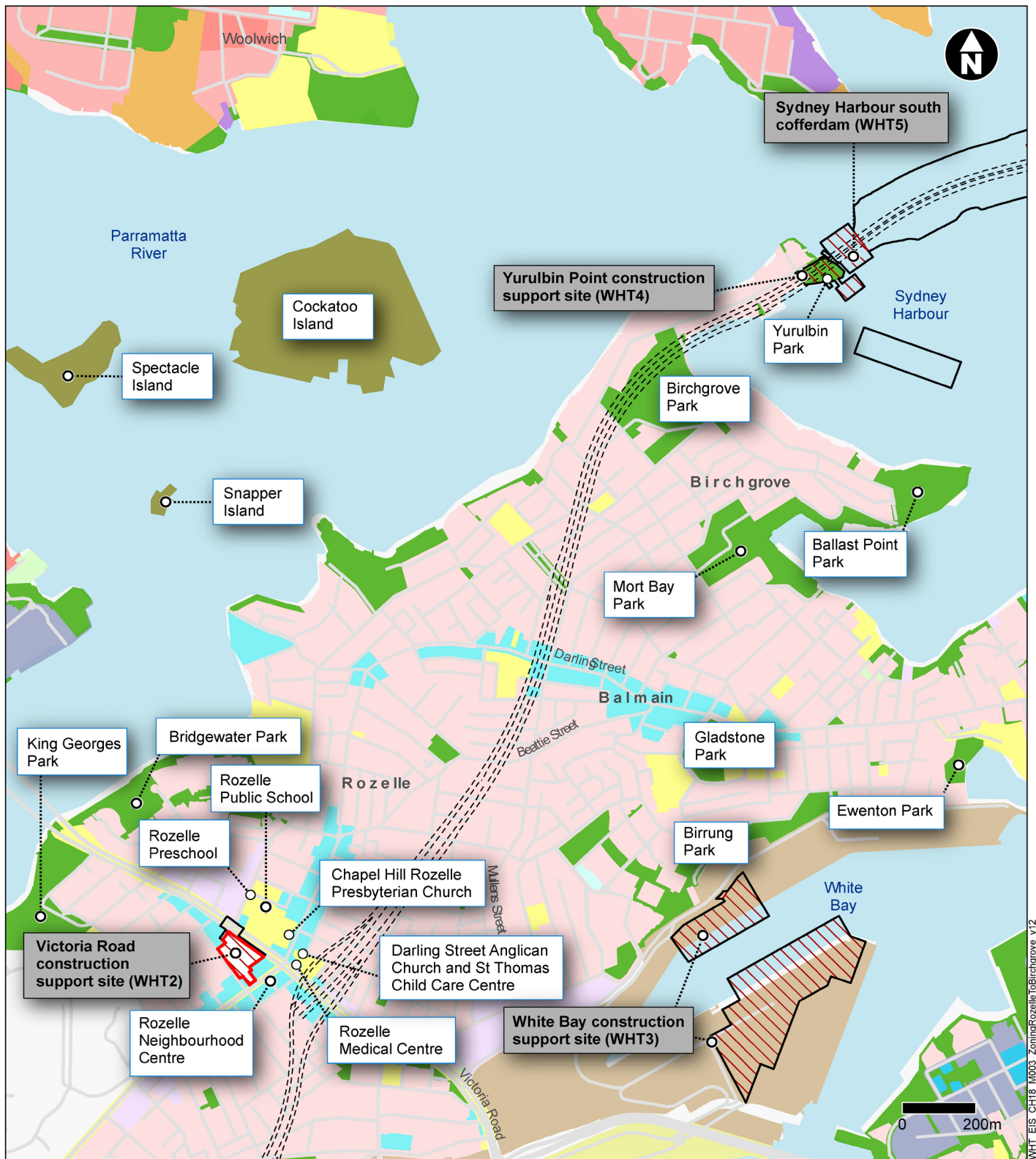
Victoria Road and Darling Street in Rozelle include a variety of local businesses and community uses such as the Rozelle Neighbourhood Centre, Rozelle Preschool, Rozelle Public School, Chapel Hill Rozelle Presbyterian Church, Darling Street Anglican Church, St Thomas Child Care Centre and Rozelle Medical Centre (refer to Figure 20-2). Proposed amendments to the Development Control Plan applicable to the site at 138 – 172 Victoria Road (the site of the former Balmain Leagues Club) were approved by the Inner West Council on 25 June 2019. Following this approval, an amended development application for the site has been submitted.

Of the public recreation areas between Rozelle and Birchgrove, Yurulbin Park in Birchgrove is the only public recreation area within the construction footprint (refer to Figure 20-2). Other public recreation areas near the construction footprint include:

- Bridgewater Park and King Georges Park in Rozelle
- Birrung Park, Gladstone Park and Ewenton Park in Balmain
- Birchgrove Park, Mort Bay Park, and Ballast Point Park in Birchgrove.

Land use zoning

Land use zones in the area from Rozelle to Birchgrove are defined under the SREP 26 and the Leichhardt LEP 2013, and are shown in Figure 20-2.



Indicative only - subject to design development

Legend

Operational features

--- Western Harbour Tunnel (tunnel section)

Construction features

▭ Construction footprint
 ▨ Construction support site

SREP 26

■ Port and employment
 ■ Public recreation
 ■ Waterfront use

Land use zoning

■ B1 Neighbourhood Centre
 ■ B2 Local Centre
 ■ B3 Commercial Core
 ■ B4 Mixed Use
 ■ E2 Environmental Conservation
 ■ IN2 Light Industrial
 ■ IN4 Working Waterfront

■ R1 General Residential
 ■ R2 Low Density Residential
 ■ R3 Medium Density Residential
 ■ RE1 Public Recreation
 ■ RE2 Private Recreation
 ■ SP2 Infrastructure
 ■ DM Deferred Matter

Figure 20-2 Land use and zoning – Rozelle to Birchgrove

20.3.4 Birchgrove to Berrys Bay

Existing land use

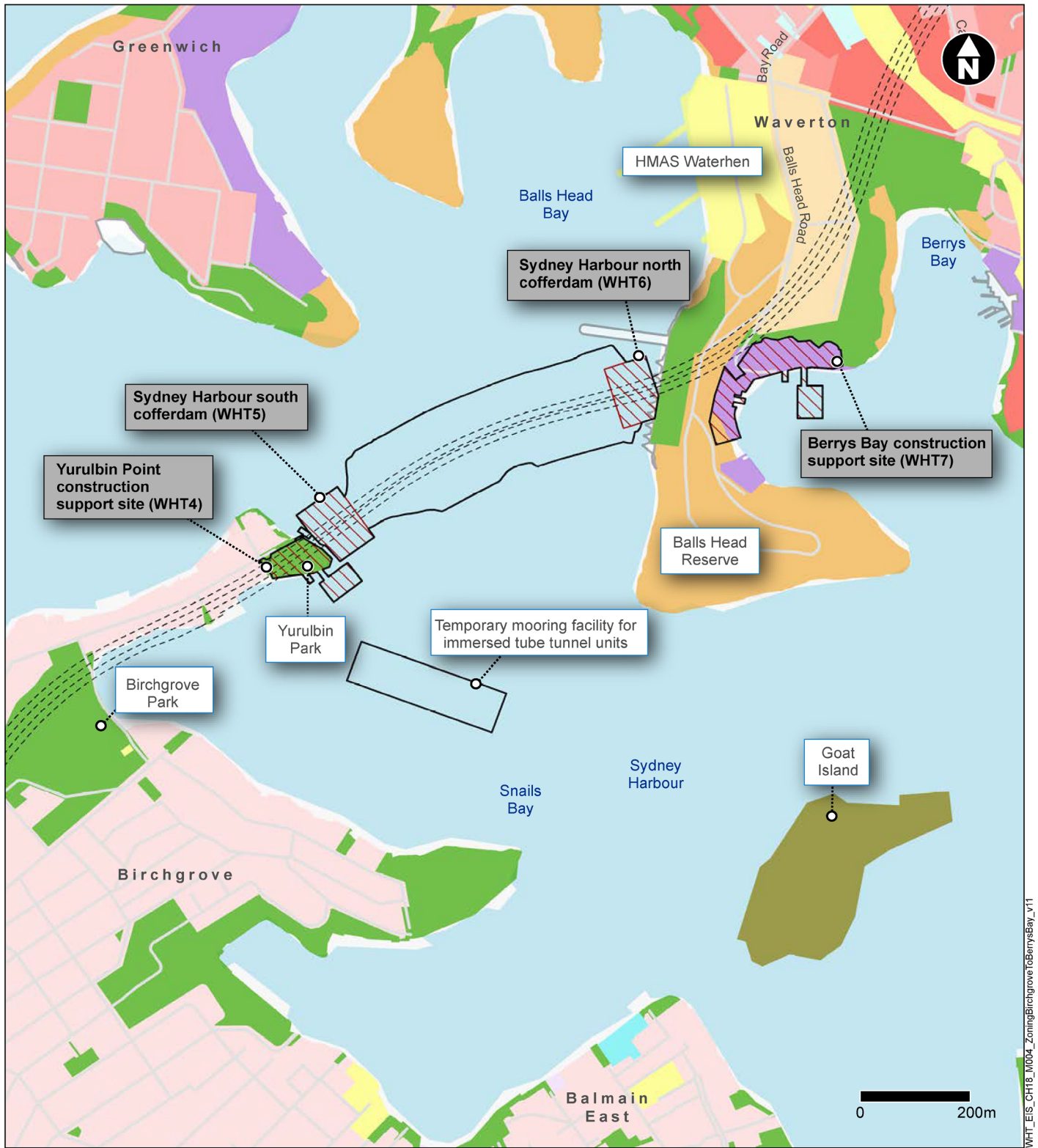
Existing land use in the area from Birchgrove to Berrys Bay within the construction footprint includes Sydney Harbour and associated foreshore land (refer to Figure 20-3).

Land uses along the foreshore at Birchgrove mostly comprise public recreation, public transport and open space, while the Berrys Bay foreshore is characterised by public recreation and industrial maritime uses. The Waverton Peninsula includes Balls Head Reserve which is an environmental conservation area. Commercial and industrial buildings and infrastructure owned by the NSW Government are located on the eastern side of Waverton Peninsula, including an existing Sydney Water asset and a number of disused buildings. The Royal Australian Naval base, HMAS Waterhen, is on the western side of Waverton Peninsula. The *Waverton Peninsula Strategic Masterplan* sets out strategies for development within this area.

Sydney Harbour is used for a range of marine activities including commercial operations, the movement of cargo, public transport and recreational fishing and boating. Snails Bay at Birchgrove has a public jetty for recreational use as well as several private jetties. There are several existing Transport for NSW moorings and dolphin berths next to and within the construction footprint in the Birchgrove to Berrys Bay area.

Land use zoning

Land use zones in the area from Birchgrove to Berrys Bay are defined under the Leichhardt LEP 2013, the North Sydney LEP 2013 and the Sydney Harbour SREP, and are shown in Figure 20-3.



Indicative only - subject to design development

Legend

Operational features

--- Western Harbour Tunnel (tunnel section)

Construction features

▭ Construction footprint
 ▨ Construction support site

SREP2005

■ National Parks
Land use zoning
 ■ B1 Neighbourhood Centre
 ■ B2 Local Centre
 ■ E2 Environmental Conservation

■ E4 Environmental Living
 ■ IN2 Light Industrial
 ■ IN4 Working Waterfront
 ■ R1 General Residential
 ■ R2 Low Density Residential
 ■ R3 Medium Density Residential

■ R4 High Density Residential
 ■ RE1 Public Recreation
 ■ RE2 Private Recreation
 ■ SP2 Infrastructure
 □ UL Unzoned Land

Figure 20-3 Land use and zoning – Birchgrove to Berrys Bay

20.3.5 Berrys Bay to the Warringah Freeway

Existing land use

Existing land use in the area from Berrys Bay to the Warringah Freeway at North Sydney includes the Waverton Peninsula on the northern side of Sydney Harbour, and the suburbs of North Sydney, Waverton and McMahons Point (refer to Figure 20-4). Low and medium density residential land uses are located in the suburbs of Waverton and McMahons Point.

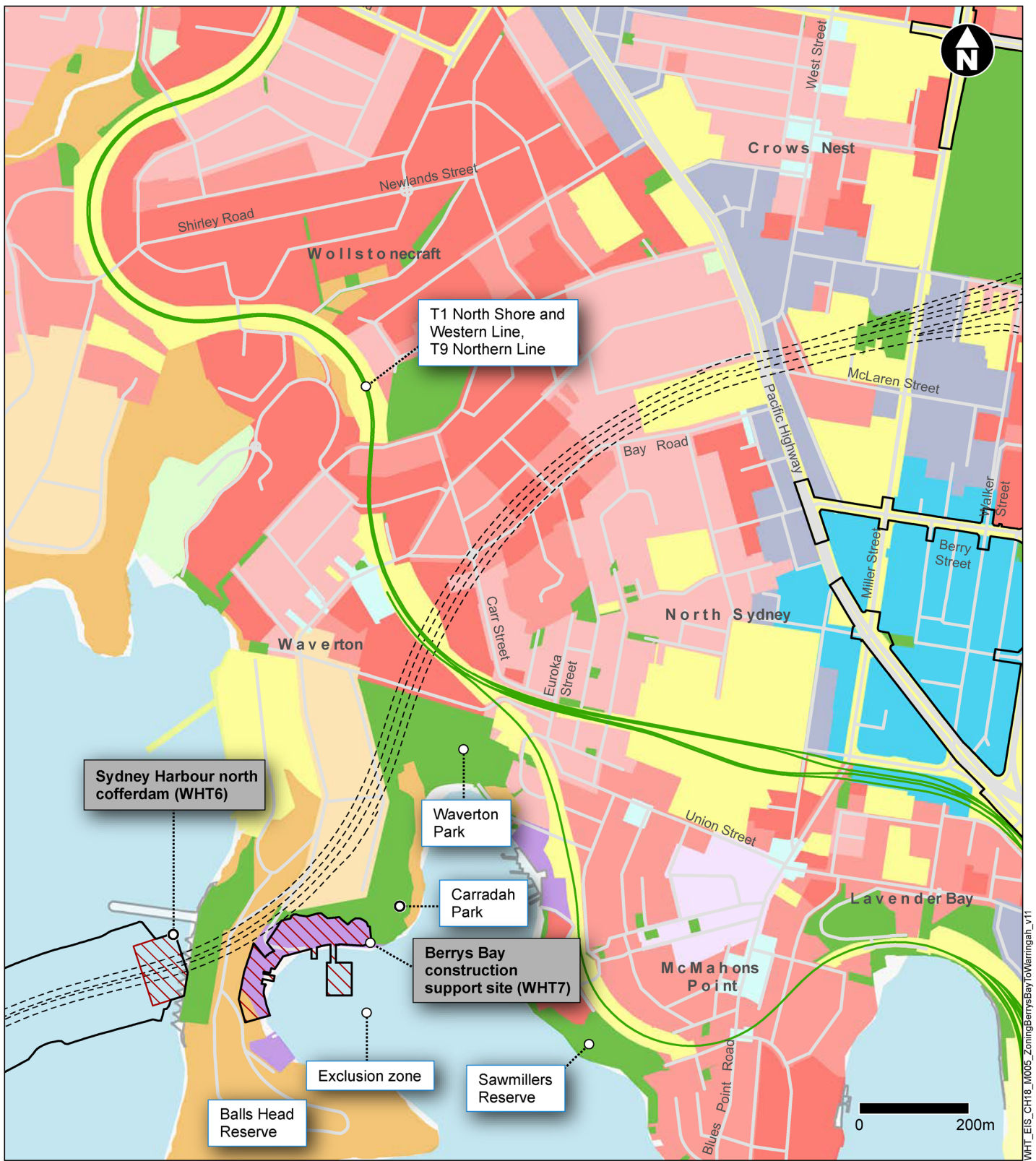
The northern portion of this area comprises the North Sydney commercial precinct which includes a range of business, retail and office uses. North Sydney also includes areas of medium and high density residential land use. The *Ward Street Precinct Masterplan* aims to balance the delivery of commercial space with public space and community facilities within the northern portion of the North Sydney commercial precinct.

Balls Head Reserve is a prominent environmental conservation and public parkland area partly located within the construction footprint. Waverton Park and Carradah Park in Waverton and Sawmillers Reserve in McMahons Point are located in the vicinity of the construction footprint. Most recently, the development of Berrys Bay was proposed by Meridien Marinas (DA 260/15) in an area leased to them by Transport for NSW to develop the Berrys Bay Maritime Precinct. The development application was rejected by the Joint Regional Planning Panel in May 2016. There are currently no development proposals for the site.

Major road and rail infrastructure located in this area includes the Pacific Highway, the Warringah Freeway and the T1 North Shore and Western and T9 Northern rail lines.

Land use zoning

Land use zones in the area between Berrys Bay and the Warringah Freeway at North Sydney are defined under the North Sydney LEP 2013 and are shown in Figure 20-4.



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Legend

Operational features

----- Western Harbour Tunnel (tunnel section)

Construction features

- Construction footprint
- Construction support site

Land use zoning

- B1 Neighbourhood Centre
- B3 Commercial Core
- B4 Mixed Use
- E2 Environmental Conservation
- E4 Environmental Living
- IN2 Light Industrial
- IN4 Working Waterfront

- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- RE1 Public Recreation
- RE2 Private Recreation
- SP1 Special Activities
- SP2 Infrastructure
- UL Unzoned Land

Figure 20-4 Land use and zoning – Berrys Bay to the Warringah Freeway

20.3.6 Warringah Freeway and surrounds

Existing land use

Existing land use in the area around the Warringah Freeway corridor between Milsons Point and Naremburn is characterised by a mix of low, medium and high density residential development, business and retail uses, neighbourhood centres and commercial uses.

The commercial centre of North Sydney is located to the west of the Warringah Freeway, and is surrounded by a range of mixed use and infrastructure land uses, including education facilities along Miller Street and Ridge Street (refer to Figure 20-5).

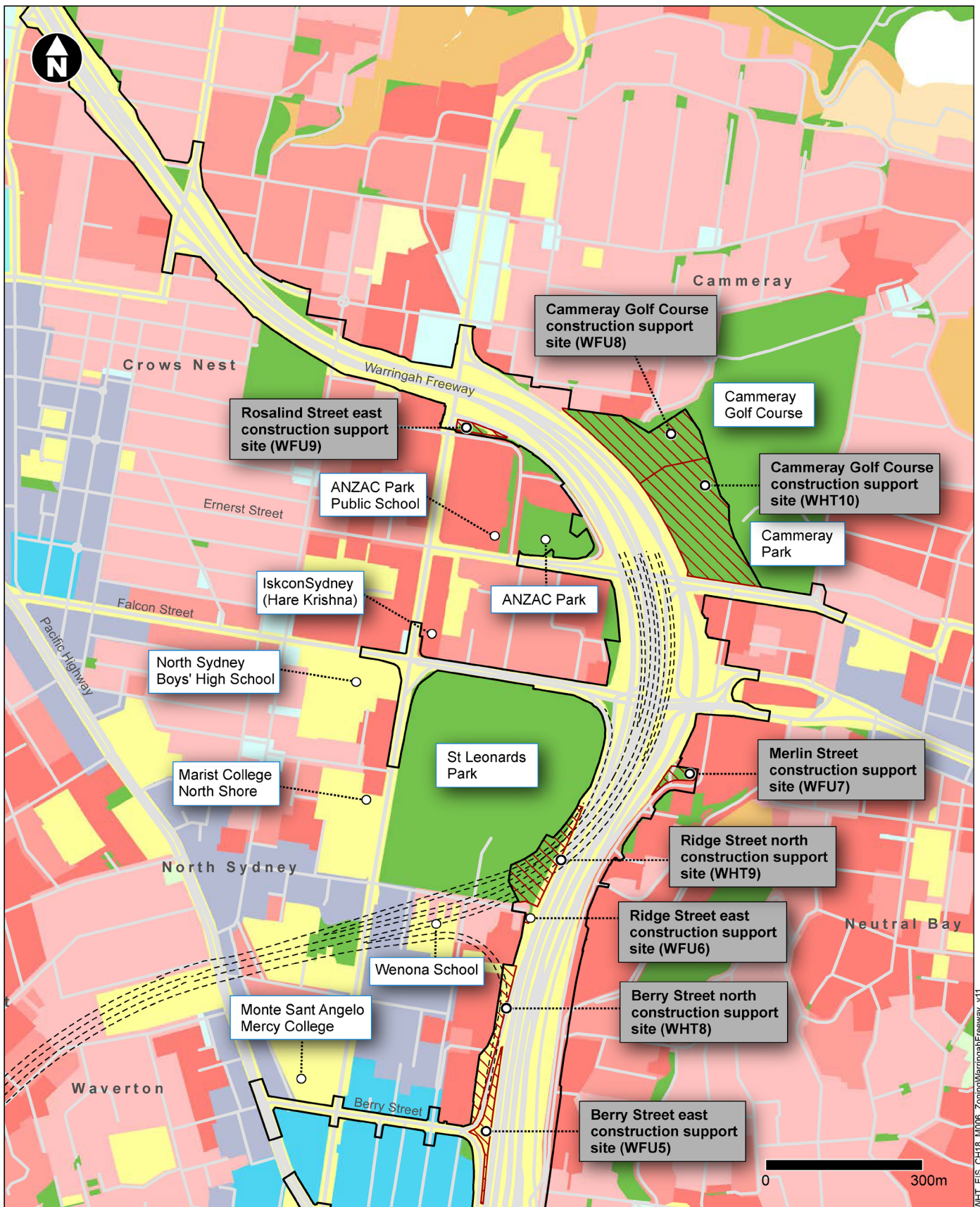
Public recreation areas within the construction footprint include St Leonards Park in North Sydney, ANZAC Park, Cammeray Golf Course and Cammeray Park in Cammeray (refer to Figure 20-5). Within St Leonards Park, future management and works are guided by the *St Leonards Park Landscape Masterplan*.

Major road infrastructure located in this area includes the Warringah Freeway between Milsons Point and Naremburn. There are several existing major road network connections to and from the Warringah Freeway, including:

- Pacific Highway and High Street, which provide connections to North Sydney and Kirribilli
- Mount Street, which provides connectivity for North Sydney
- Berry Street, which provides connectivity for North Sydney and Crows Nest
- Falcon Street, which provides connections to North Sydney, Crows Nest, Cammeray and Neutral Bay
- Ernest Street and Miller Street, which provide connections to Cammeray
- Brook Street, which provides connections to Willoughby and Crows Nest
- Willoughby Road, which provides connections to Naremburn.

Land use zoning

Land use zones in the area around the Warringah Freeway are defined under the North Sydney LEP 2013 and the Willoughby LEP 2012, and are shown in Figure 20-5.



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Operational features	Land use zoning	E2 Environmental Conservation	R4 High Density Residential
--- Western Harbour Tunnel (tunnel section)	B1 Neighbourhood Centre	E4 Environmental Living	RE1 Public Recreation
Construction features	B2 Local Centre	R2 Low Density Residential	RE2 Private Recreation
□ Construction footprint	B3 Commercial Core	R3 Medium Density Residential	SP1 Special Activities
▨ Construction support site	B4 Mixed Use		SP2 Infrastructure

Figure 20-5 Land use and zoning – Warringah Freeway and surrounds

20.4 Assessment of potential impacts

The project has the potential to impact on property and land use in the following ways:

- Occupation of surface properties, including temporary use during construction and permanent acquisition for operational infrastructure
- Acquisition of substratum (below ground) land for the project tunnels
- Return of residual land (full or partial lots) required for construction but not for operation of the project
- Impacts to land use and development potential during construction and operation of the project
- Changes in public open space availability
- Ground movement impacts to properties during construction and operation of the project
- Creation of residual land (partial lots) that is not fully acquired or occupied on a permanent basis.

Further assessment of impacts to boat moorings are discussed in Chapter 8 (Construction traffic and transport) and Chapter 21 (Socio-economics).

20.4.1 Property

Acquisition and temporary use of surface properties

The project has been designed and developed to minimise property acquisitions and has prioritised the use of Transport for NSW land. Notwithstanding this, some temporary use and permanent acquisition of properties would be required. All property acquisitions required for the project would be carried out in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW), and in accordance with the land acquisition reforms announced by the NSW Government in 2016. Temporary use of properties would be managed through leasing arrangements or property acquisition should lease arrangements not be practical. Where required discussions would be held with affected property owners concerning the purchase, lease or licence of land. Landowners and tenants of landowners affected by acquisition will be supported by access to counselling services throughout the process and a community relations support toll-free telephone line will be established to respond to any community concerns.

The project would require the acquisition or temporary use of 28 properties including:

- Seventeen private residential properties
- Four private commercial properties
- Seven government-owned properties (excluding Transport for NSW land).

Anticipated properties required for acquisition or temporary use are summarised in Table 20-2. Properties anticipated to be permanently acquired by the project are shown in Figure 20-6 to Figure 20-9. Impacts of property acquisition are further discussed in Chapter 21 (Socio-economics).

The acquisition of land for construction activities may result in residual land that would not be required for operational infrastructure or activities. The future use of this land is discussed in the section below.

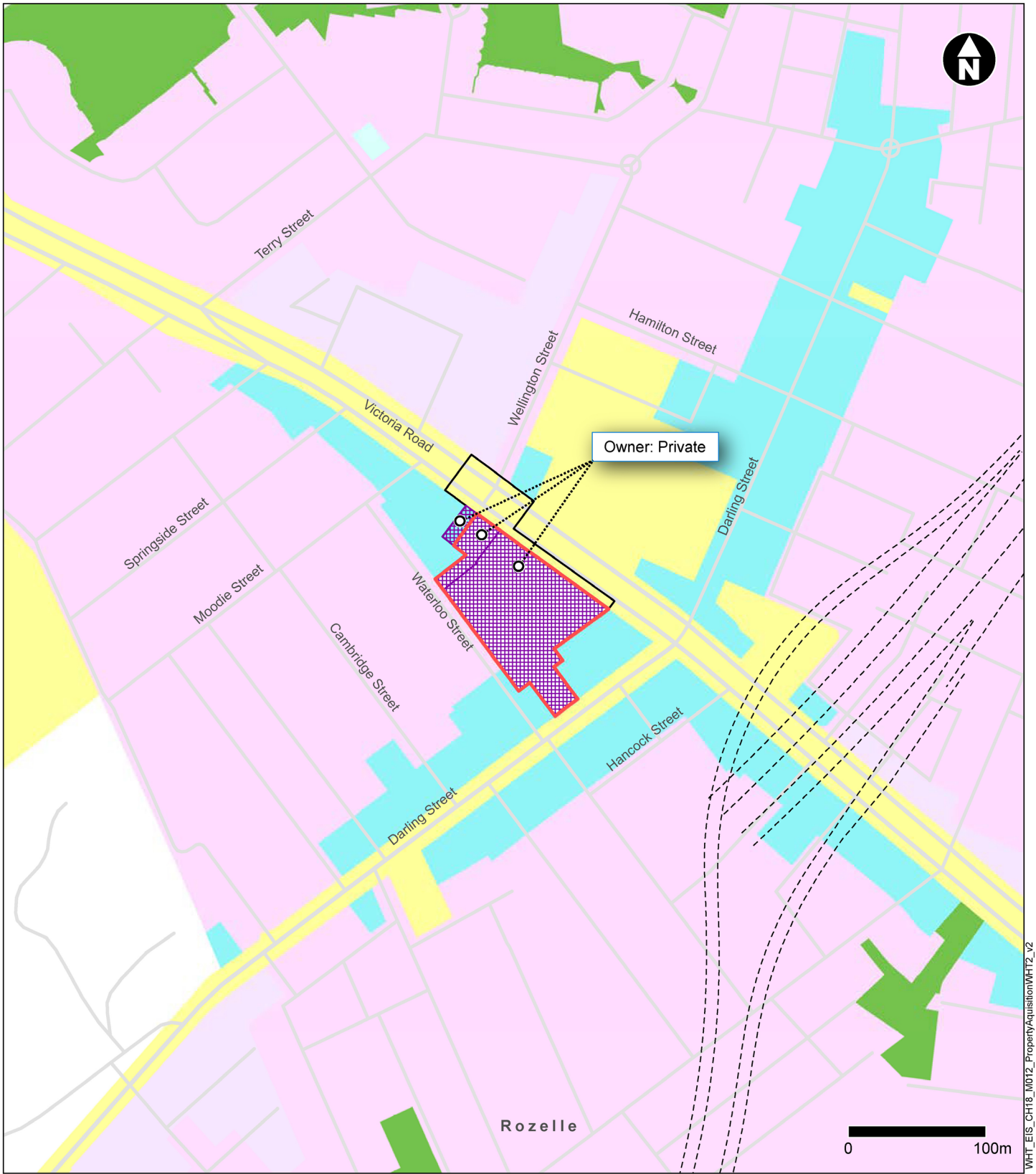
Table 20-2 Anticipated property acquisition and temporary leases required for the project

Location	Ownership	Number of property acquisitions ¹		Number of properties for temporary use ¹	
		Full property acquisition	Partial property acquisition	Full property lease	Partial property lease
Western Harbour Tunnel component					
Rozelle²	Private – commercial	2	0	0	0
	Private – residential	1	0	0	0
	Government	0	0	0	1
Birchgrove	Government	0	0	1	0
Waverton	Government	0	0	0	1
Artarmon	Private – commercial	1	0	0	0
Total for Western Harbour Tunnel component		4	0	1	2
Warringah Freeway Upgrade component					
North Sydney	Private – commercial	0	1	0	0
	Government	0	1 ³	0	1
Neutral Bay	Private – residential	0	1	0	0
	Government	1	0	0	0
Cammeray	Private – residential	15	0	0	0
	Government	0	1 ³	0	0
Total for Warringah Freeway Upgrade component		16	4	0	1

Note 1: Multiple parent lots and strata titles may exist within each property.

Note 2: May be leased rather than acquired, subject to negotiations with landowner.

Note 3: Along with acquisition additional land at these properties would be leased for construction.



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Legend

Operational features

- Operational footprint
- Western Harbour Tunnel (tunnel section)

Property to be acquired

Land use zoning

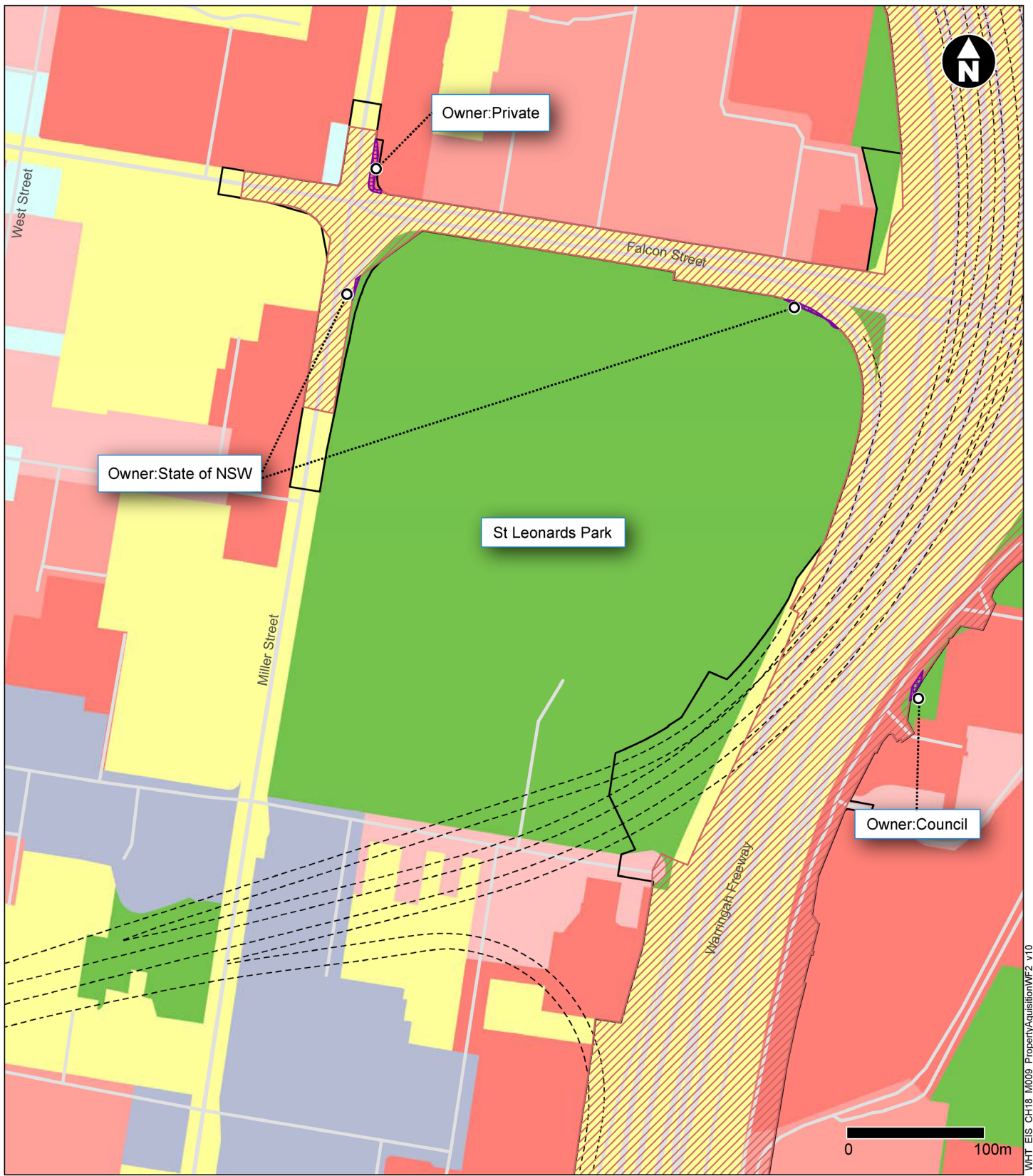
- B1 Neighbourhood Centre
- B2 Local Centre
- IN2 Light Industrial

- R1 General Residential
- RE1 Public Recreation
- SP2 Infrastructure
- DM Deferred Matter

Construction features

- Construction footprint



Figure 20-6 Property acquisitions for the Western Harbour Tunnel (around Rozelle)




Indicative only – subject to design development

Legend

Operational features




-  Operational footprint
-  Western Harbour Tunnel (tunnel section)

Construction features

-  Construction footprint

 Property to be acquired

Land use zoning

-  B1 Neighbourhood Centre
-  B4 Mixed Use
-  R2 Low Density Residential





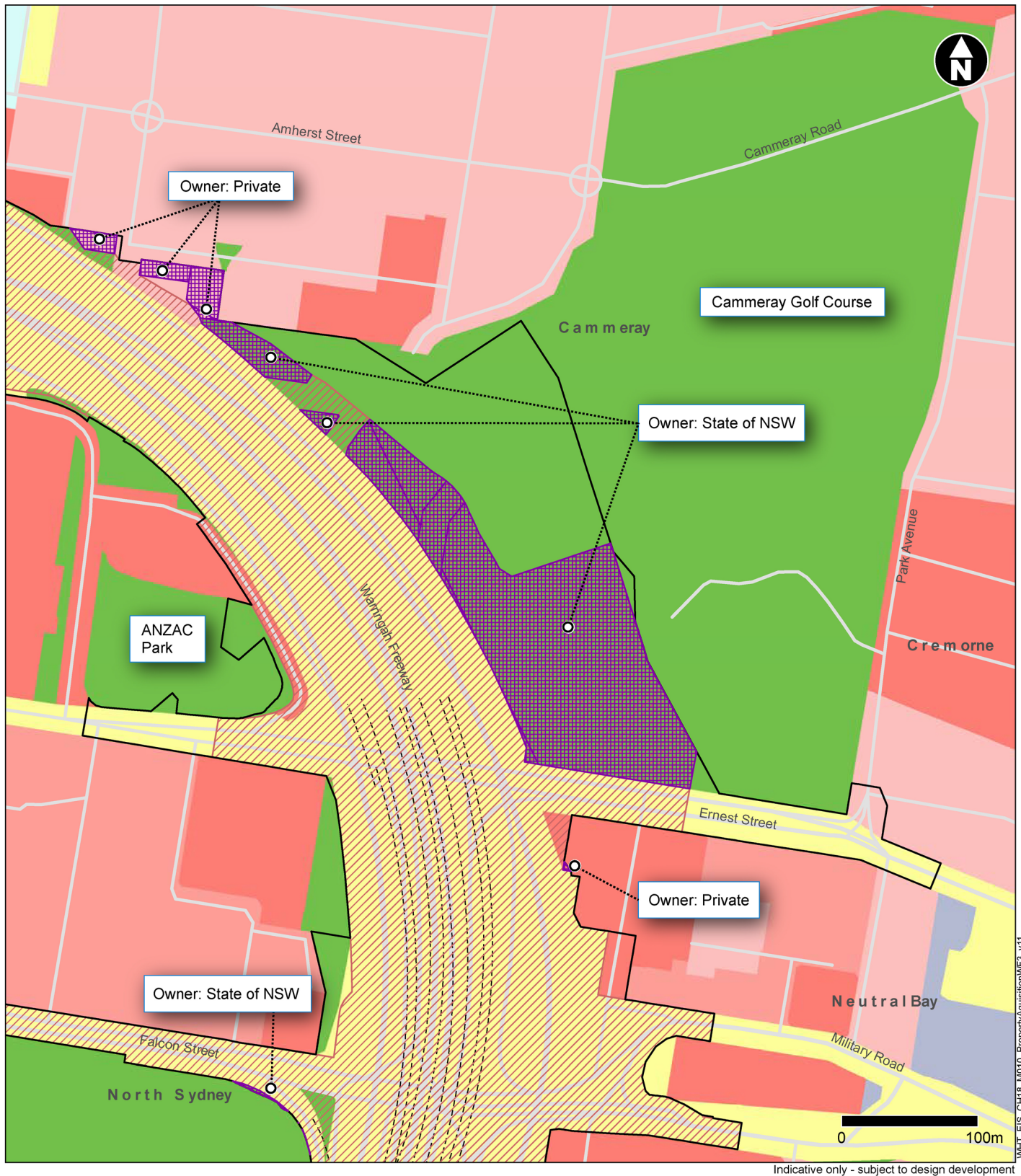
-  R3 Medium Density Residential
-  R4 High Density Residential
-  RE1 Public Recreation
-  SP2 Infrastructure

Figure 20-7 Property acquisitions for the Warringah Freeway Upgrade (around North Sydney)



Indicative only - subject to design development

Legend

Operational features

- Operational footprint
- Western Harbour Tunnel (tunnel section)

Construction features

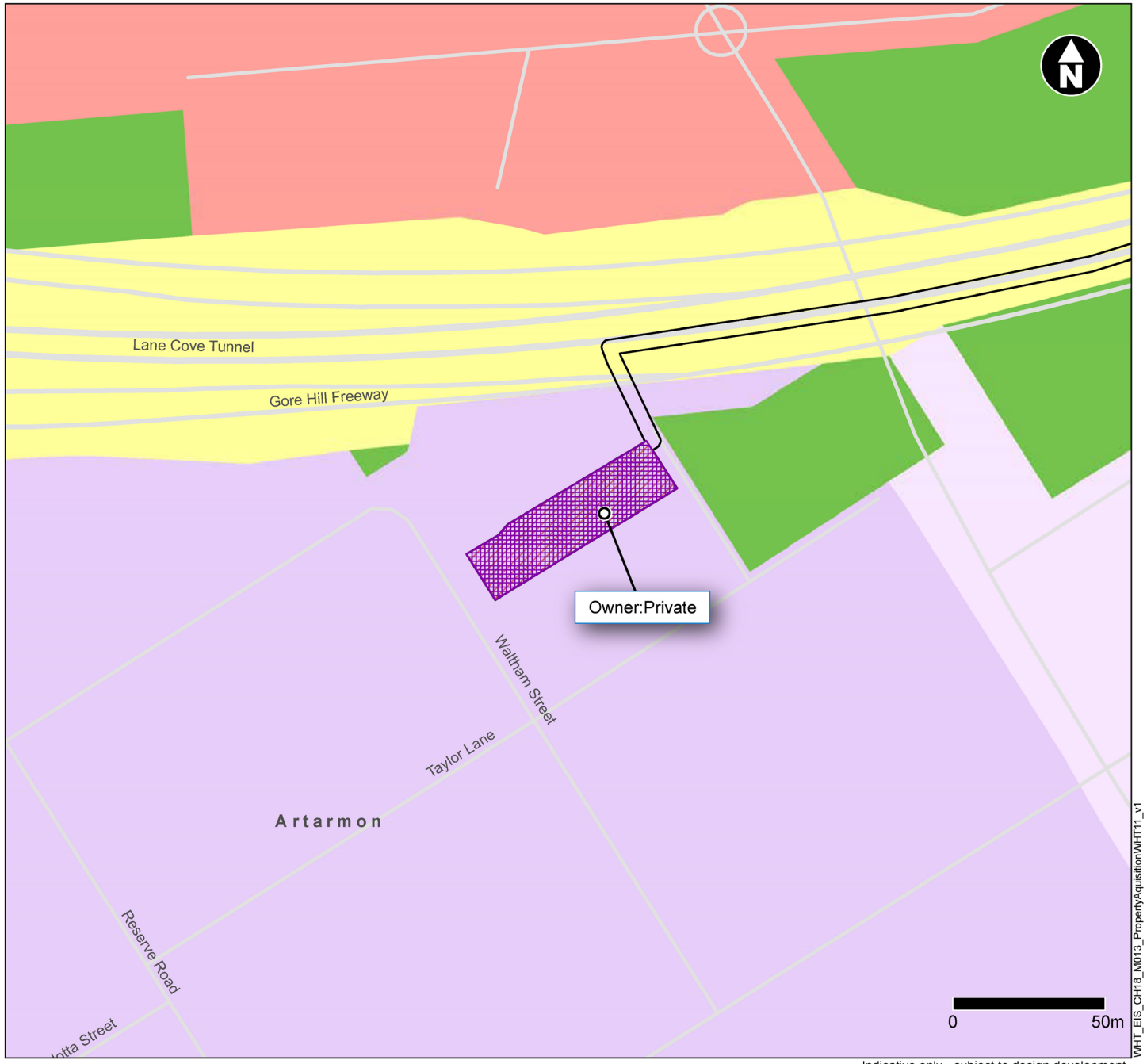
- Construction footprint

Property to be acquired

Land use zoning

- B1 Neighbourhood Centre
- B4 Mixed Use
- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- RE1 Public Recreation
- SP2 Infrastructure

Figure 20-8 Property acquisitions for the Warringah Freeway Upgrade (around Cammeray)



Legend

- | | | | |
|--|--|--|--|
| <p>Operational features</p> <p></p> | <p>Construction features</p> <p></p> | <p> Property to be acquired</p> | <p>Land use zoning</p> <ul style="list-style-type: none">  IN1 General Industrial  IN2 Light Industrial  R3 Medium Density Residential  RE1 Public Recreation  SP2 Infrastructure |
|--|--|--|--|

Figure 20-9 Property acquisitions for the Western Harbour Tunnel (around Artarmon)

Residual land

Residual land comprises lots that are created when a site is only partially acquired on a permanent basis to operate the project. Residual land can be created by initially acquiring a full or partial lot and leaving or returning part of the lot for future use (the residual lot).

Because most local environmental plans place minimum lot size requirements and other restrictions on parcels of land to be used for specified types of development, the creation of a residual lot has the potential to affect the development potential of the land. Minimum lot sizes most often apply to land zoned for residential purposes but can also apply to other land use zonings. Residual lands that would be created as a result of the project are summarised in Table 20-3.

The residual land created as a result of the project would largely continue to remain suitable for future development in accordance with the relevant land use zonings and applicable development standards (for example, the minimum lot size if applicable). Following construction, residual land would be rehabilitated to the existing ground level or as otherwise agreed with the landowner. Additionally, some lots would be wholly or partially occupied during construction of the project but would not be required for permanent operational infrastructure or other operational activities. Where feasible and reasonable, this land would be reinstated, rehabilitated and returned to an equivalent state and the same use as existing on the land prior to construction of the project. Where land is leased for construction of the project, reinstatement and rehabilitation of the site would be carried out in consultation with the relevant landowner.

Any future development of lands would be subject to separate assessment and approval in accordance with the *Environmental Planning and Assessment Act 1979* and is beyond the scope of this project.

Table 20-3 Residual land created by the project

Location	Pre-construction land use	Current land use zoning	Ownership	Project use and anticipated future treatment
Western Harbour Tunnel component				
Rozelle	Private – commercial	DM Deferred Matter	Private	138-172 Victoria Road in Rozelle would be temporarily required for use as a construction support site (WHT2) and would not be required on a permanent basis to operate the project. The site may be acquired by Transport for NSW or leased depending on ongoing property negotiations. If the property is leased, the site would be rehabilitated and returned to the landowner at the completion of construction. Any proposed redevelopment of the remaining land would be subject to development assessment and approval from the relevant planning authority.
	Private – residential	B2 Local Centre	Private	A private residential property on Victoria Road would be permanently acquired for use as a construction support site (WHT2). The land acquired for the project would not impact on the long term viability of the site to continue to be used for private residential purposes.
	Glebe Island	SREP 26 Port and employment	Government	White Bay construction support site would be temporarily leased for use as a construction support site (WHT3) and would not be required on a permanent basis to operate the project. The site would be rehabilitated and returned to the landowner at the completion of construction.
Birchgrove	Yurulbin Park	RE1 Public Recreation	Government	Yurulbin Park in Birchgrove would be temporarily leased for use as a construction support site (WHT4). This site would not be required on a permanent basis to operate the project and would be rehabilitated in line with the design vision provided by the original landscape architect (Bruce Mackenzie) as part of this project as soon as practicable at the completion of construction. The project would not impact on the long term viability of the site to continue to be used for public recreation and open space purposes.

Location	Pre-construction land use	Current land use zoning	Ownership	Project use and anticipated future treatment
Waverton	Working waterfront at Balls Head	IN4 Working Waterfront E2 Environmental Conservation	Government	<p>Government-owned waterfront land at Berrys Bay in Waverton would be temporarily required for use as a construction support site (WHT7). This site would not be required on a permanent basis to operate the project and would be rehabilitated as soon as practicable at the completion of the project. Once complete the project would not impact on existing or potential future land uses.</p> <p>Transport for NSW acknowledge the importance of the Berrys Bay area and is committed to working with the community and key stakeholders to understand their views on the future use of the Berrys Bay. Once the project is completed, Transport for NSW would return the Berrys Bay area as public open space. As part of this process, Transport for NSW would establish a reference group, to include representation of key stakeholders, the community and independent experts, to support the development of the final layout. It is expected this process would be carried out prior to the start of construction works.</p>
Warringah Freeway Upgrade component				
North Sydney	St Leonards Park	RE1 Public Recreation	Government	<p>The south-eastern portion of St Leonards Park would be temporarily required for use as the Ridge Street north construction support site (WHT9). This site would not be required on a permanent basis to operate the project and would be rehabilitated and returned as soon as practicable at the completion of construction.</p> <p>Kerb and footpath adjustment works would occur on Miller Street southbound around the intersection with Falcon Street. These works would provide a new dedicated lane for left turning traffic from Falcon Street westbound to Miller Street southbound. Further review of the impacts in this area is currently being carried out and permanent impacts to St Leonards Park would be minimised or, where possible eliminated.</p>
	ANZAC Park	RE1 Public	Government	A section of the park would be temporarily leased for use during

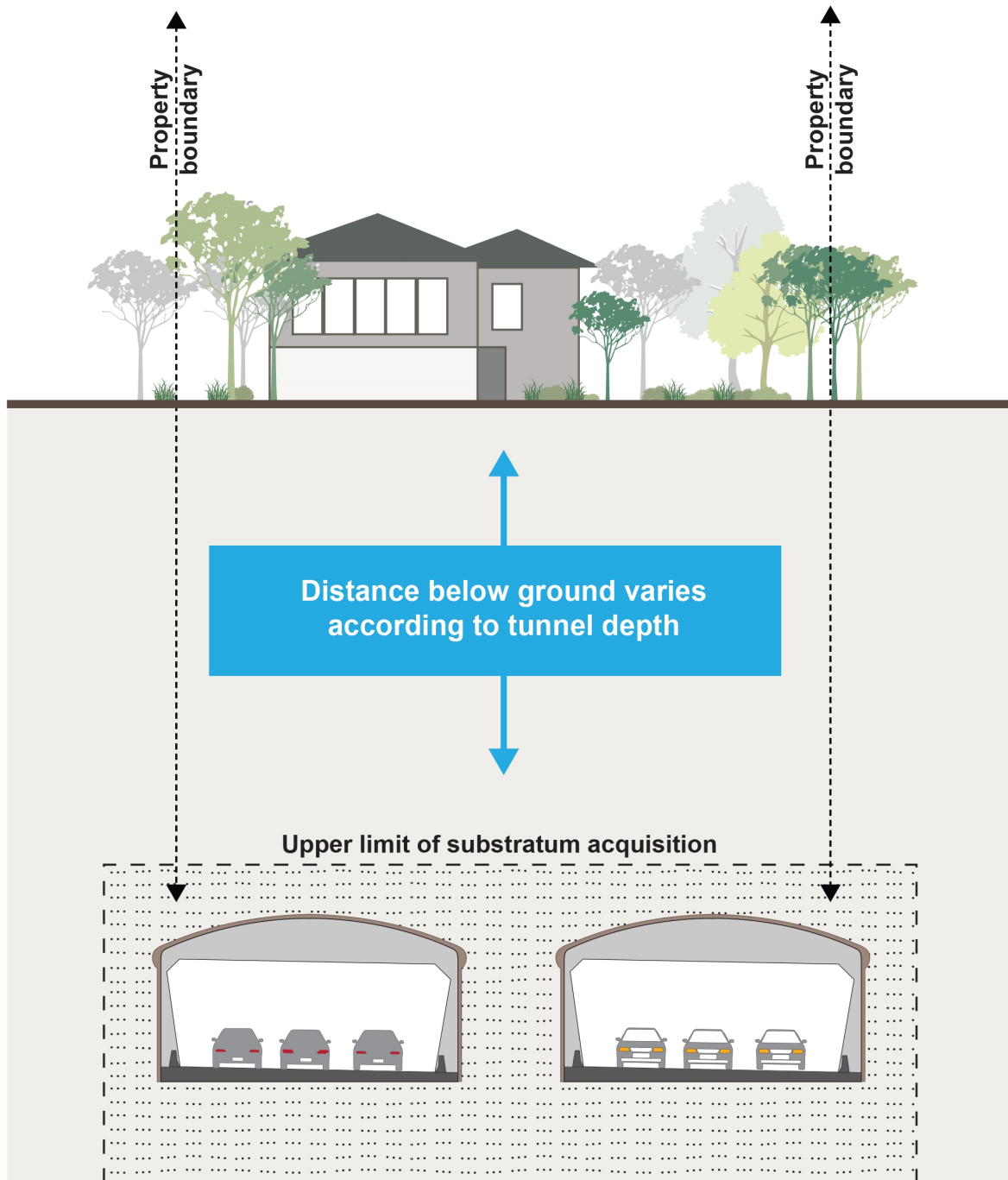
Location	Pre-construction land use	Current land use zoning	Ownership	Project use and anticipated future treatment
		Recreation		construction. The section of land comprises less than 10 per cent of the total area of ANZAC Park. The temporary lease during construction would not impact on the long term viability of the site, which would continue to be used for public recreation and open space.
	Private – commercial	R4 High Density Residential	Private	Two sections of private commercial property on Falcon Street would be permanently acquired for permanent road corridor works on the Warringah Freeway. The sections of land acquired for the project would not impact on the long term viability of the site to continue to be used its current function as both Hare Krishna Catering and the Hare Krishna Movement, place of worship.
Neutral Bay	Rose Avenue Reserve	RE1 Public Recreation	North Sydney Council	A section of Rose Avenue Reserve would be permanently acquired for permanent road corridor works on the Warringah Freeway. The section of land acquired for the project comprises about 25 per cent of the total area of Rose Avenue Reserve and would not impact on the long term viability of the site to continue to be used for public recreation and open space purposes.
	Private – residential	R4 High Density Residential	Private	A section of private residential property adjacent to Ernest Street would be permanently acquired for permanent road corridor works on the Warringah Freeway. The section of land acquired for the project comprises less than five per cent of the total property and would not impact on the long term viability of the site to continue to be used for private residential purposes.
Cammeray	Cammeray Golf Course	RE1 Public Recreation	Government	Part of Cammeray Golf Course would be permanently acquired for permanent operational facilities for both the Western Harbour Tunnel and Warringah Freeway Upgrade project and the Beaches Link and Gore Hill Freeway Connection project. Land required for the project would be acquired and/or leased as part of the Warringah Freeway Upgrade component of the project. The sections of land acquired for both projects would comprise about 25,000 m ² . Alterations to the configuration of the golf course would be required, however the project would not impact on the long

Location	Pre-construction land use	Current land use zoning	Ownership	Project use and anticipated future treatment
				<p>term feasibility of the site to continue to be used as a nine hole golf course and for public recreation and open space purposes.</p> <p>Parts of the golf course would also be temporarily required for use as a construction support site (WHT10 and WFU8). The sections of land required temporarily would comprise about 48,300 m². These sections would not be required on a permanent basis to operate the project, however a portion of the site would be retained to support the construction of the Beaches Link and Gore Hill Freeway Connection project. Land that would not be required to support the Beaches Link and Gore Hill Freeway Connection project would be rehabilitated and returned as soon as practicable at the completion of construction. Land that would be retained to support the Beaches Link and Gore Hill Freeway Connection project would be rehabilitated and returned as soon as practicable at the completion of construction of that project.</p> <p>Both projects have been designed and developed to minimise impacts to Cammeray Golf Course. The configuration of the construction support sites and the permanent operational infrastructure for both projects, whether implemented at the same time or at different times, would allow for the site to remain operational as a nine hole golf course for the duration of the construction and operation of both projects. Amendments to the configuration of holes and their associated pars would be required during construction and operation of the project to achieve this outcome. Transport for NSW have engaged and consulted with the golf course operator and land holder and this would continue during further design development and implementation of the project to ensure that the operation of the golf course site during construction and operation of the project is possible.</p>

Location	Pre-construction land use	Current land use zoning	Ownership	Project use and anticipated future treatment
	Private – residential	R2 Low Density Residential	Private	The site of a residential building comprising 12 units on Morden Street and common property at Cammeray would be fully acquired and demolished for use during construction. A large section comprising about 95 per cent of the site would not be required on a permanent basis to operate the project. Following construction, the site would be rehabilitated as soon as practicable at the completion of the project. The project would not impact on the long term viability of the site for development consistent with permissible land uses.
Cammeray	Residential dwelling	R2 Low Density Residential	Private	Two residential dwellings on Bellevue Street at Cammeray would be fully acquired and demolished for use during construction. The sites would not be required to operate the project and would be rehabilitated as soon as practicable at the completion of the project. The project would not impact on the long term viability of the sites or change the permissible uses.
Artarmon	Private – commercial	IN1 General Industrial	Private	The property would be acquired for construction support site (WHT11). The site would be required for the operation of Western Harbour Tunnel and would be used to construct the motorway control centre for the Western Harbour Tunnel. The site would be adjacent to operational infrastructure for the future Beaches Link and Gore Hill Freeway Connection project.

Acquisition of substratum

The construction and operation of the project would require the acquisition of land below the surface of the ground to accommodate the mainline and ramp tunnels. This is called substratum acquisition and is shown in Figure 20-10.



Legend


 Substratum acquisition envelope

Figure 20-10 Example of substratum acquisition

This substratum acquisition would consist of a stratum acquisition envelope around the tunnels, including any associated ground support area that may be required. In some circumstances, the introduction of the tunnels has the potential to limit development above the tunnels. For example, depending on the depth of the tunnels from the surface, the ability to construct basement levels in buildings above the tunnels may be restricted. However, this is generally only the case where the

tunnel depth is shallow, near tunnel portals. Tunnel portal locations are described in Chapter 5 (Project description). Otherwise, substratum acquisition should not affect the future use of property at the surface. Subject to council regulations and approvals, landowners would generally be able to:

- Carry out improvements, such as installing a swimming pool
- Dig deeper foundations for a new building or second storey additions.

Where substratum acquisition is required, Transport for NSW would contact owners of affected properties. Transport for NSW has the authority to acquire the subsurface land, under the *Roads Act 1993* (NSW). The *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) provides that compensation is not payable for substratum acquisition of land or easements, unless specific circumstances as detailed in that Act apply. Appendix C of the *Roads and Maritime Land Acquisition Information Guide* (Roads and Maritime, 2014a) sets out in detail the compensation provisions of the Act relating to substratum acquisition.

Ground movement impacts

Ground movement (or settlement) due to excavation or disturbance below ground may present a risk to the stability of nearby buildings and other structures during construction and operation of the project.

An assessment of potential ground movement impacts associated with the project is provided in Chapter 16 (Geology, soils and groundwater). The assessment identified risks of 'very slight' settlement impacts to buildings, primarily near the connection to the Rozelle Interchange and at the North Sydney cavern location. Changes in land use as the result of ground movement impacts is therefore considered unlikely during both construction and operation of the project. Management measures are included in Chapter 16.

20.4.2 Land use

Potential land use impacts during construction

The project has the potential to impact land use and development potential of land occupied by construction works and construction support sites. These impacts would be temporary in nature, except for sites that are subsequently used for operational infrastructure (refer to Table 20-5). Table 20-4 outlines the potential land use impacts at each construction site and construction support site required for the project.

Potential indirect impacts as a result of changes to land use would also relate to traffic and transport, noise and vibration, air quality and social and economic values. Consideration of these impacts is provided in Chapter 8 (Construction traffic and transport), Chapter 10 (Construction noise and vibration), Chapter 12 (Air quality) and Chapter 21 (Socio-economics). Utility relocations, adjustments and protection are discussed in Chapter 5 (Project description) and Appendix D (Utilities management strategy).

Table 20-4 Potential land use impacts during construction

Construction location	Potential impacts on land use during construction
Rozelle Interchange and surrounds	
Rozelle Rail Yards construction support site (WHT1)	<p>The Rozelle Rail Yards construction support site (WHT1) would temporarily change the existing land use at the Rozelle Rail Yards from redundant industrial and transport infrastructure to a construction support site. Prior to the start of construction, the site would operate as a construction site for the M4-M5 Link project. Subsequently, WHT1 has been additionally assessed as part of the approved M4-M5 Link project EIS.</p> <p>The establishment of the construction support site would have no impact on the existing land use and development potential of the Rozelle Rail Yards as the site is currently inaccessible and generally unsuitable for development in its current state. A new area of open space would be provided at the site at the completion of construction as part of the approved M4-M5 Link project. Use of the site for construction of the Western Harbour Tunnel would be coordinated with the requirements of the approved M4-M5 Link project.</p> <p>The <i>Informing the Bays Precinct, Sydney Transformation Plan</i> (UrbanGrowth, 2015a) identifies the Rozelle Rail Yards as a longer-term priority destination that would form part of The Bays Precinct urban renewal project. The establishment of the construction support site would occupy part of the Rozelle Rail Yards on a temporary basis and would not preclude the planned future construction of Rozelle Park as part of the Bays Precinct Urban Transformation Program.</p>
Rozelle to Birchgrove	
Victoria Road construction support site (WHT2)	<p>The Victoria Road construction support site (WHT2) would be located adjacent to Victoria Road in Rozelle, at the former Balmain Leagues Club site. The site is currently occupied by a vacant two-storey building, car parking areas and vacant and occupied residential and commercial properties. The site would be temporarily used as a construction support site for the duration of construction (either acquired or leased). The temporary occupation of this land would not affect the existing land use zoning or development controls that are applicable to the site. The temporary occupation of the site would however prevent any development from occurring for the duration of construction. If the site is leased, it would be returned to the landowners upon completion of construction, for development in accordance with land use zoning and planning controls.</p> <p>The Victoria Road construction support site (WHT2) would also include a privately owned residential property on Victoria Road to the north of the former Balmain Leagues Club site. The site would be acquired or leased and temporarily converted to a construction support site for the duration of construction. The temporary occupation of this land would not affect the existing land use zoning or development controls that are applicable to the site.</p>

Construction location	Potential impacts on land use during construction
White Bay construction support site (WHT3)	<p>Land use impacts at the White Bay construction support site (WHT3) would be negligible as the surrounding precinct currently provides for a range of maritime and industrial activities. The temporary occupation of this land would not affect the existing land use zoning arrangement or development controls that are applicable to the site. The temporary establishment of a construction support site at White Bay during construction of the project would not introduce long term land use impacts that would preclude its future development as part of the Bays Precinct Urban Transformation Program.</p>
Yurulbin Point construction support site (WHT4)	<p>Construction of the project would impact on the existing public use of Yurulbin Park which would be temporarily occupied and used for the Yurulbin Point construction support site (WHT4). The nearest available area of recreational open space is Birchgrove Park located about 500 metres from Yurulbin Park.</p> <p>The Birchgrove Ferry Wharf would also be temporarily impacted for the duration of construction, which would affect existing ferry services and recreational use of the wharf. Ferry customers would be notified of alternative travel arrangements in advance of the wharf closure (refer to Chapter 8 (Construction traffic and transport for additional information)).</p> <p>Upon completion of construction, the site would be reinstated in line with the vision provided by the original landscape architect (Bruce Mackenzie) and made available again for public use. The current land use zoning for Yurulbin Park being for public recreational use restricts the future development of the site for other uses. The temporary use of Yurulbin Park during construction is therefore not expected to impact on the site's future use.</p>
Birchgrove to Berrys Bay	
Sydney Harbour south cofferdam (WHT5)	<p>The Sydney Harbour south cofferdam construction support site (WHT5) would be temporarily located in Sydney Harbour off the Yurulbin Park shoreline. An exclusion zone would be set up around WHT5 to facilitate the safe passage of all vessels and recreational users travelling in the vicinity of the cofferdam.</p> <p>Construction activities associated with this site would require the establishment of maritime speed restrictions around construction equipment. This would result in minor increases to transit times for recreational, commercial and government vessels. Recreational users, community groups and sailing clubs that make use of Sydney Harbour may also be temporarily impacted by these restrictions. Potential impacts on vessel movements and marine activities within Sydney Harbour are further considered in Chapter 8 (Construction traffic and transport).</p> <p>The establishment of WHT5 would not require the relocation of any existing moorings within Snails Bay or impact on access to private jetties for residential properties along Louisa Road in Birchgrove. Access to the existing moorings at Snails Bay would be restricted during construction to allow for the mooring of immersed tube tunnel</p>

Construction location	Potential impacts on land use during construction
	units at this location.
Sydney Harbour north cofferdam (WHT6)	<p>The Sydney Harbour north cofferdam construction support site (WHT6) would be temporarily located to the west of the Waverton Peninsula off Balls Head. An exclusion zone would be set up around WHT6 to facilitate the safe passage of all vessels and recreational users travelling in the vicinity of the cofferdam.</p> <p>Construction activities associated with this site would require the establishment of maritime speed restrictions around construction equipment. This would result in minor increases to transit times for recreational, commercial and government vessels. Potential impacts on vessel movements and marine activities within Sydney Harbour are further considered in Chapter 8 (Traffic and transport).</p> <p>The establishment of WHT6 would require the temporary relocation of the historic <i>Baragoola</i> and <i>M.V. Cape Don</i> vessels which are currently moored in the vicinity of the site. Transport for NSW would give reasonable time and notice for the vessel owners to find a suitable alternate birthing within Sydney Harbour before construction commences.</p>
Berrys Bay to the Warringah Freeway	
Berrys Bay construction support site (WHT7)	<p>The Berrys Bay construction support site (WHT7) would be a temporary land and water-based construction support site located on the northern foreshore of Berrys Bay in Waverton. The construction support site would be located on government-owned land that is zoned for working waterfront uses. Activities carried out at the site, including the transportation of spoil (via barge to the White Bay construction support site (WHT3)), would be consistent with the current land use zoning.</p> <p>Land use impacts may include temporary impediments for vessels based at the Sydney Harbour Yacht Charter located at Berrys Bay. Impediments may be experienced due to the movement of barges to and from the construction support site. Coordination would be required during the arrival and departure of construction barges in Berrys Bay to avoid manoeuvring, access and egress restrictions for the Sydney Harbour Yacht Charter vessels. Impacts to marine traffic and access are further considered in Chapter 8 (Construction traffic and transport).</p> <p>Moorings in the vicinity of the construction support site at Berrys Bay (WHT7) and on approach to the site would need to be relocated. Relocations would be managed by Transport for NSW in accordance with the measures outlined in Chapter 8 (Construction traffic and transport).</p> <p>The establishment of the construction support site would occupy land covered by the <i>Waverton Peninsula Strategic Masterplan</i>. This area would be impacted on a temporary basis and would not preclude the long term use of the area for public open space and working waterfront land uses.</p>

Construction location	Potential impacts on land use during construction
Berry Street north construction support site (WHT8)	<p>The Berry Street north construction support site (WHT8) would temporarily occupy land located between the Berry Street on ramp and the Warringah Freeway in North Sydney. The site is owned by Transport for NSW and is currently vacant and zoned SP2 Infrastructure. The location of this construction support site would not impact on the existing land use zone as it is currently vacant and zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p> <p>The construction support site would be located in the vicinity of land covered by the <i>Ward Street Precinct Masterplan</i> but is not expected to impact the implementation of this plan on a temporary or permanent basis.</p>
Ridge Street north construction support site (WHT9)	<p>The Ridge Street north construction support site (WHT9) would temporarily occupy the south-eastern portion of St Leonards Park between the North Sydney Bowling Club and the Warringah Freeway corridor. The construction support site would be located on land largely owned by the State of NSW (Crown land) that is zoned for public recreation.</p> <p>The adjoining netball courts, North Sydney Bowling Club, North Sydney Oval, Bon Andrews Oval and St Leonards Park Music Shell would remain operational during construction and would not be directly impacted during construction. About 12 on-street car parking spaces along Ridge Street would be temporarily removed to create access to the site.</p> <p>St Leonards Park comprises one of the largest areas of public open space in North Sydney. The Ridge Street north construction support site would temporarily occupy only a small area of land in the context of the whole of St Leonards Park. Alternative sections of the park would be available for public recreation during the construction period which could include the expansive open space area located to the north of North Sydney Oval and adjacent Bon Andrews Oval.</p> <p>The directly impacted part of St Leonards Park would be rehabilitated in consultation with North Sydney Council and with consideration of the <i>St Leonards Park Landscape Masterplan</i>. The areas would be returned to an equivalent state at the completion of construction for continued public recreational use.</p>
Cammeray Golf Course construction support site (WHT10)	<p>The Cammeray Golf Course construction support site (WHT10) would temporarily occupy the south-western portion of the existing golf course, adjacent to the Warringah Freeway, Ernest Street and Cammeray Park in Cammeray. The site would be located on government-owned land zoned for public recreational use associated with the Cammeray Golf Club.</p> <p>The site would be a tunnelling site and would be located adjacent to a separate construction support site for the Warringah Freeway Upgrade works (WFU8). The construction support site would occupy part of Cammeray Golf Course for the duration of construction works.</p>

Construction location	Potential impacts on land use during construction
	<p>The location and layout of WHT10 and adjoining WFU8 within Cammeray Golf Course have been designed to minimise disruption to users of the golf course. It is anticipated that Cammeray Golf Club would continue to operate as a nine hole golf course during construction, with a revised configuration and reductions in length of some fairways.</p> <p>The adjoining Cammeray Park sports ground, tennis club, croquet club and skate park would remain operational during construction and would not be directly impacted during construction.</p> <p>At the completion of construction, a portion of the site would be used on an ongoing basis to support permanent project infrastructure. Land use impacts during operation of the project are considered in the below section.</p>
<p>Waltham Street construction support site (WHT11)</p>	<p>The Waltham Street construction support site (WHT11) would temporarily occupy an entire lot within the Artarmon Industrial area, between Waltham Street to the west, Gore Hill Freeway to the north, Hampden Road to the east and industrial buildings to the south. The site would be located on private, commercial land zoned for industrial use.</p> <p>The site would be used to construct the motorway control centre for the Western Harbour Tunnel. The site would also be used for equipment laydown, car parking for construction workers and temporary site office buildings.</p> <p>At the completion of construction, the entire site would be used to support permanent project infrastructure. Land use impacts during operation of the project are considered in the below section.</p>
<p>Warringah Freeway and surrounds</p>	
<p>Warringah Freeway Upgrade</p>	<p>Surface works required as part of the Warringah Freeway Upgrade would be carried out from a point immediately north of the Sydney Harbour Bridge at Milsons Point to the intersection with Willoughby Road at Naremburn. A detailed description of these works is provided in Chapter 5 (Project description).</p> <p>Construction activities carried out within the Warringah Freeway corridor and along the surrounding road network would generally be carried out on land owned by Transport for NSW and zoned for infrastructure related uses. Consequently, the majority of construction works associated with the Warringah Freeway Upgrade would not directly impact existing land use zones or the development potential of land in the area between Milsons Point and Naremburn.</p> <p>There is the potential for construction of the Warringah Freeway Upgrade to impact a number of private driveways in areas located adjacent to where construction works would be carried out. Impacts would include temporary access impediments for residents or removal of driveways to facilitate construction activities. Access to residences would be maintained at all times, and any impacted driveways would be reinstated by Transport for NSW as soon</p>

Construction location	Potential impacts on land use during construction
	<p>as practicable once the relevant construction works are completed.</p> <p>Construction works would also temporarily impact pedestrians and cyclists who would need to be detoured around areas of construction works at certain locations along the Warringah Freeway corridor and the surrounding road network. Impacts of the project on pedestrian and cyclists are further considered in Chapter 8 (Construction traffic and transport) and Chapter 21 (Socio-economics).</p> <p>The Warringah Freeway Upgrade would require the establishment of nine construction support sites to enable construction of the project (refer to Chapter 6 (Construction work)). Land use impacts associated with these sites are discussed below.</p>
Blue Street construction support site (WFU1)	<p>The Blue Street construction support site (WFU1) would temporarily occupy land located between the Pacific Highway and T1 North Shore and Western rail line in North Sydney and would support construction activities at the southern end of the Warringah Freeway Upgrade. WFU1 would be located on land owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>
High Street south construction support site (WFU2)	<p>The High Street south construction support site (WFU2) would temporarily occupy land that is bound by Cahill Expressway, High Street and the High Street off ramp in North Sydney. The land is owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently vacant and zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>
High Street north construction support site (WFU3)	<p>The High Street north construction support site (WFU3) would temporarily occupy land that is bound by Cahill Expressway and Alfred Street in North Sydney. The land is owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently vacant and zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>
Arthur Street east construction support site (WFU4)	<p>The Arthur Street east construction support site (WFU4) would temporarily occupy land bound by the Warringah Freeway, Arthur Street, Mount Street and High Street in North Sydney. The land is owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently vacant and zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>

Construction location	Potential impacts on land use during construction
Berry Street east construction support site (WFU5)	<p>The Berry Street east construction support site (WFU5) would temporarily occupy land bound by the Warringah Freeway, Arthur Street and Berry Street/Warringah Freeway on ramp in North Sydney. The land is owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently vacant and zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>
Ridge Street east construction support site (WFU6)	<p>The Ridge Street east construction support site (WFU6) would temporarily occupy land between the Warringah Freeway and residential properties on Ridge Street in North Sydney. WFU6 would support construction of the Ridge Street pedestrian bridge eastern abutment. The construction support site would be on land owned by Transport for NSW and is zoned SP2 Infrastructure. The use of this site to support construction activities would not impact on the existing land use as it is currently vacant and is zoned for infrastructure related uses. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>
Merlin Street construction support site (WFU7)	<p>The Merlin Street construction support site (WFU7) would temporarily occupy Merlin Street Reserve in Neutral Bay. WFU7 would be the main construction support site for the Alfred Street North realignment and new southbound bus lane bridge off Falcon Street. The construction support site would be on land owned by Transport for NSW and is zoned for public recreation and high density residential.</p> <p>Part of the Merlin Street Reserve would be permanently impacted during operation of the project due to the creation of a new southbound bus lane bridge off Falcon Street. Land use impacts during operation of the project are further considered in the below section.</p>
Cammeray Golf Course construction support site (WFU8)	<p>The Cammeray Golf Course construction support site (WFU8) would temporarily occupy the north-western portion of the existing golf course, located adjacent to the Warringah Freeway. WFU8 would be located on government-owned land zoned for public recreational use associated with the Cammeray Golf Club.</p> <p>WFU8 would be the main site supporting construction works for the Warringah Freeway Upgrade and would be located adjacent to a separate construction support site for the Western Harbour Tunnel works (WHT10).</p> <p>The location and layout of WFU8 and the adjoining WHT10 within Cammeray Golf Course have been designed to minimise disruption to users of the golf course. It is expected that the Cammeray Golf Club would continue to operate as a nine hole golf course during construction, with a revised configuration and reductions to the length of some of the fairways.</p> <p>The Cammeray Park sports ground, tennis club, croquet club and skate park located to the south-east of WFU8</p>

Construction location	Potential impacts on land use during construction
	<p>would not be directly impacted by the construction support site.</p> <p>At the completion of construction, a portion of the site would be used on an ongoing basis to support permanent project infrastructure and the future Beaches Link and Gore Hill Freeway Connection project construction support site (subject to a separate approval). Land use impacts during operation are considered in the below section.</p>
<p>Rosalind Street east construction support site (WFU9)</p>	<p>The Rosalind Street east construction support site (WFU9) would temporarily occupy land bound by the Warringah Freeway northbound off ramp to Miller Street in the north and east, Rosalind Street to the south and Miller Street in Cammeray to the west. WFU9 would be located on land owned by Transport for NSW and zoned for public recreation. Despite the land use zoning the site is unsuitable for public recreational use as it is a relatively small parcel of land, is severed from any expansive open space area and is bordered by existing road infrastructure. Land use impacts at this location during construction would be negligible. The site would be rehabilitated and returned to an equivalent state at the completion of construction.</p>

Potential land use impacts during operation

The project has the potential to impact land use and development potential of surrounding areas during operation. Land use changes as a result of the project would occur largely in response to the physical introduction of permanent project infrastructure at Rozelle, North Sydney and Cammeray. The location of operational infrastructure has been developed in consideration of existing land uses and future development to minimise permanent impacts and is discussed further in Table 20-5.

Surrounding land would also be affected by the operation of the project. The operation of ventilation outlets at Rozelle Rail Yards and at the Warringah Freeway in Cammeray has the potential to influence development patterns for existing and future elevated receptor locations (for example, those receptors within multi-storey residential buildings) and is discussed further in Table 20-6.

Potential indirect impacts as a result of changes to land use would also relate to traffic and transport, noise and vibration, air quality and social and economic values. Consideration of these impacts is provided in Chapter 9 (Operational traffic and transport), Chapter 11 (Operational noise and vibration), Chapter 12 (Air quality) and Chapter 21 (Socio-economics).

Table 20-5 Potential land use impacts during operation

Operational infrastructure	Potential impacts on land use during operation
Rozelle Interchange and surrounds	
<ul style="list-style-type: none"> • Connection to the Rozelle Interchange (part of the M4-M5 Link) • Western Harbour Tunnel operational facilities that form part of the M4-M5 Link Rozelle East Motorway Operations Complex • Wastewater treatment plant. 	<p>The Rozelle Interchange would be located on land zoned Port and Employment under the SREP 26. The objectives of this zone are to facilitate the continuation of commercial port uses, encourage a mix of land uses that generate employment opportunities, particularly in relation to port and maritime uses, and to provide road and rail access to port activities. The establishment of permanent project infrastructure at this location is consistent with the existing land use zone objectives as it would provide improved road access to the surrounding port and maritime precinct of Rozelle Bay and White Bay. Further, the siting of operational project infrastructure at the Rozelle Rail Yards has been developed in consideration of maximising areas of land that would be available for landscaping and urban design treatments and/or community and social infrastructure.</p> <p><i>Informing the Bays Precinct, Sydney Transformation Plan</i> (UrbanGrowth, 2015a) identifies the area around the Rozelle Interchange, including land at the Rozelle Rail Yards, as a longer-term priority destination that would form part of The Bays Precinct urban renewal project. The NSW Government has identified this precinct as a potential location to reconnect areas to the north and south of the Rozelle Rail Yards and to improve connections between Lilyfield and the Sydney Harbour foreshore. Future uses may include a mix of housing choices, including affordable housing, as well as active and passive recreational public spaces and employment uses. Operation of the project would not preclude the future construction of Rozelle Park as part of the Bays Precinct Urban Transformation Program. The project may pose restrictions on the potential establishment of future elevated receivers (including multi-storey residential buildings) located close to the ventilation outlet and motorway facilities at the Rozelle Interchange. This issue is discussed further in the following section.</p>
Rozelle to Birchgrove	
<p>There would be no permanent operational infrastructure established at surface level in the area between Rozelle and Birchgrove. Works would comprise subsurface tunnelling that would not introduce any permanent impacts to existing land uses, current land use zones or the strategic land use direction of the area.</p>	
Birchgrove to Berrys Bay	
Immersed tube tunnels	Operational infrastructure in the area between Birchgrove and Berrys Bay would include immersed tube tunnels for the crossing of Sydney Harbour. The immersed tube tunnels would sit in an excavated rock trench and would be located below the bed of the harbour. The immersed tube tunnels would not introduce navigational impacts for

Operational infrastructure	Potential impacts on land use during operation
	<p>water-based activities and operations carried out in Sydney Harbour. Further, there would be no land use impacts during operation to foreshore land along Sydney Harbour between Birchgrove and Berrys Bay.</p> <p>No other permanent operational infrastructure would be established at surface level in the area between Birchgrove and Berrys Bay. Works would otherwise comprise subsurface tunnelling that would not introduce any permanent impacts to existing land uses, current land use zones or the strategic land use direction of the area.</p>
Berrys Bay to the Warringah Freeway	
<ul style="list-style-type: none"> • Surface connection to Berry Street • Surface connection to Falcon Street. 	<p>Kerb and footpath adjustment works would occur on Miller Street southbound around the intersection with Falcon Street. These works would provide a new dedicated lane for left turning traffic from Falcon Street westbound to Miller Street southbound. Further review of the impacts in this area is currently being carried out and permanent impacts to St Leonards Park would be minimised or, where possible eliminated.</p> <p>The connections between the motorway tunnels and existing surface road network in North Sydney would be established on land owned by Transport for NSW and zoned for infrastructure related uses.</p>
Warringah Freeway and surrounds	
<ul style="list-style-type: none"> • Warringah Freeway Upgrade works • Surface connections from the Warringah Freeway to the motorway tunnel on and off ramps and surrounding surface roads • New, upgraded and widened road bridges • New, upgraded and relocated shared user bridges • Interchange upgrades at High Street and Falcon Street 	<p>Surface connections as part of the Warringah Freeway Upgrade would mostly be carried out on land owned by Transport for NSW and zoned for infrastructure related uses. The project would be compatible with the existing land use zone where carried out on land zoned SP2 Infrastructure.</p> <p>The establishment of permanent infrastructure at Cammeray Golf Course would change the existing land use in the footprint of the permanent infrastructure from public recreation to permanent project infrastructure. Further, the project would reduce the amount of land available for public recreational use in this area. It is expected that the Cammeray Golf Course would be retained in a modified form (such as changes to the length of some fairways).</p> <p>The project is consistent with the broader NSW Government strategic planning direction for North Sydney and surrounding locality. As part of the North Sydney Centre Review the traffic and pedestrian management study recommends a range of initiatives focused on prioritising pedestrians in the North Sydney CBD through improvements to connectivity, amenity and mobility. The existing scale of the Warringah Freeway creates a barrier between the eastern and western sides of North Sydney. While the project would not remove this barrier, the Warringah Freeway Upgrade would provide a positive contribution to the local area by providing new and upgraded active transport infrastructure that would improve connectivity across the Warringah Freeway including connections to and from the North Sydney commercial centre. This would include the replacement of the Ridge Street shared user bridge, a new shared user path along the southern side of the High Street bridge at North Sydney, an active</p>

Operational infrastructure	Potential impacts on land use during operation
<ul style="list-style-type: none"> • Upgrades to the surrounding road network and bus infrastructure • Ventilation outlet and motorway facilities at the Warringah Freeway • Motorway control centre at Waltham Street. 	<p>transport link north of Ernest Street, and an improved dedicated cycleway between Ernest Street and Miller Street. The NSW Government is currently undertaking a strategic planning investigation of the St Leonards and Crows Nest Planned Precinct. The new Sydney Metro station located at Crows Nest will provide opportunities for rejuvenation of the local area. This strategic planning investigation is being carried out in consultation with the relevant councils to ensure a coordinated planning approach. The northern extent of the Warringah Freeway Upgrade would be located within this planned precinct. It is anticipated that the project would not significantly impact on road access to and from the precinct as a result of the changes to connectivity for the Brook Street interchange.</p> <p>Operational infrastructure at Waltham Street would be established within the Artarmon industrial area on land zoned for light industrial uses. While the project would reduce the amount of land that would otherwise be used for light industrial activities, the project is not expected to impact on the continued viability of the Artarmon industrial area more broadly. Further, the project would not preclude the continued operation of light industrial and/or commercial uses on land that adjoins or is located in proximity to the project infrastructure within the Artarmon industrial area.</p>

The project would involve the operation of ventilation outlets and motorway facilities at the Rozelle Interchange and at the Warringah Freeway (refer to Chapter 5 (Project description)).

Table 20-6 identifies land use zones and applicable height restrictions, if any, in an area of around 300 metres from each of the project ventilation outlets. It also outlines potential implications for existing and future land use planning and particularly that:

- There are currently no adverse impacts at any existing buildings for elevated receptors or for any future buildings up to a height of 20 metres. However, there would be potential impacts for future buildings above 20 metres in height within 300 metres of the outlets; but this would not necessarily preclude such development. Further consideration at rezoning or development application stage would be required (refer to Chapter 12 (Air quality))
- Any future changes to zoning and/or development controls would need to manage any interaction between the project and future development for buildings above 20 metres and within 300 metres of the ventilation outlet.

Potential indirect impacts as a result of changes to land use would also relate to traffic and transport, noise and vibration, air quality and social and economic values. Consideration of these impacts is provided in Chapter 9 (Operational traffic and transport), Chapter 11 (Operational noise and vibration), Chapter 12 (Air quality) and Chapter 21 (Socio-economics). The air quality impact assessment (refer to Chapter 12) and the human health impact assessment (refer to Chapter 13) carried out for the project demonstrate that operation of the motorway facilities and ventilation outlets would not result in unacceptable air quality impacts or an unacceptable impact to human health for existing receivers. The air quality impact assessment and human health assessment have assessed potential impacts at ground level, as well as at existing elevated receivers (such as those in multi-storey dwellings close to the project).

Table 20-6 Existing building height restrictions around project ventilation outlets

Ventilation outlet	Relevant land use zones within 300 metres of the ventilation outlet	Existing height restrictions within 300 metres of the ventilation outlet	Potential implications for existing and future planning controls
Ventilation outlet at the Rozelle Interchange	<p>Land use zones for the area around the ventilation outlet at the Rozelle Interchange are shown in Figure 20-1 and include the following within 300 metres of the ventilation outlet:</p> <ul style="list-style-type: none"> • Predominantly R1 General Residential and Port and Employment • Some small areas of B2 Local Centre, RE1 Public Recreation (Easton Park) and SP2 Infrastructure. 	<p>There are currently no building height restrictions applicable to land around the ventilation outlet at the Rozelle Interchange under the Leichhardt LEP 2013 or SREP 26.</p>	<p>There are currently no height limits imposed on development in land use zones within 300 metres of the ventilation outlet at the Rozelle Interchange.</p> <p>Areas in and around Rozelle Bay are included in the <i>Informing the Bays Precinct, Sydney Transformation Plan</i>.</p> <p>Land use considerations would be required to manage any interaction between the project and future development for buildings above 20 metres and within 300 metres of the ventilation outlet.</p>
Ventilation outlet at the Warringah Freeway	<p>Land use zones for the area around the proposed Warringah Freeway ventilation outlet are shown in Figure 20-5 and include the following within 300 metres of the ventilation outlet:</p> <ul style="list-style-type: none"> • Predominantly R4 High Density Residential and R3 Medium Density Residential, with some pockets of R2 Low Density Residential • A small area of B4 Mixed Use zone at the western end of Military Road 	<p>Building height restrictions applicable to land around the Warringah Freeway ventilation outlet under the North Sydney LEP 2013 include:</p> <ul style="list-style-type: none"> • A maximum of 12 metres for most land zoned R4 High Density Residential, with some pockets up to 16 metres around Military Road on the eastern side of the Warringah Freeway • A maximum of 8.5 metres for most land zoned R3 Medium Density Residential, with a single site on Lytton Street permitted up to 11 	<p>All land use zones within 300 metres of the ventilation outlet currently have building height restrictions of less than 20 metres. Where height restrictions do not exist, particularly in RE1 Public Recreation and SP2 Infrastructure (road infrastructure) zones, development of elevated habitable structures would either be prohibited or inconsistent with the aims of the zone.</p> <p>No additional development controls would be required to manage the interaction between the operation of the ventilation outlet and currently permissible habitable structures in the area. However, if zoning and/or development controls were to be</p>

Ventilation outlet	Relevant land use zones within 300 metres of the ventilation outlet	Existing height restrictions within 300 metres of the ventilation outlet	Potential implications for existing and future planning controls
	<ul style="list-style-type: none"> • Several areas of SP2 Infrastructure, including education facilities, places of worship and road infrastructure • Areas of RE1 Public Recreation (including ANZAC Park, St Leonards Park and the Cammeray Golf Course). 	<p>metres</p> <ul style="list-style-type: none"> • A maximum of 8.5 metres for land zoned R2 Low Density Residential • A maximum of 16 metres for land zoned B4 Mixed Use • Maximum heights for land zoned SP2 Infrastructure (education establishments and places of worship) consistent with surrounding residential zones, being either 8.5 metres or 12 metres. There are no height limits imposed on SP2 Infrastructure (road infrastructure) zones. 	<p>reviewed in the future, land use considerations would need to manage any interaction between the project and future development for buildings above 20 metres and within 300 metres of the ventilation outlet at the Warringah Freeway.</p>

Changes in public open space

The following public open space areas would be temporarily impacted during construction:

- Yurulbin Park, Birchgrove
- Rose Avenue Reserve, Neutral Bay
- St Leonards Park, North Sydney
- ANZAC Park, North Sydney
- Cammeray Golf Course
- Merlin Street Reserve.

The majority of open space used for construction of the project would not be required to operate the project and would be rehabilitated and returned to an equivalent state as soon as practicable at the completion of construction. The project would not impact on the long term viability of these areas as public open space.

The more substantial changes in public open space as a result of the operation of the project would be at Cammeray Golf Course, where about 25,000 m² adjacent to the Warringah Freeway would be required for shared permanent operational facilities for both the Western Harbour Tunnel and Warringah Freeway project and the Beaches Link and Gore Hill Freeway Connection project. Change at this site would be managed to enable its ongoing operation as a nine-hole golf course, with minor amendments to the configuration of holes and their associated pars.

20.5 Environmental management measures

The project has been designed to minimise the requirement for property acquisition as far as practical and optimise the use of land already owned by Transport for NSW. Measures to avoid, minimise or manage land use and property impacts as a result of the project are detailed in Table 20-7.

Additional measures relevant to the management of land use impacts are also outlined in other chapters of the environmental impact statement, including:

- Chapter 8 (Construction traffic and transport)
- Chapter 9 (Operational traffic and transport)
- Chapter 10 (Construction noise and vibration)
- Chapter 11 (Operational noise and vibration)
- Chapter 12 (Air quality)
- Chapter 13 (Human health)
- Chapter 21 (Socio-economics)
- Chapter 22 (Urban design and visual amenity).

Table 20-7 Environmental management measures for land use and property impacts

Ref	Phase	Impact	Environmental management measure	Location
LP1	Pre-construction and construction	Property acquisition	Land acquisition for the project will be carried out in accordance with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> (NSW), the <i>Roads and Maritime Services Land Acquisition Information Guide</i> (Roads and Maritime, 2014a) and <i>Fact sheet: Property acquisition of subsurface lands</i> (Roads and Maritime, 2015) and in accordance with the land acquisition reforms announced by the NSW Government in 2016.	WHT/WFU
LP2	Construction	Temporary use of land	Land subject to temporary use, including areas of public open space, will be rehabilitated as soon as practicable to an appropriate land use, taking into consideration the location, land use characteristics, area and adjacent land uses. This will be carried out in consultation with the relevant council and/or the landowner.	WHT/WFU
LP3	Construction	Access impediments to private property	Where impacts to private property access is unavoidable during construction, property owners will be consulted in advance to develop appropriate alternative access arrangements.	WHT/WFU
LP4	Pre-construction and construction	Temporary relocation of moorings	Transport for NSW will consult with the owners and/or leaseholders and/or licence holders of moorings that require temporary relocation to determine alternative arrangements. All efforts will be made to relocate facilities as close to their original locations as possible.	WHT
LP5	All phases	Changes to lease arrangements	Transport for NSW will consult with existing lease holders regarding any changes to lease arrangements.	WHT/WFU

Ref	Phase	Impact	Environmental management measure	Location
LP6	Operation	Residual land	Residual land remaining following construction of the project will be confirmed to identify appropriate land use, taking into consideration the location, land use characteristics, area and adjacent land uses.	WHT/WFU
LP7	Operation	Residual land at Cammeray Golf Course	Transport for NSW will continue to work with Cammeray Golf Club with a view to maintaining the long term viability of Cammeray Golf Course.	WHT/WFU
LP8	Operation	Air quality impacts for elevated receivers located around ventilation outlets and motorway facilities	Transport for NSW will assist Inner West Council, North Sydney Council and the Department of Planning, Industry and Environment (as appropriate) in determining relevant land use considerations applicable to future development in the immediate vicinity of ventilation outlets for inclusion in local environmental plans or development control plans, where required, to manage interactions between the project and future development. This may include procedures for identifying the requirement for consultation with Transport for NSW.	WHT/WFU

Western Harbour Tunnel = WHT, Warringah Freeway Upgrade = WFU.

