14 Social and economic

This chapter outlines the potential social and economic impacts associated with the M4-M5 Link project (the project). A detailed social and economic impact assessment has been undertaken for the project and is included in **Appendix P** (Technical working paper: Social and economic).

The Secretary of the NSW Department of Planning and Environment (DP&E) has issued environmental assessment requirements for the project. These are referred to as Secretary's Environmental Assessment Requirements (SEARs). **Table 14-1** sets outs these requirements and the associated desired performance outcomes that relate to social and economic matters, and identifies where they have been addressed in this environmental impact statement (EIS).

Table 14-1 SEARs – social and economic

Desired performance outcome	SEARs	Where addressed in the EIS
9. Social and economic, land use and property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.	1. The Proponent must assess social and economic impacts (of all phases of the project) in accordance with the current guidelines (including cumulative ongoing impacts of the proposal).	An assessment of the construction related impacts of the project on social and economic matters is provided in **section 14.3**. Operational impacts of the project are assessed in **section 14.4**. The relevant guidelines considered for the social and economic impact assessment are listed in **section 14.1.2**. Potential cumulative impacts of relevant projects are assessed in **Chapter 26** (Cumulative impacts).
	2. The Proponent must assess impacts from construction and operation on potentially affected properties (including Crown lands), businesses, recreational users and land and water users, including property acquisition/adjustments, access amenity and relevant statutory rights, and community severance and barrier impacts resulting from the project.	An assessment of the project's impact on property, businesses, the community and recreational users is provided **section 14.3** and **section 14.4**. Further assessment is provided in **Chapter 12** (Land use and property).
	3. The Proponent must identify opportunities for local centre street revitalisation improvements, pedestrian and cyclist access and connectivity and provision of community and social facilities.	An assessment of the opportunities the project provides for open space and community facilities is provided in **section 14.4**. Local centre street revitalisation improvements are identified in **Chapter 13** (Urban design and visual amenity), and active transport opportunities are outlined in **Chapter 8** (Traffic and transport) and **Appendix N** (Technical working paper: Active transport strategy).

Desired performance outcome	SEARs	Where addressed in the EIS
	4. The design and siting of project elements should be located in such a way that functional, contiguous areas of residual land are maximised. The design and siting must consider appropriate land use interfaces (ie White Bay) and the social and economic impacts of proposed land uses against alternate land uses.	Residual land is referred to as remaining project land in this EIS (refer to **Chapter 12** (Land use and property). Consideration of options and alternative uses for remaining project land is outlined in **Chapter 12** (Land use and property) and **Chapter 13** (Urban design and visual amenity).
	5. Where air quality allows, residual land must be designed to positively contribute to additional community uses, public recreation uses and/or affordable or social housing. Passively landscaped areas should not be the default use for residual land.	Design opportunities for remaining project land are described in **Chapter 13** (Urban design and visual amenity).
	6. The Proponent must assess potential impacts on utilities (including communications, electricity, gas, and water and sewerage) and the relocation of these utilities.	An assessment of the potential impacts on utilities is provided in **section 14.3.8**. Further detail is provided in **Appendix F** (Utilities Management Strategy).
	7. Where the project is predicted to impact on utilities the Proponent must undertake a utilities management strategy. The strategy must identify proposed management strategies, including relocation or adjustment of the utilities, and their estimated timing and duration. This strategy must be developed in consultation with the relevant utility owners or providers.	The Utilities Management Strategy for the project identifies proposed management strategies, including relocation or adjustment of the utilities, and their estimated timing and duration, and has been developed in consultation with the relevant utility owners or providers (refer to **Appendix F** (Utilities Management Strategy)).
	8. 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: (a) traffic management (including property access, pedestrian access); (b) landscaping/urban design matters; (c) construction activities including out of hours work, and (d) noise and vibration mitigation and management.	The draft Community Consultation Framework developed for the project is included in **Appendix G** (Draft Community Consultation Framework). Consultation activities undertaken for the project to date are outlined in **Chapter 7** (Consultation).

14.1 Assessment methodology

14.1.1 Overview

The key components of the social and economic assessment included:

- Desktop assessment including review of the social and economic impact assessments from the previous WestConnex projects to scope issues and identify the scale and magnitude of potential impacts
- Community and stakeholder consultation (including information sessions and business surveys)
- Definition of the study area (a description of the study area is provided in **section 14.1.4**)
- Development of a profile of the existing social and economic environment in the study area
- Identification and consultation with stakeholders who could be affected by the project
- Assessment of the potential construction, operation and cumulative impacts of the project on social and economic matters
- Identification of management measures for monitoring and managing the potential impacts of the project.

14.1.2 Guideline and policy framework

The social and economic impact assessment has been prepared to assess the impacts of the project in accordance with the *Environmental Impact Assessment Practice Note – Social and economic assessment* (EIA-N05) (Practice Note) (NSW Roads and Maritime Services (Roads and Maritime) 2014). The Practice Note guides the assessment level and process for social and economic impact assessments and outlines the requirements for establishing the social and economic baseline. In accordance with the Practice Note, the project requires a comprehensive assessment.

The assessment has also been undertaken with consideration of the following state and local council policies and plans:

- *NSW State Priorities* (NSW Government 2015)
- *State Infrastructure Strategy* (Infrastructure NSW 2012)
- *NSW Long Term Transport Master Plan* (Transport for NSW 2012)
- *NSW Freight and Ports Strategy* (Transport for NSW 2013b)
- *A Plan for Growing Sydney* (NSW Government 2014)
- *Draft Central District Plan* (Greater Sydney Commission 2016)
- *Parramatta Road Corridor Urban Transformation Strategy* (UrbanGrowth NSW 2016a)
- *The Bays Precinct Transformation Plan* (UrbanGrowth NSW 2015b)
- *Sustainable Sydney 2030 – Community Strategic Plan* (City of Sydney Council 2013)
- Inner West Council policies:
  - *Ashfield 2023 – Our Place, Our Future* (Ashfield Council 2014)
  - *Leichhardt 2025+ Community Strategic Plan* (Leichhardt Council 2013)
  - *Our Place, Our Vision – Marrickville Community Strategic Plan* (Marrickville Council 2013).

14.1.3 Desktop assessment

Additional data used to inform the social and economic assessment included:

- Australia Bureau of Statistics (ABS) (Census 2011)
- ABS (8165.0 Counts of Australian Businesses 2016)
- ABS (5220.0 Australian National Accounts 2016)

- DP&E Population and Dwelling Forecasts 2017
- Transport Performance and Analytics 2017
- Relevant NSW state, local government and agency policy and guidelines (see **section 14.1.2**)
- Outcomes of agency, community, business and stakeholder consultation
- Mapping of social and economic index for areas (SEIFA). The SEIFA is an advantage/disadvantage rating for household conditions within an area and is weighted one to 10, with 10 being the most advantaged
- Geographic information system (GIS) information on land uses as informed by relevant local environmental plans.

14.1.4 Study area

The study area for the social and economic impact assessment covers the project footprint and comprises the ABS geographic boundaries (referred to as Statistical Area Level 2s) (SA2s) outlined in **Table 14-2**.

Table 14-2 ABS boundaries defining the social and economic study area

Precinct	SA2 boundaries
Ashfield-Haberfield	Ashfield
	Five Dock–Abbotsford
	Burwood–Croydon
	Haberfield–Summer Hill
Leichhardt-Glebe	Leichhardt–Annandale
	Lilyfield–Rozelle
	Balmain
	Glebe–Forest Lodge
Alexandria-Erskineville	Sydenham–Tempe–St Peters
	Redfern–Chippendale
	Erskineville–Alexandria
	Newtown–Camperdown–Darlington
	Petersham–Stanmore

These boundaries have been extended to include the SA2 of any area within a 400 metre radius of the project footprint. Generally, direct and indirect social and economic impacts can be more explicitly felt within a 400 metre radius (a five to 10 minute walk) from the project. The study area is shown in **Figure 14-1**.

The baseline profile for the study area has been compared with data for the Greater Sydney metropolitan area.

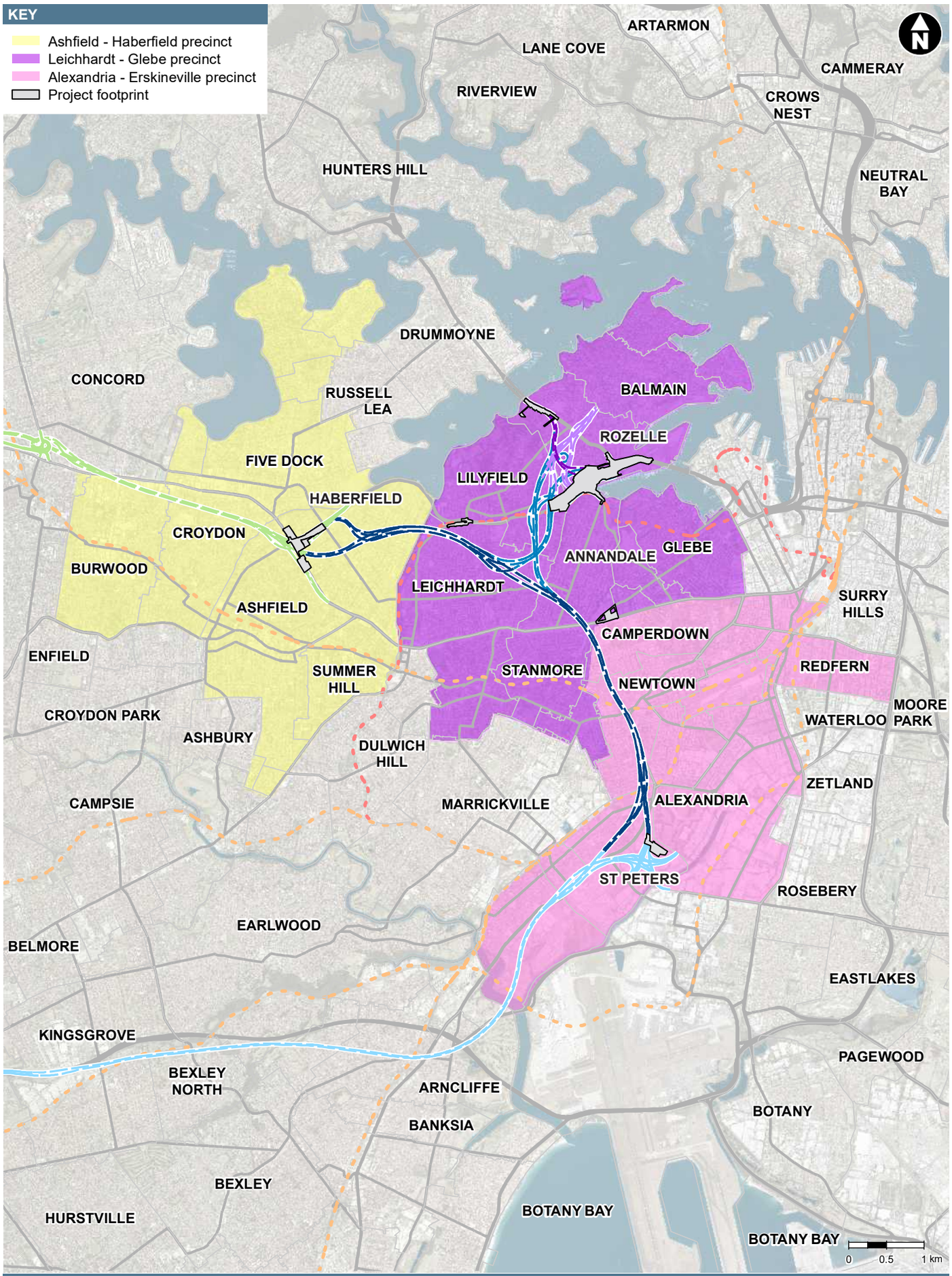


Figure 14-1 Study area for the social and economic impact assessment

14.1.5 Business surveys

The business surveys were conducted within 400 metres of the proposed construction ancillary facility sites at Rozelle, Lilyfield and Annandale over a two-week period in November 2016. Around 100 businesses participated in the survey, comprising local retailers, commercial operators and other businesses. The proposed construction sites at Haberfield and St Peters were not included in the survey as business impacts at these locations have previously been identified in the assessments for the M4 East and New M5 projects. The social and economic assessment has, however, considered these locations including with regard to the potential cumulative impacts of extended construction durations. This is discussed in **Chapter 26** (Cumulative impacts).

Information gathered as part of the business surveys was collated into a database and analysed. Survey questions generally related to the respondent's level of knowledge about the project, existing business access and delivery requirements, and perceptions and/or concerns regarding the construction and operation of the project. The survey questionnaire is included in Annexure A of **Appendix P** (Technical working paper: Social and economic).

14.1.6 Stakeholder consultation

The social and economic assessment has been informed by stakeholder and community consultation undertaken for the project including:

- Over 100 face-to-face business surveys
- Meetings were held with advocacy groups, local councils, elected representatives, government agencies, business groups, the freight industry, peak bodies and community members to seek input and feedback on key considerations influencing project design
- The online collaborative map was hosted on the WestConnex website to encourage community ideas and feedback
- Five community ideas sessions were held between 10 and 22 August 2016, to seek feedback and ideas and discuss the project process with the community
- Seven briefings were held with key stakeholders, including NRMA, Australian Logistics Council, Infrastructure Partnerships Australia, Greater Sydney Commission, and local, state and Commonwealth Government stakeholders
- Five community information sessions were held between May and June 2017 to confirm key information about the project's concept design update and provide a forum for the community to provide feedback and ideas.

In addition, communication activities were specifically undertaken to inform the local community about the project, initial investigations and the assessment process. These included the distribution of postcards with key project facts, community update newsletters, notifications, community ideas sessions and community meetings.

Further details regarding consultation undertaken for the project (up to exhibition of the EIS) are provided in **Chapter 7** (Consultation).

14.1.7 Assessment approach

The social and economic impact assessment has assessed the direct and indirect impacts and benefits of the project with regard to:

- Property impacts, including changes to property access, acquisition, value, amenity, power and utilities and remaining project land use
- Social impacts, including amenity, community health, social infrastructure, local access and connectivity, heritage and visual character
- Business impacts and benefits, including passing trade, parking, servicing and deliveries, employment and recruitment, business access, connectivity and amenity
- Economic impacts, including construction expenditure and employment, economic benefit, freight and efficiency costs and road tolling.

Figure 14-2 outlines the assessment framework that was used to determine the significance of social and economic impacts.

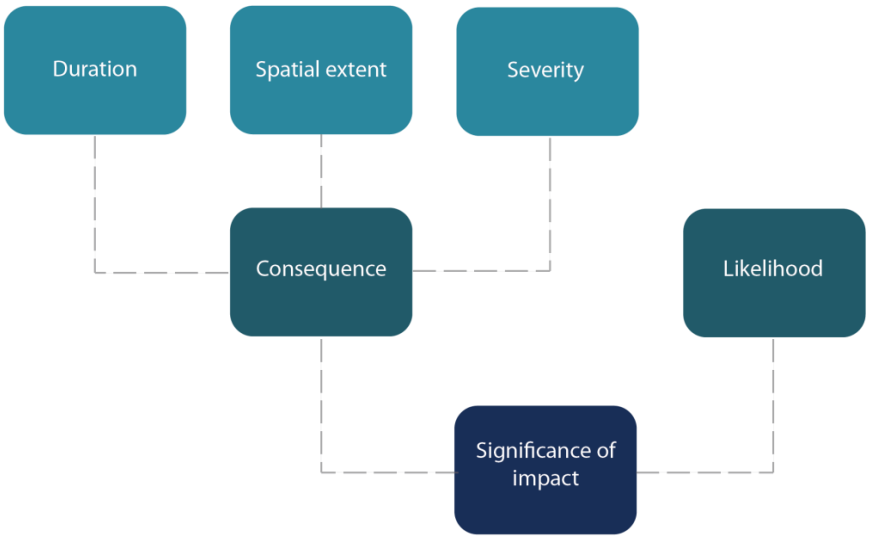


Figure 14-2 Assessment framework to determine the significance of social and economic impacts

Consequence refers to the degree of benefit or detriment associated with the impact and is assessed as neutral, slight, moderate or major. The following factors contribute to the determination of the overall consequence level:

- **Duration** – short term (less than six months), medium-short term (between six months and two years), medium term (between two and five years), medium-long term (between five and 10 years), or long term (more than 10 years)
- **Spatial extent** – locality, suburb, local government area or region
- **Severity of impact** – neutral, small, medium or large.

The likelihood of an impact is considered near certain, high, possible, low or rare.

The significance of an impact is determined from the consequence and likelihood and is assessed as positive, negative or neutral, as shown in **Table 14-3**. There terms are further defined in **Appendix P** (Technical working paper: Social and economic).

Table 14-3 Significance of social and economic impacts

		Consequence			
		Neutral	**Slight**	**Moderate**	**Major**
Likelihood	**Rare**	Negligible	Negligible	Minor	Moderate
	Low	Negligible	Negligible	Minor	Moderate
	Possible	Negligible	Minor	Moderate	Moderate
	High	Minor	Minor	Moderate	Major
	Near certain	Minor	Moderate	Major	Major

14.2 Existing environment

This section provides an overview of the social and economic characteristics of the study area with regard to precinct demographic profiles, community values, social infrastructure, business and transport services. Sensitive receivers identified in this section are indicative and not exhaustive.

Sensitive receivers and land zoning within 400 metres of construction ancillary facility sites are shown in **Figure 14-3** to **Figure 14-9**.

14.2.1 Demographic profile

This section provides an overview of the social and economic characteristics of the study area. This information has been sourced from the ABS Census 2011, Australian Statistics Business Indicators (ABS 2016) and Transport Performance and Analytics (TPA) (2011). **Table 14-4** summarises the demographic profile of the study area.

Table 14-4 Demographic information for study area precincts (ABS 2011 and TPA 2011)

Characteristics	Ashfield-Haberfield precinct	Leichhardt-Glebe precinct	Alexandria-Erskineville precinct
Population by age	• A population of around 79,119 residents (in 2011) • A low proportion of residents were under the age of 15 years (15%) when compared to Greater Sydney (19%) • A high proportion of residents within the young working family of 15-44 years (47%) and older 75+ years (8%) age cohorts when compared to Greater Sydney (44% and 6% respectively).	• A population of around 68,800 residents (in 2011) • A low proportion of residents were under the age of 15 years (15%) when compared to Greater Sydney (19%) • A high proportion of residents within the young working family of 15-44 years (51%) groups when compared to Greater Sydney (44%).	• A population of around 77,973 residents (in 2011) • A younger age profile when compared to Greater Sydney (median age of 33 years compared to 36 years for Greater Sydney) • A lower proportion of residents were under the age of 15 years (10%) when compared to Greater Sydney (19%) • A higher proportion of residents within the young working family of 15-44 years (64%) group when compared to Greater Sydney (44%).
Unemployment and household conditions	• The unemployment level was 5.8% in 2011, which was slightly higher than the Greater Sydney region (5.7%) • A SEIFA index of 8 (slightly lower than the Greater Sydney index of 9) indicates lower household conditions than Greater Sydney. Both indexes are considered to be a high score, indicating a relative lack of disadvantage in general. For example, an area may have a high score if there are (among other things) few households with low incomes, few people with no qualifications and few people in low skilled occupations.	• The unemployment level was 4.5% in 2011, which was lower than in Greater Sydney (5.7%) • A SEIFA index of 9.5 (higher than the Greater Sydney index of 9) indicates higher household conditions than Greater Sydney.	• The unemployment level was 5% in 2011, which was lower than in Greater Sydney (5.7%) • A SEIFA index of 8.75 (lower than the Greater Sydney index of 9) indicates lower household conditions than Greater Sydney.

Characteristics	Ashfield-Haberfield precinct	Leichhardt-Glebe precinct	Alexandria-Erskineville precinct
Cultural diversity	Around 44% of residents were born overseas and 46% of people spoke a language other than English. When compared to Greater Sydney, the number of people born overseas (40%) and the number of people who spoke a language other than English (38%) were both higher.	Around 30% of residents were born overseas and 17% of people spoke a language other than English. When compared to Greater Sydney, the number of people born overseas (40%) and the number of people who spoke a language other than English (38%) were both lower.	Around 38% of residents were born overseas and 29% of people spoke a language other than English. Greater Sydney recorded a lower proportion of people born overseas (40%) and a higher proportion of people who spoke a language other than English (38%).
Dwellings	In 2011, there were around 28,121 private dwellings, 47% of which were apartment style dwellings, which was higher than the Greater Sydney average (26%). There has likely been a sizeable increase in the number of apartments built in the inner and central city suburbs over recent years.	In 2011, there were around 28,710 private dwellings, 34% of which were apartment style dwellings, which was higher than the Greater Sydney average (26%). Townhouses were the primary form of housing, contributing 37% compared to Greater Sydney's 13%.	In 2011, there were around 32,643 private dwellings, 46% of which were apartment style dwellings, which was higher that the Greater Sydney average (26%).
Employment	In 2011, 65% of residents aged over 15 were employed. The top four employment industries were: • Health care and social assistance (12%) • Professional, scientific and technical services (11%) • Retail trade (9%) • Education and training (9%).	In 2011, 67% of residents aged over 15 were employed. The top four employment industries included: • Professional, scientific and technical services (17%) • Education and training (10%) • Health care and social assistance (10%) • Financial and insurance services (10%).	In 2011, 68% of residents aged over 15 were employed. The top four employment industries included: • Professional, scientific and technical services (15%) • Education and training (10%) • Health care and social assistance (9%) • Financial and insurance services (8%).
Journey to work	For employed residents within the precinct: • Around 47% drove to work in a car as either driver or passenger • Around 32% used public transport to get to work (via rail or bus) • Around 21% used other methods to get to work (including walking and cycling).	For employed residents within the precinct: • Around 43% drove to work in a car as either driver or passenger • Around 26% used public transport to get to work (via rail or bus) • Around 34% used other methods to get to work (including walking and cycling).	For employed residents within the precinct: • Around 31% drove to work in a car as either driver or passenger • Around 36% used public transport to get to work (via rail or bus) • Around 32% used other methods to get to work (including walking and cycling).

Characteristics	Ashfield-Haberfield precinct	Leichhardt-Glebe precinct	Alexandria-Erskineville precinct
	For all workers travelling to jobs within the precinct: • Around 58% drove to work in a car as either driver or passenger • Around 19% used public transport to get to work (via rail or bus) • Around 23% used other methods to get to work (including walking and cycling).	For all workers travelling to jobs within the precinct: • Around 56% drove to work in a car as either driver or passenger • Around 16% used public transport to get to work (via rail or bus) • Around 28% used other methods to get to work (including walking and cycling).	For all workers travelling to jobs within the precinct: • Around 52% drove to work in a car as either driver or passenger • Around 25% used public transport to get to work (via rail or bus) • Around 24% used other methods to get to work (including walking and cycling).
Vehicle ownership	Of occupied private dwellings: • Around 44% had one registered motor vehicle garaged or parked at their address. Around 28% had two registered motor vehicles and 87% had three or more registered motor vehicles • Around 18% per cent did not have a vehicle.	Of occupied private dwellings: • Around 49% had one registered motor vehicle garaged or parked at their address. Around 24% had two registered motor vehicles and 4% had three or more registered motor vehicles • Around 19% did not have a vehicle.	Of occupied private dwellings: • Around 49% had one registered motor vehicle garaged or parked at their address. Around 16% had two registered motor vehicles and 3% had three or more registered motor vehicles • Around 29% did not have a vehicle.
Population and employment forecast	• The TPA forecasts that by 2036, the population would increase around 29% over its 2016 population of 83,308 to 111,067 residents • Employment is forecast to increase by around 28% with the workforce also expected to increase by 28% over the same period.	• The TPA forecasts that by 2036, the population would increase around 26% over its 2016 population of 76,174 to 95,808 residents • Employment is forecast to increase by around 22% with the workforce also expected to increase by 24% over the same period.	• The TPA forecasts that by 2036, the population would increase around 34% over its 2016 population of 89,975 to 120,520 residents • Employment is forecast to increase by around 31% with the workforce also expected to increase by 28% over the same period.

14.2.2 Community values

This section presents the community values and feedback gained from consultation undertaken for the project, as it relates to the social and economic impact assessment. Consultation activities undertaken for the project are summarised in **section 14.1.6** and detailed in **Chapter 7** (Consultation). Key issues and/or themes relevant to social and economic matters identified through consultation include:

- Property impacts, including acquisition, property value, and uncertainty around elements such as acquisition, construction damage etc
- Amenity impacts, including visual, noise and vibration, air quality and human health and heritage
- Access and connectivity impacts, including public transport, access and connectivity, congestion, parking, toll prices and active transport
- Business and industry, including access and connectivity, parking, visibility, revenue, amenity and notification
- Social infrastructure impacts
- Adequate notification of the project commencing.

A detailed list of all considerations raised is provided in **Appendix P** (Technical working paper: Social and economic).

Community values are those that are shared by residents and visitors about a particular area, or about the enhancement of quality of life or sense of place. Physical aspects, such as heritage items, social infrastructure or local features (such as public art and trees) are generally highly valued by communities. Intangible elements such as neighbourhood identity, community safety, health and wellbeing, and community cohesion are also highly valued by communities.

Neighbourhood identity and character relates to the features of a place or environment that generate a sense of ownership by the community and contribute to a person's appreciation of their surroundings. During community consultation, community values associated with neighbourhood identity included:

- Integration of public art
- Continued focus and improved access to educational facilities, including local schools, preschools and adult learning centres
- Protection and enhancement of heritage and valued views/vistas (ie city skyline and waterways)
- Retention of trees and vegetation for amenity.

Community safety, health and wellbeing are a key priority for communities within the study area. Community members indicated the importance of construction activities being undertaken in a manner that considers the health, safety and wellbeing of residents.

Community cohesion refers to the connections and relationships between individuals and their neighbourhoods. Levels of community cohesion and sense of belonging are said to be good where communities have access to a diverse range of local and regional infrastructure, barriers to movement are minimised and there are a variety of meeting places which encourage strong support networks.

14.2.3 Social infrastructure

Social infrastructure comprises social services or facilities that are used for the physical, social, cultural or intellectual development or welfare of the community. Social infrastructure often includes schools and libraries and the services, activities and programs that operate within these facilities. Open spaces, parks, recreation areas and sporting fields that support sport, recreational and leisure uses are also identified as social infrastructure.

Social infrastructure facilities generally operate at a local, district and/or regional level and are defined by the scale of the population catchment they serve. For example, a public primary school is generally intended to serve a local catchment and is usually within walking distance. However, a secondary

school would generally serve a wider catchment of around three kilometres, and a university would generally cater for a significantly wider catchment (of up to 100 kilometres). Social infrastructure can often be classified as a sensitive receiver and may be directly affected by the project. This section identifies the social infrastructure within 400 metres of the construction ancillary facility sites.

The social infrastructure facilities outlined in this section are shown in **Figure 14-3** to **Figure 14-9**.

Educational facilities

There are a wide range of educational facilities in the study area, including childcare centres, primary schools, secondary schools, tertiary educational facilities and an indigenous school.

Childcare centres and primary schools mainly serve the local community. Secondary schools draw from a wider catchment as families are willing to travel further to enrol at schools with particular personal meaning, reputation or history. Tertiary facilities, such as the University of Sydney, draw from a vast catchment with students attending from interstate and overseas. The University of Sydney is located in the north of the Alexandria-Erskineville precinct and has over 54,000 students enrolled.

Table 14-5 identifies childcare and education facilities located within 400 metres of construction ancillary facility sites. Sensitive receivers identified in this section are indicative and not exhaustive.

Table 14-5 Education facilities within 400 metres of construction ancillary facility sites

Precinct	Construction site	Facility type	Facility name
Ashfield-Haberfield	Wattle Street civil and tunnel site (C1a) Haberfield civil and tunnel site (C2a)/Haberfield civil site (C2b) Northcote Street civil site (C3a) Parramatta Road West civil and tunnel site (C1b) Parramatta Road East civil site (C3b)	Childcare	• The Infants Home, Family Day Care • Chaya's Family Day Care • Little VIPs Child Care Haberfield • St John's Pre-school • Guardian Early Learning Centre • Goodstart Early Learning Centre • Nurjahan's Family Day Care • Greenwood Five Dock
		Primary school	• Haberfield Public School
Leichhardt-Glebe	Darley Road civil and tunnel site (C4)	Childcare	• Explore and Develop • Emmerick Street Community Preschool • Billy Kids Lilyfield Early Learning Centre • Zero Up Childcare • Only About Children Leichhardt Elswick St Campus • My Stepping Stone • St Columba's North Leichhardt Out of School Hours Care
		Primary school	• St Columba's Primary School Leichhardt North • Orange Grove Public School
		Secondary College	• Sydney Secondary College Leichhardt

Precinct	Construction site	Facility type	Facility name
	Rozelle civil and tunnel site (C5) The Crescent civil site (C6) Victoria Road civil site (C7)	Childcare	• Rosebud Cottage Childcare Centre • Lilyfield Early Learning Centre • Hilda Booler Kindergarten • Balmain Cove Early Learning Centre
		Tertiary education	• Sydney Community College
	Iron Cove Link civil site (C8)	Childcare	• Rozelle Out of School Hours Care • St Thomas' Child Care Centre • Balmain Cove Early Learning Centre • Rozelle Child Care Centre
		Primary school	• Rozelle Public School
		Secondary school	• Sydney Secondary College Balmain Campus
		Tertiary education	• Sydney College of the Arts – The University of Sydney
Alexandria-Erskineville	Pyrmont Bridge Road tunnel site (C9)	Childcare	• Camperdown Child Care Centre • Camperdown Sunshine Kids • Explore and Develop Camperdown • Guardian Early Learning Centre • Peekaboo - Camperdown (Learning Centre) • Annandale Child Care Centre • Sunshine Bubs Kindergarten • JoJo's Family Day Care • Explore & Develop Annandale • Lucas Street Child Care Centre
		Primary school	• Annandale Public School • St Brendan’s Primary School • Bridge Road School
		Tertiary education	• Sydney Nursing School • The University of Sydney, Camperdown NSW
		University	• University of Sydney (located around 600 m east)
	Campbell Road civil and tunnel site (C10)	Childcare	• St Peters Community Preschool • Tribe Out of School Hours
		Primary School	• St Peters Public School

Health and emergency facilities

There are around 137 health facilities within the study area, including private and public hospitals, medical centres, general medical practices and fire, police and ambulance stations. **Table 14-6** identifies the health and emergency facilities located within 400 metres of construction ancillary facility sites. Sensitive receivers identified in this section are indicative and not exhaustive.

Table 14-6 Health and emergency facilities within 400 metres of construction ancillary facility sites

Precinct	Construction site	Facility type	Facility name
Leichhardt-Glebe	Iron Cove Link civil site (C8)	Medical centre	• Rozelle Medical Centre • Rozelle Total Health
Alexandria-Erskineville	Pyrmont Bridge Road tunnel site (C9)	Medical centre	• Community Mental Health Centre Camperdown • Missenden Medical Centre • Southern Radiology Centre • Therapies for Kids

Recreational facilities

There are a number of passive and active spaces in the study area in the form of parks, reserves, playgrounds, sporting fields, aquatic centres and bowling clubs. Bicycle and walking paths are also located alongside waterfronts and other natural waterways. Specialised sporting facilities include bowling clubs, tennis courts, golf courses, basketball courts, leisure centres and aquatic centres.

Table 14-7 identifies sporting and recreational facilities within 400 metres of construction ancillary facility sites. The facilities identified in **Table 14-7** are public only and do not include private facilities. Sensitive receivers identified in this section are indicative and not exhaustive.

Table 14-7 Sporting and recreational facilities within 400 metres of construction ancillary facility sites

Precinct	Construction site	Facility type	Facility name
Ashfield-Haberfield	Wattle Street civil and tunnel site (C1a)	Sports grounds	• Hammond Park
	Haberfield civil and tunnel site (C2a) Northcote Street civil site (C3a) Parramatta Road West civil and tunnel site (C1b)	Playgrounds	• Algie Playground • Livvi's Park Playground • Crocker Park Playground • Hammond Park Playground
	Haberfield civil site (C2b) Parramatta Road East civil site (C3b)	Parks/reserves	• Croker Park • Wadim Jegorow Reserve • Reg Coady Reserve • Hammond Park • Algie Park
		Sports ground	• Timbrell Park
Leichhardt-Glebe	Darley Road civil and tunnel site (C4)	Playground	• Richard Murden Reserve Playground
		Sports ground	• Blackmore Park

Precinct	Construction site	Facility type	Facility name
		Parks/reserves	• Richard Murden Reserve • Pioneers Memorial Park
	Rozelle civil and tunnel site (C5)	Playground	• Easton Park Playground
	The Crescent civil site (C6)	Sports grounds	• Easton Park
	Victoria Road civil site (C7)	Parks/reserves	• Easton Park • Federal Park • Cohen Park • Buruwan Park • O'Connor Reserve
	Iron Cove Link civil site (C8)	Playground	• Shields Playground • Bridgewater Park
		Parks/reserves	• King George Park • Callan Park • Bridgewater Park Playground
Alexandria-Erskineville	Pyrmont Bridge Road tunnel site (C9)	Playgrounds	• Camperdown Park Playground • O'Dea Reserve Playground
		Parks/reserves	• Douglas Grant Memorial Park • O'Dea Reserve
		Sports ground	• Camperdown Park
	Campbell Road civil and tunnel site (C10)	Sports ground	• Camdenville Park
		Playground	• Sydney Park Playground
		Parks/reserves	• Camdenville Park • Simpson Park
		Parks/reserves	• Sydney Park

Community facilities

Community centres, halls and places of worship for a variety of different faiths are located within the study area. These facilities provide opportunities for:

- Educational, recreational and health services and programs
- Community, cultural and social activities
- Places that build community connections and relationships
- Places that improve the inclusion of community members, especially within areas of high culturally and linguistically diverse communities.

Table 14-8 identifies the community facilities within 400 metres of construction ancillary facility sites. Sensitive receivers identified in this section are indicative and not exhaustive.

Table 14-8 Community facilities within 400 metres of construction ancillary facility sites

Precinct	Construction site	Facility type	Facility name
Ashfield-Haberfield	Wattle Street civil and tunnel site (C1a) Haberfield civil and tunnel site (C2a) Northcote Street civil site (C3a) Parramatta Road West civil and tunnel site (C1b) Haberfield civil site (C2b) Parramatta Road East civil site (C3b)	Place of worship	• Kingdom Hall of Jehovah's Witnesses • Anglican Church Sydney Diocese
Leichhardt-Glebe	Darley Road civil and tunnel site (C4)	Place of worship	• St Columba and the Holy Souls Catholic Church • St Gerasimos Greek Orthodox Church
		Community centre	• Lucan Care Community Centre
	Rozelle civil and tunnel site (C5) The Crescent civil site (C6) Victoria Road civil site (C7)	Community centre	• Lilyfield Community Centre
	Iron Cove Link civil site (C8)	Community centre	• Rozelle Neighbourhood Centre
		Place of worship	• Darling Street Anglican Church
Alexandria-Erskineville	Pyrmont Bridge Road tunnel site (C9)	Community centre	• Booler Community Centre
		Place of worship	• C3 Central City Church • St Joseph's Catholic Church
	Campbell Road civil and tunnel site (C10)	Place of worship	• St Peters Anglican Church

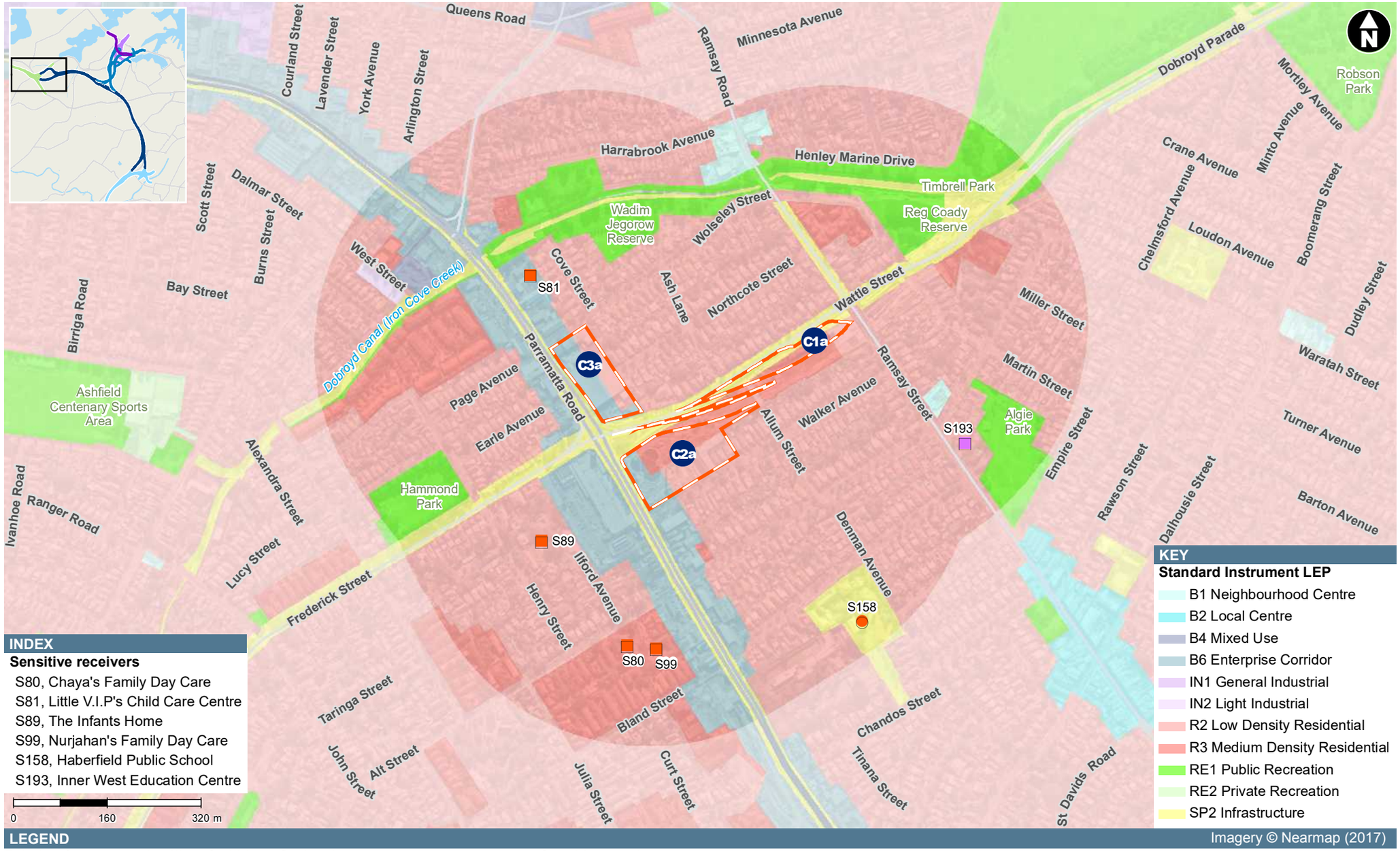
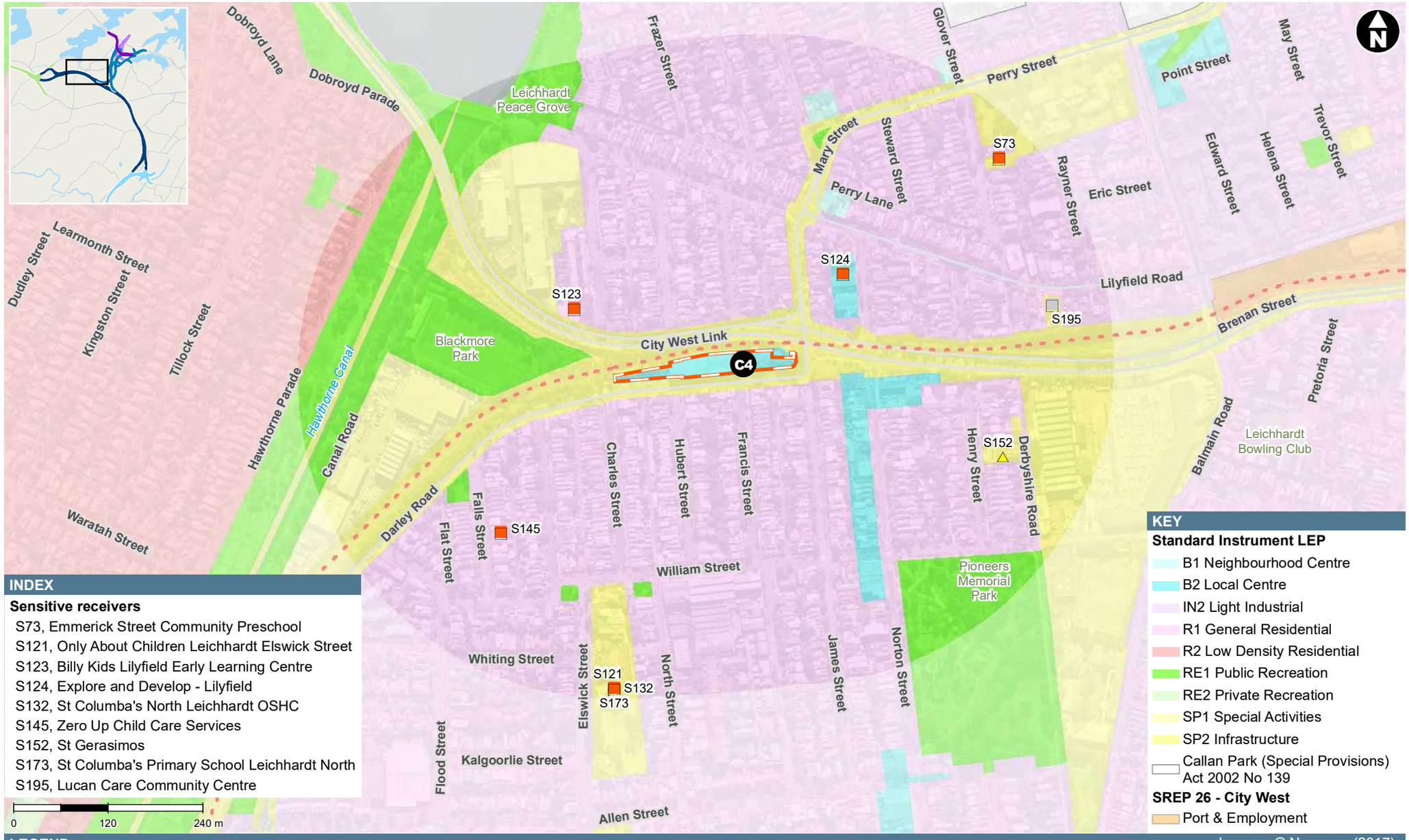


Figure 14-3 Sensitive receivers and land zoning around the Wattle Street civil and tunnel site (C1a), Haberfield civil and tunnel site (C2a) and Northcote Street civil site (C3a) – Option A

Figure 14-4 Sensitive receivers and land zoning around the Parramatta Road West civil and tunnel site (C1b), Haberfield civil site (C2b) and Parramatta Road East civil site (C3b) – Option B



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Sensitive receivers

- S73, Emmerick Street Community Preschool
- S121, Only About Children Leichhardt Elswick Street
- S123, Billy Kids Lilyfield Early Learning Centre
- S124, Explore and Develop - Lilyfield
- S132, St Columba's North Leichhardt OSHC
- S145, Zero Up Child Care Services
- S152, St Gerasimos
- S173, St Columba's Primary School Leichhardt North
- S195, Lucan Care Community Centre

KEY

Standard Instrument LEP

- B1 Neighbourhood Centre
- B2 Local Centre
- IN2 Light Industrial
- R1 General Residential
- R2 Low Density Residential
- RE1 Public Recreation
- RE2 Private Recreation
- SP1 Special Activities
- SP2 Infrastructure
- Callan Park (Special Provisions) Act 2002 No 139

SREP 26 - City West

- Port & Employment

LEGEND

Imagery © Nearmap (2017)

Existing features

- Subarterial road
- Light rail

Ancillary facilities

- C4 Darley Road civil and tunnel site
- Ancillary facility

Sensitive receivers

- Aged Care
- Child Care
- Church
- School

Figure 14-5 Sensitive receivers and land zoning around the Darley Road civil and tunnel site (C4)

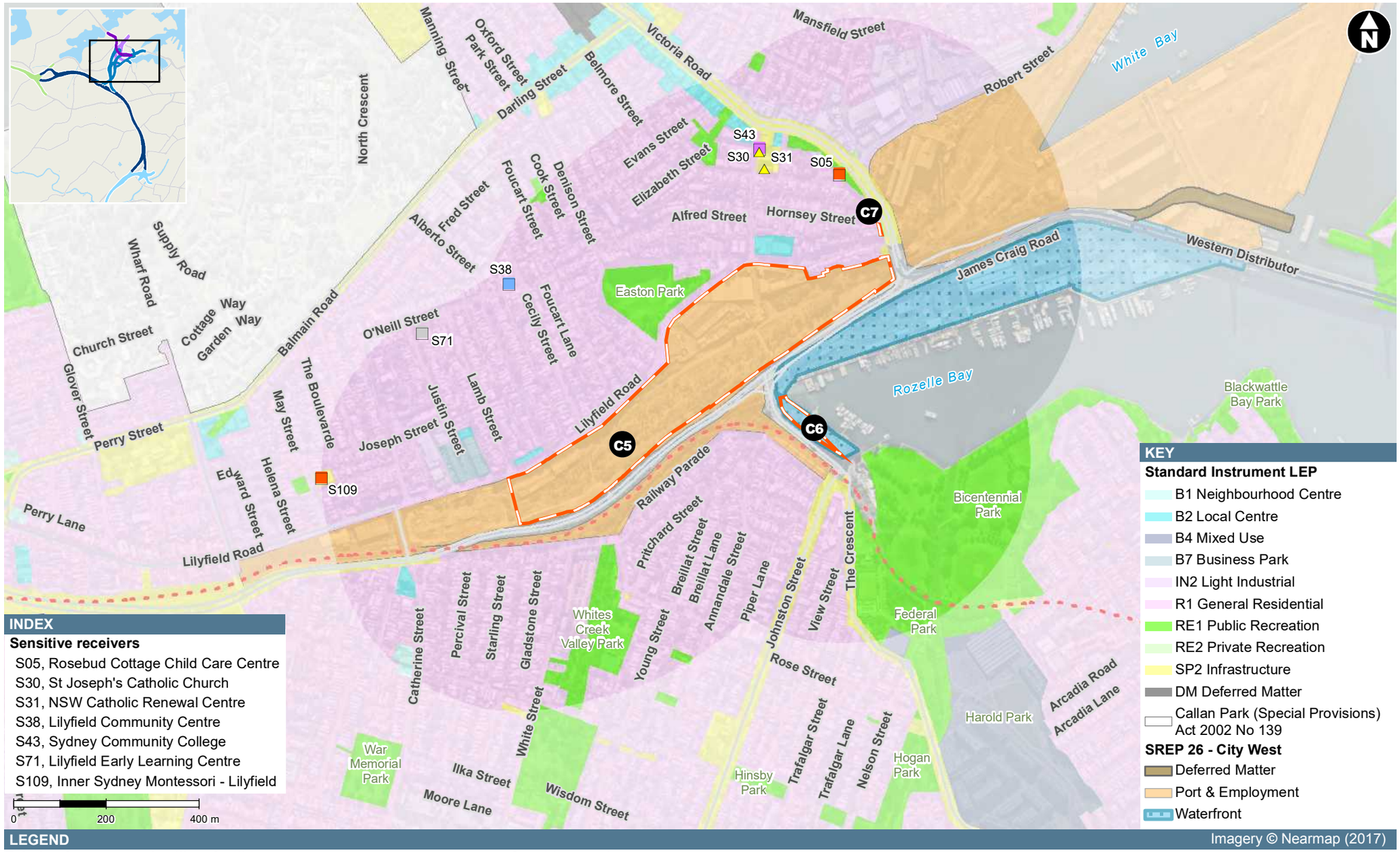
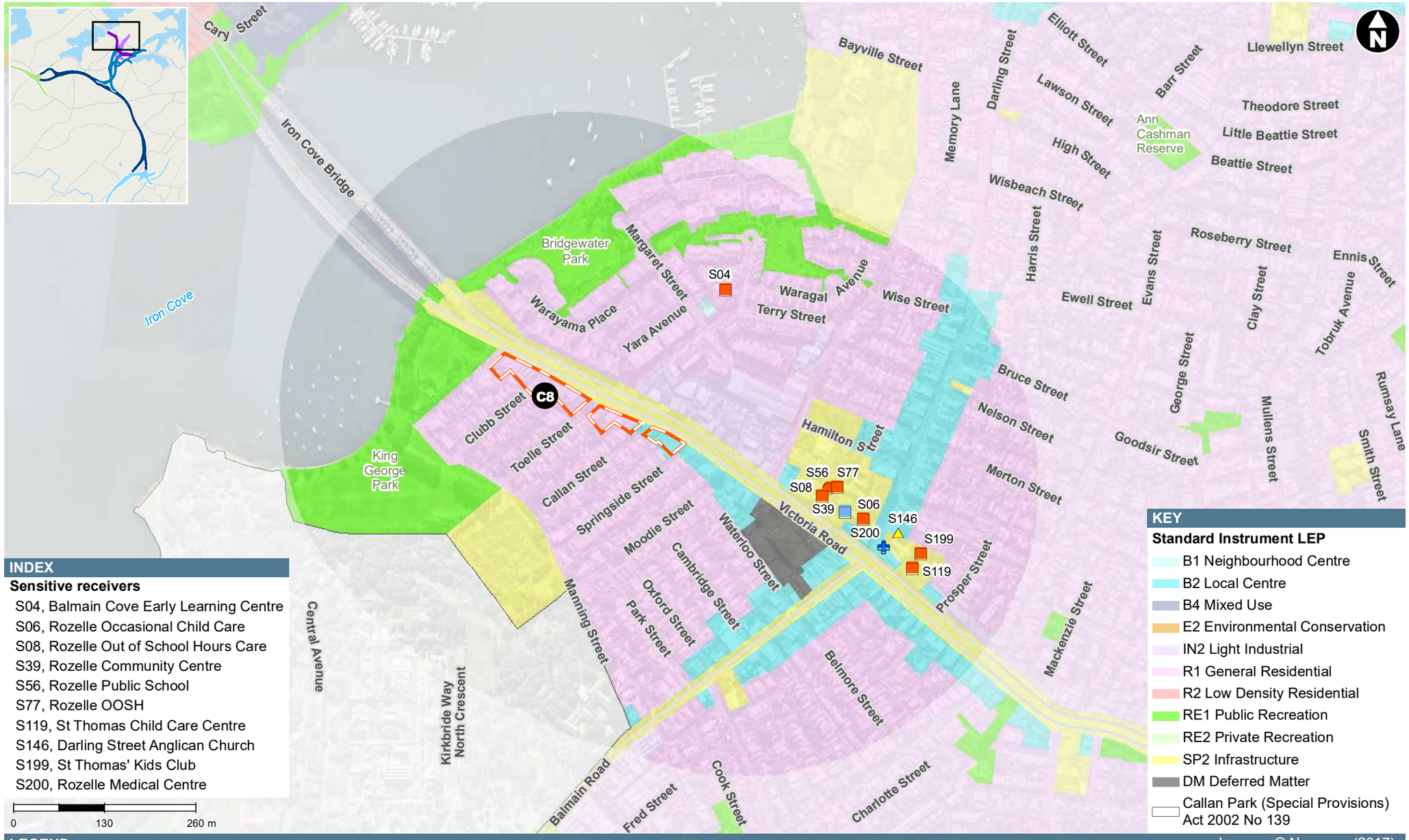


Figure 14-6 Sensitive receivers and land zoning around the Rozelle civil and tunnel site (C5), The Crescent civil site (C6) and Victoria Road civil site (C7)



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Sensitive receivers

- S04, Balmain Cove Early Learning Centre
- S06, Rozelle Occasional Child Care
- S08, Rozelle Out of School Hours Care
- S39, Rozelle Community Centre
- S56, Rozelle Public School
- S77, Rozelle OOSH
- S119, St Thomas Child Care Centre
- S146, Darling Street Anglican Church
- S199, St Thomas' Kids Club
- S200, Rozelle Medical Centre

KEY

Standard Instrument LEP

- B1 Neighbourhood Centre
- B2 Local Centre
- B4 Mixed Use
- E2 Environmental Conservation
- IN2 Light Industrial
- R1 General Residential
- R2 Low Density Residential
- RE1 Public Recreation
- RE2 Private Recreation
- SP2 Infrastructure
- DM Deferred Matter
- Callan Park (Special Provisions) Act 2002 No 139

LEGEND

Imagery © Nearmap (2017)

Existing features

- Subarterial road

Ancillary facilities

- C8 Iron Cove Link civil site
- Ancillary facility

Sensitive receivers

- Child Care
- Community Centre
- Church
- School
- Health

Figure 14-7 Sensitive receivers and land zoning around the Iron Cove Link civil site (C8)

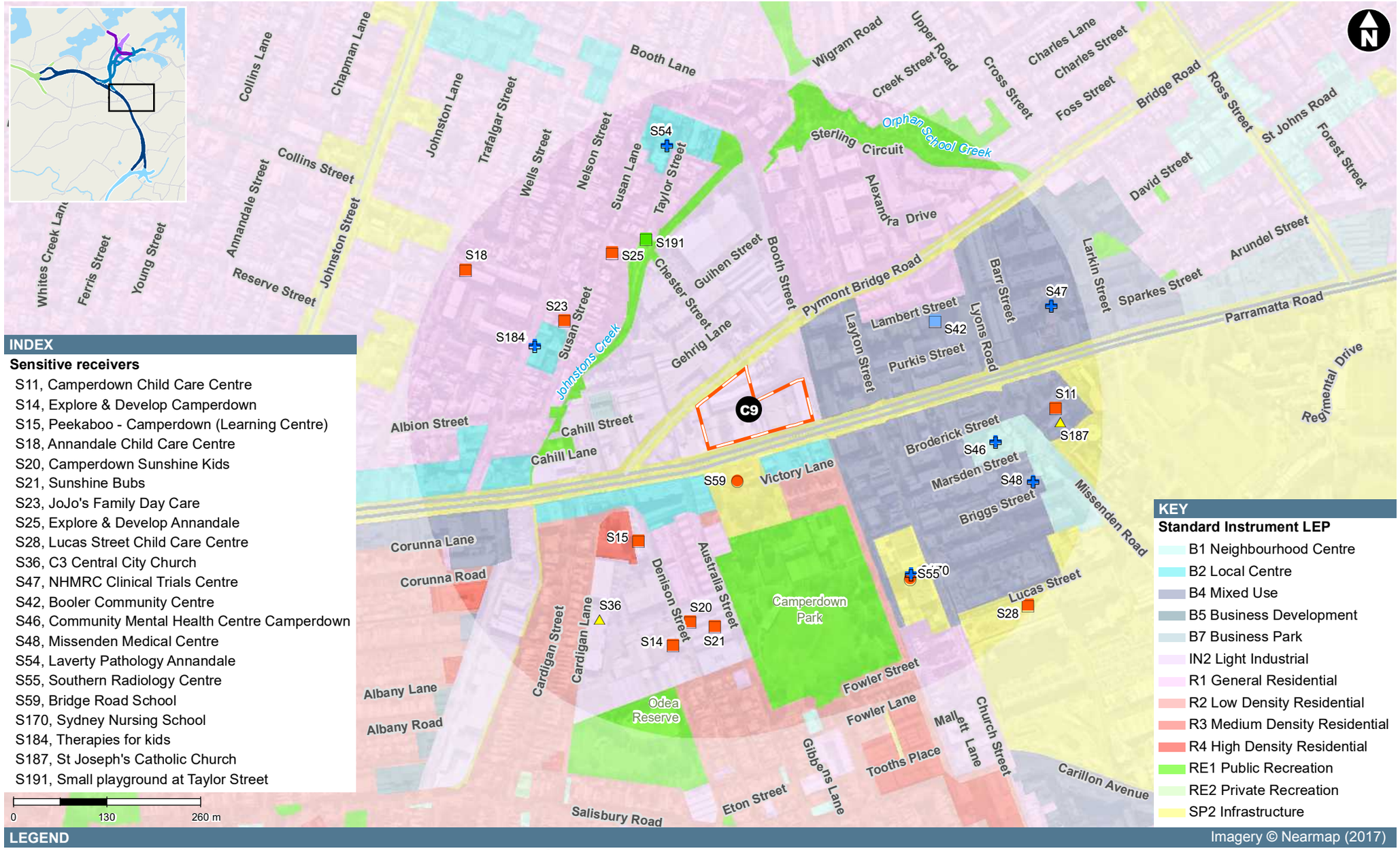

Figure 14-8 Sensitive receivers and land zoning around the Pyrmont Bridge Road tunnel site (C9)

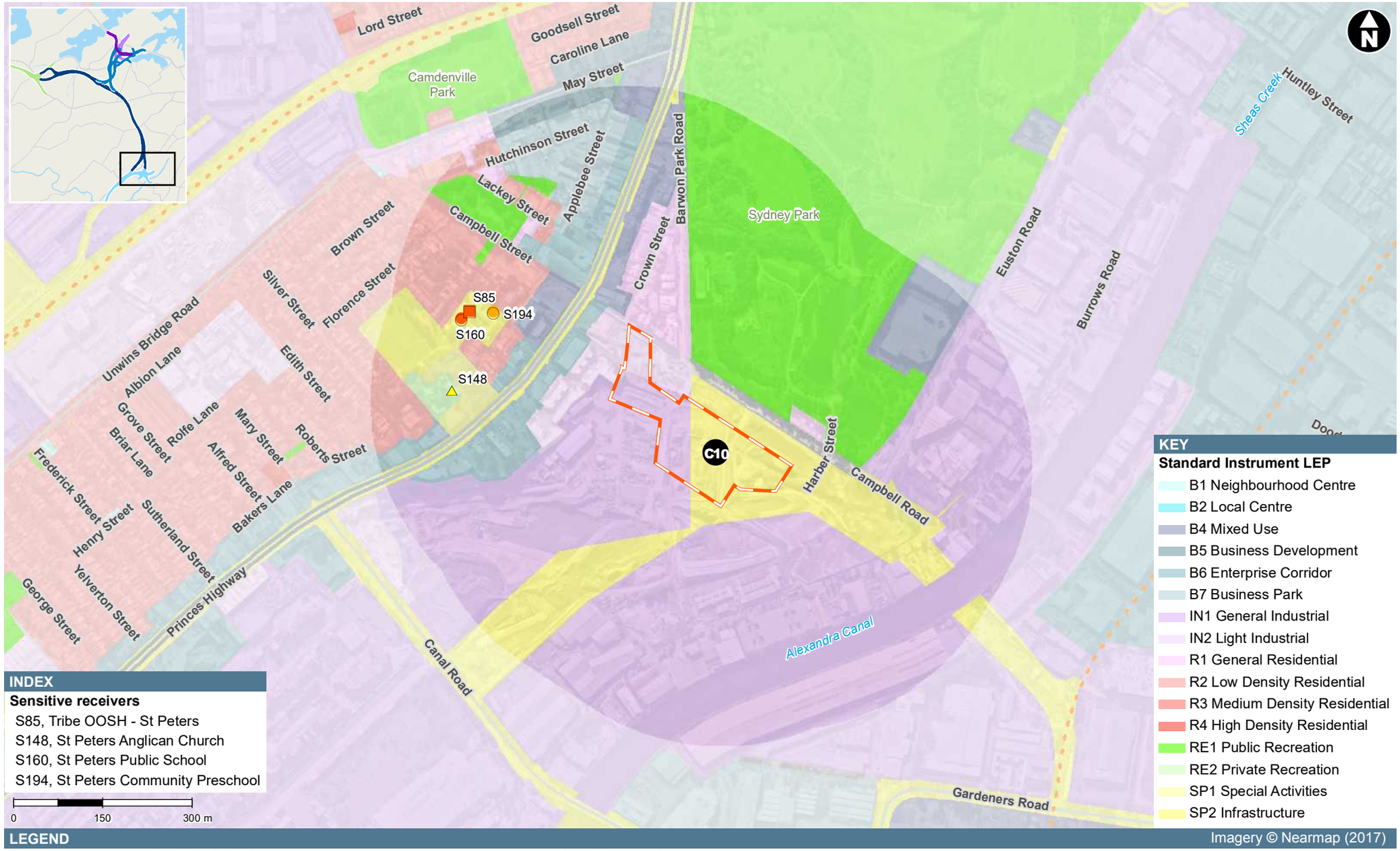

Figure 14-9 Sensitive receivers and land zoning around the Campbell Road civil and tunnel site (C10)

14.2.4 Employment centres

Strategic, district and local centres

In developing *Towards our Greater Sydney 2056* (Draft amendment to A Plan For Growing Sydney (NSW Government 2014)), The Greater Sydney Commission identified that some centres make a substantially greater contribution to the economy of Greater Sydney than others. On this basis, their draft District Plans have defined a hierarchy which includes three types of centres: strategic, district and local. These centres vary in terms of scale and contribution to Greater Sydney's job growth and productivity as well as service provision to local communities.

Local centres within the study area are generally clustered on the main transport routes (such as bus routes) and provide either a specialist service to the broader area or a convenience service for the local community. Rozelle local centre is the only local centre within close proximity to the project footprint.

Table 14-9 identifies the hierarchy of retail centres within the study area and provides an overview of some of the larger local centres in the study area. Other businesses and commercial areas within the study area are described in **Appendix P** (Technical working paper: Social and economic).

Table 14-9 Key retail centres in the study area

Centre hierarchy	Centre name	Description
Strategic Strategic centres tend to support more than 20,000 jobs and have one or more of the following characteristics: • A higher proportion of knowledge, economy jobs, generally associated with major hospitals, tertiary education institutions and/or standalone office development • Existing or proposed major transport gateways that play a major role in supporting the increased economic activity.	Green Square-Mascot	Green Square-Mascot is located south of Sydney central business district (CBD) and is currently transitioning from former industrial lands to a new strategic centre. The centre is projected to grow as a new major retail, community, cultural and residential centre to support a projected population of 61,000 people living in Green Square by 2030.
District District centres tend to support between 5,000 and 10,000 jobs and have one or more of the following characteristics: • Over 50,000 square metres of floor space • Presence of health and education facilities that serve the district and the local community • Transport services.	Burwood	Burwood district centre is centred on Burwood Station and extends north and south along Burwood Road. Two shopping centres provide the bulk of retail floor space. Westfield Burwood is the larger of the two shopping centres housing a David Jones, Kmart, Target, Coles and Woolworths, with an additional 213 speciality stores. In 2016, the centre achieved a turnover of $481.8 million, ranking as 11th out of 91 similarly sized centres across Australia. Burwood Plaza is located near Burwood Station and provides a Woolworths, Best and Less and Freshworld. Remaining retail provision within Burwood predominantly extends along Burwood Road and comprises speciality shopfront retailing.
Local Local centres vary in size from a few shops on a corner to a vibrant main street. These are generally at a smaller scale than district centres and generally serve the local population.	King Street North, Newtown	The majority of this floor space consists of restaurants/cafes, entertainment, clothing and speciality stores. The diversity of speciality retail stores along King Street makes the strip a popular shopping destination with a vibrant lifestyle economy.
	Broadway Shopping Centre, Glebe	Major tenants include Kmart, Hoyts, Target, Coles, ALDI and Harvey Norman, with a further 133 specialty stores. In 2015, Broadway recorded a turnover of $524.6 million, ranking the centre 32nd nationally out of 91 similar sized shopping centres in Australia.

Centre hierarchy	Centre name	Description
	Balmain town centre, Balmain	Balmain town centre includes a retail strip located along a one kilometres stretch of Darling Street from King Street to Queens Place. A Woolworths is also provided on the corner of Darling and Beattie Streets, anchoring the centre. Given Woolworths is the only major national supermarket in the Balmain Peninsula, the Balmain town centre serves a large area, capturing trade from the Balmain Peninsula and parts of Rozelle and Lilyfield, west of Victoria Road. The remainder of Balmain contains a mix of specialty retailing, personal services, restaurants and cafés. Balmain's vibrant restaurant and café culture, combined with an increasing range of clothing and apparel stores, also contributes to the success of the centre, especially on weekends. Balmain not only serves surrounding residents but has emerged as a destination shopping precinct.
	Norton Street, Leichhardt	Norton Street has a retail strip between Brenan Street and Parramatta Road, including Italian restaurants and cafés, an IGA supermarket, commercial shopfront premises (such as banks and real estate agents), a BWS bottle shop and other retail specialty stores. Norton Plaza is a neighbourhood shopping centre providing retail and commercial space. The Plaza is anchored by a Coles supermarket, surrounded by other specialty stores. The Italian Forum is located at the southern end of Norton Street and contains a number of restaurants, clothing stores, a travel agent, optometrist, hairdresser, beautician, bookshop, amongst others. The Italian Forum also includes a Woolworths, Target and ALDI.
	Rozelle retail strip, Rozelle	Rozelle retail strip extends along Victoria Road and Darling Street and comprises supermarkets, retail stores, speciality stores and professional businesses such as tax agents, financial services, real estate agents and lawyers.

Businesses

Business within the study area are generally clustered on the main transport routes (such as bus routes) and provide either a specialist service to the broader area or a convenience service for the local community. Business clusters considered in the social and economic assessment are listed in **Table 14-10**. Sensitive receivers identified in this section are indicative and not exhaustive.

Table 14-10 Business clusters within 400 metres of construction ancillary facilities

Construction site	Business cluster name	Business land zoning
Wattle Street civil and tunnel site (C1a) Haberfield civil and tunnel site (C2a) Northcote Street civil site (C3a) Parramatta Road West civil and tunnel site (C1b)	Parramatta Road, Haberfield	B6 Enterprise Corridor
Haberfield civil site (C2b) Parramatta Road East civil site (C3b)	Ramsay Road Convenience, Haberfield	B1 Neighbourhood Centre
Darley Road civil and tunnel site (C4)	Canal Road	SP1 Special activities: Canal Road arts precinct
	Norton Street	B2 Local centre
	State Transit	SP2 Infrastructure: transport depot
	Lilyfield Neighbourhood	B1 Neighbourhood Centre B2 Local Centre
Rozelle civil and tunnel site (C5) The Crescent civil site (C6) Victoria Road civil site (C7)	Catherine Street Convenience	B2 Local Centre
	Lilyfield Road	B1 Neighbourhood Centre B2 Local Centre
	Roberts Street	IN2 Light Industry
	James Craig Road	Unincorporated Sydney Foreshore Authority
	Chapman Road	B4 Mixed Use
	Victoria Road	B2 Local Centre IN20 Industrial Light Industry
Iron Cove Link civil site (C8)	Victoria Road	B2 Local Centre
	Darling Street	B2 Local Centre
	Crystal Street	IN2 Light Industrial
Pyrmont Bridge Road tunnel site (C9)	Annandale Camperdown	B1 Neighbourhood Centre B2 Local Centre B4 Mixed Use B7 Business Park IN2 Light Industrial

Construction site	Business cluster name	Business land zoning
Campbell Road civil and tunnel site (C10)	Princes Highway	B4 Mixed Use B6 Enterprise Corridor B7 Business Park IN2 Light Industrial
	Burrows Road Industrial	IN1 General Industrial
	Euston Road	B4 Mixed Use

Business clusters are described in detail in **Appendix P** (Technical working paper: Social and economic).

Industry Value Added

Industry Value Added (IVA) is a metric that measures economic contribution by calculating the total value of goods and services produced by an industry, minus the cost of goods and services used in the production process.

It is estimated that employment industries within the study area contributed around $9.6 billion to the total IVA of NSW as follows:

- Ashfield-Haberfield precinct contributed around $950 million IVA, comprising around 10 per cent of total IVA for the study area. Health care and social assistance, public administration and safety and rental, hiring and real estate services are the largest contributors to economic value, reflecting the presence of Sydney Private Hospital, Wesley Hospital and NSW Government offices, such as Family and Community Services and Housing NSW
- Leichhardt-Glebe precinct contributed around $2.6 billion IVA, comprising around 28 per cent of total IVA for the study area. Health care and social assistance and professional, scientific and technical services are among the largest generators of economic value, likely due to the Royal Prince Alfred Hospital and the University of Sydney
- Alexandria-Erskineville precinct contributed around $6 billion IVA, comprising around 62 per cent of total IVA for the study area. While transport, postal and warehousing information media and telecommunications are the two largest industries at the Australian Technology Park at Eveleigh, retail trade represents a much larger proportion of jobs across the precinct (but with a lower IVA), reflecting a relatively lower economic contribution.

14.2.5 Access and connectivity

A detailed description of the existing transport and traffic environment in the study area is provided in **Appendix H** (Technical working paper: Traffic and transport).

Road and freight network

Parramatta Road, Victoria Road, City West Link and King Street/Princes Highway are major arterial roads within the study area carrying significant volumes of traffic and providing access between the Sydney CBD and the west, southwest and northwest.

The road network in the study areas also services commercial and freight operators. The M4-M5 Link project forms part of the Urban National Land Transport Network for Sydney, which identifies major connections through urban areas to ports, airports and intermodal facilities. These connections are considered critical to support national and regional economic growth, development and connectivity. The M4-M5 Link project would provide a link between the M4 East and the New M5 motorways, to enable efficient movement of freight and commercial vehicles across Sydney to key metropolitan and regional markets.

Parramatta Road currently operates as a major commercial vehicle thoroughfare supporting the delivery of goods and services to major centres including Parramatta, Sydney Olympic Park and the Sydney CBD. City West Link, King Street/Princes Highway and Victoria Road are also main arterial roads within the study area used by commercial and heavy vehicles. Canal Road is close to the major

industrial and port area around Sydney Airport, and subsequently supports a high number of commercial and heavy vehicle movements.

The *2014 State Infrastructure Strategy Update* (Infrastructure NSW 2014) identified that urban roads support about 278,000 heavy freight vehicle movements every day. Currently these movements have no alternative to urban roads because there is insufficient motorway connectivity between major centres and distribution areas, such as the Sydney Airport and Port Botany precinct.

Further information regarding freight movements and demand is included in **Chapter 4** (Project development and alternatives).

Public transport

Public transport modes across the study area include light rail, heavy rail, bus and ferry services. At the time of the 2011 census, rail transport was the primary mode of public transport across the study area, carrying around 19 per cent of residents.

Bus transportation was the second preferred mode of transport across the study area, carrying around 13 per cent of residents. Parramatta Road, Victoria Road and King Street are key bus corridors with a number of services operating both inbound and outbound from the Sydney CBD.

Less than one per cent of residents in the study area travel to work by ferry, likely because ferry services are only available in the Leichhardt-Glebe precinct. More detailed travel to work data is included in **Table 14-4**. Further details for public transport services in the study area are included in **Chapter 8** (Traffic and transport).

Connectivity

In 2011, walking was the most common form of active transport for commuters across the study area, with around eight per cent of residents walking to work. Around three per cent of commuters across the study area cycled to work.

There are a number of key active transport links in the study area. The Iron Cove walking and cycling path at Rozelle, Jubilee Park at Glebe, Richard Murden Reserve at Hawthorne Canal in Haberfield, Sydney Park at St Peters and the Johnstons Creek connection at Glebe, all provide separated cycleways for all levels of bicycle users. These parks and spaces are also popular with recreational walkers and provide connectivity through the inner west.

Highly valued active transport networks in the study area identified through community consultation include the Bay Run at Rozelle, Glebe foreshore, Anzac Bridge cycleway and the northern part of the Greenway (the active transport connection between Cooks River and Iron Cove) through Leichhardt. The shared path along Whites Creek to Buruwan Park at Annandale is used by cyclists and pedestrians. Shared pedestrian and cycle paths also run along both sides of Victoria Road, with important overpasses provided at the city end of Victoria Road and across City West Link to provide connection to the water.

14.3 Assessment of potential construction impacts

During construction of the project, construction works have the potential to affect the social and economic environment. These potential impacts are assessed in this section.

14.3.1 Demographic profile

Factors of the project's construction that can influence or change the demographic profile of the study area include property acquisition and influx of construction workers resulting in more people being employed in the local area and choosing to live close to work, which has the potential to influence the demographic profile of the study area. Information on property acquisition as a result of the project is provided in **Chapter 12** (Land use and property). Properties to be acquired for the project include businesses and residential properties.

A small number of residential property acquisitions would be required in the Leichhardt-Glebe precinct along Victoria Road in Rozelle to facilitate the Iron Cove Link. No residential property acquisitions as a result of the project are proposed for the Ashfield-Haberfield precinct or the Alexandria-Erskineville precinct.

Given the overall number of residential property acquisitions required, this impact is not expected to affect the population and demography of the study area or precinct. The study area is projected to experience significant population growth over the next 20 years, partially as a result of urban renewal programs. Further assessment of the social and economic impacts of residential property acquisitions is included in **section 14.3.9**.

The construction workforce for the project would be expected to be sourced from across the broader Sydney region and is not expected to change the population and demography in the study area. As the project is located in the inner west and is relatively easily accessible, it is unlikely that construction workers would need to relocate to live in the study area. The presence of construction workers would have a minimal effect on local residential population and demographics.

Overall, the severity of the impact of the project on the demographic profile of the study area is expected to be neutral with the likelihood of change possible. Considering this, the overall impact of construction activities on the social and economic environment would be negligible.

14.3.2 Community values

Neighbourhood identity and character

As identified in **Appendix S** (Technical working paper: Biodiversity) of the EIS, vegetation removal would be required to facilitate construction, including the removal of street trees. Vegetation removal has the potential to expose residents, pedestrians and motorists to direct views of fencing and hoarding and other large elements of construction, reducing the amenity and character of affected environments.

As trees contribute to the identity of a neighbourhood, provide protection from the elements and provide intermittent or consistent screening and privacy, the clearing of trees is likely to be of concern to the community, particularly those where the visual amenity and landscape character of the area or property is altered due to a reduction in landscape screening.

Public art and monuments contribute to neighbourhood identity and character, holding sentimental value for the community. There are two items of public art within the project footprint – the statues of soldiers on the approaches of Anzac Bridge and the mural along The Crescent, between City West Link and Johnston Street. These items of public art would be retained and protected during construction and would not be impacted by the project.

Chapter 20 (Non-Aboriginal heritage) provides an assessment of the project on items of heritage significance. Overall, the project would have a moderate impact on non-Aboriginal heritage values. As heritage is of high value to communities within the study area, the loss of heritage items may diminish the sense of place and neighbourhood identity valued by the community. Environmental management measures would be implemented to reduce the loss of heritage, including photographic archival recordings and salvaging historic fabric and features. The social and economic impacts of a moderate heritage impact in the study area would be moderate negative.

An increase in construction activity in or around open space and recreation areas has the potential to reduce the amenity and accessibility of these areas. Key areas of open space in the study area include Easton Park, Blackmore Park, the Bay Run, King George Park, Sydney Park, the Glebe Foreshore parks and Buruwan Park at Whites Creek. During construction, a small area of King George Park (near Victoria Road) and Buruwan Park would be impacted. The impacts on social infrastructure have been assessed in **section 14.3.4**.

Overall, changes to community values would be medium-long term and reflect a moderate change to the existing environment. The likelihood of impacts occurring ranges from possible to near certain. As such, the overall impact upon the social and economic environment would be moderate negative.

Community safety, health and wellbeing

Construction impacts on community welfare include light spill, dust, traffic, noise and vibration. Those affected most by these impacts include residents and users who frequent areas closest to project footprint.

The human health risk assessment determined that without mitigation, extended elevated levels of noise, vibration and construction dust could result in adverse health effects across the community (refer to **Chapter 11** (Human health risk)). These health effects may include disturbance of sleep, reduced capacity for concentration, interference with speech and other activities, potential effects on cardiovascular health, annoyance and increased stress levels.

Increased levels of noise and vibration can affect human comfort and cause sleep deprivation if noise exceedances extend more than two consecutive nights. The potential for structural damage to properties as a result of vibration was also a concern for some residents and is considered likely to trigger higher levels of anxiety and stress, resulting in direct impacts on health and wellbeing.

Dust generation from construction activities was raised as a concern due to the potential impacts on the health of some sections of the community who may be more sensitive to changes in air quality. This includes people with pre-existing medical conditions such as asthma or respiratory difficulties, as well as children and the elderly. These impacts are likely to be relevant for works at the Pyrmont Bridge Road tunnel site (C9) in particular, where a number of educational receivers are located nearby, which may be affected by reduced amenity.

An increase in construction traffic and heavy vehicles within the study area may also affect the community's perception of safety around roads and active transport connections. This is most likely to occur in proximity to construction ancillary facilities, on local or arterial roads with higher traffic volumes than would normally be experienced, and along pedestrian and cyclist routes that have been temporarily diverted and may not accommodate the pre-existing level of lighting, casual surveillance or general activity. However, spoil haulage routes have been selected to avoid using local roads which would minimise heavy vehicle movements along these roads.

Traffic congestion and loss of residential on-street car parking has the potential to contribute to health impacts such as stress and anxiety, reduced air quality, increased noise, poor perception of amenity and safety concerns. On-street parking would be temporarily removed along a section of the northern side of Darley Road at Lilyfield for the Darley Road civil and tunnel site (C4), and areas around the Rozelle civil and tunnel site (C5) would likely experience the greatest competition and demand for on-street parking from the influx of construction workers. Elderly people, those with a disability or families with young children, who may have difficulty walking greater distances, would be particularly affected if they are required to park further away due to demand increases.

Measures to manage parking impacts would be addressed in a car parking strategy, which would be included in the Construction Traffic and Access Management Plan (CTAMP). This would be developed in consultation with local councils and stakeholders and would include the identification of areas where there are high levels of existing parking demand around the construction ancillary facilities (and other works sites) and identification of alternative car parking sites for use by the construction workforce.

As outlined above, management measures would be implemented to manage the construction impacts of light spill, dust, traffic, noise and vibration (refer to **Chapter 29** (Summary of environmental management measures)). Despite these measures, a small number of people may still experience adverse health impacts from these project related sources.

Construction of the project would directly affect values held by the community around community safety and health. Although the impacts would generally be confined to localities around construction ancillary facilities, they would be medium-long term and reflect a minor change to the existing environment. The likelihood of effects on health and safety is possible. As such, the overall impact upon the social and economic environment would be moderate negative.

Community cohesion

Infrastructure that creates a physical or psychological barrier between communities may produce a real or perceived barrier, reducing the capacity for community cohesion, including social and economic interaction. Community severance may lead to short or long term changes to people's behaviour patterns, affecting established community networks and an area's character and sense of place.

Existing physical and physiological barriers between communities in the study area include:

- Arterial roads including City West Link, Victoria Road, Parramatta Road and the Princes Highway that carry large volumes and high speed traffic, with priority generally given to motor vehicles over pedestrians and cyclists
- The Rozelle Rail Yards, which act as a significant physical barrier between the communities of Annandale, Rozelle and Lilyfield.

During construction, temporary changes to the road network, particularly along City West Link, Victoria Road, The Crescent, Lilyfield Road and Darley Road may contribute to the perception of further community severance and disconnection. Temporary road network changes would be short term and returned to their pre-construction layout. Access to properties would be generally be maintained at all times throughout construction. Where temporary impacts on existing property access are unavoidable as a result of construction activities (eg footpath and pavement works), consultation would be carried out with the landowner and/or tenant to provide equivalent standards of access.

The Bay Run around Iron Cove is a key active transport link in the study area. A small section of the Bay Run would be temporarily diverted during construction; however, access along the path would be maintained throughout construction.

Two pedestrian bridges across Victoria Road and City West Link, which are popular for both recreational and commuter pedestrian and cyclist traffic would also be removed by the project. The removal of these bridges, despite the presence of temporary alternatives during construction, may reduce community cohesion and perception of access to a place. These connections provide important access to Rozelle Bay and through to the Glebe Foreshore walkways. The project would provide new and improved north–south and east–west pedestrian and cyclist connections to replace these links.

The Crescent civil site (C6) would also impact pedestrian and cyclist connectivity to the Glebe Foreshore walkways for residents of Rozelle and Annandale. This reduced connectivity may deter people from participating in community activities or active transport, potentially reducing the connection to an environment and feeling of community cohesion.

While physical and psychological community severance would be increased during construction, these changes would result in only slight variation from existing conditions. Mitigation measures would be put in place during construction, including the transitioning of pedestrian and cyclist connections to alternative routes prior to the removal of the former. Impacts would generally be confined to suburbs around the project footprint, including the construction ancillary facilities and would extend for a medium-long term duration. The likelihood of effects on community cohesion is possible. As such, the overall impact upon the social and economic environment would be minor negative.

14.3.3 Amenity

Amenity refers to the pleasantness or attractiveness of a place or area. Changes to local amenity can affect the ability of a resident, a visitor or the community to enjoy or undertake activities within the local area. Construction of the project would temporarily change the amenity of the local area and affect community safety, health and wellbeing as well as community cohesion, particularly around or near construction ancillary facilities.

Local amenity would be impacted during construction by increased noise, vibration, dust, traffic movements and changes to visual amenity. Refer to **Chapter 10** (Noise and vibration), **Chapter 9** (Air quality), **Chapter 11** (Human health risk), **Chapter 8** (Traffic and transport) and **Chapter 13** (Urban design and visual amenity).

Some parts of the community would also experience construction fatigue associated with construction impacts from a variety of projects occurring over an extended period of time with few or no breaks between construction periods. Construction fatigue typically relates to traffic and access disruptions, noise and vibration, air quality and visual amenity and social and economic impacts from projects that have overlapping construction phases or are carried out back-to-back. Potential impacts associated with construction fatigue are assessed in **Chapter 26** (Cumulative impacts).

Overall, the impact of construction activities on the social and economic environment would be moderate negative. A summary of the streets that are likely to experience combined impacts of construction activity on a more regular basis is included in **Appendix P** (Technical working paper: Social and economic).

Noise and vibration

Construction would generate an exceedance of background noise levels at sensitive receivers surrounding all of the construction ancillary facilities, with the highest noise level exceedances predicted during pavement and infrastructure works. These works are generally of short-term duration (two weeks at each site) and intermittent, with some works required outside standard construction hours. The demolition of existing buildings, utility works, roadworks and use of laydown areas across the study area is also likely to generate noise exceedances and potentially disrupt night-time amenity. The following facilities are anticipated to experience noise exceedances:

- Kingdom Hall of Jehovah's Witnesses at 12 Wattle Street, Haberfield
- The Infants Home at 17 Henry Street, Haberfield
- Yasmar training facility at 185 Parramatta Road, Haberfield
- Chaya's Family Day Care at 12/111 Alt Street, Ashfield
- Nurjahan's Family Day Care at 12a/115 Alt Street, Ashfield
- Explore and Develop at 372 Norton Street, Lilyfield
- Billy Kids Learning at 64 Charles Street, Lilyfield
- Rosebud Cottage Child Care Centre at 5 Quirk Street, Rozelle
- Easton Park Playground at Lilyfield Road, Rozelle
- Rozelle Public School at 663 Darling Street, Rozelle.

Chapter 10 (Noise and vibration) identifies a number of management and mitigation measures to be implemented prior to or during construction that would reduce noise impacts on receivers as well as the number of potentially highly affected properties. These measures include increasing the height of site hoarding, upgrading acoustic shed performance, limiting the total sound power level of equipment operating within the acoustic sheds and providing respite periods to affected residents.

During the day, construction noise is expected to have a moderately negative impact on the social and economic environment, as there would be noticeable and substantial changes from the existing social and economic environment. The impact on night-time local amenity is anticipated to be major negative, with construction respite periods required. Ground-borne noise would also be generated from tunnelling, which would be progressive as the roadheader moves along the tunnel alignment (generally at a rate of about 20 to 25 metres per week), and from construction traffic, which is expected to have a negligible impact on local amenity as truck haulage routes are on arterial roads and not on local roads.

Where noise effects cannot be mitigated, there is potential for social and economic impacts including heightened annoyance, stress and sleep disturbance. These impacts would be particularly felt by people who work from home, shift workers, elderly residents or households with young children that are more dependent on quieter environments to rest and relax. As identified in **section 14.2**, health care and social assistance are among the top three industries of employment for residents in the study area. Given that the health care industry has a greater tendency to employ people under shift work arrangements, it is likely that there would be a higher number of shift workers in the study area who rely on a quieter environment to rest and recuperate.

Vibration impacts would be intermittent and short-term at any particular receiver. The severity of impact would be moderate resulting in a moderate change to the existing conditions. The likelihood and severity of impact would however dissipate the further the receiver is from the construction ancillary facility. With consideration of these factors, the overall impact on the social and economic environment would be minor negative.

Air quality

Construction activities such as demolition, earthworks and construction activities have the capacity to increase dust, air emissions and odour. This has the potential to affect local amenity due to the increase in dust in an environment.

Increased dust can adversely affect the function and operating costs of businesses. Nuisance dust generated from construction activities would commonly affect dwellings and sensitive premises that require a cleaner and/or sterilised environment (such as food manufacturers and processing manufacturers). Increased dust can also reduce the capacity of the community to enjoy the environment and can increase health risks for receivers, particularly those with respiratory and health issues such as asthma and allergies. The human health impacts of air quality are assessed in **section 14.4.3**.

Mitigation measures would be implemented to minimise the effects of construction dust on surrounding receivers, including minimising drop heights from machinery and using fine water sprays on dust generating equipment. These measures would be outlined in the Construction Air Quality Management Plan. Considering this, the residual impact of dust on local receivers is considered to be low (refer to **Chapter 9** (Air quality)).

Visual amenity

Construction of the project has the potential to affect visual amenity in the study area through activities including the removal of vegetation, installation of construction hoardings, installation of acoustic sheds, construction equipment and/or the presence of construction sites (including acoustic sheds, site offices and amenities). Additionally, view corridors to and from heritage items or areas, open space, water bodies or the city skyline may be affected by temporary construction facilities and permanent fixed facilities that are being constructed (refer to **Chapter 13** (Urban design and visual amenity)).

Visual impacts have the potential to affect the appeal of external and internal living spaces and reduce the overall amenity of an environment. Residential properties that have the amenity of their living and entertaining spaces reduced may be less inclined to entertain or interact with other household members as the appeal or privacy has declined. The removal of trees and the introduction of construction ancillary facilities could also reduce the privacy of some properties and reduce screening of construction activities.

Visual impacts on local amenity would be medium-long term in nature. The severity of impact on individual receivers would vary depending on the proximity from the construction ancillary facility. The severity of impact would be confined to locality level, while construction effects would result in a moderate change to existing conditions. The overall impact on the social economic environment would be moderate negative.

14.3.4 Social infrastructure

Changes in access and amenity for some social infrastructure facilities are anticipated during construction. Construction ancillary facilities and activities may affect the amenity of nearby social infrastructure, resulting in increased noise, dust and construction traffic, or changes in visual amenity (ie presence of construction machinery or clearing of vegetation).

Changes in amenity can affect how users interact with or enjoy an environment or their ability to participate and concentrate. Changes in access to social infrastructure can also affect the operation and function of social infrastructure facilities or services, reducing accessibility for operators, visitors and service providers. A reduction in the convenience of social infrastructure access may also deter users and potentially impact on community participation levels, which would have an indirect impact on community values. Social infrastructure users exposed to multiple construction activities may also be more susceptible to construction fatigue, which may have direct social and economic consequences.

Social infrastructure facilities that would be most indirectly affected during construction would include the receivers nearby construction ancillary facilities, including:

- Kingdom Hall of Jehovah's Witnesses at 12 Wattle Street, Haberfield

- Timbrell Park at Henley Marine Drive, Five Dock
- The Infants Home at 17 Henry Street, Haberfield
- Yasmar training facility
- Chaya's Family Day Care at 12/111 Alt Street, Ashfield
- Nurjahan's Family Day Care at 12a/115 Alt Street Ashfield
- Haberfield Public School at 24-26 Denman Avenue, Haberfield
- Explore and Develop at 372 Norton Street, Lilyfield
- Billy Kids Learning at 64 Charles St, Lilyfield
- Rosebud Cottage Child Care Centre at 5 Quirk Street, Rozelle
- Easton Park at Lilyfield Road, Rozelle
- Glebe Foreshore Parks at Chapman Road, Glebe
- Rozelle Public School at 663 Darling St, Rozelle
- Rozelle Out of School Hour Care at 663 Darling St, Rozelle
- King George Park at Manning Street, Rozelle
- Bridge Road School at 127 Parramatta Road, Camperdown
- Sydney Park at St Peters.

Further detail on specific impacts at each of the receivers identified above is included in **Appendix P** (Technical working paper: Social and economic). During construction measures to manage the impacts on social infrastructure would be included in the Social Infrastructure Plan, including:

- Measures that will be delivered as part of the project to improve community connectivity in areas affected by the project, including pedestrian and cyclist access
- Community and social facilities, for example open space, that will be delivered or enhanced as part of the project
- Community initiatives and programs that will receive support as part of the project, including the manner in which support will be provided.

Considering this, the overall impact on the social and economic environment is likely to be a moderate negative.

14.3.5 Business and industry

Businesses across the study area may be affected during construction by temporary changes in passing trade, access and travel time (for employees, customers, deliveries and/or servicing), parking, serving and deliveries and amenity. Dependent on the nature of the business, the actual impact on business revenue would vary. These impacts would be an inconvenience for businesses affected although they would be temporary in nature. Potential impacts on specific individual businesses and commercial areas are included in **Appendix P** (Technical working paper: Social and economic).

Passing trade

Passing trade refers to customers who choose to visit a business because they see it when walking or driving, not because they planned to go there.

During construction, vehicle and pedestrian flows along current routes would change, which may influence the level of passing trade. Some businesses could benefit as passing trade is redirected towards their business, while others might be disadvantaged as traffic is diverted away or they are otherwise affected by indirect impacts (eg from noise, dust, reduces visibility, parking availability). The majority of business clusters outlined in **Table 14-10** that offer retail and convenience services would experience an increase in construction workers in the area, which may generate increased passing trade. This would be particularly beneficial for the smaller local business clusters such as Ramsay

Street Convenience, Lilyfield Neighbourhood, Norton Street North, Catherine Street Convenience, Victoria Road and Darling Street. Increased passing trade would generate increased business revenue, directly benefiting the social and economic environment. It is unlikely that any centre would experience a noticeable loss in passing trade due to construction.

Access and travel time

Businesses may be affected by temporary traffic changes, such as congestion or diversions, which may impact access to workplaces or servicing areas. The traffic and transport assessment identified that road network performance would be affected during construction, with a number of temporary road closures, increased construction traffic and an expected worsening of intersection performance at some intersections (refer to **Chapter 8** (Traffic and transport)). These changes would likely affect employee and customer travel time and the efficiency of services and deliveries.

A number of business clusters identified in **Table 14-10** would experience a potential decline in road network efficiency. Specialised retailers may experience a greater decline in their customer base, as clients seek to avoid traffic delays, travelling instead to more accessible business centres that offer similar products. Business clusters including Chapman Road, Annandale, Camperdown and Roberts Street may be more affected by these changes. Although employee travel time may slightly increase, there is adequate provision of public transport in most locations around the business clusters that offer alternative commuting options. Although there would be minimal direct access impacts, a reduction in the efficiency of the road network overall, may result in minor adverse effects on this business cluster.

Parking

The removal of parking or increased demand and competition for car parking would impact nearby businesses' deliveries and/or services and parking convenience for workers and customers. Reduced parking can influence customers to use an alternative service or visit a different business.

Changes to parking accessibility as a result of the project would occur around the Darley Road civil and tunnel site (C4), Rozelle civil and tunnel site (C5), Iron Cove Link civil site (C8) and Pyrmont Bridge Road tunnel site (C9). Business clusters identified in **Table 14-10** that may experience increased competition for car parking include Parramatta Road Haberfield, Canal Road, Lilyfield Road, James Craig Road, Victoria Road, Annandale Camperdown and Euston Road may. As the majority of these business clusters would have their own private parking, it is unlikely that a reduced supply in car parking would have a noticeable impact on employee or customer access.

Servicing and deliveries

Businesses rely on deliveries and dispatch of goods to support the sale of products and/or services, as well as relying on services from other businesses such as refuse collection. These activities may sometimes be required multiple times per day.

Temporary changes to the existing road network, including street closures, the relocation and/or removal of car parking and/or loading zones along street frontages, and the location of construction ancillary facilities could collectively restrict or reduce servicing, delivery and dispatch opportunities. This can detrimentally affect businesses resulting in time and vehicle related costs and lost revenue for businesses.

All of the business clusters identified in **Table 14-10** would be dependent on servicing, deliveries and dispatch as part of normal business operation. The construction of the project, is however, not anticipated to remove loading zones or parking that would affect the business clusters. Although the efficiency and condition of access routes may alter, such as for businesses along Lilyfield Road, James Craig Road and potentially Roberts Street it is unlikely that this would have a substantial impact on business revenue, overheads or productivity.

Amenity

Construction of the project would affect the amenity of an environment, including for people visiting or working at local businesses in the study area. This would be as a result of increased noise, vibration and dust, or reduced visual outlook and business visibility. Changes to amenity can affect business ambience, productivity, functionality and exposure.

Businesses that rely on the external ambient environment to some degree, such as beauty salons, restaurants or cafes, may experience a decline in customers due to negative customer experiences from reduced amenity. Customers could be encouraged to travel to more amenable locations that offer similar services. This change in consumer behaviour would directly affect business viability as trade and customer expenditure would reduce.

Increased dust during construction may result in increased operating costs (including cleaning and maintenance costs), reduced hygiene (associated with food preparation) or increased instances of respiratory issues for employees or customers.

The visual appeal of an environment can be important to businesses that rely on customer attraction to the pleasantness and quality of an environment, such as retail, personal service providers, cafes and restaurants. These businesses are more dependent on access to natural light and clear sightlines of the street to enhance the attraction of their business. This is particularly important for businesses that provide outdoor dining. Reduced visual amenity may result in a reduction in customer sales and repeat clients, affecting business revenue in both the short and long term.

Businesses that rely on storefront exposure to attract customers may be affected by reduced visibility from the presence of construction machinery and materials (such as construction hoardings). This has the potential to directly affect business revenue and turnover as customers do not see the business, or are less inclined to enter due to reduced amenity or safety concerns. A change in pedestrian or vehicle routes and traffic volumes can also affect the exposure of businesses to potential customers.

Business clusters that have higher dependency on amenity to attract and retain customers would be more susceptible to changes in amenity as a result of construction activity. The business cluster of Annandale-Camperdown is the only business cluster that is more sensitive to amenity impacts such as noise, vibration and dust, that has a heightened risk of being affected.

14.3.6 Access and connectivity

Road network

Construction impacts on the local and arterial road network have the capacity to influence the performance of the broader road network, both within the study area and within a wider area. Construction of the project would increase traffic congestion, commuter travel time, the accessibility of local areas and the efficiency of freight, commercial vehicle and public transport movements. Detailed impacts on the road network are outlined in **Chapter 8** (Traffic and transport).

These changes have the potential to increase peak spreading or result in modal shifts for commuters. Traffic delays can also affect freight and commercial vehicle transport efficiency, commuter travel times and general access and connectivity to surrounding areas or employment centres. Increased traffic congestion can also reduce the amenity of an environment, with idling vehicles generating noise and emissions in a particular area. This can have impacts on human health and business amenity. These increases in traffic volumes may also reduce roadside safety, particularly in areas of high pedestrian and cyclist traffic such as near schools, child care centres, aged care facilities and near public transport stops. This would particularly be the case at Alt Street at Ashfield due to the proximity of Haberfield Public School and the Parramatta Road East civil site (C3b) and along Parramatta Road due to the proximity of Bridge Road School to the Pyrmont Bridge Road tunnel site (C9).

Increased intersection delays and traffic congestion have the capacity to increase stress and anxiety for road users; reduce access to residences, social infrastructure and businesses; increase air and noise pollution; and increase the costs and reduce the efficiency of the freight network. Generally, intersections in the study area are unlikely to experience substantial increases in average delays, with construction having a negligible impact on the road network (refer to **Chapter 8** (Traffic and transport)).

In most instances, modifications to the road network would be temporary with local roads reinstated upon completion of construction. These local roads carry lower volumes of primarily local residential traffic. While properties along these roads may experience a marginal increase in travel time, the variance from what is currently experienced is unlikely to be substantial and would result in a minor negative impact on the social and economic environment.

Construction impacts on major road networks would increase traffic congestion, travel time, the accessibility of local areas and the efficiency of freight, commercial vehicles and public transport movements. Arterial road impacts are expected on City West Link, The Crescent, Victoria Road and Parramatta Road. Detailed traffic management plans would be required which would include measures to manage the additional volumes of heavy vehicles travelling along arterial roads.

To reduce traffic and amenity impacts on local roads, spoil haulage routes would operate on arterial roads including Parramatta Road, M4 East tunnels, City West Link, Pyrmont Bridge Road, Campbell Street and the Princes Highway. The implementation of the CTAMP would assist in reducing the impacts associated with changes and alterations to the road network. However, inefficiencies would still be experienced by road users. The construction impacts have the capacity to affect a large number of people and businesses both locally and regionally. Although the effects would be temporary, a noticeable and substantial change from the existing environment is anticipated. As such, the effect on the social and economic environment is a moderate negative.

Overall, construction impacts would occur for a medium-long duration and would potentially affect the efficiency of road networks across the broader region. This reflects a moderate change from the existing road network condition, with impacts having a high likelihood of occurring. The overall impact on access and connectivity with regard to the social and economic environment would be moderate negative.

Public transport

Temporary impacts on existing bus services would occur during construction (refer to **Chapter 8** (Traffic and transport)). Bus customers near construction ancillary facilities may experience a reduction in amenity while waiting for buses and increased travel times due to potential traffic congestion. The temporary or permanent relocation of bus stops would also potentially increase the distance bus patrons are required to walk. Impacts on bus services and the broader public transport network are likely to be minor and would be managed in consultation with bus service providers. Any changes to bus services would be undertaken in consultation with the bus service provider, with relevant information being communicated to bus users.

Heavy rail or light rail services would not be directly impacted during construction; however passenger access to stations (including the Leichhardt North light rail stop and Rozelle Bay light rail stop) may be temporarily affected by temporary traffic changes and congestion arising from the presence of construction works. Surrounding amenity would also be impacted. In both cases, access to light rail stops would be retained at all times, although some local diversions of pedestrian movements may be required.

Active transport

Changes to the existing pedestrian and cyclist network have the potential to affect commuter departure times, travel durations, movement patterns and accessibility. Activities that would impact the active transport network include the removal of the Victoria Road and City West Link pedestrian bridges, and the temporary closure of a section of the Victoria Road shared path on the southern side of the westbound carriageway.

During consultation, all of these connections were identified as important for commuter links or enabling public access to waterways. Subsequently, the loss of these connections would have an adverse effect on commuter connectivity, local amenity and community values. Proposed alterations to these links are outlined in **Chapter 8** (Traffic and transport).

Generally, these diversions do not result in significant changes from the existing pedestrian and cyclist network connections. There are two instances where the alternative active transport route would present new difficulties for users. This includes proposed diversions on the southern side of Victoria Road and the connection between Whites Creek and Rozelle Bay (via Johnston Street), which would extend the travel distance and require users to navigate more difficult terrain. This may present difficulties for cyclists or pedestrians with reduced mobility.

The introduction of temporary signalised crossings, delays due to construction vehicles turning in and out of construction sites, or extended travel routes may increase pedestrian wait times and increase journey to work times for active transport commuters. While the opportunity to walk or cycle in the study area would be maintained, the alterations and changes may detract from the experience of the

pedestrian and cyclist environment and potentially deter people from enjoying an active lifestyle or feeling connected with their community. Depending on the length and terrain of alternative routes, people may be more inclined to take a shorter, less safe option, than detouring along a recommended detour route. At the extreme, this may increase the chance of pedestrian and cyclists conflicts with vehicles or may encourage people to break road rules.

Around eight per cent of the population in the study area walk to work, while around three per cent cycle. Temporary changes to commuter oriented networks would therefore only impact a small proportion of the population. Some of these changes, however, would affect popular recreational pedestrian and cyclist paths at Rozelle and Glebe that are heavily used by both locals and visitors. Generally, the alternatives proposed for these recreational paths do not noticeably increase the difficulty or distance of these routes.

To reduce the impact on pedestrian and cyclist connections, a strategy for the maintenance of pedestrian and cyclist access during construction, and information regarding alternative travel routes, would be prepared during detailed design. Measures would form part of the CTAMP and would include:

- Specifications around the standards of pedestrian and cyclist environments (around construction sites and on alternative routes)
- Provisions that ensure the maintenance of access for all levels of mobility
- Information regarding alternative travel routes including the difficulty of terrain, the additional distances and the duration of time detours would be in place
- Construction signage clearly identifying the detour route and locations for alternative crossings.

Any changes to pedestrian and cyclist routes would ensure safety and maintenance of access for all levels of mobility, while minimising detour distances. During construction, all efforts would be made to minimise disruption to pedestrian and cyclists and to maintain network legibility by transferring from the existing infrastructure to the new infrastructure as soon as possible.

Parking

During construction, around 20 on-street parking spaces would be lost from the northern carriageway of Darley Road between Francis Street and Charles Street in Leichhardt. The removal of these parking spaces would reduce the availability of on-street parking for light rail commuters and would increase demand for parking on other nearby streets. Should construction workers also utilise on-street parking, the demand for parking in this area would increase further. Local residents would then be competing with both regular commuters and the construction workers for parking. A similar scenario may occur at the Rozelle Bay light rail stop, which is in close proximity to The Crescent civil site.

Residential streets, in close proximity to construction ancillary facilities which are not constrained by parking time limits, would likely experience an increase in construction worker parking. Elderly people, those with a disability or families with young children, who may have difficulty walking greater distances, would be particularly affected if they are required to park further away.

A detailed car parking strategy would form part of the CTAMP and would be developed in consultation with local councils and affected stakeholders adjacent to project sites. The above mentioned plan would reduce the extent of the impact on the socio-economic environment.

14.3.7 Economy

Expenditure and employment

Construction activity can benefit the economy by injecting economic stimulus benefits into the local, regional and state economies. The economic benefits of construction include:

- Increased expenditure at local and regional businesses through purchases by construction workers
- Direct employment through on-site construction activities

- Direct expenditure associated with on-site construction activities
- Indirect employment and expenditure through the provision of goods and services required for construction.

The number of direct and indirect jobs generated as a result of the proposed five-year construction period has been estimated based on the following assumptions:

- A base year of 2018 for the start of construction
- A five-year construction period (from 2018 to 2023)
- The project opening to traffic in 2023 (noting that the mainline tunnels would be operational and open to the public by 2022).

Direct jobs are defined as those relating to the project's development throughout construction, commissioning, operation and management of the facility and would include on-site labour, supervision, professional services and project managers. Indirect jobs are defined as jobs that support the project through the provision of goods and services such as off-site manufacturing and equipment hire (within Australia).

Based on a five-year construction period, 14,378 direct job years would be created from 2018 to 2023, which is equivalent to 2,876 jobs a year. Furthermore, around 42,351 indirect (off-site) job years would be generated, equivalent to 8,470 jobs a year based on the project period. Construction of the project would significantly increase the employment opportunities across the study area, and is considered to have a major positive impact on the social and economic environment.

As a commitment of the project, the WestConnex Training Academy has been established. As outlined in the WestConnex Sustainability Strategy, the WestConnex program of works aims to deliver 500 apprenticeships/traineeships during the life of the WestConnex project. A portion of this number would be trained on the M4-M5 Link project. In addition to offering new opportunities for employment, the WestConnex Training Academy is providing training in tunnelling to people who have transferrable skills from other industries, like the natural resources sector. This would allow people with experience from other sectors, like mining and heavy industry, to join the workforce. The WestConnex Sustainability Strategy also incorporates initiatives to improve Aboriginal and Torres Strait Islander participation in construction and provides opportunities to Aboriginal and Torres Strait Islander enterprises.

Construction of the project would significantly increase the employment opportunities across the study area. Construction would create medium-long to long term job opportunities and economic benefit to the region. There is a high likelihood of these benefits occurring with potential significant consequence on the social and economic environment. As such, the overall impact upon the social and economic environment would be major positive.

Value add

The construction industry contributes around 7.7 per cent of total gross domestic product (GDP) to the Australian economy. In calculating the flow-on economic benefits of a project, it is common to employ economic multipliers. Multipliers refer to the level of additional economic activity generated by a source industry. There are two types of multipliers:

- Production induced, comprising:
  - First round effects (all outputs and employment required to produce the inputs for construction)
  - Industrial support effect (induced extra output and employment from all industries to support the production of the first round effect)
- Consumption induced, which relates to the demand for additional goods and services due to increased spending of wages and/or salaries across all industries.

Consumption induced effects comprise the increase in output required to satisfy the additional demand generated by the increased wages and salaries resulting from all increased output (ie direct and indirect employment).

The estimated construction costs of the project, ABS multipliers and industry knowledge have been analysed to determine that construction of the project would generate a further $5.8 billion of activity in production induced effects and $7.7 billion in consumption induced effects. Total economic activity generated by the construction of the project would be around $19.7 billion. Further detail is included in **Appendix P** (Technical working paper: Social and economic).

Overall, construction of the project would produce a long-term economic benefit to the region. There is a high likelihood of these benefits occurring with potential moderate consequence on the social and economic environment. As such, the overall impact on the social and economic environment would be moderate positive.

14.3.8 Utilities

Communities and businesses are dependent on public utilities, particularly the supply of electricity and water, for the operation of electronics, industrial production and daily activities such as showering, drinking water and cooking. The disruption of these services for short periods of time may cause some inconvenience to daily life and business operation, consequently affecting economic productivity and the routines of individuals.

During construction, public utilities and services may be disrupted while they are temporarily or permanently relocated, or for safety reasons. Disruptions for safety reasons could arise when construction activities involve relocating power lines or operating machinery close to power lines. Such disruptions may result in an economic loss for a business and could affect business viability if disruptions continue for extended periods. This may also affect employees who may experience an economic loss if employment is temporarily placed at risk. Residents would also feel these disruptions as they create inconvenience, require a change in routine and have the capacity to reduce the productivity of individuals and increase household costs.

A Utilities Management Strategy has been prepared for the project (refer to **Appendix F** (Utilities Management Strategy)). In accordance with the strategy, existing utility services would be avoided or protected wherever possible. Utility relocations and adjustments would still be required both inside and outside the project footprint. In most instances, impacts on utilities would be temporary, and would be effectively managed by the measures outlined in **Appendix F** (Utilities Management Strategy). When disruptions to the local community are required, the local community who may be affected would be given prior notification of the works, at least five days prior to the works commencing.

Extended utility outages are unlikely; however short-term outages to facilitate utility works are likely. The consequence on the social and economic environment would generally be limited to a locality or suburb, be short term and have only a slight effect on the existing condition. The overall impact on the social and economic environment from planned utility outages would be a minor negative.

14.3.9 Property acquisition

The nature of direct property impacts, including details of property acquisitions, temporary occupation of land and settlement and subsidence impacts are detailed in **Chapter 12** (Land use and property). This section identifies the socio-economic consequence of these direct property acquisitions on residential properties, businesses and social infrastructure.

Residential

The project has been designed to be a predominantly sub-surface motorway. To facilitate surface works for the project, the acquisition of residential properties is required.

Acquisition and subsequent relocation of households and businesses due to property acquisition can disrupt social networks and affect health and wellbeing due to raised levels of stress and anxiety. Purchasing and moving houses can be one of the most significant events in a person's life. Similarly, finding appropriate rental property within restricted timeframes can also be stressful for households who rent. The duration of this process can potentially be extended due to the high demand for rental housing in inner western Sydney.

Both a house and a workplace/study location are central to most people's daily routine, with the location of these influencing their travel patterns, and social, community and commercial interactions.

When an individual is required to relocate, their daily routine would be affected with new routines and social interactions generally taking a while to re-establish. This feeling of disconnect may not be isolated to people moving away from a location. Those people left behind, if they had strong social connections to the person leaving, may also be affected by the change.

The property acquisition process and the subsequent need to relocate can also elevate health risks, causing stress and anxiety. This can particularly affect vulnerable households, such as the elderly, those suffering illness or a disability, or those that speak English as a second language.

Uncertainty around the acquisition process can also heighten stress and anxiety across the broader community. Speculative media coverage or misinterpretation of project information can cause some members of the community to unnecessarily worry about their property being acquired. This speculation and uncertainty can also influence a person's economic decision to purchase or sell in an area due to perceived changes in the local property market.

Property acquisition presents the potential for major adverse social and economic impacts upon individuals and households. These impacts may be reduced and/or managed through the application of a process of consultation and compensation that is designed to be equitable to existing property owners. As the process may be emotionally and physically taxing and requires a permanent change, the overall social and economic impact upon affected individuals is expected to be major.

Impacts associated with property acquisition are being managed through a property acquisition support service that provides the following:

- Affected households would have access to a counselling service that assist people through the property acquisition process and, where necessary, providing referrals to more specialised experts
- A property acquisition factsheet that outlines the process and provides further information for concerned residents is to be prepared and made available online and in hard copy at project information centres
- An independent service is to be provided to vulnerable households (eg elderly, those suffering an illness) to assist with relocation. Assistance could include, finding a suitable house for relocation (purchase or rent), arranging removalists, disconnecting services and attending appointments with solicitors or other representatives
- A community relations support toll-free telephone line is to be established to respond to any community concerns or requests for translation services.

All acquisition required for the project is being undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW), the *Land Acquisition Information Guide* (NSW Government 2014) and the land acquisition reforms announced by the NSW Government in 2016 (2016 reform).

The 2016 reform was triggered by a review of the existing acquisition process, which demonstrated that although the legislative framework for land acquisitions was sound, there was more work to be done to ensure that a stressful and complex situation is made as easy as possible. The reformed position on land acquisitions strikes a more effective balance between the property rights of landowners and the public good derived from essential public infrastructure. Additional information about the 2016 reform, including changes that were introduced, is included in **Appendix P** (Technical working paper: Social and economic).

The reformed acquisition process has been and would continue to be implemented as part of the project. The impact of residential property acquisition will be managed by the implementation of a detailed consultation and advice process, as per the 2016 reform. The impact of residential property acquisition is expected to be moderate negative.

Businesses

As well as residential property acquisitions, the project would also require the acquisition of business premises in the study area. These businesses comprise commercial and industrial properties and likely serve a local to district trade. Impacts of acquisition and the associated relocation of businesses can result in:

- Disruptions to business operation
- Loss of revenue
- Relocation and re-establishment costs
- Employee training expenses for new employees
- Trade catchment alterations
- Business closure.

Businesses required to close or relocate due to the project are mostly light industrial or specialty services, all likely to service a district trade area and employ a small number of workers. It is therefore likely that these businesses would need to relocate to another trade catchment, resulting in noticeable relocation and establishment costs with a loss in trade and business revenue during this period.

The relocation and subsequent loss of local businesses due to property acquisition would also disrupt the character of business areas and affect the productivity of the local economy. The impact on the character of these areas may be temporary, where the opportunity exists for businesses be return and re-establish in the same location following construction. This would most likely be seen around the Darley Road civil and tunnel site (C4), Pyrmont Bridge Road tunnel site (C9) and along Parramatta Road, which would retain opportunity for the land to be redeveloped post construction, consistent with the current land zoning.

Communities can develop strong ties to a business and its employees, particularly local businesses. Changes to these businesses can cause disruptions to routine, social networks and economic productivity.

The area where a business relocates to may also have different locational attributes, such as reduced passing trade or business visibility, which could result in a loss of revenue or the requirement to relocate again to maintain viability.

Although the acquisition process is likely to be a noticeable change for individual businesses directly affected by the project, the compensation process should help to alleviate the severity of impact on individual business interests. In regards to the broader social and economic environment, the business closures are anticipated have a slight effect on the existing condition, with the economy expected to normalise and business expected to be re-established in a short-medium term. The spatial extent of impact would generally be confined to a suburb level. The likelihood of these changes occurring is near certain. Considering this, the overall impact of construction activities on the social and economic environment is moderate negative.

Social infrastructure

Direct impacts on the following social infrastructure facilities would occur during construction:

- Loss of Buruwan Park to facilitate the new alignment of The Crescent. Buruwan Park is a passive open space area that is predominantly used by pedestrians and cyclists using the active transport link through to Rozelle Bay. The park currently has poor surveillance with evidence of anti-social behaviour in the form of graffiti on the walls. The park has no formalised outdoor furniture and has limited grass area. Due to other parks being in close proximity (such as Easton Park, Jubilee Park, Bicentennial Park) and the creation of the new open space at the Rozelle Rail Yards (upon completion of construction), the loss of this park would have minimal impact
- King George Park:
  - Loss of a small portion of the park adjacent to Byrnes Street to facilitate the Iron Cove Link portals
  - Loss of part of the informal area of the car park at Manning Street (within King George Park) to formalise the car park and provide a bioretention facility. The park is heavily utilised by local residents and visitors from the broader area due to its high amenity value and park facilities. The park also contains a section of the Bay Run, which is a highly valued pedestrian and cyclist connection. The Bay Run would be temporarily diverted; however access would be maintained during construction.

14.4 Assessment of potential operational impacts

The operation of the project has the potential to positively and negatively affect residents, businesses, road users, users of social infrastructure and the wider community in the study area. An assessment of potential social and economic impacts within the study area during operation of the project is provided in this section. Further information is provided in **Appendix P** (Technical working paper: Social and economic).

14.4.1 Demographic profile

Given the number of residential property acquisitions required, this impact is not expected to affect the population and demography of the study area or precinct. The study area is projected to experience significant population growth over the next 20 years as a result of urban renewal programs.

14.4.2 Community values

Community safety, health and wellbeing

Residents living on Clubb Street at Rozelle would have their access affected by the closure of the intersection with Victoria Road, turning Clubb Street into a cul-de-sac. Although direct access from Victoria Road would be reduced, community safety is likely to increase as vehicles would no longer be able to turn left into and out of Clubb Street.

In total, the project would result in the loss of around 26 unrestricted on-street parking spaces from Byrnes Street, Clubb Street, Toelle Street and Callan Street at Rozelle. Loss of parking availability can affect residents, social infrastructure providers and businesses in terms of daily routines, level of activity, passing trade or business operations. Reduced street parking can also deter visitors from accessing a business or community facility due to an increase in travel time and lack of convenience, and can impair convenience and accessibility for residents accessing their properties and visitors accessing properties. This impact would potentially impact businesses along the southern side of Victoria Road.

The removal of these parking spaces at Rozelle is considered to result in a small, but measureable, change to the existing conditions, affecting a small number of local residents. This would have minor social and economic impacts.

Community cohesion

Elements of the project that could affect community severance include local road closures (Clubb Street at Rozelle), the widening of Victoria Road near the eastern side of Iron Cove Bridge, increased accessibility to active and public transport routes, and changes to existing traffic volumes on arterial roads. Community severance can lead to short or long term changes to people's behaviour patterns, affecting established community networks and an area's character and sense of place.

The project would deliver new and enhanced areas of open space at the Rozelle Rail Yards, the Glebe Foreshore and a network of active transport connections, which has the potential to increase social connectivity and community cohesion by providing increased opportunities for the community to meet and interact.

The Rozelle Rail Yards currently act as a significant physical barrier between the communities of Annandale, Rozelle and Lilyfield. The project would transform this area providing a net increase in public open space with a network of active transport links, which would improve community cohesion and better connect the communities of Annandale, Rozelle and Lilyfield and improve connections between Bicentennial Park, the Rozelle Rail Yards and beyond to Easton Park.

The widening of Victoria Road at the eastern abutment of Iron Cove Bridge has the ability to exacerbate the existing barrier effect between the communities of Rozelle and Balmain already created by Victoria Road. The improved pedestrian and cyclist accessibility between Toelle Street and Terry Streets would assist in alleviating this impact. The siting of Iron Cove Link portals would also reduce this impact, allowing a direct link between these streets that would provide a pedestrian crossing over the two northbound lanes before another signalised crossing over the two southbound

lanes of Victoria Road. The closure of Clubb Street is unlikely to cause community severance, given the other through roads in the immediate surrounding area (Toelle Street and Callan Street).

It is expected that around 2,000 heavy vehicles would be removed from Parramatta Road and reduced traffic is anticipated on sections of major arterial roads, including City West Link, Parramatta Road, Victoria Road, King Street, the Princes Highway, Southern Cross Drive and Sydenham Road (refer to **Chapter 8** (Traffic and transport)). This forecast in the reduction in traffic may lead to increased use of these streets for residents, visitors and businesses.

The operation of the project is expected to increase community cohesion and for a large number of local residents and businesses across the study area and therefore has a moderate positive impact on the social and economic environment.

14.4.3 Amenity

The project would improve general amenity within the study area by reducing the volume of traffic on surface roads, which would be displaced into the mainline tunnels. This would subsequently reduce current levels of noise and vibration, air pollution from vehicle emissions, traffic movements and congestion. In addition, the project provides opportunities for:

- Creation of open space at Rozelle Rail Yards and Iron Cove for community and recreational use
- New and improved active transport links, connecting currently disconnected communities and improving community cohesion
- Potential future urban revitalisation along existing arterial roads, particularly along Victoria Road at Rozelle and Parramatta Road east of Haberfield.

Noise and vibration

During operation, traffic related noise in the study area is generally expected to decrease as a result of traffic being displaced from surface roads into the mainline tunnels. This would have a moderate positive impact, resulting in a noticeable and substantial positive change in the existing environment. This impact would be long-term and would affect a large number of people.

Significant reductions in noise are identified along sections of Victoria Road at Rozelle where the project is forecast to significantly reduce traffic numbers. As this area is generally occupied by businesses, positive effects are likely to include increased amenity and ambiance which could increase the number of visitors and passing trade. This is considered a moderate positive impact, resulting in a noticeable and substantial positive change in the existing environment, and has the potential to affect a large number of people working, visiting and living in these locations.

Increases in noise are identified in areas of the study area such parts of Johnston Street where traffic volumes are expected to increase, and in Iron Cove to the south of Victoria Road (Byrne Street, Clubb Street, Toelle Street, Callan Street and Springside Street) where noise shielding from the front row of buildings would be removed due to property acquisitions and subsequent demolition.

Residents would be more susceptible to health impacts associated with increased noise, such as general annoyance (eg having to keep windows closed), sleep disturbance and interference with household activities (eg eating outdoors). This is considered a moderate negative impact on the social and economic environment for residents who are currently shielded from traffic noise.

Open space areas are also particularly sensitive to changes in noise levels. King George Park is predicted to experience a noticeable increase in noise levels, particularly the eastern end closest to Victoria Road. Although the existing background noise levels are high and dominated by existing road traffic noise, the increased noise levels may affect a person's desire use the park in the future. People would be less likely to gather for picnics and other outdoor activities if it is believed to be less healthy and unattractive where there may be interference with normal speech levels.

To minimise the impact of elevated noise levels in the study area, management measures would be implemented, such as low noise pavement and noise barriers. In addition, at-property acoustic treatment would be considered where noise exceedances are still predicted (refer to **Chapter 10** (Noise and vibration).

No vibration impacts are expected during operation of the project (refer to **Chapter 10** (Noise and vibration)).

Air quality

The project is expected to result in an overall reduction in total pollutant levels in the community and a redistribution of emissions to the tunnels as there would be less vehicles using surface roads. For much of the community this would result in no change or a small improvement to existing conditions, resulting in a negligible impact. Changes in air quality related health incidents would be too small to measure and therefore the impact on their occurrence is expected to be negligible.

Changes to air quality both inside and outside the tunnels would also have an unobservable impact on human health or local amenity. Therefore, air quality impacts associated with the operation of the project are considered negligible (refer to **Chapter 11** (Human health risk)).

Planning controls would need to be developed in the vicinity of St Peters to ensure future developments at heights of 10 metres or higher are not adversely impacted by emissions from the ventilation outlets. Development of planning controls would need to be supported by detailed modelling addressing relevant pollutants and averaging periods (refer to **Chapter 9** (Air quality)).

Visual amenity

The operation of the project would result in changes to local visual amenity due to the presence of new and enhanced infrastructure, landscaping and urban design features.

The suburbs of Lilyfield and Rozelle would experience the most noticeable change in visual amenity from the transformation of the Rozelle Rail Yards. During operation, permanent infrastructure would be located in the Rozelle Rail Yards, including ventilation and water treatment facilities, comprising three, thirty-five metre ventilation outlets. This area would be landscaped and rehabilitated in to be consistent with the Urban Design and Landscape Plan (UDLP), however the visual character of the immediate area would change. Within The Bays Precinct, there are number of existing prominent buildings and structures including the White Bay Power Station, the large grain silos which are located on the northern side of Anzac Bridge and Anzac Bridge itself. Over the next 20 or so years, the area surrounding the Rozelle Rail Yards is expected to change as The Bays Precinct is subject to urban renewal which would result in changes to the urban landscape. This would affect local residents in the suburbs of Rozelle and Lilyfield and therefore would have a moderate negative impact on the social and economic environment.

Design options have been considered to minimise the visual impacts of prominent infrastructure. A landscape and visual impact mitigation strategy would be developed for the project to avoid, reduce and manage identified potential landscape and visual impacts during operation. This would include:

- Street tree planting for screening, shade and canopy
- High quality finishes to buildings and ventilation facilities to facilitate long term durability and minimal maintenance
- Improvement of active transport links to reduce reliance on local roads for short journeys.

In addition, the project would deliver open space, providing opportunities for recreational and community land uses. The open space at the Rozelle Rail Yards would include active transport links that would connect the communities of Annandale and Lilyfield and improve community cohesion by delivering an area where communities can come together and enjoy community space. While the project would introduce new infrastructure elements that would reduce amenity, the overall change in land use at Rozelle Rail Yards is considered to have an overall positive impact on amenity at Rozelle.

14.4.4 Business and industry

Access and parking

Overall, the road, active transport and public transport network would improve during operation of the project. Increased accessibility and connectivity has the potential to reduce delivery time, increase delivery reliability and reduce transport costs.

The largest reduction in traffic is expected along Victoria Road, which would potentially benefit businesses along Victoria Road and Darling Street through general improved amenity and improved delivery and dispatch movements. The reduction in traffic may activate the commercial areas by allowing more passing trade and foot traffic, however may reduce passing trade. There are no permanent impacts on on-street parking near business and commercial areas proposed as part of the project.

Amenity

Changes to amenity can affect businesses that are heavily dependent on passing trade. Reduced amenity may also result in customers travelling to competing business centres for goods and services. This change in consumer behaviour can have a long-term impact on business and local economic viability.

Traffic volumes on local surface roads in the study area are projected to reduce. This reduction potentially improves environmental amenity by reducing congestion, noise and air pollution. This may increase pedestrian and cyclist activity in the area, which may lead to an increase in trade and business revenue. This would be particularly true for the commercial areas along Parramatta Road, Victoria Road and Darling Street.

As a result, the project is expected to have a positive impact on existing business amenity, which would lead to a moderate positive impact on the broader social and economic environment. Potential impacts on specific individual businesses and commercial areas are included in **Appendix P** (Technical working paper: Social and economic).

14.4.5 Access and connectivity

Permanent changes to the existing road, public transport and active transport networks could potentially impact access and connectivity for residents, business owners and visitors. This section assesses the potential access and connectivity impacts during operation of the project.

Road network

Road intersection and network performance is forecast to improve across the overall road network, largely due to the redirection of vehicles from surface roads into the mainline tunnels. This would have a positive effect for those travelling to or from western Sydney, with significant improvements predicted at the Wattle Street interchange in both the AM and PM peak periods. This would have a major positive social and economic impact, reducing travel times for a large number of people living or working in western Sydney.

Reduced network performance is forecast at the Rozelle interchange in both the AM and PM peak periods, and at the St Peters interchange in the PM peak period. This would have an adverse impact on residents living in the inner west, increasing travel times and cost.

Overall, the project is forecast to improve travel times, reduce congestion, reduce travel costs and reduce traffic related mental and physical health benefits. The improvements to the network are considered a major positive benefit to the social and economic environment. Changes to local roads are unlikely to affect the broader road network. However, these changes would directly affect accessibility for local residents, businesses and visitors.

Public transport

Improvements to public transport would contribute to a number of direct and indirect social and health benefits such as reduced stress and accessibility. As people often choose to shop, visit and spend their time at the most convenient and accessible locations, changes to public transport travel time may benefit businesses and social infrastructure within the study area.

Both travel time savings and delays across the public transport network are considered minor and are unlikely to deter a person from using public transport, or to have any significant impact on a person's quality of life. Therefore, the changes to the public transport network are considered to have a negligible impact on the social and economic environment. Details of changes to public transport as a result of the project are outlined in **Chapter 8** (Traffic and transport).

Active transport

Social and economic benefits from active transport networks include enhanced connectivity, increased opportunities for social interaction and community cohesion, reduced car dependency, reduced cost of travel and the promotion of more active lifestyles, resulting in community health benefits.

The project would improve connectivity and safety and contribute to the active transport network. Cyclist and pedestrian paths delivered by the project would create safe links that have reasonable grades and are separated from vehicular traffic. Two key pedestrian bridges would be replaced at Victoria Road and City West Link, maintaining existing active transport access at Rozelle.

The project would also address poor active transport connectivity in the study area, including along Victoria Road and the Rozelle Rail Yards at Rozelle. **Table 14-11** identifies the active transport infrastructure that would be delivered as part of the project. The project would contribute 3,800 metres to the existing active transport network in the study area. This enhancement is considered a major positive impact, as it would result in a noticeable, long-term change to the social and economic environment, benefiting a large number of people.

Table 14-11 Active transport being delivered as part of the project

Route	Feature	Approx. length	Benefits
Rozelle Rail Yards Link Links the Bay Run, The Bays Precinct and the Greenway in the west to Anzac Bridge and Sydney CBD in the east	Underpass	150 m	• Provides the junction connecting Rozelle Rail Yards and Victoria Road to The Bays Precinct • Provides north–south connectivity between Glebe and Annandale with Rozelle and Balmain • Provides a connection from the inner west to The Bays Precinct via the Rozelle Rail Yards • Removes the need for an at-grade crossing at City West Link • Connects to the Rozelle Bay light rail stop
	Shared path	1 km	• Provides the link between Victoria Road and Lilyfield Road across the Rozelle Rail Yards
Victoria Road - Iron Cove Link Links the northern suburbs of Drummoyne, Russell Lea and Chiswick to The Bays Precinct and the Sydney CBD	Separated cycleway	250 m	• Provides a separated cycleway and footpath on the western side of Victoria Road along the extent of the M4-M5 Link works • Connects the eastern side of the Rozelle Rail Yards along Victoria Road to the intersection of Robert Street • Connects the existing retail centres on Darling Street and Victoria Road, as well as social infrastructure and active and passive recreation facilities
	Separated cycleway	450 m	• Links the intersection of Springside Street to Iron Cove Bridge and the Bay Run

Route	Feature	Approx. length	Benefits
	Bridge	200 m	• Connects Victoria Road to The Crescent over Rozelle Rail Yards • Connects to Rozelle Bay light rail stop • Removes the conflict between pedestrians and cyclists with traffic on City West Link • Removes the need for an at-grade crossing at City West Link and increases pedestrian safety • Provides north–south connectivity between Glebe and Annandale with Rozelle and Balmain
	Shared path	400 m	• Connects Victoria Road to the Crescent
	Shared path	500 m	• Connects The Crescent to the James Craig Road existing active transport network
Whites Creek Link Links Parramatta Road to the Rozelle Rail Yards and Callan Park	Bridge	200 m	• Links the intersection of Brenan Street and Railway Parade with City West Link and Rozelle Rail Yards • Links residential communities in Annandale and Lilyfield • Addresses connectivity from Whites Creek to the Rozelle Rail Yards, crossing the light rail line and City West Link
Johnstons Creek Valley Link Extends the existing Johnstons Creek pathway to connect Glebe Foreshore to Parramatta Road	Bridge and shared path	300 m	• Connects Easton Park to The Crescent through the Rozelle Rail Yards • Addresses connectivity from Johnstons Creek to Rozelle Rail Yards • Links Glebe Foreshore and parklands to the Rozelle Rail Yards and Parramatta Road and The Bays Precinct
	Shared path	500 m	• Provides a suitable cycling space for the connection along The Crescent into Jubilee Park and linking to the existing Glebe Foreshore • Provides connectivity and links to an existing and proposed off-road active transport network

14.4.6 Economy

Freight and efficiency costs

The freight industry is an important part of the NSW economy as an enabler of economic activity, contributing an estimated $58 billion to NSW State Gross Product (SGP) in 2011 (Transport for NSW 2011). An objective of the M4-M5 Link project is to encourage heavy and commercial vehicle movements into the tunnel, increasing efficiencies and reducing freight costs through increased travel speeds and reliability and reduced travel distances.

Commercial vehicle movements are generally oriented around the major commercial/industrial centres of Port Botany and Sydney Airport. **Appendix H** (Technical working paper: Traffic and transport) determined that the project would result in substantial potential benefits for freight and commercial vehicle movements. Improvements in the efficiency and reliability of these transport networks would likely result in increased productivity, reduced costs and broader economic benefits for these workforces.

Reductions in freight or heavy vehicle traffic movements along surface roads in the study area, particularly Parramatta Road, City West Link, Victoria Road, King Georges Road and the existing M5 East Motorway, have the potential to improve the amenity of the environment, which in turn benefits residential communities, visitors and businesses.

Employment connectivity

Over 25 per cent of all Sydney jobs are located in the Global Economic Corridor, which extends from Norwest Business Park in the north through to the Sydney CBD and on to Port Botany and Sydney Airport in the south (A Plan for Growing Sydney 2014). Western Sydney is expected to deliver strong job growth over the next 20 years, however employment in the eastern part of Sydney would also continue to grow. This means that people from western Sydney would continue to travel eastwards for employment opportunities. WestConnex would improve existing transport connections to the Global Economic Corridor and the eastern part of Sydney, as well as facilitating the growth of Parramatta. It is estimated that using WestConnex, motorists would save around 40 minutes on a typical journey from Parramatta to Sydney Airport (WestConnex Updated Strategic Business Case 2015). In addition, the reduction of traffic on surface roads would improve the road network and allow for enhanced public transport services, including buses.

For commuters, the project would lead to a more reliable road network, reducing commuting time and lowering vehicle operating costs. For the residents of western Sydney, in particular, this would result in a major positive impact on the social and economic environment.

Road tolling

The M4-M5 Link (excluding the Iron Cove Link) would be tolled. The direct impacts of a tolling system include the management of congestion, which has an impact on economic productivity, and social elements such as stress, time with family and friends, cost and environmental amenity.

The use of a toll road may increase the cost of living for individuals and can exacerbate social inequality. Generally, higher income earners are more capable of absorbing the cost of tolls than lower income households, whereas lower income households are more likely to travel longer distances and avoid tolls due to affordability constraints (Mokonyama 2012).

ABS 2011 Census data on taxable personal incomes highlight that areas of western Sydney, including Bankstown, Blacktown, Parramatta, Fairfield and Liverpool, are in the lowest 20 per cent of Sydney's income receivers (Phillip O'Neill 2013). This may mean that despite the introduction of the tolled section of the M4-M5 Link, a proportion of the Greater Sydney population may not be able to afford to benefit from the increased efficiency and travel times that the project could offer. However, given the benefits of the project for users it is likely that there would be minimal economic variance between using a toll free road versus using a tolled road. This would result in improvements to the existing conditions resulting in a minor positive impact on the social and economic environment.

An impact of implementing a tolled road is the potential for increased congestion on surrounding roads as a consequence of motorists changing travel patterns to avoid being charged by the new toll. Once the project is operational, there would likely be a period during which drivers would trial both existing, toll-free routes and the new, tolled M4-M5 Link, before deciding on a regular route. Congestion in peak periods on the existing, toll-free surface roads may provide an incentive to use the new, tolled road.

This would result in improvements to the existing situation, resulting in a moderate positive impact on the social and economic environment.

14.4.7 Future land use

Land required for the construction of the project that is not required for permanent operational infrastructure, and that would not be subject to the UDLP has been termed remaining project land. This land would consist of:

- Land that would be retained by Roads and Maritime for future (separate) road infrastructure projects
- Land that would be considered for separate future development (residual land).

The potential future use of this land would be identified in the Residual Land Management Plan (RLMP) that would be prepared for the project. A summary of the potential future uses of land required for construction and not required for permanent operational infrastructure is included in **Chapter 12** (Land use and property). These areas would be confirmed following detailed design. A description of how remaining project land would be managed following the project is provided in **Table 14-12**.

In considering the potential future use of remaining project land, regard would be given to identifying opportunities to deliver outcomes that support and connect existing neighbourhoods, complement and stimulate local economies, and provide opportunities for growth across existing and future local industries. The project would not rezone or consolidate remaining project land and therefore there would be no changes to land use zoning for future development, including around the Rozelle Rail Yards.

Table 14-12 Future land use following the project

Location	Feature
Wattle Street interchange surface works	The land remaining at Wattle Street at Haberfield would be rehabilitated and landscaped to be consistent with the RLMP and the UDLP for the M4 East project. The current use as construction sites would be consistent with the future use as transport infrastructure and as such would have negligible impact on future land use. This would result in a neutral impact on the social and economic environment.
Parramatta Road West and East civil and tunnel sites	These construction ancillary facilities would change the land use from commercial to construction infrastructure during construction. Following construction, these sites would be rehabilitated to be consistent the UDLP developed for the project. In determining the future use of this site, consideration would be given to the Parramatta Road Urban Transformation Strategy (UrbanGrowth NSW 2016). Future potential use of the site would be outlined in the RLMP developed for the project.
Darley Road surface works	The project would change the existing land use at the site as it would comprise permanent operational infrastructure (Darley Road motorway operations complex (MOC1)). However this site is adjacent to existing transport infrastructure for the Inner West Light Rail line and the Leichhardt North light rail stop and as such, this change would be consistent with surrounding transport infrastructure land uses. Upon operation the remaining land would continue to be zoned B2 Local Centre and any future use would be subject to a separate assessment and determination in accordance with the relevant planning controls. The project would not have long term impacts on future use of the site and as such, would have a negligible impact on the social and economic environment.
Rozelle surface works	This area is currently a disused industrial and transport infrastructure site and inaccessible to the public. The project would deliver new open space at the Rozelle Rail Yards, as well as new and enhanced active transport links for the community and permanent operational and transport infrastructure. The Rozelle Rail Yards are identified as a Precinct under The Bays Transformation Plan (UrbanGrowth NSW 2015). Open space and active transport links are identified as land uses for this precinct in the Plan, as well as an area for mixed housing and employment uses. The project would deliver open space in this area, and not preclude further development in accordance with The Bays Transformation Plan. The project on operation would continue to provide transport infrastructure. However, on operation the site would be accessible to and useable by the public resulting in a moderate positive impact on the existing social and economic environment.

Location	Feature
The Crescent and Whites Creek surface works	The use of The Crescent civil site (C6) would be temporary and would not permanently change the existing land use. During operation, the site would be reinstated. The realignment of The Crescent would result in the permanent loss of Buruwan Park, which would have a moderate to high impact on the local community. Notwithstanding, delivery of new open space within the Rozelle Rail Yards and new pedestrian and cyclist bridges is considered to be a beneficial outcome for the community and as such, the loss of Buruwan Park is considered to be minor in a regional context. Active transport connections to the Rozelle Bay light rail stop and to Railway Parade would be maintained. For much of the surrounding communities these future land use opportunities would improve the existing environment, resulting in a moderate positive impact on the social and economic environment
Victoria Road and Anzac Bridge approaches	The reconstruction of Victoria Road would result in the permanent loss of a small number of commercial buildings located on the western side of Victoria Road. The potential future redevelopment of this land for commercial uses in accordance with the existing land zoning would be lost. The design of the approaches to and from Anzac Bridge includes the delivery of new and enhanced active transport connections, which would allow future connections into the future redevelopment areas of the White Bay Power Station and the wider Bays Transformation Precinct. While the permanent loss of a small number of commercial properties on the western side of Victoria Road would be a moderate negative impact on the existing social and economic environment, the social infrastructure benefits arising from the project would provide a moderate positive impact for the wider community.
Iron Cove Link surface works	This area would change from residential and commercial land use to transport infrastructure, mainly from the acquisition of properties south of Victoria Road to the permanent operational infrastructure. This would result in moderate negative impact on the existing local social and economic environment. The bioretention facility adjacent to Manning Street within King George Park would be unlikely to impeded redevelopment of this land as the existing zoning limits the potential for redevelopment (RE1 Public Recreation). The project would not have long term negative impacts on future use of this area in King George Park and would have a minor positive impact on the social and economic environment due to the improvement to the existing informal carpark.
Pyrmont Bridge Road tunnel site	The Pyrmont Bridge Road tunnel site (C9) would be located on land currently used by commercial and industrial uses. The land use zoning would remain unchanged (currently IN1 Light Industrial). Any future development on the site would be subject to approval by the relevant consent authority. When considering future use of this site, consideration would be given to the *Parramatta Road Urban Transformation Strategy* (NSW Government 2016). Future potential use of the site would be outlined in the RLMP for the project.
St Peters interchange surface works	The Campbell Road civil and tunnel site (C10) is currently being used by the New M5 project. Following construction by the M4-M5 Link project, this site would be landscaped to be consistent with the UDLP's for the New M5 and M4-M5 Link projects.

14.5 Environmental management measures

Environmental management measures relating to social and economic impacts during construction and operation are provided in **Table 14-13**. Additional mitigation and management measures relevant to social and economic matters are also described in the following sections of this EIS:

- Traffic management and safety, access and parking management measures in **Chapter 8** (Traffic and transport)
- Air quality management measures in **Chapter 9** (Air quality)
- Noise and vibration management measures in **Chapter 10** (Noise and vibration)
- Human health risk management measures in **Chapter 11** (Human health risk)
- Urban design and visual amenity management measures in **Chapter 13** (Urban design and visual amenity).

Table 14-13 Environmental management measures – social and economic

Impact	No.	Environmental management measure	Timing
Construction			
Impacts on businesses	SE1	A Business Management Plan will be prepared and will include: • Identification of businesses that have the potential to be adversely affected by construction activities that will occur as part of the project • Management measures that will be implemented to maintain appropriate vehicular and pedestrian access during business hours and visibility of the business to potential customers during construction, including alternative arrangements for times when access and visibility cannot be maintained. These will be determined in consultation with the owners of the identified businesses.	Construction
Changes to community access and connectivity	SE2	A Community Communication Strategy will be prepared that details: • Procedures and mechanisms that will be implemented in response to the key social impacts identified for the project • Property acquisition support services that will be provided • Procedures and mechanisms to communicate to project stakeholders (including affected communities), the access and connectivity enhancements and new community and social facilities that will be delivered as part of the project through the Social Infrastructure Plan and to update stakeholders on delivery progress • Procedures and mechanisms that will be used to engage with affected business owners to identify potential access, parking, business visibility and other impacts to develop measures to address potential impacts on a case by case basis.	Construction
Property acquisition	SE3	Property acquisition will continue to be undertaken in accordance with the *Land Acquisition Information Guide* (Roads and Maritime 2014), the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) and the land acquisition reforms announced by the NSW Government in 2016 (NSW Government 2016). A property acquisition factsheet that outlines the process and provides further information for concerned residents will continue to be made available online and in hard copy at project information centres.	Construction
	SE4	Affected households will continue to have access to a counselling service that assists people through the property	Construction

Impact	No.	Environmental management measure	Timing
		acquisition process.	
	SE5	An independent service will continue to be provided to vulnerable households (eg elderly, those suffering an illness) to assist with relocation. Assistance could include finding a suitable house for relocation, arranging removalists, disconnecting services and attending appointments with solicitors or other representatives.	Construction
	SE6	A community relations support toll-free telephone line will be operated to respond to any community concerns or requests for translation services.	Construction
Operation			
Impacts on social infrastructure and facilities	OSE7	A Social Infrastructure Plan will be prepared that details: • Measures that will be delivered as part of the project to improve community connectivity in areas affected by the project, including pedestrian and cyclist access • Community and social facilities, for example open space, that will be delivered or enhanced as part of the project • Community initiatives and programs that will receive support as part of the project, including the manner in which support will be provided. The Social Infrastructure Plan will be prepared by a suitably qualified and experienced person in consultation with the community and relevant councils and implemented as part of the project.	Construction and operation