

# **SOCIAL IMPACTS AND COMMUNITY INFRASTRUCTURE**

CHAPTER NINETEEN

# 19 Social impacts and community infrastructure

This chapter provides an assessment of the potential impact on local and regional communities and community infrastructure as a result of the project, and identifies mitigation measures to address these impacts.

## 19.1 Secretary’s environmental assessment requirements

The Secretary’s environmental assessment requirements relating to social impacts and community infrastructure, and where these requirements are addressed in this Environmental Impact Statement, are outlined in Table 19-1.

Table 19-1 Secretary’s environmental assessment requirements – social impacts and community infrastructure

Ref.	Secretary’s environmental assessment requirements	Where addressed
<b>10. Socio-economic, Land Use and Property</b>		
10.1	The Proponent must assess social and economic impacts in accordance with the current guidelines.	Business impacts are addressed in Chapter 13 (Business impacts). Economic benefits are addressed in Chapter 3 (Strategic need and justification). Social impacts addressed in this chapter.
10.2	The Proponent must assess impacts from construction and operation on potentially affected properties, approved development applications, businesses, public open space, recreational users and land and water users (for example, recreational and commercial fishers, oyster farmers), including property acquisitions/adjustments, access, amenity and relevant statutory rights.	Social impacts are addressed in this chapter. Property impacts are addressed in Chapter 12 (Land use and property). Access impacts are addressed in Chapter 8 (Construction traffic and transport). Business impacts are addressed in Chapter 13 (Business impacts). Cumulative impacts are addressed in Chapter 26 (Cumulative impacts).
10.3	Assess the likely risks of the project to public safety, paying particular attention to subsidence risks, bushfire risks and the handling and use of dangerous goods.	Public safety risks are addressed in this chapter. Traffic related public safety risks during construction are addressed in Chapter 8 (Construction traffic and transport). Traffic related public safety risks during operation are addressed in Chapter 9 (Operation traffic and transport). Risks associated with groundwater are addressed in Chapter 17 (Groundwater and geology). Bushfire risks and the handling and use of dangerous goods are addressed in Chapter 23 (Hazard and risk).

## 19.2 Assessment methodology

An assessment of potential social and community infrastructure impacts was carried out in accordance with reference to the *Environmental Impact Assessment Practice Note (No 5) – Socio-economic assessment* (Roads and Maritime Services, 2011).

The scope of the assessment comprised:

- Describing the existing social environment within the study area, including:
  - ◆ An analysis of population and demographic data for communities in the study area, such as information available from the Census of Population and Housing 2011 (Australian Bureau of Statistics (ABS), 2011)
  - ◆ A review of existing community infrastructure in the study area, such as education facilities, health and emergency services, recreation and transport facilities
  - ◆ Identification of existing community values relating to factors such as community cohesion, local amenity and character, and community health and safety
  - ◆ A review of the outcomes of early community consultation carried out for the project
  - ◆ Observations made during a site visit to the study area
- Evaluation of impacts on existing social conditions and community values in the study area as a result of the project, including:
  - ◆ Identification of community infrastructure that would be directly affected as a result of the project; this included consideration of the availability of alternative facilities or if the facilities can be replaced in the local area
  - ◆ Identification of where access may be affected as a result of the project
  - ◆ Consideration of the potential health impacts associated with the project
- Development of mitigation measures to address potential social and community infrastructure impacts.

The primary study area for this assessment, based on the relevant ABS Statistical Areas Level 2 (SA2) locations, is shown in Figure 19-1. It is based on those communities that have the greatest potential to experience changes to social conditions or local movement patterns due to the location of project and construction activities.

The assessment also considers impacts on communities in the Willoughby, North Sydney, City of Sydney and Marrickville local government areas (LGAs). Benefits and impacts from the project may also be experienced in other areas of the greater Sydney region, such as through improved public transport operation. These impacts have also been considered in this assessment, where relevant.



**KEY**

- Proposed station location
- Proposed dive locations
- Proposed ancillary infrastructure
- Chatswood to Sydenham
- SA2 block
- Local Government Area
- Road network

Indicative only, subject to design development



Figure 19-1 Social impact study area

## 19.3 Existing environment

The existing social environment is described below in terms of:

- Population and demographic characteristics of local and regional communities
- Community values, including those relating to community cohesion, local amenity and character, and community health and safety
- Community infrastructure
- Transport and access.

### 19.3.1 Regional context

The project extends from the Willoughby City LGA (Willoughby LGA) in the north to the Marrickville Council LGA (Marrickville LGA) in the south. In 2014, the LGAs in the study area had a combined estimated resident population of 426,878 people, of which more than 46 per cent lived in the City of Sydney LGA (Sydney LGA) and nearly 20 per cent in the Marrickville LGA. The LGAs also had a combined worker population of more than 530,000 people at the 2011 Census. About 395,000 workers, or nearly 75 per cent of the combined LGA total, worked in the Sydney LGA, while about 65,900 workers (12.4 per cent) worked in the North Sydney Council LGA (North Sydney LGA).

#### Willoughby City Council

The Willoughby LGA is located about six kilometres north of the Sydney CBD and covers an area of about 23 square kilometres. In June 2014, the LGA had an estimated resident population of about 74,166 people (Australian Bureau of Statistics, 2014). The Willoughby LGA is a predominantly residential area. However, it also includes commercial and industrial uses at the Chatswood and St Leonards employment hubs, and the Artarmon Industrial Area. The LGA also comprises significant parkland areas including bushland at Castle Cove, Middle Cove and along the edges of Middle Harbour (profile.id, 2015a).

The Willoughby LGA includes a range of district and regional level community services and facilities including major hospital and community health facilities at the Royal North Shore Hospital precinct, and TAFE NSW Northern Sydney Institute at St Leonards. The LGA includes a number of major retail centres within the Chatswood CBD, including Westfield Chatswood Shopping Centre, Chatswood Chase, Metro Chatswood and Chatswood Central (profile.id, 2015a). Numerous parks, reserves, golf courses, and other facilities which provide for active and passive recreational activities for both local residents and wider communities are also located in the LGA.

#### North Sydney Council

The North Sydney LGA is located about three kilometres north of the Sydney CBD and covers an area of about 11 square kilometres. In June 2014, the LGA had an estimated resident population of about 71,025 people. The population of the LGA grew at an average annual rate of 1.9 per cent over the five years to 2014, although the growth rate increased to 2.6 per cent between 2013 and 2014. This was higher than the rate of growth for NSW over the same periods (Australian Bureau of Statistics, 2014). The North Sydney LGA is also a popular tourist destination, attracting large numbers of holiday makers during event and festival periods (North Sydney Council, 2013e).

The North Sydney LGA includes significant residential land uses, as well as commercial land uses at North Sydney and Crows Nest, and parkland. The LGA accommodates a number of important regional level community uses, such as Luna Park, North Sydney Olympic Pool, North Sydney Oval, and TAFE NSW Northern Sydney Institute at Crows Nest (profile.id, 2015b). The LGA also includes numerous parks, reserves, golf courses, and other facilities which cater for the needs of local communities.

### **City of Sydney**

The Sydney LGA covers an area of about 25 square kilometres and includes the Sydney CBD and inner-city suburbs. The LGA had an estimated resident population of about 198,331 people in June 2014. Over the five years to 2014, the population of the LGA grew at a higher rate than NSW as a whole. Annual average population growth was 2.3 per cent between 2009 and 2014. This grew to 3.4 per cent between 2013 and 2014 (Australian Bureau of Statistics, 2014).

The Sydney LGA comprises a mix of commercial, residential and industrial land uses. The Sydney CBD is the primary commercial and economic centre for the Sydney metropolitan area. In 2011, the LGA had a worker population of more than 395,000 people (Australian Bureau of Statistics, 2011). The Sydney CBD also attracts an estimated 480,000 visitors and students each day (City of Sydney, 2015a).

The LGA accommodates a range of regional level community services and facilities including major educational facilities (The University of Sydney, University of Technology Sydney, University of Notre Dame Australia, Curtin University Sydney, Central Queensland University (Sydney Campus), TAFE NSW Sydney Institute), major public and private hospitals (St Vincent's Hospital, Royal Prince Alfred Hospital, Sydney Hospital), and major entertainment attractions (International Convention Centre Sydney, to be opened in December 2016), The Star Casino, Sydney Cricket Ground, Sydney Football Stadium (known as Allianz Stadium), Sydney Convention and Exhibition Centre, Wild Life Sydney Zoo, Sydney Sea Life Aquarium, Sydney Observatory, The Domain and Hyde Park). Numerous iconic sites are also located within the LGA, including Sydney Harbour, Circular Quay, Sydney Harbour Bridge, Sydney Opera House, and Darling Harbour (profile.id, 2015c).

The City of Sydney hosts a number of major sporting, entertainment and cultural events that attract large numbers of visitors to the inner city from across Sydney and NSW, and from interstate and overseas. Some key events include the New Year's Eve fireworks, Chinese New Year Festival, Sydney Mardi Gras parade, ANZAC Day March, Sun-Herald City2Surf, St Patrick's Day Parade, Sydney Festival, Sydney Spring Cycle, Mother's Day Classic, Blackmores Sydney Marathon, Vivid Sydney, and Carols in the Domain.

### **Marrickville**

The Marrickville LGA is located to the west of the Sydney CBD and covers an area of about 17 square kilometres. In 2014, Marrickville LGA had an estimated resident population of about 83,356 people. Over the five years from 2009, the LGA's population grew at a slower rate than NSW as a whole, at 1.0 per cent annually (Australian Bureau of Statistics, 2014).

The Marrickville LGA is a predominantly residential area (about 61 per cent of the LGA comprises residential uses). The LGA also comprises industrial, commercial and parkland areas. Key features within the LGA include educational facilities such as TAFE NSW Sydney Institute, Newington College, and Trinity Grammar School; the Metro Rehab Hospital and Annette Kellerman Aquatic Centre (profile.id, 2015d).

### 19.3.2 Community profile

This section describes the key population, demographic and housing characteristics of the study area. In particular, it provides information on these groups within the community that may be most vulnerable to changes brought about by the project due to their level of economic resources, age or need for assistance.

#### Population size and growth

In June 2014, the study area had an estimated resident population of about 207,421 people. Sydney-Haymarket-The Rocks SA2 had the largest resident population with 27,695 people, followed closely by the SA2s of Marrickville and Chatswood (East)-Artarmon. Sydenham-Tempe-St Peters SA2 had the smallest resident population.

Over the five years to 2014, the population of the study area grew by an average of about 1.8 per cent annually, above the rate of growth for NSW as a whole. Population growth over the 12 months to 2014 was above the five year average, at 2.5 per cent. Population growth in the study area was generally driven by relatively high growth rates in North Sydney, Redfern, Sydney City and St Leonards. The SA2s of Chatswood (East)-Artarmon, Marrickville, Newtown-Camperdown-Darlington and Surry Hills all experienced rates of growth below NSW as a whole.

Information on future population growth for the study area is available at an LGA level. The total population of the four LGAs covering the study area is expected to increase by about 150,000 people by 2031. Much of this growth is expected to be driven by population increases in the Sydney LGA. The rate of population growth in the remaining LGAs is expected to be similar to NSW as a whole.

#### Age profile

The study area has a relatively young population, with a lower median age, higher proportions of people aged 15-44 years, and lower proportions of people aged 65 years and over, compared to NSW. In 2011, all SA2s within the study area recorded median ages below the NSW average. The North Sydney-Lavender Bay and Marrickville SA2s recorded the highest proportion of people aged 65 years and over, although this was lower than the NSW average.

#### Cultural diversity

Communities in the study area are culturally diverse, with proportions of people born overseas, people who speak a language other than English at home and people who do not speak English well or at all above the NSW average.

In 2011, each of the study area SA2s recorded proportions of people born overseas above the NSW average, with Sydney-Haymarket-The Rocks and Chatswood (East)-Artarmon having proportions more than double the NSW average. About 33.2 per cent of people in the study area spoke a language other than English in 2011, with this increasing to around 50 per cent or more in the SA2s of Sydney-Haymarket-The Rocks and Chatswood (East)-Artarmon. Non-English languages commonly spoken by people in the study area include Chinese languages (ie Mandarin and Cantonese); South East Asian languages (ie Indonesian, Tagalog, and Filipino); Korean; Indo-Aryan languages; and Greek.

Overall, the study area had slightly lower levels of English proficiency compared to NSW as a whole. Levels of English proficiency varied across the study area, with the SA2s of Marrickville, Sydenham-Tempe-St Peters, Chatswood (East)-Artarmon, Sydney-Haymarket-The Rocks and Redfern-Chippendale all having proportions of people who do not speak English well or at all above the study area and NSW averages. People with lower levels of English proficiency represent a stakeholder group with particular communication needs and a group that may be more vulnerable to changes from the project.

The study area had relatively low proportions of Indigenous persons, with each of the SA2s recording proportions of Indigenous people below the NSW average. Redfern-Chippendale SA2 recorded the highest proportion of Indigenous persons within the study area, followed by Marrickville and Sydenham-Tempe-St Peters.

### **Households and mobility**

There were about 74,685 households in the study area at the 2011 Census. Overall, the study area had lower proportions of family households, and higher proportions of lone person and group households compared to NSW. SA2s closer to the city centre generally had higher proportions of lone person and group households, while outer areas had higher proportions of family households.

The study area had relatively high levels of population mobility, with lower proportions of people who lived at the same address either 12 months or five years prior to the 2011 Census compared to NSW. This is likely to reflect the residential development that has occurred in the inner city over recent years and relatively high levels of rental accommodation, which generally experience higher levels of population turnover. Marrickville SA2 had the lowest level of population mobility, although this was still lower than NSW as a whole. This is likely to reflect some of the more established residential neighbourhoods within this area.

### **Housing**

In 2011, there were about 82,651 dwellings in the study area, of which about 90 per cent, were occupied on Census night. Dwelling types are typical of the study area's inner city location, with very high proportions of apartments and low proportions of separate houses compared to NSW as a whole.

Apartments are the predominant dwelling type in all SA2s apart from Newtown (semi-detached dwellings) and Sydenham (separate houses). The study area as a whole had occupancy rates similar to the NSW average, although these varied across the study area. In particular, the Sydney-Haymarket-The Rocks SA2 had relatively low occupancy rates (at 82.6 per cent), which may reflect the availability of short-term rental accommodation in inner Sydney.

The study area had relatively high proportions of dwellings that were being rented and low proportions of owner occupied dwellings, compared to that of NSW. In 2011, more than half of the occupied private dwellings in the study area were being rented. The SA2s of Sydney-Haymarket-The Rocks, Surry Hills and Redfern-Chippendale had particularly high levels of rental accommodation, at more than double the State average, which is likely to reflect the higher housing costs within inner Sydney. About 45.4 per cent of dwellings in the study area were either owned outright or owned with a mortgage. This is compared to 66.5 per cent in NSW as a whole. Sydenham-Tempe-St Peters had the highest proportion of owner occupiers, with rates similar to the NSW average, which is likely to reflect the more established, residential nature of these suburbs.

At the 2011 Census, there were 3,741 dwellings that were rented from a State housing authority, representing about 5.0 per cent of dwellings in the study area. This was marginally higher than the State average and was driven by very high proportions of State rental housing in the Redfern-Chippendale and Surry Hills SA2s.

### Level of disadvantage and need for assistance

The ABS produces a range of indices that indicate relative levels of socio-economic advantage and disadvantage. The Socio-economic Indexes for Areas (SEIFA) index of relative socio-economic advantage / disadvantage is derived from Census variables such as income, educational attainment, unemployment and vehicle ownership.

At the 2011 Census, levels of relative advantage / disadvantage varied widely across the study area. Communities in the study area north of Sydney Harbour generally recorded decile scores of seven or above, indicating high levels of relative advantage and low levels of disadvantage. South of Sydney Harbour, communities displayed greater diversity in levels of relative advantage / disadvantage, with some neighbourhoods recording decile scores of three or less, placing them in the bottom 30 per cent of communities in NSW in relation to relative disadvantage, while others recorded scores of nine or 10, indicating high levels of relative advantage. A community's level of disadvantage may influence the ability of that community to cope with or respond to changes from the project. In particular, communities that display levels of relative disadvantage may be more vulnerable to the impacts of large infrastructure projects than those that display levels of relative advantage. However, improved access to employment opportunities would also provide benefits for those communities that display levels of relative disadvantage.

The study area had relatively low levels of people in need of assistance in one or more of the three core activity areas of self-help, mobility, or communication due to disability, a long-term health condition or old age. However, the level of people needing assistance varied across the study area. Marrickville SA2 had relatively high levels of people needing assistance (at 6.3 per cent), while the SA2s of Surry Hills, Sydenham-Tempe-St Peters, Redfern-Chippendale and Chatswood (East)-Artarmon all had levels of people needing assistance above the study area average. People in this group may be more vulnerable to changes from the project, such as changes in local access, including to community services and facilities, effects associated with property acquisition, including the loss of social and community networks, and changes in local amenity.

### Income and employment

Households in the study area generally had relatively high levels of income compared to NSW as a whole. In 2011, the median household income in the study area was above the NSW average, with all SA2s recording median incomes above NSW.

The study area also had high levels of workforce participation compared to NSW. At the 2011 Census, there were 108,329 people in the study area aged 15 years or over either employed or actively looking for work, representing about 66.7 per cent of the study area's working age population. Unemployment in the study area was generally below the NSW average in 2011. However, unemployment levels varied across the study area with Sydney-Haymarket-The Rocks, Redfern-Chippendale and Marrickville all having unemployment rates above the State average.

### Worker population

There were about 434,945 people working in the study area at the 2011 Census, of which nearly 60 per cent (251,453 people) worked within the Sydney-Haymarket-The Rocks SA2. North Sydney-Lavender Bay had the second largest worker population, followed by St Leonards-Naremburn, Surry Hills and Chatswood (East)-Artarmon. This reflects the presence of major employment centres within the study area such as the Sydney CBD, North Sydney and St Leonards employment hubs and Artarmon industrial area.

In 2011, the study area had a high proportion of full-time workers (ie worked 35 hours or more each week) and relatively low proportion of part-time workers, compared to NSW as a whole. Professional, scientific and technical services; and financial and insurance services are the main industries of employment for people working in the study area.

About 37.3 per cent of people working in the study area travelled by train for all or part of their journey to work compared to 9.4 per cent in NSW as a whole at the 2011 Census. The SA2s of Sydney-Haymarket-The Rocks and North Sydney-Lavender Bay had the highest proportion of workers who commuted by train at 44.4 per cent and 41.8 per cent respectively. Nearly 14 per cent of people working in the study area travelled to work by bus only, while a further 7.6 per cent either walked or cycled only. These were both above the averages for NSW.

### 19.3.3 Community values

Community values are those values held as important to residents for quality of life and well-being. They include physical elements such as parks, landscapes and pedestrian connectivity; and intangible qualities such as sense of place and community cohesion.

#### Community cohesion

Community cohesion refers to the connections and relationships between individuals, groups and neighbourhoods, and is encouraged by the existence of local community facilities, a sense of local identity, and opportunities for community participation.

Overall, levels of community cohesion and sense of belonging in the study area are expected to be good, with communities having access to a diverse range of local and regional level community facilities, strong support networks and a variety of meeting places such as local centres, community centres and cafes.

A number of community groups operate within the study area, which help to foster relationships and trust. These include groups associated with local communities (such as residents groups, progress associations and precinct groups), environmental areas, heritage values, transport, sporting clubs and cultural facilities. Some communities in the study area also demonstrate relatively high levels of participation in volunteering, which also contributes to community cohesion.

Communities in the study area host a variety of local events, including neighbourhood street fairs, festivals, exhibitions and markets, which provide opportunities to involve local communities and help to foster a sense of community and local identity. These events include:

- Local festivals such as Willoughby Spring Festival, North Sydney Children’s Festival, Cameraygal Festival at Lane Cove, Newtown Festival, Dulwich Hill Village Fair, and Marrickville Festival
- Cultural and sporting events such as Willoughby Fun Run, Guringai Festival, Twilight Food Festival and Spring into Jazz at North Sydney, Bairro Português Food and Wine Fair at Marrickville, and Open Marrickville
- Australia Day celebrations
- Weekly and monthly farmers and arts markets, including at Chatswood Mall, Crows Nest, Kirribilli, Lane Cove, North Sydney and The Rocks.

Communities in the study area are culturally diverse, with high proportions of people born overseas, and people who speak a language other than English at home. Some communities in the study area also have relatively high levels of people needing assistance and levels of relative disadvantage. These groups are likely to be more dependent on personal and community support networks.

### **Local amenity and character**

Community values relating to local amenity and character refer to natural and physical qualities and characteristics that contribute to a person's appreciation of their surroundings. They relate to such things as built form and landscape, environmental conditions (such as noise levels and air quality), and heritage and cultural features.

Local amenity and character in the study area is characterised by a diversity of land uses, including major commercial areas in the Sydney CBD and at North Sydney, St Leonards and Chatswood; and local centres and shopping precincts, including at Crows Nest, McMahons Point, Surry Hills and Newtown. Pockets of high density residential uses are located at centres near St Leonards, Crows Nest and North Sydney, and adjacent to Sydney Harbour at McMahons Point.

Sydney Harbour is a major contributor to the amenity and character of the study area and is highly valued by communities for its natural, ecological, scenic amenity, landscape, heritage, recreational and lifestyle values. Sydney Harbour also supports a range of transport and economic functions. The harbour is the focus of a number of major events, such as the New Year's fireworks, Australia Day celebrations and Sydney to Hobart Yacht Race, as well as a range of formal and informal recreation activities including fishing, boating, kayaking, and sailing.

The study area includes a number of open spaces, reserves and parkland areas that are valued by local and regional communities for their landscape, visual amenity, heritage and recreational values. These include Blues Point Reserve, Barangaroo Reserve, Hyde Park and Prince Alfred Park.

The character of the urban environment is important to local communities and varies throughout the study area. Residents value the village atmosphere and character of local centres within the study area, including at Artarmon, Crows Nest and McMahons Point. The protection of the character of these villages and local centres was identified as important during early community consultation for the project.

The heritage and history of the study area – including places associated with Indigenous culture and early European settlement – also contribute to the character and identity of communities. Community members identified the importance of protecting heritage values during early community consultation for the project. In particular, community members identified heritage values associated with rail stations at Artarmon and Marrickville, and the area surrounding the Crows Nest Village. Protecting the heritage values of buildings within the Sydney CBD and open space areas such as Hyde Park is also likely to be important for community members. Heritage items within the study area are discussed further in Chapter 14 (Non-Aboriginal heritage) and Chapter 15 (Aboriginal heritage).

### **Community health and safety**

Community safety refers to the ability of people to go about their day-to-day lives without fear for their own safety or the safety of others. Maintaining a high level of community safety and ensuring people feel safe in public places is important to communities in the study area.

Previous consultation carried out by councils in the study area identified safety at public transport facilities (including train stations and interchanges), as well as at parks (such as Chatswood Park and Blues Point Reserve) as concerns for some residents (Willoughby City Council, undated; North Sydney Council, 2014).

Comments made by community members during early consultation for the project indicated support for safe, reliable and affordable public transport. Key safety issues raised by community members related to:

- Concerns about impacts on passenger safety due to overcrowding at existing stations
- The use of ‘driverless’ trains and concerns about safety for passengers in the event of an incident on a ‘driverless’ train
- The need to ensure safe access for passengers, including the elderly, by including lifts in the station design, maintaining air quality and reducing the gap between the train and the platform.

Impacts of noise and vibration during construction and operation of the project on occupants of buildings near the project were identified during early community consultation for the project. Specifically, some community members identified concerns about possible sleep disruption, impacting on children’s learning and adults to function at work and causing stress for families.

### 19.3.4 Community infrastructure

A wide range of community services and facilities are located in or near to the study area that cater for the needs of communities within the study area and across the Greater Sydney region and NSW. These include:

- Major tertiary education facilities such as universities and Institute of TAFE at St Leonards, Crows Nest, North Sydney and within the Sydney CBD
- Major hospitals and facilities offering medical, health and emergency services, including Royal North Shore Hospital and North Shore Private Hospital at St Leonards, and Mater North Sydney Hospital at North Sydney
- Emergency services, including fire, police and ambulance stations
- Formal and informal sport, recreation, cultural and leisure facilities, including Sydney Harbour foreshore, which includes Blues Point Reserve and Barangaroo Reserve; Observatory Park; Royal Botanic Gardens; and Moore Park sporting and entertainment precinct, which includes Sydney Football Stadium and Sydney Cricket Ground.

A number of community facilities are located near to Sydney Metro surface infrastructure, construction works, haulage routes, and the tunnel alignment, which due to their proximity may experience impacts during construction and / or operation.

### Chatswood dive site (northern)

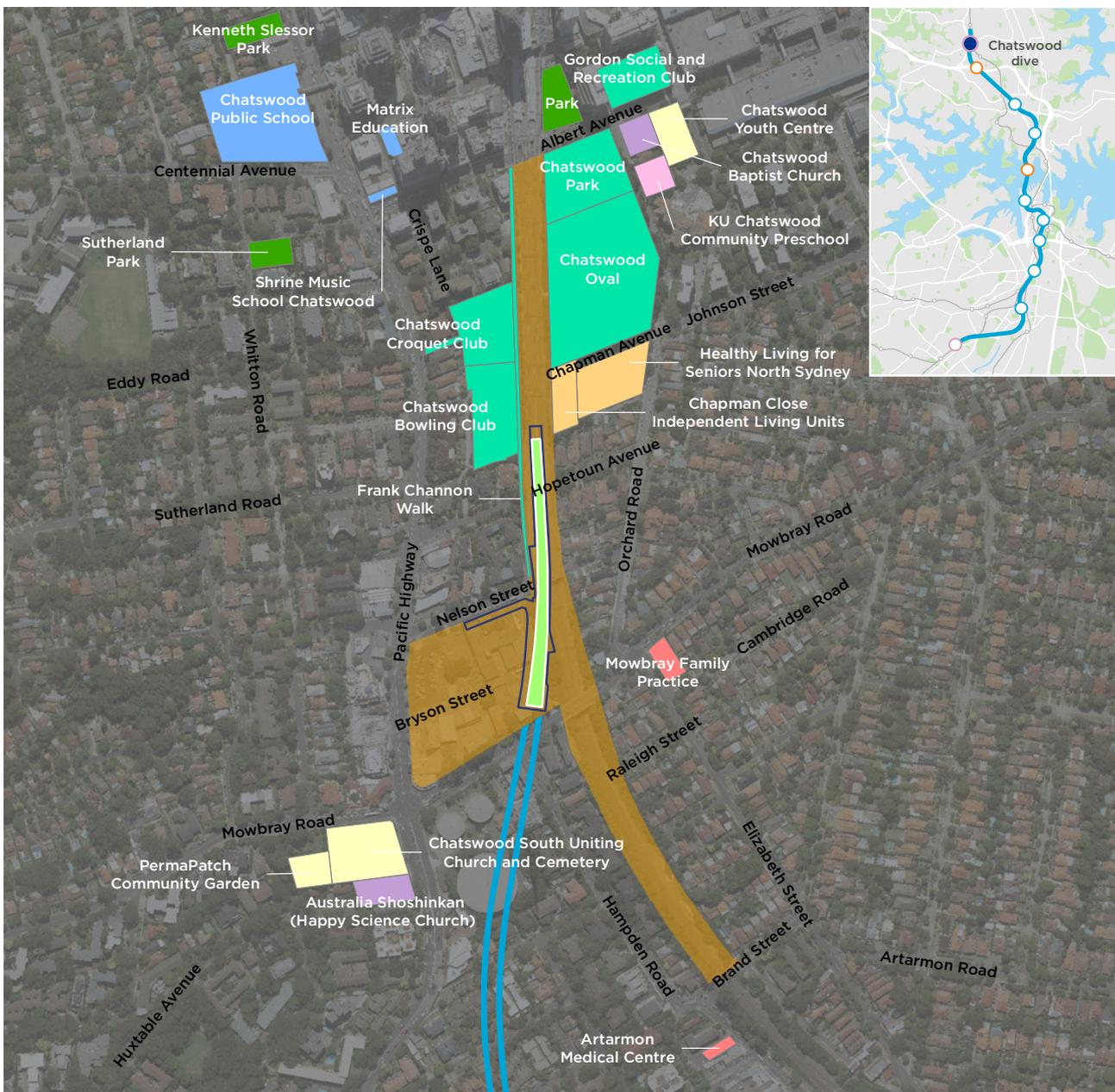
Community infrastructure around the Chatswood dive site is listed in Table 19-2 and shown on Figure 19-2. It includes:

- Chatswood Park, on Orchard Road. The oval within the park is the home ground of Gordon District Cricket Club and the Gordon Highlanders Rugby Club. The park includes picnic facilities, an exercise station, sports area, skate park, and play equipment
- Frank Channon Walk. This shared path is located on the western side of the rail corridor, between Albert Avenue and Nelson Street. It provides pedestrian and cyclist access to Chatswood Croquet Club, Chatswood Bowling Club, and Chatswood Oval via an underpass
- Australia Shoshinkan at the Pacific Highway, which is the main Australian temple of the Happy Science church. Weekly meetings are held at the temple as well as regular overnight seminars
- Chatswood Croquet Club and Chatswood Bowling Club, on the Pacific Highway
- Aged care and independent living facilities, such as the Chapman Close Independent Living Units and the Healthy Living for Seniors North Sydney, on Chapman Avenue.

**Table 19-2 Chatswood dive site (northern) – community infrastructure**

Facility	Location	Type
Chatswood Park	Orchard Road, Chatswood	Sport and recreation
Chatswood Oval	Albert Avenue / Orchard Road, Chatswood	Sport and recreation
Chatswood Croquet Club	Pacific Highway, Chatswood	Sport and recreation
Chatswood Bowling Club	Pacific Highway, Chatswood	Sport and recreation
Frank Channon Walk	Albert Street to Nelson Street, Chatswood	Active transport
KU Chatswood Community Preschool	Victor Street, Chatswood	Childcare
Chapman Close Independent Living Units	Chapman Avenue, Chatswood	Aged living
Healthy Living for Seniors North Sydney	Chapman Avenue, Chatswood	Aged living
Chatswood South Uniting Church and Cemetery <sup>1</sup>	Pacific Highway, Lane Cove	Other
Australia Shoshinkan (Happy Science Church)	Pacific Highway, Lane Cove	Place of worship
Chatswood Public School	Centennial Avenue, Chatswood	Education
PermaPatch Community Garden	Mowbray Road, Lane Cove	Other
Matrix Education	Thomas Street, Chatswood	Education
Chatswood Youth Centre	Albert Avenue, Chatswood	Other
Shrine Music School Chatswood	Pacific Highway, Chatswood	Education
Mowbray Family Practice	Mowbray Road, Artarmon	Health
Artarmon Medical Centre	Hampden Road, Artarmon	Health
Chatswood Baptist Church	Albert Avenue, Chatswood	Place of worship
Park	Albert Avenue, Artarmon	Sport and recreation
Sutherland Park	Whitton Road, Chatswood	Park
Kenneth Slessor Park	Pacific Highway / Western Way, Chatswood	Park
Gordon Social and Recreation Club	Albert Avenue, Chatswood	Sport and recreation

<sup>1</sup> The Chatswood South Uniting Church was closed in 2012.



**KEY**

- Chatswood to Sydenham
  - Proposed dive structure
  - Proposed construction site area
  - Proposed operational area at surface
- Social infrastructure
- Aged living
  - Place of worship
  - Childcare
  - Sport and recreation
  - Health
  - Park
  - Education
  - Other

Indicative only, subject to design development



Figure 19-2 Chatswood dive site (northern) - community infrastructure

### Artarmon substation

Community infrastructure around the Artarmon substation site is listed in Table 19-3 and shown on Figure 19-3. It includes:

- Education facilities, such as Artarmon Public School, on McMillan Road. Artarmon Public School provides primary education for about 980 students from kindergarten to Year 6. The school has established a temporary extension comprising demountable classroom buildings within the Artarmon substation site. It is understood that the school will vacate the site at the end of the 2017 school year
- Sport and recreation facilities, such as Thomson Park, on Reserve Road. Thomson Park includes a soccer field, synthetic cricket pitch, basketball court and practice net.

**Table 19-3 Artarmon substation – community infrastructure**

Facility	Location	Type
Thomson Park	Reserve Road, Artarmon	Sport and recreation
Artarmon Public School	McMillan Road, Artarmon	Education
Artarmon District Tennis Club	Barton Road, Artarmon	Sport and recreation



- KEY**
- Chatswood to Sydenham
  - Proposed operational area at surface
  - Proposed construction site area
- Social infrastructure
- Education
  - Sport and recreation

Indicative only, subject to design development

0 100 m

Figure 19-3 Artarmon substation – community infrastructure

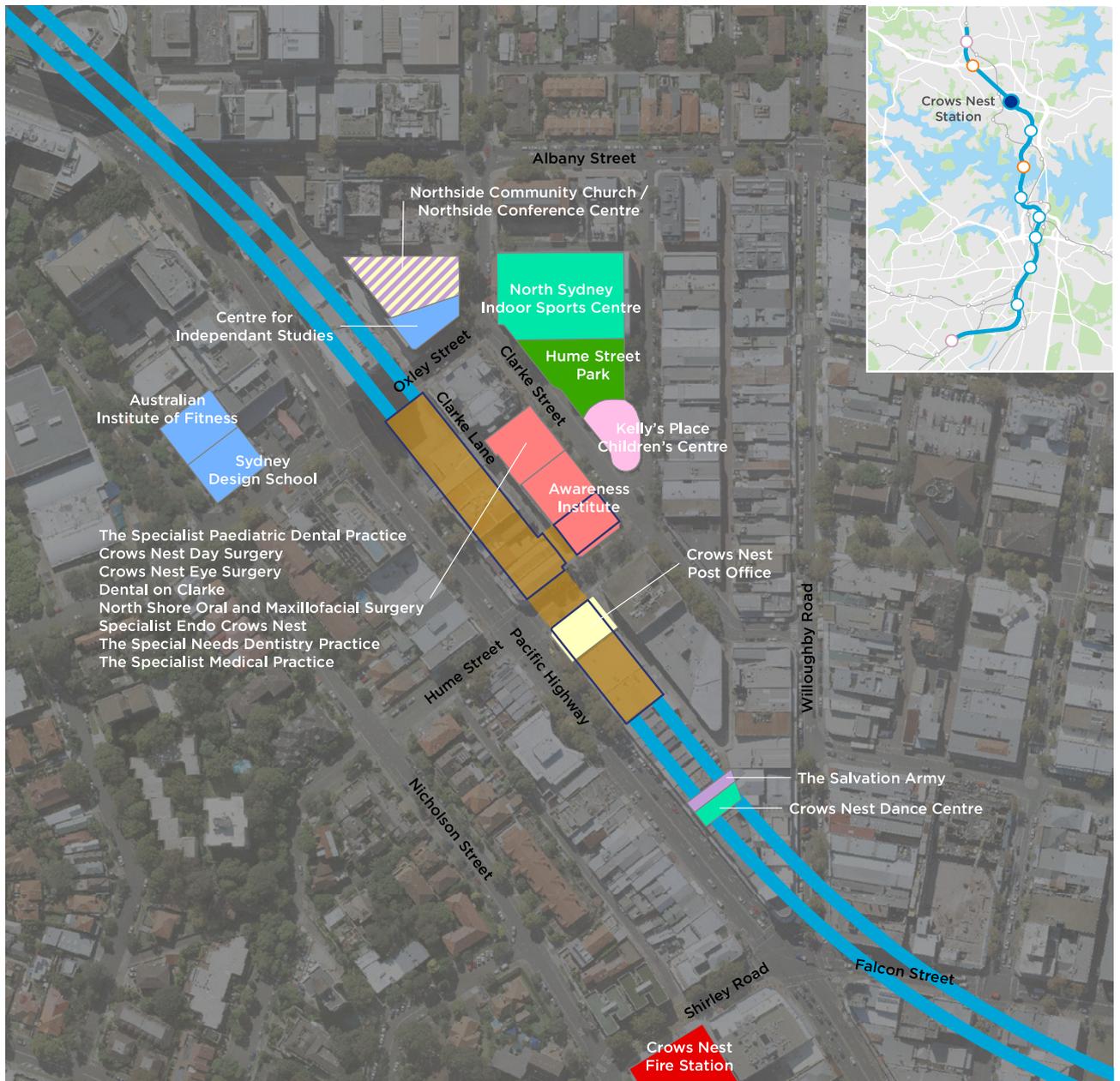
## Crows Nest Station

Community infrastructure around the Crows Nest Station site is listed in Table 19-4 and shown on Figure 19-4. It includes:

- Cultural facilities and places of worship, such as Northside Community Church, on the corner of Oxley Street and Pole Lane
- Sport and recreation facilities, such as the North Sydney Indoor Sports Centre, on Clarke Street and Hume Street, and Crows Nest Dance Centre on the Pacific Highway
- Kelly's Place Children's Centre, on the corner of Clarke Street and Hume Street. Kelly's Place is licensed to accommodate 40 children per day
- A number of healthcare facilities on Clarke Street, such as Crows Nest Day Surgery, Crows Nest Eye Surgery, Dental on Clarke, Special Needs Dentistry Practice, Special Medical Practice, North Shore Oral and Maxillofacial Surgery, and Specialist Endo Crows Nest.

**Table 19-4 Crows Nest Station – community infrastructure**

Facility	Location	Type
Kelly's Place Children's Centre	Hume Street, Crows Nest	Childcare
Northside Conference Centre	Oxley Street, Crows Nest	Other
Northside Community Church	Oxley Street / Pole Lane, Crows Nest	Place of worship
Crows Nest Post Shop	Pacific Highway	Other
Centre for Independent Studies	Oxley Street, Crows Nest	Education
Crows Nest Day Surgery	Clarke Street, Crows Nest	Health
Crows Nest Eye Surgery	Clarke Street, Crows Nest	Health
Dental on Clarke	Clarke Street, Crows Nest	Health
North Shore Oral and Maxillofacial Surgery	Clarke Street, Crows Nest	Health
Specialist Endo Crows Nest	Clarke Street, Crows Nest	Health
The Special Needs Dentistry Practice	Clarke Street, Crows Nest	Health
The Specialist Medical Practice	Clarke Street, Crows Nest	Health
Awareness Institute	Clarke Street, Crows Nest	Health
Crows Nest Dance Centre	Pacific Highway, Crows Nest	Sport and recreation
North Sydney Indoor Sports Centre	Hume Street, Crows Nest	Sport and recreation
Hume Street Park	Hume Street, Crows Nest	Park
The Specialist Paediatric Dental Practice	Clarke Street, Crows Nest	Health
The Salvation Army	Pacific Highway, Crows Nest	Place of worship
Australian Institute of Fitness	Oxley Street, Wollstonecraft	Education
Sydney Design School	Oxley Street, Wollstonecraft	Education
Crows Nest Fire Station	Shirley Road, Wollstonecraft	Emergency services



**KEY**

- █ Chatswood to Sydenham
- Proposed operational area at surface
- Proposed construction site area

**Social infrastructure**

- Childcare
- Emergency services
- Health
- Education
- Place of worship
- Sport and recreation
- Park
- Other

Indicative only, subject to design development



Figure 19-4 Crows Nest Station - community infrastructure

## Victoria Cross Station

Community infrastructure around the Victoria Cross Station site is listed in Table 19-5 and shown on Figure 19-5. It includes:

- Education facilities such as Monte Sant' Angelo Mercy College, on Miller Street, and Wenona School, on Walker Street. Monte Sant' Angelo Mercy College offers secondary education for students in Year 7 to Year 12, and had 1164 students in 2014 (My School, 2015a). Wenona School is an independent day and boarding school offering education for students from kindergarten to Year 12. In 2014, the school had 1009 students, including 50 boarders (My School, 2015b)
- Childcare facilities. St Thomas' North Sydney Preschool is located within the grounds of St Thomas' Anglican Church on the corner of Church Street and McLaren Street. The preschool caters for 27 children per day. Goodstart Early Learning North Sydney, on the corner of Berry Street and the Pacific Highway, provides 89 places for children aged six weeks to five years. Only About Children on Berry Street provides 68 places for preschool children
- Sisters of Mercy North Sydney accommodation.

**Table 19-5 Victoria Cross Station – community infrastructure**

Facility	Location	Type
Only About Children	Berry Street, North Sydney	Childcare
Monte Sant Angelo Mercy College	Miller Street, North Sydney	Education
Miller Street Medical Practices	Miller Street, North Sydney	Health
Australian Catholic University School of Physiotherapy	Pacific Highway, North Sydney	Education
St Thomas Anglican Church and Memorial Hall	McLaren Street, North Sydney	Place of worship
St Thomas North Sydney Preschool	McLaren Street, North Sydney	Education
Goodstart Early Learning North Sydney	Berry Street, North Sydney	Childcare
Civic Park	Miller Street, North Sydney	Park
North Sydney Court House	Pacific Highway, North Sydney	Court house
Uniting Care Georgian House	McLaren Street, North Sydney	Aged care
Wenona High School	Walker Street, North Sydney	Education
Greenwood Medical Centre	Pacific Highway, North Sydney	Health
Quality Dental North Sydney	Elizabeth Plaza, North Sydney	Health
Wenona Primary School	Walker Street, North Sydney	Education
Mary Mackillop Place	William Street, North Sydney	Place of worship
North Sydney Stanton Library	Miller Street, North Sydney	Other
North Sydney Police Station	Pacific Highway, Crows Nest	Emergency services
North Sydney Council Chambers	Miller Street, North Sydney	Other
Sisters of Mercy (North Sydney)	McLaren Street, North Sydney	Other



**KEY**

- Chatswood to Sydenham
- Proposed operational area at surface
- Proposed construction site area

**Social infrastructure**

- Aged care
- Childcare
- Emergency services
- Health
- Education
- Court house
- Place of worship
- Park
- Other

Indicative only, subject to design development



**Figure 19-5 Victoria Cross Station - community infrastructure**

### Blues Point temporary site

Community infrastructure around the Blues Point temporary site is listed in Table 19-6 and shown on Figure 19-6. It includes:

- Blues Point Reserve, which forms part of the Sydney Harbour foreshore and includes playground and picnic facilities. Blues Point Reserve is also a popular location for recreational fishing, canoeing and kayaking. The reserve is the starting point for canoe and board paddling events, such as the annual Bridge to Beach ocean paddling event
- McMahons Point Wharf, which caters for multiple Sydney Ferries routes.

**Table 19-6 Blues Point temporary site – community infrastructure**

Facility	Location	Type
Blues Point Reserve	Blues Point Road, McMahons Point	Park
McMahons Point Wharf	Henry Lawson Avenue, McMahons Point	Wharf



**KEY**

Chatswood to Sydenham Proposed temporary site area

Social infrastructure

Park Wharf

Indicative only, subject to design development



Figure 19-6 Blues Point temporary site – community infrastructure

## Barangaroo Station

Community infrastructure around the Barangaroo Station site is listed in Table 19-7 and shown on Figure 19-7. It includes:

- Barangaroo Reserve, including Munn Reserve. The reserve is located on Sydney Harbour on the northern end of Barangaroo. It includes pedestrian and cycle paths, public lawn areas, and cultural spaces that can accommodate up to 5500 people. The reserve is an important location for large community events as well as smaller, private events and picnics
- Childcare facilities, such as KU Lance Preschool and Children's Centre on High Street, which is a long daycare centre catering for 39 children aged six weeks to five years.

**Table 19-7 Barangaroo Station – community infrastructure**

Facility	Location	Type
KU Lance Preschool and Children's Centre	High Street, Millers Point	Childcare
The Rocks Fire Station	Kent Street, Millers Point	Emergency services
Kent Street Tennis Court	Kent Street, Millers Point	Sport and recreation
Fort Street Public School	Upper Fort Street, Millers Point	Education
Sydney Observatory	Watson Road, Millers Point	Observatory
Observatory Park	Watson Road, Millers Point	Park
St Brigids School	Kent Street, Millers Point	Education
Abraham Mott Hall / Abraham Mott Youth Centre	Argyle Place, Millers Point	Other
Barangaroo Reserve	Merriman Street, Barangaroo	Park
Munn Street Reserve	Munn Street, Millers Point	Park



**KEY**

- Chatswood to Sydenham
- Proposed construction site area
- Proposed operational area at surface

Social infrastructure

- Childcare
- Sport and recreation
- Emergency services
- Park
- Education
- Other
- Observatory

Indicative only, subject to design development



Figure 19-7 Barangaroo Station - community infrastructure

## Martin Place Station

Community infrastructure around Martin Place Station is listed in Table 19-8 and shown on Figure 19-8. It includes:

- Martin Place, which is a pedestrian-only public space. It comprises the Cenotaph (war memorial), sculptures, fountains and seating, and is surrounded by retail and commercial uses. Martin Place hosts a number of community events, including annual ANZAC day services
- Educational facilities, such as the University of Newcastle Sydney Campus, on Elizabeth Street
- Childcare facilities, such as the Martin Place Early Learning Centre. The Martin Place Early Learning Centre is a long day care centre, providing 76 places for children aged six weeks to five years
- Health and emergency services, such as the Sydney Hospital and Sydney Eye Hospital, on Macquarie Street, Sydney which provides surgical and medical treatment, and a 24-hour emergency service
- Entertainment facilities, such as the Theatre Royal at the MLC Centre, on King Street. The theatre is a key cultural and arts venue, hosting a large number of plays, musicals and other events. It has seating for more than 1100 people.

**Table 19-8 Martin Place Station – community infrastructure**

Facility	Location	Type
Martin Place	Martin Place, Sydney	Open space / active transport
Martin Place Early Learning Centre	Martin Place, Sydney	Childcare
MLC Centre (Theatre Royal)	Martin Place, Sydney	Other
University of Newcastle	Elizabeth Street, Martin Place	Education
Chifley Square	Chifley Square, Sydney	Open space
Hyde Park Barracks Museum	Macquarie Street, Sydney	Museum
St James Church	King Street, Sydney	Place of worship
High Court Of Australia; NSW Federal Court Registry; Federal Magistrates Court Of Australia NSW; Supreme Court	Queens Square, Sydney	Court house
The Mint	Macquarie Street, Sydney	Museum
Sydney Hospital and Sydney Eye Hospital	Macquarie Street, Sydney	Health
Cenotaph	Martin Place, Sydney	Monument
St Stephen's Uniting Church	Macquarie Street, Sydney	Place of worship
Museum of Sydney	Phillip Street / Bridge Street, Sydney	Museum
GPO Post Office	George Street, Sydney	Other
City Recital Hall	Angel Place, Sydney	Cultural
Parliament of NSW	Macquarie Street, Sydney	Other
State Library of NSW	Macquarie Street, Sydney	Library
Richard Johnson Square	Castlereagh Street, Sydney	Open space



**KEY**

- Chatswood to Sydenham
- Proposed operational area at surface
- Proposed construction site area

Social infrastructure

- |  |  |   |
|--|--|---|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: pink; margin-right: 5px;"></span> Childcare | <span style="display: inline-block; width: 15px; height: 10px; background-color: lightgrey; margin-right: 5px;"></span> Cultural   | <span style="display: inline-block; width: 15px; height: 10px; background-color: purple; margin-right: 5px;"></span> Place of worship |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: red; margin-right: 5px;"></span> Health     | <span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; margin-right: 5px;"></span> Open space    | <span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; margin-right: 5px;"></span> Other            |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: blue; margin-right: 5px;"></span> Education | <span style="display: inline-block; width: 15px; height: 10px; background-color: darkblue; margin-right: 5px;"></span> Court house |   |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: olive; margin-right: 5px;"></span> Museum   | <span style="display: inline-block; width: 15px; height: 10px; background-color: brown; margin-right: 5px;"></span> Monument       |   |

Indicative only, subject to design development



Figure 19-8 Martin Place Station - community infrastructure

### **Pitt Street Station**

Community infrastructure around the Pitt Street Station site is listed in Table 19-9 and shown on Figure 19-9. It includes:

- Hyde Park at Elizabeth Street, which covers over 16 hectares and is Australia's oldest park. It includes a number of notable monuments and features including the Archibald Fountain and ANZAC Memorial and Pool of Reflection. It is also the location of major community events such as the Sydney Food and Wine Fair, NAIDOC celebrations and events for the Sydney Festival
- Great Synagogue Sydney, on Castlereagh Street. The synagogue conducts services each weekday morning and afternoon, Friday evenings and Saturdays, and hosts a number of events throughout the year and weekly public tours on Tuesdays and Thursdays
- Pitt Street Uniting Church, on Pitt Street. The church conducts weekly services on Sunday morning, as well as monthly Sunday afternoon services
- Church of Scientology, on Castlereagh Street. The church conducts Sunday morning services, weekend seminars and other weekday events
- Presbyterian Church of Eastern Australia, on Castlereagh Street. The church conducts Sunday services and Wednesday evening services.

Table 19-9 Pitt Street Station – community infrastructure

Facility	Location	Type
Wholistic Medical Centre	Park Street, Sydney	Health
Great Synagogue Sydney	Castlereagh Street, Sydney	Place of worship
Pilgrim Theatre	Pitt Street, Sydney	Other
City of Sydney Fire Station	Castlereagh Street, Sydney	Emergency services
Church Of Scientology of Sydney	Castlereagh Street, Sydney	Place of worship
Presbyterian Church of Eastern Australia	Castlereagh Street, Sydney	Place of worship
Sydney Mechanics School of Arts	Pitt Street, Sydney	Education
Kingsway Institute	Bathurst Street, Sydney	Education
Sydney Premier Medical and Health Care Centre	Pitt Street, Sydney	Health
Central Court House	Liverpool Street, Sydney	Court house
Anzac War Memorial	Hyde Park, Sydney	Monument
Wesley Mission Sydney and Conference Centre	Pitt Street, Sydney	Other
University of Sydney Business School CBD Campus	Castlereagh Street, Sydney	Education
Go Study Australia (Sydney)	Pitt Street, Sydney	Education
Town Hall Police Station	George Street, Sydney	Emergency services
Town Hall Information Kiosk Sydney	George Street, Sydney	Other
Pitt Street Uniting Church	Pitt Street, Sydney	Place of worship
Mercury Colleges	Castlereagh Street, Sydney	Education
Cubbyhouse Childcare	George Street, Sydney	Childcare
Australian International College of English	Pitt Street, Sydney	Education
Hyde Park	Elizabeth Street / Liverpool Street, Sydney	Park
The Metro Theatre	George Street, Sydney	Other

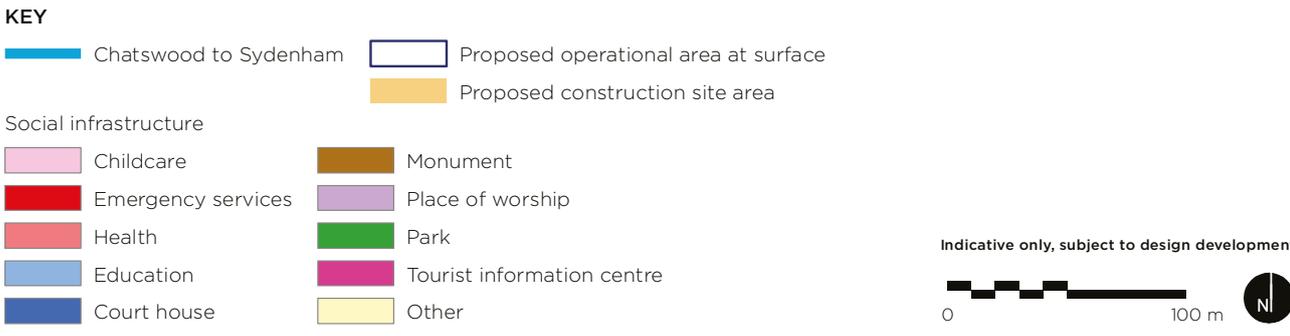


Figure 19-9 Pitt Street Station - community infrastructure

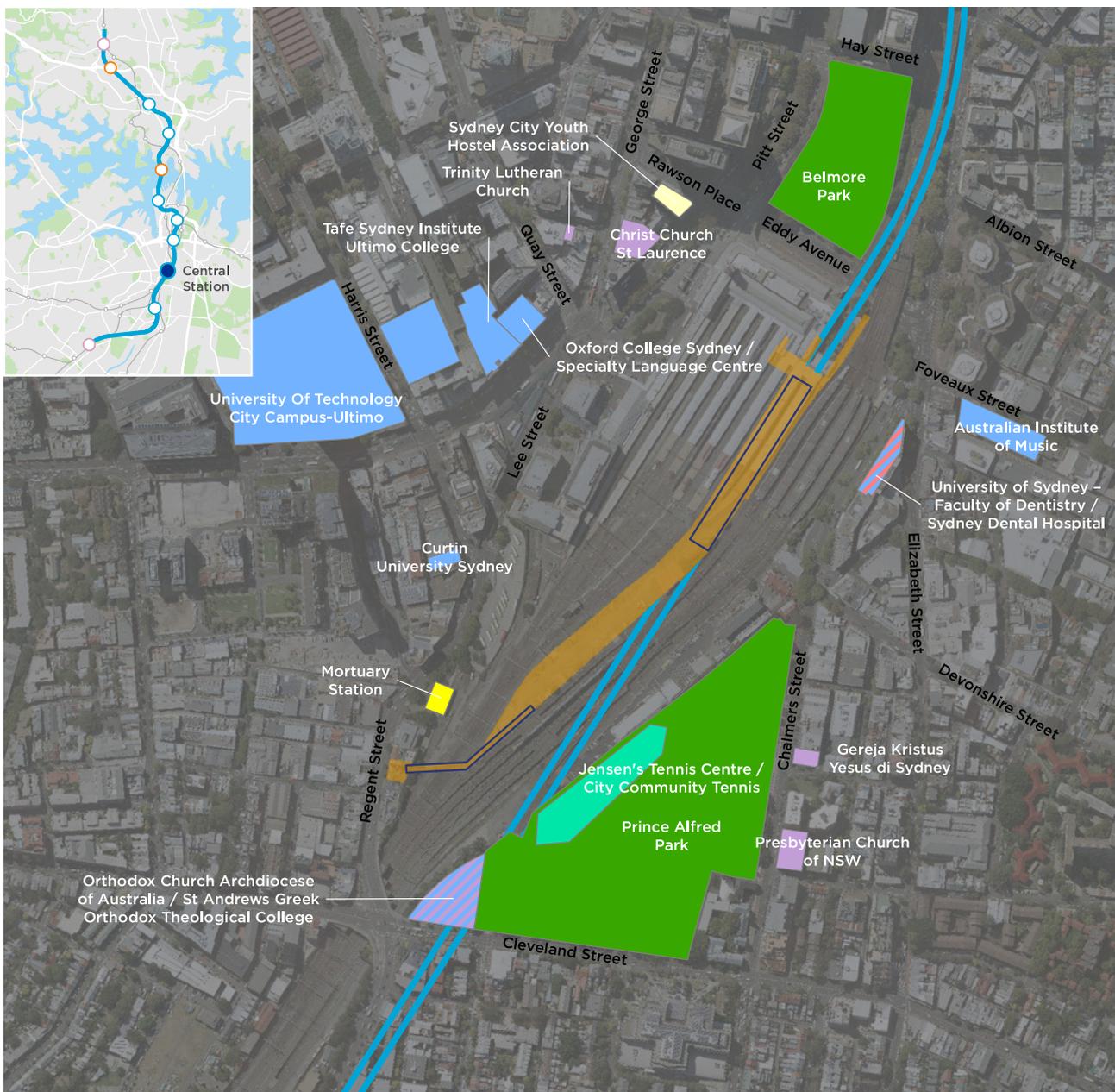
### Central Station

Community infrastructure around Central Station is listed in Table 19-10 and shown on Figure 19-10. It includes:

- Prince Alfred Park, at Chalmers Street. The park has formal and informal recreation facilities, including an outdoor swimming pool; tennis centre with five tennis courts used for social tennis, private coaching and formal tennis competitions; community centre, walking paths, playgrounds and picnic areas; and dog off-leash area. The park is also popular for personal training and group training sessions during the mornings and evenings
- Tertiary education facilities, such as Curtin University Sydney and the University of Technology Sydney. Curtin University Sydney is on Regent Street, Chippendale. It has over 900 students but is due to close by early 2017 (Curtin University Sydney, 2015). The University of Technology Sydney is located on Broadway at Ultimo. It had about 34,610 students in April 2015 (University of Technology Sydney, 2015). Other education facilities near Central Station include TAFE Sydney Institute Ultimo College on George Street, Oxford College Sydney on George Street, St Andrew’s Greek Orthodox Theological College on Cleveland Street, and The University of Sydney Faculty of Dentistry and Sydney Dental Hospital on Chalmers Street
- Cultural facilities and places of worship, such as Christ Church St Laurence on Pitt Street, which conducts about 25 services each week including weekly Sunday services and daily morning and evening prayer services; and Orthodox Church Archdiocese of Australia, Cathedral of the ‘Annunciation of Our Lady Theotokos’ on Cleveland Street.

Table 19-10 Central Station – community infrastructure

Facility	Location	Type
TAFE Sydney Institute Ultimo College	Harris Street, Ultimo	Education
Oxford College Sydney	George Street, Haymarket	Education
Christ Church St Laurence	George Street, Sydney	Place of worship
University of Sydney Faculty of Dentistry	Chalmers Street, Sydney	Education
Sydney Dental Hospital	Chalmers Street, Sydney	Health
St Andrews Greek Orthodox Theological College	Cleveland Street, Redfern	Education
Prince Alfred Park	Chambers Street, Surry Hills	Park
Orthodox Church Archdiocese of Australia	Cleveland Street, Redfern	Place of worship
Jensen's Tennis Centre	Cleveland Street, Surry Hills	Sport and recreation
Presbyterian Church of NSW	Chalmers Street, Surry Hills	Place of worship
Mortuary Station	Regent Street, Chippendale	Historic site
Curtin University Sydney	Regent Street, Sydney	Education
Specialty Language Centre	George Street, Sydney	Education
Australian Institute Of Music	Foveaux Street, Surry Hills	Education
University Of Technology City Campus-Ultimo	Broadway, Ultimo	Education
Trinity Lutheran Church	Valentine Street, Sydney	Place of worship
City Community Tennis	Cleveland Street, Surry Hills	Sport and recreation
Belmore Park	Hay Street, Haymarket	Park
Gereja Kristus Yesus di Sydney	Chalmers Street, Surry Hills	Place of worship
Sydney City Youth Hostel Association	Rawson Place, Haymarket	Other



**KEY**

- Chatswood to Sydenham
- Proposed operational area at surface
- Proposed construction site area

- Social infrastructure
- Health
  - Sport and recreation
  - Education
  - Park
  - Historic site
  - Other
  - Place of worship

Indicative only, subject to design development



Figure 19-10 Central Station – community infrastructure

## Waterloo Station

Community infrastructure around the Waterloo Station site is listed in Table 19-11 and shown on Figure 19-11. It includes:

- Waterloo Congregational Church on Botany Road, which conducts Sunday morning services as well as services at Christmas and Easter
- Waterloo Medical Centre on Raglan Street. It provides a range of general medical services for the local community
- Sport and recreation facilities, such as the IWKA martial arts school.

**Table 19-11 Waterloo Station – community infrastructure**

Facility	Location	Type
Waterloo Congregational Church	Botany Road, Waterloo	Place of worship
Waterloo Medical Centre	Raglan Street, Waterloo	Health
Eveleigh Ambulance Station	Garden Street, Eveleigh	Emergency services
The Salvation Army Community Centre	Phillip Street / Cope Street, Waterloo	Place of worship
Daniel Dawson Reserve	Wyndham Road, Waterloo	Park
Uniting Church Tonga Parish	Regent Street, Redfern	Place of worship
Sydney Film School	Cope Street, Waterloo	Education
IKWA Kung Fu	Botany Road, Waterloo	Sport and recreation
Park on Cope Street	Cope Street, Redfern	Park
Park on Rosehill Street	Rosehill Street, Redfern	Park
Vice Chancellors Oval	Henderson Road, Eveleigh	Sport and recreation



**KEY**

- Chatswood to Sydenham
- Proposed operational area at surface
- Proposed construction site area

Social infrastructure

- Emergency services
- Sport and recreation
- Health
- Park
- Education
- Other
- Place of worship

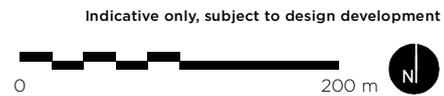


Figure 19-11 Waterloo Station – community infrastructure

### Marrickville dive site (southern)

Community infrastructure around the Marrickville dive site is listed in Table 19-12 and shown on Figure 19-12. It includes:

- St Pius' Catholic Primary School on Edgeware Road, which provides primary education for about 188 students (My School, 2015c)
- Camdenville Public School and Preschool at Wells Street, above the proposed tunnel alignment. The school offers primary education for students in preschool to Year 6. In 2014, the school had 198 students (My School, 2015d)
- Camdenville Park on May Street, which provides a range of formal and informal sport and recreation facilities
- Sydney Park, on Sydney Park Road. The park covers an area of about 40 hectares and includes grassed areas, landscaped gardens and informal recreation and play facilities, including playground, cafes, and barbeque facilities. The Sydney Park Cycling Centre is also located in the park.

**Table 19-12 Marrickville dive site (southern) – community infrastructure**

Facility	Location	Type
St Pius Catholic Primary School	Edgeware Road, Enmore	Education
Camdenville Park	May Street, Sydenham	Park
Camdenville Public School	Laura Street, Newtown	Education
Sydney Trapeze School	Unwins Bridge Road, St Peters	Sport and recreation
Sydney Indoor Climbing Gym	Unwins Bridge Road, St Peters	Sport and recreation
St Pius Enmore	Edgeware Road, Enmore	Place of worship



**KEY**

- Chatswood to Sydenham
  - Proposed dive structure
  - Proposed construction site area
  - Proposed operational area at surface
- Social infrastructure
- Education
  - Sport and recreation
  - Place of worship
  - Park

Indicative only, subject to design development



Figure 19-12 Marrickville dive site (southern) – community infrastructure

### 19.3.5 Access and connectivity

The study area includes several major transport facilities, which provide a high level of access and connectivity within the study area, to the wider Sydney area and regional NSW. These include passenger and light rail services, bus and ferry services, active transport facilities, and roads. Further detail on existing and planned transport infrastructure near the project is provided in Chapter 9 (Operational traffic and transport).

Early community consultation for the project identified access and connectivity to be important to the local community.

#### Travel to work

Travel to work by residents in the study area generally reflects the study area's high level of access to public transport, pedestrian and cycle networks and proximity to key employment and activity centres in the Sydney CBD, North Sydney and St Leonards.

In 2011, 24.1 per cent of workers living in the study area aged 15 years or over travelled by train for all or part of their journey to work, compared to 9.3 per cent in NSW as a whole. In particular, the SA2 areas of Chatswood (East), Sydenham, Erskineville and St Leonards had very high levels of train users, reflecting the proximity of these areas to existing train stations.

About 10 per cent of people in the study area travelled to work by bus only, while about 20 per cent either walked or cycled. Overall, the study area had lower proportions of people who worked at home or did not go to work compared to NSW as a whole. However, the SA2s of North Sydney, Crows Nest, St Leonards and Chatswood (East) all had proportions of people who worked from home either at or above the State average.

## 19.4 Potential impacts

Potential impacts on community values and community infrastructure as a result of the project are assessed in this section.

### 19.4.1 Property impacts

Information on properties to be acquired for the project is provided in Chapter 12 (Land use and property). A number of businesses would be directly impacted by acquisition for the project. Further information on these impacts is provided in Chapter 13 (Business impacts).

The project would acquire a small number of residential uses at Crows Nest, Elizabeth Street near Martin Place Station, Regent Street near Central Station, and Waterloo. Residents of these properties would need to relocate prior to commencement of construction.

The relocation of households due to property acquisition may impact on community relationships and social networks for some residents, if they are required to move away from existing social and support networks. This is particularly important for longer term residents, elderly people and people with disability, who may find it more difficult to adapt to new surroundings. As indicated in Section 19.3.2, residential properties to be acquired are located in areas generally characterised by communities with younger populations, relatively high levels of population mobility and relatively low levels of people needing assistance. These impacts would be localised, but would likely be significant to the quality of life of residents who relocate and other members of their local networks, and would be managed on a case by case basis.

Uncertainty around potential property acquisitions and proposed changes has potential to cause stress and anxiety for some residents, business owners and employees, potentially affecting health and well-being for these people. This is discussed in Section 19.4.3.

### 19.4.2 Population and demography

Project related factors affecting population and demography generally relate to the acquisition of residential properties or in some cases, influx of construction workers.

Given the relatively small number of residential properties to be acquired for the project, there are not expected to be any impacts on population and demography relating to property acquisition.

It is expected that construction workers for the project would generally be sourced from across the broader Sydney region, or elsewhere as required. This would not result in an influx of workers at a scale that would impact on population size or demography in the study area. Indirectly, the development of new stations would support opportunities for urban renewal in areas around stations, including housing intensification. This would support population growth in these areas, consistent with State and local strategic planning priorities.

Workforce development is one of six areas of commitment in the Sydney Metro City & Southwest sustainability policy (see Chapter 25 (Sustainability)). The delivery of the project offers the potential to increase workforce capability and capacity, mitigate skills shortages and gaps that would reduce cost, improve productivity and provide local sustainable employment. Sydney Metro's skills legacy would improve the competitiveness of industry, provide individual career pathways and provide major socio-economic benefits to individuals and communities. A workforce development program would be implemented for Sydney Metro City & Southwest, building on current activity from Sydney Metro Northwest and an assessment of future needs.

### 19.4.3 Community values

#### Community cohesion

During construction, changes to amenity of public places and local centres near to construction sites may impact on people's use and enjoyment of these areas. Changes in local access near to construction activities and temporary changes to public transport facilities may also discourage some people from making some trips. These changes may temporarily impact on levels of community interaction.

Acquisition for the project of community facilities such as the Martin Place Early Learning Centre, and local businesses such as cafes and restaurants would result in the loss or relocation of these uses. This may impact on local networks associated with these uses and levels of community cohesion. Potential impacts associated with the acquisition of the Martin Place Early Learning Centre are discussed in Section 19.4.4.

Operation of the project would improve access to fast, efficient public transport for local and regional communities. New stations at Crows Nest, Victoria Cross, Barangaroo and Waterloo would improve access to communities, facilities, services and employment in these areas from across the broader Sydney region, and improve access for local communities to other destinations across the Sydney region. This would help to facilitate social interaction and economic transactions within the study area and greater Sydney region, providing benefits for community cohesion. The project would also make some trips more attractive, helping to facilitate community interaction. This would benefit residents, workers, students, visitors and public transport users.

At a local level, the project would help to improve access to local facilities, services and destinations, supporting opportunities for community interaction. As discussed in Chapter 12 (Land use and property), the project would also support urban renewal and development opportunities near the metro stations, supporting the revitalisation of local centres and creating opportunities for new facilities and local meeting places. This is expected to have positive impacts on local community cohesion.

#### Local amenity and character

Operation of the project would improve the amenity of those areas near the metro stations by enhancing access to public transport and improvements to the public domain surrounding stations, including awnings for shade and shelter at street level and station entries, street furniture and in some locations landscaping. Metro stations would also be designed to provide safe and efficient interchange between transport modes, including minimising conflicts between pedestrians, cyclists, buses and vehicles. This would be achieved by implementing the metro station access hierarchy (refer to Section 19.4.2).

During construction, impacts on amenity may occur for communities close to construction sites due to:

- Increased noise and vibration, dust, and traffic from construction activities (refer to Chapter 10 (Construction noise and vibration), Chapter 22 (Air quality), and Chapter 8 (Construction traffic and transport))
- Changes in visual amenity near construction sites (refer to Chapter 16 – Landscape character and visual amenity).

Changes to amenity during construction may temporarily impact on the potential use and enjoyment of some residential properties closest to construction works, particularly of outdoor areas, including balconies. Noise and lighting from night-time surface works, and ground-borne noise and vibration from tunnelling works may also impact on the night-time amenity for some residents closest to the project.

Impacts of the project on local amenity and character near community infrastructure are discussed further in Section 19.4.4.

## **Community health and safety**

### ***Community health – construction***

If unmanaged, noise, light spill, dust and vibration from construction activities may impact on the health and wellbeing of some residents and occupants of buildings nearest to construction sites. In particular, the potential for dust from construction activities to impact on health of some sections of the community who may be more sensitive to changes in air quality (such as children or elderly people who suffer asthma or similar conditions), is likely to be of concern for some community members. This impact is most likely to occur where night-time work results in sleep disturbance over extended periods or where construction activities create extended periods of high noise or dust levels.

The majority of station fit-out and other aboveground construction activities would be carried out during standard daytime construction hours (as identified in Chapter 7 (Project description – construction)). Activities such as tunnelling, underground excavation at station and ancillary sites, and associated traffic construction, would occur 24 hours per day, up to seven days per week. Some other activities may also need to be carried out outside of standard daytime construction hours to minimise disruptions to local and regional road networks and rail services (refer to Chapter 7 (Project description – construction)).

The implementation of mitigation measures, in conjunction with ongoing consultation and communication with local communities, would help to manage potential impacts on community health (refer to Chapter 10 (Construction noise and vibration)). Uncertainty about local changes associated with the project and project impacts would have the potential to impact on health, wellbeing and / or quality of life for some people. For example, some residents, business owners and employees facing changes due to property acquisition or impacts on amenity due to increased construction noise, vibration, dust and traffic may experience stress and anxiety.

Consultation and communication with affected property owners and communities about the project's property requirements and construction activities (including timing, likely impacts and mitigation measures) would be important in reducing uncertainty and helping people make decisions about their property and / or business. Property acquisition is discussed in Chapter 12 (Land use and property).

### ***Community health – operation***

Operation of the project would improve public transport access and connectivity to employment and community infrastructure such as health services; educational, sport, recreation and leisure facilities; and community support services in the Sydney CBD and inner Sydney as well as across the wider Sydney region. This would support:

- Improved long term economic opportunities through better access to education and employment opportunities
- Opportunities for social interaction, by encouraging some people to take trips that they may have avoided due to unacceptable travel times and improved access to meeting places within the inner city and wider Sydney region
- Increased physical activity through improved access to sport, recreation and leisure facilities, such as Barangaroo Reserve, Prince Alfred Park, and Moore Park sporting and entertainment precinct
- Enhanced community health outcomes through improved access to health, medical and community support facilities within the Sydney CBD, inner Sydney and wider Sydney region.

Improved public transport access would particularly benefit those groups that currently experience transport or mobility difficulties such as elderly people, youth, people with disability, non-drivers or people without access to a private vehicle.

Improved public transport access is also likely to encourage increased walking trips, with many trips by public transport including an element of walking, for example, to or from stations. This would help to increase levels of physical activity, which would have positive community health outcomes. These impacts are likely to be ongoing with physical activity more likely to be initiated or sustained when incorporated into everyday activities, such as the commute to work (Queensland Health, 2005).

Electrical infrastructure would be required for the project, including:

- Substations within metro stations to provide power to the stations and trains
- Substations at Artarmon and the southern services facility (adjacent to the Marrickville dive site (southern))
- A network of overhead conductor bars providing power to the trains.

Possible health effects associated with electric and magnetic fields generated by electrical infrastructure may be a concern for some people. The *Draft Radiation Standard – Exposure Limits for Magnetic Fields* (Draft Radiation Standard) (Australian Radiation Protection and Nuclear Safety Agency, 2006) identifies exposure limits that are typically applied when considering electric and magnetic fields from new developments. The design of the substations has positioned these facilities as far as practical from nearby residences and other public areas (eg the Artarmon substation is positioned adjacent to the Gore Hill Freeway and as far as practical from the nearby residences). The detailed design of electrical infrastructure for the project would ensure that the exposure limits for the local community suggested by the Draft Radiation Standard would not be exceeded within public areas. This would be achieved through positioning of infrastructure within the site to direct electric and magnetic fields away from residences and other public areas.

### **Safety – construction**

The use of local roads by construction vehicles and an increase in construction traffic may impact on community perceptions of road safety. This would be particularly relevant:

- In areas that attract high numbers of pedestrians and cyclists, such as local centres (Crows Nest and North Sydney, and McMahons Point), the Sydney CBD and areas surrounding public transport facilities such as Central Station
- Near community facilities that are used by children and students (such as schools, childcare centres, and parks) or by people with mobility difficulties, such as elderly people or people with disability (for example, medical and health facilities)
- Near major facilities and community spaces such as Barangaroo Reserve and Hyde Park.

An increase in construction traffic and heavy vehicles on roads with community infrastructure may also impact on safety or community perceptions of safety for users of these facilities, including children. The implementation of mitigation measures for managing potential safety risks associated with construction traffic are discussed in Chapter 8 (Construction traffic and transport).

Pedestrian and cycle access would be maintained near construction sites, but temporary changes would be required to some footpaths to ensure the safety of pedestrians and cyclists. Changes to public spaces and footpaths may impact on peoples' perceptions of safety through reduced sight lines, opportunities for casual surveillance and levels of activity. This impact would be managed through the application of Crime Prevention through Environmental Design principles, which take into account the relationship between the physical environment and the users of that environment, promoting maximum useability and safety.

The needs of people with mobility difficulties – such as children, elderly people and people with disability – would also be considered in the design of temporary pedestrian and cycle facilities. Where possible, traffic controllers would be used to ensure safety for pedestrians and cyclists, such as at access points to construction sites. Temporary changes to pedestrian and cycle access would need to be clearly communicated and marked to ensure safety for pedestrians and cyclists.

### **Safety - operation**

During consultation for the project, some community members raised safety concerns regarding the driverless operation of trains, including concerns about potential passenger support during train breakdowns and the potential for increase in crime. Other issues raised by community members in relation to safety included accessibility for elderly people, the inclusion of lifts at the stations, air quality maintenance and a desire for a smaller gap between the train and platform.

The project includes a number of design features to maintain safety on trains, at stations and within station precincts. These include:

- Customer service assistants and help points on trains and in stations
- Design for clear visibility
- Easy access between carriages
- Platform screen doors
- Station and train design that allows for both passive and active surveillance.

Safety within public places is also important to communities within the study area. The metro stations and station precincts would be designed according to the principles of Crime Prevention through Environmental Design to maximise safety and security for customers, staff and in areas surrounding the station. For example, metro stations and station precincts would include:

- Lighting systems, visible closed circuit television surveillance and appropriate staffing levels during operational hours, which would contribute to safe station environments
- Passive design elements that promote safety, such as clear sight lines within and around stations, use of natural daylight and wide paths to avoid blind spots.

In addition, the increased amount of pedestrian activity and the changes to urban environments and public places around stations are likely to impact positively on people's perceptions of personal safety. Activation of streets and public spaces surrounding the metro stations would also help to improve community safety.

### **Access and connectivity**

The project would provide long-term positive impacts on public transport access for local and regional communities, by enhancing public transport access and providing more effective and efficient public transport services to and from inner Sydney, benefiting residents, workers, students, visitors and public transport users.

Metro stations would be designed to comply with the requirements of the *Disability Discrimination Act 1992*, ensuring that the stations are accessible to people with mobility difficulties. This may encourage some people, who may otherwise avoid making trips, to access public transport. This is likely to have positive impacts on the health and wellbeing of these people.

Operation of the project would require some changes to local road access and pedestrian and cycle connections near surface infrastructure and metro stations. This may impact on local access and connectivity for communities in these areas.

During construction, temporary impacts on local access and connectivity may be experienced by motorists, public transport users, pedestrians and cyclists associated with temporary road closures, increased construction traffic, changes to pedestrian and cycle paths, and temporary disruptions to some train services. As indicated in Section 19.3, train, bus, walking and cycling are important modes of transport for residents and workers in the study area and management of potential impacts on these modes of transport is important.

A detailed assessment of potential impacts of the project on access and connectivity are described in Chapter 8 (Construction traffic and transport) and Chapter 9 (Operational traffic and transport).

#### **19.4.4 Community infrastructure**

The project would have positive impacts on access to community infrastructure for communities in the study area and across the greater Sydney region, by improving public transport access to regional level community infrastructure within or near to the study area, including:

- Major tertiary education facilities, including the Northern Sydney Institute of TAFE, Australian Catholic University North Sydney Campus, University of Technology Sydney, University of Notre Dame, and Curtin University Sydney
- Secondary education facilities such as North Sydney Girls High School at Crows Nest; and Monte Sant' Angelo Mercy College and Shore Sydney Church of England Grammar School at North Sydney
- Sport, leisure and entertainment facilities such as the Moore Park sporting and entertainment precinct and adjoining Sydney Football Stadium and Sydney Cricket Ground, entertainment activities at Willoughby Road at Crows Nest and Darling Harbour
- Major open spaces, such as Barangaroo Reserve, The Domain and Royal Botanic Gardens Sydney, and Hyde Park
- Community facilities and services organisations located at Crows Nest, North Sydney and within the Sydney CBD.

Some community infrastructure located near to the project may also experience impacts during construction and operation, due to such things as property acquisition, or changes in amenity or local access. These impacts are described in the following sections.

##### **Chatswood dive site (northern)**

Community facilities near to construction activities and haulage routes for the Chatswood dive site include:

- Chatswood Park and Chatswood Oval, on Orchard Road
- Frank Channon Walk, from Albert Street to Nelson Street
- Happy Science Church, on the Pacific Highway
- Chatswood Croquet Club and Chatswood Bowling Club, on Hammond Lane
- Aged care facilities and independent living units, on Chapman Avenue and Seldon Lane.

### ***Amenity***

Temporary impacts on amenity may be experienced by users of these facilities due to increased noise and dust from surface work, excavation and spoil haulage; ground-borne noise and vibration from excavation and tunnelling; and increased construction traffic associated with spoil haulage and materials delivery.

The potential for dust to impact the health of those people who are more sensitive to changes in air quality may be a concern for some community members given the proximity of construction activities to recreation and aged care facilities.

### ***Access***

Construction of the project would require the temporary closure of the Frank Channon Walk. The closure of Frank Channon Walk would likely occur over several weekends associated with track possessions. During these periods, pedestrian and cycle access to Chatswood Station from areas to the south would be maintained via the Pacific Highway or Orchard Road. Nearby community infrastructure such as the Chatswood Croquet Club, Chatswood Bowling Club and Chatswood Oval would remain accessible for pedestrians via the local street network.

### ***Artarmon substation***

Community infrastructure is not anticipated to be impacted by the construction or operation of Artarmon substation. The site will be temporarily used as an extension to Artarmon Public School for the 2016 and 2017 school years. Construction of the Artarmon substation is not scheduled to occur until after this time.

### ***Crows Nest Station***

Community facilities that would be closest to construction activities at Crows Nest Station include:

- Northside Community Church and Northside Conference Centre, on Oxley Street
- Centre for Independent Studies, on Oxley Street
- North Sydney Indoor Sports Centre, on Clarke Street and Hume Street
- Hume Street Park, on Hume Street
- Kelly's Place Children's Centre, on the corner of Clarke Street and Hume Street.

### ***Property acquisition***

The project would require the full property acquisition of the Crows Nest Post Shop, on the Pacific Highway. Potential impacts associated with the acquisition of the post office are described in Chapter 13 (Business impacts). Details of property acquisition are discussed in Chapter 12 (Land use and property).

### ***Amenity***

Temporary impacts on amenity may be experienced by users of community facilities near to construction works due to increased noise and dust from excavation activities and spoil haulage, ground-borne noise and vibration from cut-and-cover excavation and tunnelling, and increased construction traffic. The implementation of environmental and traffic mitigation measures at construction sites, and early and ongoing consultation with managers of community facilities, would help to manage impacts on users of these facilities.

Increased noise and dust from construction activities may impact on amenity at Kelly's Place Children's Centre, particularly outdoor play areas. In addition, potential health impacts associated with increased construction dust may be a concern for some children who suffer asthma or similar conditions.

Increased construction traffic on Oxley Street and Clarke Street may also impact on amenity for some users of the Northside Community Church and associated conference centre. These impacts may also be experienced by users of the Centre for Independent Studies.

Users of the Crows Nest Dance Centre at the Pacific Highway may experience temporary changes to amenity due to ground-borne noise and vibration from underground works.

### **Access**

If unmanaged, the use of Clarke Street and Hume Street by heavy vehicles accessing the construction site may present a safety risk for parents and children accessing Kelly's Place Children's Centre, particularly during morning drop-off and afternoon pick-up times, as well as for people using North Sydney Indoor Sports Centre. The Kelly's Place Children's Centre drop off area would not be directly affected by the project.

### **Victoria Cross Station**

Community facilities that would be closest to construction activities at Victoria Cross Station include:

- Only About Children childcare, on Berry Street
- Monte Sant' Angelo Mercy College, on Miller Street
- Australian Catholic University School of Physiotherapy, on the Pacific Highway
- Miller Street Medical Practices.

In addition, a number of community facilities are located along potential haulage routes, including:

- St Thomas' Anglican Church, on the corner of Church Street and McLaren Street
- St Thomas' North Sydney Preschool, which is located on the grounds of the Anglican Church on Church Street and McLaren Street
- North Sydney Council offices, on the corner of McLaren Street and Miller Street
- Goodstart Early Learning North Sydney, on the corner of Berry Street and the Pacific Highway.

### **Amenity**

Potential impacts on amenity may be experienced by users of community facilities due to noise and dust from surface work associated with excavation of the station shaft and ground-borne noise and vibration from excavation of the station cavern and tunnelling. Increased construction traffic, including heavy vehicles, removing spoil and delivering materials, may also impact on amenity at these facilities.

Potential impacts on Monte Sant' Angelo Mercy College and the Sisters of Mercy North Sydney accommodation would generally relate to noise and dust from surface work associated with the excavation of the station shafts, ground-borne noise and vibration from station excavation and use of McLaren, Miller and Berry streets for hauling spoil, materials and equipment. The Sisters of Mercy North Sydney accommodation would also experience some night time noise impacts during the construction phase. Effects would be more noticeable in outdoor teaching and recreation areas. Potential disruption to students during school examination periods from construction activities was identified as a concern during early consultation for the project. Consultation would be carried out with the College during construction to assist in managing potential impacts.

## Access

Access and egress to the main construction site for Victoria Cross Station would be via Miller Street. The main vehicle entry to Monte Sant' Angelo Mercy College for student drop-off and pick-up is via Miller Street. Many students travelling to school by public transport are also likely to use bus stops at Miller Street or walk from North Sydney train station via Miller Street. As such, an increase in construction traffic, including heavy vehicles, on Miller Street and surrounding roads may present possible safety risks for students or impact on community perceptions of safety for students.

Increased construction traffic on Miller, McLaren and Berry streets may also present potential safety risks for children attending St Thomas' North Sydney Preschool and Goodstart Early Learning North Sydney, particularly during drop-off and pick-up times. Possible measures for managing safety would include limiting heavy vehicle access near schools and childcare centres during drop-off and pick-up times. Ongoing consultation and communication with the school and childcare communities, including students, parents and teachers, about haulage activities and potential safety risks would help to manage potential impacts. Measures to manage potential safety risks associated with construction traffic are discussed in Chapter 8 (Construction traffic and transport).

The project would require the temporary relocation of a bus stop at Miller Street, near McLaren Street and Monte Sant' Angelo Mercy College (refer to Chapter 8 (Construction traffic and transport)). The temporary relocation of the bus stop is not expected to require changes to local bus routes or bus services; however, depending on its temporary location, it may change pedestrian routes for some students. Early and ongoing communication with bus users about changes to bus stops would help to manage potential impacts on commuters.

Temporary changes may be required to public places and pedestrian routes near the construction sites on Miller Street. These changes may result in reduced sight lines, opportunities for casual surveillance and levels of activity in public spaces, potentially impacting people's perceptions of safety. This impact would be managed through the application of Crime Prevention through Environmental Design principles. The needs of people with mobility difficulties, including children, elderly people and people with disability would also be considered in the design of temporary pedestrian routes. This would be particularly important on Miller Street, which is a key pedestrian access to community facilities such as schools, childcare centres, churches, medical centres and council offices. Where possible, traffic controllers would be used to ensure safety for pedestrians and cyclists, such as at access points to construction sites.

Measures to manage potential safety risks associated with construction traffic are discussed in Chapter 8 (Construction traffic and transport).

### **Blues Point temporary site**

Community facilities that would be closest to activities at the Blues Point temporary site include:

- Blues Point Reserve, at the end of Blues Point Road on Sydney Harbour
- McMahons Point Wharf.

### ***Property acquisition***

Temporary use of land would be needed over about 2,100 square metres of Blues Point Reserve.

This is primarily a grassed area adjacent to Henry Lawson Avenue that is used for recreational activities such as picnicking, fishing, and walking. The establishment of the temporary site would result in the loss of access and temporary disruption to the use of this area. The reserve is the starting point for canoe and board paddling events. Consultation with organisers of these events would be needed to manage potential impacts on these events.

Following retrieval activities, areas disturbed would be rehabilitated and reinstated as a park.

During the retrieval of tunnel boring machine equipment, a number of car parking spaces on Blues Point Road would be lost (refer to Chapter 8 (Construction traffic and transport)). This may make access to and use of the park more difficult for some users, particularly those with mobility difficulties.

Blues Point Reserve provides access to Sydney Harbour for small water craft such as canoes and kayaks. Access to Sydney Harbour for small water craft at Blues Point Reserve would be maintained by a five metre wide zone along the foreshore and along the eastern side of the site from Henry Lawson Drive to the foreshore.

### ***Amenity***

Temporary impacts on amenity may be experienced by users of Blues Point Reserve due to noise and dust from the excavations, the movement of spoil, and increased construction traffic on Blues Point Road.

### ***Access***

Pedestrian access to Blues Point Reserve and McMahons Point Wharf would be maintained during activities at this site, although temporary changes would be required to pedestrian access near to the temporary site for safety. Temporary changes to public places and pedestrian access may result in reduced sight lines and levels of activity in public spaces, potentially impacting people's perceptions of safety.

Construction vehicles would access the site via Blues Point Road. Construction traffic on this road may present potential safety risks or changes to perceptions of safety, and impact on amenity for visitors to McMahons Point village (refer to Chapter 13 (Business impacts)).

As discussed in Chapter 8 (Construction traffic and transport), there would be short periods where Blues Point Road would be closed temporarily while tunnel boring machine cutter heads are transported away from the Blues Point temporary site. Closures are likely to occur at night to minimise traffic, transport and access impacts and during these closures access to properties would be provided however delays may be experienced.

### **Barangaroo Station**

Community facilities that would be closest to construction activities at Barangaroo Station include:

- Barangaroo Reserve, including Munn Reserve, at the northern end of Barangaroo
- KU Lance Preschool and Children’s Centre, on High Street.

A number of community facilities are also located on Kent Street, including St Brigid’s Church, Abraham Mott Hall and Youth Centre, The Rocks Fire Station, and Sydney Observatory and Observatory Park.

#### ***Amenity***

Construction activities would not directly impact on the open space areas of Barangaroo Reserve. If unmanaged, users of some areas of Barangaroo Reserve nearest to construction activities may experience temporary changes in amenity due to increased construction noise and dust associated with excavation of station shafts and handling and removal of spoil, as well as increased construction traffic.

Increased noise and dust from construction may also impact on amenity of the KU Lance Preschool and Children’s Centre on High Street, particularly outdoor play areas. In addition, potential health impacts associated with increased construction dust may be a concern for children who suffer asthma or similar conditions. The implementation of mitigation measures at construction sites and early and ongoing consultation with managers of the Preschool and Children’s Centre would help to manage impacts.

Potential air quality impacts are discussed in Chapter 22 (Air quality).

#### ***Access***

Use of Hickson Road for construction traffic access may present safety risks for people accessing Barangaroo Reserve.

Pedestrian and cycle access to Barangaroo Reserve would be maintained during construction, although temporary changes would be required near the construction site for safety. Changes to pedestrian access would need to consider the needs of children, elderly and people with mobility disabilities. Changes to pedestrian access and public places near construction sites may impact on peoples’ perceptions of safety.

Construction phase access arrangements developed for the Barangaroo station site would be coordinated with work being carried out by Barangaroo Delivery Authority.

### **Martin Place Station**

Community facilities that would be closest to construction activities at Martin Place Station include:

- Martin Place Early Learning Centre, at Martin Place
- The University of Newcastle Sydney campus, on Elizabeth Street (located adjacent to the proposed construction site)
- Martin Place.

### ***Property acquisition***

The project would require full property acquisition of the Martin Place Early Learning Centre.

Details of property acquisition are discussed in Chapter 12 (Land use and property). As indicated in Section 19.3.4, the centre provides long day care for up to 76 children aged six weeks to five years. There are about 12 child care centres located within about 500 metres of the Martin Place Early Learning Centre, of which about six centres showed some vacancies across all age groups at February 2016. The five childcare centres without vacancies, indicated waiting lists of between one month and four months. A further 22 centres are located within the broader Sydney CBD, of which about 21 centres showed some level of vacancies ([www.careforkids.com.au](http://www.careforkids.com.au)).

### ***Amenity***

The University of Newcastle Sydney campus is located adjacent to the construction site for Martin Place Station. During construction there would be high daytime airborne and ground-borne noise exceedances at this location and feasible and reasonable mitigation to minimise these impacts would be implemented in accordance with the Sydney Metro Construction Noise and Vibration Strategy (see Appendix E of this Environmental Impact Statement).

The tunnels pass beneath the Theatre Royal at King Street. The theatre hosts a large number of plays, musicals and other events. Ground-borne noise and vibration from underground construction may have short-term impacts on amenity for users of the theatre. Communication with managers of the theatre would assist in managing any potential disruptions.

### ***Access***

Martin Place is a pedestrian-only public space and includes the Cenotaph (war memorial), sculptures, fountains and seating, and is surrounded by retail and commercial uses. The public space also hosts a number of community events, including annual ANZAC day services. Construction activities would restrict pedestrian and cyclist access to above and below-ground sections of Martin Place.

Alternative surface pedestrian and cyclist access would be provided to the south of Martin Place through the site of the previously demolished building. The width of this access would be sufficient to cater for the anticipated pedestrian demand.

The primary function of the underground concourse is to provide access to the existing Martin Place Station. During the period of cut and cover construction across Martin Place, suburban rail customers would be able to use the existing Martin Place Station entry points to the east of Elizabeth Street and the east of Philip Street. This would result in additional pedestrians using the pedestrian crossing facilities at Castlereagh and Elizabeth streets (where sufficient pedestrian storage is available).

### **Pitt Street Station**

Community facilities that would be closest to construction activities at Pitt Street Station include:

- The Great Synagogue Sydney, on Castlereagh Street
- Pitt Street Uniting Church, on Pitt Street
- Church of Scientology, on Castlereagh Street
- Presbyterian Church of Eastern Australia, on Castlereagh Street
- City of Sydney Fire Station, on Castlereagh Street
- Pilgrim Theatre, on Pitt Street
- Sydney Mechanics School of Arts, on Pitt Street
- Kingsway Institute, on Bathurst Street
- Sydney Premier Medical and Health Care Centre, on Pitt Street.

A number of community facilities are also located above the tunnel alignment in this location, including:

- University of Sydney Business School CBD campus, at Castlereagh Street
- Wesley Mission Sydney and Conference Centre, at Pitt Street
- Mercury Colleges at Castlereagh Street.

### ***Property acquisition***

Details of property acquisition are discussed in Chapter 12 (Land use and property). The project would require full property acquisition of the Australia Post Shop on Castlereagh Street and the Wholistic Medical Centre on Park Street. The Wholistic Medical Centre was established in 1977, and offers patients a range of alternative and general medical services.

Potential impacts associated with the acquisition of businesses and services such as the post shop and medical centre are described in Chapter 13 (Business impacts).

### ***Amenity***

Temporary impacts on amenity may be experienced by users of these facilities due to increased construction noise (airborne noise and ground-borne noise from underground work), vibration from excavation of the station shaft and cavern, dust from surface construction activities and spoil loading and haulage, and increased construction traffic.

The station cavern would be located beneath the Pitt Street Uniting Church, Church of Scientology and Presbyterian Church of Eastern Australia. During construction, some church-goers may experience impacts from ground-borne noise and vibration from excavation of the station cavern. Underground work is proposed to be carried out 24 hours a day, seven days a week. These impacts would have the greatest effect during church services. Ongoing consultation and communication with church communities during construction would help to manage potential impacts. Consideration should be given to the timing of large church events and celebrations in planning construction activities that are likely to cause high noise impacts.

Some users of the Sydney Mechanics School of Arts, Pilgrim Theatre, the Medical and Health Care Centre and Kingsway Institute may also experience ground-borne noise and vibration impacts from excavation of the cavern beneath these buildings.

Ground-borne noise and vibration from underground construction may impact on amenity for users of facilities located above the tunnel for a short-period. Communication with managers of these facilities would assist in managing any potential disruptions.

### **Access**

During consultation, concerns regarding station access and security were raised by the Great Synagogue Sydney. This would be managed through the application of Crime Prevention through Environmental Design principles, which take into account the relationship between the physical environment and the users of that environment, promoting maximum useability and safety.

Access for emergency vehicles near to construction sites would be maintained.

### **Central Station**

Community facilities that would be closest to construction activities at Central Station include:

- TAFE Sydney Institute Ultimo College, on Harris Street
- Oxford College Sydney, on George Street
- Christ Church St Laurence, on Pitt Street
- The University of Sydney Faculty of Dentistry and Sydney Dental Hospital, on Chalmers Street
- Orthodox Church Archdiocese of Australia, Cathedral of the 'Annunciation of Our Lady Theotokos', on Cleveland Street
- St Andrew's Greek Orthodox Theological College, on Cleveland Street
- Prince Alfred Park, on Chalmers Street.

### **Property acquisition**

Acquisition of residential properties would be required for the Sydney Yard Access Bridge at Central Station. Where the project requires the permanent use of Government owned land (such as within Sydney Yard at Central Station) Transport for NSW would enter into agreements with the relevant Government departments regarding the permanent use of this land – including acquisition or lease arrangements.

There would be no acquisition of community infrastructure at Central Station as a result of the project.

### **Amenity**

Some users of facilities near to construction activities may experience temporary impacts on amenity due to increased noise, dust and construction traffic associated with construction activities, cut-and-cover construction of the underground station at Central Station, and trucks hauling spoil and materials.

### **Access**

If unmanaged, the use of Chalmers Street by construction traffic may present a safety risk or change perceptions of safety for some users of the Prince Alfred Park, particularly children accessing park facilities such as the swimming pool, tennis courts and play areas. This area is used by a large number of pedestrians accessing community facilities and public transport facilities surrounding Central Station. Spoil haulage and additional trucks would also be required to deliver materials and equipment. Any changes to pedestrian access would need to consider the needs of children, elderly and people with mobility problems.

### **Waterloo Station**

Community facilities that would be closest to construction activities at Waterloo Station include:

- Waterloo Congregational Church, on Botany Road
- Waterloo Medical Centre, on Raglan Street.

#### ***Property acquisition***

The project would require acquisition of a number of commercial / industrial properties and one residential apartment block. There would be no acquisition of community infrastructure at Waterloo Station as a result of the project.

#### ***Amenity***

Noise and dust from surface work for construction of the station cavern may impact on amenity for users of these facilities. Ground-borne noise and vibration from construction of the station cavern beneath the church may also impact on amenity for church-goers during services.

#### ***Access***

Access to the site by construction vehicles would be via Botany Road and the exit would be via Raglan Street. Spoil haulage and additional trucks would be required to deliver materials and equipment.

### **Marrickville dive site (southern)**

Community facilities that would be closest to construction activities at the Marrickville dive site include:

- St Pius' Catholic Primary School, on Edgeware Road
- Camdenville Park, on May Street.

#### ***Property acquisition***

The project would require acquisition of commercial / industrial properties at the Marrickville dive site. Apart from the partial acquisition of a small area of the existing rail corridor at this location, there would be no acquisition of community infrastructure at the Marrickville dive site as a result of the project. As discussed above, Transport for NSW would enter into agreements with the relevant Government departments regarding the permanent use of this land – including acquisition or lease arrangements.

#### ***Amenity***

Construction activities at this site are not expected to impact on amenity for users of these facilities.

#### ***Access***

May Street would be used for hauling spoil, materials and equipment. If unmanaged, this may impact on perceptions of safety for users of Camdenville Park, particularly children.

There would be no change to current access arrangements for existing businesses or other properties as a result of construction or operation of the project at this location.

## 19.5 Mitigation measures

The mitigation measures that would be implemented to address potential social and community infrastructure impacts are listed in Table 19-13.

Other mitigation measures that are relevant to social and community infrastructure impacts are outlined in the following chapters:

- Chapter 8 (Construction traffic and transport) with regard to management of construction traffic and access near residential areas and community infrastructure
- Chapter 9 (Operational traffic and transport) with regard to ensuring future design development does not restrict or prohibit access to adjacent properties, including community infrastructure
- Chapter 10 (Construction noise and vibration) with regard to noise and vibration impacts associated with construction activities near residential areas and community infrastructure
- Chapter 11 (Operational noise and vibration) with regard to operational noise impacts near residential areas and community infrastructure
- Chapter 12 (Land use and property) with regard to property acquisition of residential and commercial premises, community infrastructure or other businesses used by the community
- Chapter 13 (Business impacts) with regard to property acquisition of businesses used by the community
- Chapter 16 (Landscape character and visual amenity) with regard to visual impacts associated with construction activities near residential areas and community infrastructure
- Chapter 22 (Air quality) with regard to air quality impacts, such as increased dust and exhaust emissions during construction activities, near to residential areas and community infrastructure
- Chapter 25 (Sustainability) with regard to workforce development and industry participation during construction and operation of the project.

**Table 19-13 Mitigation measures – social impacts and community infrastructure**

Reference	Mitigation measure	Applicable location(s) <sup>1</sup>
SO1	Direct impacts to public open space at the Blues Point temporary site would be minimised.	BP
SO2	Specific consultation would be carried out with sensitive community facilities (including aged care, child care centres, educational institutions and places of worship) potentially impacted during construction. Consultation would aim to identify and develop measures to manage the specific construction impacts for individual sensitive community facilities.	All except metro rail tunnels

<sup>1</sup> STW: Surface track works; CDS: Chatswood dive site; AS: Artarmon substation; CN: Crows Nest Station; VC: Victoria Cross Station; BP: Blues Point temporary site; GI: Ground improvement works; BN: Barangaroo Station; MP: Martin Place Station; PS: Pitt Street Station; CS: Central Station; WS: Waterloo Station; MDS: Marrickville dive site; Metro rail tunnels: Metro rail tunnels not related to other sites (eg TBM works).