

# Appendix G

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## Socio-economic impact assessment

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### Sydney Harbour Bridge Southern Cycleway

Prepared for Coffey Environments Australia Pty Ltd | November 2017





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Sydney Harbour Bridge Southern Cycleway

Prepared for Coffey Environments Australia Pty Ltd | 15 November 2017

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Ground Floor, Suite 01, 20 Chandos Street  
St Leonards, NSW, 2065

**T** +61 2 9493 9500

**F** +61 2 9493 9599

**E** [info@emmconsulting.com.au](mailto:info@emmconsulting.com.au)

[www.emmconsulting.com.au](http://www.emmconsulting.com.au)

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## Socio-economic impact assessment

Final

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Prepared by **Taylor Richardson**

Approved by **Allan Young**

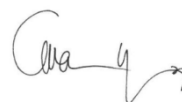
Position Senior Planner

Position Planning Service Leader

Signature



Signature



Date 15 November 2017

Date 15 November 2017

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T +61 (0)2 9493 9500 | F +61 (0)2 9493 9599

Ground Floor | Suite 01 | 20 Chandos Street | St Leonards | New South Wales | 2065 | Australia

[www.emmconsulting.com.au](http://www.emmconsulting.com.au)





## Executive Summary

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### ES1 Introduction

Roads and Maritime Services (Roads and Maritime) proposes to upgrade the existing connection between the Kent Street Cycleway and the Sydney Harbour Bridge (SHB) Cycleway (the proposal). This would improve cyclist, pedestrian and vehicular safety and support the future growth of the Sydney central business district (CBD) and Lower North Shore.

This report provides an assessment of the potential socio-economic impacts of the proposal during both its construction and operational phases.

### ES2 Existing socio-economic environment

This socio-economic assessment considers the 'The Rocks-Millers Point-Dawes Point' area (study area), as defined by the demographics company '.idCommunity' when assessing impacts (.idCommunity, 2016). The company provides a range of demographic information for City of Sydney (the City) based on the Australian Bureau of Statistics (ABS) Census data.

The study area was chosen to provide a representation of the individuals, groups and businesses that are likely to be most affected by the proposal.

The key characteristics of the study area include:

- A population of approximately 4,000 people
- A high proportion of single and couple only households, empty nesters, retirees and pre-retirees and a low number of households with children
- A well educated population with a high level of high income earners, indicating good access to economic resources
- Residents in the study area predominately utilise walking and private vehicles as a method of travel to work
- A number of community facilities and tourist/recreational businesses are located in close proximity to the proposal. The remaining area of the study area consists of a mix of residential and commercial uses including small hospitality businesses and office spaces
- Residents in the study area value safety and amenity of pedestrian and cycling facilities, connectivity to the CBD and inner Sydney, the heritage values of the area and reduced travel congestion
- Currently a number of homeless persons reside under the existing cycleway.

### ES3 Potential socio-economic impacts

The proposal presents a number of long-term benefits to the wider community by improving cyclist and pedestrian accessibility through the area and encouraging cycling and walking as a mode of travel.



However, the proposal may also result in impacts during the project's 9 to 10 month construction period. The impacts would likely include:

- Acquisition of public space currently used for exercise and recreation
- Removal of several trees currently providing visual and environmental amenity
- Temporary closure of a public fitness area used by personal trainers and other individuals
- Temporary disruption in access to nearby social infrastructure, including Observatory Hill Park, the National Trust and Fort Street Public School, associated with construction works and establishment of detours
- Long term displacement of homeless persons who reside under the existing cycleway.

#### ES4 Mitigation measures

The implementation of mitigation and management measures would assist in avoiding or mitigating the socio-economic impacts of the proposal and maximising benefits during both construction and operation. Recommended measures include:

- Informing affected residents, property owners, businesses and other organisations of the work schedule, prior to construction and on an ongoing basis throughout the proposal
- Establishing well-signposted detours for pedestrians and cyclists
- Utilising the City's established contacts to engage with the local homeless population
- Coordinating with Fort Street Public School on the likely timing and nature of work at the school, particularly as the timing is confirmed for different aspects of the proposal work.

The implementation of effective mitigation measures would reduce the proposal's negative socio-economic impacts and improve overall socio-economic benefits.

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# 1 Introduction

## 1.1 Background

Roads and Maritime Services (Roads and Maritime) proposes to upgrade the existing connection between the Kent Street Cycleway and the Sydney Harbour Bridge (SHB) Cycleway (the proposal). The proposal would improve cyclist, pedestrian and vehicular safety and support the future growth of the Sydney central business district (CBD) and Lower North Shore.

The SHB cycleway, positioned on the western side of the SHB, is the busiest cycleway in Sydney and provides an important course of access for cyclists travelling between the Sydney CBD and the Lower North Shore. It is expected that, as a result of development in the CBD and Lower North Shore, cyclist volumes on the SHB cycleway would increase. The current connection between the southern end of the SHB cycleway and Kent Street is a mixed vehicular, cyclist and pedestrian traffic arrangement on Upper Fort Street and a shared cyclist and pedestrian path which runs over the Cahill Expressway cutting and adjacent to the Bradfield Highway. Steep gradients, pedestrian and vehicle conflicts and poor sight lines are currently experienced along the connection between the SHB cycleway and Kent Street.

Work is currently underway to upgrade the SHB Southern Toll Plaza Precinct. These works would implement contemporary tolling methods and simplify traffic movements to the Western Distributor and North Sydney CBD. This is a separate project which is currently being undertaken and is expected to be completed in early 2018. The upgrade would provide additional space on the western side of the Bradfield Highway to allow for improvements to the existing cycleway connection.

## 1.2 Project overview

The proposal is to improve cyclist access on the southern approach to the cycleway on the western side of the SHB. This would involve upgrading the existing cyclist facility from the Kent Street cycleway to the SHB cycleway, including:

- Provision of a separated bi-directional cycleway facility from the Kent Street cycleway to the SHB cycleway
- Demolition of the existing shared use bridge over the Cahill Expressway and cutting, and provision of a new pedestrian and cyclist bridge with improved width and sight lines
- Construction of approach ramps to the new pedestrian and cyclist bridge with improved gradients in accordance with Austroads guidelines

The proposal area is shown in Figure 1.1 and is defined as all areas potentially disturbed by activities including the physical footprint of the proposed cycleway upgrades, replacement of the pedestrian and cyclist bridge, and site compounds.

The compound locations may include:

- The current fitness equipment area at the northern area of the proposal area
- The grassed area in front of the National Trust Centre/S.H. Ervin Gallery.

The proposed upgrade work would include the following activities:

- Establishing a compound site and storage areas
- Establishing temporary detours for pedestrians and cyclists
- Undertaking civil works including utility, electrical and construction upgrades
- Removing, upgrading and constructing retaining walls
- Providing a dedicated bi-direction cycleway from Kent Street cycleway to the SHB cycleway
- Upgrading the existing pedestrian footpath from Kent Street to Fort Street Public School
- Providing a pedestrian footpath from Fort Street Public School to Watson Road
- Replacing the existing footbridge crossing the Cahill Expressway with a new cyclist and pedestrian bridge
- Replacing of the existing pedestrian and cyclist ramp on the southern approach to the Cahill Expressway footbridge with a new spiral ramp for cyclists and pedestrians
- Modifying the merge treatment between Kent Street and Clarence Street on-ramps
- Reconfiguring of the existing fitness area in Observatory Hill to accommodate proposed cycleway alignment
- Upgrading street and cycleway lighting
- Installing new sign posting structures and signs
- Removing redundant sign posting
- Landscaping.

### 1.2.1 Construction and staging

Construction would be subject to availability of road occupancy on the SHB, at the on-ramp from Kent Street and the Cahill Expressway 'corkscrew', and Upper Fort Street. Due to the high day-time traffic, high cyclist and pedestrian volumes across the SHB and the need to maintain network efficiency into both the Sydney and North Sydney CBD, a large amount of work would be undertaken at night or during weekends and holidays. In addition, work would be undertaken in stages to fit in with the Schedule for other maintenance activities on the SHB.

The construction timeframe is estimated to be about 10 months, with 9 months of on-site construction activities (eg site preparation, demolition and construction) and four weeks of completion works (eg remove compound and detours and reinstate landscaping and furniture/equipment).

Works would be undertaken at night, when possible. For the purpose of assessment, the following road closures are anticipated:

- Cahill Expressway: 22 nights over 22 weeks (one night per week)
- Kent Street and Clarence Street on-ramps to the Bradfield Highway: 42 nights over 21 weeks (two nights per week).

This will be further assessed and evaluated by the Construction Contractor in consultation with Transport for NSW's Transport Management Centre.

### 1.3 Purpose of this report

This report provides an assessment of the potential socio-economic impacts of the proposal during both its construction and operational phases. The report supports the review of environmental factors (REF) prepared by Coffey Environments Australia PTY Ltd (Coffey), as required by Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the proposed works.





## KEY

- |   |  |
|---|--|
| — Proposal area   | ■ Construction parking                             |
| — Tree removed (Sydney Harbour Bridge Southern Toll Plaza Precinct Upgrade project) | ■ Site office                                      |
| — Tree to be removed  | ■ Lunch room/crib shed                             |
| — Tree to be retained   | ■ Amenities  |
| — Tree to be transplanted   | ■ Container  |
| ■ Incident Response Area  | ■ State Heritage Register curtilage                |
| ■ New footpath  | ■ Heritage curtilage for the Sydney Harbour Bridge |
| ■ Extent of hardstand/construction compound   | — Existing cycleways                               |

Proposal area  
Sydney Harbour Bridge Southern Cycleway  
Socio-economic assessment  
Figure 1.1

## 2 Method

### 2.1 Study area

The study area for this socio-economic impact assessment, as defined by .id (2016), includes the suburbs of The Rocks, Millers Point and Dawes Point, as well as Goat Island, as shown in Figure 2.1. The study area was chosen to provide a representation of the individuals, groups and businesses that are likely to be most affected by the proposal.

Goat Island is included within the study area due to how .id's data is structured, not because residents are expected to be impacted. Goat Island contains a small permanent resident population which is unlikely to be materially affected (ie directly or indirectly), and as such, specific consideration has not been given to the area.

### 2.2 Assessment methodology

This socio economic assessment was undertaken in accordance with Environmental Impact Assessment Practice Note: Socioeconomic Assessment (EIA-N05) (Roads and Maritime Services 2011) and used the following methodology:

- A review of socio-economic issues for the SHB cycleway
- Describing the existing socio-economic environment. This involved:
  - Identifying the study area for the socio-economic impact assessment
  - Reviewing relevant government and policy relating to the study area
  - Analysing primary and secondary data sources including, ABS data, existing socio-economic policies, outcomes of consultation and observations during a site visit undertaken on 14 November 2016
  - Reviewing existing land uses in the area
  - Reviewing social infrastructure, including open space and community services
  - Identifying existing community values.
- A review of consultation undertaken for the proposal to establish the values of the communities within the study area
- Identifying and assessing the significance of the socio-economic impacts of the proposal on individuals and the community in accordance with a moderate level of assessment as described in EIA-N05. Impacts are assessed during both the construction and operation phase. This involved consideration of the following issues:
  - Economic costs and benefits of the proposal
  - Impacts on social infrastructure



- Impacts on community values including local amenity, the displacement of homeless and access and connectivity
- Impacts to business and property
- Assessing the impact of the proposal in the context of other concurrent and foreseeable projects
- Identifying management and mitigation measures and their feasibility for managing the impacts of the proposal.

## 2.3 Data sources

The following data sources were used in the preparation of this assessment:

- Australian Bureau of Statistics (ABS) Census 2011 data, as reproduced by .id
- Relevant government strategies and policies
- Previous consultation undertaken by the City of Sydney and Roads and Maritime with surrounding landholders and other interested parties
- A site inspection undertaken on Monday 14 November 2016
- Evaluation of the costs and benefits to the community of financial investment in the Naremburn to Harbour Bridge Active Transport Corridor (Harbourlink) (SKM and Price Waterhouse Coopers 2010)
- Traffic and Transport Impact Assessment prepared for the proposal (Bitzios Consulting 2017)
- Urban Design, Landscape Character and Visual Impact Assessment prepared for the proposal (Tract Consultants 2017)
- Arboricultural Impact Assessment prepared for the proposal (TreeIQ 2016)
- Statement of Heritage Impact prepared for the proposal (Artefact Heritage Services, 2017).



# KEY

- Project area
- Study area
- Rail line
- Main road
- Project area

Study area  
 Sydney Harbour Bridge Southern Cycleway  
 Socio-economic assessment  
 Figure 2.1



## 3 Policy overview

### 3.1 Introduction

Desktop research and liaison with staff from the City identified the policies and strategies relevant to the socio-economic context of the proposal. The majority of those relevant to understanding the policy context relate primarily to the whole of the Sydney local government area (LGA) and relate to City-wide issues.

Master plans and precinct plans specific to the proposal area and study area that would ordinarily be considered as part of the socio-economic impact assessment were not evident. The exception to this being the City of Sydney Park Fitness Equipment Plan which identifies the Millers Point, Observatory Hill fitness equipment as a facility to be upgraded and expanded.

The following policies and the City directions are considered relevant to this socio-economic impact assessment. A complete policy analysis is contained in Chapter 4 of the REF.

### 3.2 Sydney City Centre Access Strategy

The Sydney City Centre Access Strategy (the Strategy) is the primary strategic document guiding the delivery of improvements to the cycling network in Sydney. The development of the Access Strategy has been informed by a strong evidence base (including traffic analysis) and feedback from customers. The proposal is a direct response to this key important strategic document.

The Strategy aims to deliver a fully integrated transport network in Sydney's CBD that meets the growing need for transport in the city. The strategy recognises that the rapid rate of growth in cycling is expected to continue and would be supported by completing the network of separated cycleways in the CBD. The strategy specifically identifies that some existing cycleways would be extended and additional cycleways would connect the whole city centre cycleway network. Connecting the cycleway network within the CBD would encourage growth in cycling, alleviate road congestion and reduce pressure on the public transport system.

The Strategy recognises that the number of cyclists accessing the CBD through key gateways has increased significantly over recent years. In the past four years the SHB has seen a 70% increase in cyclists and the Anzac Parade cycleway has seen a 109% increase. Separating cycleways from vehicles, buses and pedestrians would provide safer and more direct access for cyclists and encourage them to use dedicated routes. This would reduce the conflicts between cyclists and other customers.

The proposal would contribute to achieving many of the outcomes of the Sydney City Centre Access Strategy, including:

- Improving the amenity and safety of pedestrian and cycling links
- Completing safe and direct cycleways to the north of Sydney's CBD; and increase the number of people who are choosing to cycle into the city.

One of the actions to deliver improved cycleway connections contained within the Strategy is:

Improving the safety at key locations on existing cycleway links such as access to the SHB at the northern end of the CBD.

This proposal aims to help deliver this outcome.

Implementing the Access Strategy would involve periods of construction and change. In recognition of this a City Centre Transport Taskforce, a permanent specialist team based at the Transport Management Centre, is responsible for the smooth operation of the CBD 24 hours a day, seven days a week.

The Transport Management Centre currently coordinates and manages incidents and events on the transport network across the state and provides customers with information on changes to transport services and traffic conditions.

The Taskforce would coordinate the transport operations within the CBD and develop, ahead of time, plans to handle special events and major construction periods. It would apply travel demand management practices (similar to those used during the Sydney Olympics) to manage demand in critical locations at critical times. This would include:

- Working closely with project teams to understand and coordinate the phasing of construction works in the CBD to minimise impacts on customers
- Identifying the times and locations of unavoidable disruptions
- Contingency planning and active management of the transport system in recognition of potential disruptions
- Working with customers, stakeholders and businesses to inform them of ways to avoid the area of likely impact. This could include travelling by different modes, via an alternate route or at different times.

The Taskforce will have access to the tools required to manage transport within the CBD, including control of traffic lights, variable message signage and the ability to propose changes to the street network.

### 3.3 Sustainable Sydney 2030 (Community Strategic Plan 2014)

Sustainable Sydney 2030 is the Strategic Plan (the Plan) for the Sydney LGA. It is a plan for the sustainable development of the city to 2030 and beyond. It recognises that sustainable development is not just about the physical environment, but about the economy, society and cultures as well, and how addressing each with bold ideas and good governance, would result in better outcomes for current and future communities.

Strategic direction 4 of the Plan is

A city for walking and cycling, with a safe and attractive walking and cycling network linking the city's street, parks and open spaces.

The Plan recognises that:

- Residents walk or cycle for nearly half of their average weekday trips
- Residents are less likely to own a car, have a driving licence and use a car for short trips
- The relatively high residential density surrounding the CBD suggests that within a 10 kilometre (km) radius there is a significant potential pool of people who could cycle for work and other activities.



The following objectives of the Plan reflect the high levels of pedestrian and cycle usage in the Sydney LGA and the need to improve cyclist and pedestrian facilities:

- Develop a network of safe, linked pedestrian and cycling paths integrated with green spaces throughout central Sydney
- Give priority to cycle and pedestrian movements in the CBD
- Promote sustainable travel of major workplaces and venues in the local area.

The proposal would aid in the achievement of these objectives and the delivery of Strategic direction 4 of the Sustainable Sydney 2030 Plan.

### 3.4 City of Sydney – Social Sustainability Policy

The City of Sydney – Social Sustainability Policy (the Policy) sets out the City’s aspirations for a socially sustainable city. It has been prepared in response to the critical challenges and opportunities facing the community as the city undergoes a period of significant urban transformation. It recognises the imperative to seek to strengthen society in the face of change through deliberate policies and strategies.

The Policy states that

putting people’s wellbeing at the heart of our city is the essence of social sustainability. It recognises that sustaining a socially just and resilient society is vital to Sydney’s progress and global competitiveness.

The Policy contains 10 principles that represent the city’s aspirations for a socially sustainable Sydney – a city for all. Amongst the principles in the Policy the most relevant to this proposal are the following:

#### *Sydney is a safe and accessible city for people of all ages and abilities*

Everyone has the right to use the city and to be safe and active in their daily life. People of all ages and abilities have the same opportunities to access the city’s buildings and places, use local services, get information, and take part in community life. Everyone feels safe, and is safe, in their homes and while out and about in the city. A safe, accessible Sydney enables everyone in our community to lead enriched, fulfilling and contributing lives.

#### *Sydney’s environment supports health and wellbeing*

The urban environment supports people’s wellbeing and quality of life. It brings opportunities for people to live healthy, active and connected lives.

The natural environment is able to flourish, and green open spaces offer recreation, relaxation and respite. The city provides protection for all from the impacts of climate change and extreme weather events.

Whilst the City proposes to prepare a Social Sustainability Action Plan to realise the principles described in the Policy, the mitigation and management measures for the social impacts have been developed in the context of these key principles. The project itself would contribute to the realisation of the principles, in particular those outlined above.



### 3.5 City of Sydney Park Fitness Equipment Plan

The City of Sydney's Park Fitness Equipment Plan 2015 (the Plan), reflects the City's commitment to establishing a comprehensive network of outdoor fitness equipment facilities across parks and open spaces in the LGA to complement existing installations. This plan identifies suitable sites and equipment for future outdoor fitness equipment facilities and guides the prioritisation of future projects. The proposed facilities would seek to deliver on Sustainable Sydney 2030 objectives to create vibrant local communities and to enhance the role of parks and open space in public life.

The strategic objectives of this plan are to:

1. Increase provision of outdoor fitness equipment
2. Encourage greater participation in physical activity
3. Prioritise installation of outdoor fitness equipment
4. Engage the community.

It describes different types of physical activity and exercise as well as outdoor fitness equipment types and layout configurations. The plan gives the results of individual site assessments, which were carried out to review contemporary provision of outdoor fitness equipment facilities and to determine the quantity, distribution, diversity and quality of facilities within the City of Sydney LGA.

The Observatory Hill, Millers Point fitness equipment is identified in the Plan as:

A good facility that offers a range of static equipment that is heavily used by individuals and outdoor fitness groups. Well equipped for beginner to advanced users. Located on an active pedestrian route. Good supporting infrastructure, including natural shade and weather protection. Heavy use has damaged surrounding turf and resulted in the road being used for circuit training. Facilities could be upgraded and constructed of more robust materials and expanded to accommodate more uses.

The Plan also identifies Observatory Hill, Millers Point as the suggested location for upgraded exercise equipment, focusing on static equipment, with seating, signage, softfall and associated supporting infrastructure. Specific upgrade locations are noted to be indicative and subject to future cyclepath upgrades.

### 3.6 Outdoor Fitness Training Voluntary Code of Conduct

This code of conduct has been developed by the City in response to the growing popularity of outdoor training. Observations at the proposal area indicate the use of the park and fitness equipment by fitness training groups.

Personal fitness trainers, including commercial, not-for-profit and community groups, wishing to train outdoors in the City of Sydney LGA are expected to comply with the code by completing and signing a declaration.

Signing the declaration signifies a personal trainer's intent to comply with all the provisions of the code.

Personal trainers and commercial operators are issued with branded identification to identify themselves as signatories to the code. Personal trainers must have this identification with them during any training activity conducted on public land managed by the City.

The City would presumably have a database of fitness trainers who may be impacted by the proposal and who will be able to be contacted to be informed of the construction activities that would impact on the space.



## 4 Existing socio-economic environment

### 4.1 Introduction

This chapter provides an overview of the study area's (ie the 'The Rocks-Millers Point-Dawes Point' area as identified in Figure 2.1) existing socio-economic conditions. The socio-economic characteristics of the study area which are relevant to the consideration of the impacts of the proposal include population and demographics, transport and access arrangements for the CBD, land uses immediately surrounding the proposal, business and industry in the study area, community values and homelessness.

### 4.2 Population and demographics

The study area covers an area of approximately 82 hectares with an estimated population of approximately 4,000 people (.idCommunity 2016). Key demographic and travel characteristics of the study area and comparisons to Sydney LGA are shown in Table 4.1. The following is a summary of the key findings of the comparisons.

The average age of the population in the study area is 42 years (.idCommunity 2016). This is high compared to the average age of the whole Sydney LGA which is 36 years. The population of the study area consists of predominately working age and older people. The study area has a high proportion of empty nesters, retirees and pre-retirees, with people over 50 representing a significantly larger portion of the population than within in the Sydney LGA (.idCommunity 2016). Consequently, there is a lower proportion of people within nearly every other age bracket in the study area than within the Sydney LGA. The exception is the 12-17 year range, which is nearly equal.

With respect to household structure, the most common household types are couples without children and lone person households. There is also a relatively low level of households with children (.id 2016). It is noted that there is a high proportion of 'Other not classifiable' households. This category commonly represents occupied dwellings for which a Census form was not received or was received with insufficient information.

The study area has a lower portion of population which was born overseas or is from a non-English speaking background than the Sydney LGA, indicating that there is potentially a comparatively lower level of cultural diversity in the area (.idCommunity 2016).

Residents of the study area are similarly educated to the population of the Sydney LGA, though it is noted that a higher proportion of residents declined to state their qualification level. The unemployment level is also slightly higher than, but comparable to the Sydney LGA, with the most common occupations being Managers and Professionals. Income levels are generally more divided between the lowest and highest quartiles than the Sydney LGA.

A high portion of residents from the study area walk or travel to work in a private vehicle. Levels of public transport utilisation as a method of travel to work are much lower in the study area than in the Sydney LGA. Similarly, the number of residents cycling to work was also lower in the study area than the Sydney LGA (.idCommunity 2016). A higher proportion of residents than the population of the Sydney LGA either travelled by a different mode, worked at home, did not work or did not respond to the question.

Socio-Economic Indexes for Areas (SEIFA) measure the relative level of socio-economic disadvantage of areas based on a range of census characteristics including income, educational attainment, unemployment and occupation (.idCommunity 2016). A high SEIFA index score represents a lower level of

disadvantage. The study area has a SEIFA index of 1,001.9. This places the study area in the 47<sup>th</sup> percentile of Australian SEIFA indexes, meaning that 47% of Australia's suburbs have a lower SEIFA index than the study area. The study area therefore has a medium level of disadvantage when compared with the whole country.

**Table 4.1** Key demographic and travel characteristics of the study area and Sydney LGA

Characteristic	The Rocks-Millers Point-Dawes Point	Sydney LGA
<b>Population and demographics</b>		
<i>Population</i>	3,956 <sup>1</sup>	205,339 <sup>1</sup>
<i>Average household size</i>	1.80	1.95
<i>Age breakdown:</i>		
0-4 years	3.1%	3.6%
5-11 years	1.7%	2.6%
12-17 years	2.2%	2.0%
18-24 years	7.2%	14.8%
25-34 years	20.4%	32.6%
35-49 years	21.4%	23.1%
50-59 years	18.1%	9.5%
60-69 years	15.6%	6.5%
70-84 years	9.2%	4.3%
85 and over	1.2%	0.9%
<i>Qualification level</i>		
Bachelor or higher degree	36.6%	40.2%
Advanced diploma or diploma	6.9%	8.8%
Vocational	5.6%	7.9%
No qualification	23.7%	26.3%
Not stated	27.2%	16.7%
<i>Need for assistance due to a severe or profound disability</i>	3.2%	2.5%
<i>Household structure</i>		
Couples with children	7.2%	8.9%
Couples without children	24.4%	24.3%
One parent families	5.6%	4.4%
Other families	0.8%	2.0%
Group household	3.2%	12.2%
Lone person	33.3%	34.3%
Other not classifiable household	16.7%	10.7%
Visitor household	8.7%	3.4%
<b>Employment and economic</b>		
<i>Employment status</i>		
Employed	93.9%	94.2%
Unemployed	6.1%	5.8%

<sup>1</sup> ABS forecasted resident Population 2015

**Table 4.1** Key demographic and travel characteristics of the study area and Sydney LGA

Characteristic	The Rocks-Millers Point-Dawes Point	Sydney LGA
<i>Household weekly income (quartiles)</i>		
Lowest (Less than \$614)	24.6%	21.6%
Medium lowest (\$615-\$1,233)	13.1%	18.0%
Medium highest (\$1,234-\$2,272)	13.0%	23.1%
Highest (Higher than \$2,272)	49.3%	37.3%
<i>Occupation</i>		
Managers	27.6%	16.5%
Professionals	43.5%	38.8%
Technicians and trades workers	3.5%	7.7%
Community and Personal Service Workers	4.4%	9.2%
Clerical and Administrative Workers	11.7%	13.1%
Sales workers	6.4%	7.4%
Machinery operators and drivers	0.4%	1.5%
Labourers	1.1%	3.9%
Inadequately described	1.5%	1.8%
<b>Method of travel to work</b>		
Private vehicle or taxi	30.3%	28.0%
Public transport	12.5%	29.5%
Bicycle	0.6%	2.9%
Walked only	36.5%	25.3%
Other/not stated/work at home/did not work	20.1%	14.4%
<b>Cultural diversity</b>		
Overseas born	34.0%	42.4%
Non-English speaking background	19.3%	30.0%

Source: (.id 2016)

The population of the Sydney LGA is expected to grow to around 315,200 by the year 2036. This represents a 72% increase in population from the recorded population of the Sydney LGA at the 2011 census (NSW Department of Planning and Environment 2016). It is unclear how this would be represented within the study area, given the relatively low population density and land use constraints.

In terms of visitor demographics, the proposal area, including Observatory Hill Park is a tourist destination due to its proximity to major tourist landmarks including The Rocks and SHB. The Rocks attracted approximately 1.5 million international visitors in the year ending September 2016, with the top five international markets being the USA (14%), China (13%), the UK (13%), New Zealand (6%) and Korea (6%). As such, a significant number of people visiting the proposal area and surrounds may not speak English as their first language (Destination NSW 2016).

### 4.3 Existing land uses

The area in the immediate vicinity of the proposal is used for a range of public and private uses. Key land uses in the area immediately adjoining the proposal area are shown in Table 4.2 below.

**Table 4.2** Existing land uses

Land use	Description
Observatory Hill Park	Public park used by locals, workers and visitors in the area
Sydney Observatory	Public observatory and museum. Open 10am – 5pm (Monday-Sunday). Night visits are available and the timing of these is variable (Monday-Sunday); and by booking only.
Observatory Hill Environmental Education Centre	Education centre which provides teaching and learning programs for students from Kindergarten to year 12 (NSW Department of Education and Communities 2017)
Fort Street Public School	Primary school.
The National Trust Centre	Headquarters of the NSW branch of the National Trust. Open 9am-5pm (Monday-Friday).
The Bradfield Highway	Provides vehicular access across the SHB
S.H Ervin Gallery	Public art gallery. Open 11am-5pm (Tuesday-Sunday).

The balance of the study area consists of residential and metropolitan centre uses, including a mix of residential dwellings (multi-unit flat buildings), public infrastructure such as roads and commercial and office uses. Figure 4.1 shows the land uses in the vicinity of the proposal.

Approximately 80 m of the eastern side of Upper Fort Street is designated as metered car parking, allowing for parking of approximately 14 light vehicles. These spaces provide parking opportunities to visitors of the Sydney Observatory and provide a source of revenue for the City. Visitors to the study area can also park in Watson Road or Argyle Street both of which are metered.

## 4.4 Social infrastructure

Key social infrastructure in the immediate vicinity of the proposal includes the existing cycleway, Observatory Hill Park, Sydney Observatory, Fort Street Public School, Observatory Hill Environmental Education Centre, the National Trust Centre and S.H Ervin Gallery, as described above.

### 4.4.1 Cycleway

The existing cycleway is the primary pedestrian and cyclist access route through the proposal area and provides the sole cyclist link between the Sydney CBD to the south and the North Sydney CBD. Cyclist intercept surveys were undertaken in 2009 at the northern SHB entrance to the cycleway to understand the volumes and characteristics of cycleway users (SKM and Price Waterhouse Coopers 2010). Interviews with 737 cyclists were undertaken over the three day survey period.

Almost 90% of survey respondents indicated that they were travelling for commuting purposes, with spikes in counts occurring during the AM peak hour (7.30 – 8.29) and PM peak hour (17.00 – 17.59). Trip origins and destinations are generally within 5 km of the SHB, with some origins and destinations approximately 20 km away. A disproportionate amount of users were 30 – 49 years old (70.6%), compared to the general population (30.4%).

This data suggests that while the population of the study area is less likely to cycle (Section 4.2), the cycleway enables cycling for users in the region for commuting purposes, which may reduce motor vehicle traffic in the CBD, North Sydney and the surrounding areas, as well as the demand for public transportation.

#### 4.4.2 Public fitness area

A public fitness area containing public fitness equipment is located near the north-eastern corner of Observatory Hill Park, near the southern extent of the SHB cycleway. During an inspection of the proposal area, the public fitness area was being used by several individuals, including a personal trainer and clients. As discussed in Section 3.5, the public fitness area is identified for future upgrades, pending cycleway upgrades.

The nearest alternative public outdoor fitness equipment areas are located in The Domain and Bourke Street Park, approximately 1.5 km to the south-east of the Observatory Hill facility. The shade and weather protection provided by trees adjoining the park is mentioned in the fitness equipment plan as one of the park's qualities.



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## KEY

### Land use

- 1 - Road
- 2 - Sydney Observatory
- 3 - Observatory Hill
- Environmental Education Centre
- 4 - Observatory Hill Park
- 5 - Fort Street Public School
- 6 - Bureau of Meteorology
- 7 - National Trust and S.H Ervin Gallery
- 8 - Residential with bottom floor commercial uses
- 9 - Outdoor exercise area
- 10 - Cycleway

### Surrounding land uses

Sydney Harbour Bridge  
 Southern Cycleway  
 Socio-economic assessment  
 Figure 4.1





## 4.5 Business and industry

A range of tourist and recreation businesses including the Sydney Observatory, National Trust Centre and S.H. Ervin Gallery adjoin the proposal area. These businesses rely primarily on visitors to the study area visiting their premises to form part of their income.

The study area includes small portions of land zoned for B1 Neighbourhood Centre and B8 Metropolitan centre in the *Sydney Local Environmental Plan 2012*. During an inspection it was observed that other businesses in the study area include small retail and hospitality businesses such as cafes, hotels and restaurants and office spaces, predominately along Kent Street.

As previously mentioned, some personal trainers use the outdoor fitness equipment in Observatory Hill Park to train clients.

## 4.6 Travel and access

### 4.6.1 Access to the CBD

As discussed in the Sydney City Centre Access Strategy, Sydney's CBD is growing as an economic and cultural focal point for both Sydney and Australia. The CBD generates large amounts of economic activity and the efficient movement of goods and people to and from, through and within the CBD is essential to maintaining the global competitiveness and liveability of Sydney (NSW Government 2013).

As explained in the strategy:

Over 630,000 trips are made to the city centre each day and a further 1.27 million within the centre for work, education, shopping, tourism and by those who live there, generating demand for a mix of high capacity transport services.

The number of people travelling to the city centre each day would grow to 775,000 by 2031 – an extra 145,000 trips (NSW Government 2013, p 9).

Public access trends to the CBD over the past 10 years have shown the number of people driving to the CBD during the morning peak reducing dramatically and the number of people arriving by public transport growing significantly. The number of trips to the centre by walking or cycling has more than doubled over the past 10 years (NSW Government 2013).

Major developments in the Sydney CBD, at Barangaroo and Darling Harbour are expected to create significant additional demand for travel to the city, with the Barangaroo development alone creating an additional 23,000 jobs.

### 4.6.2 Cycling to the CBD

The number of cyclists accessing the CBD through key gateways has increased significantly over recent years. Between 2009 and 2013, the number of cyclists using the SHB has grown by 70% (NSW Government 2013). This growth in cyclist usage is expected to continue and new cycleways and improvements to the existing cycleway networks are required to accommodate this (NSW Government 2013).

Around 2,000 – 3,000 cyclists trips are taken on the SHB Cycleway each day, making it the busiest cycleway in Sydney. The SHB provides the only cyclist access between the Lower North Shore and CBD.

Existing cycle routes into and surrounding the Sydney CBD including the key gateways into the city are shown in Figure 4.2. As shown on Figure 4.2, the SHB is one of the key cycling routes into the CBD.

Figure 4.2 below shows the proposed transport network in the study area and CDB for 2031. The proposal forms part of the future strategic cycleway network and sits adjacent to key strategic vehicular and bus routes.

#### 4.6.3 Bus access

Buses servicing Fort Street Public School access the school via Upper Fort Street. During an inspection of the proposal area, it was observed that buses accessing Fort Street Public School have difficulty navigating the pinch point outside the school.

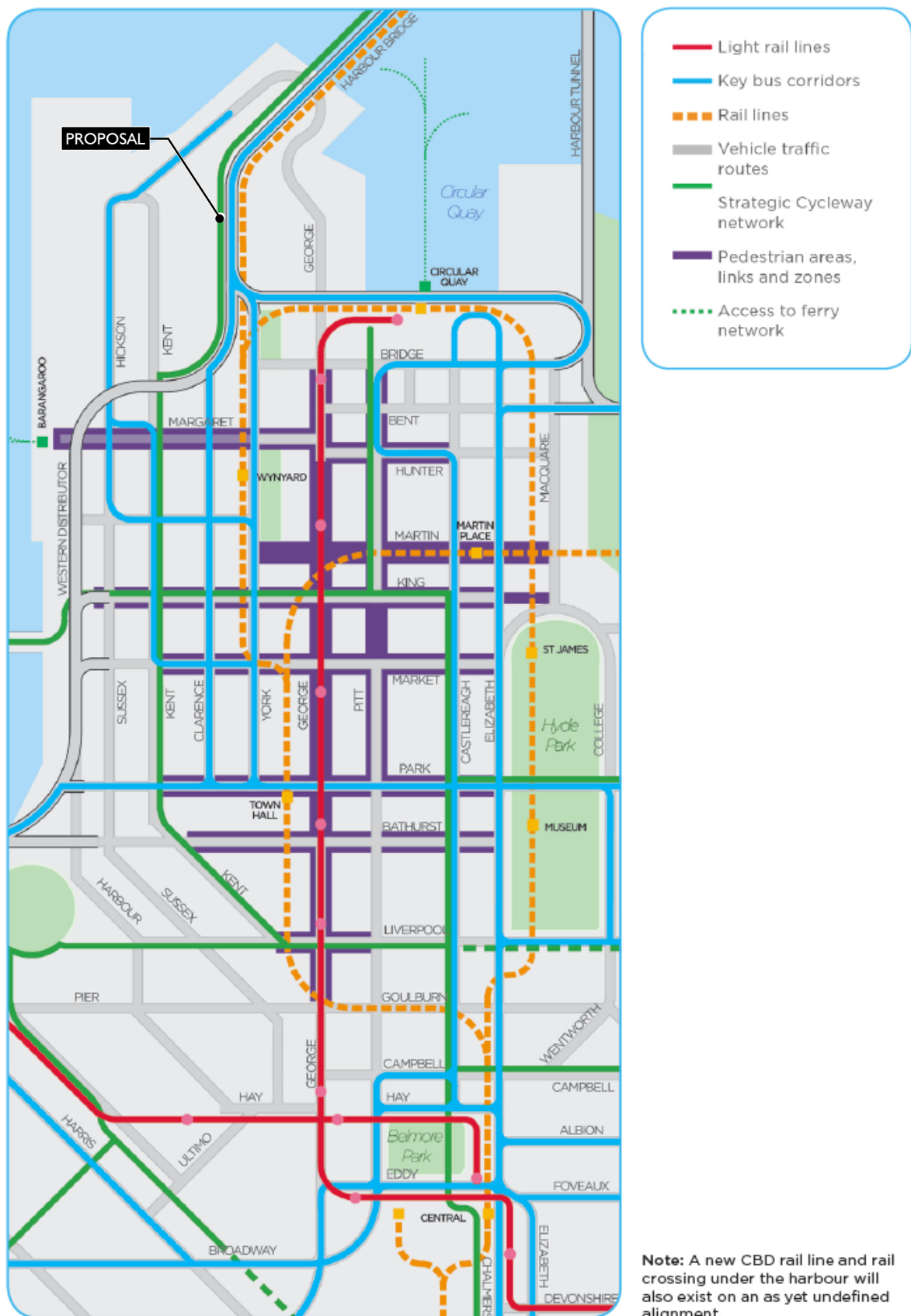
The bus lane located on the SHB approach between Kent Street and the Bradfield Highway towards the south of the study area services a high number of bus routes travelling north across the SHB (Transport for NSW, 2015). There are no bus stops adjacent to works associated with the proposal.

#### 4.6.4 Congestion

A significant portion (around 30%) of daily trips (made by all modes of transport) into the Sydney CBD are made during the morning peak and the SHB corridor accommodates a large portion of these trips during the morning peak (NSW Government 2013). As previously mentioned, the number of trips to the CBD during the morning peak are expected to grow significantly and increasing access through key corridors including the SHB corridor is critical to meeting this future demand (NSW Government 2013).

Congestion has a significant financial cost. Across the Sydney metropolitan area, congestion is estimated to cost around \$5 billion per year (Department of Infrastructure and Regional Development 2015). This is forecast to increase to around \$8 billion per year by 2020 (Department of Infrastructure and Regional Development 2015). In addition, there are a number of non-financial social costs associated with congestion, including increased travel time, travel time variability and reduced air quality (Department of Infrastructure and Regional Development 2015). The cost of traffic congestion is spread across society.

As discussed by the NSW Government (2013), walking and cycling plays an important role in relieving road and public transport congestion and maintaining the efficient functioning of the transport system by reducing trips made by road or public transport. Increasing the mode share of walking and cycling trips into the CBD will play an important role in relieving congestion and achieving an efficient transport network within the Sydney CBD and surrounds (NSW Government 2013).



Source: Sydney City Centre Access Strategy (tNSW, 2013)

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2031 city centre transport network  
 Sydney Harbour Bridge Southern Cycleway  
 Socio-economic assessment  
 Figure 4.2

## 4.7 Community values

### 4.7.1 City of Sydney values

Sustainable Sydney 2030 is the long-term program and commitment to achieving the vision and targets set out for a green, global, connected city. The community strategic plan was developed in consultation with residents, visitors, workers and business and reflects the community's values.

Consultation undertaken in the preparation of the plan identified the following key issues for the community:

- Creating a city where riding a bike is safe and enjoyable, not clogged by cars
- A city with environmental leadership.

The vision outlined for Sydney is a city which is clean, green and connected. To achieve the vision of a connected city, the plan aims to create a city which is easy to get around and has a local network for walking and cycling, and transit routes connecting the city's villages, CBD and the rest of Inner Sydney. A key target of the plan is that by 2030, at least 10 per cent of city trips will be made by bicycle and 50 per cent by pedestrian movement.

One of the strategic directions outlined in Sustainable Sydney 2030 is creating a safe and attractive walking and cycling network, linking the city's streets, parks and open spaces. Objectives to achieve this direction relate to the provision of safe and attractive facilities which would increase the mode share of cycling and walking.

Other key strategic directions of the plan relate to reducing greenhouse gas emissions and improving the quality of transport.

A study undertaken by Environmetrics Pty Ltd (Environmetrics) (2012) on cycling in the City indicates that the perception of danger on roads is a key factor in discouraging potential and infrequent cyclists from riding more often. Environmetrics (2012) indicate that separate paths and pleasant settings are the main factors which encourage bike riding.

### 4.7.2 Local area values

During the consultation undertaken for the proposal, the conservation of the heritage values of the study area, particularly the National Trust Centre were raised by interested community members and groups. Of particular concern was the need to conserve views of the heritage listed National Trust Centre.

The key values of the community which could potentially be affected by the construction and operation of the proposal include:

- Safety of cycling and pedestrian facilities
- Amenity of cycling and pedestrian facilities
- Connectivity to the city's villages, the CBD and inner Sydney
- Reduced vehicular usage and an increase in walking and cycling as a mode of travel
- Heritage values of the study area, in particular the National Trust Centre.

## 4.8 Homelessness and public space

Field observations of area identified that there were several people residing under the existing cycle/pedestrian bridge over the Bradfield Highway. The exact number of people using this space was not clear however there was evidence of several by the amount of bedding and other items in the area. The City aims to ensure that public spaces can be accessed and enjoyed by everyone including people who are homeless. The City encourages responsible behaviour by all people in our public spaces whilst acting to ensure that disadvantage people are not discriminated against and are treated with compassion and respect.

The City employs four public space liaison officers who have the role of working with city business units, service providers and other external stakeholders to manage the impacts of homelessness in the public domain, whilst ensuring that vulnerable people have access to the support they need.

The above city direction is relevant to dealing with the impacts of the proposal on the homeless likely to be affected during the construction of the proposed new ramp and bridge.



## 5 Consultation

The proposal is a key action of the Sydney City Centre Access Strategy (refer to Section 3.2). The development of the Access Strategy has been informed by a strong evidence base (including traffic analysis) and feedback from customers.

In addition to the above, project specific consultation has been undertaken with key stakeholders potentially affected by the proposal. The consultation included meetings and two value engineering workshops held on 7 November 2016 and 10 March 2017.

Stakeholders engaged included the following:

- City of Sydney Council
- Office of Environment and Heritage
- Heritage Council of NSW
- Interested members of the local community
- Australian Government Department of the Environment and Energy
- Transport for New South Wales
- Property NSW
- National Trust of Australia
- Fort Street Public School
- Sydney Observatory
- NSW Department of Education (DoE)
- RMS Driver Aid Services.

All stakeholders were generally supportive of the proposal. Specific issues and concerns raised during stakeholder consultation include:

- The National Trust noted that the current 'viewshed' to/from the building should be maintained
- RMS Driver Aid Services noted that the incident response area must remain operational at all times during construction and operation of the proposed cycleway
- The DoE was not in favour of a bridge alignment option which would encroach into the property lot currently occupied by the Environmental Education Centre
- The Sydney Observatory noted that there are limited parking opportunities near Observatory Hill Park and this needs to be considered at the northern end of the proposal, where there are several on-street parking spaces on Upper Fort Street that could be impacted if a dedicated cycleway were to be provided at this location



- NSW DoE indicated that there are plans to redevelop Fort Street Public School to accommodate additional students.

The matters raised during the consultation have been taken into consideration in the design of the proposal, including the timing and staging of construction works. Those issues impacting on the socio-economic environment are discussed in Chapter 6 of this report.

## 6 Socio-economic impacts

### 6.1 Introduction

This chapter describes the potential socio-economic impacts of the proposal expected during the construction and operation phases.

### 6.2 Property impacts

#### i Construction

There are a number of public facilities and businesses in the immediate vicinity of the proposal including Observatory Hill Park, Sydney Observatory, Fort Street Public School, Observatory Hill Environmental Education Centre, the National Trust Centre and S.H. Ervin Gallery.

During construction, traffic management measures, localised diversions and minor traffic delays may make these facilities temporarily difficult to access. This would result in an inconvenience to access these facilities for visitors and employees.

Works that would limit access or cause delays are expected to occur predominately at night with impacts expected to be minor during primary operating hours. More significant impacts are expected during the evening hours (eg special events such as school functions or after-hour venue hires) which may have significant requirements for vehicle access. Early communication and coordination with the surrounding properties regarding night and holiday work periods would help mitigate the impacts.

Site compounds would be established within the public fitness area towards the north of the study area and at the grassed area to the east of the National Trust. Use of these areas would reduce access to otherwise publically accessible space throughout the construction period.

The proposal area also extends across land owned by the following:

- Roads and Maritime
- City of Sydney
- Department of Education
- Property NSW.

These parcels of land would either be acquired, easements sought or licences granted, as required. Potentially affected land owners have been consulted as part of the stakeholder consultation.

The spiral ramp at the north-eastern corner of the grassed area associated with the National Trust is owned by Property NSW. It is understood that the proposal would not require property acquisition in this area.

Given the relatively small area and the proximity and exposure to SHB motor vehicle traffic, the effect of the acquisition of this land is expected to be minor. Further, from a public perspective, as land would be moving from one public authority to another, and land would remain publically accessible, practical impacts strictly related to acquisition would be negligible.

## ii Operation

The proposal is expected to result in minor benefits to the accessibility of some properties in the area associated with the improved ridability (eg easing the grading of the cycleway) and separation of cyclists and pedestrians, as well as cyclists and motor vehicle traffic, particularly near the Upper Fort Public School and along Upper Fort Street.

## 6.3 Social infrastructure impacts

Social infrastructure in the immediate vicinity of the proposal includes Observatory Hill Park, public fitness equipment, Sydney Observatory, Fort Street Public School, Observatory Hill Environmental Education Centre, the National Trust Centre and S.H Ervin Gallery.

### i Construction

#### a. Traffic and access

As noted in Section 6.2, minor travel delays, traffic management and localised diversions for motor vehicles, cyclists and pedestrians are likely to occur during construction. This would reduce the ease of access to these facilities and deter some patrons from utilising these facilities. This may result in reduced patronage to social infrastructure facilities in the study area.

Construction activities are to occur predominately at night and access to social infrastructure in the area would be maintained during the day, when usage is expected to be the highest. Night works would require non-construction vehicle access to be limited along Upper Fort Street, Watson Road and the Kent Street on-ramp periodically throughout the proposal. Access to and from the area is discussed in Section 6.5.

The Sydney Observatory conducts nightly tours of their facility and would therefore be most adversely affected by night works. However, as access to the facility would be maintained at all times, and the facility is accessible via a number of routes through Observatory Hill Park from Watson Road and Kent Street, impacts associated with reduced accessibility to the Sydney Observatory would be minor. Impacts could be mitigated by informing patrons of the potential disruption to traffic conditions and alternative access arrangements at the time of booking, or on Sydney Observatory's webpage.

Approximately 10 of the 13 available of on-street parking along the eastern side of Upper Fort Street would be reserved for construction staff and/or construction vehicles, which otherwise would be available for visitor parking (Bitzios Consulting, 2017).

While traffic impacts are expected to be minor, the loss of car parks throughout the construction period would reduce the accessibility of the surrounding social infrastructure. This would most greatly impact visitors of the Observatory Hill Park, which does not have a dedicated parking area.

#### b. Environmental and amenity impacts

Local environmental impacts, including noise, air quality and visual impacts can be expected during construction and may impact on the amenity of social infrastructure facilities located in close proximity to the proposal (listed in Section 4.3).

The construction timeline, including anticipated night works and closures, is discussed in Section 1.2.1, with on-site construction estimated to occur over a period of 9 to 10 months. Temporary impacts associated with social infrastructure during this time would vary during construction and would be

influenced by the separation of the facilities from construction activities and the management of construction. Impacts may be highest in close proximity to the site of the new bridge and approach adjacent to the Cahill Expressway loop, due to the extent of demolition and construction activities.

The majority of construction associated with the proposal would be undertaken at night. Many of the construction related amenity impacts would therefore occur outside of the normal operational hours of surrounding social infrastructure facilities, mitigating the potential impact. Overall, impacts are expected to be minor, with the exception of special events after hours, as discussed in Section 6.2.

As previously mentioned, the Sydney Observatory conducts nightly tours of their facility. As the majority of works associated with the proposal are to be undertaken at night, the operation of these tours may be affected by temporary environmental impacts. This may reduce patronage or patron satisfaction, resulting in some loss in revenue for the Sydney Observatory. Ongoing consultation with Sydney Observatory regarding the construction timetable would potentially aid Sydney Observatory to mitigate impacts for employees and patrons.

The cycleway would also impact vegetation and landscaping in the following areas (TreeIQ 2016, Tract 2017):

- On-ramp to the Bradfield Highway (shared path widening): removal of three trees where the shared path would be widened
- National Trust Centre/S.H. Ervin Gallery (spiral ramp and bridge approach): removal of eight trees and transplanting (or removal if required) of one tree
- Upper Fort Street/Upper Fort Street Public School: removal of five trees
- Public fitness area: removal of three trees and transplanting eight trees.

#### c. Temporary closure of the public fitness area

The installation of the at-grade approach to the SHB, construction site compound and reconfigured public fitness area would result in the temporary closure of the existing public fitness area near the north-eastern corner of Observatory Hill Park. The public fitness equipment is reported to be well-used by individuals and by private trainers.

The temporary closure would have a moderate impact on the amenity and businesses during construction work, including those associated with the fitness area reconfiguration. The impact would continue until the proposed reconfiguration of the area is completed. Installation of a temporary public fitness area during the construction period would assist to mitigate the impact.

#### ii Operations

The cycleway, when upgraded, would improve access to social infrastructure facilities in the immediate vicinity of the proposal area by improving safety and ease of access to the facilities. This is a result of removing the existing conflict between cyclists/pedestrians and vehicles on Upper Fort Street by providing a separated facility. Further, the public fitness area would be reconfigured and reinstated with new equipment and landscaping.

As noted above, the proposal would result in the removal and/or transplanting of several trees throughout the proposal area. In addition to the loss of flora, this would result in a loss of shaded areas

and visual amenity, most noticeable in the area around the new bridge and landings at the Cahill Expressway. Given the proximity of remaining and transplanted trees, the impact would be minor.

The new spiral ramp to the bridge would result in the separation of the north-eastern area of the National Trust grassed area from the remainder of the grassed area, effectively reducing publically accessible space. Further, the spiral ramp would form a physical barrier that would interrupt views to and from the National Trust (Tract 2017). As the spiral ramp is on the periphery of the grassed area between the Cahill Expressway and Western Distributor, the impact would be minor and further mitigated by design features, the 'ribbon' element of the spiral ramp and surface treatments.

The reconfiguration of the public fitness area would likely result in a net loss of space dedicated to the public fitness area (ie the cycleway would pass through land currently occupied by the public fitness area). The final configuration of the reinstated public fitness area and landscaping may result in a higher quality and accessible area. The public fitness area would be designed in consultation with the City and take advantage of their knowledge of the needs of individuals and businesses using the equipment.

As such, the operation of the proposal would result in minor impacts to the surrounding social infrastructure facilities.

## 6.4 Impacts on business and industry

### i Construction

As previously discussed, some of the businesses in close proximity to the cycleway which offer recreational activities to the community may experience short term losses in patronage as a result of small changes in amenity and access arrangements. These businesses include: Sydney Observatory, Observatory Hill Environmental Education Centre, the National Trust Centre and S.H. Ervin Gallery. Ongoing communication with these businesses would help mitigate these minor impacts.

As noted above, personal trainers using the public fitness area would also experience disruptions. Impacts for these types of businesses would be mitigated with early notification of the closure and recommending other facilities to be used. The City maintains a database of trainers that could be used for this purpose. Personal trainers were also observed to use the main western portion of Observatory Hill Park, suggesting that the trainers' operations are flexible and impacts would be minor.

Other businesses in the study area further from the cycleway are unlikely to be impacted by the construction of the proposal.

### ii Operation

The operation of the proposal may result in some minor increase to the patronage of business in the area as a result of a potential increases in cyclist and pedestrian through trips in the area, however this is not expected to be material.

## 6.5 Impacts on travel and access

### i Construction

During construction, pedestrian and cyclist accessibility would be maintained and managed through a series of shared pedestrian and cyclist zones and diversions. The existing bridge which crosses the Cahill Expressway cutting would be closed during demolition and construction of the new bridge. An alternative

temporary pedestrian route, around the back of the Cahill Expressway cutting is proposed. Cyclists would be diverted along Kent Street, Argyle Street and Watson Road (an additional 500 m).

While pedestrian and cyclist access would be maintained throughout construction, the level of service along the cycleway would be temporarily reduced and cyclists and pedestrians travelling in the area may experience delays and longer travel distances due to the diversions. It is also noted that the temporary pedestrian route may occasionally be shared with construction vehicles and would require a specific traffic management plan to compensate.

Due to the high level of usage of this section of the cycleway, a large number of people would be impacted by this reduced level of service. The impacts would be limited to the construction period. As a result of the reduced level of service in and through the proposal area, some cyclists and pedestrians may feel compelled to use an alternate mode of travel such as car or public transport or adjust their daily routine during construction.

To allow the safe construction of the proposal adjacent to the road corridor, traffic management measures would be required. Some sections of the proposal which are adjacent to the Bradfield Highway require the timed closure of one lane during construction. Some disruptions to traffic may occur as a result of these lane closures.

Residents of Barangaroo and Millers Point to the northwest of the proposal area who utilise the Kent Street to Cahill Expressway connection would be impacted by the closure of the connection. Impacts would be limited to the duration of construction. A significant amount of works would be carried out at night and/or weekends, which would help mitigate the disruptions to traffic resulting from construction activities. Communication with residents in the surrounding area regarding the closures would also assist in mitigating impacts.

The demolition of the existing cycleway bridge which spans the Cahill Expressway and the construction of the new bridge would require the closure of sections of the Cahill Expressway, as discussed in Section 1.2.1. During this time, traffic would be diverted via an alternate route.

The closure of the Cahill Expressway and resultant traffic diversions are proposed one night each week over a period of 22 weeks. This would have a relatively short-term impact on congestion on the road network in the Sydney CBD during the overnight period. This may result in increased travel times for some road users. Local residents who use this section of road frequently in the area would be most affected by the diversions and congestion caused by the proposal.

Further to the above, the City Centre Transport Taskforce has been established to ensure the smooth operation of CBD transport on a 24/7 basis and will provide a single point of reference for transport incidence responses. The Taskforce has access to the tools required to manage transport within the CBD, including control of traffic lights, variable message signage and the ability to propose changes to the street network.

## ii Operation

The operation of the proposal would provide long-term and broad ranging benefits. Users of the SHB Cycleway would benefit from an improved level of service. The proposal would offer improved grades, alignments and track widths which allow improved ease of use and safety to users. The proposal provides full separation of cyclists and pedestrians from the road corridor along its entire length, thus improving the ease of use of cycleway and reduce travel times through the study area for both cyclists and pedestrians.

It is expected that the proposal would encourage cycling as an alternative form of transport to driving or using public transport. By increasing the mode share for walking and cycling the proposal would assist in relieving congestion on roads and improving the level of service of roads and public transport in the area. This is an important impact of the proposal and would assist in achieving the strategic directions outlined in the Sydney City Centre Access Strategy and Sustainable Sydney 2030.

## 6.6 Impacts to community values

### i Construction

The proposal would temporarily affect the amenity of the study area during construction as a result of:

- Visual impacts associated with the worksite
- Noise and vibration associated with machinery and construction activities
- Changes in lighting during night works
- Temporary impacts on the access to and amenity of social infrastructure
- Temporary road, cycleway and footpath accessibility disruptions
- Temporary localised decrease in air quality.

### a. Amenity

As previously mentioned, amenity is one of key values of the community within the study area. The impact on amenity would be received mostly by residents in the study area and those who frequently use the study area for recreational activities. Impacts would vary between individuals and groups and depend on the exposure of individuals to the environmental impacts and the degree to which construction activities affect their use or enjoyment of land surrounding the proposal area.

Amenity impacts would be largely limited to periods of active construction work, which would occur predominately at night. Exceptions include the establishment of the on-site compounds, resulting in the temporary closure of the public fitness area and a section of the grassed area to the west of the National Trust Centre.

Establishment of on-site compounds would result in a minor increase in heavy vehicle movements associated with the delivery of materials. This would result in minor amenity impacts for residents in the vicinity of the proposal area as a result of increases in traffic noise and impacts to air quality. However, given the proximity of the proposal area to major roads, the overall effect would be minor.

### b. Heritage

A key value of the community within the study area is the preservation of heritage values within the area, including the National Trust Centre (artefact 2017). The proposal interacts with and is located within close proximity to a number of heritage items including the Sydney Observatory; Observatory Park including Boer War Memorial, Bandstand, fences and landscaping; Fort Street Public School including buildings and the National Trust Centre. The construction of the proposal may impact on the public enjoyment of these heritage items as a result of visual, noise and vibration and dust impacts.

Works associated with the proposal would occur predominately at night and would appear as a static construction site during the day, resulting in minor impacts. The impact of the proposal on the heritage items in the vicinity of the proposal area and the associated noise and vibration impacts are discussed in detail in the REF for the proposal.

The National Trust Conservation Management Plan identifies three Moreton Bay Fig trees as being of high significance to the National Trust Centre. Two of the Moreton Bay Fig trees would be removed, with a further two being transplanted, if possible, or otherwise removed. The removal and/or transplanting of the trees may result in impacts on the enjoyment of the heritage values of the National Trust Centre. Community members and groups who have a strong affinity to the building and heritage values within the study area would be most adversely impacted by the removal of these trees.

## ii Operation

The National Trust noted during consultation that the view shed to and from the National Trust Centre should be maintained. The alignment of the cycleway connection, particularly the spiral ramp, has been designed to avoid conflicting with views to and from this building. Views to and from the National Trust Centre would likely be intermittently obscured only from viewpoints to the north-east by the new spiral ramp associated with the proposal. As views from these viewpoints are currently largely obscured by vegetation, and predominately viewed from the north-east by vehicles travelling on the SHB at speeds up to 70 km/h, any long-term visual amenity impacts are considered minor.

Accessibility and the safety and amenity of pedestrian and cyclist facilities are valued highly by the community in the study area. Through improved grades, alignments and path widths, the proposal provides a more pleasant experience for its users. The upgrades would also provide users of the cycleway with greater confidence to walk or cycle to destination and allow them to feel safe when using the cycleway. It would allow for reduced travel times and provide a timely connection between existing cycleway facilities in the CBD and on the SHB. This may encourage cycling and walking as a mode of transport, allowing the health benefits associated with this to be realised.

## 6.7 Economic impacts

### i Construction

The proposal forms part of a \$35 million funding package from the NSW Government for upgrades to the northern and southern cycleway connections of the SHB. Construction would create a number of short-term labour, engineering, site management and site worker employment positions. Workers to fill these positions are likely to be sourced from the local labour market and it is therefore expected that most of the economic benefits associated with the creation of employment is likely to be mostly captured within the local economy. Economic benefits associated with the creation of employment during construction would be short-term and of a minor scale when compared to the Sydney economy.

The SHB is a key transport route and provides access between the Sydney CBD and Lower North Shore for people commuting to work and for commercial vehicles. As discussed in Section 6.5 above, minor traffic delays, detours and congestion are likely to be experienced in the vicinity of the proposal area during construction. The economic costs associated with congestion are discussed in Section 4.6.4. It is expected that some economic costs would result from the congestion and traffic delays during the construction phase. However, as the majority of construction activities are proposed to occur during the night and/or on weekends, most construction related traffic disruptions would occur outside of standard work hours and are limited to the duration of construction. The significance of this impact is therefore minor.



Some businesses in the immediate vicinity of the proposal area may experience a minor reduction in patronage during construction. However the impacts of this are expected to be low as construction works would take place predominately at night. The Sydney Observatory run night tours and would likely be most adversely impacted by reduced patronage at night, however these impacts are not expected to be major and would be mitigated by communicating with the businesses regarding the construction schedule.

## ii Operation

As discussed by AECOM Australia Pty Ltd (AECOM 2010) in a study assessing the economic benefits of the Inner Sydney Regional Bike Network, cycle facilities provide economic benefits to the community through a number of cost savings resulting from:

- Travel time savings and reduced congestion.
- Reduced travel and vehicle operating cost savings.
- Reduced pressure on government infrastructure and services.
- Health benefits.
- Environmental benefits associated with reduced air pollution and greenhouse gases.

The study found that the Inner Sydney Regional Bike Network would be economically beneficial for individuals, government and the economy through cost savings and benefits. The report estimated that the network would provide \$3.88 in economic benefits for every dollar spent (AECOM 2010). The AECOM investigation provides an indication of the economic benefits which cycleway upgrades are likely to have in the Sydney area.

While the proposal does not form part of the Inner Sydney Regional Bike Network, it is likely to provide economic benefits to the Sydney area, similar to the Inner Sydney Regional Bike Network. Economic benefits would be observed through cost savings from travel time and congestion reductions, reduced travel and vehicle operating costs and health benefits resulting from an increase in cycling and walking which the proposal is expected to facilitate (see Section 4.6.4). The scale of the economic benefits provided by the proposal upgrade is likely to be small in comparison the Sydney economy.

There would be some costs associated with the maintenance of the proposal during its operation. The cost of maintenance of the proposal would be borne by the City. These costs are expected to be less than the economic benefits created by the proposal.

## 6.8 Homelessness and open space

### i Construction

As noted in Section 4.8, makeshift shelters were observed below the southern ramp to the existing cyclist and pedestrian bridge over the Cahill Expressway. This indicates that homeless persons are likely to be residing in this area.

The construction of the proposal would result in the displacement of those residing here. While the number of people residing below the overpass is not clear, those affected represent the most disadvantaged members of the community. The impact of their displacement is therefore high.

It is noted that the City's Homeless Unit provides outreach in partnership with several government and non-government organisations and services. Consultation with and utilisation of the Homeless Unit before construction would help mitigate impacts associated with the demolition of the overpass.

## ii Operation

The impact of the proposal in displacing homeless persons is likely to be long-term, extending into operation of the proposal. The infrastructure associated with the proposal does not provide the same opportunity for shelter or privacy as the existing cycle link and homeless persons are therefore unlikely to return to reside in the area. The social impacts of the long-term displacement of homeless persons resulting from the proposal have the potential to be high, depending on the availability of, and willingness of homeless residents to utilise, other housing options.

## 6.9 Cumulative impacts

The construction of the proposal may occur at the same time as construction activities associated with the upgrade of the SHB Southern Toll Plaza Precinct (construction predominately at night) and the installation of lifts at the southern end of the SHB. Although minor, there would be the potential for some degree of cumulative impacts to occur during construction.

Potential cumulative impacts include traffic delays and congestion and temporary changes to amenity resulting from environmental impacts. The presence of a number of construction sites in the area may result in a general feeling of congestion in the area. Those not wanting to use the cycleway during construction may also experience congestion if they use an alternate mode-of-travel as a result of these cumulative works. A coordinated approach to the management and construction of the proposal and nearby concurrent projects would ensure that cumulative impacts are minimised.

Fort Street Public School is planning extensive redevelopment, which may increase the number of students at the school. If the construction of the school redevelopment and the proposal occur at the same time, it is likely that cumulative traffic impacts would occur. Further, given the timeframe for the proposal (9 – 10 months), it is likely that an extensive redevelopment of Fort Street Public School would overlap with the proposal significantly, if not completely.

As noted above, there is a single vehicle access point to the school along Upper Fort Street. As such, limited options for compounds and construction parking in the area and the potential for mixing of cyclist, pedestrian and motor vehicle access in a relatively constrained area, the potential cumulative impacts to access and safety could be substantial.

However, consultation with the Department of Education and Fort Street Public School with the aim to mitigate cumulative impacts and arrange the staggered timing of construction activities would ensure the effective management of traffic along Upper Fort Street for Fort Street Public School and uses.

Opportunities also exist to stage work in a way that would help mitigate impacts for the proposals. Significant construction work, such as closure and removal of the existing bridge would reduce cyclist and pedestrian traffic close to Fort Street Public School. Further establishment of footpaths and crosswalks along Upper Fort Street would help separate pedestrian and cyclist traffic.

The proposal, once complete, would also facilitate improved access to Fort Street Public School for both construction of redevelopment activities and access for the proposed increased in student numbers.

## 7 Safeguards and management measures

### 7.1 Introduction

A range of safeguards and measures are proposed to manage any adverse impacts of the proposal, relating primarily to the construction stage. These are outlined in the following section. As provided for under the City Centre Access Strategy, it is anticipated that the City Centre Transport Taskforce would coordinate the transport operations within the CBD and develop, ahead of time, plans to handle major construction periods and other competing priorities, such as special events. It will apply travel demand management practices (similar to those used during the Sydney Olympics) to manage demand in critical locations at critical times. This will include:

- Working closely with project teams to understand and coordinate the phasing of construction works in the CBD to minimise impacts on customers
- Identifying the times and locations of unavoidable disruptions
- Contingency planning and active management of the transport system in recognition of potential disruptions
- Working with customers, stakeholders and businesses to inform them of ways to avoid the area of likely impact. This could include travelling by different modes, via an alternate route or at different times.

The Taskforce has access to the tools required to manage transport within the CBD, including control of traffic lights, variable message signage and the ability to propose changes to the street network.

### 7.2 Community values and amenity

The potential adverse impacts on amenity resulting from the proposal are expected to be restricted primarily to the construction stages, and would be largely managed through the measures outlined in the tables below.

#### 7.2.1 Local amenity

**Table 7.1 Measures to safeguard amenity and social infrastructure**

Impact	Environmental safeguard	Responsibility	Timing
Social infrastructure	The users of the outdoor gym will be notified about the construction activities and upcoming changes via notices in the local media, and by prominent signage.	Roads and Maritime / City Centre Transport Taskforce and construction contractor	Pre-construction and during construction

**Table 7.1 Measures to safeguard amenity and social infrastructure**

Impact	Environmental safeguard	Responsibility	Timing
	Consultation and notification of works will be undertaken with the community and adjacent facilities (Sydney Observatory, Fort Street Public School, Observatory Hill Environmental Education Centre, the National Trust Centre and S.H Ervin Gallery) in accordance with the Roads and Maritime's Community Involvement Practice Notes and Resource Manual and Roads and Maritime Noise and Vibration Guideline.	Roads and Maritime and construction contractor	Pre construction and during construction
	Complaints from surrounding users (eg residents, businesses or visitors) will be recorded and attended to promptly in accordance with the Roads and Maritime Community Involvement Practice Notes and Resource Manual.	Construction contractor	Construction
	Contact the City to access the data base of declared fitness trainers under the Fitness Trainers Voluntary Code of Conduct and notify contacts regarding the closure of the public fitness area.	Roads and Maritime construction contractor	Pre construction and during construction
	RMS will consult with the City to determine amenity and layout requirements for reconfigured public fitness area	Roads and Maritime	Pre construction and during construction

## 7.2.2 Homeless

**Table 7.2 Measures to safeguard homeless persons**

Impact	Environmental Safeguard	Responsibility	Timing
Homeless	Consultation and notification of works will be undertaken with the City's public space liaison officers.	Construction contractor	Pre-construction and during construction

## 7.2.3 Access and connectivity

**Table 7.3 Measures to safeguard access and connectivity**

Impact	Environmental safeguards	Responsibility	Timing
Access and connectivity	The community will be notified about the construction activities and upcoming changes via notices in the local media, and by prominent signage such as Variable Message Signs (VMS) or similar, in accordance with Roads and Maritime Community Involvement Practice Notes and Resource.	Roads and Maritime/City Centre Transport Taskforce and construction contractor	Pre-construction and during construction
	Pedestrian and cyclist access will be maintained throughout construction.	Construction contractor	Construction
	Provision of signage outlining any pedestrian and cyclist diversion routes will be displayed during construction.	Construction contractor	Construction

**Table 7.3 Measures to safeguard access and connectivity**

Impact	Environmental safeguards	Responsibility	Timing
	There will be advance notification of any construction works that affect pedestrians and cyclists.	Construction contractor	Pre-construction
	Construction activities requiring traffic management or road closures would be undertaken during the night time or shut down period where feasible.	Construction contractor	Construction
	Property access will be maintained at all times where feasible.	Construction contractors	Construction
	Where temporary access impacts are necessary, owners and tenants of affected properties will be consulted regarding alternate access arrangements.	Roads and Maritime	Pre-construction and during construction
	A traffic management plan will be prepared and would include measures to minimise heavy vehicle usage, parking on local roads and interactions between pedestrians and construction vehicles. Where practicable, deliveries of construction plant and materials will be undertaken outside of peak traffic periods, including school drop off and pickup periods.  The traffic management plan will be developed in consultation with the community and surrounding land holders and the operators of nearby concurrent projects.	Construction contractor	Pre-construction and during construction
	Organise and plan construction and demolition activities to ensure that road closures and traffic disruptions do not occur alongside major traffic generating events.	Roads and Maritime	During construction



## 8 Conclusion

The proposal would provide a number of important long-term benefits to the Sydney LGA. It would encourage cyclist and pedestrian activity, improve safety and assist in meeting the expected growth in the demand for cycle facilities on the SHB. The proposal would contribute to alleviating road congestion and reducing pressure on the public transport system and would provide an important improvement in access and connectivity for the local and regional cycleway network.

During the construction phase the proposal would result in some short-term, mostly localised, socio-economic impacts including:

- Limiting access to social infrastructure facilities
- The temporary reduction in local amenity as a result of construction related environmental impacts
- Congestion and traffic delays for cyclists, pedestrians and vehicles
- The displacement of homeless persons.

The effective implementation of safeguards and management measures would assist in minimising or avoiding many of the key socio-economic impacts. Ongoing consultation and notification is recommended with the community, homeless occupiers of the area, property owners, and the operators of facilities near the proposal area throughout the construction of the proposal.

On balance, the proposal would result in socio-economic benefits. Most of the negative impacts of the proposal are not of a high magnitude or significance, can be effectively managed through mitigation measures and would generally be limited to the construction phase of the proposal. The operation of the proposal would provide significant and broad-ranging benefits to the Sydney LGA and surrounding areas by encouraging cyclist and pedestrian activity and reducing the pressure on roads and public transport.





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#### SYDNEY

Ground floor, Suite 01, 20 Chandos Street  
St Leonards, New South Wales, 2065  
T 02 9493 9500 F 02 9493 9599

#### NEWCASTLE

Level 1, Suite 6, 146 Hunter Street  
Newcastle, New South Wales, 2300  
T 02 4907 4800 F 02 4907 4899

#### BRISBANE

Level 4, Suite 01, 87 Wickham Terrace  
Spring Hill, Queensland, 4000  
T 07 3839 1800 F 07 3839 1866

