



Transport  
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Light Rail

**PARSONS  
BRINCKERHOFF**

# CBD AND SOUTH EAST LIGHT RAIL PROJECT SUBMISSIONS REPORT

MARCH 2014



**Incorporating Preferred  
Infrastructure Report**

Volume 1 – Main Volume



**The new  
state of  
business**





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## VOLUME 2

### Appendices

#### Appendix A

Key issue and sub-issue categories

#### Appendix B

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#### Appendix C

Response to government agency and project partner submissions







# Glossary and abbreviations

ATC	Australian Turf Club
AFL	Australian Football League
ANZAC	Australian New Zealand Army Corp
ARI	average recurrence interval
BCR	benefit-cost ratio
BRT	bus rapid transit
CBD	central business district
CCTV	closed circuit television
CEMP	construction environmental management plan
CH <sub>4</sub>	methane
CMP	conservation management plan
CNVMP(s)	construction noise and vibration management plan(s)
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> -e	carbon dioxide equivalent
CPMPT	Centennial Park and Moore Park Trust
CPTED	crime prevention through environmental design
CSELR	CBD and South East Light Rail ('the proposal')
CTMP(s)	construction traffic management plan(s)
CTTMS	Construction Traffic and Transport Management Strategy
DACHA	Darug Aboriginal Cultural Heritage Assessments
dB	unit of measurement for sound pressure level
dBA	A-weighted decibels
DCP	development control plan
DDA	(Cwth) <i>Disability Discrimination Act 1992</i>
DEC	(NSW) Department of Environment and Conservation (now the Office of Environment and Heritage)

DECC	(NSW) Department of Climate Change (now the Office of Environment and Heritage)
DECCW	(NSW) Department of Climate Change and Water (now the Office of Environment and Heritage)
DGRs	Director-General's requirements (for the EIS)
DLO	Darug Land Observations
DSAPT	(Cwth) <i>Disability Standards for Accessible Public Transport 2002</i>
EIS	Environmental Impact Statement (specially, the <i>CBD and South East Light Rail Project, Environmental Impact Statement, Volumes 1 to 6</i> , prepared by Parsons Brinckerhoff for Transport for NSW, November 2013)
EMF	electromagnetic field
EMR	Environmental Management Representative
EPA	(NSW) Environment Protection Authority
EP&A Act	(NSW) <i>Environmental Planning &amp; Assessment Act 1979</i>
ESA	Environmental Site Assessment
George Street pedestrian zone	Area of George Street, between Bathurst and Hunter streets, which is proposed to be pedestrianised as part of the CSELR proposal
GML	Godden MacKay Logan
GPS	geographic positioning system
HIA	health impact assessment
HAMU	historical archaeological management unit
HFC	hydrofluorocarbons
ICAC	Independent Commission Against Corruption
ICNG	<i>Interim Construction Noise Guideline</i> (DECC 2009)
INP	<i>NSW Industrial Noise Policy</i> (EPA 2000)
IPCC	International Panel on Climate Change
kg	kilogram
kL	kilolitres
KPI	key performance indicator
kWh	kilowatt hours



$L_{Aeq}$	The 'energy average noise level' evaluated over a defined time period. The $L_{Aeq}$ can be likened to a noise dose representing the cumulative effects of all the noise events occurring in the relevant time period.
$L_{Aeq(15minute)}$	The 'energy average noise level' evaluated over a 15 minute time period.
$L_{Amax}$	The maximum noise level occurring during a noise event.
$L_{AE}$	The sound exposure level, which is used to indicate the total acoustic energy of an individual noise event. The sound exposure levels are applied in the calculation of $L_{Aeq}$ noise levels from light rail operations.  The subscript 'A' indicates that the noise levels are filtered to match normal human hearing characteristics (i.e. A-weighted).
LATM	Local Area Traffic Management
LEP	local environmental plan
LGA	local government area
LoS	level of service – performance parameter used to describe the operation of an intersection
LRV(s)	light rail vehicle(s)
MCA	multi-criteria analysis
MyZone	Sydney's integrated transport zoning system
$N_2O$	nitrous oxide
NCA	noise catchment area
NCCATC	Nelune Comprehensive Cancer and Advanced Treatment Centre (approved new centre at Prince of Wales Hospital)
NIDA	National Institute of Dramatic Art
NML	noise management level (construction noise goal)
NMP	network management plan
NOx	oxides of nitrogen
NSW	New South Wales
$O_3$	ozone
OEH	(NSW) Office of Environment and Heritage
OHW	overhead wiring
ONVR	operational noise and vibration review

Opal card	Sydney integrated electronic ticketing system, currently in trial
OpCo	The Operating Company (for the CSELR – company yet to be determined)
P&I	(NSW) Planning and Infrastructure (previously Department of Planning and Infrastructure)
PA	public address
PIDS	Passenger Information Display System
PoEO Act	(NSW) <i>Protection of the Environment Operations Act 1997</i>
PPP	public-private partnership
QVB	Queen Victoria Building
RBL	rating background (noise) level
REA	rapid economic appraisal
RHP	Randwick Health Precinct
RING	<i>Rail Infrastructure Noise Guideline</i> (RING, EPA 2013)
RMS	(NSW) Roads and Maritime Services
RNP	<i>NSW Road Noise Policy</i>
Round Table	The Sydney Light Rail Round Table. A forum of executive representatives from key stakeholders.
SCATS	Sydney Coordinated Adaptive Traffic System
SCCAS	<i>Sydney City Centre Access Strategy</i> (NSW Government, December 2013)
SCG	Sydney Cricket Ground
SEPP	State environmental planning policy
SF6	sulphur hexafluoride
SFS	Sydney Football Stadium (also called Allianz Stadium)
SHR	State Heritage Register
SSI	State significant infrastructure
SSTS	(Transport for NSW's) School Student Transport Scheme
SULE	safe useful life expectancy (method used for preliminary tree assessment)
Sydney LEP	<i>Sydney Local Environmental Plan 2012</i>
TCP(s)	traffic control plan(s)



The proposal	The CBD and South East Light Rail (CSELR) Project
TTLG	Traffic and Transport Liaison Group
UAP	urban activation precinct
UNSW	University of New South Wales





# Executive summary

## Overview of the proposal

The Central Business District (CBD) and South East Light Rail Project ('the CSELR proposal' or 'the CSELR') comprises the construction and operation of a new light rail service in Sydney, including approximately 12 kilometres of new light rail track from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park.

The CSELR proposal includes 20 light rail stops, a pedestrian zone on George Street (between Hunter and Bathurst streets), approximately 12 substations to provide power for the light rail vehicles (LRVs), an LRV stabling facility in Randwick and a maintenance depot in Rozelle.

Transport for NSW is the proponent for the CSELR, and would deliver the planning and concept design phases of the proposal, and the early works. The detailed design, construction, maintenance and operation of the proposal would be delivered through a public-private partnership (PPP) arrangement. It is anticipated that it would take approximately five to six years to build the CSELR, with work beginning at multiple sites from mid-2014 (subject to planning approval).

## Planning approvals process

The CSELR proposal was declared a critical 'State significant infrastructure' (SSI) project by the NSW Minister for Planning and Infrastructure on 20 May 2013. Part 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes an assessment and approval regime for SSI.

An Environmental Impact Statement (EIS) for the CSELR proposal was placed on public exhibition between 14 November and 16 December 2013. During this period, government agencies, interested groups and the community were invited to make written submissions on the CSELR proposal to NSW Planning and Infrastructure (P&I).

Following the conclusion of the public exhibition period, Transport for NSW prepared a Submissions Report (this document) to address the issues raised in community and stakeholder submissions, and to document a number of proposed design changes and additional investigations undertaken since exhibition of the EIS.

The Minister for Planning and Infrastructure will subsequently decide whether to grant approval, or to refuse the proposal, under Section 115ZB of the EP&A Act. Approval from the Minister for Planning and Infrastructure is required before Transport for NSW can proceed with the CSELR proposal.

## Purpose of this report

This Submissions Report (incorporating a Preferred Infrastructure Report) documents and considers the issues raised in community and stakeholder submissions received during the public exhibition of the CSELR EIS, as well as Transport for NSW's response to these issues. The Submissions Report also provides an overview of the EIS; consultation activities undertaken prior to, and during, the public exhibition of the EIS, as well as activities proposed during the pre-construction, construction and commissioning phases; details on 13 design changes and additional investigations that have been undertaken since exhibition of the EIS; as well as clarifications on the information provided in the EIS (in response to issues raised in submissions).

## Overview of submissions

A total of 487 submissions were received during the EIS exhibition period. Of these submissions, 16 comprised responses from government, agencies or project partners. Of the project partner submissions two were from councils (City of Sydney and Randwick City Council) and three were from other non-government agency project partners: the Centennial Park and Moore Park Trust, the Australian Turf Club and University of New South Wales (UNSW). The full list of submissions received from government agencies and (non-government agency) project partners included:

- Australian Turf Club
- Centennial Park and Moore Park Trust
- City of Sydney
- Education and Communities (NSW)
- Environmental Protection Authority (NSW)
- Health Infrastructure (NSW)
- Heritage Council of NSW
- Leichhardt City Council
- NSW Office of Water
- NSW Small Business Commissioner
- Northern Sydney Local Health District
- Randwick City Council
- Roads and Maritime Services (NSW)
- Sydney Local Health District
- Sydney Water
- UNSW.

Most community submissions were concerned about the CSELR proposal design and operations, proposal alternatives and traffic, transport and access issues within the Surry Hills and Randwick precincts. Socio-economic considerations, impacts to planted trees and noise and vibration impacts were also raised as important issues. Key issues of most concern to the community included:

- impacts to on-street parking (particularly along Devonshire Street and Anzac Parade) and the ability to replace this parking in the surrounding area
- changes to existing bus routes (particularly in the south-eastern suburbs) and potential impacts to commuters
- the removal of a number of significant and mature trees along the proposed CSELR alignment





- the location of the proposed CSELR alignment, particularly the alignment along Devonshire Street, Surry Hills
- the location and layout of the proposed CSELR stops, particularly the Randwick stop at High Cross Park
- operational noise and vibration impacts, particularly within the Surry Hills and Randwick precincts
- socio-economic issues arising from impacts from the CSELR proposal on amenity, character and local businesses, particularly within the Surry Hills, Randwick and Kensington/Kingsford precincts.

## Modifications to the proposal

Since the exhibition of the EIS, 13 design changes have been made to the CSELR proposal in response to further design investigations, submissions received and/or other issues raised by stakeholders and the community during consultations. The proposed changes and their justification are summarised in Table S.1 below. Further details, including an assessment of the potential impacts of the changes, are provided in the Preferred Infrastructure Report in Chapter 6.

Table S.1 Summary of modifications to the proposal

Proposed design change/modification	Justification for change
<ul style="list-style-type: none"> <li>▪ Change in the extent of the wire-free zone within the CBD (removal of wire-free running between the Circular Quay and Wynyard stops).</li> </ul>	<ul style="list-style-type: none"> <li>▪ To maximise the reliability of the operation of the CSELR (based on the current wire-free system and design) within the City Centre Precinct.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Change in the Chinatown stop arrangement from a side platform arrangement north of the intersection of George and Campbell streets, to an island platform arrangement approximately 15 metres north of the previous location.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To avoid potential overcrowding on the northbound platform during morning peak periods.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Amendments to the design of the Central Station stop and surrounds, including: <ul style="list-style-type: none"> <li>▸ removal of the special event track and platform identified in the EIS</li> <li>▸ removal of existing traffic lanes along Chalmers Street between Randle and Elizabeth streets and replacement with a shared zone for pedestrians, cyclists and vehicles to access properties in Chalmers Street in a low speed environment</li> <li>▸ maintenance of Randle Street as northbound-only, providing three lanes of traffic including a single bus-only lane</li> <li>▸ maintenance of a northbound bus stop on Chalmers Street just south of Devonshire Street and a new northbound bus stop on Elizabeth Street south of Foveaux Street, providing easy access to Central Station</li> <li>▸ use of Elizabeth Street as a traffic bypass route.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to detailed design of this sub-precinct and consultations with stakeholders including City of Sydney and Roads and Maritime Services.</li> <li>▪ This included consideration of competing transport demands within Chalmers Street, the need to retain bus stops adjacent to Central Station, and the strategy in the Sydney City Centre Access Strategy to use Elizabeth Street as a traffic bypass route.</li> <li>▪ Further analysis also identified that the proposed turnback siding in Eddy Avenue would provide sufficient capacity for special event operations without the need to provide a third track and platform within Chalmers Street.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Change to the Surry Hills stop arrangement from an island platform opposite to the intersection of Devonshire and Riley streets, to a side platform arrangement with two 45 metre long platforms, and a pedestrian crossing at each end of the stop.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To improve access to Ward Park without the need to cross the light rail track from the central island platform arrangement.</li> <li>▪ To improve the operation of light rail along this section of track.</li> <li>▪ To slightly reduce the proposal footprint at the eastern and western ends of the stop.</li> </ul>

Proposed design change/modification	Justification for change
<ul style="list-style-type: none"> <li>▪ Addition of replacement parking for the Langton Centre (with approximately 30 spaces provided on the northern wide of the CSELR alignment and up to ten potential spaces on the southern of the alignment adjacent to the new Wimbo Park).</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to discussions with the Langton Centre and concerns raised in regard to the loss of parking for the centre.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Change to the CSELR alignment and stop within the Moore Park Precinct, including:                             <ul style="list-style-type: none"> <li>› relocation of the Moore Park stop approximately 250 metres south of the previously identified stop location, to the south of the existing AFL training oval</li> <li>› addition of a centre turnback siding to the south of the revised Moore Park stop for LRVs during special event operations</li> <li>› shifting of the tunnel alignment under Moore Park and Anzac Parade approximately 90 metres south to provide a more direct route to the relocated Moore Park stop</li> <li>› minor works to the existing bus loop around the AFL training oval to accommodate the above changes.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ To reduce the impacts on the existing AFL training oval during construction and operation of the CSELR, in response to discussions with the Centennial Park and Moore Park Trust and design refinements.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Addition of a pedestrian bridge over Anzac Parade, to connect with the relocated Moore Park stop.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to discussions with Sydney Boys and Sydney Girls High Schools, and other concerns raised regarding the relatively poor safety and inconvenience of an at-grade crossing.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Changes in local access arrangements to Royal Randwick racecourse, including:                             <ul style="list-style-type: none"> <li>› a slightly reconfigured Alison Road and Darley Road intersection to accommodate a new eastbound, bus-only slip lane from Alison Road onto King Street</li> <li>› Buses and coaches accessing the Royal Randwick racecourse would travel in a loop along King Street and John Street and access the racecourse in a westbound direction from Alison Road via a bus-only slip lane.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to discussions with the Australian Turf Club (and Royal Randwick racecourse), which identified that eastbound access to the racecourse from Alison Road for event buses and coaches would be required.</li> <li>▪ The provision of the bus only connection between Alison Road and King Street would also remove the need for special event bus staging in Darley Road.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Amendment to the CSELR alignment and stops on Alison and Wansey roads, including:                             <ul style="list-style-type: none"> <li>› realignment of a portion of the light rail alignment along Alison Road</li> <li>› amendments to the traffic configuration of Wansey Road</li> <li>› relocation of the Wansey Road and UNSW High Street stops into Alison Road and High Street respectively.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to ongoing consultation with relevant stakeholders (including Randwick City Council, Royal Randwick racecourse and Australian Turf Club (ATC)), and submissions received from local residents and community groups (such as the Wansey Road Action Group).</li> <li>▪ To minimise environmental impacts, including:                             <ul style="list-style-type: none"> <li>› reducing impacts on existing mature Fig trees to the south of Alison Road along the boundary of the Royal Randwick racecourse</li> <li>› reducing impacts to kerbside parking on Wansey Road</li> <li>› reducing impacts to access to ATC land and facilities.</li> </ul> </li> <li>▪ To improve efficiency and safety of access to UNSW and the hospital precinct.</li> </ul>



Proposed design change/modification	Justification for change
<ul style="list-style-type: none"> <li>▪ Amendments to the Randwick stop and interchange, including:               <ul style="list-style-type: none"> <li>▸ providing approximately three times the amount of green space (while also continuing to retain the war memorial and proposed cycling facilities)</li> <li>▸ moving the Randwick stop approximately three metres north towards Belmore Road (approximately one lane width) by removing the existing southbound kerbside traffic and parking lane adjacent to High Cross Park</li> <li>▸ maintaining three lanes of traffic along Belmore Road including a single southbound lane for general traffic and two northbound bus only lanes (one for stopped buses to allow passengers to interchange to/from light rail and one permitting buses to pass).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to community and stakeholder concerns in submissions regarding the overall impact of the proposal on High Cross Park.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Amendments to the UNSW Anzac Parade stop arrangement, including:               <ul style="list-style-type: none"> <li>▸ movement of the stop from the eastern side of Anzac Parade to the centre of Anzac Parade as an island stop just north of the University Mall crossing</li> <li>▸ addition of a northbound indented bus bay and a new bus stop on the eastern side of Anzac Parade.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to a master planning exercise of the lower campus conducted by UNSW and through ongoing consultation between UNSW and Transport for NSW, which identified that the stop would be better positioned as a centre island platform along of Anzac Parade to provide increased pedestrian safety.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Changes to substation locations at Parker Lane, Chalmers Street and Surry Hills.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To improve reliability of the electrical supply for the proposal and minimise impacts of these substations.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Changes to the location and extent of construction compounds, including new compounds at Bond Street and Barrack Street in the City Centre and the NIDA car park on Anzac Parade, and revised compounds at Ward Park and Moore Park.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to a review of constructability requirements, design refinement and changes to the design of the proposal (such as the realignment and relocation of the proposed tunnel and Moore Park stop described above).</li> </ul>

A full assessment of these design changes is presented in Chapter 6 of this report which comprises the Preferred Infrastructure Report. The impacts associated with the proposed design changes would be manageable through the application of the environmental management measures presented in Chapter 8 of this Submissions Report, which includes some new and revised measures. Overall, the benefits of the changes to the community and the environment, and the benefits for operation of the CSELR, are expected to outweigh the potential impacts of these changes.

## Conclusions and next steps

This Submissions Report (and accompanying Preferred Infrastructure Report) has documented and considered the issues raised in community and stakeholder submissions on the CSELR proposal, as well as Transport for NSW's response to these issues. It is proposed that the CSELR proposal, as described in Chapters 5 and 6 of the EIS, and as amended by this Submissions Report, should be submitted for determination by the Minister for Planning and Infrastructure.

The Minister for Planning and Infrastructure will subsequently decide whether to grant approval, or to refuse the proposal, under Section 115ZB of the EP&A Act. Should the proposal be approved by the Minister, Transport for NSW would continue to consult with community members, government agencies and other stakeholders during the pre-construction, construction and commissioning phases (refer section 2.4 of this report for further details).





# 1. Introduction

The Central Business District (CBD) and South East Light Rail Project (‘the CSELR proposal’ or ‘the CSELR’) comprises the construction and operation of a new light rail service in Sydney, including approximately 12 kilometres of new light rail track from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park.

## 1.1 Background and purpose of this report

An Environmental Impact Statement (EIS) for the CSELR proposal was placed on public exhibition between 14 November and 16 December 2013. An electronic copy of the EIS is available on Planning and Infrastructure’s (P&I’s) website, <http://www.majorprojects.planning.nsw.gov.au/>. During this period, government agencies, interested stakeholders and the community were invited to make written submissions on the CSELR proposal to P&I.

The determination process for the CSELR is summarised in Figure 1.1, which also identifies the current status of the proposal in relation to the determination process.

This document comprises the Submissions Report (and accompanying Preferred Infrastructure Report) for the CSELR proposal, which has been prepared in accordance with the requirements for State significant infrastructure (SSI) under Part 5.1 and section 115Z(6) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Section 115Z(6) of the EP&A Act specifies that:

‘The Director-General may require the proponent to submit to the Director-General:

- a) a response to the issues raised in those submissions, and
- b) a preferred infrastructure report that outlines any proposed changes to the State significant infrastructure to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned.’

The proposed changes to the CSELR proposal that comprise the Preferred Infrastructure Report are described in Chapter 6 of this Submissions Report.

This Submissions Report documents and considers the issues raised in community and stakeholder submissions received on the CSELR proposal, as well as Transport for NSW’s response to these issues. The Submissions Report also provides an overview of the EIS; consultation activities undertaken prior to, and during, the public exhibition of the EIS, as well as ongoing consultation during the pre-construction, construction and commissioning phases; details on proposed changes to the CSELR proposal (the Preferred Infrastructure Report) and additional investigations that have been undertaken since exhibition of the EIS; as well as clarifications on the information provided in the EIS (in response to issues raised in submissions).

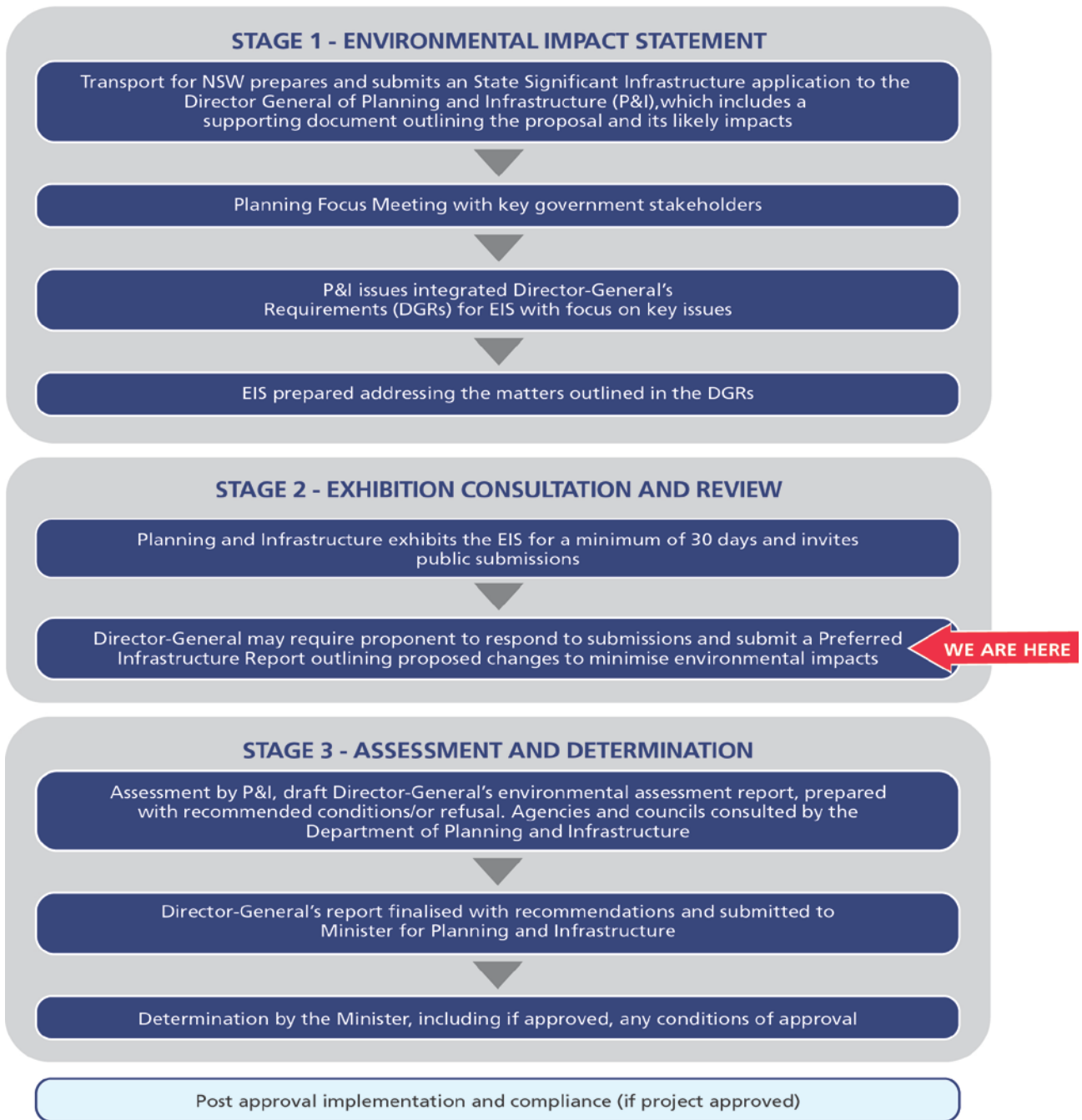


Figure 1.1 Planning and assessment process



## 1.2 Overview of the EIS proposal

Figure 1.2 identifies the proposed route, and the stop and stabling/maintenance facility locations for the CSELR as presented in the EIS. It also shows the extent of the existing light rail network in Sydney, including the Inner West Light Rail Extension (which is a separate project, currently under construction).

### 1.2.1 Key features of the EIS proposal

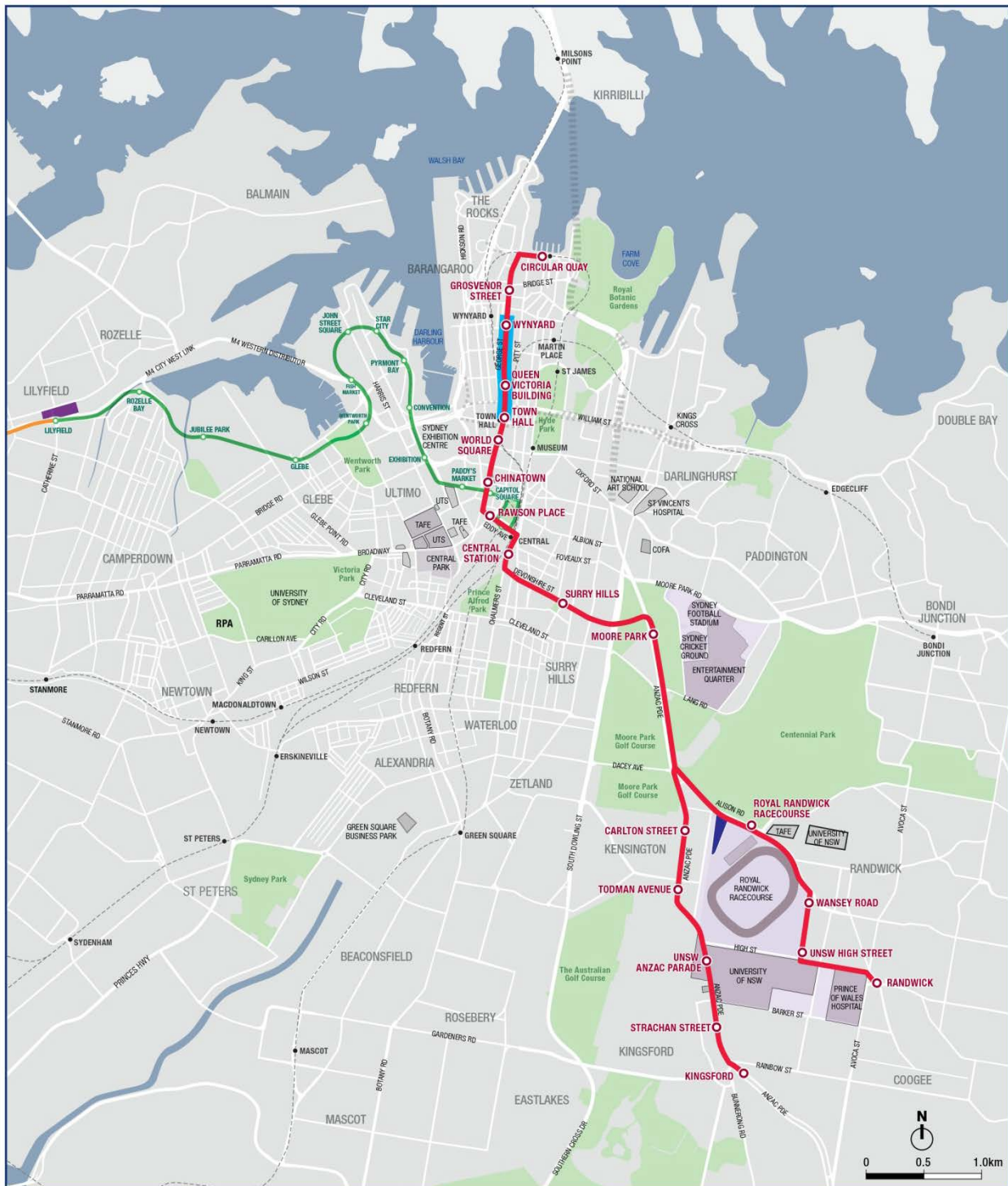
The key features of the CSELR proposal as presented in the EIS include:

- high frequency, ‘turn up and go’ services every two to three minutes during peak periods within the CBD and out to Moore Park, with services operating every five to six minutes between Moore Park and the Randwick and Kingsford branches
- a pedestrian zone in George Street from Bathurst Street to Hunter Street, with light rail vehicles (LRVs) operating wire-free in this zone (except for overhead wires at stops used for charging LRVs)
- 20 light rail stops along the route, including interchange with heavy rail at major rail stations (Circular Quay, Wynyard, Town Hall and Central), ferry interchange at Circular Quay, and bus interchanges at the Town Hall, Queen Victoria Building, Rawson Place, Central Station, Randwick and Kingsford stops
- facilities in Randwick and at Rozelle for LRV stabling and maintenance (including wash down)
- a fleet of approximately 30 electric-powered LRVs (including spare LRVs), approximately 45 metres long, featuring air conditioning and accessible low-floor design
- a highly reliable service with the capability to carry up to 9,000 passengers per hour in each direction
- capacity for approximately 80 seated and 220 standing passengers in each LRV
- public domain improvements including concepts for paving, street trees, lighting and furniture.

It is anticipated that the CSELR proposal would take approximately five to six years to build, with work beginning at multiple sites from mid-2014 (subject to planning approval).

Further details on key features and the likely construction methodology for the CSELR proposal are provided in Chapters 5 and 6 of the EIS.

Further design development of the proposal has been undertaken since the exhibition of the EIS. The details of this design development and the proposed changes to the proposal’s design are described in the Preferred Infrastructure Report in Chapter 6 of this Submissions Report.



Note: Indicative only. Subject to detailed design

Figure 1.2 Overview of the CSELR proposal as presented in the EIS





## 1.2.2 Strategic framework

In December 2012, the NSW Government released two key strategic plans that set the framework for improving the central Sydney transport system:

- the *NSW Long Term Transport Master Plan* (NSW Government 2012a) — which is a 20 year plan to improve the NSW transport system
- *Sydney's Light Rail Future — Expanding public transport, revitalising our city* (NSW Government 2012b) — which details an integrated modal delivery plan for light rail, as one component of the *NSW Long Term Master Plan*.

In 2013, the NSW Government also released the draft *Metropolitan Strategy for Sydney 2031* that provides a comprehensive plan to manage the growth of Sydney up to 2031; and the *Sydney City Centre Access Strategy* (SCCAS) that outlines a suite of initiatives to improve the way the Sydney CBD transport system operates.

The structure and content of the *NSW Long Term Transport Master Plan* and the SCCAS are illustrated in Figure 1.3.

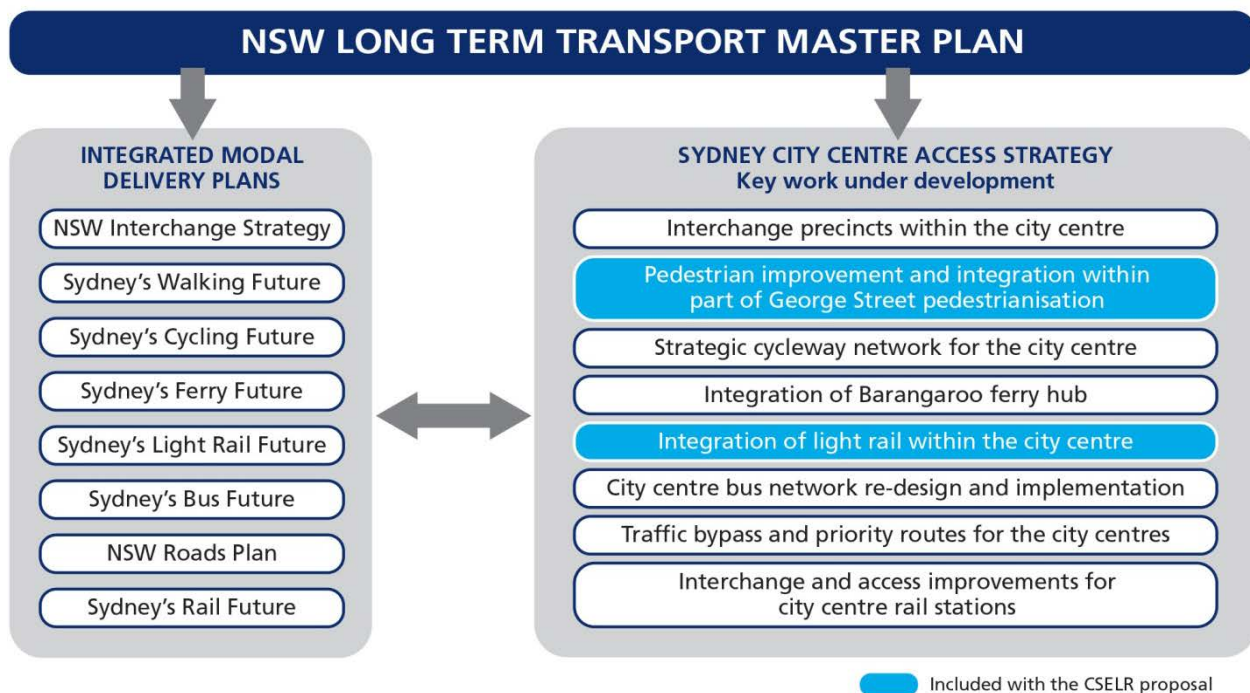


Figure 1.3 Structure and content of the NSW Long Term Master Plan and SCCAS

Together, these strategic planning documents identify a number of transport, economic and other challenges facing Sydney — including catering for a growing city, the need to generate urban renewal and global competitiveness, and unlocking capacity on Sydney's transport network.

The documents also delineate a range of strategies and projects to address these challenges. These include easing transport congestion in the Sydney CBD and improving public travel between key destinations in South East Sydney and the CBD by:

- expanding the current light rail services in inner Sydney, from Circular Quay to Randwick and Kingsford
- creating a pedestrian zone along approximately 40 per cent of George Street
- redesigning and better coordinating the Sydney CBD transport network (including buses, light rail, ferries, pedestrians and cyclists) to create an integrated public transport solution for the Sydney CBD.

The first two items in this bulleted list comprise the CSELR proposal that is the subject of the CSELR EIS and this Submissions Report. The third item is being delivered via the SCCAS, of which light rail in the CBD is one component.

### 1.2.3 Need for the proposal

The need for the CSELR proposal was described in detail in Chapter 3 of the EIS. In summary, the inadequate capacity and complexity of Sydney CBD's transport system is constraining Sydney's ability to function as a productive and attractive place to work and visit. Poor accessibility and congestion within Sydney's CBD (particularly for business-related travel) is constraining productivity and potential productivity growth.

The volume of buses in the city, especially on major transport corridors such as the Harbour Bridge, York Street, George Street and Elizabeth Street, results in major bus congestion on these routes on a regular basis. In the future, additional buses required to address the growth in population and employment in the region cannot be accommodated without compounding existing bus congestion in the City Centre, leading to further delays for commuters and further reductions in reliability of service.

In South East Sydney, the public transport network no longer efficiently and effectively supports major travel destinations. This results in lengthy delays for students, staff and patrons of the Moore Park sports and entertainment complex, Royal Randwick racecourse, University of NSW (UNSW) and the Randwick Education and Health Specialised Centre. Bus services often operate at capacity with only 34 per cent of services operating within two minutes of the scheduled time (NSW Government 2012a).

By 2031 an additional 86,000 residents and approximately 147,000 workers are expected within the CBD, as well as 37,000 new residents and 17,000 new workers in inner South East Sydney (Bureau of Transport Statistics 2012a and 2012b). If not addressed, this significant growth forecast for the CBD and inner South East Sydney would exacerbate existing issues resulting in a further decline in productivity and amenity, which would ultimately have a negative impact on the international competitiveness of Sydney. Without the CSELR proposal, it is anticipated that there would continue to be an increase in traffic congestion and a worsening in the reliability of travel from the South East suburbs to the City Centre.



## 1.2.4 Anticipated benefits

The CSELR proposal has been developed to meet the identified proposal objectives (as outlined in section 3.3 of the EIS, Volume 1A). It would address a number of key problems with the CBD and inner South East Sydney transport systems and is expected to deliver:

- *customer benefits* — improved and more reliable journeys for public transport users, a net reduction in congestion and accident costs for private vehicle users, and improved travel times and amenity for pedestrians
- *operating benefits* — delivering a savings in existing transport operator costs
- *broader community benefits* — through a reduction in environmental and health externalities such as air pollution and noise
- *wider economic benefits* — through opportunities for urban renewal and agglomeration.

The CSELR would transform the transport system within inner Sydney and provide a step change in transport capability and capacity. It would address the current challenges including:

- Addressing CBD congestion through transfer from existing buses and private vehicles. The CSELR proposal would reduce buses in the CBD by approximately 180 in the morning's busiest hour. When combined with other proposed bus network changes this would provide a reduction of approximately 220 buses.
- Improving access for the inner South East suburbs to the CBD through improved reliability of travel and efficient connection to major trip generators including the Moore Park sports and entertainment complex, Royal Randwick racecourse, UNSW, and the Prince of Wales and Sydney Children's Hospitals.
- Supporting continued population and employment growth in the region by providing up to 18,600 morning peak hour boardings in both directions in 2021, growing to around 23,400 by 2036.

An economic appraisal for the CSELR proposal indicates that the economic benefits significantly outweigh the project costs. The CSELR proposal has been assessed as having a benefit-cost ratio (BCR) of 2.4 (with a net present value of \$2,174 million) excluding wider benefits; or a BCR of 2.5 (with a net present value of \$2,396 million) including wider benefits such as resource efficiencies, greenhouse gas reductions, and an efficient public transport service. Further discussion on the economic appraisal of the CSELR is provided in section 3.5.3 of the EIS (Volume 1A).

## 1.3 Key findings of the EIS

### 1.3.1 Key impacts identified in the EIS

Key regional and local impacts (positive and negative impacts) during operation and construction of the CSELR proposal were described in detail in the Executive Summary and Chapters 9 to 17 (Volumes 1A and 1B) of the EIS. The EIS splits the discussion of impacts into regional and whole-of-project impacts (Chapters 9–11 | Volume 1A) and local environmental impacts (Chapters 12–17 in Volume 1B). The local environmental impact chapters of the EIS describe the impacts on a precinct basis. These precincts are summarised in Figure 1.4.

In summary, the key adverse impacts identified in the EIS include the following:

- Parking and access impacts during construction and operation, including permanent removal of a significant number of on-street parking spaces along the CSELR alignment. The Surry Hills and Kensington/Kingsford precincts are predicted to have sufficient latent parking capacity to absorb displaced parking demand; however, there is potential for parking demand to outstrip supply within the Randwick Precinct.
- Disruption to public spaces during construction, including roadways along the CSELR alignment, and proposed construction worksites at First Fleet Park, Belmore Park, Ward Park, Wimbo Park, Langton Centre car park, Moore Park, High Cross Park, Royal Randwick racecourse, UNSW and adjacent to the Nine Ways intersection at Kingsford.
- Noise and other amenity impacts during construction and the associated social impacts and impacts on local businesses particularly in the City Centre, Surry Hills and Randwick precincts.
- Localised flooding impacts associated with changes to stormwater drainage capacity, including areas along George Street, and associated with existing flooding at the proposed Randwick stabling facility and Alison Road.
- Impacts on trees including the removal of up to 760 trees along the proposed CSELR alignment.
- Operational amenity impacts as a result of the Randwick stabling facility in particular noise and visual amenity.
- Direct impact to and permanent changes to the setting, context and appreciation of various heritage items and heritage conservation areas along the alignment. Major permanent impacts were predicted at the Palace Hotel complex (City Centre Precinct); Devonshire Street significant trees and Wimbo Park (Surry Hills Precinct); Martin Road significant trees, the Racecourse Precinct Heritage Conservation Area, Royal Randwick racecourse significant trees and High Cross Reserve and significant trees (Randwick Precinct); and Tay Reserve and UNSW significant trees (Kensington/Kingsford Precinct).
- Impact on the setting of, disturbance to or loss of significant (including State significant) archaeological resources at some locations along the alignment. Moderate to major potential impacts were predicted in the City Centre Precinct (e.g. First Fleet Park, Town Hall), and at High Cross Park (Randwick Precinct) and Tay Reserve (Kensington/Kingsford Precinct).



Note: Indicative only. Subject to detailed design

Figure 1.4 Precincts for local impact assessment

A large suite of management and mitigation measures is proposed to be implemented to reduce the potential adverse impacts of the proposal, as detailed in Chapter 18 and Appendix I of the EIS and revised in Chapter 8 of this Submissions Report. These measures would be incorporated into the construction environmental management plan (CEMP) and sub-plans for the proposal and, subsequently (if necessary), the future Operator's environmental management system.

### 1.3.2 Conclusion of the EIS

As discussed in Chapter 19 of the EIS (Volume 1B), there is a strong justification for the CSELR proposal in relation to its need, the anticipated benefits and costs/impacts, the objectives of the EP&A Act and matters of ecologically sustainable development. The EIS also concluded that provided the measures and commitments specified in the EIS are applied and effectively implemented during the design, construction and operational phases of the CSELR proposal, the identified environmental impacts are considered to be acceptable and manageable.

## 1.4 Structure of this report

The structure of this Submissions Report is as follows:

- *Executive summary*: Provides a brief summary of the information presented in the Submissions Report.
- *Chapter 1 — Introduction*: Provides an introduction to the Submissions Report; an overview of the key features of the CSELR proposal; a summary of the key conclusions of the EIS; and the structure of this Submissions Report.
- *Chapter 2 — Consultation*: Provides an overview of consultation activities undertaken prior to, and during, the public exhibition of the EIS. Also includes a summary of ongoing consultations and communications.
- *Chapter 3 — Overview of submissions*: Provides an overview of the process that was used to analyse the issues raised in submissions, as well as an overview of the key issues raised by the community, government agencies and project partners.
- *Chapter 4 — Government agency and project partner submissions*: Summarises the issues raised in government agency and project partner submissions. Due to the complexity of these submissions, Transport for NSW's response to these issues is provided in Appendix C.
- *Chapter 5 — Response to community submissions*: Details the key issues raised in community submissions and Transport for NSW's response to these issues.
- *Chapter 6 — Preferred Infrastructure Report*: Documents and assesses proposed changes that have been made to the CSELR proposal since the exhibition of the EIS, as well as any additional environmental management measures that Transport for NSW proposes to implement to manage any newly identified adverse impacts. An overall statement of the change in environmental and social impact of the CSELR proposal, relative to that documented in the EIS, is also provided.



- *Chapter 7 — Additional investigations and clarifications to the EIS:* Documents any additional investigations that have been undertaken since the exhibition of the EIS. This chapter also provides a number of clarifications to the information presented in the EIS, in response to issues raised in submissions, or to correct minor errors in the EIS identified by the project team.
- *Chapter 8 — Revised environmental management measures:* Provides the revised set of environmental management measures for the CSELR proposal, which have been amended in response to the proposed changes to the proposal, additional investigations undertaken since the public exhibition of the EIS, and issues raised in submissions received during the public exhibition period.
- *Chapter 9 — Conclusion:* Provides key conclusions for this Submissions Report.
- *Chapter 10 — References:* Provides a list of the documents that have been cited in this Submissions Report.
- *Appendix A — Key issue and sub-issue categories:* Provides a consolidated list of key issues and sub-issues categories for issues raised in community submissions.
- *Appendix B — Table of issues per community submission:* Provides a table of key issues and sub-issues raised in each community submission and a cross-reference to where these are responded to in this Submissions Report.
- *Appendix C — Responses to government and project partner submissions:* Provides detailed summaries of government agency and project partner submissions and responses.







## 2. Consultation

This chapter summarises the stakeholder and community consultation activities that Transport for NSW has undertaken prior to, and during, the exhibition of the Environmental Impact Statement (EIS) for the CBD and South East Light Rail (CSELR) proposal.

### 2.1 Pre-EIS exhibition consultation

A detailed overview of the consultation activities that Transport for NSW undertook for the CSELR proposal both before and during the preparation of the EIS was provided in Chapter 2 (Volume 1A) and Appendix E (Consultation Outcomes Report, Volume 1C) of the EIS. This included an overview of the key issues raised by stakeholders and the community and, where relevant, how these concerns have been addressed through the design of the CSELR proposal and/or the EIS process. A summary of the consultation activities undertaken with key project stakeholders and the community is provided in sections 2.1.1 and 2.1.2 below, respectively.

#### 2.1.1 Consultation with key project stakeholders

Consultation occurred throughout the strategic planning phase of the CSELR with project partners, and a number of senior stakeholders from organisations located in, or associated with the study area (including councils, health and education providers, event and recreation precincts, peak bodies and associations, and government agencies). As detailed in Chapter 2 of the EIS (Volume 1A), consultation with key project stakeholders prior to the exhibition of the CSELR EIS included:

- a year-long consultation process during the development of the *NSW Long Term Transport Master Plan* (NSW Government 2012a) (refer section 2.3.1 of the EIS, Volume 1A)
- six Sydney Light Rail Round Table meetings (held during the feasibility phase of the CSELR proposal), involving key project stakeholders and elected State and council representatives (refer section 2.3.2 of the EIS, Volume 1A)
- four Light Rail Working Group sessions (held between October 2011 and June 2012), involving technical and expert level representatives of key government and institutional stakeholders (refer section 2.3.3 of the EIS, Volume 1A)
- stakeholder meetings (including with government agencies) to support the Round Table and Working Group process and to facilitate information exchange
- an industry briefing session (held on 9 April 2013) which included presentations by the NSW Minister for Transport and the Deputy Director-General Transport Projects and attracted over 350 attendees from a wide audience including industry groups, government agencies and private businesses
- a briefing with key Moore Park sports and entertainment complex representatives and major users of these facilities (held on 5 August 2013) to jointly discuss and provide input to the design process (refer section 2.4.4 of the EIS, Volume 1A)

- consultation with utility providers, which included a high level briefing of senior utility representatives (held on 16 May 2013) (refer section 2.4.5 of the EIS, Volume 1A)
- comprehensive stakeholder briefings and presentations (held since December 2012) (refer section 2.4.6 of the EIS, Volume 1A).

### 2.1.2 Community consultation

Following the announcement of the CSELR proposal by the NSW Minister for Transport in December 2012, the communications team was expanded to include consultation specialists from the EIS team, as well as the appointment of Place Managers. Community consultation and information activities began in February 2013. As described in section 2.5 of the EIS (Volume 1A), consultation with the community prior to the exhibition of the CSELR EIS included:

- *CSELR contact mechanisms* — A proposal information line (1800 684 490) and email address (projects@transport.nsw.gov.au) were established to enable all stakeholders to provide feedback on the proposal and ask questions of the project team.
- *Proposal website* — Information about CSELR has been available on the transport projects pages of the Transport for NSW website (<http://www.sydneylightrail.com.au/>) since December 2012. The website included a range of proposal information, including information about community information sessions held in September 2013 and copies of the community update brochures.
- *'Have Your Say' website* — This website (<http://engage.haveyoursay.nsw.gov.au/cselr>) was launched on 2 September 2013 to coincide with a series of community information and feedback sessions. The website hosted an online version of a feedback form and linked back to the Transport for NSW CSELR website.
- *Place Managers* — Place Managers were established in May 2013 to act as the direct point of contact for the community, businesses and other stakeholders. Separate dedicated Place Managers were assigned for the City Centre (CBD), Surry Hills and the South East sections of the light rail route.
- *Community update brochure, April 2013* — A community update brochure was distributed in April 2013 to all residents and businesses within 500 metres of the proposed CSELR alignment. Over 50,000 brochures were delivered. The purpose of the community update brochure was to create awareness of the proposal, outline the next steps and give the community an opportunity to contact the proposal team.
- *Community update brochure, August 2013* — A letterbox drop of over 50,000 community updates was completed in August 2013 to all residents and businesses within 500 metres of the proposed CSELR alignment. In addition, all property owners along the alignment were sent the brochure to ensure both owners and tenants were informed of the CSELR proposal. This community update provided a project and planning update, project contact details and invited community members to EIS preparation phase community information sessions.
- *Lilyfield letterbox drop and doorknock* — A letter and the August community update were sent to local residents and businesses near the proposed Rozelle maintenance depot in Lilyfield to inform them of the CSELR proposal and invite them to the EIS preparation phase community information sessions. Members of the project team also completed a door knock in the Lilyfield area as a follow up activity to the letterbox drop. The door knock was undertaken to confirm residents had received the communications materials and encourage them to attend the September community information sessions.



- *Community information stands* — In April 2013, five community information stands were established at locations near the proposed CSELR alignment to receive local input on the proposal at an early stage. The information stands were attended by members of the project team, so that attendees' questions could be answered and feedback obtained. The community information stands were located in the following areas:
  - ▶ Surry Hills Market, Crown Street, Surry Hills — Saturday 6 April 2013
  - ▶ Entertainment Quarter Village Markets, Lang Road, Moore Park — Saturday 13 April 2013
  - ▶ Royal Randwick Shopping Centre, Randwick — Saturday 20 April 2013
  - ▶ Kingsford Markets, Kingsford — Sunday 21 April 2013
  - ▶ The Rocks Market Sydney — Friday 31 May 2013.
- *Door knocking* — Door knocking of businesses and residential properties along the proposed CSELR alignment commenced in June 2013. Door knocking was undertaken by Place Managers and members of the CSELR communications team and was undertaken to make direct contact with potentially impacted residential and commercial properties. Priority was given where access or other special needs may be an issue.
- *Business survey* — A business survey (involving 100 businesses) was conducted as part of the Economic Impact Assessment for the EIS (refer to Technical Paper 4 in Volume 3 of the EIS) in June 2013. The business survey was conducted to better understand the operational needs of businesses and the potential impacts on them from the CSELR during construction and operation. The business survey within the Surry Hills, Moore Park, Randwick and Kensington/Kingsford precincts was conducted on 14 and 28 June 2013; while a survey of the City Centre Precinct was conducted on 26 June 2013.
- *Community information and feedback sessions* — A series of five community information and feedback sessions were held in local venues along the preferred route during the EIS preparation phase consultation period. The information sessions provided information and graphic displays and were supported by members of the project team to answer questions. Attendees were encouraged to complete a feedback form. The community information and feedback sessions were held at the following locations:
  - ▶ State Library, Macquarie Street, Sydney — Monday 2 September 2013, 4 pm–8 pm
  - ▶ Randwick Town Hall, Corner Avoca and Frances Streets, Randwick — Tuesday 3 September 2013, 4 pm–8 pm
  - ▶ Eastern Suburbs Masonic Centre, 199 Anzac Parade, Kensington — Wednesday 4 September 2013, 4 pm–8 pm
  - ▶ Prince Alfred Park, Coronation Hall, Chalmers Street, Surry Hills — Sunday 8 September, 11 am–4 pm
  - ▶ Adina Apartment Hotel, 359 Crown Street, Surry Hills — Monday 9 September, 4 pm–8 pm.
- *Stakeholder briefing* — A briefing for key stakeholders was held on 2 August 2013 at the State Library to provide these stakeholders with an early opportunity to view the communication materials prior to public consultation.

## 2.2 Consultation during public exhibition of the EIS

The EIS was publicly exhibited between 14 November and 31 December 2013. During the exhibition period, government agencies, interest groups and organisations, stakeholders and the community were invited to make written submissions. A summary of the engagement activities and tools used to encourage community and stakeholder participation during the public exhibition period is outlined below.

### 2.2.1 EIS display locations

The EIS was placed on public exhibition at a number of locations, including:

- Department of Planning & Infrastructure, Information Centre, 23–33 Bridge Street, Sydney
- City of Sydney Council, One Stop Shop, Town Hall House, Level 3, 456 Kent Street, Sydney
- Randwick City Council, Administration Building & Customer Service Centre, 30 Frances Street, Randwick
- Leichhardt Municipal Council Citizen Service Centre, 7–15 Wetherill Street, Leichhardt
- Customs House Library, Level 2, 31 Alfred Street, Circular Quay, Sydney
- Haymarket Library, Ground Floor, 744 George Street, Sydney
- Surry Hills Library and Neighbourhood Centre, 405 Crown Street, Surry Hills
- Margaret Martin Library, Level 1, Royal Randwick Shopping Centre, Randwick
- Bowen Library & Community Centre, 669–673 Anzac Parade, Maroubra
- Malabar Community Library, 1203 Anzac Parade, Matraville
- Transport for NSW Transport Projects, Level 5, Tower A Zenith Centre, 821 Pacific Highway, Chatswood
- University of NSW, Library Building, Mid Upper Campus, Anzac Parade, Kensington
- Randwick TAFE Customer Service Centre, Building A, Lower Ground Floor, Corner Darley Road and King Street, Randwick
- Prince of Wales Hospital, Barker Street, Randwick
- Sydney Children's Hospital, High Street, Randwick
- Nature Conservation Council, Level 2, 5 Wilson Street, Newtown
- Northcott Community Centre, Surry Hills.

A poster and information cards were provided at each of the above display locations to provide information on the submissions process and encourage attendance at the community information sessions.

An electronic copy of the EIS was also available on Planning and Infrastructure's (P&I's) website at <http://www.majorprojects.planning.nsw.gov.au/> and on the Sydney Light Rail website at <http://www.sydneylightrail.com.au>.



## 2.2.2 Community information sessions

Seven information sessions were held at the following locations:

- Eastern Suburbs Masonic Centre, 199 Anzac Parade, Kensington — Saturday 23 November, 10 am–2 pm (approximately 60 people attended this session)
- State Library, Macquarie Street, Sydney — Tuesday 26 November, 4 pm–8 pm (approximately 30 people attended this session)
- University of NSW, Sydney — Wednesday 27 November, 10 am–2 pm (approximately 50 people attended this session)
- Randwick Town Hall, Corner Avoca and Frances streets, Randwick — Saturday 30 November, 10 am–2 pm (approximately 120 people attended this session)
- Surry Hills Library, 405 Crown Street, Surry Hills — Monday 2 December, 5 pm–8 pm (approximately 100 people attended this session)
- Sydney Boys High School, Gate 9, Anzac Parade, Moore Park — Thursday 5 December, 4 pm–8 pm (approximately 20 people attended this session).
- Surry Hills Library, 405 Crown Street, Surry Hills — Tuesday 10 December, 4 pm–8 pm (approximately 90 people attended this session).

The community information sessions provided residents and interested community members the opportunity to talk directly to the CSELR project team. Project team staff from various technical disciplines (e.g. design, EIS and technical specialists) were in attendance at each session to clarify the information presented in the EIS as well as listen and consider any suggestions or concerns that members of the community had in relation to the proposal. Community members who attended the sessions were encouraged to make a formal submission on the CSELR proposal via the P&I website.

## 2.2.3 Pop-up events and market stalls

In addition to the community information sessions described above in section 2.2.2, Transport for NSW also held nine pop-up and market stalls at the following locations:

- Customs House Square, Sydney — Thursday 21 November, 8 am–2 pm
- Allianz Stadium, Moore Park — Saturday 23 November, 3.30 pm–5.30 pm
- Royal Randwick Shopping Centre, Randwick — Monday 25 November, 11 am–2 pm
- Pacific Square Shopping Centre, Maroubra — Thursday 28 November, 11 am–2 pm
- Collins Street Closure, Surry Hills — Thursday 28 November, 4 pm–7 pm
- Rozelle Markets, Rozelle — Sunday 1 December, 9 am–4 pm
- Prince of Wales Hospital, Randwick — Tuesday 3 December, 11 am–4 pm
- Entertainment Quarter Markets, Moore Park — Saturday 7 December, 10 am–3 pm
- Kingsford Rotary Markets, Kingsford — Sunday 8 December, 8 am–3 pm.

The purpose of these informal sessions was to inform members of the community that the EIS was on public display and to raise public awareness about the proposal. These sessions were staffed by the community engagement team. Information made available at each of these sessions included the EIS overview document, CSELR brochure and a copy of the full EIS. Stakeholders seeking detailed technical information about the proposal were directed to the Transport for NSW and P&I websites, and encouraged to attend one of the community information sessions.

#### 2.2.4 Light rail community information centre

A new light rail community information centre on the Ground Floor of 388 George Street, Sydney, was opened by the Minister for Transport on 14 November 2013. The information centre is staffed Monday — Friday 9 am to 5 pm and will be open for the life of the project. Available at the information centre is general proposal information, a copy of the EIS and copies of the CSELR EIS overview document.

#### 2.2.5 Newsletters

A community update brochure was distributed in November to over 50,000 property owners, businesses and tenants along the proposed CSELR alignment. This community update provided a project and planning update, project contact details and invited community members to EIS community information sessions.

A letter and community update was also sent in November to local residents and businesses near the proposed Rozelle maintenance depot to inform them of the CSELR proposal and invite them to the EIS community information sessions and the local pop-up event at the Rozelle Markets.

#### 2.2.6 Website and 1800 number

An electronic copy of the CSELR EIS and associated technical papers were available from NSW Planning and Infrastructure's (P&I's) website (<http://www.majorprojects.planning.nsw.gov.au/>). A full copy of the EIS was also available for download from Transport for NSW's Sydney Light Rail website (<http://www.sydneylightrail.com.au/>).

#### 2.2.7 Newspaper advertisements

P&I placed advertisements in the following papers to advertise the commencement of the EIS exhibition period:

- *Southern Courier* (12 November 2013)
- *Wentworth Courier* (13 November 2013)
- *Inner West Courier* (12 November 2013)
- *Sydney Morning Herald* (13 November 2013)
- *Daily Telegraph* (13 November 2013).



Transport for NSW placed further advertisements in relevant local and metropolitan newspapers to inform the public that the EIS was on display and to invite the public to the community information sessions. The placement of advertisements and dates they appeared are outlined in Table 2.1.

Table 2.1 Newspaper advertisements

Publication date	Publication
Tuesday 19 November 2013	<ul style="list-style-type: none"> <li>▪ Inner West Courier</li> <li>▪ Southern Courier</li> <li>▪ Chinese Daily</li> </ul>
Wednesday 20 November 2013	<ul style="list-style-type: none"> <li>▪ Central Courier</li> <li>▪ Wentworth Courier</li> <li>▪ Sydney Morning Herald</li> <li>▪ Daily Telegraph</li> </ul>
Tuesday 26 November 2013	<ul style="list-style-type: none"> <li>▪ Inner West Courier</li> <li>▪ Southern Courier</li> </ul>
Wednesday 27 November 2013	<ul style="list-style-type: none"> <li>▪ Central Courier</li> <li>▪ Wentworth Courier</li> <li>▪ mX</li> </ul>
Tuesday 3 December 2013	<ul style="list-style-type: none"> <li>▪ Inner West Courier</li> <li>▪ Southern Courier</li> </ul>
Wednesday 4 December 2013	<ul style="list-style-type: none"> <li>▪ Central Courier</li> <li>▪ Wentworth Courier</li> <li>▪ mX</li> </ul>

### 2.2.8 Round Table meeting

The Sydney Light Rail Delivery Phase Round Table (Round Table) was formed in June 2013. The delivery phase of the CSELR includes further design work, preparing the CSELR program and delivery strategy, and undertaking environmental assessment work.

The Sydney Light Rail Delivery Phase Round Table is the main vehicle through which key government and institutional stakeholders can provide input to and be informed about the progress of the delivery of the CSELR. The meetings provide members with CSELR project development and design updates and are planned to continue on a quarterly basis throughout the delivery phase.

A Round Table meeting was held during the EIS public display period on 15 November 2013.

### 2.2.9 Stakeholder briefings

A number of stakeholder meetings were held during the EIS public exhibition phase. Briefings were held with senior representatives of the CSELR project team and were intended to allow time to discuss and ask detailed questions, and to understand views about the CSELR proposal. A list of stakeholders who participated in the stakeholder briefing meetings is provided in Table 2.2.

Table 2.2 Stakeholders who participated in stakeholder briefing meetings

Sector	Stakeholder
Government	<ul style="list-style-type: none"> <li>▪ Transport Management Centre</li> <li>▪ Ambulance NSW</li> <li>▪ NSW Fire and Rescue</li> <li>▪ NSW Police</li> </ul>
Community and resident groups	<ul style="list-style-type: none"> <li>▪ People Unite Surry Hills</li> <li>▪ Wansey Action Group</li> <li>▪ Olivia Gardens residents</li> <li>▪ Kensington West Precinct Committee</li> <li>▪ Tower Apartments</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Coombes Property Group</li> <li>▪ ACME Framing</li> <li>▪ Central Physio and Performance Fitness</li> <li>▪ GPT Group</li> <li>▪ Hunter Connection</li> <li>▪ Master Specs</li> </ul>
Churches	<ul style="list-style-type: none"> <li>▪ St Peters Catholic Church</li> </ul>

### 2.2.10 Reminder notification

An email reminder was sent on 14 November 2013 to all stakeholders and community members who have opted to be on the CSELR Consultation Manager database. The email reminder was used to inform people of the public display period and the upcoming community information sessions. A total of 1,609 emails were sent to contacts to invite them to the community information sessions.

The above mentioned email reminder was re-sent on 28 November 2013. A total of 2,377 emails were sent or re-sent to contacts to invite them to the community information sessions.

Another email reminder was sent on 27 November 2013 to Surry Hills stakeholders and community members who have opted to be on the CSELR Consultation Manager database. The email reminder was used to inform people of the public display period and additional upcoming community information sessions. A total of 378 emails were sent to contacts to invite them to community information sessions.

### 2.2.11 Enquiries, request for information and complaints

The CSELR information line (1800 684 490) and email address ([projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au)) were available to the community and stakeholders to allow them to provide feedback on the proposal and ask questions of the project team. All formal submissions were directed to P&I.

During the public exhibition period, 140 enquiries were made, including telephone, email and online enquiries about the proposal.





### 2.2.12 Thank you letters

Transport for NSW has sent a letter to all community members and stakeholders who made a submission (and who have not requested that their contact details remain confidential) to advise them of their submission number and where in the Submissions Report to refer to responses to issues raised. Submissions have not been responded to individually.

The community and stakeholders would be notified about the completion and availability of the Submissions Report through advertisements in suburban and metropolitan press, the CSELR website and a community newsletter. Key stakeholders would also receive notification of the Submissions Report via a letter.

## 2.3 Ongoing Aboriginal consultation

As part of the ongoing consultation activities for the CSELR proposal, consultation with local Aboriginal heritage stakeholders was commenced in December 2013 during the exhibition of the EIS by Godden MacKay Logan (GML) on behalf of Transport for NSW. As part of this process, the following activities have been undertaken:

- Consultation with required statutory bodies to identify relevant key groups and potential knowledge holders, including consultation with the Office of Environment and Heritage (December 2013 to January 2014).
- Public advertising in regional and local newspapers to seek registration of interested local Aboriginal land councils and individuals for involvement in the assessment of Aboriginal archaeology and cultural heritage. Expressions of interest for registration were requested to be received by 22 January 2014 (refer to Figure 2.1). Advertisements for the expression of interest were placed in the following media communications:
  - ▶ *Inner West Courier*
  - ▶ *Southern Courier*
  - ▶ *mX Sydney*
  - ▶ *Central Courier*
  - ▶ *Wentworth Courier*
  - ▶ *Daily Telegraph*
  - ▶ *Sydney Morning Herald*.

# CBD and South East Light Rail

## Registration for Aboriginal community consultation

The CBD and South East Light Rail (CSELR) is a unique infrastructure project that will transform Sydney. This new 12 kilometre light rail line will extend from Circular Quay along George Street to Central Station to Moore Park, then to Kingsford via Anzac Parade and Randwick via Alison Road and High Street.

On behalf of Transport for NSW, Godden Mackay Logan (GML) invites local Aboriginal people with cultural knowledge of Aboriginal objects and places along the CSELR route to register an interest in community consultation for the project.

CSELR is being assessed under the *Environmental Planning and Assessment Act 1979* as a State Significant Infrastructure Project and will not require an Aboriginal Heritage Impact Permit in accordance with Part 6 of the *National Parks and Wildlife Act 1974*. However, Transport for NSW wishes to undertake Aboriginal

community consultation in order to compile a list of Registered Aboriginal Parties for the project.

To register please contact GML Heritage Consultants by **22 January 2014**.

Written registration should be addressed to:

**Kate Price, GML Heritage Consultants**  
**78 George Street**  
**Redfern NSW 2016**

Alternatively, email [katep@gml.com.au](mailto:katep@gml.com.au) or fax **02 9319 4383**.

Please mark all responses with the subject line: 'Sydney Light Rail – Confidential'

Please be advised that the details of all parties who register will be forwarded to the Office of Environment and Heritage and the Local Aboriginal Land Council unless specified otherwise.



For more information please contact the Project Infoline on 1800 684 490, email [projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au) or visit [www.sydneylightrail.com.au](http://www.sydneylightrail.com.au).

N38213

Figure 2.1 Example of advertisement for registration for Aboriginal community consultation

Following the advertisement for the expression of interest, registrations from the following groups/organisations had been received as at the time of completion of this Submissions Report:

- Darug Land Observations (DLO)
- Darug Aboriginal Cultural Heritage Assessments (DACHA)
- Metropolitan Local Aboriginal Land Council
- Tocomwall/individual representative.

Ongoing consultation with relevant Aboriginal stakeholders would continue to be undertaken as part of the detailed design of the CSELR proposal.

## 2.4 Ongoing and future communications with the community

Transport for NSW is committed to community and stakeholder engagement beyond the planning phase and through detailed design, construction and commission of the CSELR. Transport for NSW would work closely with both the Managing Contractor and the Public-Private Partnership (PPP) Contractor for the CSELR to ensure the consistent delivery of accurate information on the project to the community, businesses and stakeholders throughout the life of the CSELR proposal.



The following communication activities and procedures would be implemented to support the delivery of the project:

- The Managing Contractor and the future Operator of the CSELR would implement the approved Sydney Light Rail stakeholder and community engagement strategy.
- Community liaison plans would be developed and implemented by the Managing Contractor and the PPP Contractor.
- Place Managers would continue to function in the current precincts — the CBD, Surry Hills/ Moore Park, Randwick and Kensington and Kingsford. Place Managers would provide a single point of contact for all residents and businesses in the area.
- Local business and community forums would be established in each of the precincts to provide timely and accurate information on the proposal, and receive local input into the proposal. The local business and community forums would then feed into the Business and Community Reference Groups that would report to the project team and Sydney Light Rail Advisory Board. These groups would comprise independent representatives from business and local communities to advise on concerns on the proposal.
- An Urban Domain Reference Group would also be established to allow key partner stakeholders such as City of Sydney and Randwick City Councils to review and comment on the proposed urban domain elements.
- A Utilities Reference Group would also be established, which would comprise independent representatives from the utility owners to advise on utility concerns related to the proposal.
- Business management plans would be developed and implemented for the precinct areas.
- The Delivery Phase Round Tables would also continue to operate throughout the life of the project.
- One-on-one stakeholder briefings and community information sessions would be held when appropriate to support the rollout of the program of works.
- The Sydney Light Rail website would be constantly reviewed and updated.
- The Transport for NSW Community Information Centre would continue to operate Monday to Friday 9.00 am to 5.00 pm. The centre would provide information to the public on the CSELR proposal and other CBD-related transport initiatives.
- Transport for NSW's project information line (1800 684 490) and email address ([projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au)) would continue to be available during the construction phase.
- Notifications would be issued to all affected businesses and residents informing them in advance of impacts related to construction activities.
- Complaints during construction would be managed in accordance with Transport for NSW's Community Engagement Policy. A construction response line (1800 775 465) is available for all Transport for NSW projects and is a 24 hour contact point for complaints regarding construction works.
- Targeted communication activities, such as doorknocking, letterbox drops, brochures, and emails updates, would continue as the project progresses.
- The CSELR contact details would continue to be included in all written communications distributed to the community or made available online.





## 3. Overview of submissions

This chapter provides an overview of the process that was used to analyse the issues raised in submissions received on the CBD and South East Light Rail Project ('the CSELR proposal' or 'the CSELR') during the public exhibition of the Environmental Impact Statement (EIS). This chapter also analyses the key issues raised in community, government agency and project partner submissions. A summary of responses to the issues raised in government agency and project partner submissions is provided in Chapter 4, while a response to issues raised in community submissions is provided in Chapter 5.

### 3.1 Analysis process

#### 3.1.1 Receipt of submissions

Submissions from government agencies, project partners, special interest groups, peak bodies, businesses and the community were received by Planning and Infrastructure (P&I). Submissions received up until 31 December 2013 were provided to Transport for NSW for consideration. A total of 487 submissions were received, comprising 13 submissions from government and agencies and 474 'community' submissions (where 'community' includes businesses, special interest groups, peak bodies, community action groups and project partners that are not government agencies). Two of the community submissions were received directly by Transport for NSW and were not included in P&I's official submissions received.

Detailed submissions were received from the two government agency project partners, City of Sydney and Randwick City Council, and the three non-government agency project partners, the Centennial Park and Moore Park Trust (CPMPT), Australian Turf Club and University of New South Wales (UNSW).

Discounting project partner submissions, a total of 471 submissions were received from the community. Of the community submissions, 19 submissions were received from special interest groups, 12 submissions were received from peak bodies, and 11 submissions were received from community action groups. Submissions from the business community were included in the community submissions and included 35 submissions from large or multi-national businesses and 18 submissions from local businesses. Each submission was assigned an individual number by P&I. These numbers are referred to in Chapters 4 and 5 of this Submissions Report, as well as Appendices B and C.

#### 3.1.2 Handling of submissions

##### Government agency and project partner submissions

Submissions were received from the five project partners for the CSELR project, including City of Sydney Council, Randwick City Council, CPMPT, Australian Turf Club and UNSW. The project partners have been involved in the development of the CSELR through the feasibility and concept design phases of the proposal. This has included discussions relating to design and operation of the CSELR to address project partner requirements, whilst still meeting the overall objectives of the CSELR proposal.

Project partner submissions were addressed individually alongside the government agency submissions (rather than with community submissions) as their issues are specific to their assets and interests. The content of government agency and project partner submissions was reviewed and a summary of each key issue raised provided in this Submissions Report. Issues raised by government agencies and project partners were not categorised as the issues raised were largely dependent on each stakeholder's technical discipline area and/or assets. A summary of the key issues raised in government agency and project partner submissions is provided in Chapter 4.

### Community submissions

Community submissions, including special interest groups, peak bodies, community action groups and submissions from the business community, were considered separately to government agency and project partner submissions.

The content of each community submission was reviewed and categorised according to the key issues (e.g. noise and vibration) and sub-issues (e.g. construction noise) raised. A full list of the key issue and sub-issue categories used to categorise the issues raised in submissions is provided in Appendix A. A summary of the key issues raised in community submissions is provided in section 3.2.2 of this Submissions Report, while a summary of the types of issues raised by each community submission is provided in Appendix B.

## 3.1.3 Response to submissions

### Government agency and project partner submissions

Responses to issues raised by government agencies and project partners were provided to each individual submission are presented in full in Appendix C of this Submissions Report.

### Community submissions

Due to the number of issues raised in community submissions, issues were grouped together based on their assigned key and sub-issue categories with responses provided to these grouped issues. Each issue is presented as a summary of the specific issues raised by individual submissions, meaning that, while the exact wording of a particular submission may not be presented in the summary of the issue, the intent of each individual issue raised has been captured. A tailored response has been provided to each grouped issue summary. Issues and responses are located in Chapter 5 of this Submissions Report.

## 3.1.4 Consideration of petitions

One petition was received as a submission during the exhibition period (submissions number 240). This submission was treated as a single community submission.



## 3.2 Summary of issues

### 3.2.1 Government agency and project partner submissions

A summary of the key issues raised by each government agency and the project partners is provided in Chapter 4. A complete list of issues raised in government agency and project partner submissions and Transport for NSW's response to these issues is provided in Appendix C of this Submissions Report.

### 3.2.2 Community submissions

The key issues raised in community submissions are summarised in Table 3.1. A breakdown of the top three frequently raised key issues in community submissions (proposal alternatives, traffic, transport and access; and proposal design) by sub-issue is provided in Figure 3.1. A complete breakdown of all key issues into sub-issue categories, and Transport for NSW's response to these issues, is provided in Chapter 5 of this Submissions Report.

**Table 3.1 Summary of key issues raised in community submissions**

Key issue	No. submissions raising key issue	% of submissions raising key issue
Planning and statutory requirements	27	6%
Community and stakeholder consultation	111	24%
Proposal need and justification	88	19%
Proposal alternatives	295	63%
Proposal design and operations	179	38%
Proposal construction	47	10%
Proposal sustainability	2	0%
Traffic, transport and access	274	58%
Land use and property	116	25%
Noise and vibration	96	20%
Planted trees	131	28%
Visual and landscape character	75	16%
Built and non-Indigenous heritage	43	9%
Socio-economic	138	29%
Ground and surface water	12	3%
Land stability, soils and contamination	8	2%
Aboriginal heritage	2	0%
Biodiversity	10	2%

Key issue	No. submissions raising key issue	% of submissions raising key issue
Air quality	14	3%
Utilities and services	21	4%
Greenhouse gases	4	1%
Climate change and adaptation	1	0%
Waste, energy and resources	7	1%
Hazards and risks	74	16%
Cumulative impacts	7	1%
Issues external to the CSELR proposal	66	14%

### Analysis of community submissions

#### *Support or opposition for the proposal*

Of the 471 community submissions received, not including project partners, 80 submissions (or 17 per cent) indicated support for the proposal, 230 submissions (or 49 per cent) indicated they were opposed to the proposal, with the remaining 161 (34 per cent) did not clearly state support or opposition to the proposal.

#### *Submissions by precinct*

A breakdown of issues raised by precinct is provided in Table 3.2. This table does not indicate the number of submissions received by community members from each precinct, but shows a breakdown by issue where that issue was attributable to a specific precinct or locality. Issues relating to all precincts, regional impacts or where issues were non-specific in relation to location are also shown.

**Table 3.2** Issues raised by precinct

Precinct	No. of issues raised	% of total number of issues
All precincts	668	14%
City Centre Precinct	503	11%
Surry Hills Precinct	1775	38%
Moore Park Precinct	295	6%
Randwick Precinct	685	15%
Kensington/Kingsford Precinct	228	5%
Rozelle locality	5	< 1%
Regional impacts (wider impacts on Sydney)	37	1%
Non-precinct specific issue	445	10%
<b>Total</b>	<b>4,641</b>	<b>100%</b>





A large number of submissions were concerned about issues within the Surry Hills Precinct, with 38 percent of all submissions raising an issue within this precinct.

### *Analysis of issues*

Over 4,600 individual issues were raised in the 471 community submissions received.

Figure 3.1 shows a breakdown of sub issues for proposal alternatives, traffic, transport and access and proposal design, the three most frequently raised key issues.

Of the submissions raising concerns in relation to proposal alternatives almost half of the issues raised (45 per cent) related to the alignment. Further analysis of the submissions indicated that a total of 108 submissions, or 23 per cent of the total amount of submissions, raised concerns specifically relating to the alignment through Surry Hills. Other sections of the alignment that were raised numerous times included Wansey Road (26 submissions, or six per cent of the total), the alignment between Bourke Street and Moore Park (25 submissions, or five per cent of the total) and tunnel alternatives (21 submissions, or four per cent of the total).

Concerns relating to stop locations accounted for almost a quarter (24 per cent) of the issues raised relating to proposal alternatives. The Randwick stop generated the most submissions, with 49 submissions, or 10 per cent of the total, raising concerns regarding the location of this stop.

With regard to submissions raising concerns relating to traffic, transport and access, the graph in Figure 3.1 shows that impacts to traffic (28 per cent), impacts to parking and loading (24 per cent) and impacts to property access (15 per cent) were all raised frequently. However, further analysis of these submissions indicates that in all three of these sub-issue categories, operational impacts provided the majority of concerns. For example, operational traffic impacts were raised in 145 submissions (or 31 per cent of the total), while construction traffic was only raised 40 times (nine per cent of submissions). This trend was similar for parking impacts and property access impacts.

Of the submissions raising concerns with the proposal design and operations, the sub-issue category that generated the most issues was light rail services and trip duration (84 submissions, which equates to 27 per cent of issues raised for this key issue or 18 per cent of all submissions). This sub-issue category captured issues relating to light rail speeds, frequency, journey time, reliability and hours of operation.

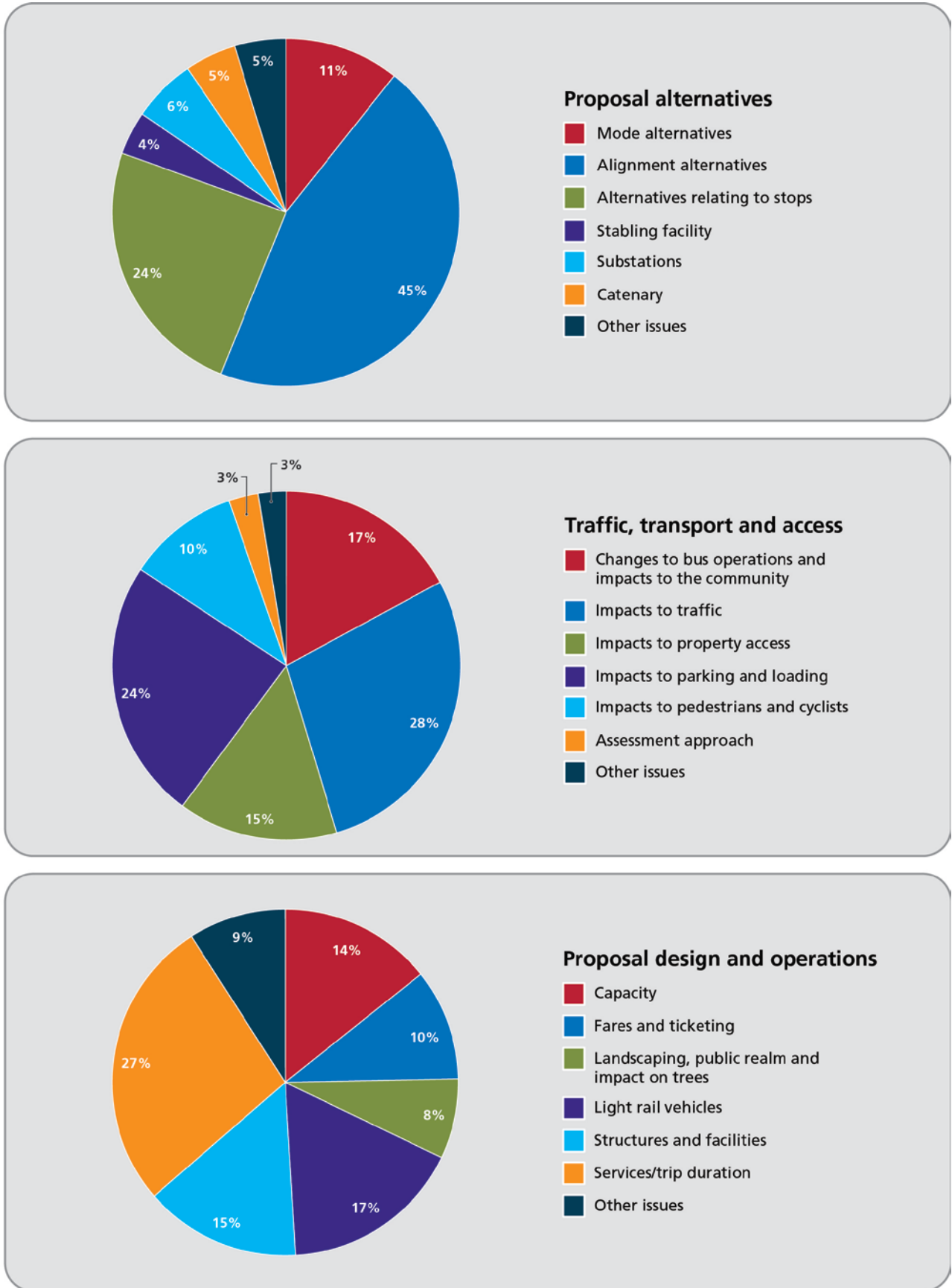


Figure 3.1 Breakdown of the top three most frequently raised key issues



## 4. Government agency and project partner submissions

Chapter 4 includes a high level summary of the submissions received from government agencies and project partners for the Central Business District (CBD) and South East Light Rail Project ('the CSELR proposal' or 'the CSELR'). Due to the length and complexity of several of these submissions, the full summaries and responses to issues raised are included in Appendix C.

A high level summary of the government agency submissions received are included in Table 4.1. Table 4.1 includes submissions from the City of Sydney and Randwick City Council, which are also project partners. Table 4.2 includes a high level summary of other project partner submissions (i.e. project partners that are not government agencies).

Table 4.1 Summary of government agency submissions

Agency	Key issues raised (for full summary and responses refer Appendix C)
City of Sydney  (submission number 462)	<ul style="list-style-type: none"> <li>▪ Maintenance of access to properties along the CSELR during construction and operation.</li> <li>▪ Mitigation of noise and construction disruption to residences and businesses along the alignment, in particular in Devonshire and Chalmers Streets, and near hotels in the city.</li> <li>▪ Resolution of public amenity concerns including provision of trees and mitigation of the loss of on-street parking.</li> <li>▪ High quality urban design outcomes for the City Centre and Surry Hills.</li> <li>▪ Preference for a tunnel under Moore Park rather than the viaduct option which would have unacceptable amenity impacts.</li> <li>▪ Provision of a new neighbourhood park at Olivia Gardens in Surry Hills.</li> <li>▪ The upgrade of Devonshire Street through the reconstruction of footpaths and provision of new lighting and trees.</li> <li>▪ Pedestrianisation of part of George Street and for this area to be free of overhead catenary wires.</li> <li>▪ Contractor's design team should consult with the City's staff during the development of detail designs for traffic management, public domain design and in-ground services from initial through to final phases.</li> <li>▪ Supports a number of design modifications at Olivia Gardens, Chalmers Street, Moore Park stop and Moore Park alignment.</li> <li>▪ Sustainability standards should be adopted as mandatory requirements.</li> <li>▪ Need for community engagement strategy during delivery and construction, including proactive community input.</li> </ul>

Agency	Key issues raised (for full summary and responses refer Appendix C)
<p>Randwick City Council (submission number 471)</p>	<ul style="list-style-type: none"> <li>▪ Objection to:                             <ul style="list-style-type: none"> <li>› location of Randwick interchange at High Cross Park</li> <li>› location and layout of Kingsford interchange</li> <li>› location of stabling facility</li> <li>› alignment on Wansey Road</li> <li>› loss of on-street parking on Anzac Parade, High Street, Wansey Road, Alison Road and within the Anzac Parade median island car park outside South Sydney Junior Rugby League Club</li> <li>› reduction in footpath width or capacity.</li> </ul> </li> <li>▪ Concerned about:                             <ul style="list-style-type: none"> <li>› impact of the project on traffic flows along alignment and on local roads</li> <li>› lack of certainty about changes to bus network</li> <li>› noise and vibration impacts on sensitive locations</li> <li>› ticket pricing.</li> </ul> </li> <li>▪ Supports further investigation of:                             <ul style="list-style-type: none"> <li>› alternative location of Randwick interchange at High Street near Prince of Wales Hospital</li> <li>› alternative alignment of the light rail route on Wansey Road into the Royal Randwick Racecourse land opposite</li> <li>› alternative solution for the Kingsford interchange located further south or an extension to Maroubra Junction</li> <li>› options to retain/provide parking to serve commercial and residential requirements</li> <li>› alternative light rail stabling location at south-eastern corner of the racecourse</li> <li>› options for retention of more significant trees</li> <li>› traffic modelling and intersection performance in the wider street network.</li> </ul> </li> <li>▪ Notes further information required for:                             <ul style="list-style-type: none"> <li>› impact on flooding and measures to avoid adverse flood impacts on surrounding areas/properties/structures/downstream receiving waters</li> <li>› impact on existing drainage, utilities services and infrastructure, and the future ability for servicing and augmentation</li> <li>› coordinating the public domain and landscape design with the light rail infrastructure</li> <li>› opportunities for undergrounding of power along Anzac Parade (at commercial centres)</li> <li>› potential economic impact on local commercial centres during construction and operation</li> <li>› design, visual and amenity impacts of buildings and structures (including light rail stabling facility, interchanges and substations)</li> <li>› impacts of future population demands, including coordination with Urban Activation Precinct investigations</li> <li>› ongoing stakeholder input and liaison into the formulation of any management plans</li> <li>› consultation through the future stages of the project.</li> </ul> </li> </ul>



Agency	Key issues raised (for full summary and responses refer Appendix C)
Department of Education and Communities (NSW)  (submission number 463)	<ul style="list-style-type: none"> <li>▪ Requests various school-specific concerns are addressed, including:               <ul style="list-style-type: none"> <li>▸ Cleveland Street Intensive High School, Bourke Street Public School, Sydney Distant Education Primary School, Randwick Girls High School, Randwick Boys High School, Rainbow Street Public School, Kensington Public School — where necessary, include new infrastructure in the project to maintain safe and efficient school access, including alternative on-street parking and pedestrian pathways/crossings.</li> <li>▸ Bourke Street Public School — clarify impacts on school and mitigation measures; requests school be identified as sensitive receptor; notes school evacuation procedures may need review; notes importance of maintaining access to Moore Park.</li> <li>▸ Sydney Boys and Sydney Girls High Schools — requests an overhead pedestrian safety bridge over Anzac Parade is included in the project; notes operational impacts are not assessed in enough detail; notes construction compound near the boys school will affect amenity; concerned about light rail capacity to accommodate all students.</li> <li>▸ Sydney Children’s Hospital School — requests EIS be updated to include the school as a sensitive receptor.</li> <li>▸ Kensington Public School — requests EIS be updated to include the school as a sensitive receptor; and further details provided on extent of amenity impacts.</li> </ul> </li> <li>▪ Proposes conditions of consent for issues of traffic safety monitoring and reporting, amenity impacts and the construction management plan.</li> </ul>
Environment Protection Authority (NSW)  (submission number 464)	<ul style="list-style-type: none"> <li>▪ Recommends a number of conditions, covering issues of operational and construction noise and vibration, water pollution, land contamination, waste management, hazards and risk, community information, consultation and involvement, construction noise and vibration, air quality, soil, water quality and hydrology, and the construction environmental management plan.</li> <li>▪ Requests opportunity to review the draft conditions of consent prior to finalisation.</li> <li>▪ The project may require a licence from EPA to commence construction and operation once development project approval is granted.</li> <li>▪ Requests a copy of submissions received to assist in reviewing the draft conditions of consent and performing the licensing function.</li> <li>▪ Disposal of groundwater generated during construction of the Moore Park tunnel must not cause pollution of waters under Section 120 of the <i>Protection of the Environment Operations Act 1997</i> (PoEO Act).</li> <li>▪ Extent of contamination has not been fully investigated so it is unclear what remediation is required and the amount of contaminated material that will need to be disposed of.</li> <li>▪ A Phase 2 Environmental Site Assessment of any suspected contaminated areas and remediation of any contaminated areas along the route of the proposal should be undertaken before construction commences.</li> <li>▪ Waste generated from construction should be classified according to the EPA’s <i>Waste Classification Guidelines</i> (DECC 2009) and diverted from landfill by being reused where possible.</li> <li>▪ Construction compounds should be constructed and operated with consideration of the potential noise impacts on surrounding noise sensitive receivers.</li> <li>▪ If existing light rail vehicles are to be used on the new system, any noise and vibration impacts should be thoroughly assessed against relevant criteria.</li> <li>▪ The noise and vibration impact assessment predicts changes to road traffic noise but does not compare these to the increase in light rail noise.</li> <li>▪ Suitable compliance assessment conditions should be included that require additional noise mitigation measures if the assessment identifies impacts above predicted impacts.</li> <li>▪ Extensive consultation with the community will be essential during construction to inform the community of upcoming works and the expected impacts on their amenity.</li> </ul>

Agency	Key issues raised (for full summary and responses refer Appendix C)
<p>Health Infrastructure (NSW)</p> <p>(submission number 465)</p>	<ul style="list-style-type: none"> <li>▪ Randwick Health Precinct (RHP) – future growth: <ul style="list-style-type: none"> <li>› Concerned that the proposal has a limited capacity to serve future travel demand.</li> <li>› Access to the RHP for disabled, the elderly and children should be a high priority consideration.</li> </ul> </li> <li>▪ RHP – stop locations: <ul style="list-style-type: none"> <li>› Critically concerned about lack of a stop or terminus in High Street.</li> <li>› Does not support the terminus location in High Cross Park.</li> </ul> </li> <li>▪ RHP – operation of High Street: <ul style="list-style-type: none"> <li>› Current proposal would require patients, staff, visitors and students to negotiate Avoca and Belmore roads to access the hospitals.</li> <li>› Relocating the taxi rank away from the hospital frontage creates significant accessibility issues for some user groups.</li> <li>› Critical hospital functions are served by the RHP's frontage with High Street.</li> <li>› Signalisation of High Street and Clara Street is not supported.</li> <li>› Signalisation of High Street and Hospital Drive is not supported.</li> <li>› Consolidation of the entrances to Prince of Wales Hospital to a single four-way signalised access with Clara Street will create significant impacts on the operation of the pick-up/drop off facility.</li> </ul> </li> <li>▪ RHP – traffic management and access: <ul style="list-style-type: none"> <li>› Does not support traffic management principle for consolidation of right-turn movements across the alignment with these only permitted at signalised intersections.</li> <li>› Requests alternative options are developed to address operational impact along High Street on Prince of Wales pick-up/drop-off, Sydney Children's Hospital emergency pickup/drop-off and ambulance access and parking bays.</li> </ul> </li> <li>▪ RHP- noise and vibration: <ul style="list-style-type: none"> <li>› Impact of vibration from light rail construction and operation on hospital buildings has not been adequately assessed.</li> <li>› No allowance has been made for the future operations of the approved Prince of Wales Nelune Comprehensive Cancer and Advanced Treatment Centre (NCCATC).</li> <li>› Linear accelerators located in underground bunkers (corner of High and Avoca streets) are highly sensitive to vibration.</li> <li>› Requires a detailed vibration emission study with specific assessment on the NCCATC linear accelerators, MRI, CT scanner and orthovoltage equipment.</li> <li>› Requests dilapidation reports and baseline vibration surveys on all hospital buildings within the vicinity of the proposal (especially RHP's heritage buildings).</li> <li>› Health Infrastructure is investigating potential issues with regard to Electromagnetic Fields associated with MRI equipment and impacts from the proposal.</li> <li>› Undertakings in the EIS to stage works and/or limit some activities to weekends or night works will not address concerns regarding impacts on health facilities that operate 24/7.</li> </ul> </li> <li>▪ RHP – construction impacts: <ul style="list-style-type: none"> <li>› Construction footprint shown in EIS would make hospital operations 'impossible' during construction phase.</li> <li>› Use of High Street as a construction haulage route will impact on hospital operations and hospital construction activities.</li> <li>› Requests further consultation on extent, duration and severity of construction on High Street.</li> <li>› Construction access to the NCCATC construction site via High Street is required to be maintained until late 2016.</li> </ul> </li> </ul>



Agency	Key issues raised (for full summary and responses refer Appendix C)
	<ul style="list-style-type: none"> <li>▪ Langton Centre, Surry Hills:               <ul style="list-style-type: none"> <li>› Proposed route dissects the Langton Centre, creating a separation between its clinical area and the car park – this option is not supported.</li> <li>› Requests that Health Infrastructure be consulted in more detail regarding pedestrian access, movement and safety in the vicinity of Langton Centre.</li> </ul> </li> <li>▪ Communication:               <ul style="list-style-type: none"> <li>› The public, ambulance and other emergency services will need to be made aware of alternative access arrangements to the RHP and the Langton Centre.</li> <li>› Requests opportunity to be consulted on and provide input to the proposed communication strategy.</li> </ul> </li> </ul>
Heritage Council of NSW  (submission number 466)	<ul style="list-style-type: none"> <li>▪ Generally supports findings of heritage assessment in EIS.</li> <li>▪ Advises that expert heritage advice is retained throughout the project to help ensure heritage impacts are avoided or minimised, and managed according to current best practice.</li> <li>▪ Recommends alternative designs are prepared to mitigate the visual and material impacts of the Moore Park stop and the project in the immediate vicinity of the Royal Randwick racecourse.</li> <li>▪ Suggests alternative designs are prepared to eliminate the need for removal of the row of exceptional significant trees within the Royal Randwick Racecourse site along Alison and Wansey Roads, in consultation with the NSW Heritage Division.</li> <li>▪ Recommends/suggested conditions of approval for light rail stop detailed design/construction, historical archaeology and heritage interpretation.</li> </ul>
Leichhardt City Council  (submission number 467)	<ul style="list-style-type: none"> <li>▪ Rozelle maintenance depot:               <ul style="list-style-type: none"> <li>› Requests follow up parking, traffic and noise studies are conducted to reduce any cumulative impact the facility may have on the locality.</li> <li>› Approval for project should require: early morning start up activities to occur within the proposed maintenance buildings with all doors closed, to minimise any adverse impacts of noise in the locality; and conditions relating to the lighting of the maintenance facility and stabling yards.</li> <li>› Any surface development of the site should be subject to a comprehensive community consultation process that actively involves all stakeholders, including Leichhardt Council and the local community.</li> </ul> </li> <li>▪ Requests details regarding the likely employment to be generated by the project and its contribution to the local economy are provided to Council.</li> </ul>
Northern Sydney Local Health District (NSW)  (submission number 468)	<ul style="list-style-type: none"> <li>▪ Proposal is likely to reduce car dependence and increase daily physical activity and social interaction, leading to better health.</li> <li>▪ Recommends additional measures to improve integration between bicycles and light rail, including:               <ul style="list-style-type: none"> <li>› Bicycle lanes are maintained and extended to link with the network.</li> <li>› Convenient bicycle storage is available on the light rail carriages.</li> <li>› Bicycle parking is provided at transport interchanges including light rail and bus stops.</li> </ul> </li> </ul>

Agency	Key issues raised (for full summary and responses refer Appendix C)
<p>NSW Small Business Commissioner</p> <p>(submission number 469)</p>	<ul style="list-style-type: none"> <li>▪ Traffic and access impacts:                             <ul style="list-style-type: none"> <li>› Concerned that loading zones which are designed to service local businesses will become all day parking spots for construction workers.</li> <li>› Recommended that Transport for NSW clarifies where funding for alternative parking arrangements will be sourced.</li> <li>› Recommended that Transport for NSW liaises with RMS, which is currently working with local councils on developing parking strategies as part of the Sydney Clearways Strategy.</li> <li>› Recommended that Transport for NSW adopts strategies for managing parking capacity which accommodate the needs of small businesses.</li> </ul> </li> <li>▪ Noise and vibration impacts:                             <ul style="list-style-type: none"> <li>› Recommended that small businesses are consulted in relation to potential disturbances caused by noise and vibration.</li> </ul> </li> <li>▪ Planted trees and landscape impacts:                             <ul style="list-style-type: none"> <li>› Recommended that Transport for NSW consults with local communities, businesses and local councils as part of the process for developing urban design strategies and plans for improvements to public domain spaces.</li> </ul> </li> <li>▪ Socio-economic impacts:                             <ul style="list-style-type: none"> <li>› Recommended that Stakeholder Managers within Transport for NSW within each precinct play an active role in identifying those businesses which are financially vulnerable and refers them to business advisory and support programs, such as the Small Biz Connect program offered through the Office of the Small Business Commissioner (OSBC).</li> </ul> </li> <li>▪ Recommended consultation activities including that:                             <ul style="list-style-type: none"> <li>› Small businesses are consulted in relation to potential changes to on-street parking and loading zones.</li> <li>› Small businesses are given adequate notice of changes in pedestrian, bus and private vehicle access and when diversions are put in place during construction.</li> <li>› Consultation with small businesses should include a range of channels including visits to business premises, flyers, newspaper notices and online.</li> <li>› Engagement with the OSBC should take place well in advance of the construction phase.</li> <li>› Engagement with the NSW Police and other emergency services should take place in advance of the construction phase.</li> <li>› Consultation with the relevant local councils and businesses should be undertaken well in advance of the construction phase.</li> <li>› Transport for NSW should consult with local businesses as early as possible and ensure small businesses are consulted with, and involved in, the development of the construction environmental management plan (CEMP), access management plans and business landowner and engagement management plan.</li> </ul> </li> </ul>
<p>NSW Office of Water</p> <p>(submission number 470)</p>	<ul style="list-style-type: none"> <li>▪ Requests a meeting with Transport for NSW and P&amp;I regarding groundwater related issues with the proposal in 'early 2014'.</li> <li>▪ Considers a more detailed groundwater assessment is appropriate for the likely scale of dewatering.</li> </ul>





Agency	Key issues raised (for full summary and responses refer Appendix C)
Roads and Maritime Services (NSW)  (submission number 472)	<ul style="list-style-type: none"> <li>▪ RMS is continuing to collaborate with Transport for NSW, councils and other project partners to confirm the design and operational suitability of the proposal across the network.</li> <li>▪ To achieve successful and integrated operation, various traffic, transport and access design issues need to be considered along the alignment (refer Appendix C for full list).</li> <li>▪ Notes various measures are likely to be required to managed redistributed traffic as part of the SCCAS.</li> <li>▪ For construction phase:               <ul style="list-style-type: none"> <li>› Notes requirements for traffic management plans, road occupancy licences, incident response resources and an emergency response plan.</li> <li>› Comprehensive consultation with Emergency Services is required to ensure an acceptable arrangement is achieved during closure of sections of George Street.</li> <li>› During excavation of the tunnel under Anzac Parade the road surface must be monitored continuously to ensure that settlement issue do not develop.</li> <li>› Concurrent works on Anzac Parade and Alison Road requiring capacity reductions in peak periods would not be able to be considered as they are alternative routes for each other.</li> <li>› Tidal flow arrangements on Anzac Parade during the construction phase are not likely to be acceptable</li> </ul> </li> </ul>
Sydney Local Health District (NSW)  (submission number 473)	<ul style="list-style-type: none"> <li>▪ Recommends a Health Impact Assessment is undertaken.</li> <li>▪ Emphasises importance of bicycle access on light rail and bicycle parking at interchanges.</li> <li>▪ Suggests the plan considers the possible negative impacts and develops measures to minimise increases in noise levels, loss of wetlands, adverse impacts on historic sites, gentrification and the risk of displacement of vulnerable persons in the community.</li> <li>▪ Emphasises need to address injury and accident prevention.</li> </ul>
Sydney Water  (submission number 474)	<ul style="list-style-type: none"> <li>▪ The planning approval needs to include any Sydney Water asset adjustment/protection works associated with the project, including any works outside the documented corridor.</li> <li>▪ Does not agree with the hierarchy of mitigation measures listed in the document for utilities and services — The strategy should prioritise treatment of water, stormwater and sewer assets in a manner which will minimise the impact on the ongoing inspection and condition assessment, renewal, repair and maintenance and decommissioning those assets.</li> <li>▪ Impacts on Sydney Water utilities will be assessed and approved on a case by case basis during the detail design stage of the project.</li> <li>▪ All adjustment/protection, or building adjacent to asset or Section 73 applications must be submitted through standard Sydney Water processes.</li> <li>▪ Notes various Sydney Water assets are affected by works at the Rozelle maintenance depot, Randwick stabling facility and CSELR stops.</li> <li>▪ CSELR tree planting proposals would affect Sydney Water's water mains.</li> <li>▪ Private water, sewer and stormwater assets (planned or existing) would be affected along the alignment. This is not discussed in the impact on utilities section.</li> <li>▪ Sydney water requires 24 hours/7 day access for emergency operational repairs to all assets within the corridor.</li> <li>▪ A contingency plan is required to be developed in consultation with Sydney Water – to allow Sydney Water to undertake emergency or required maintenance work.</li> <li>▪ Utilities impact discussion does not mention Sydney Water operational impact on the CSELR, emergency and planned maintenance requirements during construction and operation.</li> </ul>

Agency	Key issues raised (for full summary and responses refer Appendix C)
	<ul style="list-style-type: none"> <li>▪ Ongoing consultation with Sydney Water will be necessary to ensure that Sydney Water has adequate access, on a planned and unplanned basis, to its assets for those purposes.</li> <li>▪ The CSELR design should enable access by Sydney Water to its assets in a manner which avoids, where possible, or minimises disruption to Sydney Water and the CSELR.</li> <li>▪ Hazard and risks assessment does not acknowledge various risks.</li> <li>▪ Gantry support poles will have a major impact on water mains located in the footway.</li> <li>▪ Any proposed development must comply with Sydney Water policies and guidelines for building over or adjacent to stormwater assets and 'Asset Creation Requirements' for connection.</li> <li>▪ Notes the EIS must reference or mention various flood study requirements, a Water Sensitive Urban Design and MUSIC model study, a Stormwater Impact Report, and Stormwater Asset Condition Reports.</li> <li>▪ Sydney Water's Land and Waterways should be consulted regarding any development that may impact a stormwater system.</li> <li>▪ Sydney Water has assets which may be impacted by the works within the construction sites and compounds.</li> <li>▪ The impact of electrolysis on Sydney Water assets will need to be reviewed.</li> <li>▪ In regards to adjustment or protection of Sydney Water assets, funding will not apply, and is the responsibility of the proponent.</li> </ul>

Table 4.2 Summary of other project partner submissions

Agency	Key issues raised (for full summary and responses refer Appendix C)
<p>Centennial Park and Moore Park Trust (CPMPT)</p> <p>(submission number 234)</p>	<ul style="list-style-type: none"> <li>▪ Overarching principles:               <ul style="list-style-type: none"> <li>› Visual, environmental, ecological and amenity impacts on park and reduction in parkland area must be absolute minimum required for construction and operation.</li> <li>› Impacts on CPMPT revenue stream must be replaced under the same terms.</li> <li>› Construction or operation impact on the parklands and its playing fields must be reinstated or replaced on a like for like basis in a manner and location as nominated or agreed by CPMPT.</li> </ul> </li> <li>▪ Moore Park West:               <ul style="list-style-type: none"> <li>› Preference for tunnel option over a viaduct.</li> <li>› Need to clarify and agree portal entry and exit points.</li> <li>› Depth and quality of the tunnel covering (earth material).</li> <li>› Amenities block needs replacement during construction.</li> <li>› Maintain safe access to fields during construction.</li> <li>› Provide temporary facilities or replace revenue for loss of any wickets/fields.</li> <li>› Protect and/or reinstate irrigation system.</li> <li>› Maintain access to and upkeep of Korean War memorial.</li> </ul> </li> <li>Moore Park East:               <ul style="list-style-type: none"> <li>› Significant impact on Kippax Lake field is unacceptable.</li> <li>› Support moving Moore Park stop further south.</li> <li>› Suggests collocating CSELR with busway on Anzac Parade to minimise impact on Tramway Oval and parklands.</li> <li>› Any movement of Tramway Oval would have impacts and would need to be agreed by CPMPT and Sydney Swans.</li> <li>› Proximity of light rail and use of bus loop to AFL fields may affect player safety.</li> </ul> </li> </ul>



Agency	Key issues raised (for full summary and responses refer Appendix C)
	<ul style="list-style-type: none"> <li>▶ Preference for below ground substation at Moore Park or integration with new amenities building near tennis centre.</li> <li>▶ Contamination containment measures on Showground Field may be affected.</li> <li>▶ Any car park loss n Showground Field must be minimised and revenue replaced.</li> <li>▶ Heritage sign at Lang Road and Anzac Parade corner needs protection.</li> <li>▪ Moore Park stop: <ul style="list-style-type: none"> <li>▶ Two storey design would have significant visual impact. Support single-storey design.</li> <li>▶ Support relocation of stop south toward Lang Road to minimise impact on Tramway Oval.</li> <li>▶ Need to integrate safe management of special event crowds into project design.</li> <li>▶ Proposed turnback will affect future redevelopment plans for Showground Oval</li> <li>▶ Bicycle parking facilities should be integrated with existing/proposed Parkland facilities</li> </ul> </li> <li>▪ Robertson Road fields – concerned proposal will/may impact wickets 13 and 14, diamonds 8 and 9, amenities block, underground irrigation system, other utilities.</li> <li>▪ Parklands Tennis Centre – concerned proposal will restrict vehicle entry (during construction), affect function of existing building, and affect parking.</li> <li>▪ Robertson Roads kiosk/change room – facility must be replaced at agreement of CPMP.</li> <li>▪ Federation Way access must be retained.</li> <li>▪ Pedestrian crossings near Royal Randwick racecourse stop should be coordinated with Centennial Park Master Plan.</li> <li>▪ Concern noted about various construction impacts – on playing fields, general amenity, traffic and access (including parking), environment, CPMP assets, park events.</li> <li>▪ Request for clarification on CPMP land affected.</li> <li>▪ Landscaping and public domain works – support for 8:1 tree replacement; species and replacement need to be agreed; process needed for managing future loss of trees after construction; need for works to be in accordance with CPMP requirements; concern about overhead catenary.</li> </ul>
<p>Australian Turf Club (ATC)</p> <p>(submission number 397)</p>	<p>Notes key areas requiring further design and consideration:</p> <ul style="list-style-type: none"> <li>▪ Confirmation of the final alignment.</li> <li>▪ Consideration of the sensitive and frequent nature of daily equine movements.</li> <li>▪ Safety concerns relating to the potential spooking of horses during training and racing, during construction and operation.</li> <li>▪ Design and location of proposed Randwick stabling facility, and potential impacts including loss of buildings, access, visual and amenity issues.</li> <li>▪ Loss of access (or significantly restricted access functionality) to Royal Randwick racecourse vehicle and pedestrian gates, during construction and operation.</li> <li>▪ Suitability and adequacy of current Royal Randwick racecourse stop location and layout, in terms of safety and functionality to best support Royal Randwick racecourse activities/events.</li> <li>▪ Proposed relocation strategy or design of functioning buildings, infrastructure, services, structures and car parks, and how these might be replaced.</li> <li>▪ Impact on approved and proposed developments including equine stabling facility, hotel, standing event consent and P&amp;I draft Urban Activation Precinct.</li> <li>▪ Noise and vibration impacts on sensitive locations within Royal Randwick racecourse, including administration/commercial buildings, equine stables, residential accommodation and race tracks.</li> </ul>

Agency	Key issues raised (for full summary and responses refer Appendix C)
	<ul style="list-style-type: none"> <li>▪ Acoustic analysis of the impact of loss of trees surrounding Royal Randwick racecourse and the potential impact on surrounding residents during events.</li> <li>▪ Urban design details and fabric including design and materiality of stops, paving material, tree replacement and public domain finished and fixtures.</li> <li>▪ Impacts to visual amenity adjacent to the racecourse on Alison Road.</li> <li>▪ Need for detailed analysis of construction impacts on occupants of buildings within close proximity of construction activities including the Upper High Street stabling precinct and the ATC administration building.</li> <li>▪ Detailed strategy to address any loss of heritage fabric.</li> <li>▪ Insufficient design and performance detail for intersections and carriageways for all roads surrounding the racecourse.</li> <li>▪ Insufficient detail on flood impact assessment or mitigation measures.</li> <li>▪ Impact on utilities services and infrastructure supporting Royal Randwick racecourse, and the future ability of services to augment Royal Randwick racecourse.</li> <li>▪ Details on the design, visual, amenity and landscaping interface issues between Royal Randwick racecourse and the stabling facility and other areas.</li> <li>▪ Analysis on whether the project is designed to cater for the future impacts of the Royal Randwick racecourse master plan, population growth demands and coordination with Urban Activation Precinct forecasts.</li> <li>▪ Analysis on whether the design caters for growth in events proposed for Royal Randwick racecourse as a function of its application for a Standing Events Consent.</li> <li>▪ Seeks comfort that the issues above are adequately addressed either through approval design documentation or Consent Conditions.</li> </ul>
<p>University of NSW (UNSW)</p> <p>(submission number 459)</p>	<ul style="list-style-type: none"> <li>▪ UNSW’s key objectives are broadly met by the scheme. However, alternative schemes are suggested for the UNSW Anzac Parade and UNSW High Street stops in order to achieve a superior result in terms of staff and student safety.</li> <li>▪ Construction and operation-related concerns noted in submission include: <ul style="list-style-type: none"> <li>▸ UNSW campus must remain accessible during construction for retail and other delivery vehicles, construction vehicles for sites on the campus, staff and student parking, cyclists and pedestrians.</li> <li>▸ Concerned at the loss of trees along Anzac Parade, Wansey Road and probably High Street and the consequential adverse impact on landscape amenity and historical significance of the district and UNSW campus.</li> <li>▸ Noise, vibration and electromagnetic interference during construction and operation have potential to affect a range of sensitive uses at UNSW, including on-site student accommodation, sensitive equipment, NIDA and exams.</li> <li>▸ EIS risk assessment does not identify that UNSW is the service utility provider, owner and maintainer for the UNSW Kensington Campus and as a result has not been consulted on these issues.</li> <li>▸ Various NSW utilities and infrastructure are affected, including existing underground groundwater and borewater services, UNSW-owned electricity, gas, water supply and sewer assets.</li> <li>▸ Existing local stormwater flooding along Anzac Parade from High Street to Day Street adjacent to UNSW is not addressed. The UNSW overland stormwater flood path drains onto Anzac Parade across the proposed construction compound and the UNSW Anzac Parade stop.</li> <li>▸ Requests further information on proposed treatment of range of communications carrier services that enter UNSW via Anzac Parade.</li> <li>▸ Need for future proofing in regard to future expansion and servicing needs of UNSW.</li> </ul> </li> </ul>



Agency	Key issues raised (for full summary and responses refer Appendix C)
	<ul style="list-style-type: none"> <li>▶ Construction and operation impacts on UNSW operations, including student and staff access, operations and delivery access, UNSW construction program, traffic operations, and journey times.</li> <li>▶ Bus services – need for mitigation measures to offset disruption to staff and students travelling from Central Station during construction.</li> <li>▶ Requests that construction works be timetabled to coincide with major Christmas break (outside exam periods).</li> <li>▶ Requests that UNSW be defined as a business for purpose of the Business and Landowner Engagement and Management Plan as well as a Business Management and Assistance Strategy.</li> <li>▶ Does not support location of construction compound on campus due to range of impacts.</li> <li>▪ Seeks preparation and implementation of stakeholder liaison protocol and sign-off mechanism.</li> </ul>





## 5. Response to community submissions

This chapter details the issues raised in community submissions received during the exhibition of the Environmental Impact Statement (EIS) for the Sydney CBD and South East Light Rail Project ('the CSELR proposal' or 'the CSELR'), and Transport for NSW's response to these issues.

The order of the issues in this chapter is designed to reflect the order of the EIS (where relevant), and does not reflect the number of times a particular issue was raised. For each issue (or sub-issue) raised, a summary of the issue is presented, followed by a list of the relevant submission numbers and then Transport for NSW's response. Where specific issues were raised that required a specific response, the individual issues and responses are presented in a table format.

### 5.1 Planning and statutory requirements

#### 5.1.1 EIS process and documentation

##### Summary of issues raised

A range of issues were raised in relation to the EIS process and documentation, as detailed below.

##### *Precinct approach*

It was noted that there was support for the precinct by precinct approach in the EIS.

##### *Concern regarding EIS comment period*

A series of submissions raised concerns with the length of time that was provided to comment on the EIS, noting that it was too short to review such a large document. It was requested that the consultation period be extended for at least one month to cover the Christmas and New Year period.

It was also noted that some affected residents (such as those within the Northcott public housing estate) do not have readily available access to computers, and therefore were unable to make a submission. It was raised that hard copies located in government offices were insufficient.

It was also requested that a public response to another submission (submission number 87) be made.

### *Navigation of the EIS*

Concern was raised regarding the ability for some respondents to navigate through the EIS to find relevant sections of information and that the EIS documentation was repetitive. It was noted that the EIS should have included a comprehensive index to assist.

### *Concern regarding detail and transparency of the EIS process*

Concern was raised regarding the lack of detail in some sections of the EIS, including the EIS overview. Additionally, it was noted that the EIS makes unsubstantiated claims and raises unresolved issues. Concerns regarding specific details included:

- Concerns that costs are not detailed in the EIS.
- The EIS does not show cross-sections of the George Street pedestrian zone.
- The assessment of Alison Road and its intersections does not reflect the current operating conditions experienced by drivers day to day during the morning peak.
- The EIS ignores major heritage and environmental impacts.
- Concern that the document does not consider practical implications.
- Concern that operational capacity has been overstated in the EIS.
- Comments that numerous unsuccessful requests have been made to obtain assumptions used to calculate journey times. Submits that EIS should contain detailed assumptions and calculations to justify published journey times.
- Submits that the EIS has not calculated and assessed the impact of the proposal on weekly vehicle journeys, noting research showing that journey time impacts in the Kensington/ Kingsford Precinct will be approximately 12,000 per week.
- Submits that the EIS does not take into account the student population attending local private schools in the Randwick local government area (LGA), and therefore does not account for their travel needs and safety needs.
- Concern about lack of detail in the EIS around the Anzac Parade/Alison Road and Robertson Road intersection.

Concerns were also raised by some respondents regarding the lack of transparency around the EIS process.

### *General concerns regarding the EIS process*

A range of other general concerns regarding the EIS and the planning approvals process were also raised including:

- The behaviour of Transport for NSW and City of Sydney should be investigated by an independent authority like the Independent Commission Against Corruption (ICAC).
- Concerns about process of developing the EIS.
- Concern some commuters have not been considered such as Coogee Beach tourists.





- Land use planning should precede transport planning.
- Concern regarding the overall outcomes presented in the EIS, noting that the EIS fails to 'make a case' that the proposal will benefit the Surry Hills Precinct, and that the analysis in the EIS overstates environmental benefits and minimises adverse impacts.

### *Errors in the EIS*

A series of submissions raised concerns with inconsistencies and errors within the information presented in the EIS document. Concern was raised that the incorrect figures will impede people's ability to assess the proposal and make relevant submissions about real impacts. It was also raised that quality control was insufficient, and therefore the EIS is in breach of legislative requirements. The inconsistencies and errors identified in the submissions included:

- The residential property at 242 Devonshire Street, with a driveway onto Devonshire Street, is not identified in Figure 13.2 of the EIS (Volume 1B). Conversely, the figure shows a business having access from Devonshire Street (corner Devonshire and Marlborough streets) that it does not have.
- Figure 13.2 of the EIS (Volume 1B) shows St. Patricks Business College, which is no longer at this location. It should read St. Vincent's Hospital Children's Centre.
- Figure 13.7 and Figure 13.11 of the EIS (Volume 1B) do not identify the residence at 242 Devonshire Street. In addition, on Figure 13.7 of the EIS (Volume 1B) the properties in Marlborough Street (left from Devonshire Street) have not been separately identified as requiring access from Devonshire Street during the street closure.
- Information contained in Technical Paper 2 of the EIS (Volume 2), Figure 3-11 (2021 morning peak CSELR boardings and mode of access by light rail stop) seems to be incorrect for Surry Hills.
- Notes inconsistency between numbers presented in Figure 3-17 of Technical Paper 2 (Volume 2 of the EIS) and the accompanying text on p.121; in that demand for 17,720 passengers could not be cleared in 55 minutes with a both direction capacity of 14,175 passengers/hour.
- The EIS is contradictory with respect to the closure of the pedestrian crossing at the Strand Arcade.
- The EIS contains an error regarding the UNSW student population. The UNSW current student figure is 50,000 with a target of 90,000, as opposed to 37,000/50,000 listed in the EIS.

### **Submission number(s)**

35, 156, 166, 220, 242, 271, 280, 291, 332, 334, 338, 347, 350, 371, 386, 396, 403, 407, 410, 414, 435, 447, 448, 455, 477, 478

## Response

Support given to the precinct approach adopted in the EIS is noted.

### *Concern regarding EIS comment period*

NSW Planning and Infrastructure (P&I) is responsible for setting the required exhibition timeframes for an EIS. Under clause 115Z(3) of the *Environmental Planning and Assessment Act* (EP&A Act), the Director-General of P&I must make an environmental impact statement publicly available for at least the minimum exhibition period (not less than 30 days). The EIS was on exhibition between the 16 November 2013 and 31 December 2013, meeting the required exhibition timeframe.

Whilst electronic copies of the EIS and supporting technical papers were available on the P&I and Transport for NSW websites, hard copies of the EIS were also made available at 16 display locations including various government agencies, local councils, local libraries and other community facilities (such as Prince of Wales Hospital, UNSW, and Northcott Community Centre) throughout the exhibition period. These locations are identified in section 2.2.1 of this Submissions Report. Written submissions posted to P&I were accepted as part of the EIS exhibition process. These details were provided in the executive summary of the EIS as part of 'How to make a submission on the CSELR proposal'. A series of community information sessions were also available for interested people to view and discuss the proposal and the EIS.

With respect to the request for a public response another submission, responses to all issues raised in submissions received as part of the CSELR proposal EIS exhibition are addressed in this Submissions Report.

### *Navigation of the EIS*

Whilst it is acknowledged that the EIS prepared for the CSELR proposal was extensive, it is considered that the structure of the document was appropriate to guide people throughout each of the components of the proposal and the environmental assessment. The detailed table of contents and document structure maps (included at the beginning of each volume) were considered to be sufficient to assist respondents to locate specific information within the EIS.

Given the nature of the various impacts across the alignment of the proposal, the precinct-based approach to the EIS was considered to be the optimal approach to providing an appropriate level of detail for the potential environmental impacts. Whilst repeating some issues, this method allowed most respondents to easily identify the issues that would directly impact on them, as it was considered that most potential impacts would occur at a local/precinct level.

### *Concern regarding detail and transparency of the EIS process*

Concern was raised in regard to the lack of detail in the EIS overview document. The purpose of this document was to provide an overview of the CSELR proposal and detailed information. For comprehensive information about the proposal, potential impacts and mitigation measures, the EIS should be referred to.



A range of technical studies were also undertaken as part of the assessment of the proposal. These were contained in Volumes 2 to 6 of the EIS. Each of these technical papers provided a high level of detail and impact assessment of the proposal on issues such as traffic and transport, heritage, socio-economic, air quality and greenhouse gases, visual and landscape, and noise and vibration. These studies used up to date information (as current as was available at the time of preparation) and included an assessment of the practical implications of the proposal on the existing environment.

Whilst no specific cross-section of the George Street pedestrian zone was provided in the EIS, it is considered that the elevations provided for the Wynyard stop, Queen Victoria Building stop and the Town Hall stop, which are located within the pedestrianised zone, provide a sufficient indicative description of this proposed space.

Whilst concern was raised regarding the lack of detail and potentially unresolved issues, the level of assessment undertaken is considered appropriate given the level of design detail on which the EIS was prepared (i.e. definition design). Furthermore, the EIS was accepted by P&I as adequate for exhibition. As noted in Figure 4.2 of the EIS, and captured in the recommended mitigation measures, detail design development and ongoing consultation with relevant stakeholders, project partners and the community would be undertaken through a series of Reference Groups. Further details are provided in section 2.4 of this Submissions Report

#### *General concerns regarding the EIS process*

The EIS has been completed by experienced professionals in accordance with all relevant environmental and planning legislation and other relevant procedures and guidelines required by government agencies. These requirements, and how the EIS has been prepared in accordance with the requirements, were detailed in section 1.7 and Appendix D of the EIS (Volume 1A and Volume 1C respectively).

Throughout the consultation process, community expectations and concerns have been addressed in proposal planning and design to the greatest extent practicable. Ultimately, the selection of the preferred option took into account existing and proposed land use planning and transport needs, in addition to other environmental impacts and engineering and cost constraints.

Throughout the development of the EIS, all potentially impacted receivers were considered. Whilst it is acknowledged that the proposal would result in some changes to the existing transport system within the Randwick area, it is not considered that the proposal would result in a substantial impact on Coogee Beach tourists, other than to provide them with an additional transport option to access the South East of Sydney from the CBD.

Whilst all efforts have been made to address the concerns of all respondents, it is recognised that, despite the consultation undertaken, there are still people who oppose the proposal and the outcomes of the EIS assessment.

#### *Errors in the EIS*

Prior to public exhibition of the EIS, a preliminary assessment of document adequacy was completed by P&I and various other government agencies.

Whilst all efforts were made during the preparation of the EIS to provide accurate and consistent information throughout the report and technical papers, some inconsistencies have been raised throughout the submissions process. A number of these inconsistencies and errors have been addressed in section 7.10 of this Submissions Report. The inconsistencies and errors are considered to be minor in nature and Transport for NSW does not consider that they significantly impede the ability to assess the impacts of the proposal.

## 5.1.2 Planning approval process

### Summary of issues raised

Concern was raised regarding about the recent amendment to the Infrastructure SEPP which related to light rail and the wide range of development or works that are prescribed as exempt development under this state environmental planning policy (SEPP). The same submission requested that Transport for NSW undertakes appropriate impact assessment for any preliminary works that may now be undertaken as exempt development.

### Submission number

125

### Response

Transport for NSW has appropriate systems and processes in place to ensure that works are undertaken in an environmentally responsible manner, having regard to the provisions of the EP&A Act and Environmental Planning Instruments such as *State Environmental Planning Policy (Infrastructure) 2007*. The range of works constituting exempt development are generally minor in nature and the environmental inputs can be addressed by standard environmental management measures.

The preliminary/enabling works proposed as part of the CSELR are outlined and assessed in the EIS. Investigation works to inform the delivery of the preliminary/enabling works outlined in the EIS have been assessed under the provisions of Part 5 of the EP&A Act in accordance with Transport for NSW's processes.

## 5.2 Community and stakeholder consultation

### 5.2.1 Requests for further consultation

#### Summary of issues raised

A series of general requests for further consultation about the CSELR proposal were made in submissions. A summary of the specific requests is provided below:

- Request for a meeting with proposal representatives to discuss the submitter's concerns.
- Further, genuine, consultation with the Surry Hills community will help a better outcome be reached for residents and businesses in the short and long-term.
- Request for greater community consultation about parking on Alison Road.



- Express of support for further community consultation, in general. The experience of the proposal will depend on the level of communication between the stakeholders.
- Request that communication between Sydney Buses, Light Rail and local councils is made more transparent to clarify vested interests.
- Consultation and agreement with property owners should be sought regarding any controls that may have an impact on their operations.
- The Kingsford Chamber of Commerce welcomes any opportunity to meet with the government to discuss concerns.
- Recommendation for further investigation and ongoing, meaningful consultation with affected councils and local residents.
- Request that once the CSELR proposal's impacts are quantified, government consults with AMP Capital to ensure that the long-term operation and functionality of the NAB building, and its curtilage, is preserved or appropriately altered to ensure the safety of its users.
- Request for stakeholders affected by impacts to be informed about changes to conditions and of alternatives and mitigations.
- Request for ongoing consultation with CSELR proposal team, relevant affected councils and the community who represent interests of their residents. Issues highlighted specifically included proposal impacts, traffic management, and mitigation, and detailed design.
- Request that detailed information be made available for landowners to review before approval is granted, ideally in the form of a Draft construction environmental management plan (CEMP). Suggests landowners should be included in discussions and negotiations for the CEMP.
- Request that genuine community consultation with Surry Hills residents and business owners is undertaken.
- Request for consultation about Langton Centre parking.
- Request for consultation during demolition of Olivia Gardens complex.
- Request that small businesses are included in the development of the CEMP and urban design strategies and plans.
- Request for further consultation with small businesses to enable a clearer understanding of long-term gains, empowers them to make informed decisions, provides them with a clearer understanding of mitigations, clearly articulates the nature of communication and links them to government and non-government services for general business advice.
- Request to consult with the Office of the NSW Small Business Commissioner throughout the project.

### Submission numbers

88, 124, 210, 214, 217, 225, 232, 262, 269, 284, 300, 308, 324, 325, 329, 347, 350, 396, 403, 422, 447

## Response

Transport for NSW is committed to community and stakeholder engagement beyond the planning phase and through detailed design, construction and commission of the CSELR. A Community and Stakeholder Involvement Plan would be prepared during the detailed design phase to ensure:

- the community and stakeholders have a high level of awareness of all processes and activities associated with the proposal
- accurate information is made available in an effective and timely manner
- a timely response is given to issues and concerns raised by stakeholders and the community.

Transport for NSW's project information line and email address would continue to be available during the construction phase. Targeted communication activities, such as letters, brochures, emails and website updates, would continue as the CSELR progresses. All stakeholders would continue to be proactively engaged through Round Table meetings, business forums, community forums and other stakeholder meetings.

Further discussion on ongoing and future communication activities that Transport for NSW proposes to undertake for the CSELR proposal is provided in Chapter 2 and throughout this section 5.2 of the Submissions Report.

The CEMP, and any other sub-plans relating to specific issues such as urban design, would be prepared by the contractor(s) and approved by the Director-General of P&I. It is not normal practice for these documents to be available for comment; however information received as part of the ongoing consultation process with the community and other stakeholders would be taken into account when preparing these plans.

### 5.2.2 Community and stakeholder consultation during detailed design

#### Summary of issues raised

A number of submissions requested clarification on the opportunities for community and stakeholder consultation during detailed design and pre-construction stages of the proposal. The specific requests are summarised below.

- Request for the opportunity to participate in the design and placement of bicycle facilities and cycle paths, where such provisions are proposed to be implemented as part of the CSELR proposal.
- Request for the opportunity to work closely with Transport for NSW and its Contractors in the planning, design and construction phases.
- Request that Crowell Property Group, AMP Capital and Sydney TAFE be consulted during designed design with respect to the potential impacts of the CSELR proposal on their respective properties (or properties managed by these entities).
- Support for further investigation for improved design through consultation.



- Request for an opportunity to address issues of visual impact, noise pollution and vehicle exhaust pollution as a trade-off for removing trees, introduction of light rail and increased use of the bus road. Suggests that community consultation is undertaken about vegetation offset.
- Request for a mechanism to allow local residents to provide proactive input into the project. Residents have the best knowledge of areas and this would give them a sense of ownership and acceptance of the project.
- Request for engagement with Australia Post/logistic firms and major courier companies explaining access points and route changes and updates for deliveries.
- Request for opportunity to be engaged in relation to the detail of the management plans in relation to Moore Park.
- Suggestion that a liaison group is created to assist in consultation with landowners and to provide regular progress updates and early notification of proposed works.
- Request for access to a dedicated liaison officer throughout the currency of the proposal with documented powers for this person.
- Submits that a Community Reference Group should be established prior to planning approvals to design the new Wimbo Park.
- Submits that ongoing communications and engagement needs to involve community and business through the design and delivery phase, to develop prevention and mitigation measures. Notes engagement needs to be real and meaningful.
- Request for engagement with emergency services to take place in advance of construction phase.
- Submits that an effective printed and online communication plan should be developed to ensure businesses and residents in the local area (Haymarket, Chinatown) are informed about construction impacts and temporary and permanent changes to access.

### Submission numbers

41, 125, 139, 220, 222, 274, 276, 280, 292, 300, 335, 336, 337, 347, 389, 433, 439, 438, 443, 449, 461

### Response

Transport for NSW is committed to continuing community and stakeholder engagement through the detailed design phase of the CSELR.

Transport for NSW would ensure the consistent delivery of accurate information on the CSELR proposal to the community, businesses and stakeholders throughout the life of the proposal.

The following communication activities and procedures would be implemented to support the delivery of the proposal during further detailed design and beyond:

- A Sydney Light Rail Stakeholder and Community Engagement Strategy would be implemented throughout the life of the proposal.
- Community liaison plans would be developed and implemented by the Managing Contractor and the nominated contractor.
- Place Managers would continue to function in each of the identified proposal precincts including the CBD (City Centre), Surry Hills, Moore Park, Randwick, and Kensington/Kingsford and Rozelle. Place Managers provide a single point of contact for all residents and businesses in the area.
- Local business and community forums would be established in the four precincts to provide timely and accurate information on the proposal, and receive local input into the proposal. The Local Business and Community Reference Groups would comprise independent representatives from the community to advise the proposal on community concerns.
- An Urban Domain Reference Group would also be established to allow key partner stakeholders such as City of Sydney and Randwick City Council to review and comment on the proposed urban design elements.
- A Utilities Reference Group would also be established, which would comprise independent representatives from the utility owners to advise on utility concerns related to the proposal.
- Business management plans would be developed and implemented for the four precinct areas. The Delivery Phase Round Tables would also continue to operate throughout the life of the proposal.
- One-on-one stakeholder briefings and community information sessions would be held when appropriate to support the rollout of the program of works
- The Sydney Light Rail Website would be constantly reviewed and updated. The CSELR contact details would continue to be included in all written communications distributed to the community or made available online.
- The Transport for NSW Community Information Centre would continue to operate Monday to Friday 9.00 am to 5.00 pm. The centre provides information to the public on the light rail proposal and other CBD-related transport initiatives.
- Transport for NSW's project information line (1800 684 490) and email address ([projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au)) would continue to be available during the construction phase.
- Complaints during construction would be managed in accordance with Transport for NSW's Community Engagement Policy. A construction response line (1800 775 465) would be available for all Transport for NSW projects and is a 24 hour contact point for complaints regarding construction works.
- Targeted communication activities — such as doorknocking, letterbox drops, brochures, and emails updates would continue as the proposal progresses.
- Notifications would be issued to all affected businesses and residents informing them in advance of impacts related to construction activities. This would also include other stakeholders such as emergency services.





### 5.2.3 Community and stakeholder consultation during construction

#### Summary of issues raised

A number of submissions requested clarification on the opportunities for community and stakeholder consultation during the construction stage of the proposal. The specific requests are summarised below.

- Lend Lease requests the opportunity to be engaged in relation to the detail contained in the CEMP and traffic management plans.
- As a condition of consent, Sydney TAFE requests that all construction management plans are prepared and monitoring in consultation with Randwick College.
- Suggests community liaison staff work with Sydney Girls and Sydney Boys High Schools to find solutions to impacts throughout the construction period.
- Genuine consultation should be undertaken with business owners and operators about the construction of the proposal, with immediate support in the event of an incident.
- Identification of key personnel contact and emergency contact points is important.
- Suggests communication boards we provided for shoppers, including regular updates on progress. Suggests Transport for NSW consider using Myer's email contact list, and lists provided by other major stakeholders, to issue regular construction updates and notifications.
- Request for a 24 hour channel through which small businesses can seek information, ask questions and raise issues/complaints.
- Comments that managing the impacts on George Street buildings during construction will require engagement. Requests the formation of a George Street Building Owners stakeholder group to work with the government.
- Request for consultation with building owners and managers during construction, including inviting them to be part of working groups to work through issues during construction. Notes that throughout construction, community and businesses will need to be reminded about the proposal benefits and costs of inaction.
- Suggests that the conditions of approval include the provision of regular newsletters about construction activities and changes be circulated to owners, managers and tenants.
- Suggests appointment of place managers and a community liaison unit to support residents and businesses during construction.
- Submits that a Community Reference Group be established to discuss the construction methodology, including work times, respite requirements.
- Submits that the City Centre Transport Taskforce will need to work with partners and stakeholders to develop a plan to 'keep Sydney moving' during construction.
- Submits that an exemplary communications strategy be developed, including the use of social media to share information.
- Submits there is a need for a campaign to support and promote businesses during construction.

- Request for the ongoing identification of potential risks, clear communication about possible impacts from these risks and timely development and implementation of solutions to mitigate these.
- Request for early identification of impacts including changes to parking, noise etc.

#### Submission numbers

125, 139, 162, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 269, 300, 334, 335, 336, 337, 399, 416, 427, 422, 433, 438, 449

#### Response

Transport for NSW is committed to community and stakeholder engagement beyond the planning phase and through detailed design, construction and commission of the CSELR. Transport for NSW would work closely with both the Managing Contractor and the CSELR Operator to ensure the consistent delivery of accurate information on the CSELR proposal to the community, businesses and stakeholders throughout the life of the proposal.

The communication activities and procedures that would be implemented to support the delivery of the CSELR proposal are detailed in Chapter 2 and section 5.2.2 of this Submissions Report.

### 5.2.4 Advertisement of community information sessions

#### Summary of issues raised

One submission noted that community information sessions in Surry Hills were conducted secretly and without publicity, and that very few people were aware the public display was being conducted.

#### Submission number

103

#### Response

Transport for NSW rejects the suggestion that the community information sessions in Surry Hills were conducted secretly and without publicity. As outlined in section 2.2.2 of this Submissions Report, three community information sessions were held in Surry Hills on Monday 2 December 2013, Thursday 5 December 2013 and Tuesday 10 December 2013. In addition to these community information sessions, Transport for NSW also held one pop-up market stall in Surry Hills on Thursday 28 November 2013.

As outlined in section 2.2.5 of this Submissions Report, a community update brochure was distributed in November to over 50,000 property owners, businesses and tenants along the proposed CSELR alignment. This community update provided a project and planning update, project contact details and invited community members to EIS community information sessions.



In addition to the community update brochure, Transport for NSW also placed advertisements in relevant local and metropolitan newspapers to inform the public that the EIS was on display and to invite the public to the community information sessions. The placement of advertisements and dates they appeared are outlined in Table 2.1 of this Submissions Report.

An email reminder was sent on 14 November 2013 to all stakeholders and community members who have opted to be on the CSELR Consultation Manager database. The email reminder was used to inform people of the public display period and the upcoming community information sessions. A total of 1,609 emails were sent to contacts to invite them to the community information sessions.

The above-mentioned email reminder was re-sent on 28 November 2013. A total of 2,377 emails were sent or re-sent to contacts to invite them to the community information sessions.

Another email reminder was sent on 27 November 2013 to Surry Hills stakeholders and community members who have opted to be on the CSELR Consultation Manager database. The email reminder was used to inform people of the public display period and additional upcoming community information sessions. A total of 378 emails were sent to contacts to invite them to community information sessions.

Transport for NSW is committed to continuous improvement and would welcome more specific feedback on how to improve its communication with the community. Feedback can be made via phone by calling 1800 684 490 or email [projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au). Every effort would be made to accommodate any suggestions made.

## 5.2.5 Level of detail presented to the community

### Summary of issues raised

A series of concerns were raised regarding the level of detail presented to the community during consultation activities. These concerns are summarised below:

- Consultation and public exhibition were characterised by lack of detail and motherhood statements.
- No existing or future traffic data was presented at the George Street light rail update presentation, which made it difficult for residents to judge the CSELR proposal's impact on accessibility to the parking garage for the Tower Apartments.
- Residents and property owners along Devonshire Street have not received adequate information about vibration impacts on terrace homes.
- Concern that the EIS incorrectly states that there was more community concern about the displacement of people from their homes on Foveaux Street than Devonshire Street.
- Concern that one of the boards at the information sessions was not clear about the intention to open up the connection between Riley Street and Cooper Street. Concern that Cooper Street will be opened up to westbound traffic. Request to have this confirmed.
- Submits that consultation with businesses to date has been inadequate.

### Submission numbers

100, 186, 238, 287, 313, 447

## Response

The information that was distributed to the community (e.g. via the CSELR proposal website, proposal updates, community information sessions as well as information contained in the EIS) was written in 'plain English' and edited for readability to ensure it was readily comprehensible by the public. The Technical Papers which supported the information presented in the EIS were longer and more technical, but were also available for review by those people and government agencies who may be familiar with particular technical disciplines and/or who wanted to know more detailed information about the assessments completed.

One of the aims of the community consultation program was to make key staff available throughout the exhibition period and hence (particularly at community information sessions) to assist in explaining technical details of the proposal or the assessments undertaken to the community. The project contact number (1800 684 490) and email ([projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au)) were promoted on all communication materials to encourage the public to seek further clarification and information where needed.

Transport for NSW is committed to continuous improvement and would welcome more specific feedback on how to improve its communication with the community. Feedback can be made via phone by calling 1800 684 490 or email [projects@transport.nsw.gov.au](mailto:projects@transport.nsw.gov.au). Every effort would be made to accommodate any suggestions made.

An assessment of construction and operational vibration impacts on the Surry Hills Precinct was provided in sections 13.5.3 and 13.5.2 of the EIS (Volume 1B), respectively. Section 5.10 of this Submissions Report provides additional discussion and clarification on vibration impacts from the CSELR proposal and measures that would be implemented to minimise these impacts.

In addition to the information presented in the EIS, noise and vibration specialists attended community information sessions during the exhibition of the EIS to clarify the information presented in the EIS, and to listen to and consider any suggestions or concerns that members of the community had in relation to the proposal. To assist the community to understand the technical information contained in the noise and vibration impact assessment, an auralisation was prepared, comprising a visual component and calibrated noise demonstrations. The auralisation provided a comparison of different vehicle types and noise levels on a standard residential street. The auralisation was available on tablets with noise isolating headphones at each community information session.

The proposal to reinstate the Cooper Street connection to Riley Street, to safely accommodate dual light rail tracks along Devonshire Street, and maintain access for residents, was indicated on one of the two *Traffic, Transport and Access* boards under the heading 'Surry Hills'. As identified in the Transport Operations Report as part of the EIS (Volume 2), the connection is proposed to be reopened. Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.

Discussion on the proposed access arrangements for properties located within the George Street pedestrian zone (including discussion on the CSELR proposal's impact on the accessibility to parking garages for the Tower Apartments) was provided in section 12.2 of the EIS (Volume 1B). Further details regarding property access is provided in section 5.8.8 of this Submissions Report.



## 5.2.6 Consultation during public exhibition of the EIS

### Summary of issues raised

Concern regarding the level of consultation undertaken with the community and stakeholders during the exhibition of the EIS was raised in a number of submissions. A summary of these issues is detailed below:

- CSELR Community Information Sessions were well organised and resourced.
- It appears that Transport for NSW has not adequately consulted with the NSW Roads and Maritime Services or the Department of Planning and Infrastructure.
- Unhappy with the how the proposal is being rolled out.
- Residents in some apartment complexes, including Edgeview apartments in Riley Street, may not have received or paid attention to flyers, and therefore may not have been properly consulted.
- Concerned that the information session in Surry Hills was held too late in the public exhibition period (six days prior to 16 December submission deadline) and did not allow enough time for people to prepare submissions.
- There has not been enough community consultation and not enough time for residents to learn and respond. Submits that the timeframe for public display of the EIS was significantly too short, noting both the initial period and the extension. Submits that a minimum 90 days public display was required to accommodate detailed feedback and allow for proper consultation.
- Suggests that according to the IAP2 spectrum, EIS consultation was at the lowest end of the scale.
- Request for genuine models of community consultation to be undertaken by an independent body with experience and a good reputation.
- Concern that Transport for NSW and City of Sydney messaging is inconsistent.
- Submits that EIS community information sessions provided information from 'frozen designs' that was out-dated.

### Submission number(s)

90, 124, 213, 238, 271, 284, 389, 396, 433

### Response

#### *Consultation with stakeholders*

A detailed overview of the consultation activities that Transport for NSW undertook for the CSELR proposal both before and during the preparation of the EIS was provided in Chapter 2 (Volume 1A) and Appendix E (*Consultation Outcomes Report*) in Volume 1C of the EIS.

As outlined in Chapter 2 of this Submissions Report, consultation occurred throughout the strategic planning phase of the CSELR with project partners, and a number of senior stakeholders from organisations located in, or associated with the study area (including councils, health and education providers, event and recreation precincts, peak bodies and associations, and government agencies).

As detailed in Chapter 2 of the EIS (Volume 1A), consultation with key proposal stakeholders prior to the exhibition of the CSELR EIS included:

- a year-long consultation process during the development of the *NSW Long Term Transport Master Plan* (NSW Government 2012a)
- six Sydney Light Rail Round Table meetings (held during the feasibility phase of the CSELR proposal), involving key proposal stakeholders and elected State and council representatives
- four Light Rail Working Group sessions (held between October 2011 and June 2012), involving technical and expert level representatives of key government and institutional stakeholders
- stakeholder meetings (including with government agencies) to support the Round Table and Working Group process and to facilitate information exchange
- an industry briefing session (held on 9 April 2013) which included presentations by the NSW Minister for Transport and the Deputy Director-General Transport Projects and attracted over 350 attendees from a wide audience including industry groups, government agencies and private businesses
- briefings with key Moore Park sports and entertainment complex representatives and major users of these facilities (held on 5 August 2013 and 9 October 2013) to jointly discuss and provide input to the design process
- consultation with utility providers, which included a high level briefing of senior utility representatives (held on 16 May 2013)
- comprehensive stakeholder briefings and presentations (held since December 2012).

In addition, in April 2013, five community information stands were established at locations near the proposed CSELR alignment to receive local input on the proposal at an early stage. The information stands were attended by members of the proposal team, so that attendees' questions could be answered and feedback obtained.

As outlined in section 2.4 of this Submissions Report, proposal stakeholders would continue to be proactively engaged through Round Table meetings, business forums and other stakeholder meetings.

#### *Distribution of proposal update newsletter and other communications material*

A specialised distribution service is used to conduct letterbox drops of notifications and proposal brochures in a specified catchment area along the alignment. In the event that the distribution service is unable to access a residential building's mailboxes in the first instance, the service returns up to twice more at different times (and on consecutive days) to gain access. In some instances, building managers take the materials to distribute or refuse to provide access for unsolicited mail.



Where mailroom access is difficult, the distribution company liaises directly with building management to arrange access. This is sometimes successful. The distribution service also provides GPS tracking. Information included in the letterboxed materials is also placed in newspaper advertisements and online.

#### *Length of public exhibition period*

P&I is responsible for determining whether an extension to the EIS exhibition period is warranted. The CSELR EIS was exhibited between 14 November and 31 December 2013, which satisfies the *EP&A Act* requirements to exhibit for a minimum of 30 days. Submissions up to the end of December were received and considered as part of this Submissions Report.

With regard to the concern that the Surry Hills community session was held too late to provide comment, community consultation sessions were held throughout the exhibition period, including three sessions within the Surry Hills Precinct (2 December 2013, 5 December 2013 and 10 December 2013). In addition, a pop-up display was also held within Surry Hills on 28 November 2013). Whilst it is acknowledged that some sessions were held later in the exhibition period, the relevant information (such as the EIS) was available for viewing at a number of locations (including Surry Hills Library, refer to section 2.2.1 of this Submissions Report) and online from 14 November 2013.

## 5.2.7 Requests for information from Transport for NSW

### Summary of issues raised

A series of requests for additional information from Transport for NSW were raised within submissions. A summary of the requests for information is provided below:

- Concern that Transport for NSW has not provided information that had previously been requested, including: the standards that Transport for NSW is following; the cost of putting light rail inside the racecourse instead of Wansey Road; why Wansey Road is being used over High Street, when both streets are narrow and steep.
- Request for a 'cheat sheet' outlining in simple terms as to why the Devonshire Street route was chosen, and host at least one community meeting to explain this decision further.
- Request that the Business Case (not the summary) be made publicly available.
- Suggestion that the detailed options for changes to traffic and access to properties should be made available for proper consultation. Submits that the full traffic management proposal should be made available for public review and comment.

### Submission numbers

244, 280, 291, 413, 433

## Response

Transport for NSW has undertaken a significant amount of community engagement for the CSELR proposal (refer Chapter 2 of this Submissions Report). Information has been distributed via Community Information Sessions, stakeholder briefings, community meetings, the Sydney Light Rail website, proposal update newsletters and responses to correspondence requests for information made directly to Transport for NSW.

The EIS presented during exhibition provided a wide range of information regarding environmental issues, including traffic and access (refer to sections 12.2, 13.2, 14.2, 15.2 and 16.2 of the EIS (Volume 1B) in addition to Technical Papers 1 and 2 (Volume 2)). The level of information provided was sufficiently detailed to allow the community and stakeholders to understand the proposal and for P&I to assess the development for approval. Further detailed design work is continuing and, where required, impacted community members and stakeholders would be consulted to further discuss and minimise these impacts (refer section 2.4 of this Submissions Report).

Where Transport for NSW has not been able to provide the information requested (such as where it would potentially compromise the commercial confidentiality of the proposal) an explanation has been provided. Transport for NSW is committed to continuing community and stakeholder engagement on the CSELR and would work closely with both the Managing Contractor and the CSELR Operator to ensure the consistent delivery of accurate information on the proposal to the community, businesses and stakeholders throughout the life of the proposal.

### 5.2.8 Level of consultation about the CSELR proposal

#### Summary of issues raised

General comments and concern was raised in submissions regarding the level of consultation about the CSELR proposal. These concerns are summarised below:

- Notes the briefings and consultation to date has been 'appreciated'.
- Little consultation has been undertaken with the local residents who will be most affected by the CSELR proposal.
- Request for genuine community consultation regarding the design of the CSELR, which will help a better outcome be reached.
- There has been no genuine community consultation. Opinions of the community were not considered.
- The YHA was not adequately consulted in the preparation of the proposal, especially relating to Rawson Place stop.
- Concerned that consultation was not undertaken with City of Sydney regarding/for Surry Hills.
- Disappointed that the CSELR route was non-negotiable. Concerned that the community was not consulted about the Devonshire Street route until after the decision was made.
- Requests that an open forum is used to consult the community, rather than displays.





- Concern that businesses have not all been consulted with, particularly businesses on Devonshire Street. The route via Devonshire Street needs to undergo business and community debate.
- Concern that submissions will not be considered by the government.
- Concerned and disappointed about the lack of detailed consultation and communication regarding the light rail proposal.

#### Submission number(s)

72, 98, 105, 151, 160, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 196, 200, 218, 219, 232, 235, 242, 246, 252, 256, 257, 267, 284, 290, 312, 323, 355, 358, 359, 381, 386, 389, 390, 391, 396, 405, 407, 410, 413, 415, 422, 425, 427, 428, 431, 433, 437, 444, 447, 460, 478, 482

#### Response

P&I has published guidelines (*Guidelines for Major Project Community Consultation*, October 2007) that outline what community and stakeholder consultation is expected from major projects prior to, during and after assessment of an environmental impact assessment.

As outlined in Chapter 2 of this Submissions Report, a comprehensive community consultation program was implemented for the proposal and inputs have been received from a large cross-section of the community. Stakeholder and community consultation activities that Transport for NSW has undertaken prior to, and during, the exhibition of the EIS are outlined in Chapter 2 of this Submissions Report and included the following:

- CSELR contact mechanisms, including the project information line and email address
- Proposal website
- 'Have Your Say' website
- Place Managers
- Community update brochure, April 2013
- Community update brochure, August 2013
- Lilyfield letterbox drop and doorknock
- Community information stands
- Door knocking
- Business survey
- Community information and feedback sessions.

Consultation activities undertaken for the CSELR proposal have been in accordance with the P&I guidelines (*Guidelines for Major Project Community Consultation*, October 2007) and were more comprehensive than that that required under statutory obligations.

Community information sessions satisfied the P&I guidelines for community consultation, and provided stakeholders with an opportunity to access technical experts and easy to understand information about the proposal. Drop-in style information sessions provided more flexibility for people to attend at a time and for an amount of time that suits them, within the scheduled times. The information sessions provided stakeholders with direct access to the CSELR proposal team, in an accessible format.

All issues raised in submissions received regarding the exhibition of the EIS have been considered and are addressed in this Submissions Report.

## 5.2.9 General concern regarding the project team's engagement with the community

### Summary of issues raised

General concerns regarding the project team's engagement with the community during the community sessions and exhibition of the EIS were raised in some submissions.

These concerns are identified below:

- Concerned that government departments are 'passing the buck' and not adequately answering questions.
- Concerned about the limited local knowledge of planners who have engaged with the community to date.
- Notes that several emails containing recommendations and concerns have been submitted to the proposal team and inadequately addressed in the EIS.
- Concerned that views of the P&C have not been incorporated into the EIS.
- Disappointed that issues raised about safety and loss of infrastructure were not addressed or noted in the EIS.

### Submission numbers

219, 252, 433, 456, 457

### Response

The EIS was completed by experienced professionals in accordance with all relevant environmental and planning legislation and other relevant procedures and guidelines required by government agencies. These requirements, and how the EIS was prepared in accordance with the requirements, are detailed in Appendix D (*Planning and statutory requirements*) and Appendix B (*Director-General's Requirements Checklist*) of the EIS (Volume 1C).

As discussed in section 2.2.2 of this Submissions Report, CSELR proposal team staff from various technical disciplines (e.g. design, EIS and technical specialists) were in attendance at each of the community information sessions held during the exhibition of the EIS to clarify the information presented in the EIS, and listen to and consider any suggestions or concerns that members of the community had in relation to the proposal. Community members who attended the sessions were encouraged to make a formal submission on the CSELR proposal via the P&I website.



Prior to public exhibition of the EIS, a preliminary assessment of document adequacy was completed by P&I and various other government agencies. Any omissions or inadequacies of the EIS would be reported in the Director-General's assessment report and addressed (if necessary) prior to the determination of the proposal.

## 5.3 Proposal need and justification

### 5.3.1 Surry Hills and Moore Park alignment

#### Summary of issues raised

One submission noted that the proposed CSELR route through Devonshire Street and Moore Park will not adequately address the transport issues within the Inner City. Unreliable travel times and the frequency of buses to and from the CBD to Surry Hills, Redfern, Green Square and Waterloo are a major issue, particularly during peak commuter periods. The CSELR route through Surry Hills will not address this issue.

Another submission noted there is a lack of justification for the proposal as a whole and no cost benefit study of possible routes through Surry Hills.

#### Submission number(s)

2, 350

#### Response

The need for the CSELR proposal is detailed in Chapter 3 of the EIS (Volume 1A).

A key benefit of the CSELR proposal is to improve access to the South East suburbs and reliability of travel and efficient connection to major trip generators including the Moore Park sports and entertainment complex, Royal Randwick racecourse, UNSW and the Prince of Wales and Children's Hospitals.

The CSELR would generally run on a dedicated corridor and would therefore not be significantly affected by traffic congestion that currently affects bus reliability during peak periods. It would significantly increase public transport capacity to these locations by providing up to 18,600 peak hour boardings in both directions by 2021 and 23,400 by 2036.

The CSELR proposal would also address CBD congestion with a reduction of approximately 180 buses in the morning's busiest hour. When combined with other bus network changes this would provide a reduction of approximately 220 buses. This reduction in buses would free up capacity for buses from other corridors, including Green Square, Waterloo and Redfern, to operate more effectively.

In relation to the proposed route through Devonshire Street and Moore Park, a strategic options assessment was conducted which considered a number of routes, as detailed in section 3.4 of the EIS (Volume 1A – refer Figure 3.8 for route locations). The routes were subject to a multi-criteria analysis and rapid economic analysis. This assessment showed that a direct link from Central Station via Surry Hills to UNSW and the Randwick health precinct attracted high levels of patronage demand as it would provide an efficient connection for passengers connecting to rail services at Central.

Two routes were then further considered: Option I2, a surface route via Devonshire Street; and Option J, a tunnel option through Surry Hills. The Devonshire Street route option was preferred over the tunnel option as it would be substantially less expensive and would allow for a stop in Surry Hills (refer to section 5.4.4 of this Submissions Report for further discussion on alternatives that were considered through Surry Hills).

### 5.3.2 Adequacy of existing public transport

#### Summary of issues raised

A number of submissions commented that the existing bus network servicing the South East suburbs is adequate and proposed that the bus network be improved as an alternative to the CSELR proposal. Issues raised are listed below:

- There is already sufficient transport to UNSW and the Moore Park sports and entertainment complex from Central Station and the CBD. For most commuters, walking between Central Station and the Moore Park sports and entertainment complex is very easy.
- Transport capacity and reliability to the Moore Park sports and entertainment complex from Central Station is not an issue; rather, the frequency and reliability of trains and buses from Central Station is the primary issue.
- The CSELR has been poorly planned. It appears that improvements to the bus network, if necessary, would serve the area better than a light rail service.
- The CSELR will not induce the forecast shift to light rail.
- Does not accept demand for light rail. Additional or re-configured bus services would be sufficient for shortfalls.
- The current bus system adequately services the Randwick health precinct.
- Buses account for a minority of vehicular movements in central Sydney.
- Supportive of public transport but strongly oppose this proposal because it does not speed up journeys, is expensive and disruptive.
- How was it ascertained that buses create unreliable journey times and have a confusing network?
- The current transport service provided in Randwick is generally of a high level. The CSELR should deliver a transport outcome that at a minimum meets current services and where possible exceeds.

#### Submission number(s)

2, 72, 111, 133, 242, 260, 284, 290, 293, 435, 476

#### Response

Historically, the public transport needs of the South East suburbs and major trip generators to and from the CBD and for local journeys have been well serviced by the existing bus network. This bus network is, however, reaching capacity and the customer travel experience is being degraded by unreliable travel times and a confusing bus network.



Within the CBD the large number of buses, combined with general traffic, is leading to slow and unreliable travel times. It can take up to 30 minutes to travel between Circular Quay and Central – a distance of just 2.5 kilometres. There are approximately 200 bus routes operating within the CBD, resulting in poor network legibility and making the system difficult to navigate.

The existing bus system also does not have the capacity to accommodate predicted growth in the region. The *NSW Long Term Transport Master Plan* identifies that over the next 20 years, trips in the Sydney CBD are forecast to grow by 31 per cent. This represents an additional 56,500 trips, which is the equivalent of 942 standard buses (NSW Government 2012b). This growth cannot be accommodated on the exiting CBD road network, which would compound congestion and economic growth.

Introduction of light rail is anticipated to improve journey times. One light rail vehicle has the capacity to carry up to 300 people, which provides five times greater capacity than a standard bus, while only taking about twice as much road space. Light rail is also expected to provide a more reliable service, with around 97 per cent of services forecast to run within two to three minutes of the timetable, which is significantly higher than current bus reliability (only 19 to 34 per cent of buses achieve this along Anzac Parade and within the Sydney CBD).

The *Long Term Transport Master Plan* outlines a strategy of improving the efficiency and frequency of road based public transport overall by moving to a connected network of trunk and feeder services. This would release buses to provide new or improved local and cross-regional services, as well as reducing congestion in the CBD. The CSELR is part of the NSW Government's strategy in the *Long Term Transport Master Plan* (in conjunction with *Sydney's Bus Future* and *Sydney's Light Rail Future*) to reorganise the surface public transport system into a connected network, improving the efficiency effectiveness and coverage of the bus network. Outside of the CSELR, to the NSW Government is also committed to improving the Sydney rail system as detailed *Sydney's Rail Future* (NSW Government 2012c).

Buses that previously shared a common route to the city and are not well utilised (partially full) would be truncated to consolidate customers to a new high frequency trunk service, either Bus rapid transit or light rail.

For the South East, an all-day network of light rail with an improved local and cross-regional bus network is being delivered. The NSW Government is currently planning to retain express buses for the morning and afternoon peaks. The CSELR together with the proposed bus changes would see a mode shift from cars to public transport.

A bus rapid transit (BRT) option was considered as an alternative to the CSELR proposal and is discussed in section 3.4.3 of the EIS (Volume 1A). It was not adopted for the following reasons:

- The BRT option did not cater for the same level of demand as light rail – offering just two-thirds of the capacity in comparable traffic conditions.
- Patronage modelling indicated that forecast demand levels are predicted to be lower, at around 50 per cent of that achieved for light rail.
- The BRT option would also not reduce traffic congestion to the same extent as light rail, nor would it offer the same opportunities for urban renewal such as revitalising George Street.

With respect to the reliability of bus journey times, the volume of buses entering the Sydney CBD has reached the capacity of the bus lanes and CBD street network. This has caused bus congestion on CBD streets and impacts to travel times for buses and general traffic. The reduction of buses through the consolidation of customers to trunk routes (such as the CSELR) would allow the bus lanes and CBD street network to operate more effectively. The CSELR would replace (in conjunction with other changes) up to 220 buses from the CBD in peak hour. The introduction of the CSELR would also provide capacity for growth without the need for additional bus services entering the CBD.

### 5.3.3 Patronage

#### Summary of issues raised

A number of submissions questioned the basis of the patronage analysis and requested further investigation to validate this analysis. Specific comments are listed below:

- Peak hour capacity at Kensington will only increase by three people per tram at the commencement of CSELR operations, relative to peak hour capacity on the existing bus system. The need for the proposal is questioned given the level of patronage capacity on day one of CSELR operations.
- The allowance made for transfers from heavy rail to light rail at Town Hall and Wynyard appears small. Barangaroo has not likely been factored in for in and outbound passengers.
- The current dense population in the eastern suburbs will not grow substantially over the next 20 years.
- Does not agree with demand and patronage survey data that underpins decision to take light rail via Surry Hills (and not via Taylor Square).
- Notes inconsistencies in the patronage data contained in section 3.2 – Future Demand (Figure 3-11 shows morning peak boardings of 2,198 for Kingsford and 1,732 for Randwick (all inbound) whereas Figure 3-12 shows only 1,454 departing Kingsford and 826 departing Randwick).
- Request for a review of projected demand.
- Provision for school children's journeys have not been considered, especially if they come from Coogee.
- A new tower known as 'York George' is soon to be built which will increase demand.
- Submits that light rail is ineffective as a mass transit solution because the capacity cannot be increased to meet growing demand, especially in response to urban activation precincts.
- Concerned the patronage, impacts and cost analyses are inaccurate.
- Concerned the proposal only benefits commuters to the university and sporting events.
- Request that more research is conducted so Sydney does not get another under-utilised project.
- Concerned that the number of people to use this service is insignificant.
- Concerned that the assumption that 17 per cent of demand for the CSELR will be diverted from car use has not been properly tested.



### Submission number(s)

34, 87, 242, 290, 291, 322, 332, 338, 407, 414, 429, 444, 445, 477

### Response

The CSELR proposal would provide significant additional public transport capacity upon opening, providing up to 18,600 morning peak hour boardings in both directions by 2021 and 23,400 by 2036. This additional capacity is needed to address projected population and employment growth in the CBD and South East suburbs as discussed in section 5.3.2 of this Submissions Report.

Patronage modelling undertaken for the CSELR incorporates existing and planned development across the Sydney metropolitan area through to 2036, including Barangaroo. Overall, population in the CSELR study area is forecast to increase by 1.3 per cent per annum between 2006 and 2021, and 0.7 per cent between 2021 and 2036. Compounded, this represents significant growth over the next 20 years.

The South East Sydney corridor is one of Sydney's busiest bus corridors. The CSELR would support a range of travel patterns and trip purposes, including commuters from the South East who work in the CBD, students travelling to UNSW, short trips within the CBD, recreational trips to Moore Park and Royal Randwick racecourse, as well as other destinations in the South East such as the Sydney Boys and Girls High Schools and Prince of Wales Hospital. The CSELR would therefore serve multiple purposes throughout the day and at weekends. It would not replace many of the current school bus services, with the exception of those servicing Sydney Boys and Sydney Girls High schools from Central Station.

The forecast diversion of demand from car to public transport is supported by customer surveys that indicated many people prefer to travel on light rail than other modes.

The CSELR would offer a peak service frequency of two to three minutes from opening between Circular Quay and Moore Park and five to six minutes on the Kingsford and Randwick branches to meet the forecast patronage demand. However the CSELR would be designed and constructed to provide for a future 50 per cent increase in capacity. This could be achieved by providing a two minute service frequency between Circular Quay and Moore Park and four minutes on the Kingsford and Randwick branches. Therefore, the proposed CSELR operational capacity can be increased if needed to meet patronage demand by providing additional light rail services at the relevant time of day. To meet growing demand over time, additional light rail vehicles (LRVs) could be added to the CSELR and the service frequency increased to ensure the system capacity meets the customer demand.

## 5.3.4 Traffic congestion

### Summary of issues raised

A number of submission noted concerns that the CSELR would not solve traffic congestion issues:

- The CSELR proposal will not improve CBD congestion. Replacing buses with a light rail service will result in LRVs lining up along George Street, rather than buses. Trams used to historically line up along George Street, which resulted in public complaints.

- The CSELR is not going to be an effective solution to congestion issues as it will occupy road space and will not adequately address the loss of road space for other vehicles. Further, the rigid nature of the CSELR route and stops makes it much less pragmatic and usable for locals.
- Request for more research into how many cars will be replaced by the light rail.
- Submits that, in order to address congestion in the CBD, the focus should be on removing private cars from the CBD, not just buses. Suggest that emphasis on buses is misplaced.
- Concern that the proposal will not reduce parking and traffic.
- Do not cram more facilities into the eastern suburbs.

#### Submission number(s)

44, 201, 348, 360, 446, 455

#### Response

The CSELR would run on a dedicated corridor within the CBD and therefore would not be significantly affected by traffic congestion. For the historic tram network, motor vehicles shared the road space with trams, which led to traffic congestion as traffic levels increased over time.

The CSELR proposal would assist in addressing CBD traffic congestion by enabling a reduction in the number of bus services into the city by up to 180 buses in the morning's busiest hour. It would also act as a catalyst for the redesign of the Sydney CBD bus network as set out in *Sydney's Bus Future* (NSW Government 2013c). In addition, as stated in section 3.4.2 of the EIS (Volume 1A), one light rail vehicle has the capacity to move up to 300 people — which provides up to five times greater capacity than a traditional bus, while taking only about twice as much road space.

Section 9 of the EIS (Volume 1A) details the regional traffic impacts associated with the CSELR proposal. Currently buses account for 20 per cent of the daily trips into the city (126,000 trips) compared to 25 per cent for private vehicles (175,500 trips). The effect of buses on traffic congestion is proportionally greater due to the larger size of a bus compared to a passenger car.

Mesoscopic (regional) traffic modelling was conducted for the road network in the vicinity of the CSELR proposal and reported in Technical Paper 1 of the EIS (Volume 2). The modelling considered scenarios with and without the CSELR proposal for morning and afternoon peak periods in 2021. The modelling showed that the effect of the CSELR proposal would be to reduce traffic levels in the study area by around 3,500 to 4,000 vehicles in each of the four hour morning and afternoon peak periods. While some of this reduction would be achieved by changes to the bus network, mode shift is also expected from private vehicles to light rail.

Legibility of the bus network and interchange with the CSELR is an important consideration in the design of the network. By reducing the number of bus routes in the CBD and creating convenient interchange with CSELR, it would be easier for customers to access and use the transport network.





### 5.3.5 Business case

#### Summary of issues raised

A number of submissions raised concerns regarding the CSELR business case. Specific comments included:

- There is a lack of business case for the CSELR proposal.
- The project's business case should be made publicly available.
- Questions the business case of the proposal and notes that details are deemed 'commercially sensitive' and are therefore not publicly accessible.
- The CSELR proposal is fundamentally flawed and will be unable to meet the objectives set for it.

#### Submission number(s)

66, 144, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 200, 243, 323, 396, 403, 407, 413, 437, 447

#### Response

A business case has been prepared for the CSELR proposal and endorsed by the NSW Government. This has not been publically released as certain details are considered commercial-in-confidence.

Relevant information from the business case has been incorporated into the EIS including a summary of the economic appraisal provided in section 3.5.3 of the EIS (Volume 1A). A summary of the business case was released publicly in November 2013, and is available on the Sydney Light Rail website, <http://www.sydneylightrail.com.au/>.

The strategic context, need and objectives for the CSELR proposal are set out in Chapter 3 in Volume 1A of the EIS.

### 5.3.6 Economic assessment and value for money

#### Summary of issues raised

A number of submissions raised issues in relation to the cost of the CSELR proposal and economic assessment undertaken. Specific issues are listed below:

- It is essential that design/construction activities do not introduce operational cost penalties that will increase annual operational and maintenance costs without any real benefit to government.
- The economic assessment does not provide a convincing case; proposal does not appear to deliver major improvements to Sydney transport infrastructure which would justify the investment and negative impacts of the construction phase.
- Objection to the proposal on the basis that \$1.6 billion could be spent more effectively on other transport infrastructure projects or other projects the state needs.

- Opposition expressed to the funding of the CSELR proposal. Funding of the CSELR proposal is not supported. Such an action is not responsible fiscal or social governance.
- The cost of the proposal is too high or not cost effective.
- Concerned about the long-term viability of the CSELR proposal. The CSELR needs to be priced right, fulfil the promise of reliable and efficient transport to and from the CBD and offer clear advantages over the existing transport options. This proposal must be a commercial and absolute success.
- Request for a further cost-benefit analysis or independent cost-benefit analysis. The current cost-benefit analysis presents inadequacies.
- Commercial confidentiality is invoked as a reason not to adequately rationalise the project.
- Request for information about how the government will recover costs of construction and operation from large business beneficiaries of the project.
- Question about whether light rail will be sold to a private operator. What if the private operator goes broke?
- Requests for cost benefit documentation have been denied.
- Are bodies such as the SCG, Centennial Parklands etc. contributing to the cost of light rail?
- Concern this proposal will become a 'white elephant'.

#### Submission number(s)

66, 79, 111, 144, 157, 182, 243, 346, 350, 381, 385, 396, 403, 410, 411, 415, 424, 433, 445, 446, 455

#### Response

A summary of the economic appraisal for the CSELR proposal is provided in section 3.5.3 of the EIS (Volume 1A).

The CSELR proposal has been assessed as having a benefit-cost ratio of 2.5 (including wider benefits) with a total value of benefits of \$4 billion. These values are very high compared to similar light rail and public transport initiatives currently being considered in Australia. It is therefore considered that the CSELR proposal represents outstanding value for money as a major public transport initiative.

The range of benefits considered in the economic assessment is broad and includes:

- public transport benefits from improved reliability
- reliability savings
- road user benefits including decongestion and reduced accident costs
- pedestrian amenity and time savings benefits
- bus network cost savings
- increased efficiency on the Inner West Light Rail line



- reduced air and noise pollution
- reduced greenhouse gas emissions
- health benefits
- wider economic benefits including agglomeration and infrastructure savings from increased development density.

Further independent economic assessment is not proposed. The CSELR proposal has been reviewed and endorsed by the NSW Government.

Operational and maintenance costs have been incorporated into the economic assessment.

The proposal is proposed to be delivered by a public private partnership (PPP) which would include an operator. The PPP tenders would be subject to detailed analysis including a financial audit to verify the financial viability of the operator. The contribution from the NSW Government would be subject to negotiation with the preferred tenderer. Separate project agreements are being negotiated with project partners, major landowners and utility authorities. These agreements set out arrangements for financial contribution, compensation (if required) and management of land and assets owned by the respective parties.

### 5.3.7 Benefits of the CSELR proposal

#### Summary of issues raised

A number of submissions questioned the benefits of the CSELR proposal and noted that it would primarily service facilities such as the UNSW and sporting facilities instead of local residents. Specific comments included:

- The benefits of the CSELR proposal are debatable or minimal.
- The proposal will not benefit east and southern suburbs residents.
- Concerned about the cost of the proposal, considering it mostly benefits viewers of sport.
- How were community values ascertained and how will light rail achieve them? How will light rail enhance access to public spaces and community facilities? How will it enhance urban connectivity and liveability? How will it improve social sustainability? How will it increase business activity in Randwick? What is the evidence for the need for urban renewal and an urban activation precinct (UAP) in Randwick?
- Concerned that Redfern and Waterloo residents get no benefit.
- Concerned the proposal only benefits large land holdings such as the Royal Randwick racecourse, UNSW and the Prince of Wales Hospital. What provisions have been made for local residents?
- Concerned that the long and short term benefits of light rail are not contained in the EIS.
- The proposal is designed to service event precincts and not residents.

- Concerned light rail will not meet the needs of commuters as it may be seen as a CBD and specific destination service and not as a preferred public transport system for most people on the route.
- Objection to proposal altogether as benefits are minimal.

### Submission number(s)

75, 153, 213, 229, 284, 290, 316, 332, 346, 371, 382, 385

### Response

The CSELR proposal provides a broad range of transport benefits including providing improved reliability of travel for residents of the South East suburbs to and from the CBD and major facilities along the route. The CSELR proposal would provide additional public transport capacity to the South East suburbs and would improve reliability of travel compared to buses, particularly for trips to and from the CBD. The benefits are discussed in section 3.5 of the EIS (Volume 1A). In addition to Royal Randwick racecourse and UNSW, the alignment provides improved access to the Randwick hospitals precinct, the Moore Park sports and entertainment complex, Sydney Boys and Sydney Girls High Schools, and sporting and recreation facilities in Moore Park and Centennial Park.

Community issues of concern were identified through the community and stakeholder activities described in Chapter 2 (Volume 1A) of the EIS, the business surveys undertaken as part of the economic impact assessment (Technical Paper 4, Volume 3 of the EIS), and the customer surveys undertaken regarding the potential for mode shifts from existing transport options to a light rail system (refer to section 5.3.3 of this Submissions Report). The EIS has responded directly to issues raised by the community as opposed to a values-based assessment which is more subjective in nature.

The CSELR would enhance access to public spaces and community facilities by improved reliability of travel and efficient connection to major community facilities including Moore Park sports and entertainment complex, Royal Randwick racecourse, UNSW and the Prince of Wales and Sydney Children's Hospitals. Whilst these major trip generators were one the key drivers for this proposal, the broader benefits of the proposal such as reduced buses within the CBD, improved reliability of travel and efficient connections within the CBD and South East, improved air quality and reduced noise to community, were also considered as part of the overall benefits of the proposal.

The provision of a new dedicated public transport corridor through one of the most densely populated regions of Sydney would enhance urban connectivity and provide liveability benefits through improved access to public transport and encouraging transfer from private vehicles to public transport.

The key sustainability benefits are described in Table 7.1 in section 7.1 of the EIS (Volume 1A). These include improved connectivity, urban renewal, economic growth, social well-being and environmental benefits. The pedestrianisation of George Street would also result in some sustainability benefits through the improvement of amenity and liveability in the CBD.

Effects on business activity in Randwick are addressed in section 5.14.1 of this Submissions Report. Discussion relating to the proposed Randwick UAP is provided in section 5.9.17 of this Submissions Report.



### 5.3.8 Randwick Hospitals Campus

#### Summary of issues raised

One submission raised a concern that light rail will not service the health precinct as promised.

#### Submission number(s)

213

#### Response

The CSELR proposal would run along High Street on the northern side of the Randwick Hospitals Campus. Stops would be provided at the western end at UNSW High Street and at the eastern end at High Cross Park for the Randwick stop and bus interchange.

A design change is proposed to relocate the UNSW High Street stop to better service the Randwick Hospitals Campus. The revised location would be in High Street between Wansey Road and Botany Street (refer section 6.11 of this Submissions Report for further detail). The proposed Randwick light rail stop at High Cross Park would also be located approximately 200 metres from the main entrance of the Prince of Wales Hospital.

### 5.3.9 Long-term viability of the CSELR

#### Summary of issues raised

One submission raised a concern that light rail will become redundant and will be dismantled.

#### Submission number(s)

242

#### Response

The CSELR proposal is planned as a component of planned integrated improvements to Sydney's transport network as set out in *Sydney's Light Rail Future* (Transport for NSW 2012b) and the *NSW Long Term Masterplan* (NSW Government, 2012a). It is planned to service the needs of commuters from the South East suburbs for the foreseeable future and has the ability to be extended should this be required.

### 5.3.10 Support for the CSELR proposal

#### Summary of issues raised

Specific comments and issues regarding support of the proposal included:

- The proposal appears to be beneficial to the city.
- The proposal is a much needed improvement to the transport to and from UNSW, provided that LRV operations are not hindered by traffic and can be reliably quick.
- The increase in public transport is supported.

- Key benefits are reliability of public transport, reduced congestion and more sustainable development of Sydney.
- The City Circle adequately services the CBD and George Street light rail will supplement this.
- Acknowledges and agrees with the forecasted need to reduce bus movements in and out of the Sydney CBD by moving passengers onto a rail based system in peak travel times.
- Light rail is a positive alternative in an area where previously buses were the only public transport option.
- The proposal will successfully see current car and bus travellers to the CBD moving to rail in peak travel times, if the proposal is implemented effectively.
- Supportive of light rail generally.
- The existing bus network has limited capacity to grow to meet increased demand for journeys into and through the CBD.
- Understands the objectives and benefits of the proposal and acknowledges the potential to improve amenity for the whole transport network, including cyclists.
- Accepts that improvements to one of several competing transport systems will induce passengers to switch to that system. If effectively implemented CSELR will see current car and bus travellers to the CBD moving over to light rail in peak travel times.

Submission number(s)

34, 55, 215, 224, 242, 308, 349, 358, 410, 438, 439, 440, 443, 452, 458

Response

These comments regarding support for the proposal are noted. The strategic context and need for the CSELR proposal are set out in Chapter 3, Volume 1A of the EIS.

5.3.11 Other general comments

Specific responses to general comments and issues relating to the proposal need and justification are provided below.

Sub-issue	Response	Sub No.
a) General comment made about the logic of previous governments to remove Sydney's light rail system, only to have another government decide to build a new light rail system.	The CSELR proposal would differ significantly from the previous Sydney tram network in a number of ways. Notably it would generally operate in a dedicated corridor and would not be substantially affected by traffic congestion. It would also provide for high capacity LRVs which can hold approximately 300 passengers and transport up to 9,000 passengers per hour.	75
b) Western Sydney has a claim for transport infrastructure — need to solve transport across Sydney.	The CSELR proposal is part of a suite of initiatives proposed by the NSW Government. The full range of initiatives is set out in the <i>NSW Long Term Transport Masterplan</i> (Transport for NSW 2012a) which includes initiatives specific to western Sydney.	114



Sub-issue	Response	Sub No.
c) The needs of tourists should be catered for as well as the needs of commuters.	As noted in the Economic Impact Assessment (Technical Paper 4 of the EIS, Volume 3), tourism plays an important role in the economy of Sydney. The provision of the CSELR as a new public transport option is anticipated to provide enhanced benefits for tourists to move around the city and South East regions of Sydney. The CSELR would assist in providing tourists access within the CBD and to the South East.	151
d) Submits that people should walk to Randwick, rather than use light rail.	Public transport needs to provide for the needs of a range of users. Light rail would provide an additional option for people to travel to and from Randwick.	169
e) Requests that a review of proposal is undertaken.	The CSELR proposal and business case has been rigorously assessed and accepted by the NSW Government. Further review would be conducted by P&I in deciding whether to grant planning approval for the proposal.	217
f) Concern the proposal is for short term political gain and not long term transport gain.	The CSELR proposal would provide significant transport benefits as described in Chapter 3 of the EIS (Volume 1A) and in section 5.3.7 of this Submissions Report.	244
g) The EIS does not sufficiently deal with the 'conflict' between whether the objective of light rail is to augment mass transit capacity or improve urban amenity, or both.	The primary objective of the CSELR proposal is to augment mass transit capacity along the corridor. Urban amenity is an important consideration in the design of the proposal and would be addressed through a sensitive approach to the treatment of public domain and landscape mitigation measures.	291
h) Concern that the scheme has not considered input of regular users of the routes affected.	As part of the community consultation process, input provided by local residents who currently use bus services in the region has been considered as part of the proposal (through activities such as information sessions). Further detail regarding consultation undertaken is provided in Chapter 2 of this Submissions Report.	346
i) Concern that there is no need for a light rail service that can deliver 9,000 passengers an hour in each direction from Circular Quay, especially as the Sydney City Centre Access Strategy advises that a new ferry hub at Barangaroo will be constructed.	The proposed ferry hub at Barangaroo would not service the transport needs of the residents and major facilities in South East Sydney.	348
j) The justification of a south east rail system stems from the current needs of existing residential capacity.	It is acknowledged that the CSELR proposal could be justified in terms of current needs; however future growth in the region in terms of population and employment reinforces the need for the proposal as a long-term transport solution.	349
k) Concern the project does not promote public transport.	The CSELR proposal is major public transport initiative. The improved travel reliability along the corridor compared to existing bus services would promote the use of public transport.	375
l) Concern that Randwick Council and P&I proposals for housing development in Coogee/Maroubra/Randwick are at odds with the light rail proposal.	The design of the CSELR proposal takes into account planned population growth in Coogee, Maroubra and Randwick. Further responses in relation to the Randwick Urban Activation Precinct are provided in section 5.9.17 of this Submissions Report.	414

Sub-issue	Response	Sub No.
m) Concern this is a political stunt for votes.	As discussed in section 5.3.5 above, the business case for the CSELR proposal provides a robust justification for the proposal including an extensive range of transport benefits.	415
n) Concern that the needs and justifications of light rail are flawed.	The need for the CSELR proposal is discussed in Chapter 3 of the EIS (Volume 1A). The proposal demonstrates a broad range of transport benefits as discussed in response to issue 349 above and a strong economic performance as discussed in section 5.3.6 of this Submissions Report.	446
o) There is a need for a medium and long term vision of the on-street public transport network, including both light rail and bus services.	The CSELR proposal is part of a suite of transport initiatives proposed for Sydney by the NSW Government. Further initiatives are set out in the <i>Sydney City Centre Access Strategy</i> (NSW Government 2013a) and the <i>NSW Long Term Transport Masterplan</i> (NSW Government 2012a).	452
p) Consider how the light rail proposal and the CBD bus plan are inter-dependent.	The proposed CBD bus changes are in part related to the CSELR proposal due to the proposed pedestrianisation of George Street between Bathurst Street and Hunter Street and the need to re-route existing bus services along this section of George Street. The CBD bus plan also provides an opportunity to rationalise bus services in the City Centre. Further information is provided in the <i>Sydney City Centre Access Strategy</i> (NSW Government 2013a) and <i>Sydney's Bus Future</i> (NSW Government 2013b).	452

## 5.4 Proposal alternatives

### 5.4.1 Mode alternatives

#### Summary of issues raised

The submissions received expressed a preference for alternative transport modes to light rail, including heavy rail, buses, trolley buses, shuttle buses, a cycling scheme and mono-rail.

Rail, both below and above ground, was suggested as an alternative transport mode. Submissions suggested the extension of the Eastern Suburbs Railway (via Randwick) and South East Metro, and a new underground rail line from the CBD to the eastern suburbs. Support was expressed for heavy rail to service suburbs in Bondi Beach, Maroubra, Coogee, Bronte, Port Botany, Prince of Wales Hospital, UNSW, Green Square, Alexandria, Sydenham, Bondi Junction, La Perouse, Kingsford, Maroubra Junction and Long Bay. The use of heavy rail was preferred by some to make use of existing spare capacity, to carry a higher number of passengers and the potential to carry freight. On the contrary, two submissions expressed concern over the support for heavy rail.

Investment in the improvement of the bus network or establishment of a rapid bus network were preferred for reasons of speed, reliability, flexibility (particularly if services break down), reduced congestion, improved safety and better capacity for an increasing population. A transition to gas-powered buses, bendy and double decker buses was described as a means of achieving customer demand. One submission included a detailed assessment of existing bus services to The Spot and Anzac Parade, and noted that the optimum route to replace buses with light rail is the Anzac Parade alignment to UNSW rather than High Street.

Prior to making decisions on whether to proceed with the CSELR, some submissions suggested waiting for sound transport data from Opal card use and trialling buses-only along George Street.





Light rail was described as unlikely to meet the passenger demand, expensive and likely to cause increases in traffic and travel times. Some submissions indicated that trams have been tried previously in Sydney and therefore are likely to fail again.

Other suggested improvements included investing \$1.6 billion in a cycle system and introducing a congestion charge in the CBD.

### Submission number(s)

24, 45, 63, 73, 82, 87, 104, 147, 149, 153, 163, 166, 184, 191, 192, 193, 194, 204, 212, 224, 232, 236, 242, 243, 246, 260, 277, 284, 291, 306, 307, 316, 321, 339, 348, 349, 352, 359, 371, 373, 377, 385, 396, 411, 407, 415, 424, 429, 431, 432, 445, 451, 446, 432, 455, 475, 480

### Response

The CSELR proposal was developed as part of a comprehensive options identification and assessment process consisting of three key stages — strategic assessment, options assessment and definition design. The options identification and assessment process is detailed in section 3.4 of the EIS (Volume 1A).

The first of these stages, strategic assessment, looked at what transport solution would be best suited to addressing transport challenges for Sydney's CBD and South East corridor. Potential transport solutions included the continued development of the bus system and infrastructure solutions including heavy rail, bus and light rail. The assessment of the different transport solutions is included in the *NSW Long Term Transport Master Plan* (NSW Government 2012a) and supporting transport reports.

The outcome of the strategic assessment process, was that light rail was identified as the preferred solution to increase the capacity and improve the reliability of the inner Sydney and CBD transport network. Other transport modes, including bus improvements/redesigned bus network and heavy rail (including extensions to the network), were discounted during the strategic assessment stage for the reasons outlined below. Trolley buses, shuttle buses and mono-rail were considered unlikely to relieve congestion in the CBD and the South East. Monorail is currently being discontinued in Sydney and buses would not relieve congestion.

The strategic assessment process discounted alternative transport modes for the following reasons:

- Improvements to the flow of buses through the CBD and reduced bus loadings are much needed. Doing nothing to change existing transport infrastructure is unrealistic. Section 3.1.2 of the EIS (Volume 1A) further outlines the inadequate capacity and complexity of the CBD transport system.
- Growth in buses and traffic would further compound existing congestion problems in the CBD and bus and traffic speeds would decline. As a potential solution, it is possible that new bus services could terminate closer to their entry point to the CBD than current routes; however this would either result in longer walking trips for customers or a need to transfer customers to services which already have limited capacity.

- Extending the Eastern Suburbs Rail Line to Randwick and Maroubra was considered; however existing and predicted levels of demand in the medium term do not support a heavy rail extension, which would require extensive tunnelling and/or land acquisition. This would be the most costly and disruptive option to construct and would not provide access to key destinations such as Surry Hills, UNSW and Moore Park.
- A bus rapid transit (BRT) option was considered; however analysis showed it would provide a lower capacity than light rail in comparable traffic conditions. BRT systems are suitable for corridors where no future growth is anticipated. Light rail provides higher capacity for future growth anticipated along the CSELR alignment, including within the Randwick UAP. Furthermore, BRT would not improve urban amenity. A trolley bus solution would have similar issues.
- Introduction of light rail to the corridor could improve journey times and reliability for customers while increasing the capacity of the transport system. One LRV has the capacity to move up to 300 people which provides five times the capacity of a traditional bus.

In response to submissions suggesting investment in congestion schemes and an improved bicycle network, such options are not considered to offer the necessary infrastructure solution required to address congestions problems or capacity issues of the inner Sydney and CBD transport network. Such options could, however, offer an ancillary means of reducing congestion.

The decision to propose light rail for Sydney's CBD and South East was founded on a thorough assessment of different transport options in response to existing and increasing problems associated with congestion in the CBD and South East. As such, it is not considered that further information is required (e.g. information from Opal) prior to proceeding with the CSELR. Transport for NSW also disagrees with the suggestions that the proposed CSELR should not proceed because trams were previously discontinued in Sydney and are an 'old-fashioned' transport mode. Light rail has recently been successfully implemented in numerous cities around the world.

Generally, the benefits of light rail over other modes (such as heavy rail) are that light rail offers greater scalability — the ability to increase or decrease services during peak times (including special events). Additionally, light rail makes it more convenient for commuters to change between transport modes and it also facilitates short trips within the CBD for business or recreation with a 'turn up and go' service.

Providing additional bus services was considered as part of the strategic options assessment. This option was not pursued as growth in buses and traffic would further compound existing congestion problems in the CBD and bus and traffic speeds would decline. Light rail was, therefore, identified as the preferred solution to increase the capacity and improve the reliability of the inner Sydney and CBD transport network.

Extensions to the proposed CSELR are considered in section 5.26.1 of this Submissions Report.



## 5.4.2 Tunnel alternatives

### Summary of issues raised

Submissions requested that the CSELR tracks are located underground to relieve traffic congestion, reduce project costs (due to reduced property acquisition) and reduce impacts on pedestrians, cyclists and road vehicles.

More specifically, strong support was given to a cut-and-cover tunnel under Moore Park and Anzac Parade as opposed to a viaduct solution, given the improvements to amenity, public space and traffic. One submission requested the extension of the cut-and-cover tunnel from the Moore Park stop to the other side of Lang Road. However, some raised concern in relation to the cost of a tunnelling solution and were more in favour of a viaduct solution.

Note: Sub-surface alternatives through specific sections of the alignment are discussed in sections 5.4.4, 5.4.5 and 5.4.9 of this Submissions Report.

### Submission number(s)

19, 28, 71, 78, 41, 178, 274, 306, 315, 321, 332, 354, 360, 370, 393, 413, 441, 442, 450, 447, 457

### Response

Building a surface light rail network in Sydney presents some significant advantages through opportunities for urban renewal and improved amenity, such as:

- a one kilometre pedestrian zone along George Street from Bathurst Street to Hunter Street
- reduced noise and air emissions in the CBD by removing buses from the CBD and replacing buses with light rail
- providing various opportunities for servicing urban renewal along the route
- public domain improvements, including revitalised public spaces.

Building the CSELR entirely underground would limit the potential to provide these improvements. Additionally, the costs of such a solution would be substantial and would present a range of challenges for convenient customer access and construction.

The proposed CSELR would improve the efficiency of the transport network, reduce congestion and would be designed to provide a high level of safety for both pedestrians and other road users. For the majority of the proposed route, LRVs would operate within an exclusive right-of-way, thereby minimising potential for accidents and collisions with other users.

Whilst some submissions raised support for the cut-and-cover tunnel under Moore Park, concern was raised regarding the cost of this tunnelling. The assessment of a tunnel option against a viaduct option was considered in section 4.3 of the EIS (Volume 1A). The cost of a tunnelling option was assessed as 'very high' compared to 'high' for the development of a viaduct. Whilst the viaduct was assessed as a lower-cost option, and would result in a marginal journey time benefit, this was not, on balance, considered to be sufficient to counter the potential visual impact and severance of the Moore Park playing fields.

Additionally, during the pre-EIS public consultation undertaken in September 2013, the community was given the opportunity to vote on their preference for a viaduct or tunnel across Moore Park. More than half (61 per cent) of respondents preferred a tunnel, whilst 16 per cent preferred a viaduct. A total of 23 per cent of people surveyed indicated they had no preference.

For these reasons, the tunnel was selected and assessed as the preferred alignment for this section of the CSELR.

Since publication of the EIS, Transport for NSW has reconsidered the location of the Moore Park stop and associated tunnel portal to further minimise impacts on Moore Park and provide convenient access to the Moore Park sports and entertainment complex and Sydney Boys and Sydney Girls High Schools. A proposed design change is outlined in section 6.8 of this Submissions Report. It is proposed to relocate the Moore Park stop and associated eastern tunnel portal approximately 250 metres further south of the alignment detailed in the EIS.

### 5.4.3 Alignment through the CBD

#### Summary of issues raised

Submissions suggested alternative routes through the CBD including along Pitt and Castlereagh streets, extension of the service to Barangaroo and the Eastern Distributor and a route along Phillip Street to Elizabeth Street (then on to Liverpool Street, Oxford Street, Taylor Square and Flinders Street). Support was also suggested for routes that trams and buses previously ran on from the CBD to Circular Quay and Central Station.

Loop services were suggested from Circular Quay via George, Alfred, Loftus and Bridge streets, and Central Station around Belmore Park.

George Street was considered by some to be too narrow to support the CSELR between Hunter Street and the Town Hall for LRVs and local authorised traffic.

#### Submission number(s)

13, 66, 144, 242, 47, 102, 264, 296, 348

#### Response

In order to select appropriate route options, a set of mandatory criteria was developed. To be further assessed in subsequent stages, each route option was required to meet the mandatory criteria. The criteria included:

- the need for an interchange with heavy rail
- the ability to serve key transport destinations within the corridor (CBD, UNSW and associated hospital precincts)
- engineering constraints (steep gradients or prohibitively narrow road widths).



Two alignments within the CBD were shortlisted following the consideration of options that met the mandatory criteria (refer section 3.4.3 of the EIS, Volume 1A). The two alignment options shortlisted included Central Station to Circular Quay via George Street (Option A) and Circular Quay to Barangaroo via Hickson Road (Option B).

Alternative north-south routes, such as Pitt Street, Castlereagh Street and Sussex Street, were discounted early in the options identification process as they would be unable to accommodate light rail due to their narrow widths and multiple vehicle access points, such as driveways and delivery points.

The proposed CSELR route along George Street (Option A) was selected following consideration of its good access to employment, retail and entertainment. In terms of engineering criteria, George Street has acceptable road widths and there are a low number of existing driveways along the route, which simplifies the introduction of light rail and allows traffic to be diverted to other routes. The George Street corridor also enables the light rail to act as a central high capacity transport spine through the city. The *Sydney City Centre Access Strategy* (NSW Government 2013b) provides further detail on the strategic context of light rail in relation to other transport modes.

Option B was discounted on the basis of passenger numbers. Even with significant future development at Barangaroo, forecast passenger numbers for this route option were very low. This is primarily because Wynyard Walk (under construction) will provide a shorter and more direct link between Barangaroo and other bus and rail services. However, Hickson Road is a potential future route for bus or light rail services in the future. The CSELR proposal does not preclude future extension of light rail to Barangaroo if required. The proposed CSELR alignment would not pass by the St James Building or the old Supreme Court. However these buildings would be within convenient walking distance of the CSELR.

A track junction would be constructed to provide a connection between the CSELR and the existing Inner West Light Rail tracks at Hay Street, allowing CSELR LRVs to access the proposed maintenance depot at Rozelle via the existing Inner West Light Rail line. However, as described in section 5.4.5 of the EIS (Volume 1A), the Inner West Light Rail and CSELR proposal have been designed to operate independently of each other during the operation of the overall light rail network. Passengers travelling on the Inner West Light Rail could access Circular Quay by interchanging at the Chinatown stop.

As described in section 5.4.13 of the EIS (Volume 1A), during operation of the proposal, unforeseen incidents may disrupt CSELR services, preventing parts of the CSELR network from operating and disrupting light rail services. The CSELR would provide a series of turnout points and crossover points along the length of the route, which could be used in the event of a service disruption to enable continued, albeit degraded, services. No passing loops are proposed as part of the CSELR. Preliminary operational contingency measures that would be implemented in the event of such incidents occurring on the CSELR network have been outlined in Appendix J of the EIS (Volume 1C). These contingency measures would be further refined and developed by the future Operator, in consultation with all relevant stakeholders.

## 5.4.4 Alignment through Surry Hills Precinct

### Summary of issues raised

A large number of submissions objected to the proposed surface alignment along Devonshire Street, stating that there was little or no consultation with residents regarding route selection. Submissions noted that Devonshire Street is not appropriate for light rail and this route would not result in access improvements for residents to the CBD. Further concerns were expressed in regard to the narrow width and steep gradient of Devonshire Street and the proximity of LRVs to residential premises and small businesses. LRVs along Devonshire Street were described as being likely to disrupt bus travel (from the inner west from Parramatta Road) and likely to significantly alter the 'village' and heritage character of Surry Hills. Only a few submissions expressed support for the proposed CSELR alignment along Devonshire Street.

Several submissions suggested alternative routes along Foveaux Street, Albion Street, Flinders Street, Oxford Street, Cleveland Street and Moore Park Road.

Alternative sub-surface routes under Devonshire Street or Foveaux Street (using a cut-and-cover tunnelling method) were the most suggested and supported. Sub-surface options were described as preferred as they would have less impact on residents, pedestrians, traffic flows, amenity, noise, parks, trees, journey times and, overall, would be more convenient.

Several requests were received to reconsider Foveaux Street, stating the option had been inadequately considered. Submissions said there was a lack of a business case and information regarding the costs and benefits of alternative alignments and requested that all Surry Hills routes be technically reviewed and details made available to the public.

Other alternatives to an alignment along Devonshire Street included following existing bus routes (such as Foveaux, Elizabeth and Albion streets, or to Green Square) and the re-opening of Cooper Street to a single lane, shared pedestrian-car zone.

Previous trams routes that had operated along Oxford Street and Cleveland Street and between the South East and Moore Park (via Taylor Square and Elizabeth Street) were described as being more logical and preferred to the CSELR.

Some residents believed they were misinformed and that the Devonshire Street route was chosen to favour the Sydney Cricket Ground and Fox Studios who demanded the line travel to their facilities from Central Station in exchange for a significant contribution to the project.

### Submission number(s)

1, 2, 4, 21, 22, 24, 33, 35, 36, 37, 50, 72, 82, 91, 98, 99, 101, 103, 105, 119, 121, 124, 154, 156, 167, 168, 170, 171, 172, 173, 174, 176, 181, 182, 184, 187, 188, 189, 191, 192, 193, 194, 196, 200, 212, 215, 218, 219, 226, 235, 236, 238, 239, 243, 253, 267, 271, 277, 280, 278, 280, 281, 287, 296, 312, 313, 314, 315, 316, 317, 322, 323, 326, 331, 341, 348, 350, 355, 358, 361, 364, 366, 376, 379, 381, 389, 396, 399, 405, 407, 410, 412, 413, 417, 421, 422, 427, 428, 433, 437, 440, 444, 447, 448, 449, 453, 455, 478, 482



## Response

Detailed consideration was given to the selection of the CSELR route between Central Station and the South East, including through Surry Hills. It is recognised that this is a densely populated suburb and that any surface route chosen would lead to amenity impacts for local residents adjoining the route.

As outlined in the response within section 5.4.3 above and in section 3.4.3 of the EIS (Volume 1A), a set of mandatory criteria were developed to determine route options. Options that did not meet the mandatory criteria included Albion and Foveaux streets, which were discounted on the basis that they are too steep for light rail. Cleveland Street was not considered as it is a key east-west arterial traffic link with little potential to divert traffic to alternative routes to allow for a dedicated light rail track.

Shortlisted options that met the mandatory criteria included Central Station to Moore Park via Darlinghurst (Option K); Town Hall Station to Moore Park via Darlinghurst utilising either Oxford Street (Option L1) or Campbell Street (Option L2); and options through Surry Hills, including Central Station to Moore Park via Surry Hills (Option I), and Central Station to Moore Park via Surry Hills tunnel (Option J).

Options which travelled via Green Square (Option G) and Waterloo (Option H) were discounted as they would not efficiently serve UNSW and would be slower than taking the existing bus service.

Assessment of the remaining options indicated that a higher level of demand resulted from a direct route from Central Station to UNSW and the Randwick health precinct via Surry Hills. Therefore Option I2, via Devonshire Street, and Option J, via a Surry Hills tunnel, were shortlisted, as these options best met the mandatory criteria for a light rail network (e.g. ability to serve key transport destinations and engineering constraints) and a strategic merit test (that considered factors such as customer experience, productivity, sustainability and liveability).

The routes via Town Hall and Darlinghurst (Option L1 and Option L2) and via Central and Darlinghurst (Option K) were forecast to attract only about 60 per cent of the demand expected for the Surry Hills routes and were therefore discounted.

The shortlisted route options (I2 and J) were then further investigated in consultation with key stakeholders and were subject to a multi criteria analysis (MCA) and rapid economic appraisal (REA) to determine the best performing option. An additional option, a bus rapid transit (BRT) option, was identified through this process, but later discounted as it offered less capacity, had less forecast demand, and would not reduce traffic congestion.

The Surry Hills tunnel option did not proceed due to the substantially higher costs and impacts of a building a 2.2 kilometre long tunnel which would need to be up to 30 metres deep to avoid the Eastern Distributor. The construction period would be longer than a surface route and would require extensive truck movements to remove spoil. A high land take would also be required near Central Station, and operating in such a deep tunnel would result in engineering challenges for passenger safety. Additionally, a tunnel option would have meant no CSELR stop in Surry Hills and therefore no access to light rail for customers wanting to travel to or from Surry Hills.

The Devonshire Street surface route option was therefore preferred over the tunnel and BRT options. A proposed route alignment along Devonshire Street would be substantially less expensive than a tunnel option and would allow for a stop in Surry Hills. Compared to the tunnel and BRT options, this option would result in improved public transport accessibility to and from key residential, entertainment and recreational destinations in addition to stimulating urban renewal opportunities.

As referred to in the submissions, an alternative between Central Railway Station and Moore Park was proposed by local community representatives during the EIS preparation phase consultation in September 2013 (refer to section 3.4.5 of the EIS, Volume 1A). The alternative alignment proposed a cut-and-cover tunnel along Foveaux Street, continuing to Moore Park via a tunnel underneath the junction of Anzac Parade and Foveaux Street. An assessment of this alternative alignment was undertaken by Transport for NSW. This concluded that it would be significantly more expensive and disruptive to build than the preferred alignment along Devonshire Street. The assessment identified that the option had significant constructability concerns and potential conflicts with tunnels and utilities. The Foveaux Street alternative alignment was not considered to provide any advantages over the preferred alignment along Devonshire Street and therefore was not considered further.

The CSELR proposal forms part of Stage 3 of the NSW Government *Sydney's Light Rail Future* document (NSW Government, 2012b). The government proposes to investigate extensions to the Sydney light rail network as a part of Stage 4 of this plan, as demand for public transport increases and based on feasible solutions to expand the network.

Submissions also requested that information used in the assessment of route options be made available to the public. Chapter 4 of the EIS (Volume 1A) outlines the process adopted and options considered to select the preferred route alignment. This information was in accordance with the Director General's requirements for the EIS.

Further discussion of the Surry Hills alignment can be found in section 5.3.1 and section 5.4.5 of this Submissions Report.

## 5.4.5 Alignment between Bourke Street and Moore Park

### Summary of issues raised

Options 1A and 1B were supported for having the straightest alignment and, therefore, less noise impacts on surrounding areas. The preferred alignment (Option 1B) through the Olivia Gardens apartment complex site was most preferred as this option would not result in the acquisition of a property. The route was considered to be the most cost-effective and would have the least impacts on the environment and residents.

Option 1C was less supported, but was favoured for the potential for a larger open park, preservation of a large Moreton Bay Fig tree near the Langton Centre and the removal of a former warehouse. Safety concerns were raised for this option in relation to the crossing of school children.

Alternatives to the preferred alignment were suggested along Phillip Street, Alfred Street, Elizabeth Street, Liverpool Street, Oxford Street and Flinders Street; and Bourke Street and Nobbs Street, through to Moore Park. Sub-surface options were also suggested including an alternative sub-surface route under Foveaux and Fitzroy streets.





One submission questioned why the existing traffic lights on South Dowling Street, and the associated pedestrian crossing of the Eastern Distributor, cannot be used for the CSELR proposal.

#### Submission number(s)

2, 44, 92, 93, 102, 107, 108, 109, 110, 118, 124, 127, 128, 131, 142, 168, 170, 185, 232, 233, 315, 318, 403, 404, 447

#### Response

A detailed assessment of preferred route alignments between Bourke Street and Moore Park was undertaken and is detailed in section 4.3.2 of the EIS (Volume 1A). Alignments through Oxford Street were discounted on the basis that they were forecast to attract only 60 per cent of the demand compared with alternative routes.

A total of 10 surface alignment options were assessed based on a range of criteria, including light rail operations and functionality, engineering design and constructability, environmental and social quality and accessibility. Based on the assessment of the options against the criteria, all options located within the boundaries of the Olivia Gardens apartment complex (Options 1a, 1b and 1c) were, collectively, preferred compared to the other options (Options 2, 3, 4, 5a-d) for the following reasons:

- The options have operational benefits as a result of a straighter alignment.
- The options have better accessibility outcomes by avoiding closure of streets to traffic and removing parking.
- The options would have significantly reduced environmental impacts during both construction and operation.
- The options allow for the provision of a new large open space.

Option 1b (passing directly through the centre of Wimbo Park) was found to be the best performing option. Option 1b avoids the need to acquire additional properties, minimises impacts to the Langton Centre, provides adequate replacement parking for the Langton Centre within the former Olivia Gardens site and provides a marginal additional benefit compared to Option 1a due to its location further south away from the Eastern Distributor on-ramp. As such, Option 1b was adopted as the preferred alignment. The support for Option 1b within a number of the submissions is noted.

Regarding the pedestrian crossing over South Dowling Street, such an option would be contingent on selection of a southern alignment (Options 5a to 5d) between Bourke Street and Moore Park, which were discounted in the options assessment described above and in section 4.3.2 of the EIS (Volume 1A). These southern options were discounted for reasons such as impacts to local traffic and access and amenity.

## 5.4.6 Alignment through Moore Park Precinct

### Summary of issues raised

Submissions raised general concerns about the alignment through the Moore Park Precinct and suggested alternatives to the preferred route. Several submissions suggested placing the proposed CSELR on the existing busway along Anzac Parade to minimise heritage impacts, the loss of open space and trees.

Other suggestions included considering a special-event loop at Driver Avenue and amending the route to serve commercial services along Cleveland Street and the Sydney Boys and Girls High School. Specific comments included:

- Create indents in wider footpaths on Anzac Parade to allow for bus stops.
- Following the introduction of the CSELR, the need for bus services will be significantly reduced. Therefore, the remaining bus services could easily be accommodated on Anzac Parade (rather than allowing these buses to share the CSELR alignment).
- The risk of branches falling onto overhead wires is not a credible reason to avoid running light rail along the bus roadway.
- Supportive of the preferred option between Moore Park stop and Robertson Road.

### Submission number(s)

32, 66, 84, 90, 91, 144, 178, 274, 296, 332, 393, 449, 454, 455

### Response

For the section of the proposed CSELR alignment north of Robertson Road, running LRVs in the existing busway, whether co-located with buses or with buses displaced onto Anzac Parade, would likely require significant pruning or removal of the large Figs adjacent to the busway to accommodate the overhead wiring system. Wire-free running is not an option through this section due to the high speeds required and the distance between stops (refer to section 4.5.3 of the EIS, Volume 1A). Therefore, the preferred option between Moore Park stop and Robertson Road is for a dedicated light rail track running adjacent to the busway on the eastern side.

In the section between the Anzac Parade/Dacey Avenue/Alison Road intersection and Doncaster Avenue, there is limited space for a dedicated light rail alignment adjacent to the existing busway without impacting the Kensington Ponds to the north, the row of trees between Alison Road and the busway, or the existing cycleway between the busway and Kensington Ponds. Displacement of bus services onto Alison Road, which currently experiences significant congestion during the peak periods, would result in worsening of traffic congestion and journey time reliability for the remaining buses and is therefore not preferred.

The CSELR splits into the Randwick and Kingsford branches at the Anzac Parade/Dacey Avenue/Alison Road intersection. Prior to (north of) this split, light rail and bus services would serve both Randwick and Kensington and their environs. Past (south of) this split, there would be a reduction in the frequency of LRVs and buses on each branch. For this reason, shared running south of Robertson Road would have less impact on the efficiency and reliability of the light rail system.



Co-location of light rail and bus services along the section between Anzac Parade and Doncaster Avenue is preferred because:

- The shared running section would only be 600 metres long and impacts to reliability and journey time would not be significant, although there may be some impact if inbound express buses are retained in the peak. This is subject to ongoing investigation.
- It would result in a better environmental outcome, by avoiding impacts to the Kensington Ponds and adjacent Fig trees.
- It would avoid increased traffic congestion on Alison Road resulting from displaced buses.

Cleveland Street was not considered in detail as it is a key east-west traffic link with little potential to divert traffic to alternative routes to allow for a dedicated light rail track.

A special event loop adjacent to Driver Avenue has not been included in the proposed CSELR due to the crowding that may occur on platforms. Stops have been designed to allow crowds to disperse and safely get to transport modes separately; for example by light rail, bus, walking or car.

#### 5.4.7 Alignment through the Randwick Precinct

##### Summary of issues raised

Submissions raised general concerns about the alignment in this section, proposed alternative alignments for the Randwick Precinct and/or made suggestions to minimise environmental impacts and retain on-street parking. Specific comments included:

- The CSELR alignment should operate via the Belmore Road retail area.
- The argument that Alison Road is too steep for LRVs to operate is not accurate.
- The light rail should cross Alison Road (subsurface) near Doncaster Avenue and continue to Kingsford along the western perimeter of the racecourse land, branching off at High Street to serve the university and hospital.
- The Randwick line should not turn immediately into Alison Road, but should turn left from Anzac Parade into Abbotford Street, which offers direct entry into the racecourse and has a wide central grassed median.
- A double track link should be provided from the racecourse stabling area via Ascot Street to connect with the Anzac Parade trackage.
- The light rail in Alison Road should enter the racecourse and proceed along the tree line or other side of the trees, and continue on a route west of the trees along Wansey Road to High Street.
- Objects to alignment along High Street and High Cross Park, in particular the associated tree loss and high-energy consumption.
- Preference is for light rail following the old tram routes to Coogee Beach, extended to the Prince Henry development site, with a spur up High Street to service Prince of Wales Hospital and UNSW, linking Randwick shopping precinct and Anzac Parade.

- The Randwick branch of the light rail should be abandoned as there is no solution to problems on that route. The light rail should terminate at the junction of High Street and Anzac Parade on the racecourse side where there is space.

### Submission number(s)

32, 84, 210, 214, 220, 244, 259, 277, 306, 432, 454, 476

### Response

A route alignment to Randwick was incorporated in the proposed CSELR to address existing and future transport demand in this locality and service major facilities including Royal Randwick racecourse, the UNSW upper campus and the Randwick hospitals precinct. The Randwick branch (and stop) would provide a critical interchange function serving interconnecting bus services from the South East suburbs extending to Coogee and Maroubra.

A detailed assessment of alignment options between Moore Park and Randwick was undertaken as part of the initial options identification and assessment stage (refer to section 3.4.3 of the EIS, Volume 1A). An alignment along Belmore Road (Option O1) was considered as part of the assessment, but was discounted on the basis that it did not serve the key student market at UNSW, a key transport destination. Terminating the CSELR at High Street and Anzac Parade would also not serve the UNSW Upper Campus or link into interconnecting bus services at the proposed Randwick stop.

It is acknowledged that tree removal and some loss of parking would occur as a result of the proposed alignment from Moore Park to Randwick; however, on balance, the proposed route via Alison Road, Wansey Road and High Street is preferred in terms of the connection to the transport interchange with bus routes at High Cross Park and connection with UNSW and the Prince of Wales Hospital. An assessment of impacts on parking in the Randwick Precinct is detailed in section 15.3 of the EIS (Volume 1B), with associated mitigation included in section 15.3.4. Section 5.8 of this Submissions Report details additional responses to submissions received concerning car parking. Chapter 6 of this Submissions Report details the proposed design changes in the Randwick Precinct and other areas of the alignment.

In response to the submission concerning high energy consumption, the benefits associated with the proposed alignment along High Street and into High Cross Park are considered to outweigh energy consumption considerations of an alternative alignment.

Crossing Alison Road subsurface is not a viable option because of hydrological constraints in this area (the area is already a low point and prone to flooding). Cost and constructability issues would also limit the feasibility of this option. An alignment along the western perimeter of the racecourse land (parallel to Doncaster Avenue) is not preferred for the reasons described in section 5.4.9 of this Submissions Report.

An alignment along Abbotford Street was considered for the Randwick branch during design development, but was discounted because LRVs would need to travel through four intersections instead of one at Doncaster Avenue, which would significantly increase travel times and delays.



Regarding the suggestion for a connection with the racecourse stabling area via Ascot Street to connect with the Kingsford branch, such a connection from the Kingsford branch through to the stabling facility was considered during the route assessment, but was discounted in favour of a connection from the Randwick branch, which is also close to the intersection between the two branches. The grades along Alison Road, Wansey Road and High Street are suitable for light rail operation and conveniently connect the racecourse, UNSW upper campus and the hospitals precinct. Overall, the CSELR would provide a series of turnout points and crossover points along the length of the route, which could be used in the event of a service disruption to enable continued, albeit degraded, services (refer section 5.4.13 of the EIS, Volume 1A).

Although any light rail extensions are outside scope of the CSELR proposal (i.e. they not required to meet identified proposal need and objectives in Chapter 3 of EIS, Volume 1A), the CSELR proposal has been designed to allow for potential future extensions.

### 5.4.8 Alignment along Wansey Road

#### Summary of issues raised

Concerns and objections were raised over the Wansey Road alignment. Several submissions suggested that the CSELR alignment on Wansey Road should be redirected into Royal Randwick racecourse to avoid the Moreton Bay Figs. Some submissions preferred this alignment as it would maximise the potential for the retention of significant trees, reduce impacts on adjacent residential properties, mitigate traffic and/or parking impacts, and improve the journey experiences for light rail passengers (i.e. visual amenity benefits through the retention of the significant trees).

Other suggested alternative alignments included running the proposed CSELR along Botany Street and Barker Street to service hospitals and schools. More specific designs for Wansey Road were suggested including utilising the nature strip on the eastern side of Wansey Road and relocating the northbound traffic lane to the west to reduce traffic conflicts.

Other concerns suggested that Wansey Road was too narrow and that the road should be widened to accommodate new trees and tracks. Clarification was also requested regarding the position of a footpath and cycleway on Wansey Road.

Submissions were received supporting and endorsing comments made by Wansey Road Action Group. This Action Group submission proposed an alternative alignment with a viaduct and indicative costing. A cost–benefit analysis of this alternative was requested.

Other specific comments from submissions included:

- The proposal for Wansey Road should be changed. After the northern section, the up and down tracks should cross to give right hand running in the rest of Wansey Road. The width of the eastern parking lane should be reduced and a fifth lane inserted in the centre for cars waiting to turn into driveways.
- Alter the design to ensure all vehicle movements from properties along Wansey Road do not require cars to cross the centre line of Wansey Road to complete movements to/from garages serving dwellings. The proposal must retain one lane of kerbside parking within Wansey Road, along its eastern edge.

### Submission number(s)

54, 56, 59, 63, 64, 75, 95, 217, 231, 244, 255, 260, 321, 435, 443, 329, 264, 299, 329, 349, 372, 374, 378, 393, 426, 454, 476

### Response

Wansey Road provides a suitable gradient and direct access to the UNSW Upper Campus gate 9 and, therefore, was preferred over alternative roads/routes to this campus. The option of connecting to the Upper Campus along High Street from Anzac Parade was also discounted during the initial route options analysis described in section 3.4.3 of the EIS (Volume 1A) because of the steep grade along lower High Street, which would require significant engineering works. Botany Street does not provide direct access to the UNSW Upper Campus stop. Barker Street would provide direct access to the main entrance to the Prince of Wales Hospital, but would require the CSELR alignment to 'double back' to High Cross Park to connect to bus services coming from the east. The western end of Barker Street also has unsuitable grades for light rail that could not be feasibly addressed through engineering works. The proposed route via Alison Road and Wansey Road also provides improved access for the residential area at the northern end of Randwick, as well as access to the Royal Randwick racecourse main entry on Alison Road.

Through discussions with Randwick City Council and consideration of traffic, engineering and environmental constraints, four alignment options were developed along Wansey Road (Options 1–4). An assessment of the alignment options is included at section 4.3.3 of the EIS (Volume 1A). The assessment demonstrated that the alternative alignment through Royal Randwick racecourse land (Option 4) performed well against the criteria. However, due to the additional acquisition costs and potential construction program risk, as well as the potential need to relocate existing horse stables in the south-east corner of the racecourse, Option 4 was not preferred.

The remaining three options were considered to have similar impacts with regard to the environment, general amenity and engineering and design risk. Option 3, which comprised a shared traffic and light rail alignment along the centre of Wansey Road, was considered to be the worst performing option due to safety and operational issues.

Option 1 was identified as the preferred option. Option 1 comprised a light rail alignment on the western edge of Wansey Road, removing existing parking spaces on both sides of Wansey Road but allowing for the retention of two lanes of traffic to continue to operate along Wansey Road.

An assessment of impacts on parking in the Randwick Precinct was provided in section 15.3 of the EIS (Volume 1B) with associated mitigation included in section 15.3.4. Proposed design changes to address the concerns raised regarding parking impacts in Wansey Road are described in section 6.11 of this Submissions Report. The amendments would include the retention of one lane of existing parking along part of the eastern side of Wansey Road between Alison Road and Arthur Street. The existing pedestrian and cycleway along Wansey Road would also be maintained as part of this option.

The revised design also addresses the concern regarding movements to/from garages serving dwellings, as the addition of the parking lane would provide additional room for these movements.



In regard to the suggestion that Wansey Road should be widened to accommodate new trees and tracks, any further widening would require either partial acquisition of private residential properties to the east, or acquisition of racecourse land and major engineering works to the west (including major retaining works). For these reasons, this option is not considered feasible.

The viaduct option presented by the Wansey Road Action Group is not preferred relative to the Option 1 (the preferred alignment). The viaduct option has a similar alignment to Option 4, which was discounted due to cost, property acquisition and program impacts (refer section 4.3.3 of the EIS, Volume 1A). A viaduct would also have significant visual amenity impacts in this area.

## 5.4.9 Alignment through Kensington/Kingsford Precinct

### Summary of issues raised

Concern was raised over the proposed crossing of Anzac Parade/Alison Road by the CSELR. Submissions noted that the intersection was already busy during peak and shoulder periods and therefore further delays to both vehicular traffic and the proposed CSELR may result. The need to avoid any impact to Tay Reserve's heritage significance and trees was noted. In response to concerns, submissions suggested a grade separation or a tunnel solution is investigated. For similar reasons, an underpass or grade separation at Nine Ways roundabout was also suggested.

Alternative alignments were suggested along Doncaster Avenue which would also allow access to the stabling facility. An opportunity was also highlighted to use existing light rail reserves remaining in the Randwick LGA to minimise mixed traffic implementation.

Suggestions were made to terminate the Kingsford branch at Anzac Parade at UNSW; however other submissions suggested extending the Kingsford branch to Maroubra Junction or Maroubra Beach.

### Submission number(s)

3, 7, 30, 66, 100, 133, 144, 259, 260, 349, 365, 393, 441

### Response

Several submissions suggest that a grade-separated intersection or tunnelling solution should be provided at the Anzac Parade and Alison Road intersection. At this intersection, the alignment would branch into two separate routes to Randwick and Kingsford. The Randwick branch would travel south-east along the existing busway (to be shared between buses and LRVs) on the northern side of Alison Road. The Kingsford branch would follow Anzac Parade as a generally centre-running light rail corridor. This configuration has been designed to meet the overarching objective to maximise transport system performance and deliver the best outcomes for the community as a whole.

Traffic modelling of this intersection demonstrated that the intersection provided an acceptable performance with the light rail crossing. As such, the proposed at-grade layout is considered an appropriate means of achieving the objectives without the cost of a grade separation or tunnelling. Further design refinement to optimise the intersection would be undertaken during detailed design in consultation with Roads and Maritime Services (RMS).

Tay Reserve would be impacted as a result of the crossing at the Alison Road/Anzac Parade intersection. Avoiding Tay Reserve would have a far greater impact at the intersection as the light rail would cross more road lanes, thereby limiting dual running of road and light rail traffic, resulting in greater traffic congestion.

It is proposed that LRVs would progress through intersections under signal control and with minimal delay (refer to section 5.4.3 of the EIS, Volume 1A). The design of the Anzac Parade and Alison Road intersection would have regard to all road users and the overall performance of the transport network. The Sydney Coordinated Adaptive Traffic System (SCATS) is designed to ensure the operation of each intersection achieves the optimal performance for the network as a whole and would be expanded to accommodate LRV operations. LRVs are expected to experience small delays at some intersections depending on the direction of travel and time of day; however this has been factored into the proposed light rail journey time forecasts. The final design of Anzac Parade and Alison Road intersections and traffic light control system would be completed during the detailed design phase of the proposal.

One submission suggested that an underpass should be considered at the Nine Ways intersection, whilst another suggested a flyover at this location. The Nine Ways intersection is proposed to be reconfigured to remove the roundabout and install traffic signals. Constructing an underpass or flyover at this location is not considered to be necessary for the intersection to operate at a satisfactory level. The proposed intersection changes also avoid the additional construction cost and environmental impacts associated with an increased footprint for a grade-separated option. Further details regarding the proposed traffic access management changes resulting from the CSELR proposal are provided in Chapters 12 to 16 (refer Volume 1B EIS) and Technical Paper 1 (refer Volume 2 of the EIS). Further details would also be made available during the detailed design stage of the CSELR.

Doncaster Avenue was not preferred as an alternative route for the CSELR alignment relative to Anzac Parade. Anzac Parade is a major transport corridor and has the advantage of a wide avenue and a generally centre-running light rail corridor from Alison Road to the existing Nine-Ways intersection. This section of the alignment along Anzac Parade would also be more centrally located for the residents of Kensington. The CSELR has been designed in favour of customer needs. From a customer perspective, the light rail would be located in the same corridor as the buses it replaces, providing a similar level of accessibility to existing customers.

The proposed alignment along Anzac Parade would therefore provide the best operational route for the residents of Kensington whilst also providing good access to the stabling facility. Combined, these benefits outweigh any benefit of locating the alignment along Doncaster Avenue to access the stabling facility, particularly considering the proximity of the stabling facility to the Kingsford and Randwick junction.

One submission suggested terminating the Kingsford branch at UNSW (Kensington Campus). In 2036, approximately 1,900 customers are forecast to board the CSELR at Kingsford, of which approximately 1,650 (88 per cent) would interchange from buses. UNSW represents only 700 boardings in the AM peak in 2036. Kingsford is also an important interchange in the NSW Government's overall transport strategy for a connected network delivering efficiency and improved customer experience and access.

Former light rail reservations have not been utilised for the proposed CSELR, as these areas are still required for bus operations. The CSELR has been designed to respond to current issues and demand projections in Sydney's CBD and South East. The proposed alignment for the CSELR has been subject to a comprehensive options identification and assessment process to deliver the necessary transport system to meet customer requirements in Sydney and the CBD.





Although any light rail extensions are outside the scope of the CSELR proposal (i.e. they are not required to meet the identified proposal need and objectives in Chapter 3 of the EIS), the CSELR proposal has been designed to allow for potential future extensions.

#### 5.4.10 Alignment – general

##### Summary of issues raised

Questions and concerns were raised over why certain routes were selected over others in the EIS. It was also suggested that evidence regarding how options have been considered should be made publicly available. Suggestions were made that the route selected should minimise the loss of parking, focus on inner city growth areas such as Zetland, travel down existing road corridors (by closing car lanes), and include a loop system to allow LRVs to turn around.

Concern was raised that the CSELR duplicates the route of heavy rail in the city and that the light rail to Randwick and Kingsford and the route through the CBD are two different issues that have been linked as a marketing exercise.

##### Submission number(s)

66, 144, 264, 265, 297,316, 329, 348, 354, 444

##### Response

LRVs would travel down roads in various locations along the proposed CSELR and for the majority of route would operate within an exclusive right-of-way. The route selected for the proposal seeks to balance the needs of all road uses across the network, whilst also responding to the current capacity constraints on the road network that affects the existing efficiency of buses from the South East suburbs to the CBD. Regional traffic and transport impacts are assessed in section 9.2 of the EIS (Volume 1A).

As per the CSELR proposal objectives (refer section 1.3 of the EIS, Volume 1A), the proposal is designed to improve reliability and efficiency of travel to, from and within the CBD and suburbs to the South East, and to improve access to major destinations like Moore Park and UNSW. Section 4.1.1 of the EIS (Volume 1A) details how the alignment and stop locations for the proposed CSELR were chosen. The proposed alignment has been designed to respond to current transport needs and demand projections in Sydney's CBD and South East. It does not duplicate existing heavy rail routes.

In response to submissions on light rail passing loops, the CSELR would provide a series of turnout and crossover points along the length of the route, which could be used in the event of a service disruption to enable continued, albeit degraded, services. Looped systems were considered in the design; however the track designs at stops were selected to provide greater flexibility for operations, especially during special events, where LRVs would need to be terminated at Town Hall for example. Additionally, space restrictions at Circular Quay, Town Hall, Central, Randwick and Kingsford do not allow for construction of a loop. As such, no passing loops are proposed as part of the CSELR.

An assessment of impacts and associated mitigation for parking is included in the EIS for each precinct (refer Volume 1B, Part D). Section 5.8 of this Submissions Report details additional responses to submissions received concerning car parking.

## 5.4.11 Randwick stop location

### Summary of issues raised

A large number of submissions suggested the relocation of the Randwick stop from High Cross Park to High Street. The majority of the submissions suggested that the Randwick stop should be relocated to more closely serve passengers accessing the hospitals (particularly for less mobile passengers) and because of adverse impacts to High Cross Park. Concerns within submissions stated that the stop in High Cross Park would impact heritage, public open space, visual amenity and the ability to undertake community functions. Suggested mitigation included provision of an underground car park beneath High Cross Park, changing the track locations to avoid the park and the construction of a tunnel.

Other submissions stated that the stop is too far away from residents and that the EIS did not present enough detail about the proposed location of the Randwick stop or any alternatives. Manoeuvrability of buses around the stop was also raised as a concern. Alternative stop locations included Clara Street, Belmore Road, Perouse Road, Botany Street, Avoca Street, Coogee Bay Road, Alexandria, Eastgardens and a property adjacent to Brigandine School. Support was given to the stop locations suggested by Randwick City Council (refer Chapter 4 of this Submissions Report for details of Council's submission).

Some submissions supported the location of the terminus at High Cross Park as this location would allow the most efficient transfer between bus and light rail.

### Submission number(s)

7, 48, 54, 56, 59, 63, 64, 75, 85, 94, 113, 133, 136, 137, 138, 150, 201, 202, 203, 216, 223, 231, 241, 245, 247, 255, 258, 260, 268, 277, 285, 300, 306, 310, 378, 386, , 443, 365, 288, 294, 375, 294, 329, 349, 354, 360, 362, 365, 370, 476, 479

### Response

The Randwick stop would serve as the terminus for the Randwick branch of the CSELR and would provide a critical interchange function serving interconnecting bus services from the south-eastern suburbs extending to Coogee and Maroubra. The stop would also provide access to the major trip generator of the Prince of Wales Hospital, as well as Randwick shopping centre and other retail uses.

Three stop locations for Randwick were considered in the EIS (refer section 4.4.2, Volume 1A) over two distinct locations (Options 1-3 as described in section 4.4.2, Volume 1A). Option 1 comprised a stop located in the eastern portion of High Cross Park. Options 2 and 3 were located on High Street, west of the intersection with Avoca Street. Option 2 comprised two side platforms and a complete closure of High Street at Avoca Road and Option 3 comprised an island platform to reduce the width of the terminus and allow for one road traffic lane operating eastbound.

Several submissions requested that a stop be located further west along High Street to serve the Prince of Wales Hospital. This location was not feasible, as a stop here would be limited by the steepness of High Street, which falls more steeply to the west. There is also a need to avoid impacts on the car and emergency vehicle access near Clara Street and Hospital Road.



A comprehensive assessment of Options 1 to 3 was undertaken and is detailed in section 4.4.2 of the EIS (Volume 1A). Options 2 and 3 were assessed as offering a number of advantages from a customer perspective, including their proximity to the Prince of Wales Hospital without the need to cross Avoca Street. Both options do, however, offer a sub-optimal outcome from a transport integration perspective. Local and regional accessibility performance would be reduced with Options 2 and 3, as High Street would be either completely closed or limited to one-way traffic only. Cross-regional bus services would also require re-routing through surrounding streets, and maintaining through-traffic along High Street (an important east-west link) would not be possible.

Option 1 would provide a key benefit in terms of the overall transport interchange between the CSELR proposal and buses. Approximately 85 per cent of light rail passenger boardings are expected to transfer from buses; therefore the need for simple, fast and legible interchange for customers is a key differentiator in comparing these options. The support in some submissions for the location of Option 1 is noted.

With regard to environmental and social quality criteria, Option 1 was considered to perform relatively poorly due to the adverse impacts to High Cross Park, in particular the reduction of open space, removal of trees and potential heritage impacts to the park. Several submissions raised concern over the impact of the proposal on High Cross Park. In response to these submissions and to reduce the overall impact of the CSELR and the Randwick stop, the Randwick stop is proposed to be moved approximately three metres north towards Belmore Road (approximately one lane width) relative to the design in the EIS. Further details of this change and a revised proposal for High Cross Park is included at section 6.12.1 of this Submissions Report. The preferred stop location is approximately 200 metres from the main entrance of the Prince of Wales Hospital, which provides a good level of access from the light rail service.

Offsetting open space in High Cross Park by the provision of a small underground car park is not considered preferable to the benefits of Option 1, particularly with regard to cost. Chapter 15 of the EIS (Volume 1B) details the management and mitigation measures proposed for the Randwick Precinct and High Cross Park. Specific mitigation measures are also included in Chapter 8 of this Submissions Report.

Whilst acknowledging the environmental and social impacts of a stop in High Cross Park, and noting the proposed amendments to the design and location of the stop, Option 1 is the preferred stop location and layout due to the benefits it would provide in terms of overall transport interchange between the CSELR proposal and buses. Ongoing consultation with Randwick City Council and relevant stakeholders would continue during detailed design.

Although any light rail extensions are outside scope of the CSELR proposal (i.e. they not required to meet the identified proposal need and objectives in Chapter 3 of EIS, Volume 1A), the CSELR proposal has been designed to allow for potential future extensions.

## 5.4.12 Alternative or additional stop locations

### Summary of issues raised

Some submissions raised concerns regarding the distance between stops and the number of stops provided along the CSELR route. These submissions stated that the stops and their locations have not been adequately justified, considering stops in the CBD are a very short distance apart and stops outside the CBD are a longer distance apart. Specific concerns included longer walking journeys, reduced access to public transport and potential difficulties for elderly and disabled passengers to access public transport services.

Numerous submissions were received in relation to the provision of additional stops and providing stops in alternative locations. The largest number of submissions concerned the location of the Moore Park stop. Many submissions stated that the stop does not currently provide for major trip generators in the area including the entertainment precinct and the Sydney Boys and the Sydney Girls High Schools.

Specific comments of concern, support, alternative stop locations and additional stops are summarised below.

#### *General concerns and objections to stop locations:*

- Not supportive of any new stops.
- Objection to location of George Street stops.
- Grosvenor Street, World Square, Queen Victoria Building and Rawson Place stops have no value, and should be eliminated to improve journey times.
- Rawson Place is an inappropriate location for a transport interchange due to poor amenity and weather.
- The Surry Hills stop is unnecessary because of Surry Hills' proximity to Central Station.
- Does not support the proposed Surry Hills stop.
- Concern that patrons of Crown Street will have to walk too far from the Ward Park stop.
- The UNSW High Street stop does not appear to be warranted. Projected patronage movements for each stop have been withheld from public release.
- Concern about moving the Wansey Road stop back onto Alison Road.
- Strong objections to the Kingsford terminus location at the entrance to the Souths Juniors club.

#### *General comments and statements of support:*

- Supports proposed location of the Moore Park stop, per the EIS, noting the importance of being close to the stadia and more convenient than car travel.

*Alternative stop locations:*

- Circular Quay stop — should be moved to the east or southern side of Park and Market Street.
- Wynyard stop — locate closer to Angel Place, to encourage better interchange with pedestrian flow.
- Queen Victoria Building (QVB) stop — relocate north of Market Street, more centrally to its catchment and the major retail precinct. Preference to have QVB stop relocated to southern end of QVB to provide attractive pedestrian precinct with links to buses, trains and the QVB.
- Rawson Place stop — relocate to Eddy Avenue/Central Station.
- Surry Hills stop — relocate to Olivia Gardens to shorten journey time to Central Station.
- Moore Park stop — locate to service the entertainment precinct, and locate further south to service the schools.
- Randwick Racecourse special-event stop — should be moved to the west side of the racecourse on a loop around the depot or to the east to be more centred on the catchment to cater for both event patrons and local catchments such as the residential and TAFE to the north.
- Carlton Street stop — move the stop further north to serve the E.S. Marks field and/or residents in Moore Park.
- Todman Avenue stop — relocate south of Todman Avenue and centre on the catchment or further north and onto Royal Randwick racecourse land to the eastern end of Ascot Avenue to minimise traffic conflicts.
- Strachan Street stop — should be moved to Borrodale Road.
- Kingsford stop — relocate further from the roundabout/signal intersection of Anzac Parade, Gardeners Road, Rainbow Street and Bunnerong. Concerned the terminus will negatively impact on traffic flow in this area. Option 3 or 1 preferred.
- UNSW stop — change to an island platform on Anzac Parade median.
- Wansey Road stop — relocate to Alison Road to retain stables.

*Additional stops:*

- Outside the Apple Store between Wynyard and QVB.
- At the intersection of George and King streets.
- Elizabeth Street (additional).
- At the Northcott complex, Surry Hills.
- Wimbo Park (Bourke Street) to service patrons of Langton Clinic and the seniors club on South Dowling Street.
- Corner of Foveaux and Crown Streets to draw passengers in Surry Hills.

- Between South Dowling Street and Bourke Street.
- At the Olivia Gardens apartment complex (close to Bourke Street) to provide benefits for people who live in South East Surry Hills and Redfern.
- At Prince of Wales Hospital in High Street, between Clara and Avoca Streets.
- At the Robertson Road – Anzac Parade intersection.
- At the intersection of Lang Road and Anzac Parade to service the Entertainment Quarter and Centennial Park.
- Macarthur Avenue (Moore Park) to provide sufficient space for track switching.

#### Submission number(s)

1, 8, 44, 50, 61, 66, 68, 74, 84, 85, 90, 91, 97, 106, 123, 124, 126, 144, 147, 151, 152, 156, 157, 162, 178, 184, 210, 213, 214, 220, 227, 239, 242, 243, 250, 258, 260, 262, 268, 271, 274, 275, 291, 294, 296, 298, 299, 300, 302, 312, 316, 319, 302, 321, 326, 332, 334, 335, 336, 337, 347, 348, 350, 353, 356, 370, 377, 392, 399, 416, 421, 429, 438, 442, 449, 457, 470, 476, 478, 481

#### Response

The approach to selecting the location and configuration of stops for the CSELR is described in sections 4.1 and 4.4 of the EIS (Volume 1A).

A comprehensive assessment process was applied, which included consultation with key stakeholders.

The assessment process for the selection of stops initially involved the development of a long list of stop locations for the CSELR. Each of these locations was assessed against a broad set of criteria which included:

- potential role and function of the stop (origin, destination)
- potential walk-up catchment of the stop
- access to modal interchange/transfers (such as to/from bus, heavy rail or ferry services)
- compatibility and potential for integration with the proposed George Street pedestrian zone (for proposed CBD stops within this area)
- environmental constraints
- constructability (time to construct, potential cost, requirements for earthworks)
- potential for local urban renewal opportunities and land use changes
- the overall and average distance between potential stop locations
- site constraints such as existing topography and access arrangements for compliance with the *Disability Discrimination Act 1992* (DDA) and *Disability Standards for Accessible Public Transport* (DSAPT)
- stakeholder input



- potential patronage in relation to existing and projected population and employment localities (such as the existing urban renewal developments within the CBD, including Barangaroo, and the current investigations as part of the Randwick UAP).

The need to provide convenient access to major trip generators, higher density development and commercial centres was also considered.

After applying these criteria, a short list of preferred stops was determined. The short list of CSELR proposal stops included 20 preferred stop locations selected through the assessment process described above to provide maximum benefit to the community. The design and layout of the 20 proposed light rail stops was dependent on a number of functional and urban design requirements, including interchange function, safety requirements (particularly around major trip generator stops), accessibility, integration with the existing public domain and minimising traffic impacts.

Within the City Centre Precinct, stops would be between approximately 180 metres and 450 metres apart. Stops are proposed at more frequent intervals in the CBD in response to the more intense development and higher number of destinations and trip generators.

In addition to the above considerations, for precincts outside of the City Centre, stop locations were selected to better meet the transport requirements of these areas, with distances proposed between 400 and 1,500 metres apart. Adding more stops in these areas would slow down the LRV services, which risks reducing the total patronage and economic benefits of the proposal. Any increase in travel time is likely to reduce overall patronage and the economic and environmental benefits of the proposal. Provision of additional stops would be to the advantage of a relatively small number of local residents, but would delay a much larger number of passengers on board the light rail service.

It is also noted that 800 metres is generally regarded as the international standard catchment for light rail stops. The spacing of stops would not adversely impact accessibility of precincts located outside of the CBD and, overall, accessibility to destinations in the South East would be increased.

Further details on stop location criteria are provided in section 4.4.1 of the EIS (Volume 1A).

Subsequent to publication of the EIS, and in response to submissions received, some of the CSELR stop locations have been further considered. Amended locations are now proposed for the Moore Park stop, Wansey Road stop and UNSW High Street stop, and some other stops have been reconfigured. Details are provided in Chapter 6 of this Submissions Report.

### 5.4.13 Stabling and maintenance facility locations

#### Summary of issues raised

General concern was expressed over the location of the Randwick stabling facility, with several submissions suggesting the facility be located at the south-eastern corner of Royal Randwick racecourse. One submission were raised in support of the proposed location of the facility.

Reasons for not supporting the preferred location of the facility included proximity to residential properties along Doncaster Avenue and potential amenity, hydrology, traffic, land use and visual impacts. Stabling requirements of LRVs were also described as excessive, with the potential to slow down the CSELR system.

Alternative locations suggested included the old tram tunnels under the Menzies Hotel and the existing Randwick Bus Depot. Some submissions suggested that both maintenance and stabling of LRVs should occur at Lilyfield or the old Tram Depot in King Street, Randwick.

Objections were also received to the proposed 24 hour Rozelle maintenance depot in Lilyfield.

#### Submission number(s)

4, 44, 54, 59, 63, 80, 135, 143, 180, 195, 217, 231, 240, 255, 294, 327, 329, 349, 406, 446, 479

#### Response

Five main design options were considered to provide both independent and combined stabling and maintenance facilities for the CSELR proposal and the existing Inner West Light Rail system. The assessment of options is included at section 4.5.1 of the EIS (Volume 1A).

In order to accommodate the size of the LRV fleet of 30 vehicles, principal requirements were developed to guide the development and assessment of facilities to cater for the estimated size of the facility. The Royal Randwick racecourse met all the functional requirements for the stabling facility.

The Randwick Bus Depot and the former Randwick tram shed at King Street did not meet the principal requirements (site footprint) to accommodate a stabling or maintenance facility to house the 30 LRVs. Additionally, the Randwick Bus Depot would continue to be operational and is required for ongoing bus services. Old tram tunnels under the Menzies Hotel were not considered as feasible alternatives relative to the design options selected, given the functional requirements and the route of the proposed CSELR. These former tram tunnels are a significant deviation from the proposed alignment and are presently used for a car park servicing the hotel. Their use would also require significant engineering works to access the tunnels, as they did not join the former tram network south of the harbour.

Two locations at Royal Randwick racecourse were identified as options in the EIS for the stabling facility (a western and a south-eastern option). A key differentiator between the sites is that the south-eastern site adjacent to Wansey Road is currently occupied by horse stables which would require relocation prior to occupying this site. This would likely entail additional cost and property acquisition which reduces the cost-effectiveness of this option. This site is generally situated below the surface of Wansey Road residences, providing some screening for noise and visual impacts of stabling facilities.

The Doncaster Avenue site is preferable as it provides for the least overall time for the LRVs to reach the three termini (Kingsford, Randwick and Circular Quay) for the commencement of daily light rail services. The potential for noise and vibration impacts is acknowledged. It is proposed that potential noise impacts on adjacent residents would be mitigated through various mitigation measures detailed in section 15.5.4 of the EIS and Chapter 8 of this Submissions Report (refer measures B.7 and AI.4). This includes further investigating construction of a noise wall and/or acoustic shed at the facility, and any visual and/or overshadowing impacts of these measures.

The Rozelle Rail Yards was similarly found to meet all functional requirements for a maintenance facility. It is estimated that LRV movements would be four movements per day into and out of the maintenance facility. The potential for noise and vibration impacts are acknowledged during the operational period of the facility, but are expected to comply with the relevant guidelines as detailed in section 17.5.4 of the EIS (Volume 1B).





Any revisions to management and mitigation measures are included in Chapter 8 of this Submissions Report.

#### 5.4.14 Substations

##### Summary of issues raised

Several submissions requested that all proposed substations be located below ground and covered with grass. The strongest concerns were raised in relation to the location of substations in High Cross Park and Moore Park largely due to visual impacts. Other submissions suggested locating substations away from residential areas.

##### Submission number(s)

48, 54, 59, 63, 64, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 217, 245, 285, 255, 274, 323, 332, 329, 443, 439, 449

##### Response

An option for below ground substations to minimise impacts on visual amenity and open space was considered in the assessment of environmental and social impacts in the EIS (refer section 4.5.3 in Volume 1A). It is important to consider, however, that the location of substations underground has significant cost implications and requires additional land take to accommodate ventilation and access requirements for maintenance. To minimise visual impacts, and on sites where space allows, the location of substations below ground or incorporation of the substations into other uses (such as built development) would be considered further during detailed design (refer mitigation measure C.3 in Chapter 8 of this Submissions Report). Given the sensitivity of a few areas along the CSELR alignment, substations at Martin Place and Haymarket would be located underground.

#### 5.4.15 Catenary

Submissions expressed concern that the wire-free operation on George Street would add to the cost of vehicles and maintenance, detract from reliability, add additional weight to the LRVs and complicate the system. Some noted that overhead wires should span the CSELR system, with minimal support poles, and the wireless power proposal should be abandoned.

On the contrary, some submissions stated that the whole CSELR alignment should be wire-free. Some submissions requested that particular sections of the route are wire-free, including the Kingsford town centre, Surry Hills, Moore Park, Circular Quay, Devonshire Street and between Randwick Racecourse and Wansey Road. Visual amenity, avoidance of tree loss and mitigating the risk of branches falling onto overhead wires were cited as reasons in favour of wire-free operation.

##### Submissions number(s)

44, 66, 84, 144, 259, 268, 262, 264, 265, 296, 356, 358, 361, 364, 370, 378, 368, 411, 433, 439, 440, 441, 442, 443, 449

## Response

Through consultation with City of Sydney, and in response to the *George Street Concept Design* (City of Sydney 2013a), the proposal includes wire-free running along the length of the proposed George Street pedestrian zone. This would minimise visual intrusion along one of Sydney's main streets, which includes a number of iconic buildings.

With regard to the extension of wire-free running to Circular Quay, this has been modified through further design development during the public exhibition. As a result, the wire-free zone within the CBD is now proposed between the Wynyard and Town Hall stops, with the section between Circular Quay and Wynyard stops powered by overhead wiring. Further detail and justification for this design change is included in section 6.3.2 of this Submissions Report.

There are a number of constraints to wire-free running along other sections of the alignment, including steep grades (e.g. on Devonshire Street and George Street south), the need for high speed running (e.g. through Moore Park) and the distance between charging points at stops, which make wire-free running either not feasible or not operationally efficient. For these reasons wire-free running would not be provided on all sections of the CSELR proposal. Further information on this issue is provided at section 4.5.3 of the EIS (Volume 1A).

Wire-free running in the in the George Street pedestrian zone is expected to be reliable, as within this section speeds would relatively low, gradients relatively flat and distances between stops relatively small, with charging of LRV batteries at each stop.

The design of the overhead wiring system, including pole configurations, would be further developed during detailed design and would take into account stakeholder views, operational requirements, best practice from other light rail systems, design and engineering constraints and environmental considerations. The CSELR proposal does not preclude the inclusion of additional wire-free sections should this be enabled by improvements in technology, or if proposed by the future Operator of the CSELR.

### 5.4.16 Anzac Parade pedestrian bridge

#### Summary of issues raised

A number of submissions expressed support for a pedestrian bridge across Anzac Parade in the vicinity of the Moore Park Stop to support pedestrians (in particular school children) crossing from Moore Park East to Moore Park West. The removal of the existing pedestrian crossing lights (that are currently used by students from Sydney Boys and Sydney Girls High Schools) was also suggested to minimise peak hour traffic congestion.

Two submissions objected to a pedestrian bridge given the cost of the bridge, potential for impacts on amenity and accessibility issues for different users. Specific comments and issues are listed below:

- Concerned about the safety of students crossing Anzac Parade, the bus lane and light rail. Suggests the following proposed solutions:
  - ▶ grade-separated grade solution for Sydney Girls High School and Sydney Boys High School students
  - ▶ pedestrian overbridge to be positioned directly across from stop entrance, approximately in the location of the current pedestrian crossing, to provide safe access for children to the new service



- ▶ closure of the current street level pedestrian crossing allowing for better traffic flow on Anzac Parade and to ensure children utilise the safe crossing option
- ▶ design of the overbridge to support and enhance the environmental and heritage values of the precinct.
- A pedestrian bridge closer to the corner of Moore Park Road and Anzac Parade to cater for special event pedestrians is not a suitable solution because of the distance from Sydney Boys and Sydney Girls High Schools. School children cannot be expected to walk 500 metres each way to access a safe crossing.

#### Submission number(s)

41, 52, 67, 106, 162, 178, 250, 140, 438, 319, 353, 416, 449

#### Response

Since publication of the EIS, Transport for NSW now proposes a design change to the CSELR to incorporate a pedestrian bridge across Anzac Parade at the Moore Park stop. This would provide for convenient access for students from Sydney Boys and Sydney Girls High Schools using the CSELR and for other local journeys. Details of this design change and an accompanying environmental assessment are provided in section 6.9 of this Submissions Report.

The design of the pedestrian bridge would take into account convenient access for cyclists and would incorporate ramps to facilitate access. Lifts are not proposed.

### 5.4.17 Alison Road pedestrian bridge

#### Summary of issues raised

Two submissions recommended the construction of a footbridge across Alison Road between the Alison Road stop and Sydney TAFE.

#### Submission number(s)

139, 158

#### Response

A pedestrian bridge is not required as the proposed crossing location for the Alison Road stop is in the same location as the existing crossing and would cross the same number of traffic lanes. Furthermore, the length of the pedestrian crossing and the volume of expected pedestrians would not affect the operation of the Daley/Alison Road intersection or pedestrian safety.

#### 5.4.18 Pedestrian solutions at UNSW

##### Summary of issues raised

Submissions requested a pedestrian overbridge from the Wansey Road stop to UNSW campus and a new pedestrian crossing across Anzac Parade at the proposed UNSW stop.

##### Submission number(s)

113, 351

##### Response

Since publication of the EIS, Transport for NSW has further considered the configuration and location of the Wansey Road, UNSW High Street and UNSW Anzac Parade stops. The Wansey Road stop is now proposed to be located on Alison Road, the UNSW High Street stop is proposed on lower High Street and the UNSW Anzac Parade stop has moved to the centre of Anzac Parade. The justifications for and details of these changes are provided in sections 6.11 and 6.13 of this Submissions Report. The amendments to the UNSW stops would provide safer access to pedestrians accessing the university.

#### 5.4.19 Other issues

##### Summary of issues raised

Some submissions noted that the light rail system should be built within its own dedicated corridor that is separated from pedestrians, cyclists and cars.

Support was expressed for Randwick City Council's draft light rail submission and the five key changes contained within that submission.

##### Submission number(s)

210, 214, 244, 243, 420

##### Response

For the majority of the proposed CSELR alignment, LRVs would operate within a dedicated road corridor, which other vehicles would not be able to access. The only exceptions to this are within the George Street shared zone, and along a section of track from Anzac Parade and Alison Road, where buses and light rail would share the existing bus lane. Additionally, vehicles would only be permitted to cross the light rail tracks at signalised intersections. A full response to Randwick City Council's final light rail submission can be found in Appendix C of this report.



## 5.5 Proposal design and operations

### 5.5.1 Power supply, catenary and wire-free technology

#### Summary of issues raised

Submissions raising concerns around design of the CSELR power supply, including overhead wired and wire-free sections, and associated structures are summarised below.

- Centre poles, for example a central T-bar, should be used rather than poles on either side of the tracks.
- The design of the overhead supply should be a single contact wire and the more aesthetically acceptable European style of overhead design should be adopted.
- Opposes the proposal to not affix overhead wire fixtures to existing structures along the route.
- Consideration should be given to replicating the original 1890s design in locations where this would be appropriate for the streetscape.
- Concern that overhead wiring presents increased threats to wildlife along Alison Road.
- Suggestion that a modern conduit system could be constructed at a slightly higher cost than an overhead system, with similar results.
- Suggestion that in the wire-free section, APS should be considered as opposed to modern conduit.

#### Submission number(s)

84, 259, 264, 329

#### Response

The power requirements of the CSELR have been assessed during development of the concept design including a design for the power supply system, comprising overhead wiring and wire-free technologies. Consideration of alternative technologies to supply power are discussed in section 4.5.3 of the EIS (Volume 1A) and section 5.4.15 of this Submissions Report.

The design of the CSELR power supply system, including overhead wiring pole configuration and wire-free power supply, has been developed in accordance with relevant guidelines and standards. The design would be further developed during detailed design and would take into account stakeholders views, operational requirements, best practice from other light rail systems, design and engineering constraints and environmental considerations.

Suggestions with regard to the design of the power supply system are noted and would be reviewed during detailed design.

In the event of an incident attributable to the power supply system, preliminary operational contingency measures are outlined in Appendix J of the EIS (Volume 1C). These contingency measures would be further refined and developed by the future Operator, in consultation with all relevant stakeholders.

Similar to existing electrical power lines currently installed in Sydney, the proposed overhead wires are not considered to be a substantial threat to wildlife.

## 5.5.2 CSELR capacity related issues

### Summary of issues raised

A number of submissions identified concerns that the CSELR would be at nearly capacity on day one of operations, and would not have enough capacity for future operations, particularly with future growth along the alignment or to satisfy long-term travel demand between the CBD and South East.

Some specific comments regarding capacity of the CSELR included:

- The Devonshire Street route, including a single line route through Surry Hills, will limit future light rail network expansion.
- The light rail capacity cannot be increased because of shared carriageways.
- The carrying capacity of the proposal is less than existing bus capacity, and is not able to expand to meet future needs.
- With regard to UNSW, light rail will not be able to transfer the volume of students at the two peak hours. The light rail service would need to transport over 2,000 students – at least equal to the current bus transfers in terms of timeliness, cost and reliability. Light rail will not have the capacity to service the needs of the UNSW student population and greater community.
- Concern that LRVs will be full by the time they reach the school because they will have picked up students from UNSW.
- Concern about light rail capacity, in particular whether the EIS adequately analyses ‘design capacity’ versus ‘achievable capacity’. Notes that variability in when passengers arrive at stops is likely to be high as many will be interchanging from buses. Suggests that significant numbers of waiting passengers will be unable to board some services.
- Concerned about impacts of operating ‘so close to full capacity’. Notes that demand will be ‘somewhat lumpy’ and operating so close to full capacity implies a ‘degree of smoothing such that some passengers will not be able to board the first vehicle that arrives’.
- The key capacity concern is with the spine from the Alison Road junction to Central Station.
- The increased capacity of 5,000 passengers along Anzac Parade is reasonable. The present passenger numbers carried by buses along Anzac Parade are around 10,000 per hour at peak. The light rail appears to be a hybrid system, based on 9,000 being carried by light rail and 6,000 being carried by buses.
- Light rail should be able to expand services in the future, to avoid reaching capacity too soon.



- Capacity is inconsistent, and the maximum capacity is 6,000 passengers per hour, not 9,000 as reported in the EIS.
- The light rail only increases passenger capacity by 33 per cent which is only required for special events.
- Bus capacity proposed to be cut is up to three times the capacity of light rail.
- The predicted capacity of 9,000 people per hour could be achieved through the use of C Train light rail cars by using hook ups of three cars arriving every five minutes at peak times.
- Concerns about the Randwick UAP, and how the capacity of the CSELR proposal is unable to be increased to support the extra 20,000 to 30,000 residents in Randwick that will be attracted as a result of the UAP. The UAP placements in Randwick City Council seem excessive compared to distribution across other metro councils.
- Concerns, or requests for additional information regarding calculation of operational capacity and evidence of demand, which was not accurately shown in the EIS. Questions as to whether analysis been conducted to determine whether the proposal has capacity for special events and the UNSW student load. It was suggested that the operational limit of two passengers per square metre should be used for operational capacity calculations. Also, there was no capacity modelling or impact assessment on proposed cuts to bus services.
- Concerns about light rail services being overcrowded or too full, particularly at stops closer to the CBD. Overcrowding would be exacerbated by the imbalance of demand between the Randwick (43 per cent of demand) and Kensington/Kingsford (57 per cent of demand) branches of the route.
- Concerns that the CSELR will not have the capacity to allow for future expansions to the network, including extensions to Maroubra and Botany or additional future lines feeding into it, and that the CSELR was not future-proofed. The CSELR proposal should be constructed in a way that facilitates expansion (track extension and enhancement of capacity of the currently proposed track) to enable cost-effective expansion as passenger demand increases.
- Requests to see explanation/underlying assumptions/justification for the claim that special event services will have a capacity of 18,000 passengers per hour as well as analysis on how the proposal will cope with peak demand, including up to 90,000 football supporters from Central to the SCG at the same time as regular commuters and residents. Noted by respondent that 18,000 people per hour would limit the extent to which it can contribute to reducing car use at special events.
- Concerns that proposed interchanges will be inefficient; especially in terms of time and space and that the strategy to increase capacity during peak hours by increasing the number of LRVs operating would only work if the termini were large enough to handle vehicle turnarounds quickly and efficiently. Also, concern about loading and unloading rates for light rail as most commuters will enter/exit at each end of the line, not along the way.
- Comments relating to capacity and stops include suggesting that the capacity challenge could be eased if Carlton Street could be served by the Randwick branch as the highest line load of 3,000 per hour would then be reached inbound from Todman Avenue in about 2024. Also, the Ward Park stop was considered 'pointless' because city bound LRVs will be at capacity prior to reaching Surry Hills (morning peak).

- The EIS does not answer the issue of an interval risk to the adequacy of the CSELR capacity.
- There is inconsistent detail around capacity.

#### Submission number(s)

34, 63, 66, 78, 87, 144, 147, 150, 184, 191, 192, 193, 194, 221, 231, 236, 246, 290, 291, 294, 312, 316, 321,323, 338, 349, 359, 360, 361, 364, 396, 403, 410, 414, 421, 431, 433, 435, 440, 445, 446, 457, 449, 479

#### Response

##### *Calculation of operational capacity*

CSELR capacity is a function of LRV capacity and the frequency of LRV services on the network. Capacity calculations assumed a maximum LRV capacity of 300 people, comprising 80 seated customers and 220 standing customers at a standing density of four people per square metre. The proposed maximum capacity of the CSELR would be 9,000 customers per hour, which can be achieved by running LRVs capable of carrying 300 passengers at two minutes intervals.

A standing density of four people per square metre is considered to be industry standard and is the accepted level of standing density for light rail and heavy rail in Europe and Australia, including on Sydney Trains, the Inner West Light Rail and on the Gold Coast, Adelaide and Melbourne light rail systems. Reducing the standing capacity to two people per square metre would require more LRV services to meet the peak demand.

##### *Capacity at start-up and future capacity*

The CSELR capacity has been designed to cater for patronage demand, as discussed in section 5.3.3 of this Submissions Report. During peak periods at the opening of the CSELR proposal (2021) the CSELR is expected to carry up to 5,400 people per hour. The service pattern has been therefore been designed to cater for the peak demand, to achieve economic efficiency in the system, resulting in a proposed operational capacity at start-up of services of up to 6,000 people per hour in both directions. The maximum capacity of the network would be up to 9,000 people per hour, which can be achieved by increasing the frequency of LRVs services on the network, thereby increasing the number of people that can be transported each hour. Further discussion in relation to operational capacity is provided in section 7.4 of this Submissions Report.

The proposed maximum capacity of 9,000 passengers per hour is greater than the current capacity of existing morning peak hour bus services between the South East and the CBD. As discussed in section 5.8.3 of this Submissions Report, some existing services would continue to run once the CSELR is in operation, providing additional public transport capacity.

The EIS states that the CSELR proposal would reduce buses in the CBD by approximately 180 in the morning's busiest hour (refer to section 3.5.1, Volume 1A), equating to a capacity of 9,000 passengers. In reality a number of these buses are not full as they travel down George Street, meaning the demand through the CBD is less than 9,000 passengers. The maximum capacity of the CSELR is expected to be able to cater for the displaced bus passengers.





The proposed LRVs are designed based on a high capacity service that allows for fast loading and unloading via the six side doors on each side. Journey time calculations (refer section 5.5.10 of this Submissions Report) have taken into account expected dwell times at each stop to allow for the loading and unloading of passengers.

The designs of the Circular Quay, Randwick and Kingsford stops include turnback and crossover facilities to allow for quick turnaround of LRVs at these stops. Circular Quay stop includes a third track and platform and has been designed for two minute headways, whilst the Kingsford and Randwick stops have been designed to achieve four minute headways on these branch lines, which would be required to meet the 9,000 maximum capacity on the CSELR. The Randwick stabling facility has also been designed to accommodate the light rail fleet required for the maximum passenger capacity.

The proposed maximum capacity is based on demand modelling that takes into account existing and future public transport patronage and land uses as well as major trip generators along the alignment, including the Moore Park sports and entertainment complex, Royal Randwick racecourse, the UNSW and the Randwick health precinct and the future Randwick UAP. Further discussion regarding patronage is provided in section 5.3.3 of this Submissions Report.

The CSELR would provide a catalyst for the NSW Government's UAP program, which would aim to deliver more residential and employment opportunities in the Randwick precinct. Conversely the future development of the Randwick UAP would increase travel demand as a result of the proposed development within this area. As discussed above, the design of the CSELR has taken into account the UAP population figures and can accommodate future growth along the alignment through the increase in services, as well as other measures including the introduction of longer LRVs.

#### *Special event capacity*

During special events the operating capacity could be increased by coupling two LRVs together, or by running additional shuttle services. This is considered adequate to cater for potential light rail passengers travelling to or from events at the Moore Park sport and entertainment complex (maximum 46,000 patrons) and the Royal Randwick racecourse (maximum 16,874 patrons) based on mode share predictions (refer to section 9.2.2 of the EIS (Volume 1A) for further details).

#### *Overcrowding*

Light rail is a rapid transit public transport system currently in use in major cities all over the world. Like metro, or rapid train services, LRVs are designed to carry a higher ratio of standing than seated passengers to provide the additional capacity per vehicle than buses. The higher number of standing passengers also facilitates the ability of the vehicles to 'turn up and go' as loading and unloading of passengers is generally quicker than for buses and heavy rail.

The LRVs proposed to be used for the CSELR would be capable of carrying up to 300 people per vehicle, with seating for 80 passengers. This ratio is industry standard and is similar to light rail networks in operation in Europe and Australia, including in Melbourne and Adelaide and on the Inner West Light Rail.

### *Future expansion of the light rail network*

The CSELR proposal forms part of Stage 3 of the NSW Government *Sydney's Light Rail Future* (NSW Government, 2012b). The government would investigate extensions to the Sydney light rail network as a part of Stage 4 of this plan, as demand for public transport increases and based on feasible solutions to expand the network.

Current demand forecasts for future operations to 2036 include projected population growth, including as a result of the UAP, as well as interchanging bus customers. Patronage modelling forecasts that the majority of customers boarding the CSELR at the Kingsford and Randwick stops would be interchanging from buses travelling from further to the South East. Should the CSELR be expended further to the south or east, replacing many of these bus services, a large proportion of the customers boarding the CSELR before Kingsford or Randwick stops would be already accounted for in the demand forecast for 2036. Refer to section 5.26.1 of this Submissions Report for further discussion on future expansion of the network.

## 5.5.3 Fares/ticketing

### Summary of issues raised

A number of submissions raised questions and concerns around fares and ticketing. These are summarised below:

- Concerns were raised with regard to the affordability of light rail, and in particular that light rail would be more expensive than buses. There was support for light rail to become part of the public transport network, but it should be affordable and reasonably priced, or comparable to the bus fare structure and MyMulti tickets, to be successful in attracting customers and encourage patronage and be affordable. Light rail would be more expensive due to privatisation.
- Concerns were raised around passengers having to pay more, or being charged for an additional flagfall, for switching modes of transport and that this would make journeys more expensive.
- It was recommended that subsidised ticketing/free bus and train passes should continue for school children and that the CSELR should not cost students more to use relative to existing bus services. The School Transport Subsidy Scheme should apply to light rail.
- Suggestions were made that CSELR be free between Central and Circular Quay, because the existing free bus service (555) will not be running and that the CSELR should offer concessions for residents of Northcott Estate. Assurance that the pricing of travel will include student and pensioner concession tickets was also sought.
- A question was raised regarding ticketing arrangements for special event services to Moore Park.
- A number of comments related to the Opal card, including a comment that one ticket should be used. Ticketing should be easy and integrated with Opal as the Opal card makes it easier for passengers to change destinations. There was a concern that the Opal card works against this system - commuters can switch destinations at any stop and penalties cannot be imposed for travelling one more stop, particularly when commuters need to transfer to Elizabeth Street services. Opal fares are calculated separately for each mode of trip of a journey; therefore light rail will cost people more to use than existing bus services.
- There was a request for a network-wide, 'mode agnostic' fare structure.



- It was noted that information in the EIS on fares is inadequate.
- Concern was raised that the cost of transport will increase out of proportion to speed and convenience without greater ease of access to and from destinations.

#### Submission number(s)

55, 84, 106, 134, 146, 162, 166, 177, 213, 242, 268, 274, 291, 316, 321, 348, 354, 346, 361, 362, 364, 371, 373, 375, 377, 380, 389, 427, 438, 449, 455, 457

#### Response

The NSW Government would be responsible for setting fares for the CSELR proposal and it would be integrated with the Sydney public transport network and its fare structure. Public transport fares are subject to periodic review and adjustment. It is not possible at this stage to predict what the fare structure would be for the CSELR. The fare structure would be determined by Transport for NSW and the future Operator and would be comparable to other modes within the Sydney public transport network. Ticketing arrangements for special event services would also be determined at this time. Information on fares for the CSELR would be made available prior to operation of the network. It is not proposed to provide free travel on the CSELR within the CBD.

When operational, the CSELR customers would be required to use an Opal card to use the service. The implementation of the Opal card is not part of the CSELR.

To use an Opal card you tap on at an Opal card reader to start your trip, and tap off when you finish, and the system would automatically calculate your fare and deduct it from the value stored on your Opal card. As the Opal card would operate on a distance based fare structure, the CSELR would be comparable to other modes of transport travelling the same route or distance. Discount cards would include the Opal Child/Youth card, Opal Senior/Pensioner card and Opal Concession card.

The School Student Transport Scheme (SSTS) provides subsidised travel on public transport for eligible school students. The SSTS is managed by Transport for NSW. Presently the SSTS does not apply to the Inner West Light Rail and school children are required to pay concession fares to travel. Transport for NSW is currently undertaking a review of whether it is feasible for the SSTS to apply to light rail. The findings of this review would be used to determine whether the SSTS should be applied to the CSELR.

The Opal card would require customers to 'tap on' and 'tap off' all trips, (i.e. travel on one route on one mode). When continuing their journey customers have 60 minutes to 'tap on' to their next trip without attracting an additional flagfall. Under the Opal card system, light rail and buses would be considered as one mode, meaning that passengers would not attract a flagfall for interchanging between light rail and buses.

More information about the Opal card can be obtained at [www.transport.nsw.gov.au/opal](http://www.transport.nsw.gov.au/opal).

## 5.5.4 George Street pedestrian zone

### Summary of issues raised

Issues raised with regard to the George Street pedestrian zone included:

- The proposed travel speed of LRVs within the George Street pedestrian zone should be increased to 40 kilometres per hour to improve journey times. Safety concerns could be adequately managed through the provision of wider footpaths.
- Support for pedestrian zone in George Street.
- The design of the CSELR should not preclude the extension of the pedestrian zone.
- The closure of George Street will increase congestion on other streets, particularly Elizabeth Street, further reducing capacity and performance of public transport. CSELR will result in a reduction in public transport capacity along the CBD spine.
- Consider making the pedestrian zone smoke-free.
- Consider the use of lighter pavement colour in the George Street pedestrian zone to reduce temperatures.
- Ensure the pedestrianisation of George Street will deliver positive urban design outcomes.
- If there are changes in levels of the existing streets near stops and the pedestrian zone, consideration should be given to the current awnings over the street and the impacts that changing levels might have on access. Any associated works/costs to modify awnings should be borne by the project.
- It was requested that Transport for NSW, in conjunction with the City of Sydney, conduct a trial closure of George Street between Hunter and Bathurst Streets to all but bus and pedestrian traffic for a minimum period of two weeks, with a view to compiling data to prepare for the permanent closure.

### Submission number(s)

3, 266, 291, 316, 334, 373, 416, 449, 478

### Response

As described in section 5.2.4 of the EIS (Volume 1A), it is proposed that LRVs would travel at maximum speeds of approximately 20 kilometres per hour through the George Street pedestrian zone. This design speed provides for the safe operation of LRVs and pedestrians where there is no physical barrier between them to best manage the risk of collisions. This is consistent with the maximum speed of LRVs on the existing light rail through the Haymarket pedestrian area. Further discussion on safety with regard to LRVs and pedestrians is provided in section 5.24.3 of this Submissions Report.

The urban design of the George Street pedestrian zone, including pavement treatments, street furniture, and other public domain aspects would be further considered in consultation with the City of Sydney during detailed design. An Urban Domain Reference Group would be established to advise on urban domain aspects of the proposal. The City of Sydney would be offered an opportunity for continued involvement in the design development through the Urban Domain Reference Group.



Where the construction of the CSELR in the George Street pedestrian zone affects existing awnings (including clearances below awnings, pavement levels or access to properties) affected property owners would be consulted. Should any works be required to modify awnings, these works would be undertaken, or costs would be met, by the CSELR construction contractor.

Whether the George Street pedestrian zone is a non-smoking zone would be considered at the discretion of the City of Sydney.

An assessment of the impact of the George Street pedestrian zone on traffic conditions on other roads within the CBD is provided in section 12.3.2 of the EIS (Volume 1B). The assessment includes a discussion on the proposed changes to the road network, access and public transport in the CBD. A suite of mitigation measures has been developed and included in Chapter 8 of this Submissions Report to address operational impacts to traffic and transport in the CBD as a result of the EIS assessment, including the development of a network management plan (refer to mitigation measure AH.1), ongoing discussion and consultation with road authorities (refer to mitigation measure AH.2) and councils (refer to mitigation measure AH.4) and targeted traffic management updates to improve traffic circulation in the vicinity of the CSELR in the CBD (refer to mitigation measure AH.3), among other more specific measures (refer Table 8.3 in Chapter 8 of this Submissions Report).

With regard to the CSELR reducing public transport capacity along the CBD spine, the CSELR would provide an efficient and reliable public transport service through the CBD, while at the same time reducing congestion through contributing to the removal of 180 buses in the morning peak. The CSELR would also be more able to support continued population and employment growth than the existing public transport network in the CBD.

Support for the George Street pedestrian zone is noted. Support for the extension of the George Street pedestrian zone is also noted but does not form part of the current proposal.

With respect to the request for a trial of the proposed closure of George Street, the EIS Construction Traffic Management Plan (Technical Paper 2, Volume 2 of the EIS) outlines an extensive program of planning and preparation work to be conducted prior to commencing the main construction activity along George Street, including initiatives to be implemented in support of the closure. These plans would be further developed and refined and for example may include initiatives such as new way finding, a new directional signposting scheme, changed access arrangements for affected businesses and residents and a campaign to educate and inform customers.

A trial closure over two weeks would require a similar level of planning, preparation and the implementation of the management strategies as required for the main period of works to ensure that adequate access, information and guidance would be maintained during the trial period. It would be a significant exercise to implement all these measures for a two week trial period, and then revert back to the existing arrangements particularly with regard to not causing undue confusion and inconvenience to customers and the broader community.

Given the Transport for NSW track record in implementing significant changes to the traffic and transport network, there may be limited benefit in such an undertaking. Nevertheless, it is an option that would be considered as part of the ongoing planning effort. Transport for NSW would be further considered the potential for a trial closure of George Street as part of ongoing discussions with the City of Sydney on this proposal.

## 5.5.5 Amend design to avoid planted trees

### Summary of issues raised

Some submissions requested that the design is amended to avoid tree impacts as follows:

- The design of the CSELR should be reviewed and revised to avoid the removal of the large number of trees, especially mature trees and trees listed as significant for visual, historic and social reasons. The design should avoid the loss of trees in the areas of High Cross Park, Alison Road, Royal Randwick racecourse, Anzac Parade and Wansey Road.
- The trees in Anzac Parade located in the middle of a grassed median strip could be saved by trimming these trees and constructing the light rail tracks on either sides of the trees, with the trees remaining in the middle of the light rail tracks, to enhance the visual amenity of the CSELR line.
- Power lines should be underground, to reduce impact on trees.

### Submission number(s)

54, 56, 59, 63, 64, 76, 86, 116, 160, 248, 255, 378, 443

### Response

Further design development has been undertaken since the exhibition of the EIS (as described in Chapter 6 of this Submissions Report). This has resulted in a change in the number of trees impacted in distinct sections of the alignment, including:

- Chalmers Street – approximately 17 additional trees retained relative to the EIS design as a result of a reconfiguration of the stop and surrounding area (refer to section 6.5.3 of this Submissions Report)
- Moore Park Precinct – approximately four to five additional trees impacted compared to the EIS design as a result of moving the Moore Park stop and tunnel alignment to the south, and addition of a pedestrian bridge (however, the design has also identified the potential to translocate approximately 13 trees subject to further investigation by a suitably qualified arborist – refer to section 6.8.3 of this Submissions Report)
- Alison Road – approximately 15 additional trees retained along the edge of the Royal Randwick racecourse as a result of shifting the alignment to the north (refer to section 6.11.3 of this Submissions Report)
- High Cross Park – approximately three additional trees retained as a result of reconfiguration of the Randwick stop and infrastructure in this location (refer to section 6.12.3 of this Submissions Report)
- UNSW Anzac Parade stop – approximately 21 additional trees retained as a result of relocating the UNSW Anzac Parade stop into the Anzac Parade median (refer section 6.13.3 of this Submissions Report).

Ongoing design development and investigations by a suitably qualified arborist into tree root zones along the alignment would also aim to further reduce the number of trees impacted by the CSELR. Where trees have been identified as requiring removal as a result of the construction or operation of the CSELR, a suite of mitigation measures has been developed to mitigate impacts (refer to Chapter 8 of this Submissions Report).



As discussed in section 5.5.13 of this Submissions Report, it is not intended that power lines along the CSELR alignment be relocated underground. However consideration would be given to relocating power lines underground during the detailed design phase where feasible and economical. Discussion regarding catenary (overhead wiring) for the CSELR is provided in section 5.5.1 of this Submissions Report.

With respect to the retention of trees within the median of Anzac Parade, the full width of the Anzac Parade median is required for construction and operation of the CSELR. Should the trees be retained during construction, the construction of the CSELR would likely affect greater than 20 per cent of the tree protection zone and encroach into the structural root zone of trees within the Anzac Parade median, which would likely compromise the trees' structural stability and require the removal of the trees. Additionally, substantial trimming of branches to avoid interference with overhead wiring would also be likely to affect the viability of the trees, subject to assessment by an arborist. For further detail on the construction of the CSELR alignment refer to section 6.2.2 of the EIS (Volume 1A).

## 5.5.6 Landscaping and public domain

### Summary of issues raised

A summary of the issues raised regarding landscaping and the public domain follows:

- More information was requested on proposed landscaping along the eastern side of the CSELR near Robertson Road. Robertson Road residents should be consulted about landscaping.
- Concerned about streetscape impacts, and changes to amenity.
- The Circular Quay interchange should be consistent with, and enhance, the public domain and maintain views. Stop architecture should exhibit the character of Circular Quay and be an appropriate height.
- Planning for the Circular Quay precinct requires special policy and planning attention, and light rail – along with other major projects – will change the character of the area. The design solution should maintain pedestrian access to and views through to Circular Quay.
- High design standards are required for paving, lighting, trees, smart poles, street furniture, stops.
- Use grass instead of concrete in the park and roadside sections of the system as used elsewhere in the world.
- With regard to built facilities and infrastructure, paving, lighting, street furniture, Smart Poles and light rail stops should be consistent with City of Sydney standards in Surry Hills and the CBD; high quality concrete tile pavers consistent with the City of Sydney standards for village main streets should be used to upgrade the Devonshire Street footpath; and clutter and signage should be kept to a minimum to reduce visual pollution.
- A new park should be established on the Olivia Gardens site to mitigate the loss of Wimbo Park. City of Sydney should manage the park.
- Consider native planting around stops.

- High quality plazas/pocket parks should be installed where street closures are proposed, including Buckingham, Holt, Clisdell, Waterloo and High Holborn streets.
- The light rail will not attract patronage in Kingsford and Kensington unless the streetscape is addressed to make the corridor more attractive. The proposal should obtain concepts incorporated in other successful light rail projects from around the world that alleviated amenity impacts along rail routes and collaborate with P&I, Randwick City Council and other town planning experts to counter the desolation the light rail corridor will leave along Anzac Parade.

#### Submission number(s)

84, 149, 220, 356, 373, 407, 438, 441, 447, 449

#### Response

The CSELR has been designed in accordance with the CSELR urban design principles and objectives, which are discussed in section 4.1.2 of the EIS (Volume 1A). These design principles and objectives led to the development of specific light rail typologies for the CSELR alignment and stops. Three main typologies were identified: civic typology for the CBD and Surry Hills precincts; park typology for Moore Park and Randwick precincts; and boulevard typology for the Kensington/Kingsford precinct (refer Table 4.1 of the CSELR EIS). The CSELR alignment and stops have been designed using the typologies as a guide, to appropriately respond to the key characteristics of the existing urban setting, maximise their effectiveness as part of the proposal and minimise overall environmental, social and economic impacts.

An Urban Domain Reference Group would be established to advise on urban design aspects of the proposal, including refinement of the CSELR Landscape Strategy (included in Appendix F of the EIS, Volume 1C) and planning for public realm improvements. Key stakeholders, including the City of Sydney, Randwick City Council and the Centennial Park and Moore Park Trust would be offered an opportunity for continued involvement in the design development through the Urban Domain Reference Group.

Further consideration of urban design elements along the CSELR alignment and at light rail stops, including infrastructure, paving, lighting, street furniture, would be undertaken during detailed design and would include consultation with the Urban Domain Reference Group to finalise such elements.

Additionally, a Community Reference Group would be established, which would comprise independent representatives from the community to advise on community concerns related to the proposal, including landscaping and urban design.

Following construction of the CSELR, areas of the public domain and other public spaces utilised or impacted during the construction of the proposal would be reinstated and opportunities for revitalisation of public open spaces the public domain would be identified.

The urban design for the Circular Quay stop and the Alfred Street plaza would aim to reinstate and improve the existing plaza around Alfred Street at Circular Quay with reference to the *Draft Circular Quay Strategic Framework* (Sydney Harbour Foreshore Authority, August 2013). The proposed design at Circular Quay would maintain and enhance pedestrian access to and views to Circular Quay by converting Alfred Street into a pedestrian plaza.





Consideration was given to grass bed track during the development of the definition design. While acknowledging that grass bed track could provide some benefits with regard to visual and landscape amenity along the alignment, the ongoing maintenance of the grass bed tracks, in particular watering requirements, was not considered to be economically viable or environmentally sustainable in the long term.

Transport for NSW has committed to creating an expanded Wimbo Park in Surry Hills, incorporating the location of the existing Olivia Gardens apartment block as a high quality open space (refer to mitigation measure AJ.8 in Chapter 8 of this Submissions Report). The size of the park would compensate for loss of open space within the vicinity as a result of the CSELR, including losses to Wimbo Park, Ward Park and the footprint of the tunnel portal in Moore Park west. The park would include a shared pedestrian and cycle path connecting Surry Hills through to Moore Park west (via a new signalised crossing on South Dowling Street and bridge over the Eastern Distributor) and would be landscaped in accordance with the CSELR Landscape Strategy, which would be finalised through the detailed design phase in consultation with City of Sydney. An indicative layout of the new park is provided in Figure 6.5 of this Submissions Report.

There would be opportunity for the creation of a number of additional pocket parks along Devonshire Street with the closure of some streets intersecting with Devonshire Street, which could lead to the overall improvement of the environment to the benefit of the local business community and landowners. However, these spaces may also contribute to replacement on-street parking. The Community Reference Group would contribute to the decision on how these spaces are to be used.

A Landscape Strategy for the CSELR is included as Appendix F of the EIS (Volume 1C). The Landscape Strategy provides an overarching landscape strategy, developed in collaboration with the CSELR urban design vision, principles and objectives, for the landscape of the corridor to mitigate impacts of the construction and operation of the CSELR. The Landscape Strategy has been developed to respond to current landscape and street tree master plans along the corridor, as well as the existing landscape character of the area. A key principle of the strategy is to minimise the visual and ecological impacts of the CSELR by promoting the use of native tree species in accordance with the street tree master plans of the local authorities to maintain and improve ecological connections.

Proposed plant selections for Moore Park east, including near Robertson Road, are included in Section 6.8 of the CSELR Landscape Strategy (Appendix F of the EIS, Volume 1C).

## 5.5.7 Track and corridor design

### Summary of issues raised

Concerns raised regarding light rail operations included:

- The light rail corridor should be barrier-free to encourage pedestrians to cross streets. Safety barriers should be discrete – preferably no fencing or bollards.
- The CSELR does not include crossovers or other means of changing track between Circular Quay and Alison Road, except for at Eddy Avenue. If breakdowns occur, crossovers would allow LRVs to be routed around obstructions.

- Concerned that LRVs that service the Kingsford branch of track then have to access the Randwick branch of track in order to reach the stabling area. Concerned that access will be north of the Alison Road/Anzac Parade intersection.
- Query about the direction of light rail when exiting Wansey Road as this is unclear in the EIS overview document.
- The track along George Street should be elevated 150 millimetres above the road. This would assist to keep tracks clear of other vehicles and would also reduce the depth of excavation.

#### Submission number(s)

242, 260, 264, 268, 274

#### Response

The CSELR proposal includes only limited barriers across the light rail corridor, including vegetation screening and bollards at Olivia Gardens and along Wansey Road (refer Figure 6.5 and Figure 6.11 of this Submissions Report) as well as some form of barrier to prevent people accessing the Moore Park tunnel portals. For the majority of the alignment the CSELR would be barrier-free, with only a kerb and gutter segregating designated light rail tracks from adjacent traffic.

A central turnback would be provided immediately south of the Moore Park stop to allow LRVs to change tracks during special event services, as well as providing a crossover function in the event of a breakdown.

LRVs returning to the stabling facility from the Kensington/Kingsford branch would use the bifurcation of the track north of the Alison Road/Anzac Parade intersection as a turnback facility to access the stabling facility.

LRVs would travel east when turning out of Wansey Road into High Street (which is a correction from EIS Overview Document). Additional detail on the CSELR alignment is provided in section 5.2.1 of the EIS (Volume 1A).

The CSELR tracks would generally be flush with the road surface to allow for traffic to cross the alignment, to reduce potential safety hazards for pedestrians and to allow for less mobile persons to cross the tracks.

### 5.5.8 LRVs

#### Summary of issues raised

A number of submissions provided comments with regard to the LRVs. These are summarised below.



### *Seating*

Issues raised with regard to seating on LRVs included:

- Concerns regarding the number of seats provided on LRVs when compared to buses and heavy rail vehicles. A large number of commuters travelling on the CSELR would need to stand for up to their journey when compared to bus passengers. Seating is not adequate to encourage people to use light rail instead of buses or private vehicles.
- Concerns regarding passenger comfort, in particular seating for elderly, frail or mobility impaired customers, including risk of falls as LRVs accelerate or decelerate.
- Concerns regarding the number of seats compared to standing passengers. The ratio of 80 seating and 220 standing could be improved.
- Concerns that all seats (only 800 per hour) will be filled at both Randwick and Kingsford termini and passengers will have to stand for extended periods. Five rigid buses (equivalent) would provide more seats than LRVs. Proposes a shorter initial interval of five minutes between vehicles on each branch, achieving less crowding and higher first-vehicle boarding rates.
- Suggestion that all LRVs be single-ended to save space for more seating and to allow most seats to face forwards.

### *Appearance of LRVs*

Issues raised with regard to the appearance of LRVs included general dislike of the appearance of modern LRVs and a request that the light rail is not red and white striped.

### *Size of LRVs*

A number of submissions raised concerns with regard to the size of LRVs, including suggestions LRVs should be limited to either 20 metres, 29 metres, 30 metres or less than 45 metres. It was suggested that LRVs over 29 metres in length should only travel along tailored routes (e.g. sub-surface or tunnel) or dedicated right-of-ways. LRVs should be less than 45 metres to reduce impact on traffic flow at intersections.

In particular the size of LRVs travelling through residential areas such as Devonshire Street was raised in a number of submissions, given the available road width and surrounding residential development.

Some submissions noted that the LRVs on the CSELR will be 50 per cent longer than those operating on the Inner West Light Rail, with resulting noise impacts.

Other specific issues raised included:

- The width of LRVs should be increased to 2743 millimetres to create more space and make it easier for passengers to move about within the LRVs.
- Additional concern was raised regarding potential for 90 metre special event services.
- Suggests the use of shorter vehicles, coupled for peak hours.

- The proposed 45 metre long LRVs will have a floor area of 119.7 square metres, giving a passenger per square metre ratio of 2.51 for the exhibited maximum capacity of 300 passengers. This is superior to the carrying capacity ratios for articulated buses, standard buses, a full car and a normal car.

#### *LRV procurement*

Concern was raised that the trams being purchased are because of price, when a more expensive tram could overcome bigger slopes and expand the areas that could be serviced by trams.

It was suggested that LRVs should be of the highest quality, of contemporary appearance and with comfortable seating.

Others noted that the government commissioning agency should fully inform itself of the range of vehicle design issues and solutions and use that knowledge to set standards that tenderers are required to meet.

#### *Other*

Other issues raised with regard to the design and operation of LRVs included:

- Consider trams with batteries so they can travel some distance without overhead wires, including at the intersections of Anzac Parade/Lang Road and Anzac Parade/Alison Road.
- Specific questions were raised about the type of emergency brakes used on LRVs and how quickly LRVs could brake. Request that this information is disclosed before any approval is granted.
- A double decker LRV should be introduced.
- Real-time information should be available on board LRVs.
- LRVs should be fitted with wireless internet/Wi-Fi technology for passengers.

#### *Submission number(s)*

8, 50, 66, 72, 98, 99, 124, 144, 154, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 200, 239, 243, 244, 264, 265, 274, 296, 323, 332, 338, 348, 349, 352, 360, 375, 407, 413, 416, 418, 422, 427, 437, 444, 445, 447, 449

#### *Response*

##### *LRV seating and comfort*

Light rail is a rapid transit public transport system currently in use in major cities all over the world. Like metro, or rapid train services, LRVs are designed to carry a higher ratio of standing than seated passengers to provide the additional capacity per vehicle than buses. The higher number of standing passengers also facilitates the ability of the vehicles to 'turn up and go' as loading and unloading of passengers is generally quicker than for buses and heavy rail.



The LRVs proposed to be used for the CSELR would be capable of carrying up to 300 people per vehicle, with seating for 80 passengers, and would be fully compliant with the *Disability Discrimination Act 1992*, including designated seating for elderly and less mobile passengers and spaces for wheelchairs. The ratio of seated to standing passengers, and the proposed standing density of four people per square metre, is industry standard and is similar to light rail networks currently in operation in Europe and Australia. Further discussion around capacity of LRVs is provided in section 5.5.2 of this Submissions Report.

The proposed LRVs are designed based on a high capacity service that allows for fast loading and unloading via the six side doors on each side, allowing LRVs to depart from the termini stops quickly and travel on the outgoing rail without having to turn around. While unidirectional LRVs would provide additional seating due to the reduction in side doors, the system would allow for vehicles to turn around via either loops or turntables at the termini.

Outside of peak periods, LRV services would be optimised for customer experience and reliability, with LRVs likely to carry less customers, providing a lower standing density and a higher ratio of seated to standing passengers.

Whilst LRVs carry more standing passengers than buses, the vehicles are fitted with numerous fixed hold points to enable passengers to maintain balance as the LRV is in motion. The operation of the CSELR within a designated corridor would reduce the amount of heavy braking that is often associated with bus travel in mixed traffic, which would result in a smoother and more comfortable journey.

Whilst it is recognised that five buses could provide similar capacity to the CSELR and would provide a higher ratio of seated to standing passengers, the CSELR aims to reduce congestion in the CBD by removing buses from the network, thereby providing improved and more reliable journeys for public transport users as a whole. The design of LRVs (including multiple doors and configuration for standing passengers) allows for faster loading and unloading of passengers, which would contribute to the reliability of the service by reducing dwell times at stops.

#### *Size of LRVs*

The LRVs proposed to be used on the CSELR would be 45 metres long, comprising modular carriages, with other dimensions (width and height) comparable to buses. When compared to the 30 metre long LRVs currently in operation on the Inner West Light Rail, the additional length of LRVs for the CSELR proposal would allow an increased capacity to be accommodated on the network. LRVs of up to 60 metres in length are in use in other light rail systems around the world, where light rail commonly travels through residential and commercial areas.

The width, interior dimensions and layout of the LRVs proposed to be used on the CSELR are similar to the LRVs currently operating on the Inner West Light Rail and are considered to adequately balance the needs and comfort of passengers, with the optimum external dimensions for operation within mixed traffic and pedestrian zones.

As described in section 5.4.12 of the EIS (Volume 1A), it is proposed to provide special event services to operate as shuttle services between Central and Moore Park and Central and Royal Randwick racecourse. These would operate at frequent intervals in addition to regular LRV services. The 90 metre LRVs, comprising two combined 45 metre LRVs, capable of transporting 600 passengers at a time, would be used to transport customers to and from events at Moore Park when the event crowd exceeds a certain threshold. Special event services between Royal Randwick racecourse stop and Central Station stop are proposed to be 45 metres only.

In Devonshire Street, LRVs would operate within an exclusive right-of-way with safe crossings for pedestrians located along the corridor. A safety review would be conducted by an independent consultant during detailed design that would consider all safety aspects associated with the design of the CSELR proposal.

The noise impact assessment undertaken as part of the EIS (refer Technical Paper 11 of the EIS in Volume 6) was undertaken based on a 45 metre LRV, but also considered impacts from special event services. Responses to noise issues are detailed in section 5.10 of this Submissions Report.

The comments stating that the capacity of the proposed LRVs is superior to buses and cars are noted. Further discussion around capacity of LRVs is provided in section 5.5.2 of this Submissions Report.

#### *Appearance of LRVs*

The NSW Government has recently undertaken a process of colour coding Sydney's public transport modes to enable customers to easily identify modes. The colour allocated to light rail is red, which would be a feature on all LRVs and stops once the CSELR is operational. Red LRVs can already be seen on the Inner West Light Rail.

#### *Procurement of LRVs*

Transport for NSW has engaged a Shadow Operator to provide operations and technical advice through the tendering process, including with regard to international industry best practice for specifications for LRV type and performance. Transport for NSW will assess LRV options across a number of performance measures, including, but not limited to, such measures as maximum design speed, maximum grades, customer experience, energy efficiency and noise emissions, to ensure that the LRV fleet is best suited to the Sydney environment. The selected LRV fleet would ultimately need to meet the functional and operational needs of the proposed and future expansion of the network and provide value for money.

#### *Other*

All LRVs would be fitted with service brakes and emergency brakes. The service brake is a standard wheel brake which would be sufficient for all standard operating scenarios, such as stopping and slowing down at traffic signals, stops and tight curves. The emergency brake comprises magnets that clamp directly onto the track for rapid deceleration and would be used at the driver's discretion when there is a risk of collision with another vehicle or pedestrian.

The future Operator of the CSELR would design and supply LRVs that meet internationally recognised standards, including braking characteristics that would meet minimum deceleration rates for normal and emergency braking.

It is not proposed to provide Wi-Fi services at CSELR stops or on LRVs.

Real time information would be provided across the CSELR network, including at stops and on LRVs. The Passenger Information Display System (PIDS) would provide passengers with real time information including departure times, the current time, customer information, special events notices and safety messages.



Double decker LRVs were not considered for the CSELR. Whilst they may provide additional capacity, this would be offset by a range of other constraints, including:

- slower unloading times, which could affect system reliability
- engineering issues such as clearance of overbridges, for example on Eddy Avenue, need for construction of a larger tunnel through Moore Park and higher overhead wiring, with associated impacts on trees and visual amenity
- increased mass of vehicles which would increase energy usage
- non-compatibility with the Inner West Light Rail, including existing tunnels and underpasses, restricting access to the Rozelle maintenance depot
- cost, which would be greater than that of modern single deck LRVs as there are no standard double decker trams commercially available.

### 5.5.9 Moore Park tunnel

#### Summary of issues raised

Two main issues were raised relating to the Moore Park tunnel, as summarised below.

- It was suggested that the Moore Park tunnel should include a shared pedestrian/cycle path under Anzac Parade, either within the proposed light rail tunnel, adjacent to the light rail tracks, or as a separate subway tunnel. The recommended extent of the shared path ranged from just under Anzac Parade to the entire length of the Moore Park light rail tunnel.
- It was also suggested a shared pedestrian/cycle tunnel should have cycle-friendly ramps at either end and be wide enough to accommodate the large number of pedestrians anticipated to access the Moore Park sporting precinct. It was suggested this would be cheaper than building a separate cycle/pedestrian bridge and would allow for better integration of pedestrians, cyclists and public transport into the Moore Park cycling precinct. An alternate suggestion was to provide an at-grade signal crossing that would not impede the LRVs but will stop/alert buses when a pedestrian is crossing.
- It was also suggested that the tunnel under Moore Park should be constructed as a cut and cover design with minimal parkland taken by the entry portal in Moore Park West and exit portal at Moore Park East. Tunnelling under Anzac Parade should commence in Moore Park East to avoid destruction of heritage trees. The tunnel entrance/exit should have maximum cover to align closely with the original surface.

#### Submission number(s)

41, 178, 308, 332, 349, 427

## Response

The Moore Park tunnel is proposed to be constructed as a cut-and-cover tunnel with portals in Moore Park west, directly adjacent to South Dowling Street, and Moore Park east, adjacent to Anzac Parade. As a result of further design development, the Moore Park tunnel alignment has been modified, with the eastern portal now proposed further to the south. Section 6.8 of this Submissions Report provides a description of the design change and an assessment of the potential impacts and any additional mitigation measures. The tunnel design includes the rapid decline in the vertical alignment to an adequate depth to minimise permanent impacts within Moore Park west. The tunnel design and construction methodology would be further developed during detailed design.

With regard to impacts to planted trees, the revised design would not result in a substantial change in impacts to the number of trees potentially affected by the proposal. Measures to mitigate the potential impact to planted trees are included in Chapter 8 of this Submissions Report (refer to mitigation measures T.1, T.8, T.9). Where the loss of trees cannot be mitigated, trees removed as a result of the CSELR would be offset in accordance with the *Transport for NSW Vegetation Offset Guide* (Transport for NSW 2013a). Replacement plantings would be agreed in accordance with the CSELR Landscape Strategy (refer to Appendix F of the EIS, Volume 1C) and consultation with relevant stakeholders. Replacement plantings would be maintained by the future Operator (or as otherwise agreed with any relevant stakeholders) for a period no greater than two years (refer mitigation measure T.3 in Chapter 8 of this Submissions Report).

The provision of a shared pedestrian/cycle path under Anzac Parade, either within the proposed light rail tunnel or as a separate adjacent tunnel, was not considered as part of the CSELR. Construction and operation of a pedestrian and cyclist tunnel would likely result in higher operational costs compared to a bridge, including additional costs for fire and emergency systems, maintenance, water management, provision of lighting and closed circuit television (CCTV) as well as safety and security measures within and around the tunnel entrances, in accordance with crime prevention through environmental design (CPTED) principles.

A new pedestrian bridge over Anzac Parade is proposed to be provided adjacent to the Moore Park stop, providing grade-separated access across Anzac Parade for pedestrians and cyclists, via ramps and stairs. Further details on the pedestrian bridge are provided in section 6.9 of this Submissions Report.

### 5.5.10 Services/trip duration

#### Summary of issues raised

A number of submissions raised concerns around light rail services and trip duration, as summarised below:

#### *Speed of LRVs*

- Concerned about the speed of LRV movements, particularly in residential areas and along Devonshire Street. LRV travel speed should be reduced to 20 kilometres per hour between South Dowling Street and Elizabeth Street for safety reasons.





- Concerned about the speed of LRVs through Surry Hills and along Devonshire Street, including for safety reasons, considering noise impacts and to encourage pedestrian and cyclist activity.
- Concerned that the 20 kilometre per hour speed limit in pedestrianised areas is unreasonable and environmentally unsound - particularly as buses can travel at 40 kilometres per hour down George Street.
- Average trip speeds below 16 kilometres per hour make the proposal the slowest major metropolitan light rail in the world.
- Consider the use of 90 kilometre per hour vehicles.

#### *Frequency/service plan*

- Concerned about the frequency of LRVs, particularly along Devonshire Street where the proposed frequency will be disruptive. Services through Surry Hills should have a five minute headway to allow for pedestrians, cyclists and vehicles to safely cross the tracks and to reduce traffic and access impacts.
- The CSELR will require very frequent flows of LRVs during the morning and evenings as the line for the current bus route is always very long.
- Light rail service times should correspond with student travel demand, including out of hours activities (e.g. sport, performances, before and after school activities). School travel needs should be included in capacity modelling.
- Concerned about amenity of light rail services for high school students accessing Sydney Girls High School and Sydney Boys High School. Timetabled services should be frequent and efficient to support the travel needs of school children at the beginning and end of each day.
- Concerned that off peak frequency on each of the branch routes will be 10 to 12 minutes; notes that Sydney Buses research suggests customers become disaffected after seven minutes. This will affect travel time, especially for interchanging passengers (this impact was not assessed in the EIS).
- Question about how frequent light rail services will be. The frequency of light rail should take into account pedestrians, cyclists and vehicles – congestion and intersection functionality.
- The initial proposed intervals north of the Alison Road junction are inadequate (2.5 to three minutes). To achieve the required 30 LRVs per hour, an average interval of two minutes is required (calculations provided in submission).
- The proposal needs to overcome a combination of shorter initial service intervals, an earlier need for the specified two minute interval capacity to be implemented and the lack of any ability to improve on this capacity limitation.
- Reducing the frequency of the Kingsford brand during the day is a significant reduction in current service levels.

### *Journey times*

- Concerned about longer journey times, including from the South East. Concerned about increased journey time relative to existing bus services and express bus services. Concern about increased journey time resulting from need to interchange and from need to travel through Central to reach Circular Quay. Concerned about increased journey time between Central and Circular Quay due to slow speeds along the George Street pedestrian zone.
- There is a lack of information and clarity to support the changes in travel times and how the travel times quoted have been calculated. The published travelling time of 34 minutes from Kingsford or Randwick to Circular Quay seems conservative when compared to bus travel times.
- Interchanging between modes will make journeys longer, especially to accommodate less mobile passengers. Concerned that 90 per cent of commuters who use the light rail will have longer and more complicated journeys. Travel times will be longer, with interchange between modes and light rail going via Central (whereas existing bus services do not).
- Concerned that the EIS has not assessed true impact on journey times, noting that many travellers will need to change modes at Kingsford or Randwick, and potentially also at Central and Town Hall or walk further from stops to destinations.
- Concerned that quick journey times are being prioritised over attracting the travelling public.
- Concerned that travelling from Kensington to Matraville will require a change at Kingsford to light rail – making the journey longer and less convenient.
- The Randwick City Council's 'Randwick Light Rail Pre-feasibility Study' of 26 September 2011 favourably compared calculated light rail times to bus times as being better for hypothetical lines from the Randwick local government area to Martin Place or Central.
- The travel times have not factored in the sometimes significant waiting times for buses which are inherently prone to bunching up so that many buses arrive at once after long waits.
- Concerned journey times will be too long and will take longer than current journey times.
- Requested more clarity on estimated trip times for light rail and buses, given that bus services will be moved to the already congested Elizabeth Street and will slow significantly as they travel north from Central Station.
- Concerned that light rail will not offer competitive trip times to access the CBD compared with current express and limited stop buses.
- Requested to see timetabling work.
- Coogee residents will experience longer journey times with the proposed CSELR, noting that a journey to the north CBD may take 60 minutes. Bus services bypass Central and South CBD.
- Claims in the EIS are not justified or substantiated, in particular journey time savings.



### *Reliability*

- Concerned that light rail will be less reliable than buses. Light rail is less reliable than buses, due to the whole-system impacts if a LRV breaks down and blocks the network.
- Concerned about the impact of loading levels on other parameters such as journey time or on-time running. Variability in when passengers arrive at stops is likely to be high as many will be interchanging from buses. Significant numbers of waiting passengers will be unable to board some services, decreasing reliability from a user perspective. It will also increase dwell times resulting in bunching, adversely affecting on-time running.

### *Hours of operation*

- The CSELR should only operate between 5.30 am to 11.30 pm. There should be no light rail activity between 11.30 pm and 5.30 am.
- Requested for a curfew on LRVs at night. Light rail on Devonshire Street should operate on a schedule similar to flights into Sydney – i.e. not between midnight and 6.00 am.
- Concerned that buses will replace light rail during its off-hours – creating noise in a quiet, residential street, as mentioned at an information session.
- Concerned about operating hours. Operating hours are excessive. Operating hours should be limited. There should be a total ban on LRV movements between 1.00 am and 5.00 am.
- Light rail should not operate past midnight on Friday and Saturday, or past 11.00 pm on other nights. It should not operate before 6.00 am.

### *Disrupted services*

- Concerned about derailments and subsequent cancelled services. A passing (holding) loop should be provided at the existing (Inner West) Railway Colonnade Tram Stop to avoid system operating disruptions.
- To ensure minimum adverse environmental effects due to system operating disruptions, appropriate turnback facilities should be provided in the CBD and at suitable locations on the suburban legs of the CSELR to minimise the time and extent of LRV service shutdowns.
- Concerned that the EIS does not include crossovers or other means of changing track between Circular Quay and Alison Road, except for at Eddy Avenue. If breakdowns occur, crossovers would allow LRVs to be routed around obstructions. Noted there is a need to include emergency turnbacks in George Street.

### *Special event services*

- Light rail services to Randwick Racecourse should be increased during race days so that no sidings or additional tracks are required on Alison Road.
- Special event express light rail services should operate between Moore Park and Central Station, without stopping at the proposed Surry Hills stop. Further details requested regarding special events operations.
- Express special event services need to be clearly identified, to ensure passengers understand the LRV will be stopping at limited stops.

### *Others*

Other concerns regarding light rail services included comments that light rail is inflexible, that there would be no express services as LRVs cannot overtake each other and that the service will be inconvenient because bus services will terminate at UNSW and Kingsford.

### Submission number(s)

44, 47, 50, 55, 67, 72, 106, 136, 149, 154, 156, 160, 162, 167, 168, 170, 171, 172, 173, 174, 176, 181, 184, 187, 188, 189, 191, 192, 193, 194, 204, 213, 242, 243, 259, 264, 290, 291, 296, 298, 312, 323, 331, 332, 338, 343, 346, 348, 349, 358, 359, 361, 362, 364, 366, 370, 374, 381, 385, 391, 393, 396, 399, 403, 407, 410, 411, 413, 418, 419, 422, 427, 428, 433, 435, 437, 440, 441, 443, 445, 446, 447, 449, 455

### Response

#### *Speed of LRVs*

The speed of CSELR LRVs would vary based on the section of the route they are travelling on, with speeds limited within certain sections. Where light rail tracks are adjacent to traffic lanes, LRVs would operate within the existing posted road speeds, that is, at the same, or lower, speeds to traffic in adjacent traffic lanes. In the George Street pedestrian zone, LRVs would be limited to a maximum speed of around 20 kilometres per hour to minimise the risk of collision with pedestrians. Where the CSELR is within a dedicated corridor, for example through Moore Park, LRVs would travel at up to a maximum of 70 kilometres per hour. At stops and signalised intersections the light rail speeds would be lower as LRVs slow or accelerate up to operating speeds. The maximum speed proposed for the CSELR would be 70 kilometres per hour.

The design speeds have been incorporated into operational modelling to provide an estimation of journey time, which is discussed in further detail below. While the average speed along the alignment may at times be slower than the average speed for a bus travelling the same route, the CSELR aims to provide improved and more reliable journeys for public transport users.

#### *Hours of operation*

The proposed hours of operation for the CSELR are typically between 5.00 am and 1.00 am, seven days a week, with possible adjustment to these operating hours to cater for special events and/or to integrate with other public transport operations.

When in operation the CSELR would replace a number of bus services transporting people along the alignment, including into and out of the CBD. The CSELR would therefore be required to provide services along the whole alignment for the same hours of operation as existing public transport services. It would not be possible to operate the system with reduced operating hours within the Surry Hills section of the alignment as this would not enable passengers to complete their full journey between the CBD and South East during the reduced operating hours.

Buses would not be used to replace light rail services outside of the proposed operating hours. Following the proposed redesign of the CBD and South East bus networks, it is expected that some bus services would continue to operate outside of CSELR operating hours.



### *Frequency*

The CSELR would provide a highly reliable service that would carry up to 6,000 passengers per hour in each direction in the first year of operation, but with the capability to carry up to 9,000 passengers per hour as demand required. In order to achieve this capacity, the CSELR would run a fleet of approximately 30 LRVs capable of carrying 300 passengers at a frequency of every two to three minutes during peak periods within the CBD and out to Moore Park, with services operating every five to six minutes between Moore Park and the Randwick and Kingsford branches.

The maximum frequency of services along Devonshire Street under normal operations (including peak periods) would be two to three minutes. However during special events there may be additional services operating on this section of the alignment. This may result in some services arriving within a minute of the previous LRV.

Section 13.3.1 of the EIS (Volume 1B) states that existing traffic volumes along Devonshire Street in the morning peak hour are around 574 vehicles, and 631 vehicles during the afternoon peak hour, or approximately one vehicle every six seconds. This suggests that even at one minute headways there would be adequate time for people to cross the tracks.

Reducing the frequency of light rail services would reduce the overall capacity of the network, which would have flow on effects on other public transport modes and private vehicle numbers as demand for light rail services exceed supply.

The CSELR would operate more frequently during the morning and afternoon peak periods, which coincides somewhat with school arrival and departure times. The system has the ability to operate additional one-off services, or increased frequency of services, at the discretion of the future Operator, to meet the needs of stakeholders along the alignment.

It is not intended that a timetable would be provided for the operation of the proposal. There would be 'turn-up and go' services every three to six minutes in the peak times. Section 5.4.2 of the EIS (Volume 1A) provides indicative operating details, such as cumulative run times between stops and intervals between LRVs. Service information would include the first and last service times (for each stop) and service frequency during the day (e.g. during peak and inter peak periods). This information would be made available through real time and static information systems at stops and on LRVs, and would be displayed on the Transport for NSW website.

### *Special event services*

As described in section 5.4.13 of the EIS (Volume 1A) special event services would run between Central and both the Moore Park sports and entertainment complex and the Royal Randwick racecourse during events at these facilities. The Central Station, Moore Park and Royal Randwick racecourse stops have been designed to facilitate large numbers of people accessing these stops at the start and finish of events and to allow LRVs to change tracks, via turnbacks and/or crossovers.

The special event services would operate at frequent intervals in addition to normal light rail services, providing additional capacity for people travelling between Central and the special event stop.

Ninety metre LRVs, comprising two combined 45 metre LRVs, capable of transporting 600 passengers at a time, would be used to transport customers to and from events at Moore Park where the event crowd exceeds a certain threshold. Special event services between Royal Randwick racecourse stop and Central Station stop are proposed to be 45 metres only.

It is envisaged that special event services would operate as shuttle services between Central and Moore Park/Royal Randwick racecourse. LRVs would not stop at intermediate stops, with the possible exception of Royal Randwick racecourse special event services, which may stop at Moore Park to access overflow private vehicle parking.

For each special event the future Operator would prepare a special event service plan which would outline, for example, the number and frequency and duration of special event services and the need for 90-metre vehicles for events at Moore Park. Information about special event services would be pre-published on the Transport for NSW website and made available at stops and on LRVs through real time information displays, signage and way finding around stops.

### *Journey time*

The CSELR would provide a highly reliable service capable of transporting up to 9,000 passengers between Circular Quay and Randwick and Kingsford. As the CSELR would operate within a designated corridor for most of the route, the journey time between the termini is expected to be more consistent than comparable bus routes, where buses may be slowed down by traffic. Taking into account the need to stop at stops and signalised intersections and design speeds along the route, (including a maximum design speed of 20 kilometres per hour in the George Street pedestrianised zone), the CSELR would take approximately 34 minutes to travel between Circular Quay and Randwick and Kingsford, and slightly less on the inbound journey (refer Tables 5.7 and 5.8 in the EIS Volume 1A).

The CSELR has been designed as a high frequency service to minimise waiting times and provide more reliable journey times for customers. Interchanges and LRVs have been designed for efficiency. For example, cross platform boarding and multiple doors on vehicles would be provided to enable quick transfer between buses and LRVs. Whilst there may be some express buses that can achieve a faster journey time to Circular Quay by utilising the Eastern Distributor, the CSELR is part of an integrated public transport system that has been designed to meet the needs of different users.

As outlined in section 5.8.1 of this Submissions Report, the CBD and South East bus networks are proposed to be redesigned in parallel to the development of the CSELR. Changes to journey times for buses accessing and traveling through the CBD, including along Elizabeth Street, would be better understood following the redesign of the CBD and South East bus networks.

As outlined in Technical Paper 1 (*Transport Operations Report*) of the EIS (Volume 2), the introduction of the CSELR would require some passengers to interchange or transfer from another mode of transport (e.g. bus, car, walking, cycling, and heavy rail) on to the CSELR. While it is acknowledged that some passengers would be inconvenienced by the need to transfer onto the CSELR, it is anticipated that the improved reliability of the light rail system would provide a significant benefit for public transport users and would improve the customer travel experience in terms of reliable travel times.



Journey times were calculated using internationally proven modelling software applied to the specifics of the CSELR. The model included a 3D model of the route and was based on safe, efficient and comfortable speeds along the alignment, with consideration of road traffic and intersections, gradient, optimum curve speeds, modern LRV characteristics, speed constraints through pedestrian zones and deceleration and acceleration in the vicinity of stops.

### *Reliability*

One of the objectives of the CSELR is to ‘improve reliability and efficiency of travel to, from and within the CBD and suburbs to the South East’ (refer Figure 3.9 of the EIS, Volume 1A). A key feature of the CSELR that would assist in achieving this objective is that the CSELR would run in its own right of way for the majority of the route and would be less impacted by road congestion than existing bus services. Additionally, the introduction of the CSELR would allow a net reduction of 180 buses from the CBD in the morning peak hour, and 220 buses when combined with other proposed bus network changes, resulting in a net reduction in congestion in the city — which would have benefits for all transport in the CBD city, including the CSELR.

Other measures designed to contribute to the reliability and efficiency of light rail services include the design of stops and LRVs for easy access and egress, including provision of level access and boarding from platforms and six doors along the length of the vehicle to facilitate fast loading and unloading of passengers. These measures would assist in maximising passenger transfer and minimising dwell times at stops to maintain reliability during peak periods.

### *Disrupted services*

As described in section 5.4.13 of the EIS (Volume 1A), during operation of the proposal, unforeseen incidents may disrupt CSELR services, preventing parts of the CSELR network from operating and disrupting light rail services. The CSELR would provide a series of turnout points and crossover points along the length of the route, which could be used in the event of a service disruption to enable continued, albeit degraded, services. No passing loops are proposed as part of the CSELR.

Preliminary operational contingency measures that would be implemented in the event of such incidents occurring on the CSELR network have been outlined in Appendix J of the EIS (Volume 1C). These contingency measures would be further refined and developed by the future Operator, in consultation with all relevant stakeholders.

### *Other*

With regard to the comment that light rail would be inflexible, while the track alignment would be fixed, the services pattern would be increased or decreased to match customer demand. Also, the design of the track would not preclude future extensions.

It is not proposed to provide express light rail services on the CSELR, with the exception of the special event shuttle services between Central and Moore Park and Royal Randwick racecourse that would run in addition to, and between, regular services. The CSELR aims to provide a faster, comfortable and more reliable public transport journey for passengers as part of a multimodal public transport system that can cater for numerous customer needs.

This would include the retention of some express buses from the South East during peak periods to cater for express service demand to the city.

## 5.5.11 Stabling/maintenance

### Summary of issues raised

The following issues were raised with regard to the proposed stabling and maintenance facilities:

- Question about storage of chemicals at the stabling facility.
- Request that the stabling and maintenance facility adjacent to Doncaster Avenue adheres to Standard EPA protocols.
- Design of depot and service buildings should be dealt with a sensitivity reflecting the 'French Approach' to ensure an appropriate built environment.
- Maintenance activity outside service times in residential areas late at night and early in the morning should be restricted.
- Suggestions for improving the Randwick stabling facility, including provision of the access road from Abbotsford Road, extension of the two entry tracks, raising the proposed car parking above the stabling tracks and provision of a separate exit track onto Ascot Street.
- Stabling facilities should be designed to be 'future proof'.

### Submission number(s)

80, 242, 259, 264, 438, 449

### Response

Storage areas would be designed in line with the appropriate Environment Protection Authority (EPA) guidelines and legislative requirements. Hazardous material procedures would be developed for activities at the proposed Rozelle maintenance depot and Randwick stabling facility to minimise potential for impacts associated with chemical spills and leaks. Mitigation measures to manage risks associated storage of chemicals at the stabling facility are included in the mitigation measures table in Chapter 8 of this Submissions Report.

Both the Randwick stabling facility and the Rozelle maintenance facility are proposed to have 24 hour operations. At the Rozelle maintenance depot, the LRV entry doors would be closed at night-time to mitigate operational noise during the night-time period (refer to mitigation measure AI.5 in Chapter 8 of this Submissions Report).

The Randwick stabling facility would be required to meet the noise criteria defined in the NSW *Industrial Noise Policy*, which dictate that noise emissions from the stabling facility would need to be carefully controlled, particularly during the night-time period when existing background noise levels are low. As per mitigation measure A1.4 in Chapter 8 of this Submissions Report, a range of alternative mitigation measures would be considered to ensure compliance.

The noise impacts of the stabling and maintenance facilities would be reviewed in the detailed design phase to confirm the suitability of the proposed noise mitigation measures (refer Chapter 8 of this Submissions Report) to achieve compliance with the noise goals.





The design of buildings at the Rozelle maintenance depot and Randwick stabling facility would be undertaken during detailed design and would consider functionality as well as aesthetics, as appropriate to the location, scale and visual/overshadowing impact of the buildings.

The Randwick stabling facility and the Rozelle maintenance facility would be future proofed as the designs would accommodate future system growth. Recommendations for the design of the depot and stabling facility buildings are noted.

## 5.5.12 Stop layout, design and treatment

### Summary of issues raised

A number of submissions raised concerns and recommendations relating to the design and layout of the stops, including:

- Comments on canopies at stops, including the size of shelters at stops, side protection on shelters, durability of shelters, provision of shelters on all bus and train stops and shelters to protect interchanging passengers – particularly at Kingsford, Randwick, Central Station and Rawson Place stops. It was suggested that stop canopies do not need to extend to the length of the vehicles, and they should aim to have as little visual and other impact as possible. Other submissions suggested that canopies should extend the full length of the platform.
- Concerned about amenities, including toilets, seating, room for prams and wheelchairs, safety fences and bike racks. Major light rail stops, especially Rawson Place, should include weather protection, way finding, other-mode transport information, personal facilities such as public toilets and seating.
- Comments on platform and track configurations at stops, including use of the ‘Vienna’ design for stops, and customer capacity at stops.
- Comments on the size and scale of stops and platforms.
- Question about where light rail stops will be placed in the Surry Hills Precinct, their design and if they will be in the centre or on the kerb of the road.
- Comments on stop treatments, including platform kerbs, materials and finishes. In particular paving, lighting and street furniture should be consistent with City of Sydney standards in Surry Hills and the CBD and stops should be designed to maximise transparency and visibility with pedestrian barriers to be avoided where safe to do so.
- Comments on safety and accessibility of stops.
- Comments on interface with the public domain, other transport modes and the Inner West Light Rail.
- Comments on the location of stops (note this is distinct from the issues raised with regard to alternative stop locations, included in section 5.4.12).
- Concerned about the impact of stops on surrounding buildings and land uses.
- Comment that the light rail emerges from the Moore Park tunnel at a level several metres below grade. The difference in elevation should be used to provide direct access to the Moore Park stop island platform from a point adjacent to the top of the tunnel portal, instead of the ‘up-across-and-down’ configuration of current plans.

- Comment that the size of the Moore Park stop should be significantly reduced to minimise alienation. The second storey impacts on visual amenity.

#### Submission number(s)

29, 44, 66, 97, 142, 144, 151, 158, 264, 184, 206, 207, 208, 209, 213, 242, 255, 264, 265, 274, 277, 280, 286, 298, 300, 308, 329, 332, 335, 336, 337, 349, 360, 370, 389, 393, 438, 445, 449, 478, 479

#### Response

All stops have been designed in accordance with the CSELR urban design principles and objectives, which are discussed in section 4.1.2 of the CSELR EIS (Volume 1A). These design principles and objectives led to the development of specific alignment and stop typologies (refer section 5.5.6 of this Submissions Report) for the CBD and Surry Hills (civic typology), Moore Park and Randwick (park typologies) and Kensington/Kingsford (boulevard typology) precincts. Stop typologies were used as a guide during the design of stops, in conjunction with functional and urban form requirements (refer Table 4.1 of the CSELR EIS Volume 1A).

Further, the design and layout of each of the 20 proposed light rail stops took into account the specific functional and urban design requirements, including interchange function, safety requirements, accessibility, integration with the public domain and the need to minimise traffic impacts. For example:

- Side or island platforms were selected based on interchange function, integration with the public domain and the need to minimise traffic impacts.
- Larger canopies were selected at stops with a high passenger demand such as Rawson Place, Royal Randwick racecourse, Randwick and Kingsford, while smaller canopies are proposed at other stops to minimise visual impact.
- Stop size and scale were designed based on projected patronage, special event operations, interchange function and the existing public domain.

Canopies would be designed in response to the unique site conditions, including placement to suit to the existing building awnings adjacent to the stops, so that there is a seamless integration within the existing streetscape. Canopies at most stops would typically be designed with small scale, minimal canopies, while the larger interchange stops would be designed to have larger unified canopies that cover multiple platforms and to allow for overhead wire infrastructure and necessary vehicular clearances.

The platform and track configurations at stops have been designed to provide the required function and capacity for LRVs for each stop. Stops have been designed to be DDA compliant, providing access and space for wheelchairs and prams. Pedestrian crossings would be provided at all stops where customers are required to cross traffic lanes.

Stop treatments, such as platform kerbing (including Kassel kerbs), materials and finishes would be further defined during detailed design.



With regard to amenities at stops, each stop would generally include seating within a shelter, Opal ticket machine readers, six lean posts, and general waste rubbish bins. The designs do not include public toilets at stops or interchanges. Secure bicycle parking facilities would be provided at the Randwick and Kingsford stops and 'u-rail' type bike parking facilities would be provided at the Circular Quay stop and stops outside of the City Centre Precinct. The need to provide additional amenities at stops and interchanges would be considered during detailed design.

Safety barriers would be provided at stops as required. For example, for stop platforms adjacent to busy traffic lanes (e.g. on Anzac Parade) or where changes in levels occur (Kingsford stop).

A number of design changes to stops have been adopted since public exhibition of the EIS and are described in Chapter 6 of this Submissions Report. These include changes to the:

- Chinatown stop arrangement (ref section 6.4 of this Submissions Report)
- Central Station stop and surrounds (refer section 6.5 of this Submissions Report)
- Surry Hills stop arrangement (refer section 6.6 of this Submissions Report)
- Moore Park stop location and arrangement (refer section 6.8 of this Submissions Report)
- stops along Alison Road and Wansey Road (refer section 6.11 of this Submissions Report)
- Randwick stop and interchange (refer section 6.12 of this Submissions Report)
- UNSW Anzac Parade stop arrangement (refer section 6.13 of this Submissions Report).

Responses to general issues relating to stop design and to specific issues relating to specific stops are detailed below.

Specific issues raised in submissions	Response to specific issues	Submission No.
a) Queuing at stops, particularly Circular Quay stop	The frequent services of the CSELR, when compared to Sydney buses, would alleviate any extensive queuing at stops. Platform configuration and widths have been designed to accommodate the forecast customers at each stop.	300
b) Safety concerns around light rail stops and transport interchanges, including interaction between light rail customers and other people using adjacent shared paths for other journeys, particularly in relation to shared pedestrian/bicycle paths near light rail stops.	Consideration of customer and general public needs have been considered in the design of stops and the surrounding public domain, including the width of platforms and adjacent shared paths. Further consideration of customer and general public safety would be further considered during detailed design.	308
c) Grosvenor Street stop: <ul style="list-style-type: none"> <li>▪ AMP Capital seeks clarification on Grosvenor Street stop with regard to the NAB Building (255 George Street), including stop size, capacity and layout, any proposed impacts to the building curtilage, awning and street frontage, and interconnectivity between the stop and Wynyard.</li> </ul>	<p>Transport for NSW would liaise with AMP Capital during detailed design to provide further detail on the issues raised in the submission.</p> <p>The Wynyard stop would provide an interchange function with Wynyard train station.</p>	300

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>d) Interchanges with the Inner West Light Rail should be improved by relocating the Chinatown stop further to the south.</p>	<p>The Chinatown stop cannot move further south due to the crossovers that connect the CSELR and the Inner West Light Rail.</p>	<p>66, 144</p>
<p>e) Rawson Place stop:</p> <ul style="list-style-type: none"> <li>▪ The stop should be located closer to Pitt Street.</li> <li>▪ Questions the decision to make Rawson Place a bus interchange. Eddy Avenue is currently equipped to handle more bus services. Eddy Avenue should be a bus interchange, rather than Rawson Place.</li> <li>▪ Suggestion for further design development for Rawson Place interchange to retain vehicle access to SCYHA and '790 on George'. This could be achieved by reducing the footpath on the north side of Rawson Place and widening of Rawson Place on the SCYHA side.</li> <li>▪ Notes that the height of the platform (Rawson Place) necessitates ramps and railings for passenger safety and increases impact of the interchange on the streetscape.</li> </ul>	<p>Rawson Place stop was selected as the optimum location to provide an interchange with buses entering the CBD from the west. The stop has been designed to complement the redesign of the Sydney bus network and provides the required bus stopping and turn around capacity required to operate reliable bus services to the CBD.</p> <p>Design suggestions have been noted and would be considered during detailed design.</p>	<p>44, 151</p>
<p>f) Central Station stop:</p> <ul style="list-style-type: none"> <li>▪ This cannot meet demand of transferring bus and heavy rail passengers.</li> </ul>	<p>The design of the stop and surrounds has been modified to include closure of Chalmers Street to through traffic and the creation of a larger, shared pedestrian and cycle zone adjacent to the stop. Refer to section 6.5 of this Submissions Report for further details.</p>	<p>277</p>
<p>g) Surry Hills stop:</p> <ul style="list-style-type: none"> <li>▪ Query on location and design.</li> <li>▪ The development of the platform at Ward Park and the subsequent changes made to the park must be sympathetic to the needs of the elderly and people with mobility limiting disabilities.</li> <li>▪ Ward Park is also a major thoroughfare and proper way finding processes will need to be implemented.</li> </ul>	<p>The Surry Hills stop has been modified from the design that was presented in the EIS. A description of the revised design is provided in section 6.6 of this Submissions Report.</p> <p>All stops, including Surry Hills stop, would be DDA compliant and would cater for the mobility impaired and for elderly passengers. Changes made to the footpaths around Surry Hills stop would also comply with DDA requirements.</p> <p>Way finding signage would be installed around stops, typically on poles or totems located on and around the stop platform or fixed to shelter structures. The final branding, way finding and signage designs would be developed during the detailed design of the proposal and would integrate with the existing overall urban design and public domain of the CBD and South East Sydney region.</p>	<p>242, 280, 389</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>h) Moore Park stop:</p> <ul style="list-style-type: none"> <li>▪ Suggests Moore Park stop is integrated with the public domain of the precinct, as per the Precinct Master Plan and Integrated Event Transport Plan, including improved pathways, access across Anzac Parade and a relocated bus loop.</li> <li>▪ Carefully consider the Moore Park stop design. The proposed double storey station is out of character. Opposed to construction of two storey station at Moore Park.</li> <li>▪ A design competition was suggested for the Moore Park stop, to ensure a minimal and striking design.</li> </ul>	<p>A revised location and layout of the Moore park stop, including connections to the proposed pedestrian bridge over Anzac Parade, is provided in section 6.8 of this Submissions Report. The revised location and layout of the Moore park stop has been developed in consultation with the Centennial Park and Moore Park Trust. The revised design retains two storeys, as this provides grade-separated access to the light rail platforms, minimising the hazard of large numbers of event patrons crossing the tracks on their way to/from the Moore Park sports and entertainment complex.</p> <p>In addition, a new pedestrian bridge is proposed over Anzac Parade, adjacent to the Moore Park stop (refer section 6.9 of this Submissions Report), providing a grade-separated access across Anzac Parade.</p> <p>The design of the Moore Park stop and new pedestrian bridge would be refined through the detailed design process. It is not proposed to open the design process for a competition. Stop designs would be subject to review by the Urban Domain Reference Panel comprising key project stakeholders.</p>	<p>274, 298, 332, 335, 336, 337, 479</p>
<p>i) Royal Randwick racecourse stop:</p> <ul style="list-style-type: none"> <li>▪ Requested clarity on the 'terminus' near King Street, Randwick.</li> <li>▪ Noted need for provision of a dedicated stop for patrons and a dedicated stop for the general public.</li> <li>▪ Concerned about pedestrian safety.</li> <li>▪ Query on platform configuration and length.</li> <li>▪ Query on light rail services at the stop during race days.</li> <li>▪ Randwick TAFE provided a number of design recommendations.</li> <li>▪ Suggestion to provide a 120 metre platform at the border of the Racecourse.</li> <li>▪ Royal Randwick racecourse stop name should be changed to incorporate the racecourse and Randwick TAFE.</li> </ul>	<p>The Royal Randwick racecourse stop, located outside of the racecourse near King Street Randwick, Would not comprise a terminus. The stop would serve racecourse patrons, Randwick TAFE, surrounding residences and users of the facilities such as Centennial Park. The stop is described in section 5.2.3 (pages 5-40 &amp; 5-41) of the EIS (Volume 1A).</p> <p>The stop location and layout were developed to facilitate safe and easy access to the racecourse for race days and to avoid traffic and safety impacts for large numbers of pedestrians crossing Alison Road, as well as to provide access for residents and TAFE students and staff during normal operations.</p> <p>During special events there would be additional light rail services to shuttle patrons between the racecourse and Central Station. The increased frequency would address the increased number of customers without the need for longer platforms.</p> <p>The design recommendations provided by Randwick TAFE would be considered during detailed design.</p> <p>Stop names were considered during the feasibility design stage of the proposal and aim to be geographically accurate, recognise any historic or iconic value of place, maximise community ownership, and be consistent with Transport for NSW's naming policy. The Royal Randwick racecourse is an iconic landmark within South East Sydney.</p>	<p>3, 44, 81, 139, 158, 242, 264</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>j) UNSW High Street stop:</p> <ul style="list-style-type: none"> <li>▪ Suggested that provision be made for high numbers of UNSW students accessing the UNSW High Street stop, including access to the lower campus.</li> </ul>	<p>The UNSW High Street stop is proposed to be relocated from Wansey Road to High Street, providing improved and safer accessibility to the UNSW from this stop. A layout and description of the revised stop are provided in section 6.11 of this Submissions Report. The revised location is more accessible to the main source of patronage at UNSW and is designed to meet forecast demand capacity. The lower campus would be served by the UNSW Anzac Parade stop.</p>	<p>242</p>
<p>k) Randwick stop:</p> <ul style="list-style-type: none"> <li>▪ Requested that the extent of pedestrian movements and networks of pathways across the park be modelled to determine full impact of proposed terminus location.</li> </ul>	<p>The proposed layout of the Randwick stop and interchange has been modified, providing a larger extent of grassed public space than the previous design, and increasing user accessibility and amenity within the park, while still providing a high function interchange with buses. A layout and description of the revised stop are provided in section 6.12 of this Submissions Report.</p>	<p>360</p>
<p>l) Kingsford stop:</p> <ul style="list-style-type: none"> <li>▪ Noted it is unclear how the terminating buses would turn around at Kingsford Interchange.</li> </ul>	<p>To ensure services from the South East provide convenient access to key destinations along Anzac Parade, no local bus services are proposed to terminate at the Kingsford interchange. Instead, these services would continue along Anzac Parade to Kensington, terminating at Todman Avenue. This proposed route provides convenient, single-seat access to destinations such as the University of NSW and NIDA.</p>	<p>393</p>
<p>m) Future proofing of stops:</p> <ul style="list-style-type: none"> <li>▪ Review should be undertaken of the possibilities for doubling the length of CBD stops.</li> <li>▪ Provision should be retained in stop designs for easy future upgrades catering to multiple car trains allowing for less frequent schedules or greater future passenger capacity if required.</li> </ul>	<p>Stops are proposed to be 45 metres long to correspond with the 45 metre LRVs (with the exception of event services where 90 metre long platforms would be provided at Central Station and Moore Park stops). During the concept design development, stops were reviewed to ascertain any constraints to possible future extensions. The majority of stops were found to have adequate space for potential future extension of up to 60 metres in length. Provision of 90 metre stops in the CBD is not feasible due to the location and number of cross streets.</p>	<p>66, 142, 349</p>

### 5.5.13 Other structures/facilities

#### Summary of issues raised

Issues associated with other structures and facilities for the CSELR are summarised below.

#### *Bicycle facilities*

A number of concerns were raised relating to a lack of secure bicycle facilities, and specifically that no U-rail bicycle parking facilities are proposed at the Central Station stop, which is a major interchange where there would be a large demand for bicycle parking facilities. Requests were made for additional bicycle facilities, including a request for approximately 50 to 100 bikes at Royal Randwick racecourse and Wansey Road stops to increase convenience for commuters who would need to walk to access the light rail service once local bus routes are removed. Support for the provision of secure bicycle parking facilities at the proposed Randwick and Kingsford stops was also noted.



### *Cycle and pedestrian connections*

A number of submissions raised concerns and suggestions relating to cycle and pedestrian connections, stating that there is a risk of not fully integrating cycling into the proposal. It was noted that existing cycleways should be maintained and/or enhanced. Infrastructure for cyclists should be included in designs for the CSELR, to ensure that opportunities to increase the mode-share of cycling and the safety and amenity of cyclists are maximised.

Specific suggestions included accommodating pedestrians and cyclists on the South Dowling Street/Eastern Distributor overpass bridge, including a proper bicycle path in the Anzac Parade corridor, accommodating a dedicated off road bike path along the Anzac Parade medium strip, and providing usable bike/light rail interchanges. Others noted that cost effective bicycle signage should be provided for shared crossings in place of expensive bicycle lanterns. There was also a question about arrangements for high levels of pedestrian traffic at events at Moore Park, safety for cyclists and impact on parklands.

### *Parking at stops*

Concern was raised that no parking would be provided at stops and suggestions were made to consider car parking at stops, including establishing park and ride facilities in areas where adjacent land can be utilised to encourage more car/light rail interchange journeys.

### *Overhead power lines*

A number of submissions requested that electrical cables should be placed underground, including in George Street, in Devonshire Street and/or along the whole alignment to reduce visual impact/clutter and improve public domain. It was requested that the use of overhead electrical lines is justified, relative to undergrounding where they are proposed in proximity to existing tree canopies.

### *Other*

Other issues raised included:

- There is no weather protection for pedestrians walking between the Randwick stop and the hospital.
- Advertising should be limited to one side of stop shelters only and specifically forbidden on LRV windows.
- To ensure minimum adverse environmental effects due to system operating disruptions, adequate surge capacity on the system layovers should be provided on level ground at Circular Quay and the suburban termini.
- A weather-protected cover should be included between the Moore Park stop and stadia and Entertainment Quarter/Hordern Pavilion/Royal Hall of Industries.
- Facilities and infrastructure in Moore Park should be consistent with Centennial Park and Moore Park Trust parkland standards.

## Submission number(s)

41, 48, 69, 94, 142, 152, 160, 168, 170, 213, 242, 258, 274, 259, 308, 314, 321, 323, 330, 340, 349, 354, 366, 370, 373, 375, 393, 413, 416, 418, 422, 427, 445, 447, 449

## Response

### *Bicycle facilities*

Secure bicycle parking facilities would be provided at the proposed Randwick and Kingsford stops. Additionally, 'u-rail' type bike parking facilities are also proposed to be provided at the Circular Quay stop and at each of the stops outside of the City Centre Precinct. Suggestions for the provision of additional bicycle facilities are noted and would be considered during detailed design, in consultation with councils and other stakeholders.

### *Cycle and pedestrian connections*

The CSELR includes the provision of shared pedestrian and cycle paths along some sections of the alignment, including between Bourke Street and Moore Park, along Wansey Road and along Alison Road. Mixed use zones would include the George Street and Chalmers Street pedestrianised zones. A new pedestrian bridge would be provided over Anzac Parade in the location of the existing pedestrian crossing, providing a grade-separated crossing between the Moore Park stop and Sydney Boys High School and Sydney Girls High School. Further detail is provided in section 6.9 of this Submissions Report.

Additional cycle paths have been considered in the *Sydney City Centre Access Strategy* (NSW Government 2013b), which has been developed to improve access within and to Sydney's City Centre through the consideration of all transport modes and their key networks. The provision of signage and way finding for cycleways and shared pedestrian and cycle paths would be provided in consultation with Councils.

### *Parking at stops*

No parking is proposed at stops as part of the CSELR. Parking surveys undertaken during the preparation of the EIS and additional surveys undertaken during the exhibition of the EIS identify parking impacts along the alignment and areas where parking impacts can be mitigated through parking supply on surrounding streets. This latent supply could provide parking for commuters, but may be subject to parking restrictions, which would be determined by the relevant council. Further discussion around parking impacts and mitigation is provided in sections 5.8.11 and 5.8.12 of this Submissions Report. Section 7.1 of this report includes a summary of the additional parking survey undertaken during the exhibition of the EIS.

### *Overhead power lines*

Locating power lines along the CSELR alignment underground would add significant additional cost to the project. However, opportunities for locating power lines underground would be investigated during the detailed design phase of the proposal and would be provided where feasible and economical to install during construction.





Where feasible, consideration would be given to combining power lines, telecommunications cables and LRV overhead wiring on common poles along the alignment to reduce visual clutter and reduce potential impacts on existing awnings and footpaths (refer mitigation measure C.2 in Chapter 8 of this Submissions Report). Further discussion on catenary for the CSELR is provided in section 5.5.1 of this Submissions Report.

#### *Other*

The use of LRVs, stops and other CSELR infrastructure for advertising would be determined through consultation with councils, the Operator and the NSW Government.

Suggestions with regard to surge capacity are noted.

The design does not include a weather-protected cover between the Moore Park stop and the sports and entertainment facilities complex.

All facilities and infrastructure in Moore Park would be designed in accordance with discussions and agreements made with the Centennial Park and Moore Park Trust and would consider Centennial Park and Moore Park Trust standards.

### 5.5.14 Mobility and accessibility

#### Summary of issues raised

Accessibility concerns raised included the use of the CSELR and accessibility of LRVs for people with disabilities, passengers with prams, companion animals and people with bicycles.

Some submissions noted that wheelchair spaces should be provided in the first and last carriages of LRVs to make it easier for passengers to anticipate where a space for their wheelchair might be available during peak times.

Concern was raised that less mobile people will have an extra set of obstacles to traverse to get to their destinations, and interchanging will be difficult and therefore bus services should be maintained to the city unchanged.

Concern was also raised regarding how older people in Randwick/Coogee will travel to George Street/Elizabeth Street.

#### Submission number(s)

150, 155, 224, 264, 359, 346, 377, 449

#### Response

The design of CSELR stops has incorporated a number of features to provide accessibility for mobility impaired passengers, including provision of level access and boarding from platforms, wide platforms and at least one ramped access point to each stop platform.

LRVs would be fully compliant with the *Disability Discrimination Act 1992*, including low floors and designated spaces for wheelchairs and seats for elderly or less mobile passengers. Stops would also be designed to cater for people with wheelchairs or disabilities. These design features would also facilitate easy access and travel for passengers with prams and strollers.

Manual wheelchairs and battery powered wheelchairs and scooters used by customers with a disability would be permitted on the CSELR.

Similar to current Sydney Trains policy on travelling with bicycles, bicycles would be allowed on LRVs, subject to availability of space. However a child's ticket would need to be purchased for bicycles when travelling during peak periods. Bicycles would not be able to block doors or passageways, nor would they be allowed to be ridden on LRVs or on stop platforms. Motorised scooters or bikes with petrol motors would not be permitted.

Similar to the Sydney Trains policy on animals and pets, animals would not be permitted to travel on the CSELR with the exception of assistance or companion animals trained (or in training) to assist passengers with a disability, and police or security dogs.

All commuters travelling from Randwick and Coogee would be required to catch the CSELR at the Randwick stop in order to travel to the city. All interchanges have been designed to facilitate easy transfer between buses and LRVs. Modal interchange is further discussed in section 5.8.2 of this Submissions Report.

## 5.6 Proposal construction

### 5.6.1 Construction traffic and haulage

#### Summary of issues raised

One submission noted that in earlier discussions, it was suggested that George Street would not be closed off in its entirety for construction; however, the EIS indicates that George Street will be closed during construction.

#### Submission number(s)

190

#### Response

The section of George Street between Hunter Street and Bathurst Street proposed for the pedestrian zone would be closed during construction for general traffic. Delivery vehicles and vehicles owned by local residents and businesses would be permitted to access this zone although some restrictions would apply (further detail is provided in section 12.3.3, Volume 1A of the EIS).

East-west routes across the CBD would remain open although temporary closures would be required out-of-hours to enable construction of the CSELR across these roads.

Other sections of George Street would be temporarily closed to traffic at various times. Where possible these closures would be timed to minimise impact to traffic and access and alternative routes would be provided. Residents and business owners would be advised of any temporary closures and changes to access arrangements.

The contractor would develop traffic management plans for the various work sites which would detail the traffic arrangements during construction.



## 5.6.2 Construction sites and compounds

### Summary of issues raised

#### *Location of construction sites/compounds and storage/laydown*

Some submissions suggested the removal and/or relocation of the Ward Park compound. Suggestions included relocation of the compound to Prince Alfred Park, Moore Park, Belmore Park and Marlborough Street. Ward Park is valued as an area of open space for surrounding residents, many of whom are elderly. Concern was also expressed over the construction compound at High Cross Park which was noted as insensitive to the nature of businesses surrounding the park. Other specific comments included:

- Supportive of not having substations or primary construction compounds near the Dymocks building. Request for assurance that this will not change.
- The EIS is not explicit about proposed laydown areas and/or stockpiling near the Dymocks building. Transport for NSW indicated that footways would not be used for storage of plant, equipment or materials – these would be kept within the work hoardings restricted to the current trafficable area of George Street. The EIS should be more definitive about this and should be set out in a Draft Construction Management Plan and Access Management Plan in consultation with the landowners.

#### *Bus turn circle – Moore Park*

One submission noted the need for a turning circle within the bus loop service road at the southern end of the Tramway Oval during the construction phase. It recommended a temporary turn circle be constructed on the southern side of the existing bus loop road.

#### *Suggested mitigation measures*

One submission outlined several mitigation and management measures that should be required to minimise the impacts on the Dymocks building in the CBD. These methods broadly included the prohibition of construction works during special events, restrictions on the storage of materials and waste, traffic management, management processes, patrols of worksites and provision of further details to landowners on construction details. The submission also noted the construction contract should include site rental to ensure there is added incentive for the contractor to return the road reservation to the control of Council rapidly, minimising public access restrictions.

#### *Securing of construction sites*

One submission requested information about how the construction sites along Devonshire Street will be secured to ensure the safety of the local community.

### *Belmore Park construction compound*

One submission expressed concern regarding the establishment of a construction compound in Belmore Park for the following reasons:

- The park provides the only green space in the high density area.
- It would interfere with scheduled events such as Food Trucks United Friday night events and potential festivals being considered.
- It would have an adverse impact on the access between Central Station and Haymarket/Chinatown.

It was suggested that construction impacts at Belmore Park be confined to 10 to 15 per cent of the north-east part of the park.

### Submission number(s)

255, 271, 275, 280, 329, 347, 389, 403, 449, 461

### Response

#### *Location of construction sites/compounds and storage/laydown*

As noted in Chapter 6 of the EIS (Volume 1B), the construction methodology, including the location of construction worksites and compounds, is indicative only and may change as a result of design development and detailed construction planning. The current proposed locations of primary construction compounds and the process for their selection are described in section 6.7.2 of the EIS (Volume 1A). As noted in that section, the number and location of compounds may change during detailed design. However any new compound proposed would be subject to additional environmental impact assessment to determine consistency with the planning approval.

Part of Ward Park (on the north-western side next to Devonshire Street) is required for a construction compound to support construction activities along Devonshire Street. Marlborough Street is not a viable alternative to this compound because it would restrict access to local properties including St Peters Church. Prince Alfred Park, Moore Park and Belmore Park are not close enough to the required construction work sites to be feasible options. Based on construction planning to date, there are no other viable alternatives to the Ward Park site in the locality. The compound would be designed to minimise the overall area affected. It is noted that some changes to the Ward Park construction compound are proposed (relative to that presented in the EIS) as outlined in section 6.15.2 of this Submissions Report.

The proposed construction compound at High Cross Park is needed to facilitate construction of the Randwick stop and transport interchange. The compound would be designed to minimise the overall area affected. No additional trees would be removed at High Cross Park due to the construction compound.

Laydown and/or stockpiling areas are discussed in sections 6.7.3 and 6.7.4 in the EIS (Volume 1A). The precise location of these within the construction footprint would be determined during detailed construction planning. Construction materials and plant would generally be stored within designated construction compounds; however there may be a need to temporarily store materials closer to construction work sites. Any storage locations would be located to maintain appropriate levels of safety and access and the materials would be secured.



The details would be set out in the Construction Environmental Management Plan (CEMP) and Access Management Plans (where relevant). Businesses and landowners along the alignment would be consulted on these issues through implementation of a business and landowner management plan (and other consultation detailed in section 2.4 of this Submissions Report). This plan would provide ongoing information through sources such as information packs, website updates, newsletters/brochures and email updates, and would also identify effective means for ongoing cooperation and communication with the business community.

#### *Bus turn circle – Moore Park*

Construction traffic access arrangements for the proposed Moore Park stop and alignment adjacent to the existing bus loop have been re-considered due to the proposal to relocate the stop 250 metres south of the location nominated in the EIS. This has resulted in the need for additional minor works to the existing bus loop around the AFL training oval. The southern end of the bus loop (near Macarthur Avenue) would be modified to provide a turning circle to allow for buses to continue to utilise the events bus stops during construction and allow buses to return to the city via the event loop. Further detail is provided in section 6.8 of this Submissions Report.

#### *Suggested mitigation measures*

Conditions of approval would be determined by P&I as part of the determination process (if the proposal is approved). Various construction mitigation measures are already proposed in the EIS to manage construction impacts of works along the alignment, including George Street. These are detailed in the revised list of mitigation measures provided in Chapter 8 of this Submissions Report. Measures would be confirmed and further developed during preparation of the CEMP and communicated to businesses and landowners as part of the business and landowner management plan.

Land required temporarily for construction of the CSELR would be subject to temporary lease arrangements, which would be negotiated with the affected landowners.

#### *Securing of construction sites*

Safety barriers/hoardings would be installed around worksites to ensure the safety of the public. Suitable barricades and traffic/access management measures would be implemented to protect the public and prevent public access onto the worksite.

#### *Belmore Park construction compound*

The process for the selection of proposed construction compounds is described in section 6.7.2 of the EIS (Volume 1A). There is very limited land available for compounds close to the CSELR alignment, especially within the City Centre. For this reason, parts of some public parks are required temporarily for use as construction compounds. It is unlikely to be feasible to limit use of Belmore Park to 10 to 15 per cent of its area as suggested; however detailed construction planning would seek to minimise the area required.

Pedestrian access through the park would be maintained and no trees would be removed as part of the works (refer to mitigation measure O.12 in Chapter 8 of this Submissions Report). The impact of the CSELR proposal on events in the city is acknowledged in the EIS (refer section 12.3, Volume 1B). The construction contractor(s) would be responsible for incorporating known special events into the construction program, and providing detailed responses and contingencies into the construction traffic management plan and overall CEMP. Input would be sought from stakeholders such as City of Sydney and other event organisers through this process.

### 5.6.3 Drawing on national construction expertise

#### Summary of issues raised

One submission requested that prior to the commencement of construction a technical audit based on Melbourne expertise is undertaken to ensure that the methods and form of construction will ensure minimum disruption throughout the construction period and that cost-effective, operational and practical light rail standards are followed.

#### Submission number(s)

259

#### Response

Construction planning for CSELR has drawn on the best expertise available in Australia and overseas in the development of light rail systems. This would be a key consideration in selection of the contractor to construct the project.

### 5.6.4 Government procurement and value for money

#### Summary of issues raised

It was recommended that Transport for NSW be required to minimise government expenditure by the appointment of a nominated 'Informed Buyer' with extensive core light rail expertise to oversee the selection and procurement of LRVs and have oversight of the CSELR proposal delivery.

It was further suggested that it be a condition of the approval of the CSELR that Transport for NSW be required to draw up and issue basic standards for the CSELR prior to the commencement of the design and construction phase and that the information be placed on the public record prior to the letting of any design and construct contracts.

#### Submission number

259

#### Response

Transport for NSW has established a proposal team with direct light rail, rail and transport infrastructure expertise to procure and deliver the CSELR proposal. This approach has established a mixture of local and international experience that leverages lessons learnt and has created a highly capable and informed proposal team.



Transport for NSW has developed specific proposal requirements that proponents would need to adhere to. The final contract would be publicly disclosed in accordance with the NSW Government Code of Practice for Procurement.

### 5.6.5 Construction schedule and work hours

#### Summary of issues raised

A number of submissions sought to minimise the length of construction and scheduling works to minimise impacts to residents, schools and businesses. Particular concern was expressed over businesses along George Street during peak retail times. Other specific comments included:

- Consultation with Transport for NSW indicated the likely timetable for the King–Market Street block of George Street is late 2015 for around nine months rather than 24 weeks suggested by the EIS.
- Requests a more detailed construction program for works impacting Haymarket/Chinatown area.
- Question about when construction at Nine Ways will commence and for how long.
- There is no allowance for penalties to the contractor if they exceed the period specified in the EIS which does not incentivise early completion and minimal disturbance. Penalty requested.
- Seeks continued consultation with accommodation property and Tourism Accommodation Australia.

#### Submission number(s)

166, 289, 295, 330, 342, 347, 356, 427, 436, 439, 452, 461

#### Response

Details of the anticipated construction program and staging are included in section 6.1 and Figure 6.1 of the EIS (Volume 1A). At this stage, the program is based on the current design and construction staging and is therefore indicative only. A detailed construction plan is not available at this time and would be prepared by the appointed contractor(s).

Construction of the CSELR proposal is expected to commence in mid-2014 (subject to planning approval) and is anticipated to take approximately five to six years. The program comprises three main stages: early works, main construction works and commissioning. Each of these work stages comprises a number of discrete work packages which would be undertaken sequentially in order to construct the proposal.

The precise sequencing and staging would be determined by the appointed contractor(s) in line with their preferred work method. The local community and other affected stakeholders would be consulted on and kept informed of the planned works and their progression through construction. Construction works would be scheduled to minimise disruption to residents, businesses and the community as much as possible.

The indicative duration of works for the King to Market Street block of George Street is five months. It is important to note that this time is indicative and would be determined by the appointed contractor(s).

Incentives for the nominated construction contractor(s) may be considered in the construction contract for the CSELR proposal. Any incentives would be determined by the NSW Government and Transport for NSW and are outside the scope of the EIS process.

The potential for cumulative effects during the construction period is acknowledged. This is potentially a key issue for the CSELR proposal due to the length of the construction program and the concentration of a number of major development projects in close proximity, particularly in the CBD. Potential cumulative construction impacts associated with the CSELR and other major developments would be further considered as the detailed design and detailed construction planning are developed. Transport for NSW would coordinate activities with the proponents of these other major projects to minimise potential cumulative impacts. Management and mitigation measures for cumulative impacts are described in section 11.3 of the EIS (Volume 1A) and included in mitigation measure AG.1 in Chapter 8 of this Submissions Report.

## 5.6.6 Construction work hours

### Summary of issues raised

Submissions raised concerns about construction and demolition hours and the need to minimise the impact on school environments, residents and businesses. Strong concerns were expressed about 24 hour construction. It was suggested that construction should only be carried out during City of Sydney approved hours and not overnight, after 1.00 pm on a Saturday and not on a Sunday. On the contrary, there was a submission received objecting to construction hours taking place during the daytime and a request for undertaking noisy work outside of school hours. Notification of construction hours was requested.

### Submission number(s)

124, 154, 162, 269, 287, 312, 320, 343, 347, 280, 396, 407, 415, 416, 439, 440, 457

### Response

Out-of-hours work would be required for the proposal as much of the alignment is on roadways and construction works have the potential to disrupt traffic flows, particularly at a number of intersections along the alignment (refer section 6.6, Volume 1A of the EIS). Within the CBD, works may need to take place on a 24 hour basis. Outside of the CBD, works would generally be undertaken between 7.00 am and 11.00 pm. The concerns regarding 24 hour construction and out-of-hours work are noted and Transport for NSW and the selected contractor would work closely with affected residents and businesses to minimise impacts.

The community would continue to be consulted throughout the construction phases of the proposal. Newsletters and other communication tools would be distributed to keep the community informed of construction progress, activities and impacts including the scheduling of potentially disruptive work (refer section 2.4 of this Submissions Report).

Consultation would be undertaken with Sydney Girls and Sydney Boys High Schools with respect to scheduling of work and managing potential construction impacts arising from the CSELR.





## 5.6.7 Construction parking

### Summary of issues raised

One submission raised concern over construction workers parking on nearby streets and using loading zones as parking bays. Support was expressed for the use of dedicated shuttle buses for workers.

### Submission number(s)

439

### Response

Arrangements for construction parking are described in section 6.8 of the EIS (Volume 1A). Parking for the construction workforce would not generally be provided at construction worksites. To minimise parking impacts on the surrounding road network, parking for the construction workforce would be provided through the following:

- early utilisation of the proposed Randwick stabling facility site as a staff parking area, with transfers between the stabling facility and the worksite
- long-term lease of adjacent commercial parking stations within the CBD
- parking within Moore Park and Royal Randwick racecourse worksites, with transfers to adjacent worksites.

Employees would also be encouraged to use public transport (where feasible) to further reduce the impact of staff parking on surrounding areas, particularly for employees working within the Sydney CBD. It is intended that workers could be transported from the above sites to their worksites using minibuses to minimise parking requirements for the proposal, and to reduce impacts on the local traffic conditions. A traffic management plan would be prepared to provide further details on car parking arrangements and minimise impacts on the surrounding network during construction of the proposal.

## 5.6.8 Concern about impacts and/or mitigation of construction

### Summary of issues raised

General concern was raised about construction impacts on residents and/or businesses. Submissions requested that impacts relating to noise, dust and vibration are appropriately managed. A copy of the CEMP was requested to understand the expected impacts of construction and mitigation and management options.

It was noted that construction phase would bring all the disruption with little to no benefit. The CSELR proposal must minimise disruption of construction on local areas, considering the construction period would take many months. Special attention needs to be paid to ensuring Anzac Parade is able to support traffic, public transport, local business and resident activities throughout construction. Destroying the function or amenity of Anzac Parade must be avoided throughout construction.

### Submission number(s)

124, 125, 154, 162, 170, 280, 298, 330, 356, 366, 388, 407, 415, 421, 432, 436, 438, 447, 476

### Response

Potential construction impacts including noise, dust and vibration issues during construction would be managed through a Construction Environmental Management Plan (CEMP) to be prepared by the contractor prior to construction. Specific mitigation measures are listed in Chapter 8 of this report. Other specific issues/queries are responded to below.

### Other specific issues/queries

Sub-issue	Response	Sub No.
<p>a) The proposed tunnelling activities in Moore Park will be disruptive to members of the community who use the park for recreation and sports. Construction of the Moore Park tunnel should be completed as quickly as possible and measures should be adopted to ensure that the needs of the community are considered during the rehabilitation of the affected parkland area (i.e. incorporate adequate safety measures for park users in the most sensitive way possible).</p>	<p>It is acknowledged that the proposed construction works within Moore Park including construction of the cut-and-cover tunnel in Moore Park West would lead to disruption to park users during the construction period. Transport for NSW would consult with Centennial Park and Moore Park Trust and park users in relation to the construction works and seek to minimise disturbance and maintain access to sporting facilities where it is safe and feasible.</p>	<p>124, 154, 280, 298</p>
<p>b) Concern about where heavy machines will be located when not in use – concern they will be moved to the side of the road.</p>	<p>All worksites and construction compounds would be barricaded to protect the public and manage public safety and access around the construction compound. Heavy machinery, when not in use, would be located within barricaded compounds.</p>	<p>415</p>
<p>c) Concerned about impacts to parklands during construction, for students of Sydney Boys High School and Sydney Girls High School:</p> <ul style="list-style-type: none"> <li>▪ Requests access to parkland elsewhere in the precinct to offset any loss during construction.</li> <li>▪ Notes that loss of parkland during construction and operation would be detrimental to the health and well-being of students at Sydney Boys High School and Sydney Girls High School.</li> </ul>	<p>The EIS acknowledges the potential for construction related impacts on students of Sydney Boys High School and Sydney Girls High School, including the potential impacts to open spaces within Moore Park West.</p> <p>Site construction compound(s) would maximise retention of existing playing fields within Moore Park (refer to mitigation measure O.15 in Chapter 8 of this Submissions Report). Careful siting of compounds and offices would allow for retention of at least two football fields in Moore Park (west of Anzac Parade) although these fields may need to be reoriented from their current positions.</p> <p>Sydney Boys and Sydney Girls High Schools would also continue to be consulted with respect to identifying suitable alternative open space areas during construction (refer to Chapter 8 of this report for further details and mitigation measures).</p>	<p>162</p>



Sub-issue	Response	Sub No.
d) Utilise construction hoardings to provide opportunity to increase way finding and activation during construction.	The opportunity to display information on construction hoardings is acknowledged. Mitigation measure C.5 (refer to Chapter 8 of this Submissions Report) requires that detailed design consider opportunities for incorporation of public art into treatment of the site hoardings and enclosure in collaboration with relevant stakeholders. These matters could be considered as part of this process by the nominated construction contractor for the CSELR proposal.	356
e) The construction management program should note the importance of Moore Park East as a car parking area.	The importance of Moore Park East is acknowledged. Sequencing of construction activities would be managed to ensure that impacts on public spaces like that of Moore Park East are minimised.	298
f) Assurance is sought that access is maintained between the new convention centre and hotels within the city, post 2016, and that amenity of the area is maintained for high spending (conference) visitors.	<p>Access would be maintained along the proposed CSELR corridor to minimise the impact to local residents and businesses. However, due to the closure of some approach routes, diversions to properties on or adjacent to the CSELR corridor would result in some increased travel distances.</p> <p>A discussion on measures to be adopted to maintain access to local businesses and residences along the CSELR corridor in the CBD is described in section 12.3.3 (City Centre Precinct) of the EIS (Volume 1B).</p>	436
g) A pedestrian tunnel runs underneath the intersection of Market and George Streets, connecting Westfield Sydney Central Plaza to the Queen Victoria Building. Westfield is willing to provide its available design drawings to assist the project contractors. The proposal team must ensure the dig depth of the street works do not damage the tunnel structure. Westfield will require the NSW Government to indemnify the co-owners of the tunnel for any damage to the tunnel and any disruption to trade that may occur as a result of a closure to this tunnel.	<p>Transport for NSW is aware of the presence of the tunnel which has been taken into account in the existing design work. When the detailed construction methodology is developed, measures would be implemented to protect the asset and Westfield would be notified with regard to any input required.</p> <p>The offer of provision of design drawings is noted.</p>	342

## 5.7 Proposal sustainability

### 5.7.1 Sustainability certification

#### Summary of issues raised

One submission suggested using an independent sustainability certification program to measure the success of the project.

#### Submission number(s)

224

## Response

As outlined in section 7.2.3 of the EIS (Volume 1A), the sustainability initiatives documented in the CSELR proposal Sustainability Strategy (as listed in Table 7.5 of the EIS, Volume 1A) would be implemented through a Sustainability Delivery Plan, using the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability Rating Scheme and Transport for NSW's *Sustainable Design Guidelines for Rail (Version 3.0)* (Transport for NSW 2013d).

The Infrastructure Sustainability Council of Australia rating scheme is an independently verified rating scheme which aims to create a nationally consistent approach to proposal sustainability across the asset lifecycle.

### 5.7.2 Sustainability initiatives considered

One submission noted that an electrified rail system provides flexibility to source operating power from alternative energy sources.

#### Submission number(s)

349

## Response

As noted in Chapter 7 of the EIS (Volume 1A), Transport for NSW would strive to offset 100 per cent of operational energy requirements for the CSELR proposal through the purchase of renewable energy offsets. Further discussion on sustainability measures to be implemented for the CSELR is provided in sections 7.2 and 7.3 of this Submissions Report.

## 5.8 Traffic, transport and access

The following sections detail the issues that were raised in submissions relating to traffic, transport and access considerations, and Transport for NSW's response to these issues.

As noted in the EIS (refer section 1.6 in Volume 1A), the CSELR proposal is integrated with, but does not include, various transport network modifications outside the CSELR corridor, which would instead be implemented as various projects under the broader *NSW Long Term Master Plan* and/or the *Sydney City Centre Access Strategy* (SCCAS), which was finalised in December 2013). These modifications include wider City Centre and South East bus network modifications, traffic network and intersection modifications, cycleways and other works.

For completeness and context, issues that were raised in relation to these associated projects are discussed and responded to in this section, alongside issues that specifically relate to the CSELR proposal itself. Further discussion on issues external to the CSELR proposal is provided in section 5.26 of this Submissions Report.



## 5.8.1 Future changes to bus routes and services

### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to changes to existing bus services and/or routes following the introduction of the CSELR proposal (particularly those bus routes/services within the South East) as listed below:

- General concern or objection raised relating to the removal and/or changes to bus services, particularly from the south-eastern suburbs and the resulting impact that such changes would have on the quality of bus services for commuters who live beyond the extent of the proposed light rail service. Existing bus routes are adequate and do not need to be replaced. Bus routes proposed to be removed do not service the same areas as those located along the proposed CSELR route. The CSELR proposal prioritises express travel to major trip generators (e.g. Moore Park) at the expense of local transport services.
- The EIS contained inadequate information about future changes to bus routes, which precluded the community's ability to make an informed assessment of the CSELR proposal's impact. The bus strategy needs to be provided to the community, along with information about how the decision to remove bus services was made. There has been no communication about which bus services will be terminated.
- The long-term bus strategy should not be separate to the CSELR.
- Requests for various existing bus routes/services to be retained during the operational phase of the CSELR proposal, including bus routes 339, 343, 372, 373, 374, 376, 377, M10, M50, X39, X40, X73, X74 and other express bus services to the city. These bus routes should be retained to provide the community with a variety of transport choices. The 374 will be the sole remaining bus for residents who live in North Randwick. This bus route currently turns left from Cook Street into Alison Road, leaving the entire length of Belmore Road (3 stops) without a bus service. A free bus service (equivalent to route 555) should be maintained between Central Station and Circular Quay during construction. The CSELR proposal should complement existing bus services, not remove them.
- The people who live in North Randwick will have their existing access to public transport reduced to just one bus — route 374 (which does not operate frequently). Residents who live in North Randwick rely on the Coogee/Maroubra bus services to/from Randwick Shopping Centre, the City and Central Station.
- Removal of the 372, 373 and M50 bus routes during the operational phase of the CSELR will not reduce congestion on city streets (such as York Street and George Street). Most of the buses to be removed by the CSELR currently use Elizabeth Street. The CSELR proposal would transfer congestion to Elizabeth Street which is less able to accommodate such an increase in congestion. The congestion on George Street during peak times is not a result of passengers trying to get to Circular Quay — these buses are largely empty by this stage. The buses continue to Circular Quay because it is a dead end, giving buses space to turn around. The congestion in bus lanes at certain times of the day is a scheduling problem and could be addressed with the Opal card. The CSELR proposal will not reduce 220 bus trips during the morning peak period.

- Requests that bus services are not operated parallel to the proposed CSELR route, as such an operating arrangement would duplicate public transport services and defeat the purpose of building the CSELR proposal. The M50, M10, X/373, L/394, 376, 392, 397 and 396 bus services should be terminated at Kingsford or Randwick to encourage all commuters to use the CSELR. The continuation of these bus services would discourage bus commuters from using the CSELR. Concerned that buses are not removed from Anzac Parade; buses should not share the CSELR corridor between Kingsford and Strachan Street.
- General concerns raised regarding direct transport connections between the eastern suburbs and the CBD during the operational phase of the CSELR. How will commuters be able to travel directly between the eastern suburbs and Railway Square? Why do buses from the eastern suburbs need to travel to Barangaroo, Walsh Bay and Pyrmont; this will not keep buses out of the CBD.
- Signal priority should be trialled on existing bus routes along Anzac Parade and Alison Road, for example, the southbound turn lane off Anzac Parade into Lang Road, which has opportunities every signal phase to the detriment of buses in Anzac Parade bus lanes.
- Bus service changes need to take into account the distance between light rail stops and the ability for less mobile people to access the stops. Interchanging will be irritating. Frequent bus connections with the CSELR will be required. The removal of bus stops on George Street will increase the distance that customers and employees will need to walk in order to catch a bus.
- The CSELR will reduce the ability to turn buses around, layover, and commence services on time. Objects to the CSELR proposal's impact on CBD bus services, which would result in buses being rerouted to Edgecliff Station (due to the reduced ability to turn buses around in the CBD following the introduction of the proposal). Commuters would not catch a terminating Rawson Place bus service in order to access heavy rail services at Central Station, as Circular Quay bus services have a stop in Eddy Avenue.
- The proposed George Street pedestrian zone (which will impact bus accessibility to the CBD from the Harbour Bridge) will result in traffic congestion that would not be able to be alleviated, due to the need for buses to make right-hand turns from the westbound lanes of Druiett Street into Clarence Street.
- The proposed bus stops adjacent to Customs House on Young Street should be removed. This zone should continue to be used for the existing bus layover spaces and existing bus stops on Bridge Street and Phillip Street should continue to be utilised.
- Concern that buses will make a right-hand turn from Flinders Street into Oxford Street at Taylor Square; such turns have been prohibited in Sydney as they are disruptive to traffic flow.
- Further information requested about where buses will turn around at Todman Avenue following the introduction of the CSELR proposal.
- Objection to forcing non-express buses to make a right hand turn from Bunnerong Road and a hairpin turn into Anzac Parade.
- The CSELR proposal does not negate the need for the 377 and 376 bus routes along Oberon Street.



- The CSELR is not a transformational transport improvement for Randwick — it still relies on a well-integrated bus network and efficient movement of passengers transferring to other modes. The proposed changes to the bus services do not adequately support an integrated public transport system.
- The CSELR delivers benefits for City of Sydney (associated with reducing bus movements) at the expense of residents and businesses in Randwick Local Government Area. The majority of current Randwick city journeys to/from the CBD are to Hyde Park, Martin Place or Circular Quay. Other than UNSW services, very few are destined to/from Central. The CSELR proposes the majority of Randwick passengers to travel to Circular Quay via Central Station and George Street, which will increase journey distance. In addition, travel times following the introduction of the CSELR will vary from marginally quicker to longer than current bus services (the exception being the lower patronage route to Central Station where travel times would be less).

### Submission number(s)

3, 20, 49, 56, 94, 97, 112, 136, 138, 141, 150, 156, 175, 177, 199, 213, 216, 220, 221, 228, 231, 241, 242, 258, 277, 284, 291, 294, 300, 302, 306, 312, 321, 323, 346, 347, 348, 371, 374, 375, 381, 384, 386, 402, 411, 415, 423, 444, 446, 476, 479

### Response

As noted in section 3.2.3 of the EIS (Volume 1A), the CSELR proposal is integrated with, but does not include, a redesign of the Sydney bus network.

The NSW *Long Term Transport Masterplan* (NSW Government 2012a) sets out a strategic framework to reorganise the existing surface public transport network to provide improved bus priority on strategic routes between major centres and transition from a radial to a networked bus system. This includes higher service frequency on trunk (main) routes, connected to local feeder bus routes at key interchanges.

More recently, the NSW Government released the final *Sydney City Centre Access Strategy* (SCCAS; NSW Government 2013a) and *Sydney's Bus Future* (Transport for NSW 2013b) in December 2013. These strategies form the basis of the proposed redesign of the Sydney City Centre bus network and changes to the South East bus network.

The SCCAS proposes a number of major initiatives that relate to improving access within, and to, Sydney's City Centre. This strategy includes a number of initiatives across different transport modes (bus, heavy rail, light rail, ferry and cycling) that, as a whole, aim to unlock additional capacity within the Sydney CBD.

*Sydney's Bus Future* outlines planned changes to the bus network across the Sydney metropolitan area to provide a simpler, faster and better bus network. The Anzac Parade and Alison Road corridors are identified as strategic connections which will transition from bus services to light rail. *Sydney's Bus Future* also notes that many bus routes which operate to the CBD from the South East would be streamlined to connect with the light rail, with additional services added to other major destinations such as Sydney Airport and the Inner West.

The bus strategy developed as a part of the planning and business case for the CSELR proposal is outlined in Chapter 4 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS. In summary, the CSELR proposal would form the trunk route for an all-day network for surface public transport for Sydney's South East, with the bus network reorganised to provide feeder services and improved cross-regional services, supplemented by peak hour express services as required.

Detailed planning for the redesign of the Sydney City Centre bus network is currently underway. This is a key element to support the delivery of the CSELR proposal, in particular the relocation of existing bus services from George Street.

Transport for NSW will commence detailed planning for the South East bus network in 2016/2017 in preparation for the commencement of CSELR operations. This work will take into account updated data on patronage, travel patterns, demographics and development and will use the principles outlined in *Sydney's Bus Future* to refine service plans. Transport for NSW will provide the community with further information regarding the proposed changes to the bus network as it becomes available and will provide detailed customer information prior to implementation. Submissions that have been received with respect to the planning of the South East bus network will be considered by Transport for NSW during the detailed planning phase.

Further discussion on changes to bus services and the associated impacts to existing bus commuters (due to the need to interchange onto the light rail) is provided in section 5.8.2 of this Submissions Report.

## 5.8.2 Need for bus commuters to interchange with CSELR services

### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to the impact that the CSELR proposal would have on those existing bus commuters who would be required to interchange (or transfer) from buses onto the light rail. These issues are listed below:

- Future changes to south-eastern bus services (particularly those which would involve the termination of bus routes at Randwick and Kingsford) would impact journey times for existing bus commuters and would reduce the convenience of commuting between the eastern suburbs and the CBD. Residents living beyond the extent of the CSELR proposal (such as Coogee and Kingsford) would be required to continually change modes of transport; whereas such residents can currently travel directly to the CBD on one bus service. The termination of bus routes at Randwick and Kingsford would force bus commuters to change modes of transport in order to access the city and would serve as a disincentive to use the CSELR. Concerned that the expectations that existing bus commuters will interchange onto the light rail are overstated.
- Buses provide a more direct connection to the northern CBD; forcing bus commuters to switch modes onto the light rail will increase journey times as they will have to travel via an indirect route through the CBD. Public information available indicates that commuting times on the CSELR between Circular Quay and Kingsford will be approximately five minutes longer than existing bus services.
- The termination of bus routes at Randwick and Kingsford would impact accessibility for less mobile commuters (such as the elderly, people with a disability, and parents with prams). Such impacts are unacceptable. Requests clarification about what provisions will be made for less mobile passengers.





- The need to transfer between bus and light rail services at Randwick and Kingsford will encourage people to drive to the proposed CSELR stops, rather than using bus services, which will create parking issues for these areas.
- The reduction in commuting times that would be achieved by the CSELR may only be marginal, negating the benefits of the proposal. Uncompetitive travel times on the CSELR (relative to existing bus services) may be counterproductive in achieving the assumed mode shift to light rail.
- Concern raised about the potential impact that the CSELR proposal would have on journey times for existing bus commuters travelling from Coogee on express bus services X73 and X74. There are reports that most Coogee-based bus routes will terminate at Randwick once the CSELR is in operation, with commuters to the city required to switch modes to a light rail service. If the express bus services from Coogee are abolished (and therefore commuters required to use two modes of transport), the commuting time would increase by 13 minutes (or 27 per cent) relative to existing journey times (conservatively estimated to be up to 57 minutes).
- The CSELR will increase the complexity of the transport system, rather than improve it. Having to change between services/modes will cause confusion.
- The proposed Randwick and Kingsford interchanges appear to be constrained in terms of the number, frequency and capacity of passengers that would be required to change modes onto the CSELR proposal. The CSELR needs to ensure that the Randwick and Kingsford interchanges are appropriately integrated and have sufficient capacity to meet the project objectives.

### Submission number(s)

20, 56, 57, 71, 77, 78, 79, 94, 111, 138, 141, 146, 175, 177, 184, 199, 213, 221, 228, 242, 277, 294, 296, 348, 371, 375, 393, 476, 479

### Response

#### *Need for some bus commuters to interchange with the CSELR*

As outlined in Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS, the introduction of the CSELR would require some passengers to interchange or transfer from another mode of transport (e.g. bus, car, walking, cycling, and heavy rail) onto the light rail. Overall, it is anticipated that the improved reliability of the light rail system would provide a significant benefit for public transport users.

As discussed in section 5.8.1 of this Submissions Report, a detailed review is currently underway for the South East bus network as part of *Sydney's Bus Future* (Transport for NSW 2013b). Every effort is being made to maintain reliable and fast travel times for all transport customers. In preparation for the introduction of CSELR, Transport for NSW will be developing the final bus network plan for South East Sydney in 2016–2017. Transport for NSW will be undertaking further public consultation on the proposed plans prior to finalisation. Refer to page 6 of the *Sydney's Bus Future* (Transport for NSW 2013b) for more details (<http://www.transport.nsw.gov.au/sites/default/files/b2b/publications/sydney-bus-future-final-web.pdf>).

The NSW *Long Term Transport Master Plan* (NSW Government 2012a) sets out an action to grow capacity in the surface public transport system by moving from a radial bus network to a connected network. This will be enabled in part by consolidating some existing low frequency bus routes onto major corridors and by reallocating resources to provide a higher frequency on trunk corridors and their rearranged intersecting feeder routes. With a connected network, the need for interchange may be increased, but the inconvenience of interchange is reduced due to higher service frequencies. The net effect is to extend the bus travel possibilities available to the public transport customer.

On key major corridors, consolidated bus services may either be rapid bus routes or light rail. The CSELR forms the core service to the South East suburbs, freeing up bus capacity to improve other services in the region.

Further discussion on changes to existing bus services as part of the SCCAS (NSW Government 2013a) and *Sydney's Bus Future* (Transport for NSW 2013b) is provided in section 5.8.1 of this Submissions Report.

#### *Journey times*

As outlined in section 9.2.1 of the EIS (Volume 1A), the Sydney CBD has very high transport demand and limited capacity to accommodate the additional public transport required to serve future growth in customers without a step change in service provision. Two specific problems with Sydney's surface public transport network — which the CSELR and related bus network changes are designed to resolve — comprise:

- Customer travel experience is being degraded by unreliable journey times.
- The transport system does not have the capacity to support growth.

Section 2.3 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS provides discussion on the reliability issues that currently exist on the bus network. To meet the forecast growth in demand, additional bus services would degrade travel times and reliability further.

Although journey times on the CSELR may be slower than some existing timetabled bus services operating between the South East and Circular Quay, the CSELR proposal would improve the customer travel experience in terms of reliable travel times and would also support growth in public transport while removing up to 220 buses in the morning peak (when combined with the SCCAS). It is noted, however, that the CSELR would have competitive travel times to Central Station and Town Hall compared with existing bus travel times.

#### *Accessibility for less mobile commuters*

As outlined in section 5.2.2 of the EIS (Volume 1A), access to each stop has been an important consideration in the development of the stop design, to ensure a customer-focused service. Particular attention has been paid to providing passengers with convenient access to the light rail network and to integrate the light rail network with the other transport modes including heavy rail, buses and ferries.

The *Disability Standards for Accessible Public Transport 2002* (DSAPT) is the main document that provides a set of minimum technical requirements and operational guidelines by which public transport infrastructure and vehicles can comply with the *Disability Discrimination Act 1992* (DDA). Access to all of the stops proposed would comply with the DDA, DSAPT, the DDA Access Code 2010, as well as the relevant provisions of the Building Code of Australia.



Each stop would be fully accessible to persons with a disability and other less mobile persons. The CSELR proposal would also allow customers to board with a seeing-eye dog, a dog for the hearing impaired or an authorised disabled person's companion animal at all times. Where possible, the levels along the outer edge of the platforms within the pedestrian zone along George Street would tie into the existing footpath levels, enabling people to access from both ends of the platform and along the outer edge.

The exact location and detail of the access components at each stop (such as the final placement of ramps, lifts and stairs) would be subject to further detailed analysis during the detailed design phase of the proposal.

In-depth investigation into interchange requirements would be undertaken by the appointed contractor as part of the detailed design process. The detailed design process would take into consideration a range of issues, including:

- stop access issues for pedestrians
- seamless transition from different public transport modes (including ferry, bus, light rail and heavy rail)
- the positioning of bus stops to allow for safe and efficient transfers.

Best practice interchange design and planning would inform the detailed interchange design process. Chapter 7 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS provides a detailed outline (on a stop by stop basis) of a range of actions that would be required to support efficient and effective access and egress to light rail stops.

#### *Way finding*

Appropriate way finding signage would be provided at each light rail stop to indicate pedestrian movement options including access to other forms of transport and local shopping facilities. The CSELR would incorporate signage that meets the standards for light rail operators in addition to applying consistent branding codes for bus, train, ferry and light rail in accordance with Transport for NSW requirements. The final branding, way finding and signage designs would be developed during the detailed design of the proposal and would integrate with the existing overall urban design and public domain of the CBD and South East Sydney region.

### 5.8.3 Direct impacts to existing bus services and routes

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>City Centre Precinct</b>		
<p>Operators who run regular passenger services into the CBD are concerned about the impacts that changes to bus routes and stop locations will have during the construction phase of the CSELR proposal.</p> <p>BusNSW members have expressed concern regarding trees and low hanging branches in the CBD, which can cause significant damage to buses and coaches.</p>	<p>Most changes to regular bus service routes and stop locations within the CBD are proposed to be implemented as part of the SCCAS in advance of the construction of the CSELR proposal. Potential construction impacts on bus routes and stop locations were considered in Technical Paper 2 (<i>Construction Traffic and Transport Management Strategy</i>) in Volume 2 of the EIS.</p> <p>The construction contractor would develop detailed Site Specific Construction Traffic Management Plans and Traffic Control Plans, which would need to consider, amongst other things, the direct impacts of the proposed construction activities on bus routes and bus stops.</p> <p>The maintenance of trees within the CBD is a matter for City of Sydney. As a part of the development of the bus implementation plan for the SCCAS, Transport for NSW and RMS will consider tree impacts.</p>	483
<b>Surry Hills Precinct</b>		
<p>How will bus services on Route 355 continue to operate? This bus route currently services Devonshire Street and Bourke Street.</p> <p>The 355 bus to Bondi Junction is a very popular service and must be maintained. The proposed new route for the 355 via Lansdowne Street (which may be too narrow) and Marlborough Street (which is a narrow residential street) is illogical.</p>	<p>Slight route amendments to Route 355 would be required to divert buses off Devonshire Street during construction of the CSELR proposal.</p> <p>Two potential route amendment options were developed and are outlined in Section 4.3.5 of Technical Paper 2 (<i>Construction Traffic and Transport Management Strategy</i>) in Volume 2 of the EIS. In summary, these options comprised the following:</p> <ul style="list-style-type: none"> <li>▪ Option A — proposes to divert the bus route via Lansdowne Street and Marlborough Street to enter Cleveland Street, west of Crown Street. The roads along this route are generally local streets with residential developments and capture portions of the existing catchment area without diverting too far from the existing route.</li> <li>▪ Option B — proposes diversions for inbound and outbound routes. The inbound route is proposed to be diverted via Redfern Street and Chalmers Street whereas the outbound route would travel directly between Cleveland Street and Elizabeth Street. Option B is a larger diversion from the existing bus route and it would not service the developments adjacent to Phillip Street and Bourke Street.</li> </ul> <p>Both Options A and B are viable temporary options which would be subject to further investigation and consultation as part of the Construction Traffic Management Plan.</p> <p>Following the completion of construction of the CSELR proposal, Route 355 would be allowed to revert back to its original route. Refer to section 5.8.1 of this Submissions Report for discussion on the future redesign of the Sydney bus network as part of the SCCAS and changes to the South East bus network as part of <i>Sydney's Bus Future</i>.</p>	1, 271



Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Randwick Precinct</b>		
What will happen to bus routes 400, 410, 418, Metro 20 and 370 if High Street becomes a light rail only zone? How will people access the hospital?	High Street is not proposed to be a light rail only zone. Buses and traffic would continue to operate with light rail on High Street. Refer to section 5.8.1 of this Submissions Report for discussion on changes to the South East bus network as part of the <i>Sydney's Bus Future</i> .	242, 306, 377
<b>Kensington/Kingsford Precinct</b>		
<p>Concern that there will not be room for buses on Anzac Parade.</p> <p>Objection to the removal of the bus lane on Anzac Parade.</p> <p>The construction phase on Anzac Parade would potentially result in the loss of the bus lane whilst buses are still in full service.</p>	<p>As outlined in section 6.13 of this Submissions Report, an alternative design is now proposed with the CSELR alignment and UNSW stop in the centre of Anzac Parade. LRVs would operate in the median of Anzac Parade from the terminus at Kingsford through to Tay Street. This arrangement would, for the most part, require the removal of a traffic lane in each direction. The remaining lanes would be used for general traffic.</p> <p>As discussed in section 5.8.1 of this Submissions Report, <i>Sydney's Bus Future</i> outlines planned changes to the bus network across the Sydney metropolitan area to provide a simpler, faster and better bus network. The Anzac Parade and Alison Road corridors are identified as strategic connections which would transition from bus services to light rail.</p> <p>The CSELR proposal would form the trunk route for an all-day network for surface public transport for Sydney's South East, with the bus network reorganised to provide feeder services and improved cross-regional services, supplemented by peak hour express services as required.</p> <p>Further discussion on the changes to the South East bus network as part of <i>Sydney's Bus Future</i> is provided in section 5.8.1 of this Submissions Report.</p>	246, 348, 476
<b>Wider regional bus routes/services</b>		
The EIS did not consider the impact that the CSELR proposal would have on school students who rely on buses to travel to/from school, particularly those students who use buses which travel along the proposed CSELR corridor.	Based on proposed changes to the South East bus network, school special bus services currently provided between Central Station and Sydney Boys High School and Sydney Girls High School would be replaced by the CSELR proposal. The Moore Park light rail stop is located in close proximity to both of these high schools. Students would also be able to use the proposed new bus and light rail network to access these and other schools from other origins.	138
Question about whether special event buses will continue to take passengers to Moore Park and Randwick Racecourse or if light rail will be the only available transport.	Special event bus services provided between Central Station and the Moore Park Precinct and Royal Randwick racecourse during events would be replaced by the CSELR. These buses may be reallocated to provide new connections (other than Central) to the special events precincts. Together with light rail this would grow the public transport mode share to major events.	242

### 5.8.4 Accessibility of the CSELR and other public transport services

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Proposed spacing of the light rail stops</b>		
<p>The distance between the proposed light rail stops is much greater than the current spacing of bus stops. The CSELR proposal will increase the distance that people will need to walk in order to access public transport, which would disadvantage the elderly, families (parents with prams) and other less mobile members of the community. Existing bus commuters should not have to walk further to access public transport.</p> <p>The CSELR will not reduce the number of people using private vehicles as the light rail stops are inconveniently located and not properly supported by existing bus services.</p> <p>Concerned that there will only be three light rail stops located in the vicinity of Alison Road.</p>	<p>The light rail stops have been developed based on a detailed assessment of the number of stops, expected travel times and patronage. As discussed in section 5.8.1 of this Submissions Report, the NSW Government proposes to reorganise the existing surface public transport network to provide improved bus priority on strategic routes between major centres and transition from a radial to a networked bus system. This includes higher service frequency on trunk (main) routes, connected to local feeder bus routes at key interchanges.</p> <p><i>Sydney's Bus Future</i> (Transport for NSW 2013b) outlines planned changes to the bus network across the Sydney metropolitan area to provide a simpler, faster and better bus network. <i>Sydney's Bus Future</i> (Transport for NSW 2013b) also notes that many bus routes which operate to the CBD from the South East would be streamlined to connect with the light rail, with additional services added to other major destinations such as Sydney Airport and the Inner West.</p> <p>The CSELR proposal would form the trunk route for an all-day network for surface public transport for Sydney's South East, with the bus network reorganised to provide feeder services and improved cross-regional services, supplemented by peak hour express services as required.</p> <p>Under the current proposed South East bus network changes, many bus services would continue to operate using existing bus stop spacing and would provide access in the CSELR corridor. In regards to Anzac Parade, some bus services would continue to operate for the full length providing access to destinations, or alternatively, allow for interchanges onto the CSELR. A number of these routes would continue to provide access to the shopping centre on Belmore Road.</p> <p>A new light rail stop is also proposed in the vicinity of the intersections of Alison and Wansey Roads providing access to the broader network (refer to section 6.11 of this Submissions Report for discussion on the revised location of the proposed Wansey Road stop, which would now be located on Alison Road).</p> <p>People would not have to walk to the bus interchanges at Randwick and Kingsford if they do not live close by. As outlined in section 5.8.1 of this Submissions Report, consistent with the <i>Long Term Transport Master Plan</i>, changes to the South East bus network propose the establishment of an all-day network of light rail trunk services to the city with feeder and cross regional bus services, which would be retained.</p> <p>Express buses are currently proposed to be retained during peak periods to maintain direct access for customers travelling to destinations in the northern CBD (during the peak periods only).</p> <p>Further discussion on the proposed number and spacing of light rail stops is provided in section 5.4.12 of this Submissions Report.</p> <p>As outlined in section 5.8.6 of this Submissions Report, the CSELR proposal is expected to result in enhanced public transport journey times and reliability provided by light rail, which would reduce private vehicle trips as people shift onto public transport.</p>	<p>94, 100, 112, 138, 141, 175, 199, 228, 242, 306, 476</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Clarification requested about whether hospital visitors will need to walk from High Cross Park and how much shelter will be provided (as there are no shop awnings). Concern that access to the hospitals will be more difficult with no light rail stop nearby. The proposed light rail stop in High Cross Park is too far away from the hospital entrance, which will make access difficult for out-patients, elderly and disabled people.</p> <p>Concerned that the Randwick Shopping Centre in Belmore Road and the main entrances to the Prince of Wales Hospital and UNSW will not be serviced by the CSELR proposal.</p>	<p>Prince of Wales Hospital passengers alighting in High Cross Park are required to cross Avoca Street. This represents a 200 metre walk to the main hospital entrance, with the crossing at Avoca Street proposed to be upgraded to improve safety and capacity for pedestrians. Alternative options have been investigated; however, a suitable alternative that provides seamless interchange between bus and light rail and grade issues in High Street has not yet been identified. Further investigations into shelters would be investigated during detailed design.</p> <p>As outlined above, under the proposed South East bus network changes, many bus services would continue to operate using the existing bus stop spacing. A number of these routes would continue to provide access to the shopping centre on Belmore Road.</p>	242, 283, 306, 321
<b>Bus interchanges with the CSELR at the Kingsford stop</b>		
<p>No consideration was given to commuters using bus services that operate along Bunnerong Road and how these commuters will interchange with the CSELR at Kingsford.</p>	<p>Consideration was given for optimising the interchange between bus services on Bunnerong Road and the CSELR.</p> <p>For city bound movements it is proposed to operate the Bunnerong bus services via Sturt Street and allow passengers to interchange at the Kingsford stop. For outbound bus services, a similar arrangement was considered; however, the right turn from Anzac Parade into Sturt was not feasible. Passengers would be able to either interchange with buses in Bunnerong Road (i.e. they would need to walk to Bunnerong Road), or alternatively to interchange at light rail stops to the north (for example, at UNSW where the bus stop would be in close proximity to the light rail).</p> <p>Further discussion on the changes to the South East bus network as part of <i>Sydney's Bus Future</i> is provided in section 5.8.1 of this Submissions Report.</p>	177
<p>The 391/392 bus services should be diverted down Botany Street to enable such bus services to interchange with the proposed Kingsford stop. While the preliminary Kingsford bus interchange provides for a cross platform interchange for most services, Bunnerong Road services would be served by a bus stop on the opposite side of the road from the Kingsford Stop. A significant number of passengers use the Bunnerong Road bus services.</p>	<p>Botany Street was an option considered for diverting Routes 391/392. It would result in a gap for any passengers boarding buses on Bunnerong Road, between Botany Street and Kingsford. However, it may still be a viable option and would be considered further as part of the proposed changes to the South East Bus network as part of <i>Sydney's Bus Future</i> (refer to section 5.8.1 of this Submissions Report for further discussion).</p>	7

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Does not support buses using the Kingsford stop. Bus passengers could easily access the Kingsford stop via a pedestrian crossing. Such an arrangement would ensure pedestrians have right of way when crossing Anzac Parade.</p>	<p>Interchanging passengers from bus to light rail are predicted to account for 92 per cent of the total patronage at Kingsford. As such, the light rail stop has been designed so bus passengers are not required to cross a road, removing the conflict with traffic for the majority of users. All other walk up patronage would be able to access the Kingsford stop safely at signalised crossings in multiple locations that minimise the distance they are required to walk. The requirement for walk up trips to cross at least half of Anzac Parade cannot be avoided given light rail would be located in the central median.</p> <p>A key consideration for the Kingsford stop and interchange design was to optimise the design to cater for the more than 2,000 bus transfer passengers expected to use the interchange in the 2021 morning peak hour. Removing the need to cross traffic lanes was considered an optimum outcome for pedestrians, thereby maximising the attractiveness of the CSELR and also minimising the impact to other road users (e.g. motorists on Anzac Parade).</p>	<p>44</p>
<p><b>Convenience, comfort and safety of the CSELR</b></p>		
<p>Concern raised about the ability to get a seat on the light rail service, due to the large queues of commuters who will be lining up at the Randwick stop waiting to board the light rail service.</p> <p>Passengers will experience inconvenience at interchanges and will have to stand for portions of their journeys during peak times.</p> <p>Commuters from Coogee currently get a seat on the bus all the way into the City. The CSELR will result in a larger number of commuters needing to stand (relative to the exiting situation with bus services), which will lengthen the journey time even more.</p>	<p>As discussed in section 5.5 of this Submissions Report, light rail is a rapid transit public transport system currently in use in major cities all over the world. Like metro, or rapid train services, LRVs are designed to carry a higher ratio of standing than seated passengers to provide the additional capacity per vehicle than buses. The higher number of standing passengers also facilitates the ability of the vehicles to ‘turn up and go’ as loading and unloading of passengers is generally quicker than for buses and heavy rail.</p> <p>The LRVs proposed to be used for the CSELR would be capable of carrying up to 300 people per vehicle, with seating for 80 passengers, and would be fully compliant with the <i>Disability Discrimination Act 1992</i>, including designated seating for less mobile passengers and spaces for wheelchairs. The ratio of seated to standing passengers, and the proposed standing density of four people per square metre, is industry standard and is similar to light rail networks currently in operation in Europe and Australia.</p> <p>Outside of peak periods, LRV services would be optimised for customer experience and reliability, with LRVs likely to carry fewer customers, providing a lower standing density and a higher ratio of seated to standing passengers.</p> <p>Whilst LRVs carry more standing passengers than buses, the vehicles are fitted with numerous fixed hold points to enable passengers to maintain balance as the LRV is in motion. The operation of light rail within a designated corridor reduces the amount of heavy braking that is often associated with bus travel in mixed traffic, which would result in a smoother and more comfortable journey.</p>	<p>71, 94, 136, 175, 199, 242</p>
<p>Concerned that LRV dwell times at stops will not be long enough to allow less mobile passengers sufficient time to comfortably board and alight from CSELR services.</p>	<p>The future Operator of the CSELR would be responsible for the safety of customers at all times. LRV dwell times at stops would be designed to allow less mobile passengers sufficient time to comfortably board and alight from CSELR services.</p>	<p>389</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Integration of CSELR services with other modes of transport</b>		
Requests that overlay maps are provided to demonstrate how light rail will interface with all other modes of transport using Sydney's road network.	The <i>Sydney City Centre Access Strategy</i> (SCCAS) provides overlay maps of the different modes of transport within Sydney's CBD. The SCCAS was exhibited in 2013 and can be accessed via <a href="http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0">http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0</a>	138
<p>Concern about connections to Macquarie Park, Green Square, Chatswood and North Sydney.</p> <p>Concern about commuters who live in Cowper and Cook Streets and their access to transport.</p>	The CSELR would provide a series of opportunities for integrating with existing bus and the heavy rail network as part of a multi-modal access strategy. This strategy would ensure that bus passengers and heavy and light rail users can easily change transport modes in order to access a range of destinations within the CBD and South East Sydney. Interchange locations for bus and/or heavy rail that would be incorporated into the proposal are outlined in section 5.4.6 of the EIS (Volume 1A). Further discussion on the CSELR proposal's integration with bus services is provided in section 5.8.1 of this Submissions Report.	371, 377
<p>The CSELR appears to give priority to the transport needs of non-residents (i.e. those travelling to the Racecourse, sports grounds, UNSW and Prince of Wales Hospital) at the expense of local residents.</p> <p>Consideration should be given to people who travel to destinations other than the city.</p>	<p>Discussion on the need and justification for the CSELR proposal is provided in section 5.3 of this Submissions Report.</p> <p>The CSELR proposal was developed to address a number of deficiencies of the existing transport system. Two specific problems with Sydney's surface public transport network — which the CSELR and related bus network changes are designed to resolve — comprise:</p> <ul style="list-style-type: none"> <li>▪ Customer travel experience is being degraded by unreliable journey times.</li> <li>▪ The transport system does not have the capacity to support growth.</li> </ul> <p>Section 2.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS provides discussion on the reliability issues that currently exist on the bus network. To meet the forecast growth in demand, additional bus services would degrade travel times and reliability further.</p> <p>In summary, the CSELR proposal would deliver the following benefits within inner Sydney and the inner South Eastern suburbs:</p> <ul style="list-style-type: none"> <li>▪ CBD congestion would be addressed through transfer from existing buses and private vehicles.</li> <li>▪ Access between the inner South East suburbs and the CBD would be improved through improved reliability of travel and efficient connection to major trip generators.</li> <li>▪ Supporting continued population and employment growth in the region.</li> <li>▪ Improved and more reliable journeys for public transport users.</li> <li>▪ Delivering a savings in existing transport operator costs.</li> <li>▪ Broader community benefits, through a reduction in environmental and health externalities such as air pollution and noise.</li> <li>▪ Wider economic benefits, through opportunities for urban renewal and agglomeration.</li> </ul>	199, 375

Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>The CSELR proposal — in conjunction with the future redesign of the Sydney bus network as part of the SCCAS and <i>Sydney's Bus Future</i> would result in improved cross-regional bus services for Sydney's South East, supplemented by peak hour express services as required.</p> <p>As outlined in section 5.8.1 of this Submissions Report, under <i>Sydney's Bus Future</i>, many of the bus routes which operate to the CBD from the South East would be streamlined to connect with the light rail, with additional services added to other major destinations such as Sydney Airport and the Inner West.</p> <p>Further discussion on <i>Sydney's Bus Future</i> is provided in section 5.8.1 of this Submissions Report.</p>	

### 5.8.5 Impact on special events

#### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to the CSELR proposal's impact on special events held both within the CBD and elsewhere along the CSELR alignment. These issues are listed below:

- Concern raised about the proposal to relocate special events (that are currently held along George Street and Alfred Street) to alternative locations within the CBD to accommodate the CSELR proposal. Also concerned about the increasing number of special events involving road closures and parking restrictions within the CBD. If existing special events are relocated without any overall reduction in the number of special events that occur, it is inevitable that some streets will become overburdened. It is recommended that Transport for NSW conducts public consultation before allowing a new or relocated special event on any street in the City Centre. Additionally, special events permitted to occur within the City Centre should be restricted to those with a strong local connection to the area (e.g. Anzac Day March).
- During special events affecting the George Street line, trams should be terminated at Central Station stop if they cannot be run through to Circular Quay, due to the difficulties or reversing trams at close headways without an intermediate loop along the line (e.g. at Queen Victoria Building).
- The construction management program for the CSELR must note the timing of major international events, including the 2015 Cricket World Cup so as to minimise disruptions to such events.
- Notes the White Ribbon walk starts at High Cross Park each year.

#### Submission number(s)

64, 144, 150, 298



## Response

### *Operational impact on special events held within the CBD*

As outlined in section 12.3.2 of the EIS (Volume 1B), events along George Street would be further considered by Transport for NSW and City of Sydney to determine alternative routes for such events. Where special events are identified as being able to be relocated to an alternative route, assessment of the alternative route's capacity to accommodate the special event would be undertaken through the normal processes involving Transport for NSW, the Transport Management Centre, Roads and Maritime Services (RMS), Destination NSW, the City of Sydney and event organisers taking into account:

- the nature of the event
- the timing and location of the event
- the magnitude of demand expected to be attracted to the event
- the capacity of the base public transport system to cater for the event, including the ability of other modes to 'scale up' to provide additional capacity
- other conflicting events that may multiply the load experienced by the transport system
- the presence of integrated ticketing or other arrangements that improve the efficiency of the transport system at times of ultra-peak loadings.

In cases where events must retain use of the CSELR corridor, CSELR operations would be impacted and may need to be supplemented with bus services. As outlined in section 12.3.2 of the EIS (Volume 1B), the current CSELR design includes a cross-over at Town Hall which would facilitate short-running of light rail services between Central Station and Town Hall if events are held on George Street north. Under these circumstances, replacement bus services may not be required, as sufficient regular bus services exist on adjacent streets (supplemented by heavy rail services on the City Circle Line). However, if the event requires the full closure of the CSELR between Eddy Avenue and Circular Quay, replacement bus services may be required to provide sufficient capacity and accessibility to destination along the CBD CSELR alignment. Under these circumstances, replacement bus services would be anticipated to operate north-south via Elizabeth Street/Castlereagh Street.

### *Construction impact on special events*

As outlined in section 6.10.14 of the EIS (Volume 1A), wherever possible, agreement would be sought with event organisers to avoid Class 1 and 2 events (as defined in section 6.10.14 of the EIS) occurring concurrently, where such events are identified to have a cumulative impact on travel demand around the CSELR construction corridors.

Special events may require adjustment to times of operation and routes used by haulage or delivery operations, as well as varying approved road occupancy licence (ROL) conditions for the CSELR construction. The ROL approval would identify time and day restrictions, where potential conflicts are known at the time of submission.

The construction contractor(s) would be responsible for incorporating known special events into the construction program and detailed responses and contingencies in the construction traffic management plan, subject to further inputs from other stakeholders (such as City of Sydney, Randwick City Council, State Emergency Services and RMS). The construction contractor(s) would work with event organisers to identify the possibility of relocating planned events, if possible.

## 5.8.6 Operational traffic impacts

### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to the CSELR proposal's impact on traffic. These issues are listed below:

- General concern raised about increased traffic congestion that would occur during the operational phase of the CSELR due to the loss of road space (for both private vehicles and other forms of public transport) to accommodate the light rail corridor and/or proposed road closures/configuration changes.
- General concern raised regarding the road closures that are proposed to accommodate the CSELR proposal and the impact that such changes would have on other road users (e.g. the accessibility of surrounding land uses and impacts to journey times). An easy to read diagram should be published showing the existing situation and proposed changes for all intersections and mid-block locations where changes are proposed. Details on access restrictions are important considerations for the community. It is important that the rules governing the way the CSELR interacts with general traffic should be established to maximise project benefits. The delivery of intensive motorist education campaigns should be conducted, regarding how traffic and pedestrians interact with light rail. Such a campaign should form a condition of approval for the proposal.
- General comments and concerns relating to the establishment of a dedicated corridor for the operation of LRVs. Turning-traffic lanes should not be located on, nor motor vehicles allowed on, tram lanes under any circumstances. Traffic should not be allowed to use the light rail alignment. Concern about light rail and traffic mixing on the roads. Local access traffic must be allowed to cross the rail lines to enable practical access to lane ways and back streets, as this will be critical for residents and service vehicles.
- Objects to the establishment of 'tram and pedestrian only zones' within the road network, particularly within commercial and residential areas. It is commercially necessary to share all road lanes with all vehicles. Buses currently provide this benefit without the clutter that light rail infrastructure would create. In addition, the establishment of shared pedestrian and light rail zones would require the trams to travel slowly within such zones to minimise risks of collision with pedestrians.
- The CSELR proposal will result in a significant increase in traffic on surrounding local roads due to rat running. Local streets are currently quiet residential areas and do not accommodate large volumes of traffic. As more traffic uses the side streets, it must be ensured that turnaround facilities are adequate.



- General comments and concerns relating to the priority of LRVs at signalised intersections, including the operation of 90 metre long LRVs during special event running. Concern raised about the level of priority given to LRVs at traffic lights and the impact that such priority would have on other road users. Light rail services should be less frequent to reduce this impact. Notes the LRVs need prioritisation at intersections to ensure journey time savings. Seeks clarification about whether or not LRVs receive right of way at all traffic lights and intersections. Submits that traffic lights at intersections crossed by LRVs should have detectors to ensure LRVs have minimum wait times at intersections, especially at 'all intersections with adjacent stops'. Make publicly available the streets where vehicles will have priority over light rail.
- Questions about whether traffic modelling has been undertaken to determine the impact that the CSELR proposal will have on traffic, particularly for those roads that the CSELR alignment would cross, such as the junction of Anzac Parade with Cleveland Street/Lang Road. The CSELR proposal will not have the capacity to absorb the displacement of traffic. Questions the impact that giving LRVs priority over other road vehicles would have on other traffic. More detailed traffic modelling should be undertaken for the CSELR proposal.
- The CSELR does not appear to provide a solution for the traffic problems that it will create for the Surry Hills area. Peak hour traffic is already bad enough in the area.
- Most car drivers will not use the light rail.
- The CSELR will have a large impact on traffic on Anzac Parade, which is already a main thoroughfare from the Eastern Suburbs to the City.
- Concern about traffic impacts at CSELR interchanges, particularly due to the fewer number of stops proposed (relative to the number of existing bus stops) and the lack of parking around the stops.
- An independent panel should review the safety implications of proposed traffic impacts from the CSELR proposal.
- General acknowledgement of the need to progressively reallocate road space from car parking to other more vital uses, such as facilities for walking, cycling and using public transport, street gardens and appealing public space.
- Suggests that major trip generators (e.g. special event venues) should promote the use of active transport. Opportunities for the promotion of car sharing should also be investigated.
- The restricted right turns and reduced traffic lanes along Anzac Parade between Alison Road and Gardeners Road is likely to result in more cars 'rat running' on local streets. Once on local roads, an additional proportion of vehicles would continue through back streets to avoid Anzac Parade. The CSELR should perform traffic modelling, studies and recommendations based on the significant changes proposed for Anzac Parade.
- Significant concerns regarding reduced operational efficiency at the Anzac Parade/Lang Road intersection as this will have a detrimental impact on vehicular access to Fox Studios and Playbill facilities. Undertake further investigation into the performance of this intersection and ensure appropriate action is taken to ensure there is no reduction in operational efficiency.

## Submission number(s)

1, 21, 28, 32, 48, 50, 56, 57, 58, 66, 70, 71, 72, 78, 82, 88, 94, 98, 100, 101, 105, 115, 121, 124, 138, 141, 142, 143, 144, 147, 151, 154, 166, 167, 168, 170, 171, 172, 173, 174, 175, 176, 177, 181, 186, 187, 188, 189, 190, 191, 192, 193, 194, 197, 200, 204, 205, 213, 215, 216, 220, 225, 233, 235, 238, 239, 240, 242, 252, 258, 260, 264, 267, 269, 272, 275, 283, 284, 287, 290, 294, 299, 300, 301, 306, 312, 313, 316, 317, 323, 324, 327, 328, 330, 335, 343, 348, 351, 354, 356, 359, 360, 361, 364, 367, 370, 380, 381, 385, 388, 393, 396, 399, 403, 404, 405, 407, 410, 411, 413, 415, 416, 418, 421, 422, 427, 428, 429, 431, 432, 433, 437, 438, 439, 440, 445, 446, 447, 451, 457, 476, 478, 479, 481, 482, 483

## Response

### *Traffic congestion*

Analysis undertaken to date by Transport for NSW includes assessment of traffic redistribution and key intersection performance levels across all roads within the CBD and South East precincts, with the initial outcomes presented in section 5.5.3 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS. This analysis demonstrates that the implementation of the CSELR proposal would result in lower levels of congestion in the CBD and South East region road networks than would be experienced if the CSELR was not constructed. This would be due to the enhanced public transport journey times and reliability provided by light rail reducing private vehicle trips as people shift onto public transport.

Traffic modelling is subject to ongoing revision in response to mitigation measures in development by Transport for NSW and RMS to further improve network performance. Within the CBD, these mitigation measures would be developed around the *Sydney City Centre Access Strategy* (SCCAS). Outside of the CBD, mitigation would be implemented through Council's Local Area Traffic Management (LATM) measures. This work is ongoing and includes additional modelling assessment at the strategic and operational levels to refine the optimal solution including traffic signal priority strategies. This work would be completed prior to the construction of the CSELR proposal.

In addition, a Network Management Plan (NMP) would be developed by Transport for NSW. The NMP has the high level objective of maintaining network journey times and congestion levels at acceptable levels. This would be developed in consultation with stakeholders. Further discussion on the NMP is provided in section 5.5.3 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS.

Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.

Following the appointment of a preferred contractor(s), detailed design would be undertaken for the CSELR proposal. As a part of the design process, an independent road safety audit would be undertaken on the detailed design. The road safety audit would verify the appropriateness of any proposed mitigation measures for the CSELR proposal, and/or would make recommendations on any additional/alternative measures that would be required to manage road safety risks.



### *Loss of road space*

Introduction of the CSELR and associated bus network changes in the CBD and South East would result in a considerable change to current traffic operating patterns. Providing a segregated route for the light rail to maximise public transport network carrying capacity would displace some road-based traffic.

The reallocation of road space from traffic lanes to light rail operation would result in a change to existing traffic patterns on and around the corridor. These traffic volume impacts have been assessed and determined in Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS through the mesoscopic modelling traffic assessment, as described in the subsection above. This model provides an indication of key flow changes across the wider road network, specifically identifying those corridors that experience a significant change in traffic volumes to existing levels.

Broadly speaking, the traffic analysis demonstrates that the CSELR proposal could be introduced into the road network without significant detrimental impact to general traffic and buses. A number of key intersections have been identified where further design and optimisation work is underway, to provide increased capacity.

### *Rat running along local streets*

The potential for existing traffic displaced by the CSELR to reroute to alternative corridors was acknowledged in section 5.5.1 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS. While it is likely that some displaced traffic would seek alternative routes that provide a lower level of delay, given much of the network is congested during the peak hours, alternative options are likely to be limited.

Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design in consultation with the relevant roads authority (either RMS, City of Sydney or Randwick City Council), following further analysis of the effectiveness of the proposed management measures for the CSELR proposal.

### *Road configuration changes*

Road network changes proposed as part of the CSELR (including road closures, removal of existing right hand turns, road direction changes or traffic light signal changes) are described in sections 9.2 (*Regional traffic, transport and accessibility*), 12.3 (*City Centre Precinct*), 13.3 (*Surry Hills Precinct*), 14.3 (*Moore Park Precinct*), 15.3 (*Randwick Precinct*), 16.3 (*Kensington/Kingsford Precinct*) and 17.3 (*Rozelle locality*) of the EIS (Volumes 1A and 1B), while more detailed information was presented in Technical Papers 1 (*Transport Operations Report*) and 2 (*Construction Traffic and Transport Management Strategy*) in Volume 2. The road network configuration proposed during the operational phase of the CSELR proposal is also illustrated in Figures 12.5, 13.6, 14.3, 15.6 and 16.9 of the EIS (Volume 1B).

As discussed above (under subheading 'Traffic congestion') the CSELR proposal would be integrated within the existing surface street environment and, as such, would require a number of significant changes to be made to the way in which the road network is designed and operated.

Principles were defined to guide the development of the future road network strategy. The principles were designed to ensure that, in specifying the road network, the overall objective of maintaining safety for all users, maximising transport system performance and usage, and successfully integrating the light rail network with the road network, was upheld.

The key principles comprised the following:

- consolidation of right turns movements across the alignment, which would only be permitted at signalised intersections (This would provide light rail reliability benefits, as well as traffic capacity and safety improvements by minimising uncontrolled conflicting vehicle movements; however, some exceptions would apply on George Street for local property access.)
- balancing the future needs of the various transport modes within the limited road space available
- providing signal controlled pedestrian crossing access to stops, to ensure less mobile passengers or persons with a disability are given audible and visual invitations to cross traffic under full signal protection
- providing high quality interchange functionality with sufficient capacity for future operations
- minimising traffic capacity reduction
- providing sufficient capacity on footways and crossing points to accommodate the growth in pedestrian traffic (particularly around light rail stops)
- providing bus lanes where bus volumes are such that bus priority measures are warranted
- retaining all current property accesses on the corridor, although time or movement restrictions may be applied in specific locations.

An information and education program would be developed and implemented for the CSELR proposal to advise road users of the changed traffic conditions with respect to the introduction of the proposal and any interactions with LRVs on the road network.

A key feature of the CSELR is that, for the majority of the proposed route, LRVs would operate within an exclusive right of way. This would provide an operating environment that is both safe and free from the adverse effects of road congestion. However, at intersections and at a limited number of other locations, LRVs would share the right of way with other road users.

It is proposed that LRVs would progress through intersections under signal control. Traffic signals would be designed to detect the approach of an LRV in sufficient time to activate a ('call') green signal for the LRV as it approaches the intersection. The traffic light controller would ensure that other conflicting movements (i.e. cross roads and pedestrian crossings) face red or stop signals. The design intent is for LRVs to be able to proceed through all intersections with minimal delay.

However, the design of each intersection would have regard to all road users and the overall performance of the transport network. The Sydney Coordinated Adaptive Traffic System (SCATS) is designed to ensure the operation of each intersection achieves the optimal performance for the network as a whole. The road network management system would be expanded in future to accommodate LRV operation as well.





As discussed in section 5.8.6 of this Submissions Report, assessment of traffic redistribution and key intersection performance levels across all roads within the CBD and South East precincts has been undertaken by Transport for NSW (with the initial outcomes presented in section 5.5.3 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS).

Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with the relevant Council(s)), following further analysis of the effectiveness of the proposed management measures.

#### *Establishment of a dedicated LRV corridor*

As outlined above, for the majority of the proposed route, LRVs would operate within an exclusive right of way to provide an operating environment that is both safe and free from the adverse effects of road congestion. Service reliability is an important consideration for the CSELR proposal, which would require a dedicated corridor.

One of the key principles that guided the development of the future road network strategy was the consolidation of right turn movements across the CSELR alignment, which would only be permitted at signalised intersections. This would provide light rail reliability benefits, as well as traffic capacity and safety improvements by minimising uncontrolled conflicting vehicle movements; however, some exceptions would apply on George Street for local property access.

There are limited locations where LRVs would operate in a shared environment, which include:

- LRVs would share the existing (modified) busway from Anzac Parade to Doncaster Avenue.
- Some express buses would share the LRV right-of-way from the Kingsford stop through to UNSW (and potentially further beyond).
- Right turning vehicles would be permitted to share the LRV right-of-way in High Street at Botany Street.

In each case these arrangements are proposed to avoid increasing the land required for the CSELR proposal and to avoid unreasonable impacts on other road users.

#### *LRV priority at signalised intersections*

LRVs would be given signal priority at intersections (where possible) to deliver a 97 per cent level of service reliability (which would be substantially better than existing bus services).

During special events, 90 metre LRVs may be in operation between Central Railway Station and Moore Park (comprising two 45 metre LRVs coupled together). To ensure traffic and pedestrians are not adversely affected by the queuing of these larger vehicles at traffic signals (which could block adjacent intersections), it is proposed that LRVs are given priority over other traffic along Devonshire Street. LRVs detected on their approach to the Devonshire Street corridor would be given priority through the signalised intersections to ensure the LRVs do not stop at any of the signalised intersections along Devonshire Street.

Light rail advance and cancel detectors would be installed at each traffic light as part of the CSELR proposal to provide the interface infrastructure that would enable signal coordination and/or priority for LRVs.

Generally, the traffic analysis demonstrates that the CSELR proposal could be introduced into the road network without significant detrimental impact to general traffic and buses. A number of critical intersections have been identified where further design and optimisation work is underway, with potential solutions identified.

To address the effects of the identified future traffic patterns, Transport for NSW and RMS are working together to develop an appropriate Network Management Plan. This includes intersection modifications, traffic signal changes and traffic management measures that integrate to deliver the overall strategy for network operations with CSELR proposal in place. This work is ongoing and the modelling assessment undertaken to date represents the first stage in the development of this wider Network Management Plan. As this plan is refined, further improvement to the operation of the network is likely to be achieved.

Transport for NSW would continue to work closely with RMS and local councils to mitigate the potential network and local traffic impacts, including potential increased traffic flows that may occur on local roads as a result of the CSELR proposal.

#### *Traffic impacts around proposed CSELR stops*

Detailed access plans for each of the proposed light rail stops on the CSELR network (including any key actions to address potential multimodal access, customer safety, or to improve access) are provided in section 7.3 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS.

Further consideration of traffic impacts associated with the operation of CSELR stops would be undertaken during detailed design, in consultation with the relevant roads authority (either RMS, City of Sydney or Randwick City Council). Where the establishment of a stop is identified to result in a significant impact to traffic, appropriate management measures would be developed to reduce the magnitude of the traffic impact.

Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.

#### *Road safety*

The future Operator of the Sydney light rail network would have responsibility for the safe and efficient operation of the total system. The network operator would produce a safety management system and a full suite of operational rules, procedures and manuals, describing how the system is to be operated and maintained.

In principle, the LRVs would drive on line-of-sight operation. On in-street sections, LRVs would form part of road traffic and drivers would be required to observe the relevant provisions of the NSW Road Rules. The drivers would be required to give due consideration to traffic flows and pedestrian movements, assessing LRV speeds and braking requirements against their perceptions of actual or potential hazards. On observing a signal ahead displaying a stop aspect or a stationary obstacle in the swept path, the driver should be able to stop the LRV by use of the service brake only.



### Specific operational traffic impacts

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>City Centre Precinct</b>		
Concerned about the increase in traffic in the Rocks area and the reduced ability for vehicles to arrive and depart the Rocks.	The Rocks should not see an increase in traffic volumes as a result of the CSELR proposal. The CSELR should help to reduce traffic volumes in The Rocks through provision of an enhanced public transport connection to the South East and through the CBD, particularly during weekends when peak demand occurs in The Rocks Precinct.	190
The EIS identifies potential for increased vehicular traffic flow along Loftus Street and between Reiby Place and Pitt Street.	Closure of Loftus Street at Alfred Street (northern end) would remove through traffic and existing bus movements; hence traffic volumes in the section north of Reiby Place are anticipated to be lower than current levels. The closure of a section of Pitt Street at its northern end (i.e. at Alfred Street) would require traffic approaching from the east to access the northern section of Pitt Street (between Alfred and Bridge Streets) via Reiby Place. As such Reiby Place is likely to see a small increase in traffic, although this would be limited to local traffic accessing the businesses and car park in the northernmost block of Pitt Street.	300
Concern raised about the CSELR proposal's impact to traffic in the vicinity of Grosvenor Place, 225 George Street. Concerned that the CSELR proposal will result in unacceptable traffic conditions in the vicinity of the site, as well as at the access driveway serving Grosvenor Place.	Access to 225 George Street would be maintained with the introduction of the CSELR proposal. The light rail would pass along George Street in front of Grosvenor Place, with one lane in each direction open to traffic. The left turn movement from George Street into Essex Street would run concurrently with light rail and north-south traffic movements.	324
The CSELR proposal will not address congestion in the CBD; rather, intersection delays will be shifted to other north-south road corridors.  Review should be undertaken to identify opportunities to divert cross-city traffic.	A summary of project benefits for the City Centre is outlined in section 8.3 of Technical Paper 1 ( <i>Transport Operations Report</i> ) in Volume 2 of the EIS. Intersection modelling undertaken by Transport for NSW, which was presented in section 5.5.3 of Technical Paper 1, suggests that the CBD would operate more efficiently with the implementation of light rail in the 2021 scenario year, with improvements in capacity and increases in travel speeds for buses and general traffic compared to the 2021 'Do nothing' scenario.	66, 142, 360
Reiby Place is a narrow one way lane that can only be accessed via Loftus Street and should not take heavy traffic, other than local service vehicles.	It is not proposed to use Reiby Place for heavy vehicle movements as part of the CSELR proposal. Section 5.4.1 of Technical Paper 1 ( <i>Transport Operations Report</i> ) in Volume 2 of the EIS provides further detail regarding the functionality of Reiby Place to access properties along the northern section of Pitt Street between Hunter Street and Alfred Street.	300
Recommends that there are no changes to loop trams up Loftus Street.	The CSELR proposal would not require trams to be looped up Loftus Street. Trams would terminate in Alfred Street.	300

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>AMP Capital requires further information regarding access, road closures and encroachment to assess long term impacts.</p> <p>Recommends that once the impacts are quantified, Transport for NSW with AMP Capital consults and negotiates in good faith to ensure that the long-term vehicular access to this building is maintained through changes to the EIS proposed traffic management methodologies in Pitt Street.</p> <p>Recommends that the existing vehicular access arrangements for the 123 Pitt Street building and the nearby laneways which service that building are preserved.</p> <p>Recommends that, if it is established that the long-term vehicular access via Avoca Street to the centre is impacted as a result of increased traffic flows from the south, Transport for NSW and AMP Capital negotiate to ensure access and egress to the centre is at a commensurate level to that which the centre experienced prior to light rail and associated impacts.</p>	<p>As outlined in section 5.8.8 of this Submissions Report, Transport for NSW is committed to ensure access is maintained to all private and commercial vehicle driveways along the corridor.</p> <p>Local access plans for individual properties/accesses are being developed by Transport for NSW and would be subject to further consultation between the affected parties, Transport for NSW and the appropriate local authority (City of Sydney or Randwick City Council).</p> <p>Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with City of Sydney), following further analysis of the effectiveness of the proposed management measures.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design, and further information regarding access, road closures and encroachment is developed.</p>	300
<p>Suggests opening section of Park Street (towards William Street) that is closed to cars in order to improve accessibility.</p>	<p>This work is not proposed as part of the CSELR proposal. Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with City of Sydney), following further analysis of the effectiveness of the proposed management measures.</p>	301
<p>Not enough detail provided about potential impact to vehicular operations on Market Street during operation.</p>	<p>Vehicle operations on Market Street are summarised in Figures 5-37 and 5-38 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS. These figures show an expected improvement to intersection performance in the afternoon peak, but deterioration in performance at the intersections with York Street and Elizabeth Street during the morning peak. Transport for NSW and RMS are working together to identify appropriate upgrade measures to resolve these identified issues. These would be developed around the <i>Sydney City Centre Access Strategy (SCCAS)</i>, which identifies Market Street as a priority traffic route (refer to Figure 5-44 of Technical Paper 1 in Volume 2 of the EIS). This work is ongoing and includes additional modelling assessment at the strategic and operational levels to refine the optimal solution. This work would be completed prior to construction of the CSELR proposal.</p>	88



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The ongoing ability to turn right from Bridge Street into George Street is important but not clearly indicated in the EIS. This is of concern as there are a large volume of vehicles that use Bridge Street as the main route when travelling from the airport to The Rocks.</p>	<p>This right turn movement would be retained.</p>	<p>190</p>
<p>Seeks clarification on the extent of encroachment (if any) of the light rail stop on NAB building curtilage, including how the easement/right of way arrangement with 259 George Street, City of Sydney and Sydney Electricity will be addressed.</p>	<p>No property acquisition is proposed at this location. Refer to section 5.20 of this Submissions Report for discussion on issues relating to utilities and services.</p> <p>Transport for NSW has consulted with the major utility providers during development of the conceptual design for the CSELR. This issue would be further investigated during detailed design.</p>	<p>300</p>
<p>Concerned about the impact of the George Street pedestrian zone on through traffic in the CBD, noting that Elizabeth Street and Castlereagh Street are already congested.</p> <p>Concern about traffic movement around Sydney.</p> <p>Concern about the future operation of critical east/west links such as Hunter, Margaret and Bridge Streets where LRVs receive a higher signal priority than general traffic. The removal of lanes will further exacerbate this.</p> <p>Concern about lack of information on the volume of traffic displaced from the closure of George Street.</p> <p>Carefully consider the implications of changes to traffic movements beyond George Street.</p>	<p>Traffic modelling undertaken by Transport for NSW, which is presented in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS, suggests that the CBD would operate more efficiently with the implementation of light rail in the 2021 scenario year, with improvements in capacity and increases in travel speeds for buses and general traffic compared to the 2021 'Do nothing' scenario.</p> <p>Across the wider network, some isolated increases in delay are possible; however, modelling suggests that there would be an overall increase in capacity with the introduction of the CSELR proposal. The reduction in through traffic on George Street would allow additional green time for east-west movements.</p>	<p>330, 393, 411, 415</p>
<p>Requests that westward vehicle access to Rawson Place and the lay-by drop off/pickup are maintained.</p>	<p>Functional changes proposed to Rawson Place are outlined in section 5.4.1 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS. Rawson Place would become a major interchange for bus and light rail passengers and is proposed to be a dedicated transit mall. To facilitate efficient bus and light rail movements, Rawson Place would only accommodate buses (westbound only) and the light rail. Buses would be provided with a bus stopping lane adjacent to the light rail platform (i.e. provides cross platform interchange) and an additional passing lane to the north.</p>	<p>151</p>
<p>Traffic lights would not be required in the George Street pedestrian zone. Motorists travelling east/west across George Street would have adequate views of oncoming LRVs. Suggests traffic complies with 'Stop' and 'Give way to LRVs' signage.</p>	<p>Signalised pedestrian crossing facilities would be provided on all arms of existing signalised intersections to provide controlled crossing points of the CSELR alignment. This would be required to provide protection and improved amenity and accessibility for visually, hearing or mobility impaired pedestrians.</p>	<p>264</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concern about lack of detail/explanation about the transport system near the Madison Hotel.</p> <p>Concern about contradictory information about traffic lanes on Elizabeth Street.</p> <p>Concerns about traffic turning into Elizabeth Street.</p>	<p>As outlined in section 6.5 of this Submissions Report, the proposed CSELR design around Central Station has been revised since the exhibition of the EIS.</p> <p>The existing traffic lanes along Chalmers Street between Randle Street and Elizabeth Street would be removed and converted into a shared zone, allowing pedestrians, cyclists and vehicles access to properties in Chalmers Street in a low speed environment, resulting in no general traffic along this section of Chalmers Street, other than minimal access for local vehicles to existing accesses such as the Dental Hospital and residential properties.</p> <p>The revised design for the surrounding street network would maintain Randle Street as northbound-only, providing three lanes of traffic, including a single bus-only lane. Buses would not use the shared pedestrian and cycle zone along Chalmers Street. The revised design recognises the significant role of incoming buses delivering passengers to rail services at Central Station, and would maintain a northbound bus stop on Chalmers Street just south of Devonshire Street. The revised design would also provide a northbound bus stop on Elizabeth Street (south of Foveaux Street), adjacent to the existing southbound bus stop, providing easy access to Central Station via an existing lift on Chalmers Street.</p> <p>The use of Elizabeth Street as a traffic bypass route is consistent with the approach to the broader road network within the City Centre (as outlined in the SCCAS).</p>	348
<p>Closures of Pitt Street and Loftus Street should be contained south of the Gateway property lines to Alfred Street and not be allowed to extend into the plaza.</p>	<p>This issue would be investigated during detailed design in consultation with City of Sydney.</p>	356
<p>Objects to the proposal to have no traffic access across the southern edge of Rawson Place, outside Sydney Central YHA.</p> <p>Objects to the proposal to close Rawson Lane to through traffic by closing it at Rawson Place end.</p> <p>Submits that access from Rawson Place to Rawson Lane be retained.</p> <p>Concerned that additional traffic on Rawson Lane will increase congestion and may cause safety issues, as a result of closing Rawson Place.</p>	<p>Functional changes proposed to Rawson Place are outlined in section 5.4.1 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS. Rawson Place would become a major interchange for bus and light rail passengers and is proposed to be a dedicated transit mall. To facilitate efficient bus and light rail movements, Rawson Place would only accommodate bus (westbound only) and light rail. Buses would be provided with a bus stopping lane adjacent to the light rail platform (i.e. provides cross platform interchange) and an additional passing lane to the north.</p> <p>Access from Rawson Lane to Rawson Place would not be feasible under the proposed design. The closure of Rawson Lane at Rawson Place is unlikely to generate additional traffic on Rawson Lane.</p>	151
<p>Permanent changes to traffic movements should occur within the context of the broader transport changes undertaken as outlined in the <i>Sydney City Centre Access Strategy</i> (SCCAS).</p>	<p>All road changes proposed as part of the CSELR would be consistent with the approach to the broader road network within the city centre (as outlined in the SCCAS).</p>	330



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned about increased traffic being diverted onto Pitt Street as a result of redirected traffic.</p>	<p>Analysis undertaken to date by Transport for NSW includes assessment of traffic redistribution across all roads within the CBD (and South East precincts) including Pitt Street, with the initial outcomes presented in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p> <p>The traffic modelling — which has been undertaken through the use of a mesoscopic model — indicates that there would not be a significant adverse effect on Pitt Street during the operational phase of the CSELR proposal.</p> <p>The traffic modelling is subject to ongoing revision in response to mitigation measures in development by Transport for NSW and RMS. These would be developed around the SCCAS (refer to Figure 5-44 of Technical Paper 1 in Volume 2 of the EIS). This work is ongoing and includes additional modelling assessment at the strategic and operational levels to refine the optimal solution. This work would be completed prior to construction of CSELR.</p> <p>In addition, a Network Management Plan (NMP) would be developed by Transport for NSW. The NMP has the high level objective of maintaining network journey times and congestion levels at acceptable levels. This would be developed in consultation with stakeholders, and further details are available in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p>	225
<p>Traffic increase on Reiby Place should be avoided to maintain and allow the future enhancement of Reiby Place as a city laneway.</p>	<p>Section 5.4.1 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS provides further detail regarding the functionality of Reiby Place to access properties along the northern section of Pitt Street between Hunter Street and Alfred Street.</p>	356
<p>BusNSW requests details of the proposed CBD traffic flow strategy.</p>	<p>The SCCAS outlines the strategic and priority routes for general traffic and buses in the Sydney CBD. The SCCAS was exhibited in 2013 and can be accessed via <a href="http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0">http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0</a></p> <p>Transport for NSW, RMS and the City of Sydney are currently developing the detailed plans for the implementation of CBD bus and traffic management in the CBD.</p>	483

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Surry Hills Precinct</b>		
<p>Concern raised regarding traffic impacts associated with the proposed new light rail crossings of South Dowling Street and Anzac Parade (including longer travel times for bus commuters from Redfern and Waterloo). Traffic on these roads is already bad and will get worse as a result of the CSELR proposal.</p> <p>Request that the traffic lights at the at-grade crossing near the on-ramp from South Dowling Street to the Eastern Distributor are coordinated with the Cleveland Street intersection and not give way to LRVs.</p>	<p>The level of priority provided to LRVs at the proposed CSELR crossing of South Dowling Street would be coordinated with the intersections of South Dowling Street/Cleveland Street and South Dowling Street/Moore Park Road/Fitzroy Street. These intersections are currently the cause of the traffic bottleneck in the area. Therefore, the proposed CSELR crossing of South Dowling Street would not reduce overall capacity of the South Dowling Street corridor.</p> <p>VISSIM traffic modelling of South Dowling Street (between Cleveland Street and Fitzroy Street) was undertaken to test the impact of the proposed at-grade CSELR crossing of South Dowling Street. Results are provided in section 5.4.2 of Technical Paper 1 in Volume 2 of the EIS and summarised in Table 9.7 of the EIS (Volume 1A).</p> <p>In summary, the introduction of a signalised at-grade crossing of South Dowling Street for the CSELR proposal would slightly impact upon current road network performance. Introduction of this crossing is predicted to result in a seven per cent increase in vehicle travel times (or seven seconds) on South Dowling Street during the morning peak under the most likely operating scenario; however, intersection levels of service and queue lengths would not be significantly affected.</p> <p>Additional independent traffic modelling of the proposed South Dowling Street crossing has been undertaken by RMS with findings consistent with modelling undertaken as part of the EIS. No modifications to the design were recommended as part of the independent modelling.</p> <p>As outlined in section 5.2.5 of the EIS (Volume 1A), the proposed CSELR crossing of Anzac Parade would be grade separated (i.e. the light rail tracks would pass beneath Anzac Parade via a tunnel). Therefore, the CSELR crossing of Anzac Parade would not impact traffic.</p>	<p>1, 323, 348, 393, 481</p>
<p>Concern raised that the proposed at-grade CSELR alignment along Devonshire Street will displace traffic, resulting in more vehicles using small side streets to travel through Surry Hills. These quiet streets will become congested as a result of the CSELR proposal.</p> <p>Closing some streets in Surry Hills will exacerbate traffic congestion on Bourke, Cleveland and South Dowling streets. Streets surrounding Devonshire Street will become grid-locked at peak times.</p> <p>Concern that forcing Surry Hills locals onto congested roads through the closure of Devonshire Street will increase journey times.</p>	<p>The side streets in Surry Hills that remain open to traffic do not provide a suitable continuous westbound link that would attract the displaced traffic from Devonshire Street. As such the majority of streets in Surry Hills would continue to carry local access traffic only.</p> <p>The primary diversion routes for westbound through traffic displaced from Devonshire Street would be Foveaux or Cleveland streets. The CSELR would have a positive effect on public transport mode share and, therefore, the total amount of through traffic in the CBD and Surry Hills areas is predicted to be one per cent lower than would be expected without construction of the proposal.</p>	<p>50, 389, 399, 428</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned about impact to traffic at intersections with Crown Street and Elizabeth Street. The operation of the CSELR will disrupt other road users who travel north-south across Devonshire Street, such as Elizabeth Street, Crown Street and Bourke Street. Impact to traffic at these intersections will be even worse during peak travel times. LRVs will take up to 30 seconds to cross these road intersections. Traffic impacts will be exacerbated as a result of housing development in the surrounding area.</p> <p>The CSELR will have right of way on the road, with services running every two to five minutes. This will interrupt arterial traffic flow on Chalmers, Crown and Bourke Streets and make traffic conditions worse.</p>	<p>The performance of the intersections between the CSELR corridor on Devonshire Street and the intersections of Crown Street and Elizabeth Street are documented in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS. This assessment shows that these intersections would operate at Level of Service C or better in both the morning and afternoon peak periods, which represents an acceptable level of delay to drivers.</p>	<p>82, 124, 154, 235, 323, 348, 361, 364, 410, 421, 427, 433, 481</p>
<p>Allowing vehicles to turn left or right into Wilshire Street from Devonshire Street, as well as left or right from Nickson Street into Devonshire Street, would improve traffic flows in the Surry Hills area by directing more traffic towards Crown Street and away from the Bourke Street cycle path.</p> <p>To overcome congestion caused by displaced east/west traffic from Devonshire Street, Cooper Street should be opened up as a corridor with traffic light controlled access across Elizabeth Street.</p> <p>General concern raised about the need to reroute traffic to accommodate the CSELR proposal. Devonshire Street is a key access road, which provides access to other cross streets.</p> <p>Requests that Adelaide Place is closed at Devonshire Street, and keep Waterloo Street open. Adelaide Street could be re-opened at Riley Street to give better access to the area. Such a change would be a major improvement for Adelaide Place residents. There is one garage on Adelaide Place; however, it could be accessed via Adelaide Street or via Steel Lane and Steel Street. Concerned about left-hand in / left-hand out of Nickson Street.</p>	<p>Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with City of Sydney), following further analysis of the effectiveness of the proposed management measures.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	<p>1, 70, 101, 197, 233, 239, 416, 422, 446</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Suggests that Parkham and Nobbs lanes both maintain access (including rear-property access) to avoid parking issues and to provide ongoing rubbish collection services.</p> <p>Suggests Parkham Street not be open to South Dowling Street, as this would make the traffic in the area busier. This would raise safety concerns at the corner of Bourke and Parkham streets, where the school is.</p>		
<p>Question about where westbound traffic from Bourke Street, Moore Park will go when the westbound lane is removed from Devonshire Street.</p>	<p>The primary diversion routes for westbound through traffic displaced from Devonshire Street would be Foveaux or Cleveland streets. As a result of the CSELR and the positive effect it would have on public transport mode share, the total amount of through traffic in the CBD and Surry Hills is predicted to be one per cent lower than would be expected without construction of the proposal.</p>	313
<p>Questions how LRVs will be able to operate in both directions along Devonshire Street with other motor vehicles, given the narrow road width.</p> <p>Expresses concern about the proposed CSELR route through Surry Hills via Devonshire Street. Devonshire Street is the main pedestrian thoroughfare to Central and is too narrow to accommodate the CSELR, residents' vehicles and pedestrian traffic.</p>	<p>As outlined above, a single eastbound traffic lane would be maintained along Devonshire Street. The existing westbound lane would be occupied by the light rail tracks and, therefore, would generally be closed to traffic, with the exception of the section between Crown Street and Bourke Street, where one eastbound and one westbound traffic lane would be available on Devonshire Street. This proposed road configuration was developed to ensure safe, reliable and efficient light rail operation, whilst also maintaining necessary access for residents, businesses and pedestrians.</p> <p>The Devonshire Street corridor would continue to provide a strong east-west pedestrian connection through Surry Hills during the operational phase of the CSELR proposal. Pedestrians would benefit from improved amenity, particularly where streets are closed at their intersection with Devonshire Street, as this presents an opportunity to reduce road crossings and increase footpath area.</p>	1, 21
<p>Concerned about the traffic impact that the proposed changes to the Surry Hills road network will have on Adelaide Place. Adelaide Place is a laneway running between Devonshire Street and Adelaide Street. If Waterloo Street is closed at Devonshire Street, it would funnel more traffic onto Steel Street and Adelaide Place.</p> <p>Suggests that kerb adjustments at Adelaide Place, Steel Street and Little Riley Street will encourage traffic to use the area to an even greater degree than at present.</p>	<p>Adelaide Place does not act as a through route connection for non-local traffic, so any increases in traffic volumes would be small and limited to that generated by local residents accessing their property. Changes to local street connections may change the access routes for local residents, and these changes would be confirmed and agreed with the City of Sydney in the detailed design phase of the proposal following further analysis.</p>	197, 367



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The introduction of a westbound traffic lane on Devonshire Street (in conjunction with the removal of the eastbound traffic lane to accommodate the CSELR tracks) is unnecessary as vehicles can still turn right into Nickson Lane and Nickson Street. Parking within Devonshire Street is of primary importance.</p>	<p>A single eastbound traffic lane would be available on Devonshire Street between Chalmers Street and Crown Street. Between Crown Street and Bourke Street one eastbound and one westbound traffic lane would be available. The westbound traffic lane would provide access to Nickson Street, Nickson Lane and Wilshire Street.</p> <p>The westbound lane between Bourke and Crown Street would be mostly contained within the existing roadway, but may require some kerb adjustments. This service lane is required for vehicles to access Nickson Lane, Nickson Street and Wilshire Street without crossing the light rail alignment. The restriction of turning movements across the alignment is to enhance safety and reliability of the CSELR system.</p>	328
<p>General support for Devonshire Street to remain two-way for motor vehicles between Crown Street and Bourke Street.</p>	<p>As discussed in section 9.2.3 of the EIS (Volume 1A), Devonshire Street does not have sufficient available width to accommodate the proposed CSELR alignment as well as two-way traffic lanes.</p> <p>The objective of the proposed functional changes to Devonshire Street is to ensure safe, reliable and efficient light rail operation, whilst also maintaining necessary access for residents and businesses (including consideration of CSELR operations during special events at Moore Park and Royal Randwick racecourse).</p> <p>Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with Council), following further analysis of the effectiveness of the proposed management measures.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	70, 216, 422

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned about lack of information regarding access arrangements for properties on Parkham Street and the section of Bourke Street with access from Parkham Street.</p> <p>Concerned that an extension of Parkham Lane will create complicated access for locals. The two-way part of Bourke Street should be extended to Parkham Lane instead — this should be a condition of approval.</p> <p>Parkham Lane should be opened up to through traffic, with left and right turns onto Bourke Street.</p> <p>If Parkham Lane is not extended to Bourke Street with a right turn onto Bourke Street, further consultation should be undertaken with affected residents — this should be a condition of approval.</p> <p>Re-routing for Parkham Street residents should occur prior to construction of the CSELR. Parkham Place should be kept open across the light rail tracks, with signalling at this crossing location linked to the traffic lights on South Dowling Street.</p> <p>Traffic changes around Parkham Street will increase traffic congestion outside Bourke Street Public School. Opposes proposal to open Parkham Lane onto Bourke Street, noting the additional traffic flow onto Bourke Street during school pick up/drop off.</p> <p>Request to keep Parkham Street open to allow access for service vehicles and school traffic.</p>	<p>The EIS design retained access to Parkham Street and Parkham Lane. Parkham Place would be closed to traffic between Parkham Lane and Nobbs Lane. Parkham Lane is proposed to be extended to Bourke Street with a left-out turn provided. Parkham Street and Parkham Lane would operate in a one way loop, which would maintain access to all properties and Bourke Street Public School. Northbound vehicles would be required to travel via Bourke Street (southbound) and Ridge Street to access South Dowling Street (northbound). This is a relatively minor local diversion of 300 metres.</p> <p>An assessment of extending the two-way section of Bourke Street south to Parkham Lane has been undertaken. This option was not adopted due to the following:</p> <ul style="list-style-type: none"> <li>▪ This would involve the introduction of a short northbound lane on Bourke Street between Parkham Lane and Devonshire Street. The re-alignment of this intersection would result in the loss of additional on-street parking on Bourke Street, of approximately seven spaces.</li> <li>▪ The proposal would require an additional signal phase for the Devonshire Street/ Bourke Street intersection adding delay for all modes (traffic, light rail, cycles and pedestrians).</li> <li>▪ Vehicles turning right out of Parkham Lane may queue across the intersection and block southbound through traffic on Bourke Street. This could also potentially cause delays to southbound vehicles and to light rail.</li> </ul> <p>In traffic impact terms it would be preferable to retain the one way southbound exit from Parkham Lane. This would also allow retention of the parking on the eastern side of Bourke Street and minimise delays to light rail and cyclists.</p> <p>Transport for NSW would continue to work closely with RMS and local councils to mitigate the potential network and local traffic impacts, including potential access issues to Parkham Street and surrounding local roads as a result of the CSELR proposal.</p>	<p>287, 396, 403, 404, 405, 428, 433, 447</p>
<p>Between Bourke Street and Crown Street, the left in/left out rule for the lanes and side streets will add 15 minutes to a trip trying to get onto the Eastern Distributor and will compound traffic on Cleveland Street.</p>	<p>The CSELR proposal precludes uncontrolled turning movements across the alignment to improve safety and operational performance. This is described further in section 5.2 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p> <p>Alternative local routes to access the Eastern Distributor are available that avoid Cleveland Street without significant increase in journey time.</p>	<p>428</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Holt Street should remain open to traffic and parking, noting it is critically important to providing access for deliveries and services.</p>	<p>With the introduction of the CSELR proposal, there would be a number of functional changes to the local road network to ensure a safe, reliable and efficient light rail system, while maintaining necessary access for residents and businesses.</p> <p>As part of the CSELR proposal, Devonshire Street is the focus of operations through the Surry Hills Precinct. The road hierarchy of Devonshire Street would become less attractive to traffic and improved pedestrian amenity. Finalisation of kerbside treatments would occur during the subsequent design stage. This is described further in section 5.4.2 of Technical Paper 1 in Volume 2 of the EIS. Following introduction of the CSELR proposal, access to Holt Street would be maintained via Cooper Street and Gladstone Street.</p>	422
<p>Request that there is a right hand turn into Devonshire Street from Chalmers Street if the EIS is approved.</p>	<p>As outlined in section 5.4.1 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS, the right turn movement from Chalmers Street into Devonshire Street is planned to be maintained as part of the CSELR proposal.</p>	348
<p>Enquires how the traffic signals along South Dowling street will be coordinated?</p> <p>Enquires whether traffic signals will indicate to pedestrians when light rail is approaching?</p>	<p>All new traffic signals would be installed onto the SCATS system which synchronises and coordinates all traffic signals along the corridor and the wider Sydney region. Traffic signal operation would be similar to that on the existing road network, and would not indicate approaching LRV vehicles. Notwithstanding this, sufficient sight lines would be provided along the CSELR corridor to permit sufficient observation for oncoming LRV vehicles. In addition, LRVs would have warning bells that the driver could use in instances where they perceive that there is a risk to pedestrian safety.</p>	427
<p>For the Elizabeth Street crossing at Devonshire Street, commit to:</p> <ul style="list-style-type: none"> <li>▪ Good service levels to trams by a combination of short signal phasing, shorter than current phasing, down from 10/90 to 60.</li> <li>▪ Better service levels for pedestrians and bicycle crossing than current.</li> </ul>	<p>The level of priority afforded to LRVs, pedestrians, cyclists and other road users would be further investigated during detailed design, in consultation with RMS and City of Sydney.</p>	354
<p>Closure of intersections with Buckingham, Holt, Waterloo, High Holborn and Clisdell streets will not benefit local civil or commercial activities. These closures would worsen local traffic conditions by forcing local traffic to enter main and arterial streets for short local journeys.</p> <p>Submits that the closure of Devonshire Street intersections, including Buckingham, Holt, Waterloo, High Holborn and Clisdell streets, will limit movement around the suburb, lengthen local journeys and limit access for essential services such as ambulance, fire trucks and police vehicles.</p>	<p>The side streets in Surry Hills that would remain open to traffic do not provide a suitable continuous westbound link that would attract the displaced traffic from Devonshire Street. As such, the majority of streets in Surry Hills would continue to carry local access traffic only and would not be expected to see a significant increase.</p> <p>It is acknowledged that as a result of the closures some local access routes would see a small increase in the required travel distance, but all precincts would retain access.</p>	235, 367

Specific issues raised in submissions	Response to specific issues	Submission No.
Concerned solution preferences light rail over local residents.		
Concerned that proposal to signalise intersection of Devonshire and Marlborough streets will encourage Devonshire Street to become a traffic corridor and adversely impact flow of local traffic, impacting on residents.	<p>With the introduction of the CSELR proposal, there would be a number of functional changes to the local road network to ensure a safe, reliable and efficient light rail system, while maintaining necessary access for residents and businesses.</p> <p>As part of the CSELR proposal, Devonshire Street is the focus of operations through the Surry Hills Precinct. The road hierarchy of Devonshire Street would become less attractive to traffic and improved pedestrian amenity. Finalisation of kerbside treatments would occur during the subsequent design stage. This is described further in section 5.4.2 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p>	367
Retain access to the rear of Nobbs Street.	Access to the rear of Nobbs Street would be maintained.	388
Request that consideration be given to the impact of closing the intersection of Clisdell Street and Devonshire Street on traffic in smaller lanes (such as Butt, Brumby, Dawson and Belvoir Streets where they meet Elizabeth).	<p>The CSELR proposal precludes uncontrolled turning movements across the alignment to improve safety and operational performance. This is described further in section 5.2 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p> <p>With the closure of Clisdell Street at Devonshire Street, through traffic volumes would divert to alternative routes outside of the local area. The low traffic volumes within the local area are not expected to significantly impact the performance of access from adjacent side roads onto Elizabeth Street.</p>	343
Request that Brumby Street has parking removed or is made one-way from Elizabeth Street to Clisdell Street to limit bottlenecks and because the sidewalks are narrow.	This request is not directly related to an impact of the CSELR proposal and should be directed to City of Sydney.	343
<b>Moore Park Precinct</b>		
<p>Concerned about the CSELR proposal's impact on the Anzac Parade/Alison Road intersection.</p> <p>What provisions have been made to allow LRVs to exit from the proposed Moore Park section of track onto Anzac Parade? How will traffic be affected?</p>	<p>The performance of the Anzac Parade/Alison Road intersection is documented in section 5.5.3 of Technical Paper 1 in Volume 2 of the EIS. This assessment shows that this intersection would operate at Level of Service F in the morning peak, which indicates that this intersection does not have sufficient capacity to accommodate the likely traffic demand.</p> <p>Transport for NSW and RMS are currently undertaking detailed investigations into the optimisation of this intersection to improve capacity and reduce delays. It is noted, however, that the Anzac Parade/Alison Road intersection currently operates at Level of Service E and is anticipated to reduce to Level of Service F in 2021 without the introduction of light rail.</p> <p>As outlined in section 14.3.2 of the EIS (Volume 1B), the proposed CSELR alignment would exit the tunnel immediately north of the Moore Park stop at-grade on the eastern side of the existing busway. The CSELR proposal would not impact on the operation of the busway.</p>	220, 242



Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>As noted in section 16.3.2 of the EIS (Volume 1B), to minimise traffic capacity reduction at the Anzac Parade/Alison Road intersection, a two stage transition would be adopted to transfer the LRVs from the eastern side of Anzac Parade into the median, south of Alison Road. This two stage crossing would allow light rail to run concurrently with key traffic movements, which would in turn provide a 20—35 per cent reduction in light rail delays at the intersection and an increase in traffic capacity of five per cent when compared to a single transition through the intersection. The specific design details of this intersection and the transition are currently under review by RMS and Transport for NSW.</p>	
<b>Randwick Precinct</b>		
<p>Concerned that locating the terminus at High Cross Park will cause traffic congestion along Avoca Street, with light rail automatically setting the lights green every 3 minutes either way blocking traffic along Avoca Street from Belmore Road. In addition, light rail passengers requiring access to the hospitals will need to cross Avoca Street.</p> <p>The functioning of the proposed Randwick stop would be impaired by traffic if it was to be located in High Cross Park. There are three schools in the immediate area that generate large volumes of traffic during student drop-off and pick-up times. These vehicles currently extend back along Coogee Bay Road and into Belmore Road.</p> <p>Concerned about traffic changes around High Cross Park impacting school drop off/pickups at Brigidine College, and flow on impacts to traffic flow at The Spot.</p>	<p>The impact on streets adjacent to High Cross Park (Avoca Street, Belmore Road and Cuthill Street) as a result of the CSELR proposal has been assessed and is described in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p> <p>The movement of LRVs through the Avoca Street/High Street intersection (in order to access the proposed stop in High Cross Park) would only result in a marginal reduction in traffic capacity through this intersection as the light rail movements would be able to run concurrently with traffic exiting High Street. This reduction in capacity has been minimised by restricting the right turn from High Street to Avoca Street to buses only. The complete removal of an existing turning movement at High Cross Park would be limited to the right turn from Belmore Road into Cuthill Street to accommodate the proposed westbound bus movement.</p> <p>The retained movements at the Cuthill Street/Belmore Road intersection would maintain access to local schools and the commercial precinct.</p>	48, 56, 94, 141, 258, 283, 432
<p>Question about whether extra traffic lights are being installed in Randwick and if they will be synchronised with other traffic and pedestrian lights to allow the free flow of vehicles.</p>	<p>In Randwick, additional traffic signals are proposed at the following locations (as indicated in section 5.4.5 of Technical Paper 1 — <i>Transport Operations Report</i> — in Volume 2 of the EIS):</p> <ul style="list-style-type: none"> <li>▪ Alison Road/Wansey Road</li> <li>▪ Wansey Road/High Street</li> <li>▪ High Street/Hospital Road</li> <li>▪ High Street/Clara Street.</li> </ul> <p>All new traffic signals would be installed onto the Sydney Co-ordinated Adaptive Traffic System (SCATS) which synchronises and coordinates all traffic signals along the corridor and the wider Sydney region.</p>	242

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The EIS does not adequately assess the cumulative traffic impact associated with the urban activation precinct; these developments will result in increased traffic on neighbouring streets due to 'rat running'.</p>	<p>Transport for NSW would continue to work with P&amp;I, RMS and Randwick City Council to review traffic management and mitigation to address cumulative traffic impacts on other local streets.</p>	<p>115</p>
<p>Roads surrounding the proposed Randwick stop, High Cross Park and its surrounds should be limited to 40 kilometres per hour, given the increased number of pedestrian movements that would occur following the introduction of the light rail stop.</p> <p>A number of schools are likely to be serviced from the interchange at Randwick. Safe pedestrian access to and from the interchange for school children is therefore mandatory.</p>	<p>Following the appointment of a preferred contractor, detailed design would be undertaken for the CSELR proposal. As a part of the design process, an independent road safety audit would be undertaken on the detailed design. Mitigation measures, such as speed limits, may be recommended as a part of this process. Currently the streets around High Cross Park are proposed to be 50 kilometres per hour; the road safety audit would verify if this is appropriate or recommend a lower limit.</p>	<p>48, 476</p>
<p>Concerned that any stop on High Street would create unacceptable conflicts with pedestrians, LRVs and cars. To enable better access to the hospital, the Prince of Wales Hospital should better define pedestrian entry via Avoca Street. Prefers High Street remain a through traffic route.</p> <p>Belmore Road, Randwick, is not wide enough to withstand pedestrian, bus and car traffic increases.</p>	<p>As outlined in section 5.8.3 of this Submissions Report, traffic would be maintained on High Street as part of the CSELR proposal (i.e. High Street is not proposed to be a light rail only zone; rather, buses and traffic would continue to operate with light rail on High Street).</p> <p>The Randwick stop is proposed to be located in High Cross Park. Pedestrian access to the Prince of Wales Hospital (via alternative entrances) is a matter for the relevant landowner.</p> <p>Belmore Road would have sufficient road space to accommodate the CSELR proposal. As outlined above, an independent road safety audit would be undertaken for the CSELR proposal during detailed design. The road safety audit would verify the appropriateness of any proposed mitigation measures for the CSELR proposal, or would make recommendations on any additional/alternative measures that would be required to manage road safety risks.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	<p>260, 432</p>
<p>Believes the current road network in Randwick and Coogee is adequate but suggests making Belmore Road in Randwick one way.</p>	<p>This is outside the scope of the CSELR proposal. Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with Randwick City Council), following further analysis of the effectiveness of the proposed management measures.</p>	<p>242</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned that Council service vehicles (waste and recycling collection) will impact on traffic flow in both directions along Wansey Road due to proposed narrow width of traffic lanes. Notes waste collection is weekly on Monday morning.</p>	<p>With the introduction of the CSELR proposal, there would be a number of functional changes to the local road network in the vicinity of Wansey Road.</p> <p>The final design of the Wansey Road corridor would meet the relevant road design standards, including pavement widths.</p> <p>Refer to section 6.11 of this Submissions Report for an overview of the proposed operation of Wansey Road following the introduction of the CSELR.</p>	299
<p>Concerned about vehicle access. Notes there are inconsistencies within the EIS as to whether the vehicle accesses to the stabling facility from Doncaster Avenue will be entry only, exit only or both. Given the inconsistency, the impacts of the proposed vehicle access arrangements on the Doncaster Avenue properties cannot be properly assessed. The indicative layout of the stabling facility provided in the EIS indicates a car park with 94 spaces, whereas section 15.3.2 of the EIS (15-17) and the Traffic Operations Report (section 5.4.5.1) state that 100-120 spaces will be provided. The vehicle access and parking need to be resolved as the different scenarios have different implications for traffic flow, queuing and safety in this location.</p>	<p>Vehicle access to the facility would be via an existing vehicular access located at a roundabout intersection at Ascot Street. The exit point would be on the eastern side of Doncaster Avenue, south of the intersection with Alison Road. The existing vehicular crossings at Doncaster Avenue could be adapted for use during operation of the Randwick stabling facility.</p> <p>During the operation of the stabling facility, peak traffic generation would be attributable to periods of shift changeovers where staff vehicles would be entering and exiting the site. A total of 100 to 120 parking spaces are proposed on-site, which would be sufficient to accommodate all traffic associated with each shift of the maintenance facility; therefore, the impact on adjacent on-street parking provisions would be minimal. It is assumed that the shift change over period would be outside peak periods for the road network and, as such, is unlikely to impact existing intersection performance and traffic conditions.</p> <p>The impact of the additional traffic generated by the Randwick stabling facility is considered to be low for the following reasons:</p> <ul style="list-style-type: none"> <li>▪ Peak movements to the site associated with the shift changeover period would likely occur outside of the network peak.</li> <li>▪ Existing accesses are proposed to be used with no anticipated requirement for significant upgrade.</li> <li>▪ Entry and exit arrangements to the facility through existing separate vehicular access points would reduce vehicle conflicts.</li> </ul>	327
<b><i>Kensington/Kingsford Precinct</i></b>		
<p>Concerned about the traffic impacts to Coogee Bay Road as a result of the Randwick stop at High Cross Park. Would not like to see traffic on Coogee Bay Road being diverted onto quiet streets, such as Rainbow Street.</p>	<p>Initial traffic modelling has shown a shift in traffic patterns in the vicinity of the light rail alignment, including on Coogee Bay Road. The exact nature of these changes are yet to be determined, but would be analysed further to enable development of the Network Management Plan, which would seek to mitigate the impacts on the road network.</p>	175

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concern that the redesign of Nine Ways intersection will have a significant impact on traffic flow in all directions around the precinct, including the major corridors of Bunnerong Road and Gardeners Road. More clarity is required on how the junction will be reconfigured.</p> <p>Objection to the separation of Kingsford south of Gardeners Road by making a hook turn at Baker Street which is the only access from the north, with the exception of rat runs through Kensington.</p>	<p>As outlined in Figure 16.9b of the EIS (Volume 1B), all existing traffic movements at the Nine Ways intersection would be maintained, with the exception of the following movements:</p> <ul style="list-style-type: none"> <li>▪ No right turn from Anzac Parade (northbound) to Rainbow Street.</li> <li>▪ No right turn from Gardeners Road to Anzac Parade.</li> <li>▪ No right turn from Rainbow Street to Anzac Parade.</li> </ul> <p>The impact on Anzac Parade as a result of the CSELR proposal has been assessed and is described in section 5.5.3 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS. As outlined at the start of section 5.8.6 of this Submissions Report, specific mitigation measures to minimise impacts on the Anzac Parade corridor are under investigation by Transport for NSW and RMS.</p> <p>Hook turns are not proposed as part of the CSELR proposal. The existing right turn from Anzac Parade (southbound) into Gardeners Road would be retained under signal control.</p>	<p>242, 348, 393</p>
<p>Concerned about the traffic impact that the proposed UNSW stop will have on Anzac Parade; LRVs will need to cross four lanes of traffic that is already heavily congested during peak hours.</p>	<p>An alternative design is now proposed that maintains the alignment and stop in the centre of the Anzac Parade. This would remove the requirement for LRVs to cross southbound traffic and would provide a safer, more legible environment for pedestrians. Details of this amended design can be found in section 6.13 of this Submissions Report.</p>	<p>177, 479</p>
<p>Concerned that students crossing Anzac Parade will cause congestion for traffic.</p>	<p>As outlined in section 6.13.2 of this Submissions Report, the location of the proposed UNSW Anzac Parade stop has been revised since the exhibition of the EIS. This stop would now be located in the centre of Anzac Parade, just north of the University Mall crossing (rather than on the eastern side of Anzac Parade, as originally proposed in the EIS).</p> <p>A central island pedestrian walkway would be provided between the stop platform and the existing pedestrian crossing of Anzac Parade at the University Mall, providing an access point for passengers boarding the light rail platform from either side of Anzac Parade, at the southern end of the stop.</p> <p>A potential mid-block pedestrian crossing at the northern end of the stop may potentially be able to be accommodated. The provision of this crossing would be subject to consultation with RMS during detailed design.</p> <p>Fencing would be installed along the CSELR corridor at this location to prevent pedestrians from accessing the UNSW Anzac Parade stop outside of the existing pedestrian crossing at University Mall.</p> <p>Relocation of the stop into the median would require all passengers to cross at least half of Anzac Parade. This would cause an increase in pedestrian crossing movements at the UNSW Mall crossing when compared to the EIS design.</p>	<p>457</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>It is noted, however, that the revised UNSW Anzac Parade stop location into the median of Anzac Parade would remove the requirement for light rail to transition from the median to the eastern kerbside at High Street and then back from the eastern kerbside to the median at the UNSW Mall pedestrian crossing. As a result, the additional light rail phases that were required in the EIS design configuration (side platform within the UNSW campus) to permit these movements at the signalised Anzac Parade/High Street intersection and UNSW pedestrian crossing are no longer required. Removal of these phases would improve operational efficiency of these intersections, particularly at High Street which experiences high volumes of right turning traffic.</p>	
<p>Concerned about potential for increased traffic on Doncaster Avenue as a result of reducing the number of lanes on Anzac Parade.</p> <p>Concern for safety of students accessing Kensington Public School via the main gate on Doncaster Avenue.</p> <p>Suggests that traffic calming measures are installed.</p>	<p>With the introduction of the CSELR proposal, there would be a number of functional changes to the local road network.</p> <p>Transport for NSW would continue to work with RMS and Council to review traffic management and mitigation on other local streets.</p> <p>Traffic calming measures would be considered during the subsequent design stage to ensure Doncaster Avenue remains a less attractive route alternative to Anzac Parade.</p>	143
<p>Pedestrian access to schools on the Kingsford spur of the CSELR proposal is envisaged from the proposed stop at Todman Avenue. Safe access to and from this stop for school children is mandatory.</p>	<p>Following the appointment of a preferred contractor, detailed design would be undertaken for the CSELR proposal. As a part of the design process, an independent road safety audit would be undertaken on the detailed design. Additional mitigation measures may be recommended as a part of this process.</p>	476
<p>Requests clarification about the proposed road configuration along Anzac Parade. If the CSELR corridor occupies three traffic lanes, and buses operating on two of the other traffic lanes, where will private motor vehicles operate (especially during peak hour)?</p> <p>Concern that the proposed bus lane and private vehicle lanes in Kensington/Kingsford on Anzac Parade are inconsistent on different diagrams and unclear. Submits that Anzac Parade is not wide enough to incorporate LRVs in addition to existing traffic and bus volumes.</p>	<p>The proposed operation and functional characteristics of Anzac Parade are set out in section 5.4.4 of Technical Paper 1 (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p> <p>A description of the Network Performance Assessment is provided in section 5.5.3 of (<i>Transport Operations Report</i>) in Volume 2 of the EIS.</p>	78, 290, 431

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Objects to the proposed three right hand turns (only) from Kingsford through to Moore Park.</p> <p>Concerned about loss of right turns from Anzac Parade into Doncaster Road, Carlton Street and Abbotford Street; potential increase in traffic congestion and inconvenience for residents of 68–70 Anzac Parade.</p> <p>The right turn for vehicles into Day Street from Anzac Parade should be retained.</p> <p>Concern about limited right turns into side streets.</p>	<p>As outlined in section 16.3.2 of the EIS (Volume 1B), this reduction in existing right-turn locations would be required to accommodate the CSELR proposal in the median of Anzac Parade.</p> <p>One of the key principles that guided the development of the future road network strategy was the consolidation of right turn movements across the CSELR alignment, which would only be permitted at signalised intersections. This would provide light rail reliability benefits, as well as traffic capacity and safety improvements by minimising uncontrolled conflicting vehicle movements.</p> <p>As outlined in section 6.13.2 of this Submissions Report, as part of the revised design for the UNSW Anzac Parade stop, a right hand turn from Anzac Parade (southbound) into Day Avenue would be maintained. Provision of the right turn into Day Avenue would require an additional set of traffic signals compared to that identified in the EIS option. These signals would require close coordination with Anzac Parade/High Street and the UNSW Mall crossing and would need to be designed to ensure an LRV can be safely stored between each set of signals without blocking traffic entering and leaving the side roads.</p> <p>Further investigation regarding local road connections that would be required to minimise the impacts of the CSELR proposal would be undertaken during detailed design (in consultation with Randwick City Council), following further analysis of the effectiveness of the proposed management measures.</p>	<p>252, 272, 316, 351, 380</p>
<p>The proposed overhead wires for the CSELR would stretch across and along Anzac Parade, which may restrict the movement of oversized vehicles.</p>	<p>Overhead wiring for the CSELR proposal is designed to be nominally 5.5 metres above the road level. Anzac Parade is an approved route for over-height vehicles (i.e. vehicles and loads above 4.3 metres and up to 4.6 metres high). RMS restricts operation of vehicles above 4.6 metres along this section of Anzac Parade. Therefore, overhead wiring for the CSELR proposal would not further restrict the use of Anzac Parade for over-height vehicles; these vehicles would still be able to safely pass under the wire. Special permits and conditions apply to their operation and these may include not operating along Anzac Parade.</p>	<p>479</p>
<p><b>Rozelle locality</b></p>		
<p>Concern about the significant disruption and impact on local residents associated with the proposed Rozelle maintenance depot, including: Traffic impacts from increased heavy transport and staff travel to and from the facility.</p>	<p>Traffic impacts associated with the operation of the proposed Rozelle maintenance depot are outlined in section 17.3.2 of the EIS (Volume 1B). Vehicle access to the Rozelle maintenance depot and adjacent commercial properties within the Rozelle Rail Yards would be maintained via the existing driveway located on Lilyfield Road, east of Catherine Street, and the existing internal site access road.</p> <p>During the operation of the maintenance depot, peak traffic generation would be attributable to periods of shift changeovers where staff vehicles would be entering and exiting the site. To ensure efficient operation of the system, parking for staff vehicles would be accommodated internally, with approximately 50 parking spaces provided for both staff and visitors. This would be sufficient to accommodate all traffic generated by the maintenance facility and, therefore, impact on adjacent on-street parking provisions would also be minimal.</p>	<p>240</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
	Furthermore, as the development of the maintenance depot would be wholly contained within the former Rozelle Rail Yards, with minimal changes to the existing access arrangements, it is considered that the traffic impacts on pedestrians, cyclists, existing light rail users and other road users would be minimal.	
<b>Wider road network</b>		
<p>Concerned that traffic will be displaced from Devonshire Street and will overload Cleveland Street and Foveaux Street corridors with congestion.</p> <p>Raises concern about the CSELR proposal's impact on road based public transport (including buses) on Cleveland Street, and the associated impacts on the businesses that rely on customers traveling to their shops via such modes of transport.</p>	<p>Cleveland Street is likely to see an increase in traffic volumes as a result of the CSELR proposal. Transport for NSW and RMS are working to develop mitigation strategies for this alternative traffic route (amongst others). This process is ongoing but would be implemented prior to construction of the CSELR.</p> <p>Traffic impacts to other road corridors arising due to the CSELR proposal would be assessed and any required mitigation measures would be identified and implemented as part of the Network Management Plan, as outlined at the start of section 5.8.6 of this Submissions Report.</p> <p>Transport for NSW would continue to work with Councils and RMS to mitigate the local traffic impacts and potential increased traffic flows that may occur on local roads as a result of the CSELR proposal.</p>	1, 239
<p>Raises concern about the language used regarding Oxford Street becoming a traffic gateway. Previous upgrades to Oxford Street in 2004/2005 (i.e. widened to six traffic lanes and removal of parking) significantly impacted adjacent businesses and split Darlinghurst in two. Concerned about the impact that the CSELR proposal will have on Oxford Street.</p>	<p>Traffic impacts to Oxford Street would be assessed and any required mitigation measures would be identified and implemented as part of the Network Management Plan for the CSELR proposal, as outlined at the start of section 5.8.6 of this Submissions Report.</p>	58

## 5.8.7 Construction traffic impacts

### Summary of issues raised

A number of submissions raise concerns and specific comments in relation to the CSELR proposal's impact on traffic during construction. These issues are listed below:

- General concerns about traffic congestion and the disruptions to traffic and transportation during the construction of the CSELR proposal, which could take up to five years to complete.
- General concerns or objections to road closures during the construction of the CSELR proposal and the impact that such closures would have on other road users (e.g. the accessibility of surrounding land uses and impacts to journey times).
- A congestion management plan should be prepared which includes initiatives to spread the peak, education programs, freight and delivery initiatives, dedicated resource for road space management etc. Best practice construction traffic measures should be incorporated from previous projects.

- The Access Strategy/Access Management Plan for the CSELR proposal should include a range of measures to minimise construction impacts on pedestrian flows. Recommended measures include: clear demarcation of pedestrian and work zones; no storage of plant, equipment or materials on the footway across the Dymocks building frontage; maintaining clear pedestrian access and diversion of pedestrians past the Dymocks building with suitable pavement; and maintaining the pedestrian crossing access across George Street near the Strand Arcade.
- Include a condition of approval to require the proponent and contractor to prepare a detailed Construction Traffic Management Plan in consultation with the owners and managers of adjacent buildings and construction sites.
- The construction management program for the CSELR proposal must maintain the operation of important intersections, particularly at the corner of Anzac Parade and Lang Road.
- No information has been provided regarding the proposed traffic control and management measures that would be implemented during construction of the CSELR.

#### Submission number(s)

72, 88 105, 155, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 225, 272, 298, 302, 316, 334, 335, 336, 337, 347, 371, 405, 411, 415, 418, 437, 438, 447, 476

#### Response

A Construction Traffic and Transport Management Strategy (CTTMS) was developed for the CSELR proposal, which formed Technical Paper 2 of the EIS (Volume 2). The CTTMS assesses the potential traffic and transport impacts during construction of the CSELR and outlines a framework for managing and mitigating any potential adverse impacts. Appendices A and B of Technical Paper 2 provided a series of precinct access maps and indicative staging plans for key road intersections during the construction phase of the CSELR proposal.

The CTTMS is the first of four traffic and transport management plans that would be developed to manage and mitigate traffic and transport network impacts during construction. The appointed contractor(s) (in conjunction with Transport for NSW) would be responsible for developing the remaining three plans, which would comprise:

- Network Management Plan (NMP) — which would detail specific network management measures which would be implemented at each stage of construction
- Site Specific Construction Traffic Management Plans (CTMPs) — which would describe (in detail) the area of work or activity, the extent of expected traffic impacts and the network management measures to be implemented
- Site Specific Construction Traffic Control Plans (TCPs) — which would identify specific traffic control measures to be implemented for each CTMP.

Mesosopic modelling of the construction traffic and transport impacts has been undertaken as part of Technical Paper 2 in Volume 2 of the EIS. The modelling was undertaken based on a worst case scenario, assuming that the full length of the proposed CSELR corridor is an active worksite, with all road closures in place concurrently. This approach was adopted to identify the likely critical access and congestion points on the network.



The analysis identified that, under a worst case scenario, travel times could increase by around 15 per cent for all vehicles during both the morning and afternoon peaks. Average vehicle speeds would also decrease by around six per cent to approximately 33 kilometres per hour during the morning peak and 29 kilometres per hour during the afternoon peak. It should be noted, however, that once a contractor is appointed, detailed planning would take place to develop construction staging and access during construction. Under a staged construction program it is likely that improved network performance, compared to the worst case scenario, would be achieved. More detailed information on the results of the mesoscopic modelling is provided in section 3.9 of Technical Paper 2 in Volume 2 of the EIS.

The traffic, transport and access management strategies that would be adopted during the construction of the CSELR proposal are provided in sections 6.10 and 9.2.4 of the EIS (Volume 1A). Additional environmental management measures that Transport for NSW proposes to implement to address precinct specific traffic, transport and access impacts are provided on a precinct by precinct basis in sections 12.3.4 (*City Centre Precinct*), 13.3.4 (*Surry Hills Precinct*), 14.3.4 (*Moore Park Precinct*), 15.3.4 (*Randwick Precinct*) and 16.3.4 (*Kensington/Kingsford Precinct*) of the EIS (Volume 1B).

As outlined in section 6.9 of the EIS (Volume 1A), an increase in heavy vehicle movements would be expected during both the utility relocation and main works construction phase. Heavy vehicle movements would be in compliance with the *NSW Road Rules 2008, Regulation 300-3 – Driving lengthy vehicles in the Sydney CBD*. The size of trucks used for haulage would be consistent with these access route constraints, safety and any worksite constraints. Some construction activities (such as the delivery of track) may require truck and trailer combinations or semi-trailer. Access arrangements for these vehicles would be defined in the site specific CTMPs which would be developed by the appointed contractor. More detailed information on heavy vehicle routes and expected heavy vehicle traffic generation is outlined in section 2.3 of the Technical Paper 2 in Volume 2 of the EIS.

### *Specific construction traffic impacts*

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>City Centre Precinct</b>		
Not enough detail was provided about potential impact to Market Street and Market Street crossover of George Street prior to and during construction.	<p>Due to the removal of competing north-south traffic movements in George Street during construction and operation, additional green time would be available to east-west traffic movements at the intersection with Market Street thus providing increased traffic capacity compared to existing operations.</p> <p>During construction, once a contractor is appointed and details of the required individual construction stages are identified, temporary traffic management changes at the Market Street intersection would be provided in the site specific CTMPs to be prepared by the contractor. (Refer to section 1.2 of Technical Paper 2 in Volume 2 of the EIS for details of the process to be followed in later stages of the CSELR proposal).</p> <p>To address the effects of the potential changed traffic patterns in the CBD, including on Market Street, Transport for NSW and RMS are working together to identify appropriate upgrade measures. These would be developed around the <i>Sydney City Centre Access Strategy (SCCAS)</i>. This work is ongoing and includes additional modelling assessment at the strategic and operational levels to refine the optimal solution. This work would be completed prior to commencement of construction of the CSELR.</p>	88

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Moore Park Precinct</b>		
<p>Does not support the realignment of the southern bus loop road as a regular bus section further north.</p> <p>Concerned about use of bus loop service road as a regular bus route — not just during special events — during construction, due to safety implications for access across bus loop service road to training field.</p> <p>Suggests separation — fencing and netting — within the oval prior to opening bus loop service road outside of special events.</p>	<p>No realignment of the existing bus loop is proposed as part of the CSELR proposal. However, as described in section 6.8 of this Submissions Report, the proposed design changes to the tunnel alignment and Moore Park stop location would result in some additional minor works required to the bus loop.</p> <p>Construction of the tunnel, portal and dive structure between the busway and the AFL training oval would require the section of the main busway to be closed between Macarthur and Gregory Avenues. Buses would be diverted on a temporary basis via the events bus loop which would be temporarily made two way. The southern end of the bus loop (near Macarthur Avenue) would be modified to provide a turning circle to allow for buses to continue to utilise the events bus stops during construction and allow buses to return to the city via the event loop.</p> <p>Following construction, the two way main busway would reopen and, the turning circle would be removed and access from the bus loop to the Moore Park busway would return to one way, clockwise operation for events only.</p> <p>Further detail on the existing busway is provided in section 6.8 of this Submissions Report.</p> <p>All worksites associated with the construction of the CSELR, including works to the existing bus loop, would be appropriately fenced off throughout the construction period to prevent access to the general public (refer to mitigation measure O.15 in Chapter 8 of this Submissions Report).</p>	275
<b>Kensington/Kingsford Precinct</b>		
<p>Concerned that the CSELR will result in traffic congestion on Anzac Parade, especially if multiple traffic lanes will be removed to accommodate the construction of the proposal.</p>	<p>Anzac Parade would operate with two lanes in each direction, as indicated in Figure 3-6 Technical Paper 2 in Volume 2 of the EIS. This configuration is largely consistent with the configuration of the CSELR during operation. Intersection works would be undertaken outside of peak times to maintain capacity during the peak periods of traffic demand.</p> <p>As part of the Network Management Plan to be produced by Transport for NSW in consultation with major stakeholders including Randwick City Council and RMS, mitigation measures would be identified and implemented for all modes on Anzac Parade.</p>	72

### 5.8.8 Operational impacts to property access

#### Summary of issues raised

Issues raised relating to impacts to property access during the operational phase of the CSELR proposal comprised the following:

- General concern or objections raised regarding the CSELR proposal’s impact to property access.
- Sydney TAFE requests the EIS takes into account potential operational traffic impacts and accessibility to Randwick College.





- The EIS does not provide discussion about the impact that the CSELR proposal will have on the functions of the St. Peter's Church. Expresses significant concern that the EIS does not address alternative means for maintaining vehicle access to the front door of the St. Peter's Church for weddings and funerals, so that ceremonies can be conducted in a dignified fashion. Opportunities for traffic movement via High Holborn Street and Marlborough Street (on the southern side of the CSELR alignment), and via left turns to/from Devonshire Street, would need to be retained to avoid adverse effects on the St. Peter's Parish. Requests that this issue is resolved before the planning process for the proposal is finalised.
- Access for Wilshire Street residents could be maintained by allowing vehicles to turn left or right into Wilshire Street from Devonshire Street, as well as left or right from Nickson Street into Devonshire Street. Expresses support for such a traffic arrangement.
- Requests that access is provided to the Salmon Bros Electric business from Devonshire Street to Nickson Street and into the side access to the premises via a right hand crossing of the CSELR tracks at the Devonshire Street/Nickson Street intersection.
- Requests that the proposed Rawson Place stop does not impede access to 790 on George Street Backpackers entrance or block out any natural light to this business. Also requests that the entry to this business remains visible for guests.
- Requests that pedestrian access to the laneway between Scubar and Five Star Kebabs, which runs between Rawson Place to Pitt Street, is maintained from Rawson Place. 790 on George Street Backpackers have a number of contractors that will require access (for example for laundry pickups etc.), given that the loading zone on Rawson Place will be removed as part of the CSELR proposal.
- Requests that two-way access into Jamison Street from York Street is provided so as to maintain private vehicle access to the Portico residential and commercial building situated on the corner of York and Jamison Streets, Sydney. This building contains 147 residential apartments with approximately 117 car parking spots for residents. The requested access provisions would remove the need for residents and other users to access the car park via George Street and Jamison Street. The Amora Hotel and 50 Margaret Street car park would be similarly affected by the CSELR, as they are also accessed via Jamison Street.
- Concerned about access impacts for daily deliveries to businesses along Nickson Street due to proposed left-in/left-in turning and limited Bourke Street access.
- Expresses concerns about the CSELR proposal's impact on property access for the commercial building located at 420 Elizabeth Street, Surry Hills. The CSELR proposal will impact the building tenant's ability to maintain their businesses with minimal disruption, as well as the ability to receive deliveries.
- The change in access arrangements along Devonshire Street will significantly impact residents and businesses. Devonshire Street residents will have trouble receiving deliveries or accessing taxis (this would be of particular concern for elderly and disabled residents); providing alternative parking on side streets would not be an adequate solution for this impact. In addition, hotels and restaurants will not be able to receive food and beer deliveries. Disagrees with the conclusion made in the EIS that the restriction in residents' ability to access their properties would have a 'slightly negative impact'.

- Expresses concerns about the CSELR proposal's impact on garage accesses off Alison Road. Once the CSELR proposal is operational, some residents will need to reverse out into a live traffic lane on a blind corner due to the removal of the existing parking lane (which currently provides a protection from oncoming traffic).
- Notes that, if the existing operational arrangements of Jamison, Grosvenor and Lang streets are modified in any way, then heavy vehicle access to the forecourt for deliveries, essential services or future forecourt development activities, may be restricted with subsequent detrimental consequences for this building.
- Question about the provisions made for passengers accessing E.S. Marks field.
- Concerned about driveway access at 242 Devonshire Street. Currently, to access the driveway a vehicle must reverse into the garage. It would not be possible to enter the driveway and garage from the left hand side of Devonshire Street (i.e. the proposed new traffic lane) due to the narrowness of the garage and footpath. If there was the possibility of entering the driveway by not reversing (i.e. enter by turning left from Devonshire Street), then to exit the vehicle must be reversed out. This would be unsafe as the vehicle would be exiting blind directly into light rail, traffic and pedestrians. There is also some concern regarding the turning circle when entering or exiting the property. It is unclear if there is to be some barrier outside 242 Devonshire Street due to the light rail stop proposed at Ward Park.
- Traffic impact studies do not outline how residents on one-way streets (including Goodlet, Riley and High Holborn) are to enter and exit the area, particularly if heading to the city.
- Requests that design of Rawson Place interchange take into consideration that Rawson Place is the most feasible location for a crane to be located to service 2–24 Rawson Place.
- Restrictions on property access will result in increased travel distances for some service vehicles affected by right turn bans. Access restrictions should be subject to consultation with affected parties with case-by-case consideration of each affected property being undertaken during detailed design.
- NIDA will become significantly more isolated by the CSELR proposal. While the proposed UNSW Anzac Parade stop would generally improve public transport access to the area, there would be physical and psychological barriers which would affect access to NIDA.
- The proposed operating hours of the CSELR would reduce the window of time available to service the State Theatre by two hours. The design and location of the QVB stop should allow a small rigid truck to reverse out of the existing George Street loading dock. Twenty-four hour access to State Theatre loading docks in both George and Market streets must be maintained. Request that the CSELR design allows for semi-trailers to travel to/from the State Theatre loading dock. Also requests that semi-trailers are able to park in a suitable location for loading/unloading to/from the existing George Street loading dock (equivalent to existing arrangements).
- Recommends a range of traffic measures to ameliorate negative impacts of the CSELR proposal on Grosvenor Place, including: reallocating existing car parking spaces between Harrington and George streets to create a designated taxi zone; removing all bus activity on Harrington Street to reduce current congestion; review of the signal timings at the intersection of Essex Street with Harrington Street with a view to increasing left turn capacity; and various other road configuration changes to improve access to/from Grosvenor Place and reduce existing blocking effects caused by traffic.



- Recommends a range of traffic measures to ameliorate negative impacts of the CSELR proposal on 400 George Street, including: a review of signal timings at the intersection of King Street with Pitt Street and King Street with Castlereagh Street; the relocation of loading zones that currently exist on George Street to King Street; the establishment of a taxi drop off/pick up cutaway on King Street near the pedestrianised section of Pitt Street.
- Recommends a range of traffic measures to ameliorate negative impacts of the CSELR proposal on 55 Market Street, including: creation of a taxi drop off/pick up zone on to Pitt Street, south of Market Street where there is already cut away parking; and the replacement of the existing 15 minute charter bus drop off zone on Market Street with a 24-hour clear zone (along with the entire street frontage to 55 Market Street).
- Services provided by Surry Hills Community Transport to residents of Northcott Estate must be maintained. Transport for NSW should work with Housing NSW, South East Sydney Community Transport and tenants to ensure mobility impaired tenants are able to access community transport services during construction and operation of the CSELR proposal.
- Requests that any bus and taxi stands removed from the QVB are relocated to a suitable alternative location adjacent to (and with easy access to/from) the QVB.
- Concerned about impacts of the George Street closure to travel routes and access to QVB car park. The existing York Street and Druitt Street intersection already causes extensive delay. Concerned that existing extensive delays will be exacerbated. Requests that functionality of the intersection of York Street and Druitt Street be addressed, and not exacerbated by the closure of George Street and redirection of vehicles down Druitt Street. Concerned that vehicles currently using George Street will be re-routed further east into an already at capacity section of Market Street. Notes a need to ensure users of the QVB car park are not adversely affected by re-routing or having less favourable traffic signal phasing at the intersection of Market Street and George Street.
- Changes to vehicle access to George Street will reduce the ease and attractiveness for vehicular access to 420 George Street and MidCity Centre. There should be no adverse impact in respect of the largest vehicles that can currently access the delivery dock and car parking at 420 George Street and MidCity Centre during construction and operation or any future access requirements. Current access arrangements for 420 George Street and MidCity Centre should be maintained. Request for access arrangements and impacts to 420 George Street be confirmed in the preferred project report. Also requests that the 2013 traffic figures are considered during detailed design of the CSELR and ensure arrangements are made that are safe and efficient for vehicles to continue to access the site.
- Concerned about the CSELR proposal's potential long-term impacts to car parking and loading dock facilities for the completed building (200 George Street), which have been designed to be accessed via Underwood Street. Given that Alfred Street, between George and Pitt Streets, is proposed to be pedestrian and light rail only, this will cause difficulty in accessing Pitt Street/Underwood Street from George Street. In these circumstances and unless the proposed treatment on Alfred Street is altered, vehicular access to 200 George Street (and neighbouring properties) can only be achieved if two way movements of vehicular traffic is allowed along Pitt Street, north of Bridge Street.

## Submission number(s)

1, 43, 51, 62, 70, 82, 96, 98, 130, 139, 167, 168, 170, 171, 172, 173, 175, 176, 179, 181, 187, 188, 189, 191, 192, 193, 194, 295, 200, 218, 242, 271, 238, 242, 271, 276, 293, 295, 300, 302, 317, 323, 324, 325, 334, 351, 381, 396, 416, 418, 427, 437, 447, 449

## Response

### *General impacts to property access*

As outlined in Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS, the proposed changes to the existing road network, traffic and access operating arrangements are required to accommodate the introduction of light rail and have been developed with an overarching objective to maximise transport system performance and deliver the best outcome for the community as a whole.

The development of the proposed traffic and transport network changes were guided by the Traffic and Transport Management Framework, which seeks to ensure that, wherever possible, negative impacts are either avoided or mitigated. In cases where this is not possible, alternative arrangements have been developed to ensure that the community would continue to have appropriate access to the transport system.

The introduction of light rail would impact access to private and commercial vehicle driveways along the corridor. Turning movements across the alignment represent a safety hazard and need to be undertaken in controlled locations. To minimise risks to safety, vehicles entering or leaving private driveways would be restricted to left in/out where it is inefficient to provide controls. The number of controlled crossings have been balanced to maintain access but to also minimise the potential to impact light rail operations.

Transport for NSW is committed to ensure access is maintained to all private and commercial vehicle driveways along the corridor. In order to manage any potential negative impacts effectively, the following measures are proposed for the treatment of private and commercial vehicle driveways within the light rail corridor:

- General traffic access to the pedestrianised section of George Street between Bathurst Street and Hunter Street would be under restrictions to be developed as part of the SCCAS. No Entry controls would be put in place with appropriate exceptions for residents, light commercial deliveries, emergency vehicles and taxis.
- Introduction of restricted operating hours for heavy vehicles to the existing accesses within the pedestrianised section of George Street between Bathurst Street and Hunter Street. Heavy vehicles would be subject to time restrictions between 11–2.00 pm to minimise risk to lunch time crowds, while further restrictions may be appropriate in the light rail peak operation periods.
- Maintain taxi access to key hotels and other areas within the light rail corridor.
- Limit driveway accesses to left in/left out arrangements.
- Access for emergency vehicles would be maintained at all times. Emergency vehicle access is required to all building frontages along George Street. In the event of fire, access for snorkel appliances for building evacuation and/or firefighting would require the ability to position the vehicles at the frontage.



These controls and measures would result in some increased travel distances for service vehicles as their approach routes would be affected by the right turn bans. However, all accesses onto the corridor would be maintained.

#### *Property access plans*

Local access plans for individual properties/accesses are being developed by Transport for NSW and would be subject to further consultation between the affected parties, Transport for NSW and the appropriate local authority (City of Sydney or Randwick City Council). Through liaison with businesses and landowners, the access plans would establish existing servicing and delivery requirements, access periods or alternative arrangements for businesses and landowners affected by the proposal. These access plans would also identify alternative routes, specific activities or land uses (such as schools, medical centres etc.) within each precinct and would identify strategies to maintain emergency access throughout each precinct at all times.

#### *QVB car park access and egress*

Transport for NSW and RMS are working together to identify appropriate upgrade measures to address the effects of the potential changed traffic patterns in the CBD (including those changes proposed on Market Street, Druiitt Street and York Street). These would be developed around the *Sydney City Centre Access Strategy (SCCAS)* which identifies Market Street as a priority traffic route (refer to Figure 5-44 of Technical Paper 1 in Volume 2 of the EIS). This work is ongoing and includes additional modelling assessment at the strategic and operational levels to refine the optimal solution. This work would be completed prior to construction of the CSELR proposal.

A Network Management Plan (NMP) would be developed by RMS. The NMP has the high level objective of maintaining network journey times and congestion levels at acceptable levels. This would be developed in consultation with stakeholders. Further details about the NMP are provided in section 5.5.3 Technical Paper 1 in Volume 2 of the EIS.

Light rail and pedestrian priority at traffic signals would be balanced against traffic demands and maintaining acceptable performance of the CBD road network. Due to the removal of competing north-south traffic movements in George Street, additional green time would be available to east-west traffic movements at the intersections with George Street. This would offset impacts of light rail and pedestrian priority improvements. The pedestrian priority improvements are necessary to provide enhanced levels of service for this mode which represents the majority of movements through CBD intersections, as outlined in section 2.5.4 and Figures 2-13 to 2-17 of Technical Paper 1, in Volume 2 of the EIS.

Bus turning movements would be reduced at the Park Street intersection as a result of the redesign of the Sydney bus network, which would be implemented prior to construction of the CSELR proposal. This would help simplify bus movements at the York Street/Druitt Street intersection and allow potential for improved operating efficiencies at this intersection. The objective of the bus network redesign is to reduce bus congestion on corridors such as York Street, thus reducing conflict with the QVB car park exit.

#### *Access into Jamison Street*

No changes to existing access arrangements are proposed for Jamison Street (from George Street) as part of the CSELR proposal.

#### *Access for 790 on George Street Backpackers*

Transport for NSW is preparing the SCCAS in partnership with the City of Sydney and RMS which also encompasses kerbside access and management. Transport for NSW is currently working with stakeholders and the SCCAS team to identify the most suitable location for a short-term loading, pick up and drop off for backpacker accommodation on the block bounded by Pitt Street, George Street and Rawson Place.

#### *Crane access at Rawson Place*

There may be opportunities for temporary loading and heavy vehicle access to occur outside of normal CSELR operating hours. Such access requirements would be further investigated during detailed design.

#### *Access to St Peter's Church*

Vehicle access to St. Peter's Church would be maintained as part of the CSELR proposal through the provision of offset parking to compensate for the loss of the existing parking provisions. The design of this offset parking (which may impact on the Church's land) would be undertaken in consultation with the landowner during detailed design, having regard to the heritage significance of St Peter's Church.

#### *Access to Northcott Estate*

Access to Northcott Estate would not be affected by the CSELR proposal; current access arrangements to this property via Belvoir Street would be maintained.

#### *Access to E.S. Marks Field*

Access to E.S. Marks Field would be from Dacey Avenue, which would be unaffected by the CSELR proposal.

#### *Access to garages off Alison Road*

The issue raised regarding safe vehicle access to/from garages off Alison Road would be further investigated during detailed design and would be subject to a road safety audit.

#### *Access to Randwick TAFE*

In the vicinity of Randwick College (i.e. at King Street), travel volumes are expected to increase in the order of 100 vehicles per hour for the morning peak and 50 vehicles per hour in the afternoon peak. The traffic volumes for the year 2021 with the CSELR are expected to remain below the road's capacity.

#### *Access to Centennial Park*

Access to Centennial Park at Anzac Parade via Robertson Road would require traffic signal modifications which would also result in minor delay increases. The intersection operation is expected to remain at an acceptable level of performance.



### *Access to NIDA*

As outlined in section 6.13.2 of this Submissions Report, the location of the proposed UNSW Anzac Parade stop has been revised since the exhibition of the EIS. This stop would now be located in the centre of Anzac Parade, just north of the University Mall crossing (rather than on the eastern side of Anzac Parade, as originally proposed in the EIS).

A central island pedestrian walkway would be provided between the stop platform and the existing pedestrian crossing of Anzac Parade at the University Mall, providing an access point for passengers boarding the light rail platform from either side of Anzac Parade, at the southern end of the stop. A potential mid-block pedestrian crossing at the northern end of the stop may potentially be able to be accommodated. The provision of this crossing would be subject to consultation with RMS during detailed design.

## 5.8.9 Construction impacts to property access

### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to impacts to property accesses during the construction of the CSELR proposal. These issues are listed below:

- General concern raised about the impact that the CSELR proposal would have on access to private property. Access must be maintained to properties at all times. Many office and retail buildings within the pedestrian zone will face potential disruptions during construction of the CSELR proposal. Care must be taken to ensure businesses along the route can operate throughout the construction period. Construction should be staged so businesses are able to maintain access ways for customers and deliveries throughout the construction period and compensation should be paid for any periods where a business is unable to keep up this minimum requirement. Ongoing consultation is required regarding construction impacts on loading/delivery access. Request that proposed pedestrian/bus/vehicle diversions are adequately communicated to small businesses as soon as possible.
- Sydney TAFE requests the EIS takes into account potential construction traffic impacts and accessibility to Randwick College.
- Requests that road access out the front of the medical surgeries on Belmore Road is maintained at all times during construction.
- Requests for ongoing access to the construction zone layback located over a portion of the George Street footpath, directly alongside 190–200 George Street (private construction project scheduled for completion in 2016). Access to be provided via two southbound lanes of George Street.
- Lend Lease will likely require the establishment of a full length (174 to 182 George Street) construction zone on George Street from as early as October 2015. The inability to establish a construction zone at the appropriate time will undermine the feasibility of Lend Lease's project to a significant extent. Heavily loaded semi-trailers will need to access/egress the refurbishment/redevelopment construction site. In addition, changes to vehicle access to George Street and the redirection of pedestrians during construction will reduce the perceived ease of access and attractiveness for visitors/clients.

For these reasons, Lend Lease is keen to ensure that ongoing easy access/egress to the premises is maintained, and that convenient access to public transport hubs is maintained throughout the construction phase.

- Notes cranes and heavy vehicles will need access in order to complete demolition/ construction of buildings located adjacent to CSELR. For example, air conditioning chillers are scheduled to be replaced in 2-24 Rawson Place in April 2014, November 2014 and April 2015, subject to approvals from City of Sydney and RMS. A crane will be required for these works. Requests advice regarding impact of CSELR on accessibility requirements.
- The EIS does not sufficiently anticipate the extent to which access to 200 George Street (currently under construction) will be disrupted. A construction zone on George Street has been approved until 2015 for the construction of 200 George Street. It is recommended that the construction zone is extended until mid-2016.
- Understands that the CSELR proposal will result in restrictions to be put in place in relation to the frequency and ease of access to Blue Anchor Lane during construction. This is a concern as ongoing access will be required to and from George Street for the purpose of servicing 182 George Street and 174-176A George Street and the loading zone.
- It is vital that access and egress for Blue Anchor Lane is retained at current levels to tenant parking and service vehicle parking and loading areas, both during construction and operational phases of the CSELR. Access is to be maintained for the full range of service vehicles that will need to service properties with access from Blue Anchor Lane (notwithstanding the narrowed carriageway proposed in George Street).
- The closure of the Anzac Parade/Lang Road intersection during construction of the CSELR will have significant impacts on the Playbill, Entertainment Quarter and Fox Studios. Request that vehicular access to the Entertainment Quarter, Fox Studios, Hordern Pavilion, Royal Hall of Industries and Driver Avenue is maintained at all times during construction. Request for ongoing discussion and cooperation between the construction company and precinct occupants.
- Requests that traffic control and management during construction does not adversely impact pedestrian and vehicle access to the QVB and QVB car park.
- Works near 476-478 George Street should commence after October 2015 when the building is completed. Alternatively, Transport for NSW should confirm that construction vehicle access to the site will remain in place until the building and retail fit-out is completed.
- Current construction projects on George Street require daily access to deliveries from George Street. Developers require information and impacts on construction activities. Note the City of Sydney often conditions Development Applications to constrain hours in which sites can be accessed. However, the intersection of requirements between light rail construction and other developments may require flexibility in accessing sites.
- Do not limit opportunities for construction access to 420 George Street and MidCity Centre as there may be an ongoing need for repairs and upgrades to the buildings. The design of light rail should also accommodate the potential for construction access and erection of hoardings.

#### Submission number(s)

1, 83, 125, 139, 206, 207, 208, 209, 276, 279, 280, 293, 300, 302, 330, 334, 335, 336, 337, 433, 449, 460





## Response

### *General impacts to property access*

During construction, property access would be maintained where ever possible to minimise the impact to local residents and businesses. From time to time, diversions and management measures would be required and the contractor would work closely with affected property owners/operators and tenants to minimise disruption.

Specific details of the above impacts and controls for individual properties cannot be provided at this stage of the CSELR proposal. As discussed in section 5.8.7 of this Submissions Report, once a contractor is appointed and details of the required individual construction stages and intersection closures are identified, details of temporary traffic management changes would be provided in the site specific CTMPs and TCPs to be prepared by the contractor (refer to section 1.2 of Technical Paper 2 in Volume 2 of the EIS for details of the process to be followed in later stages of the CSELR proposal). Consultation with properties within the construction area would be a requirement of the contractor in seeking approval for CTMPs and TCPs.

These plans would also be reviewed through the Traffic and Transport Liaison Group (TTLG) which would have representation from major stakeholders with the relevant roads authority providing final approval (refer to Section 2.8.2 of Technical Paper 2 in Volume 2 of the EIS).

Similarly, specific construction site accesses along the route have not been considered on an individual basis. Once the CSELR contractor has been appointed, detailed design and construction staging would be developed. Consultation with property owners within the construction area would be a requirement of the contractor in seeking approval for CTMPs and TCPs including adjacent access requirements for construction sites. These would also be reviewed through the Traffic and Transport Liaison Group (TTLG).

### *Access across the construction zone within the CBD and interaction with other construction sites*

All properties that have active driveways directly accessed off the proposed CSELR corridor would retain this access during construction through the provision of access only lanes in sections of George Street. Additional controls would be needed at a limited number of locations that would require agreement with the property owners. These include:

- scheduling of deliveries for early morning/late night for short periods when the active work zone is directly outside the property
- restriction of access to smaller trucks (this may depend on access to remote warehousing or centralised dispatch centre where large loads can be broken down)
- use of road bridges/plates over the worksite to provide crossings
- east-west cross streets in the CBD to remain open to traffic except for planned closures at weekends
- Westfield requires access to the George Street (Myer) loading dock to be maintained throughout construction, without limitation or restriction of operating hours. Standard delivery hours are currently 6am to 6pm Monday to Friday but the dock is accessible 24 hours a day.

As outlined in section 12.3.4 of the EIS (Volume 2B), the coordination of construction activity at redevelopment sites without access to alternate street frontages to George Street (e.g. 383 George Street) would be agreed with the building owners and contractors prior to the start of work. It may be feasible to target light rail track works over the Christmas New Year period, when contractors may not be on-site.

#### *Access to Blue Anchor Lane*

As outlined in section 4.2.6 of Technical Paper 2 in Volume 2 of the EIS, access to Blue Anchor Lane would be maintained. A road plate would be required across the construction zone to access the north-bound travel lane to the west of George Street.

The proposed changes to the local road network and associated local access arrangements within the City Centre Precinct are shown in Appendix C of Technical Paper 2 in Volume 2 of the EIS. These plans detail how access could be maintained for those properties with existing access to car parking or service vehicle loading docks adjacent to the proposed CSELR alignment. Consultation with property owners would be undertaken to fully understand servicing requirements; however, measures would need to include:

- provision of an access corridor and sufficient manoeuvring space for vehicles turning into driveways (where these would not conflict with current worksite activity)
- scheduling deliveries outside work hours
- managing access through the worksite by traffic controllers. To maintain this access, open access lanes or controlled access lanes would be provided on George Street. When determining required lane widths, consideration would need to be given to the potentially constrained environment due to barriers or pedestrian fencing on both sides and the geometry required for vehicles to access each driveway. As a minimum, these lanes are to be in accordance with the Roads and Maritime Services manual *Traffic Control at Worksite Manual Version 4.0*.

#### *Impact to the Anzac Parade/Lang Road intersection*

As outlined in section 14.3.3 of the EIS (Volume 1B), construction works across Lang Road would be undertaken over approximately two weeks of night-time works, with construction activities scheduled to avoid periods when major events are scheduled within Moore Park. Vehicular access to the Entertainment Quarter, Fox Studios, Hordern Pavilion, Royal Hall of Industries and Driver Avenue would be maintained during the closure of the Anzac Parade/Lang Road intersection via the alternate access point of Driver Avenue and Moore Park Road, as shown in Figure 14.4 of the EIS (Volume 1B).

Westbound traffic along Lang Road would be diverted towards Moore Park Road, where traffic can turn to Anzac Parade for southern destinations or proceed towards South Dowling Street to access Cleveland Street. Eastbound traffic from Cleveland Street would need to access Anzac Parade northbound and turn into Moore Park Road to access Driver Avenue and Lang Road.

The proposed diversions would not affect vehicle access to developments within Moore Park. In particular, if events are scheduled within the Parklands Sports Centre, located to the south of Lang Road, traffic controllers would manage the interaction between visitors and construction vehicles.



### 5.8.10 Vehicle access within the George Street pedestrian zone

#### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to the vehicle access arrangements proposed within the George Street pedestrian zone. These issues are listed below:

- The proposed George Street pedestrian zone will have a negative impact on CBD residents due to the loss of access to their off-street parking spaces. Concern raised that residents living on George Street already have difficulty entering/exiting their underground car parks due to the special events (which require the closure of George Street) and large volumes of pedestrian traffic on intervening footpaths. The ability to access off-street parking on George Street will be further reduced both during construction (due to conflicting construction works) and following the introduction of the CSELR (due to the proposed widening of footpaths). Appropriate measures must be in place to ensure that vehicle access to George Street residential properties is maintained at all times.
- Requests clarification about whether access to the Tower Apartment's basement car park (located on Market Street) will be maintained for residents following the pedestrianisation of George Street. This property access is shared with Myer and the Swissôtel. If access is not proposed to be retained, will alternative centralised parking provisions be provided for affected residents?
- The CSELR proposal will create more pedestrian traffic and changes will be needed to manage pedestrian and vehicle interface. Requests that Transport for NSW make provision for and fund any required changes. Make provisions to restrict unauthorised vehicles from entering this area. Requests that accesses to private driveways off George Street are provided with appropriate automatically operated gates etc. to enable safe entry and exit without risk of collision with pedestrians, or delays to vehicles entering/leaving the driveway.
- A single dedicated traffic lane should be provided between Hunter and Bathurst streets, with appropriate access restrictions in place for residents, freight delivery, refuse collection, emergency vehicles and taxis.
- Concern raised regarding the absence of a defined/dedicated vehicle access laneway between King and Market streets. A dedicated laneway should be retained along this section of George Street for residents (permit controlled), delivery/service vehicles, and emergency vehicles. Such a provision would blend in with the pedestrian zone and have no impact on the CSELR proposal.
- Taxis should be allowed to operate within the proposed George Street pedestrian zone. Access for taxis within this zone should generally be limited to between 10.00 pm and 6.00 am; however, taxis carrying disabled persons and/or accessing the Hilton Hotel should be permitted to enter the pedestrian zone at all times. The ability to restrict taxi access within the George Street pedestrian zone is unrealistic as taxi customers will not understand why they cannot be dropped off close to their destination; such misunderstandings will place taxi drivers at risk.

- Concern raised regarding the impact that the proposed George Street pedestrian zone would have on businesses requiring deliveries from vehicles (for example at Rawson Place). A number of businesses (such as Myer and Dymocks) and offices located between Market and King streets require two traffic lanes in order to access driveways without causing traffic congestion. It must be ensured that deliveries can be made to businesses and offices located in the proposed pedestrian zone. Further consultation is to be undertaken with all business owners affected by the proposed George Street pedestrian zone to develop a consensus as to whether freight deliveries could be restricted to within certain hours. Vehicular and pedestrian access to a number of commercial buildings needs to be managed, in consultation with the affected building owners/managers.
- Notes that with capacity limitations along George Street, there will be a high demand for through traffic infiltration along King Street and Market Street as bypass routes. The SCCAS has identified King Street and Market Street are to be subject to future pedestrian access improvements. These measures have not yet been identified, however any measures proposed need to be investigated and implemented to preserve the amenity of this route by discouraging through traffic infiltration. This could include turn restrictions, traffic calming measures, pedestrianisation measures and revised signal timings. Consideration should be given to the major retail zones and arcade access when any future changes are made to pedestrian movements and amenity of King Street.
- Requests that detailed access plans are provided for the 450 George Street loading dock.
- Clarification requested regarding how many special access permits residents will receive to allow them to access the proposed George Street pedestrian zone. The provision of up to two permits per apartment would not be sufficient as it would not allow visitors to access the Tower Apartments.
- Slow moving private vehicles, taxis and hire cars should be retained throughout the length of George Street to provide convenience and the safety that passing vehicles provide at night. Absence of vehicles, especially at night, deprives an area of natural surveillance.
- The EIS indicates the controlled access lane will be limited to 8.8 metre long vehicles. The EIS does not indicate when the access strategy will be prepared or what alternative dispute resolution framework will exist if landowners are not provided with satisfactory outcomes. The building currently has unrestricted access for loading/unloading and Dymocks expects the same arrangements during and after construction.
- Requests that further investigation is undertaken to determine the CSELR proposal's impact on taxi and coach operations.
- The EIS is ambiguous about how access impacts within the George Street pedestrian zone will be mitigated, particularly in respect of the State Theatre loading dock. Coordination will be required during construction of the QVB stop to maintain access to the State Theatre loading dock. Additional pedestrian traffic in the George/Market Street area will also require management.



- Concerned about access for delivery trucks in the pedestrian zone. The CSELR proposal must be designed to allow businesses to continue to operate once construction has been completed. Roads, particularly the pedestrianised section of George Street, must be designed so that businesses can access deliveries without compromising pedestrian safety or amenity of this section of the route. If heavy vehicles cannot access George Street for peak periods, work with the City of Sydney to arrange flexibility on the conditions of consent which constrain access hours. Consider funding the construction of new delivery access routes if it is not possible for delivery vehicles to co-exist with the new streetscapes.
- Opposes proposals that would allow some through traffic such as taxis and hire cars in the pedestrian area, noting safety risks. Possibility for taxis to access the area at times when light rail is not operating, subject to safety.

### Submission number(s)

39, 40, 44, 88, 120, 186, 242, 266, 269, 279, 280, 293, 301, 302, 324, 325, 330, 334, 347, 415, 436, 449, 452

### Response

#### *Access to private property, parking and loading zones within the pedestrian zone*

As discussed in section 12.3.2 of the EIS (Volume 1B), a pedestrian and vehicle shared zone is proposed on George Street, between Bathurst and Hunter streets and adjacent to the proposed CSELR corridor. This shared zone would allow local access, service delivery and emergency vehicles to use an area of the pedestrian zone to travel down the side of the CSELR corridor to access driveways and loading areas, where vehicles would be able to park to service properties on either side of George Street.

All existing property accesses along George Street would be maintained; however, certain restrictions are likely to apply. These would be developed and implemented by City of Sydney and could include:

- access restrictions implemented by the City of Sydney to provide for appropriate safety and amenity for pedestrians, which would be determined by City of Sydney, in consultation with Transport for NSW
- limitations on driveway access along the proposed CSELR corridor to left-in left-out only, where feasible.

The above access restrictions would result in increased travel distances for some service vehicles as their approach routes would be affected by the right turn bans. Any access restrictions required for the CSELR proposal would be subject to further consultation between the affected parties, Transport for NSW and City of Sydney. A case by case consideration of each affected property access would be undertaken during detailed design (in consultation with the affected parties) to determine the access restrictions required along the proposed CSELR route.

### *Interface between pedestrians and vehicles*

Vehicles entering or leaving private driveways have the potential to affect light rail operations and represent a safety hazard when undertaking turning movements across the CSELR alignment. Measures that Transport for NSW proposes to manage these impacts are outlined in section 12.3.4 of the EIS (Volume 1B).

Where the shared zone is adjacent to building entrances and street furniture, the urban design would guide vehicles away from pedestrian conflict points to maintain safe sight distances.

At signalised intersections and stop lines, vehicle queuing and turning movements would be controlled. Signposting and traffic restrictions would be determined by City of Sydney and could be flexible depending on policy. Taxis and hire cars exiting the Hilton Hotel would be permitted to turn left into the Park Street bus lanes, whilst general traffic would proceed southbound to Bathurst Street. Vehicles may be discouraged from travelling further than one block by signposting.

Vehicle restrictions would ensure only local access, service delivery and emergency vehicles are permitted within the shared zone. The detailed streetscape design of George Street would include defined areas for pedestrians and LRVs through visual cues, such as changing pavement types. This would be important to provide a safe environment for all road users.

Signalised pedestrian crossing facilities would be provided on all arms of existing signalised intersections to provide controlled crossing points of the CSELR alignment. This would provide protection and improved amenity and accessibility for visually, hearing or mobility impaired pedestrians.

### *Access for taxis and coaches*

The SCCAS proposes a grid of taxi ranks/zones throughout the CBD at a maximum spacing of 150 metres. This strategy relocates or establishes taxi ranks on all cross streets approaching George Street. Safe places to drop off passengers are being considered in the pedestrian zone design. No stopping would be allowed on the light rail tracks.

Transport for NSW has engaged the Taxi Council and is currently finalising access arrangements to the pedestrian zone. Coach stopping zones would be provided on cross-streets and parallel streets.

## 5.8.11 Operational parking and loading impacts

### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to impacts on kerbside parking and loading during the operation of the CSELR proposal, as listed below (Note: access to parking/loading within the George Street pedestrian zone is addressed in section 5.8.10 of this Submissions Report):

- General concerns or objections raised regarding the proposed loss of on-street parking along the CSELR route (particularly along Anzac Parade, Alison Road, Wansey Road, High Street, Devonshire Street and in the area of the proposed Kingsford stop). The loss of so many parking spaces would put pressure on parking supply in the local area, which is already unable to meet demand. Residents and businesses that do not have off-street parking (and thus, rely on existing on-street parking) will be negatively impacted.



The CSELR proposal would have a significant impact on commercial activity along Anzac Parade and High Street as a result of the loss of parking for businesses and customers. The loss of parking spaces would also affect frequent travellers to the affected areas (particularly those residents who have a disability and are unable to walk very far).

- General concerns raised regarding the ability to replace on-street parking that would be removed to accommodate the CSELR proposal. There is not enough space in the surrounding area to completely absorb the number of displaced parking spaces. The provision of additional angle parking on side streets to Anzac Parade will only partly compensate for the loss of parking along Anzac Parade. Expanding the use of pay-parking will not mitigate parking impacts, as existing metered parking does not encourage turnover nor discourage commuting. Requests clarification about what provisions will be made for residents and businesses located along the CSELR route and where funding for alternative parking arrangements will be sourced. New parking spaces should be provided close to affected areas. Concern that inconsistencies may exist in the quality and extent of parking strategies developed across local government boundaries. A review of existing street parking should be undertaken, with the view to better utilising the remaining parking spaces. Plans for resolving parking space loss should be prepared prior to planning approval.
- The proposed loss of parking on Anzac Parade and High Street will have a negative impact on people requiring access to specialist medical appointments in various health precincts. Patients currently use the limited number of on-street parking spaces, as well as parking provided within nearby shopping centres. There is already a shortage of parking around the hospitals; the CSELR proposal will further reduce the supply of on-street parking in the vicinity of the hospitals. Requests clarification about what provisions will be made for hospital visitors.
- Concerned that the EIS did not mention the removal of disability parking. Requests clarification about how less mobile people (such as the elderly and people with a disability) will be able to easily access their properties once parking is removed from outside their homes. Concerned that loss of kerbside parking will result in no capacity for disabled passengers to alight or be picked up in the roadway.
- The near total loss of all parking would be a negative outcome for businesses, local residents and visitors to Randwick, Kensington and Kingsford. The affected spaces are currently in high demand during the week day, weekends and night-time trading hours. Seeking solutions in neighbouring streets is not reasonable, and is unlikely to provide sufficient relief to the loss or offer an alternative required to support a town centre.
- UNSW should be required to provide sufficient off-street parking for its staff and students before the CSELR is developed to reduce the proposal's parking impacts.
- Concerned that residents will be unable to find parking in nearby areas, if permit zones are extended, because these areas are also functioning at or near capacity.
- The loss of amenity, access and convenience that street parking offers is not adequately addressed in the EIS. Concerned that forcing residents to find parking further away from their homes, as a result of loss of parking spaces. This will create safety issues for the community due to an increased risk of assaults. Residents will also be inconvenienced by not being able to unload their shopping from their cars.
- An alternative CSELR alignment should be investigated and developed to reduce the number of parking spaces that would need to be removed from various locations along the alignment.

- Strong support for managing parking capacity with strategies that assist local businesses such as extending parking permit schemes. Request to adopt parking strategies that accommodate the needs of small businesses and give them and their customers a range of free/low cost options. Generally supportive of a demand management solution to satisfy parking pressure rather than a supply management approach. A parking strategy should be implemented to encourage a higher turnover of all remaining short-term parking.
- The EIS gives little attention to reducing parking demand or achieving Travel Demand Management. Practical strategies include priority for disability parking, car shares vehicles and taxi zones.

#### Submission number(s)

18, 34, 43, 54, 56, 59, 63, 64, 70, 72, 75, 77, 78, 81, 90, 94, 95, 96, 98, 100, 105, 126, 130, 134, 138, 141, 147, 149, 151, 155, 160, 161, 167, 168, 169, 170, 171, 172, 173, 174, 176, 179, 181, 187, 188, 189, 191, 192, 193, 194, 200, 204, 205, 206, 207, 208, 209, 210, 213, 214, 217, 218, 219, 222, 225, 228, 231, 236, 238, 239, 242, 243, 245, 255, 260, 262, 267, 271, 272, 274, 279, 282, 283, 284, 291, 293, 294, 299, 302, 303, 306, 310, 312, 316, 317, 322, 323, 326, 328, 329, 342, 349, 351, 354, 355, 357, 359, 361, 362, 364, 367, 374, 377, 379, 380, 381, 389, 391, 396, 398, 405, 407, 409, 410, 413, 416, 417, 418, 421, 422, 423, 425, 427, 428, 429, 433, 437, 439, 443, 446, 447, 449, 452, 475, 476, 478, 479, 481, 482, 483

#### Response

##### *Loss of parking and associated impacts on the community*

Due to the nature of the proposal, current kerbside uses would be affected by the requirement to re-allocate road space for traffic lanes or the CSELR alignment.

As discussed in section 6.4 of Technical Paper 1 (*Transport Operations Report*) in Volume 2 of the EIS, due to road width constraints within the CSELR corridor, there is limited ability to replace lost parking with additional parking within the corridor.

As discussed in Technical Paper 1, parking occupancy surveys conducted in the Surry Hills Precinct and Kensington sub-precinct identified sufficient latent (i.e. unused) capacity to continue to meet the demand for kerbside uses following construction of the CSELR. However, within the Randwick Precinct, there would be the potential for parking demand to outstrip supply. Similarly, parking utilisation within the Kingsford sub-precinct would be close to effective capacity, allowing for inefficiency in demand and supply.

The EIS concluded that the loss of parking spaces was likely to have the greatest impact to businesses that rely on customer access along with uses that have less mobile customers and clients.

##### *Replacement/mitigation of lost parking*

Through the assessment of parking supply and demand, the EIS demonstrated that there are opportunities to balance the demands for parking and loading on the CSELR corridor (what would be impacted by the implementation of the CSELR proposal) with the available kerbside capacity within the assessed precincts. It is important to consider how best to manage the available kerbside capacity, especially in locations where demand matches supply.





Mitigation measures identified to ensure the design of the CSELR proposal is balanced with corridor movements and need for parking/access to land uses for stakeholders along the corridor include:

- *Replacing 100 per cent of special kerbside uses impacted:* All impacted special kerbside uses (e.g. disabled parking and loading zones) along the CSELR corridor are to be replaced on a 'like for like' basis within the local vicinity of existing provision. The detailed implementation of this replacement is being worked through with the two local councils, City of Sydney and Randwick City Council.
- *Local area parking management:* Adjustments to local area parking controls are recommended in the EIS within each precinct to meet the needs of key users. Local area parking management in the precincts surrounding the CSELR should primarily provide:
  - ▶ for residents — local area residential parking schemes. To provide for residential parking, particularly during the pre-morning and post-afternoon peaks.
  - ▶ for businesses — short-term timed parking to encourage turnover, trade and increase capacity for customers.
- *Design of CSELR infrastructure:* Identifying opportunities to maximise the use of available road space for kerbside parking during periods of low traffic demands (for example, designing CSELR infrastructure so as to not preclude the opportunity for on-street parking to be accommodated within the kerbside lane of the road, where sufficient road space is present). The details of the operational management strategy are currently being investigated.

Transport for NSW would continue to work with the key stakeholders involved in the management and operation of the road network and management of kerbside activity to implement the mitigation measures outlined above. Key to this process would be further consultation and design to ensure appropriate and satisfactory measures which promote better utilisation and efficiency of use for kerbside space are implemented, while considering the access requirements of local residents, businesses, sporting, health and education uses and all other land uses along and in the vicinity of the corridors.

Section 7.1 of this Submissions Report outlines the proposed mitigation and relocation of special kerbside uses. Transport for NSW would work with City of Sydney and Randwick City Council to refine these measures. These councils would lead the development and implementation and management of general parking displaced by the CSELR and the relocated special uses.

Whilst assessment of parking supply indicates that sufficient parking is available to meet demand; it is acknowledged that residents may need to walk further to access on-street parking.

#### *Opportunities to adopt an alternative CSELR alignment to minimise parking impacts*

As discussed in section 6.4 of Technical Paper 1 in Volume 2 of the EIS, the retention of existing parking and loading supply has been accommodated where feasible on the CSELR corridor balanced with the primary objective stated above to deliver a high quality on-street mass public transit system for Sydney's CBD and inner suburbs which can reliably and efficiently move significant volumes of people.

The project planning and design development of the stages of the CSELR proposal have considered the most efficient way to utilise available road space to achieve the broader policy objectives as set out in NSW Government and local planning policies. This includes, for example, ensuring that the CSELR proposal is consistent with the *NSW Long Term Transport Master Plan* (NSW Government 2012a) as well as the supporting modal strategy *Sydney’s Light Rail Future* (NSW Government 2012b).

The aims of the *NSW Long Term Transport Master Plan* and the *Sydney’s Light Rail Future* are broadly designed to deliver customer benefits, which include:

- expanding the public transport network to address CBD congestion and provide reliable turn up and go services for city commuters
- integrating bus and light rail to create an integrated public transport solution to meet the travel demands of Sydney residents
- delivering an effective and efficient surface public transport network.

These policies and strategies have guided the development of the CSELR proposal from options identification through options assessment and design development to ensure efficient and effective use of public road space. These policy principles have therefore been adopted at a strategic level and at a local level through the design development process.

Further discussion on alternatives to the CSELR alignment is provided in section 5.4 of this Submissions Report.

*Specific operational parking and loading impacts*

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>City Centre Precinct</b>		
<p>Vehicle access from Goulburn Street will be affected when the intersection of George and Goulburn Streets is closed. Access will be maintained via a southbound access lane on George Street but there will be a level of inconvenience due to rerouting of service and delivery vehicles.</p> <p>George Street will become one lane southbound, eliminating the ability for taxis to stop outside World Square. Request to consider creating a taxi drop off zone along George Street as part of the area being claimed for footpath widening.</p> <p>If taxi drop off zone on George Street is not considered, consider one on Goulburn Street outside World Square.</p>	<p>Provision of a taxi rank or dedicated stop facility would not be possible on George Street in this location. No significant footpath widening is proposed in the vicinity of World Square. The George Street cross-section only has sufficient width for a single southbound traffic lane outside 680 George Street; hence any stopping vehicles would stop traffic flow and severely impact operations on George Street. Existing footpaths are already often congested and construction of any such facility within the existing footpath width would severely reduce pedestrian amenity and safety.</p> <p>A strategy would be developed (through further detailed design by Transport for NSW and key stakeholders) to determine levels of access required by taxis. The consideration and provision of alternative taxi ranks and drop off points on side streets adjacent to World Square would be undertaken as part of the SCCAS (NSW Government 2013a).</p>	225



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Changes to surrounding road layout will impact how accessible World Square is for taxi patrons as taxis will not be able to stop outside World Square.</p> <p>Request that the taxi rank on Liverpool Street is not removed or changed.</p>	<p>The CSELR proposal would not directly impact the taxi rank located on Liverpool Street between George and Pitt streets. However, as part of the SCCAS, a cycleway is proposed within Liverpool Street.</p> <p>The SCCAS provides overlay maps of the different modes of transport within Sydney's CBD. The SCCAS was exhibited in 2013 and can be accessed via <a href="http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0">http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0</a></p>	225
<p>Objects to the loss of the existing lay-by area in front of the Sydney Central YHA. The CSELR will impact the facility's ability to use the frontage to Rawson Place for drop-offs and pick-ups of guests, for deliveries and services to the Sydney Central YHA.</p> <p>Concerned that there are no viable alternative access points for Sydney Central YHA, with no sites offering the same convenience or proximity to the existing frontage to Rawson Place.</p> <p>Alternative access points suggested by Transport for NSW to date are not suitable as they clash with the locations of proposed bus stops or are too far from the Sydney Central YHA.</p> <p>On-street parking alternatives listed in Table 5-2 of the EIS are not considered feasible or appropriate.</p> <p>Seeks confirmation of proposals for alternative on-street parking locations/mitigation measures for access impacts prior to planning approval.</p>	<p>Section 5.4.1 of Technical Paper 1 in Volume 2 of the EIS provides detail on the functional changes proposed for Rawson Place, following the introduction of the CSELR proposal. Rawson Place would provide a key interchange for light rail and bus passengers. The proposed stop and interchange location would necessitate the closure of Rawson Place to general traffic. Further consideration of suitable loading areas in the vicinity of Rawson Place would be undertaken during detailed design.</p>	151
<p>It is unclear in the EIS how garbage trucks will service Sydney Central YHA (Rawson Place) if they are unable to turn around in Rawson Lane. Sydney Central YHA relies on Rawson Place to access its basement car park. Seeks clarification about whether larger vehicle access would be maintained on Rawson Place, or alternative access plans defined prior to planning approval.</p>	<p>Access to Rawson Lane would be provided from Pitt Street with property access retained. Larger vehicles may be required to reverse into the laneway from Pitt Street.</p>	151
<p>Detail needed on how reasonable access to businesses on Rawson Place will be maintained, for instance additional coach and taxi bays, way finding for Rawson Place businesses and decluttering of footpaths to facilitate movements of customers with luggage.</p>	<p>Kerbside arrangements for the precinct around the Rawson Place stop are being investigated with the City of Sydney as part of the SCCAS. There are several opportunities for passenger pick up/set down within close proximity of Rawson Place to provide continuity of access for Rawson Place businesses. Wayfinding and footpath amenities would be considered as part of detailed design.</p>	452

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned about the CSELR proposal's impact on the Sydney Coast Terminal in Eddy Avenue (currently leased from Transport for NSW). Main source of revenue is obtained from the rental of Coach Bays to companies departing Central Station.</p> <p>The provision of four bays in Eddy Avenue and four in Pitt Street (as part of the CSELR) will not provide enough bays for current coaches.</p> <p>Concerned about the loss of loading areas for all businesses located within Central Station. In addition, one of the coach bays is leased to NSW Police on a permanent basis for their vehicles.</p> <p>Concerned about the loss of space emergency vehicles at Central Station.</p>	<p>Section 4.2.3 of Technical Paper 1 in Volume 2 of the EIS outlines the current and estimated future demand of the Central Station coach terminal. The Coach Terminal Study undertaken by McCormick Rankin Cagney (2010) estimated a current operational requirement of seven bays without time restrictions, and six bays with time restrictions. This study also estimated that, to allow for future growth in the medium term, nine and eight bays without or with time restrictions would be required, respectively.</p> <p>With the CSELR proposal, there would be provision of eight bays for active passenger pick up, which meets the medium term requirement outlined in the McCormick Rankin Cagney (2010) report. Mitigation measures for bus layover in the precinct include the use of alternatives, including the Central Station western forecourt and Chalmers Street.</p>	303
<p>Requests that the vehicle service lane along the George Street pedestrian zone is designed to accommodate the size, weight and turning circles of the delivery vehicles. The design should also detail how delivery vehicles can safely operate and turn into the George Street (Myer) loading dock in the proximity of pedestrians and LRVs.</p>	<p>The detailed design of the layout of George Street would be subject to further refinement by the future Operator, in consultation with Transport for NSW, RMS and City of Sydney.</p>	342
<p>The EIS did not adequately consider the impacts that changes to the current operating environment of bus and coach services will have on customers.</p>	<p>As noted in the EIS (refer section 1.6 in Volume 1A), the CSELR proposal is integrated with, but does not include, various transport network modifications outside the CSELR corridor, which would instead be implemented as various projects under the broader NSW <i>Long Term Master Plan</i> and/or the SCCAS. These modifications include wider City Centre and South East bus network modifications, traffic network and intersection modifications, cycleways and other works.</p> <p>A Coach Terminal study undertaken by McCormick Rankin Cagney (2010) and commissioned by Transport for NSW was used to determine the current and future operational requirements for coaches at Central Station. The proposed design would be progressed further in consultation with BusNSW.</p>	483
<p>Any proposed changes to Eddy Avenue should be developed in consultation with the Bus and Coach industry.</p>	<p>Transport for NSW understands the importance of Central Station and Eddy Avenue to coach operators and the coach industry. The CSELR proposal would retain coach operations in Eddy Avenue and Pitt Street following construction. Transport for NSW would work with BusNSW (and its members who use this facility) during the detailed design phase of the CSELR proposal to finalise coach arrangements in this location.</p> <p>As outlined in section 6.5 of this Submissions Report, the proposed CSELR design around Central Station has been revised since the exhibition of the EIS. Refer to section 6.5 of this Submissions Report for discussion on the proposed changes to the CSELR at this location.</p>	483



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Requests that Transport for NSW explore the possibility of establishing shared zones that could be used as coach layover areas outside of restricted hours (for example, allowing coach layover to occur within mail zones, which are only utilised at certain parts of the day).</p>	<p>Kerbside access (including coach stops and layover areas) is being considered as a component of the SCCAS.</p>	483
<p>Recommends that Transport for NSW and City of Sydney consider the establishment of an additional layover area (similar to the King Street Wharf layover) for coaches on the eastern side of the city to avoid the need for coaches to travel across the city.</p> <p>An integrated mode plan, as well as a layover that caters for coach parking on the eastern side of the CBD will help alleviate congestion caused by the disruption of the main artery of the CBD (due to the introduction of light rail and the pedestrianising sections of George Street).</p>	<p>The SCCAS outlines the strategy for scheduled bus operations in the CBD. A CBD east layover facility is currently being investigated as a part of the implementation of the SCCAS.</p>	483
<p>Requests information regarding impact on waste collection services for the QVB.</p> <p>Concerned about potential impacts on existing delivery patterns (vehicle access) to the QVB. Requests that existing delivery and waste collection services to the QVB are not adversely impacted.</p>	<p>Service and delivery vehicles would benefit from improved management of the street network, reduced congestion and improved journey times as part of the SCCAS. The SCCAS identifies routes and access for specific vehicle types at specific times to minimise conflicts and congestion, particularly balancing the needs of businesses with priority public transport movements.</p> <p>The SCCAS provides overlay maps of the different modes of transport within Sydney's CBD. The SCCAS was exhibited in 2013 and can be accessed via <a href="http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0">http://www.transport.nsw.gov.au/content/sydney-city-centre-access-strategy-0</a></p> <p>Transport for NSW would ensure that business owners and the delivery and servicing industries are informed of the best way to access loading zones by providing the necessary information (including through web based and phone applications).</p>	302
<p>Reconfigure the kerb and gutter on Market Street to provide a formalised drop-off zone to service the QT Hotel and State Theatre.</p>	<p>Transport for NSW would continue to work closely with RMS and City of Sydney to mitigate the potential network and local traffic impacts. Finalisation of kerbside treatments would occur during detailed design.</p>	293
<p>Requests that a loading zone is provided on George Street, near Rawson Place. 790 on George Street Backpackers has up to six contractors that require access to this business.</p>	<p>As described in section 5.8.11 of this Submissions Report (refer to general response prior to this table), Transport for NSW would continue to work with City of Sydney in the management of kerbside activity to implement the mitigation measures outlined in Technical Paper 1 in Volume 2 of the EIS. This process would seek to promote better utilisation and efficiency of use for kerbside space, while considering the access requirements of local residents, businesses and all other land uses along and in the vicinity of the corridors. Council would be responsible for the implementation of any changes to the function and management of on-street kerbside activity within the area of influence of the CSELR proposal.</p>	43

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Further consultation with all building owners is required in order to develop a consensus as to whether the hours that freight can be delivered can be restricted. Further consultation is also required with businesses in local areas where there is to be a significant loss of parking in order to identify new parking spaces to ensure that the impact on business is minimised.</p>	<p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	<p>279</p>
<p><b>Surry Hills Precinct</b></p>		
<p>Parking issues within Surry Hills are caused by commuters who park in the area for extended periods of time and the lack of parking inspectors in the area to enforce parking restrictions.</p> <p>Unlimited or long term parking areas, such as Clisdell Street, should be replaced with metered parking (with resident exemptions).</p>	<p>The regulation of parking within Surry Hills is the responsibility of the City of Sydney. Transport for NSW would work closely with the City of Sydney to minimise parking impacts associated with the CSELR proposal.</p> <p>General discussion on management of parking impacts of the CSELR proposal is provided at the beginning of section 5.8.11 of this Submissions Report (refer general response prior to this table).</p>	<p>18, 422</p>
<p>The EIS did not adequately consider or assess the impact that the loss of parking would have on residents, deliveries or visitors. Requests clarification about how residents would receive deliveries and/or move house if nearby parking and loading zones are removed. Further review of such impacts needs to be undertaken.</p> <p>Concern about the future difficulties with respect to taxi pick up and drop off for visitors of the Quaker Meeting House, especially with luggage or shopping. Visitors will be forced to walk long distances.</p> <p>Notes that business (120 Devonshire Street) receives multiple deliveries each day, and will be adversely impacted by the loss of loading zones along Devonshire Street, in particular in close proximity to business. There is currently a loading zone immediately outside the premises that is in high demand and will be lost if the light rail proposal proceeds</p>	<p>As discussed in section 5.8.11 of this Submissions Report (refer to general response prior to this table), Transport for NSW would continue to work with City of Sydney in the management of kerbside activity to implement the mitigation measures outlined in Technical Paper 1 in Volume 2 of the EIS. This process would seek to promote better utilisation and efficiency of use for kerbside space, while considering the access requirements of local residents, businesses and all other land uses along and in the vicinity of the corridors. City of Sydney would be responsible for the implementation of any changes to the function and management of on-street kerbside activity within the area of influence of the CSELR proposal.</p>	<p>70, 96, 130, 134, 160, 168, 170, 171, 172, 173, 174, 176, 179, 181, 187, 188, 189, 191, 192, 193, 194, 238, 239, 243, 271, 322, 328, 354, 367, 407, 413, 418, 422, 427, 433, 447, 449</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Loss of parking along Devonshire Street should be addressed by creating more parking spaces for Surry Hills residents and businesses. This could include the provision of new parking stations near Devonshire Street (some of which could be located underground) and increasing resident parking zones on side streets.</p> <p>Short-term parking restrictions should be implemented in the vicinity of Bourke Street Bakery during business hours. One hour parking restrictions could replace the current 2 hour parking restrictions to allow a greater turnover between Nobbs Lane and Devonshire Street.</p> <p>Requests that Transport for NSW work with City of Sydney and RMS to extend on-street parking along 420 Elizabeth Street (between Butt Street and the Devonshire Street/Elizabeth Street intersection) in order to create four new one hour parking spaces and one new half-hour loading zone.</p> <p>Request for a 10 minute drop off zone in Little Riley Street for business customers and suppliers.</p> <p>Facilitate the membership of car sharing organisations in areas where on-street parking will be reduced.</p> <p>Consolidating parking permit precincts is not a solution, because parking in adjacent precincts is already at/near capacity. Residents need to be able to park near their homes not in the neighbouring suburb.</p> <p>Parking loss will impact school pick up/drop off (Bourke Street Public School). Transport for NSW should consult with the school when devising parking plans.</p>	<p>As discussed earlier in section 5.8.11 of this Submissions Report (refer to general response prior to this table), all impacted special kerbside uses (e.g. disabled parking and loading zones) along the CSELR corridor are to be replaced on a 'like for like' basis within the local vicinity of existing provision. The detailed implementation of this replacement is being worked through with City of Sydney.</p> <p>The CSELR proposal does not include any allowance to expand parking in this area through the provision of an underground or multi-storey car park.</p> <p>Transport for NSW would continue to work with the key stakeholders involved in the management and operation of the road network and management of kerbside activity to implement the mitigation measures outlined above. Key to this process would be further consultation and design to ensure appropriate and satisfactory measures which promote better utilisation and efficiency of use for kerbside space are implemented, while considering the access requirements of local residents, businesses, sporting, health and education uses and all other land uses along and in the vicinity of the corridors.</p>	<p>(continued from previous page)</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Requests the provision of a set down zone for community transport, disability taxis and non-emergency patient ambulance transport vehicles for homes located at 147–163 Devonshire Street, Surry Hills. The set down zone needs to be positioned between Waterloo Street and Little Riley Street and opposite 166 Devonshire Street.</p> <p>Proposed changes to parking on/near Devonshire Street will adversely impact patients accessing the clinic at 120 Devonshire Street. Requests that a taxi rank be provided near the clinic.</p> <p>Requests the provision of a loading zone in Nickson Street, allowing for four loading spaces adjacent to the Salmon Bros Electric business.</p> <p>Requests that parking and drop off/pick up zones are provided for Northcott Estate. Space could be provided by using the under-utilised car parking spaces underneath 166a Devonshire Street.</p> <p>Businesses on Devonshire Street currently use the loading zone located on the southern side of Devonshire Street for deliveries throughout the day. The Bourke Street Bakery requires deliveries between 6.00 am and 12.00 pm, seven days a week. It is essential that an operational loading zone is provided for Devonshire Street businesses if the existing loading zone is removed to accommodate the CSELR proposal. Requests all businesses along Devonshire Street are surveyed to establish need for sufficient loading zones during business hours.</p>	<p>As discussed earlier in section 5.8.11 of this Submissions Report (refer to general response prior to this table), the proposed mitigation measure to the loss of special kerbside uses (including taxi, disabled and loading zones) is to replace all spaces on a 'like for like' basis within the local vicinity of the existing provision. The detailed implementation of this replacement is being investigated with the City of Sydney.</p>	<p>130, 134, 328, 389, 422</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Recommends that the proposed CSELR alignment on Devonshire Street is amended between Nickson Street and Bourke Street to provide parking outside of peak hours. Such parking provisions could be provided, based on the design guidelines specified in <i>AusRoad Guide to Road Design: Geometric Design Part 3 Section 4.9.3</i>.</p> <p>Provided a sketch design of an alternative solution to provide six 1-hour short term parking spaces and two 5-minute parking/loading spaces within the vicinity of the Bourke Street Bakery and other businesses in Devonshire Street (which would maintain required clearances for the CSELR). The provision of only one eastbound traffic lane and one parking lane is proposed. The sketch shows a slight adjustment to the alignment of the proposed light rail tracks from a centre road alignment to a southern side alignment.</p>	<p>A similar alternative layout to that proposed was assessed during the design development process. This alternative was not adopted as it prohibits provision of a westbound traffic lane between Bourke Street and Crown Street. Given the only available entry point to Nickson Street and Nickson Lane is from Devonshire Street, access under this alternative proposal would be via right in and right out turning movements across the light rail alignment. Provision of priority controlled turning movements across the light rail alignment would present a safety hazard and negatively impact on the reliability and journey times achievable by LRVs. Given Nickson Street and Nickson Lane would not meet RMS requirements for traffic signals to control these turning movements, and signals would provide further delay to LRVs, it is proposed to retain the current proposal design in this area.</p>	328
<p>Suggests using newly acquired space between Bourke Street and South Dowling as parking.</p> <p>The Olivia Gardens site should include some replacement parking spaces.</p> <p>Recommends maintaining the underground parking at the Olivia Gardens site to replace spaces lost at Langton Clinic.</p> <p>Expresses concern about the accessibility of the Langton Clinic following the removal of the centre's car park. Concern also raised about the subsequent impact this would have on parking in the surrounding area.</p>	<p>Replacement parking is not currently proposed to be provided within the Olivia Gardens site. As outlined in section 13.7 of the EIS (Volume 1B), the CSELR proposal includes an expanded Wimbo Park in the location of the existing Olivia Gardens apartment complex. An indicative plan of this new park is provided in Figure 6.5 in this Submissions Report. This park includes new areas of proposed tree plantings and landscaped areas, and is expected to contribute to the public domain of Surry Hills, including a connection through to Moore Park.</p> <p>As outlined in section 6.7 of this Submissions Report, following exhibition of the EIS and discussion with the Langton Centre regarding the loss of parking, further design refinement for the replacement of this parking has been undertaken to mitigate the loss of the existing Langton Centre car parking spaces between Parkham Place and South Dowling Street. The refined design would provide for replacement parking — up to approximately 30 spaces on the northern side of the alignment of the proposal (accessed via Nobbs Lane). Additionally, up to 10 spaces could be provided to the south of the alignment (accessed via Parkham Lane) adjacent to the new Wimbo Park. The indicative location of the proposed car parking is shown in Figure 6.5 in this Submissions Report.</p>	242, 322, 427, 433

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Moore Park Precinct</b>		
<p>The EIS did not provide any discussion regarding whether the impacted car park for the tennis courts, located on the corner of Lang Road and Anzac Parade, would be replaced as part of the CSELR proposal. Requests that the car park for the tennis courts is replaced in the vicinity of its current location.</p>	<p>This parking would be replaced with replacement off-street parking. The location of this parking and access arrangements would be determined in consultation with the Centennial Park and Moore Park Trust during detailed design.</p>	90
<p>Suggests the Moore Park Plaza car park with 1,600 spaces is constructed as part of the CSELR proposal, to compensate for lost parkland. Car park to be built underground and landscaped.</p>	<p>The CSELR proposal does not include any allowance to expand parking in this area through the provision of an underground car park. Further discussion on measures that would be implemented to manage the CSELR proposal's impact is provided at the start of section 5.8.11 of this Submissions Report (refer to general response).</p>	274
<p>Suggests that event parking in Moore Park ceases when light rail is operational, as demand for cars will be reduced.</p>	<p>Transport for NSW is not responsible for the provision and/or management of special event parking at Moore Park. Affected areas of Moore Park west would be reinstated following construction of the CSELR proposal.</p>	274, 291
<b>Randwick Precinct</b>		
<p>Requests clarification about whether parking will be provided after the proposed Randwick stabling facility is constructed.</p>	<p>Existing informal car parking on the proposed site of the Randwick stabling facility would be removed to accommodate the CSELR proposal. Opportunities to offset the loss of this car parking would be discussed with the Australian Turf Club.</p>	242, 427
<p>Requests that the CSELR design is amended to provide one lane of traffic and one lane of parking along Wansey Road.</p>	<p>As outlined in section 6.11 of this Submissions Report, following ongoing consultation with Randwick City Council and submissions received from local residents during the exhibition of the EIS, the traffic configuration along Wansey Road has been amended from the design presented in the EIS.</p> <p>The proposed traffic configuration would be amended to allow for one lane of traffic (southbound) and retention of one lane of existing parking (along the eastern side of Wansey Road) between Gate 10 of the Royal Randwick Racecourse (near Alison Road) and Arthur Street.</p> <p>Between Arthur Street and High Street, the design presented previously in the EIS would generally be retained to include the provision of two traffic lanes, with one lane in each direction (although the location of the proposed Wansey Road stop has been changed from Wansey Road to Alison Road, in the vicinity of the intersection of these two roads).</p>	95, 260, 299, 409



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Requests that all existing 2 hour parking spaces outside of the medical surgeries on Belmore Road be permanently retained and, to the extent possible, increased in number to offset the loss of the five spaces on the opposite side of the road.</p> <p>Requests that the number of 1–2 hour restricted car parking spaces are increased within 150 metres of the medical surgeries on Belmore Road. Specifically, on the nearest parts of Cuthill Street, Coogee Bay Road and Mears Avenue, all of which currently contain a good quantity of unrestricted parking spots within such a distance, some of which could be converted into 1–2 hour restricted parking spots.</p>	<p>As discussed in section 5.8.11 of this Submissions Report (refer general response prior to this table), Transport for NSW would continue to work with Randwick City Council in the management of kerbside activity to implement the mitigation measures outlined in Technical Paper 1 in Volume 2 of the EIS. This process would seek to promote better utilisation and efficiency of use for kerbside space, while considering the access requirements of local residents, businesses and all other land uses along and in the vicinity of the corridors. Council would be responsible for the implementation of any changes to the function and management of on-street kerbside activity within the area of influence of the CSELR proposal.</p>	<p>206, 207, 208, 209</p>
<p><b><i>Kensington/Kingsford Precinct</i></b></p>		
<p>Requests that a parking layby is established in front of the Andrew Kennedy Funerals (between 434–436 Anzac Parade) between 9.30 am and 3.00 pm during weekdays. Other neighbouring businesses would also appreciate such parking laybys for loading zones.</p> <p>Request for more angle parking to be provided in streets located within the wider area of the CSELR proposal, such as Houston Road and Meeks Street, or streets with oversized nature strips such as Harbourne Road.</p> <p>Request for off-peak parking to be made available along Anzac Parade to reflect the present situation where parking along Anzac Parade is permitted between Alison Road and Nine Ways outside of 6.00 am–10.00 am and 3.00 pm–7.00 pm.</p> <p>Electronic monitoring built into any new provided parking could also be considered to enable drivers to find empty car spaces servicing Kensington businesses with a smart phone app maintained by the light rail operators.</p>	<p>As outlined in section 6.13.2 of this Submissions Report, the location of the proposed UNSW Anzac Parade stop has been revised since the exhibition of the EIS. This stop would now be located in the centre of Anzac Parade, just north of the University Mall crossing (rather than on the eastern side of Anzac Parade, as originally proposed in the EIS).</p> <p>The retention of a centre running alignment would provide the potential to co-locate express buses north of UNSW, which otherwise would need to return to kerbside lanes. The location north of UNSW where the express buses would re-join the general traffic lanes along Anzac Parade would be determined during detailed design following further traffic and intersection modelling. This would allow some of the on-street parking along Anzac Parade to be retained during off-peak periods.</p> <p>As discussed earlier in section 5.8.11 of this Submissions Report (refer to general response prior to this table), all impacted special kerbside uses (e.g. disabled parking and loading zones) along the CSELR corridor are to be replaced on a 'like for like' basis within the local vicinity of existing provision. The detailed implementation of this replacement is being worked through with City of Sydney.</p> <p>As discussed in section 5.8.11 of this Submissions Report (refer general response prior to this table), Transport for NSW would continue to work with Randwick City Council in the management of kerbside activity to implement the mitigation measures outlined in Technical Paper 1 in Volume 2 of the EIS. This process would seek to promote better utilisation and efficiency of use for kerbside space, while considering the access requirements of local residents, businesses and all other land uses along and in the vicinity of the corridors. Council would be responsible for the implementation of any changes to the function and management of on-street kerbside activity within the area of influence of the CSELR proposal.</p>	<p>61, 231, 262, 349</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concern raised regarding the CSELR proposal's impact on parking for Souths Juniors due to the establishment of the Kingsford stop. The loss of this parking will increase the CSELR proposal's impact on local parking supply by placing further pressure on the back streets and surrounding residential precincts.</p> <p>Underground and/or multi-level car parking should be provided alongside the CSELR corridor to compensate for the loss of parking. This parking provision should be provided with convenient access to Anzac Parade.</p> <p>Requests that a multi-storey car park be built on the car park known as the Market Car Park prior to the commencement of any work for the CSELR proposal. This would service not only The Juniors, but a significant amount of businesses along Anzac Parade at Kingsford, as well as returning the side streets back to residents. Alternatively, The Juniors urges consideration is given to regain parking spaces within a block of each alignment, and for an alternative underground parking lot to be constructed, potentially under the proposed substation. This would require an examination of each alignment to ascertain whether angle parking and/or one-way systems could be introduced in order to recover, in close proximity, all of the parking spaces removed from the alignment.</p>	<p>The CSELR proposal does not include any allowance to expand parking in this area through the provision of a multi-storey car park. Further discussion on measures that would be implemented to manage the CSELR proposal's impact on parking is provided at the start of section 5.8.11 of this Submissions Report (refer to general response prior to this table). It is noted that the parking affected outside Souths Juniors comprises on-street parking that is located on land owned by Randwick City Council and is not private parking for the exclusive use of Souths Juniors.</p>	<p>56, 72, 126, 245, 262</p>
<p>Request for parking restrictions and traffic calming measures to be provided (as a minimum) in side streets off Anzac Parade to control the increased number of vehicles that will be using these roads when looking for alternative parking.</p>	<p>Traffic management on side roads off Anzac Parade is the responsibility of the relevant roads authority (either RMS or Randwick City Council). Transport for NSW would continue to work with Randwick City Council and RMS to mitigate the local traffic impacts and potential increased traffic flows that may occur on local roads as a result of the CSELR proposal.</p> <p>As discussed in section 5.8.11 of this Submissions Report (refer general response prior to this table), Transport for NSW would continue to work with Council in the management of kerbside activity to implement the mitigation measures outlined in Technical Paper 1 in Volume 2 of the EIS. Council would be responsible for the implementation of any changes to the function and management of on-street kerbside activity within the area of influence of the CSELR proposal.</p>	<p>100</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
The EIS did not adequately assess the cumulative parking impact that would occur as a result of both the CSELR proposal and the Urban Activation Precinct (UAP). The UAP will increase the demand for on-street parking in neighbouring streets. Parking survey zones 2 and 3, as defined in Figures 6-18 and 6-19 of Technical Paper 1 (Transport Operations Report), are too small and do not take into account the substantial parking problems caused by UNSW students in residential streets.	<p>Parking demand and supply in precincts surrounding the proposed CSELR corridor is provided in Chapter 6 of Technical Paper 1 in Volume 2 of the EIS. The proposed UAP would be subject to a separate planning process. The coverage of the parking surveys was agreed by all stakeholders as sufficient to cover the potential impacts of the CSELR proposal.</p> <p>Transport for NSW would continue to work with P&amp;I, RMS and Randwick City Council to review parking management and mitigation measures to address cumulative parking impacts associated with the UAP.</p>	155
Requests that the DA-required 212 parking spaces for NIDA patrons, located on the existing western campus car park, is retained.	The proposed functional characteristics of the Kingsford and UNSW precinct following the implementation of the CSELR proposal is provided in section of Technical Paper 1 in Volume 2 of the EIS. The Anzac Parade UNSW stop footprint would have minimal impact to the western UNSW campus.	351

### 5.8.12 Construction parking and loading impacts

#### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to impacts on kerbside parking and loading during the construction of the CSELR proposal. These issues are listed below:

- Maintaining delivery access will be critical in ensuring restaurant and café businesses remain viable in and around Devonshire and Bourke Street during construction. Businesses need to be able to receive supplies and produce daily in order to run their businesses effectively. Closing arterial roads and redirecting traffic during construction has the potential to cause significant disruption to restaurant procurement processes.
- Uninterrupted 24-hour access is required to businesses located adjacent to the proposed CSELR corridor (including the loading dock at 450 George Street). During construction, disruption along George Street will interfere with waste and recycling removal, delivery schedules, hotel guest parking, guest drop off and pick up points.
- Concern raised about the loss of parking outside 68–70 Anzac Parade (12 residential units) during the construction of the CSELR proposal.
- On-street parking for construction activities should be banned; parking and access should not be impacted by construction equipment.
- Intermittent closure of George and Goulburn streets during construction on weekends will impact access to the World Square loading dock and car park. Many deliveries to World Square occur over weekends.
- A loading bay should be provided in Bourke Street between the hours of 6.00 am and 12.00 pm to permit deliveries for businesses during the construction period.
- The construction phase on Anzac Parade would potentially result in the loss of significant on-street parking spaces.

### Submission number(s)

88, 225, 269, 272, 304, 439, 476

### Response

#### *Property access*

As discussed in section 5.8.9 of this Submissions Report, during construction, property access would generally be maintained to minimise the impact to local residents and businesses. However, on occasion, some short-term intersection closures would affect some approach routes to car park and loading facilities. Transport for NSW and its contractor(s) would develop diversions and management measures in close consultation with affected property owners/operators and tenants prior to these works commencing.

Specific details of the above impacts and controls for individual properties have not been developed at this stage of the proposal. Once a contractor is appointed, a preferred construction methodology and details of the required individual construction stages and intersection closures would be developed together with details of temporary traffic management changes. This would be provided in the site specific Construction Traffic Management Plans (CTMPs) to be prepared by the contractor (refer to section 1.2 of Technical Paper 2 in Volume 2 of the EIS for details of the process to be followed in later stages of the CSELR proposal).

CTMPs would be reviewed through the Traffic and Transport Liaison Group (TTLG), which would have representation from major stakeholders, with the relevant roads authority providing final approval (refer to section 2.8.2 of Technical Paper 2 in Volume 2 of the EIS).

#### *On-street parking and loading*

All on-street parking and loading along the CSELR corridor would be affected during construction. A parking utilisation study undertaken for the CSELR proposal concluded that, whilst parking demand based on current levels would reach or exceed the reduced capacity in some localised areas, these effects could be managed through the extension of parking permit schemes and the provision of priority on streets immediately adjacent to the CSELR corridor.

To minimise parking impacts during construction of the CSELR, where possible, only on-street parking spaces that would be permanently removed to accommodate the CSELR proposal would be impacted during the construction phase (other than those spaces required for construction compounds). Off-site construction vehicle parking would be limited to designated areas. Areas of temporary on-street parking during peak construction events would be identified in the traffic management plans to minimise the impact on surrounding properties and businesses.



### 5.8.13 Operational pedestrian and cyclist impacts

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>General issues</b>		
<p>Bicycle parking facilities should be provided at new light rail stops.</p>	<p>As outlined in section 5.2.2 of the EIS (Volume 1A), bicycle u-rails are proposed at Circular Quay and at all non-CBD light rail stops, located on the street adjacent to, or at, the stop. Secure lockers would also be provided at the Randwick and Kingsford stops, supplemented by u-rails. The proposed bicycle parking facilities would cater for demand at strategic points on the light rail system in close proximity to the strategic bicycle network.</p> <p>Figure 5.4 of the EIS (Volume 1A) summarises the proposed rail and bus interchange locations and bicycle parking facilities at each light rail stop.</p>	308
<p>Concern raised about the CSELR proposal's impact on cyclists, particularly impacts to connections to the Bourke Street and Moore Park cycle routes, as well as impacts to cyclist access to Central Station and Moore Park.</p> <p>Concern or objection raised regarding the loss of bicycle capacity along Devonshire Street and/or the proposal to relocate the existing east-west cycle route from Devonshire Street. Devonshire Street is the only safe cycle route to Central Station from Surry Hills, Moore Park and the eastern suburbs. Bicycle access along Devonshire Street should be maintained.</p> <p>Randle, Cooper and Arthur streets do not provide straight cycle routes. Transport for NSW should introduce road configurations, in consultation with City of Sydney, to make cycling on Randle, Cooper and Arthur streets safer and easier.</p>	<p>All existing cycle routes that would be impacted by the CSELR proposal would be relocated. It is anticipated that the reduction in private vehicle trips that would occur as a result of implementing the CSELR would create an improved cyclist environment in the wider network.</p> <p>As outlined within <i>Sydney's Cycling Future</i> (Transport for NSW 2012e), the NSW Government is committed to providing priority cycleways across Sydney.</p> <p>Transport for NSW is currently working with the City of Sydney and the community to finalise the Sydney CBD strategic cycleway network (as detailed in the SCCAS. In developing the CBD strategy, Transport for NSW is concentrating on the provision of continuous links, separated from other road users where possible, that connect cycle entry points to the CBD and provide safe passage through the city.</p> <p>The NSW Government proposes to increase bike riding in South East Sydney by improving connections to the Royal Randwick racecourse, and the hospital and university precinct. This would improve access to stations on the future CSELR proposal. These changes would also make transferring from one mode to another easier by providing secure bicycle parking at major interchanges.</p> <p>Detailed maps illustrating the proposed bicycle network surrounding the light rail corridor are outlined in section 5.4.8 of Technical Paper 1 in Volume 2 of the EIS.</p> <p>At this stage, bicycle access through Surry Hills is proposed to be provided via Cooper Street and Arthur Street.</p>	41, 231, 249 277, 278, 302, 308, 358, 362, 367, 409, 433, 449

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Requests that CSELR construction be used to extend and improve the cycleways connecting the CBD and Inner West with the eastern suburbs, especially from Redfern/Surry Hills and down Anzac Parade. Currently, these routes are disconnected and interrupted by traffic signals. The light rail construction offers an opportunity to make this also a first-class bicycle commute corridor.</p> <p>Concerned that cycle paths have been rerouted away from George Street.</p> <p>Cyclists will be redirected from Devonshire Street to the much steeper Cooper Street.</p> <p>Opposes surface changes to discourage bicycle use along Devonshire Street, noting cyclists should not be prevented from using the easiest route.</p> <p>Concern about mixing pedestrians and cyclists, particularly on narrow paths.</p> <p>Transport for NSW should provide a detailed plan for how cycle ways will operate.</p> <p>Submits that reducing the capacity of Devonshire Street for traffic and applying a surface treatment to discourage cyclists will be ineffective, and traffic and cyclists will persist to use the route, causing congestion and risking accidents.</p>	<p>As discussed in section 9.2.3 of the EIS (Volume 1A), Devonshire Street does not have sufficient available width to accommodate the proposed CSELR alignment as well as a dedicated cycle facility. Alternative parallel cycle corridors with better gateway entries to the CBD have been assessed by RMS (2013). The preferred alternative route is via Cooper Street and Arthur Street.</p> <p>Arthur Street is already classified as an on-road cycle route by the City of Sydney. It connects Surry Hills to Moore Park via an existing pedestrian/cycle bridge over South Dowling Street. In order to make the new east-west corridor more legible for cyclists, Cooper Street would require pavement markings, paint and signage to function as an on-route cycle route. The Cooper Street/Elizabeth Street intersection would also need to be reconfigured to be safer for cyclists. Randle Street would provide access to Cooper Street from the south and west, with Elizabeth Street the northern connection.</p> <p>The existing pedestrian and cycle crossing linking Arthur Street to Moore Park would be retained to provide a continuous cycle link between Moore Park and Central Railway Station through Surry Hills. Appropriate signposting would be provided to direct cyclists from the crossing location at Devonshire Street and Bourke Street.</p>	<p>(continued from above)</p>
<p>Concern or objection raised regarding any potential reduction in footpath width and/or capacity adjacent to the CSELR proposal.</p> <p>It is unclear how severe the reduction in footpath widths will be as a result of the CSELR proposal.</p>	<p>As outlined in Technical Paper 1 in Volume 2 of the EIS, improvements to pedestrian facilities (including footpaths) would be provided along the proposed CSELR corridor and all existing pedestrian access points would be retained.</p> <p>The George Street pedestrian zone between Hunter Street and Bathurst Street would generate significant benefits for pedestrians with the removal of buses and other traffic. Improved travel times for pedestrians would result from reduced footpath congestion and reduction in the amount of time required to cross east-west streets.</p> <p>In general, Transport for NSW does not intend to reduce footpath widths from current configurations unless needed to address traffic and road safety requirements. Some adjustments would be required in specific locations such as the proposed UNSW Anzac Parade stop (refer section 6.13 of this Submissions Report). In areas where footpath widths are proposed to be reduced, the resultant minimum footpath widths would comply with the relevant design criteria.</p>	<p>54, 59, 63, 64, 222, 242, 252, 255, 294, 306, 321, 329, 443, 479</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>More detailed information demonstrating the improved level of services that pedestrians would experience as a result of the CSELR proposal is included in section 5.4.8 of Technical Paper 1 in Volume 2 of the EIS. Further detailed information on how the pedestrian network would integrate with light rail within the CBD is included within the SCCAS.</p>	
<p>Concern about pedestrian congestion and safety at interchanges.</p> <p>The fact there would be fewer stops with light rail (relative to buses) means there would be a concentration of passengers and pedestrians entering and leaving the stops from both sides of Anzac Parade, Alison Road and High Street — which is a pedestrian safety concern. Safe access to platforms for all passengers is paramount, and especially for elderly, disabled and sick.</p>	<p>Detailed access plans for each of the proposed light rail stops on the CSELR network (including any key actions to address potential multimodal access, customer safety, or to improve access) are provided in section 7.3 of Technical Paper 1 in Volume 2 of the EIS.</p> <p>Further consideration of pedestrian impacts and congestion around CSELR stops would be undertaken during detailed design, in consultation with the relevant roads authority (either RMS, City of Sydney or Randwick City Council).</p>	385, 476
<b>City Centre Precinct</b>		
<p>The Chalmers Street, Elizabeth Street and Eddy Avenue intersection will become more complex as a result of the CSELR proposal. Options should be investigated to improve clarity and safety for cyclists. Integrating clear cycle routes at this intersection will make an important contribution to broadening transport choices, improving amenity and improving safety for all road users.</p> <p>The signalised pedestrian crossing of Chalmers Street is highly congested, and is a long-standing hazard for vulnerable pedestrians. Concerned about the impact of the CSELR proposal on cyclists at this location; particularly those crossing the eastern side of Chalmers Street (at Randle Street) to enter the off-road cycleway in Prince Alfred Park. Technical Paper 1 did not outline the upgrading of signalling at the intersection of Elizabeth and Devonshire Streets, or permitting bicycle crossing together with pedestrian crossings.</p>	<p>As outlined in section 6.5 of this Submissions Report, further analysis and review of the operational requirements for the Central Station stop have resulted in the removal of the previously proposed special event track and platform (resulting in a revised design with two tracks and two platforms at for the Central Station stop). In addition, the existing traffic lanes along Chalmers Street between Randle Street and Elizabeth Street would be converted into a shared zone, allowing access by pedestrians, cyclists and vehicles accessing properties in Chalmers Street in a low speed environment.</p> <p>The revised design for the surrounding street network would maintain Randle Street as northbound-only providing three lanes of traffic, including a single bus-only lane. Buses would not use the shared pedestrian and cycle zone along Chalmers Street. The revised design recognises the significant role of incoming buses delivering passengers to rail services at Central Station, and would maintain a northbound bus stop on Chalmers Street just south of Devonshire Street. The revised design would also provide a northbound bus stop on Elizabeth Street (south of Foveaux Street), adjacent to the existing southbound bus stop, providing easy access Central Station via an existing lift on Chalmers Street. The use of Elizabeth Street as a traffic bypass route is consistent with the approach to the broader road network within the City Centre (as outlined in the SCCAS).</p> <p>Overall, the revised design would provide a safe environment for all users, accommodate emergency vehicles and provide a low speed limit (approximately 10 kilometres per hour) in the shared zone to provide access to existing private properties. It also allows for legible, fast and efficient interchange for all modes and prioritises the highest pedestrian flows and the modes carrying the most people. A plan of the revised stop layout plan of the functional use of the surrounding area is provided in Figure 6.4 of this Submissions Report.</p>	308, 354

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Not enough detail was provided about the potential impact to pedestrians on Market Street.</p> <p>Requests that the footpaths on the southern side of Market Street are widened to increase pedestrian capacity.</p>	<p>Pedestrian movements on Market Street at the intersection of George Street have been assessed in section 5.4.8 of Technical Paper 1 in Volume 2 of the EIS. Table 5-13 of Technical Paper 1 demonstrates a significant improvement to pedestrian levels of service at the intersection as a result of the pedestrianisation of George Street. Pedestrian operations along Market Street beyond its interface with the CSELR corridor are subject to further investigation as part of the SCCAS, which identifies Market Street as a priority corridor for pedestrian improvements.</p>	<p>88, 293</p>
<p>Concerned about impacts to pedestrian access to the QVB. Any changes to the pedestrian precincts and pedestrian links are to incorporate the existing pedestrian access to the QVB as an integral component.</p>	<p>Pedestrian access to the QVB would be greatly enhanced through the pedestrianisation of George Street. Additional pedestrian improvements and upgrades in the area would be developed as part of the SCCAS in consultation with City of Sydney and other stakeholders.</p>	<p>302</p>
<p>Requests that a protected cycle route is provided to ensure that cyclists can access the Queen Victoria Building.</p>	<p>Whilst George Street would no longer operate as a signed cycle route through the CBD, the SCCAS proposes additional cycle routes along Castlereagh Street, Kent Street, and King Street (amongst other new links). This would help to provide improved access to cyclists throughout the CBD including the QVB.</p>	<p>302</p>
<p>Concerned that the Rawson Place interchange will adversely impact pedestrian congestion/pedestrian flows on footpaths, including outside Sydney Central YHA.</p> <p>Safety concerns relating to the movement of pedestrians/tourists in and around Rawson Place and accessing Sydney Central YHA needs to be considered.</p>	<p>An outline of the proposed functional changes to Rawson Place is provided in section 5.4.1 of Technical Paper 1 in Volume 2 of the EIS.</p> <p>Key actions proposed to resolve the multimodal access issues in the Rawson Place stop precinct have been identified. These include a new dedicated pedestrianised transit mall with bus and light rail access only, and implementation of pedestrian priority improvements to reduce pedestrian wait times at key intersections.</p> <p>In addition to these measures, there is provision for bus-light rail transfers to occur via cross platform interchanges, reducing conflicts between interchanging customers and pedestrian footpaths.</p> <p>The detailed design of the Rawson Place interchange would be subject to further refinement by the future Operator, in consultation with Transport for NSW, RMS and City of Sydney.</p>	<p>151</p>
<p>Concerned about safety implications of Central Station access. Safe pedestrian options to be designed for Central Station interchange, acknowledging large influx of school students at the beginning and end of each day.</p>	<p>A detailed access plan for the proposed light rail stop at Central Station is provided in section 7.3 of Technical Paper 1 in Volume 2 of the EIS. Please also refer to section 6.5 of this Submission Report for proposed design changes at the Central Station stop.</p> <p>Following the appointment of a preferred contractor, detailed design would be undertaken for the CSELR proposal. As a part of the design process, an independent road safety audit would be undertaken on the detailed design. Mitigation measures may be recommended as a part of this process. The road safety audit would verify the appropriateness of any proposed mitigation measures for the CSELR proposal, or would make recommendations on any additional/alternative measures that would be required to manage road safety risks.</p>	<p>162</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>There are opportunities for further revitalisation in precincts beyond George Street. The Government should ensure it has captured key pedestrian movements in Circular Quay, Hyde Park, Darling Harbour and Central Station. General acknowledgement of the benefits that the George Street pedestrian zone would deliver for the CBD.</p>	<p>Additional pedestrian improvements and upgrades in the area would be developed as part of the SCCAS in consultation with City of Sydney and other stakeholders.</p>	330
<p>The design of the CSELR proposal should minimise impacts on pedestrian movements at Circular Quay.</p> <p>Recommends that Alfred Street is designed as a shared path for pedestrians and cyclists.</p> <p>AMP Capital's Quay Quarter Sydney development aims to introduce new pedestrian access and circulation routes in Young Street. The public transport task at Circular Quay should be coordinated with the Quarter Sydney development to ensure that the desired pedestrian links are achieved.</p>	<p>The CSELR proposal is anticipated to improve pedestrian movements at Circular Quay. As outlined in section 12.3.2 of the EIS (Volume 1B), the section of Alfred Street located between Pitt Street and George Street would become a pedestrianised zone providing a shared zone for pedestrians and LRVs. Vehicle access would be restricted to service and emergency vehicles with access to service vehicles permitted during restricted hours.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	300, 356, 452
<p>The legal priority in Transport for NSW's <i>'Safer Speeds: Policy Guidelines'</i> states that pedestrians must not cause a traffic hazard by moving into the path of a driver and must not unreasonably obstruct the path of any driver or another pedestrian. Concerned that this would be unenforceable on George Street because of the volume of pedestrians.</p> <p>Concern about how cars will interact with pedestrians on George Street.</p>	<p>As outlined in section 5.8.10 of this Submissions Report, the pedestrianisation of Alfred Street and George Street (between Hunter and Bathurst streets) would provide safe pedestrian access, with only residents, light commercial deliveries (during restricted hours), emergency vehicles and taxis permitted to access the pedestrian zone.</p> <p>Priority improvements, by way of signalised pedestrian crossing facilities, would be provided on all arms of existing signalised intersections to provide controlled crossing points of the light rail tracks. This would provide protection and improved amenity for visually, hearing or mobility impaired pedestrians.</p> <p>The detailed streetscape design of George Street would include defined areas for pedestrians and LRVs/local traffic through visual cues, such as changing pavement types. This would be important to provide a safe environment for all road users.</p> <p>In addition, LRVs would have warning bells that the driver could use in instances where they perceive that there is a risk to pedestrian safety.</p>	266

Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Surry Hills Precinct</b>		
<p>LRV speeds along Devonshire Street should be restricted to 20 kilometres per hour to minimise safety risks to pedestrians. Pedestrian activity around Devonshire Street, Bourke Street and South Dowling Street is generally high. This section of the CSELR route is located in close proximity to a number of schools.</p> <p>LRV movements along the CSELR network should be timed so as to ensure a safe crossing environment for pedestrians.</p> <p>Additional pedestrian safety measures should be implemented to reduce the risks associated with the operation of LRVs in the vicinity of local schools. A large number of parents currently walk their children to school via Devonshire and Bourke Streets (some of which require the use of prams). In addition, a school bus service currently travels west along Devonshire Street.</p> <p>Pedestrian priority crossings should be maintained on Devonshire Street.</p>	<p>As noted in section 5.4 of Technical Paper 3 (<i>Social Impact Assessment</i>) in Volume 3 of the EIS, some Surry Hills residents, particularly elderly and disabled persons in the adjacent public housing, have raised concerns about road safety and location of pedestrian crossings.</p> <p>Road safety concerns associated with the CSELR proposal (and subsequent severance issues) would be managed through design. For example, all streets where the light rail crosses traffic would be signalised. The intersection of Bourke Street and Devonshire Street would be signalised and have turn restrictions introduced. Signals would include the Bourke Street cycleway. The intersection of Marlborough Street and Devonshire Street would be signalised to provide safe access to the Surry Hills stop at Ward Park. In addition, LRVs would have warning bells that the driver could use in instances where they perceive that there is a risk to pedestrian safety.</p> <p>Overall, safety issues associated with pedestrian crossings of the CSELR proposal are expected to be partly offset by the reduction in road vehicle traffic along Devonshire Street. While access and local traffic conditions would be permanently altered by the proposal, with clear signage and communications, it is expected that people would adjust to the new traffic conditions, as has proven to be the case in numerous international cities. Adjustment to new conditions would be accelerated where the permanent conditions planned for operational phase of the CSELR are implemented early on in the construction phase.</p> <p>Following the appointment of a preferred contractor, detailed design would be undertaken for the CSELR proposal. As a part of the design process, an independent road safety audit would be undertaken on the detailed design. Mitigation measures, such as speed limits, may be recommended as a part of this process. The road safety audit would verify the appropriateness of any proposed mitigation measures for the CSELR proposal, or would make recommendations on any additional/alternative measures that would be required to manage road safety risks.</p>	<p>233, 235, 252, 294, 328, 357, 389, 433, 481</p>
<p>Concerned that the artist impression for the proposed Moore Park tunnel did not include a pedestrian link between Devonshire Street and Moore Park. Requests clarification about whether this link will be removed as part of the CSELR proposal. Pedestrian access should be retained, not removed.</p>	<p>As outlined in section 5.2.5 of the EIS (Volume 1A), the proposed Eastern Distributor bridge would incorporate two light rail tracks and a shared use pedestrian and cycle path. Such an arrangement is shown in Figure 5.47 of the EIS (Volume 1A).</p> <p>The bridge structure would provide pedestrian and cyclist access into Moore Park and would replace the existing pedestrian/cycle bridge and associated crossings located adjacent to Parkham Street.</p>	<p>1</p>
<p>Concerned about the loss of pedestrian space that would occur once traffic is opened up between Cooper and Riley Streets.</p>	<p>The proposal to open up the connection between Cooper and Riley streets is designed to facilitate local access. The design should seek to retain as much pedestrian space as possible, whilst allowing for local access movements by vehicles. This would be subject to further detailed design.</p>	<p>358</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>It is vital that the CSELR proposal results in improvements for pedestrians along Devonshire Street. It must be ensured that Devonshire Street does not become a 'transport corridor'.</p>	<p>The Devonshire Street corridor would continue to provide a strong east-west pedestrian connection through Surry Hills during the operational phase of the CSELR proposal. Pedestrians would benefit from improved amenity, particularly where streets are closed at their intersection with Devonshire Street, as this presents an opportunity to reduce road crossings and increase footpath area.</p>	449
<p>Concerned about pedestrian congestion along Devonshire Street during the morning peak (noting interchange patronage from buses to light rail will be 505 in 2021).</p>	<p>The proposed access improvements for the Surry Hills Precinct are outlined in section 7.3.11 of Technical Paper 1 in Volume 2 of the EIS. Key actions proposed to resolve multimodal access issues in the precinct include the implementation of pedestrian priority improvements to reduce pedestrian wait times at key intersections. In addition, the reduction in vehicular traffic along Devonshire Street would allow additional priority to the east-west pedestrian movement. Finalisation of kerbside treatments would occur during detailed design.</p> <p>The above measures would increase the significance of pedestrians in the road hierarchy and would ensure increased pedestrian volumes can be accommodated in the precinct.</p>	291
<b>Moore Park Precinct</b>		
<p>Lighting and pedestrian amenity/safety from Driver Avenue to the bus stop via Gregory Avenue/Macarthur Avenue requires upgrading to maximise use of light rail by workers within the precinct. Weather protection should be provided between the stop and Driver Avenue.</p>	<p>Further consideration of this issue would be undertaken during detailed design.</p>	335, 336, 337
<p>A solution is required for bike riders crossing Anzac Parade at the Lang Avenue/Cleveland Street intersection, noting that the existing complex intersection is set to become more complex with light rail.</p> <p>A bike bridge should be provided to link the City of Sydney's bike network with Centennial Park.</p>	<p>The Lang Road/Anzac Parade intersection would remain broadly consistent with the existing layout and traffic signal operation following the introduction of the CSELR proposal. The existing cycleway along Anzac Parade would be maintained with minimal impacts arising from the proposed CSELR alignment.</p>	363
<b>Randwick Precinct</b>		
<p>The existing off-road shared path along the southern side of Alison Road, running between Darley Road and Wansey Road, should be retained.</p> <p>Sections of the shared path adjacent to Alison Road and Wansey Road that do not current meet AusRoad standards should be upgraded as part of the CSELR proposal (for example, the section between Darley Road and Wansey Road).</p>	<p>As outlined in Table 15.9 of the EIS (Volume 1B), between Darley Road and Wansey Road, the CSELR would run on the southern side of Alison Road. As a result, the off-road cycle route would be realigned between the CSELR corridor and Royal Randwick racecourse. At the signalised intersection of Alison Road and Darley Road, cyclists would still be able to move between off-road cycle routes; however, they would also need to cross the CSELR tracks.</p> <p>The section of the off-road cycle route that is proposed to be realigned as part of the CSELR proposal would be designed to comply with current design standards.</p>	41, 409, 446

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The existing off-road shared path along the western side of Wansey Road should be retained.</p> <p>The footpath in front of Wansey Road residential properties should also to be retained.</p> <p>The pathway on the western side of Wansey Road should be designated for use by pedestrians only. Cyclists should be required to use the alternative route via High Street and Doncaster Avenue. This alternative route should be made into a dedicated cycleway.</p> <p>Wansey Road should be cantilevered to create a shared zone.</p>	<p>As outlined in section 6.11 of this Submissions Report, further refinement of the CSELR design along Wansey Road has resulted in the need to relocate the existing shared pedestrian and cycle path to the eastern side of the proposed light rail alignment, between the light rail tracks and Wansey Road. The shared path would be separated from the light rail alignment by a buffer planting zone and small retaining wall. Access to the northern end of the shared path from the existing shared path along Alison Road would occur via a new crossing to be provided at the intersection of Alison Road and Wansey Road.</p> <p>As outlined in section 5.4.5 of Technical Paper 1 in Volume 2 of the EIS, following the introduction of the CSELR proposal, the High Street corridor north of Wansey Road would become incompatible for an on-road cycle route. Retaining the existing Wansey Road corridor for cyclists was preferred in favour of establishing an alternate cycle route due to geometric, legibility and safety concerns.</p> <p>Further discussion on the proposed changes to the configuration of Wansey Road is provided in section 6.11 of this Submissions Report.</p>	<p>41, 299, 308, 409</p>
<p>The EIS did not describe how the existing bike/pedestrian path and busway crossing near the corner of Anzac Parade and Alison Road will be managed. A zebra crossing and stop sign for buses currently exists at this location, with buses needing to stop at the stop sign, regardless of whether there is a pedestrian present or not. Pedestrians and cyclists currently have right-of-way over buses. Following the introduction of the CSELR, two tram routes (i.e. four sets of tracks) will also be present at this location. Requests clarification about the ability to avoid impacts to the existing cycleway; the EIS did not provide sufficient information to demonstrate how such an outcome could be achievable.</p>	<p>The crossing would be managed under signal control, with the stop sign and zebra crossing removed. By default the signal phasing would remain on a green signal to pedestrians/cyclists to provide improved priority to these modes. The signals would only change when a bus or LRV approaches.</p> <p>Implementation of CSELR would result in fewer buses on the busway and as a result a reduced number of conflicting vehicle movements would occur. When this is combined with the signal control, it would represent enhanced protection for cyclist and pedestrian movements.</p>	<p>90, 178</p>
<p>The Centennial Park Draft Master Plan includes a significant upgrade to the pedestrian entry at Doncaster Avenue. This master plan should be considered during the development of the Randwick Racecourse stop design to facilitate access to Centennial Park for light rail passengers.</p>	<p>The Centennial Park Draft Master Plan would be considered during the detailed design of the proposed Royal Randwick Racecourse stop.</p>	<p>41</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<b>Kensington/Kingsford Precinct</b>		
<p>There was no consideration given to the number of bicycles that currently use the existing bus lanes along Anzac Parade. Buses do not use the bus lanes because these lanes are full of cyclists. Following the introduction of the CSELR proposal, buses will be forced to share one traffic lane with cars for the entire trip along Anzac Parade between Kingsford and the city.</p> <p>Concern that revised road usage on Anzac Parade will not allow safe joint usage of roads for cyclists and motor vehicles.</p>	<p>Section 16.3.1 of the EIS (Volume 1B) noted that the majority of cyclists travelling along the proposed CSELR alignment currently use footpaths. While bus lanes are also permitted for use by cyclists, this shared use creates potential conflict and safety issues for cyclists.</p> <p>Alternative cycle routes to the Anzac Parade bus lanes currently exist in parallel streets, such as Houston Road and Doncaster Avenue. These alternative routes would continue to be available to cyclists during the operational phase of the CSELR proposal.</p> <p>While there is the potential that cyclists would continue to use the Anzac Parade corridor during the operational phase of the CSELR, cycle storage facilities would be provided at the Kingsford stop, providing opportunities for cyclists to change mode onto the light rail.</p>	177, 290
<p>Light rail will reduce pedestrian access to UNSW services for NIDA students. The CSELR proposal would significantly extend pedestrian trips because the only pedestrian access to NIDA from the UNSW side of Anzac Parade will be at the existing traffic lights at High Street and the newly proposed traffic lights at Day Avenue.</p>	<p>The functional characteristics of the Kingsford and UNSW precinct following the introduction of the CSELR proposal is provided in section 5.4.4 of Technical Paper 1 in Volume 2 of the EIS. The proposed UNSW Anzac Parade stop would retain a pedestrian crossing of Anzac Parade, which would be aligned with the University Walk.</p>	351

#### 5.8.14 Construction pedestrian and cyclist impacts

##### Summary of issues raised

A number of submissions raised concerns and specific comments in relation to impacts on pedestrians and cyclists during the construction of the CSELR proposal. These issues are listed below:

- Request for bicycle and pedestrian access to be maintained along the CSELR alignment for the duration of construction. Restrictions on pedestrian activity should be minimised.
- Construction works within heavily pedestrianised areas should be restricted to within clearly demarcated areas (e.g. through the erection of safety barriers around the active worksite) to minimise disruption to pedestrian and customer flows. Multiple access points across the construction zone should be provided for shoppers.
- Maintaining pedestrian access will be critical in ensuring local business viability (including restaurant and café businesses located in the CBD and along Devonshire and Bourke streets). Access for customers must be maintained during trading hours. Clear signage directing shoppers to key stores, shopping malls and designated crossing points across the construction worksite should be provided. Screens, barriers, directional signage and pedestrian routes are to be well maintained throughout the construction of the CSELR.
- The Alison Road bike path should be kept open during construction by temporarily moving it further to the north. Concern that Alison Road is not a suitable path for cyclists as it has a steep gradient, reduced lane capacities and high traffic volumes.

- It is understood the midblock pedestrian crossing outside the Strand Arcade will be closed during construction which is contradictory to the Social Impact Assessment that notes that it will be kept open.
- Safe access to Moore Park west should be maintained for Bourke Street Public School students. This access should be retained in close proximity to the school.
- Concerned about reduced footpath space at the corner of George Street and Market Street. Existing space at this location is already constrained by a long term homeless resident. During construction, the constrained space will pose a serious risk to his safety, pedestrians, Myer customers and staff.
- The entrance to Sydney Central Plaza at the corner of George and Market Streets is the second ranked entrance in terms of foot traffic. Requests that construction works do not impede on the existing footpath adjacent to the Sydney Central Plaza. Appropriate way-finding signage should also be provided to assist pedestrians and tourists with navigating around the construction works.

#### Submission number(s)

41, 120, 269, 292, 304, 342, 347, 349, 409, 449

#### Response

##### *Cyclist access*

As outlined in section 6.10.9 of the EIS (Volume 1A), existing cycle paths located within the construction corridor, but not occupied by the required worksite, would be maintained during construction. Where existing cycle routes or facilities are occupied by the construction worksites, alternate routes would be identified. Alternative cycle route changes that are currently anticipated to be required during the construction of the CSELR proposal include the following:

- To avoid Devonshire Street, an alternative route along Cooper Street/Author Street is proposed.
- To avoid Wansey Road and Alison Road, an alternative route along Botany Street, Church Street and Kings Street is proposed.

In developing these temporary diversions, consideration has been given to the suitability of alternative routes based on the road environment and current function. Alternative cycle routes would be reviewed by the relevant roads authority with input from local bicycle user groups and local communities, prior to their implementation.

Further discussion on measures that would be implemented to minimise construction impacts to cycle routes is provided in section 9.2.3 of the EIS (Volume 1A).

##### *Pedestrian access*

A detailed assessment of the CSELR proposal's impact on pedestrian access and movements within, adjacent to and around the CSELR construction footprint is provided on a precinct by precinct basis in sections 12.3.3 (*City Centre Precinct*), 13.3.3 (*Surry Hills Precinct*), 14.3.3 (*Moore Park Precinct*), 15.3.3 (*Randwick Precinct*), and 16.3.3 (*Kensington/Kingsford Precinct*) of the EIS (Volume 1B).





As outlined in section 9.2.3 of the EIS (Volume 1A), for the majority of the main construction works, existing longitudinal pedestrian movements (i.e. pedestrian movements running parallel to the CSELR alignment) would be maintained along the footpaths. Transverse pedestrian movements (i.e. pedestrian movements crossing the CSELR alignment) would generally be maintained at existing pedestrian crossing facilities either at signals or controlled by traffic controllers.

While the mid-block pedestrian crossing at Martin Place would be maintained during construction, the mid-block crossings at the Strand Arcade, Queen Victoria Building and Event Cinemas (on George Street) would be closed while the CSELR is constructed in these areas.

Where worksites have an impact on footpaths, consideration would be given to the requirements of all pedestrians and especially vulnerable users (e.g. those with mobility limitations). *Disability Discrimination Act 1992* requirements would be adopted (e.g. with drop kerbs, etc. provided at crossings). Footpath widths would allow two-way pedestrian traffic, with sufficient space provided to accommodate pushchairs and wheelchairs. Where high numbers of vulnerable users utilise a footpath, special provision and design consideration would be undertaken to minimise impacts to these pedestrians.

Measures that would be implemented during construction to minimise the CSELR proposal's impact on pedestrian traffic are described in section 9.4.2 of the EIS (Volume 1A).

Consultation with businesses and residents during the construction of the CSELR proposal would be undertaken in accordance with the Business and Landowner Management Plan, which would be prepared prior to construction. Further discussion on the Business and Landowner Management Plan is provided in section 5.14 of this Submissions Report.

#### *Use of construction barriers and site hoardings*

Site hoardings and/or barriers would be used to demarcate construction works from pedestrians (where required). The design and placement of barriers and site hoardings would be reviewed so as to minimise disruption to pedestrians and customers, wherever possible. Environmental management measure U.5 (refer to Chapter 8 of this Submissions Report) states that regular maintenance of site hoarding and perimeter site areas would be undertaken, including the prompt removal of graffiti.

#### *Pedestrian access to businesses along the CSELR alignment*

Consideration of potential impacts to the accessibility of businesses located along the proposed CSELR route would be undertaken by the construction contractor(s), in consultation with adjacent business owners/managers. Where pedestrian access to a business is identified to be significantly impeded by the CSELR construction works, appropriate management measures would be developed and implemented. This could include (where appropriate) the use of way-finding signage to direct pedestrians around the construction worksite and entrances to businesses.

Further discussion on measures that would be implemented to minimise the CSELR proposal's impact on local businesses during construction is provided in section 5.14 of this Submissions Report.

#### *Access to Moore Park west during construction*

Pedestrian and cyclist access between Surry Hills and Moore Park would be maintained during construction of the CSELR.

### 5.8.15 LRV breakdowns and other emergencies/incidents on the CSELR network

#### Summary of issues raised

A number of submissions raise concerns and specific comments in relation to LRV breakdowns and other emergencies/incidents on the CSELR network, as listed below:

- General concerns raised about LRV breakdowns and other emergencies/incidents on the CSELR network, including power failures and accidents.
- Clarification requested regarding the provisions that have been made to respond to, and manage, LRV breakdowns.
- Concern raised about LRV susceptibility to being disrupted by motor vehicles. Whilst traffic accidents would be expected to be a rare event, such an incident would cause significant disruptions to the CSELR network, as evidenced by the impact that relatively minor derailments on the Inner West Light Rail had on that light rail network.
- Concern raised about the responsiveness and ability of LRV drivers to respond to an emergency on the CSELR network. Bus drivers can stop to help the less able enter the bus, or drive directly to police or the hospital.

#### Submission number(s)

184, 213, 242, 445

#### Response

As outlined in section 5.4.13 of the EIS (Volume 1A), the operator of the Sydney light rail network would have responsibility for the safe and efficient operation of the total system. The network operator would implement a safety management system including a full suite of operational rules, procedures and manuals, describing how the system is to be operated and maintained.

Preliminary operational contingency measures that would be implemented in the event of an incident occurring on the CSELR network are outlined in Appendix J of the EIS (Volume 1C). These contingency measures would be further refined and developed by the future Operator, in consultation with all relevant stakeholders (including the Transport Management Centre).

Where an unforeseen incident prevents part of the CSELR from operating, shortened services would be provided where possible (dependent upon the location and nature of the incident). If an incident causes an extended interruption to normal operations it may be desirable/necessary to implement shuttle services whereby LRVs continue to operate a truncated service either side of the incident site within the constraints of the available crossover locations.



### 5.8.16 Disruptions to access for emergency services vehicles

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>General concern raised regarding the impact that the CSELR proposal would have on access for emergency vehicles.</p> <p>NSW emergency services should review all traffic changes to ensure emergency access is maintained.</p> <p>The conditions of approval for the CSELR proposal should require the preparation of emergency response plans for the construction period including access for emergency vehicles, integration with existing building evacuation planning, identification of building evacuation meeting points and paths of travel.</p>	<p>Access for emergency vehicles would be maintained at all times during and operation of the CSELR. Emergency access requirements to adjacent properties and land uses during the operational phase of the CSELR proposal would be addressed during detailed design. For example, within the City Centre Precinct, the CSELR would be designed to make provision for emergency vehicle access requirements. These provisions would include maintaining access to all building frontages along George Street, and (in the event of fire) access for snorkel appliances for building evacuation and/or firefighting.</p> <p>During construction, measures to facilitate the movement of emergency vehicles through worksites would be made available at all worksites and would be defined in the worksite specific traffic management plans. These measures may include the establishment of clearways adjacent to worksites and/or the installation of road plates.</p> <p>Emergency services would be advised of all planned changes to traffic arrangements prior to applying the changes. Advice would include information about upcoming traffic switches, anticipated delays to traffic, extended times of work, locations of road possession or any likely major disruptions.</p> <p>During short periods when major construction and loading/unloading activities are underway, it may not be possible to allow emergency vehicles to traverse the full block length. Access to an emergency within the block would be maintained at an identified access point and diversion routes would be agreed with the emergency services prior to commencing the major construction and loading/unloading activities.</p> <p>The construction contractor(s) would consult with NSW Fire and Rescue during the preparation of the site specific traffic management plans, to obtain any specific requirements for any of the buildings adjacent to the CSELR alignment. An Emergency Management Plan would coordinate these measures and provide a framework for input to the individual worksite traffic management plans.</p>	<p>1, 125, 271, 334, 427, 433, 475</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>How will emergency vehicles access Devonshire Street?</p> <p>Requests clarification about how emergency vehicles would be able to access Northcott Estate and other nearby properties if the existing right-hand turns at Marlborough Street are removed and Clisdell Street is blocked off.</p> <p>Concerned about ambulance access to the clinic at 120 Devonshire Street, noting that on rare occasions it may be necessary for a patient to be transferred to hospital by ambulance in an emergency situation.</p> <p>Suggests project team anticipates and plans for forced stoppage of all traffic on Devonshire Street in the event of a medical emergency requiring temporary ambulance access via Devonshire Street.</p>	<p>Emergency vehicle access to all properties and land uses along Devonshire Street would be maintained at all times.</p> <p>As outlined in section 13.3.2 of the EIS (Volume 1B), a single eastbound traffic lane would be retained along Devonshire Street (although the existing westbound lane would be occupied by the light rail tracks and, therefore, would be closed to traffic). Therefore, access for emergency vehicles travelling eastbound along Devonshire Street would occur via the retained eastbound traffic lane. Westbound access for emergency vehicles would also be retained along Devonshire Street by permitting emergency vehicles to travel on the CSELR alignment.</p> <p>To enable attendance at emergencies within the Northcott Estate it is anticipated that emergency vehicles would stop either on Clisdell Street, Belvoir Street or within the estate itself. During detailed design of the CSELR proposal, provision of an emergency vehicle bay would be investigated outside the estate on Devonshire Street so that a stopped emergency vehicle would not impact light rail or general traffic movements.</p>	<p>271, 422</p>
<p>Emergency access to buildings should be maintained.</p> <p>The proponent should cover all costs associated with changes to emergency evacuation procedures for the Dymocks building and any project approval should require this as a condition of approval.</p>	<p>As discussed in section 6.10.12 of the EIS (Volume 1A), it is anticipated that emergency evacuation procedures for buildings located along the proposed CSELR alignment may need to be amended to account for the CSELR construction worksite and compounds. This would particularly be the case for buildings which utilise public open spaces affected by the CSELR proposal (such as Belmore Park) as emergency evacuation marshalling areas. Transport for NSW would consult with building owners/managers along the proposed CSELR alignment to assist with the redesign of emergency evacuation procedures for affected buildings.</p> <p>Emergency evacuation requirements would need to be agreed with emergency service providers (including NSW Fire Brigade). Depending on the stage of work this may require:</p> <ul style="list-style-type: none"> <li>▪ temporary road plates to permit crossing of the work zone</li> <li>▪ assistance of traffic controllers in restricting public access to the street block and facilitating access for emergency service vehicles</li> <li>▪ protocols for managing emergency response, which would need to be agreed with service providers prior to the start of work</li> <li>▪ protocols to manage the evacuation of occupants adjacent to the worksite, which would need to be agreed with the building owners and service providers prior to the start of work.</li> </ul>	<p>125, 347</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
	Transport for NSW would not provide financial assistance to building owners/managers in relation to the amendment of emergency evacuation procedures for buildings along the CSELR alignment. Changes to emergency response and evacuation procedures would be the responsibility of building owners/managers. Transport for NSW would consult with building owners/managers along the proposed CSELR alignment to assist with the redesign of emergency evacuation procedures for affected buildings.	(continued from above)
A detailed emergency access plan should be prepared and provided to Surry Hills residents for review.	<p>As discussed in section 5.8.8 of this Submissions Report, Transport for NSW is committed to ensure that access is maintained to all private and commercial vehicle driveways along the corridor (which includes emergency vehicle access). Measures that are proposed for the treatment of private and commercial vehicle driveways within the CSELR corridor are outlined in section 5.8.8 of this Submissions Report.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	271

### 5.8.17 Impact assessment approach and EIS documentation

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Residential property at 242 Devonshire Street, with a driveway onto Devonshire Street, not identified in Figure 13.2.</p> <p>Figure 13.2 incorrectly shows a business having access from Devonshire Street (corner Devonshire and Marlborough streets).</p> <p>Figure 13.7 does not identify the residence at 242 Devonshire Street. In addition, the properties in Marlborough Street (left from Devonshire Street) have not been separately identified as requiring access from Devonshire Street during the street closure.</p> <p>Concerned that the incorrect figures will impede people's ability to assess the proposal and make relevant submissions about real impacts.</p>	<p>The errors noted with Figures 13.2 and 13.7 are acknowledged. The issues raised are considered to be minor in nature and do not impede the ability to assess the CSELR proposal's impact on property access.</p> <p>Section 13.3 of the EIS (Volume 1B) acknowledged that there are a number of properties on Marlborough Street (north of Devonshire Street) and driveways on Nickson Lane that are accessible only via Devonshire Street. To manage the impacts that the CSELR proposal would have on accessibility to these properties, the Devonshire Street/Marlborough Street intersection would be signalised. Vehicle access to these properties would be achievable via left-in left-out turning movements.</p> <p>As discussed in section 5.8.8 of this Submissions Report, Transport for NSW is committed to ensuring access is maintained to all private and commercial vehicle driveways along the corridor. Measures proposed for the treatment of private and commercial vehicle driveways within the CSELR corridor are outlined in section 5.8.8 of this Submissions Report.</p> <p>Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design and further information regarding access, road closures and encroachment is developed.</p>	271

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Suggests that the public transport and activation benefits of the CSELR are overstated in the EIS in that nearly half of Surry Hills residents walk or cycle to work. In addition, the Devonshire Street precinct of Surry Hills has enjoyed significant activation over the last 10 years and doesn't need a light rail for such activation to continue.</p>	<p>The CSELR proposal would enhance existing sustainable travel options for local residents by providing a direct and convenient public transport option to the CBD and other destinations of regional significance.</p>	<p>122</p>
<p>The parking data presented in the EIS is not consistent with local resident observations (Tudor Street). The EIS incorrectly shows unrestricted parking on Riley Street near the day-care centre, parking on Devonshire Street next to Ward Park and the number of spots on Tudor Street. The EIS states that parking is available in this area during the day; this is not the case.</p>	<p>The parking supply map incorrectly labelled the restriction for Riley Street in one time period. The incorrect labelling had no bearing on the occupancy analysis.</p>	<p>250</p>
<p>Concern that the 700 metre catchment radius used in the parking assessment did not reflect the distances that pedestrians and customers would be prepared to walk to access local shops and services.</p>	<p>The 700 metre radius identified represents the extent of the parking surveys that were undertaken for each precinct as part of the EIS. Smaller sub-precincts — which only considered the streets located immediately adjacent to major commercial, retail or entertainment centres along the corridor — were included in the analysis of parking survey data. These sub-precincts were defined in consultation with Councils and were used during the analysis of parking survey data in Chapter 6 of Technical Paper 1 in Volume 2 of the EIS.</p> <p>Further discussion on how parking impacts would be managed during the construction and operational phases of the CSELR proposal is provided in sections 5.8.12 and 5.8.11 of this Submissions Report, respectively.</p>	<p>54, 59, 63, 64, 126, 255, 329</p>
<p>Figure 12.2a of the EIS incorrectly identifies Blue Anchor Lane as a 'private driveway'. Blue Anchor Lane is a privately owned laneway which is affected by permanent legal easements for access to various parties including the City of Sydney. This lane currently provides access to car parking and loading docks for a number of properties, including 182 George Street and 174–176A George Street.</p>	<p>The error on Figure 12.2a of the EIS (Volume 1B) is acknowledged.</p>	<p>125</p>
<p>More analysis needs to be undertaken to test the priority required to ensure a 2–3 minute 'turn up and go' service.</p>	<p>The future Operator of the CSELR would further refine and enhance the operational performance of the network through the subsequent design phases.</p>	<p>277</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Concerned that the seven second delay to through traffic, as noted in the EIS, may not have taken into account the cumulative impact of traffic slowing to a stop at the proposed signalised level crossing at South Dowling Street.</p> <p>Concern that the flow on impacts in surrounding streets not covered in the EIS will be considerable.</p> <p>Concerned about the lack of detail provided on the likely impact on surrounding streets and intersections of displaced traffic and increased competition for on-street parking.</p>	<p>Analysis of the South Dowling Street at-grade crossing is provided in section 5.5.2 of Technical Paper 1 in Volume 2 of the EIS. This section of Technical Paper 1 provides details on intersection level of service, queue lengths, and green time distribution under multiple levels of LRV priority. The conclusions, which were developed in consultation with RMS, determined the proposed at-grade crossing for the CSELR proposal would have marginal impacts on the current performance of the road network.</p>	393
<p>Parking impacts in Surry Hills have been assessed using faulty baseline data. The parking occupancy figures are inaccurate, noting occupancy on Riley, Tudor and Arthur Streets is greater than 85 per cent between 10.00 am and 2.00 pm.</p> <p>The parking research presented in the EIS is inaccurate, and does not reflect the reality experienced by residents in and around Devonshire Street.</p>	<p>Surveys were undertaken during a typical weekday; however, due to the nature of the parking behaviours of drivers, the number of parking spaces that are available at any given time is subject to variability.</p>	291, 367
<p>Concerned that traffic modelling assumes a three-minute peak frequency, but elsewhere in the EIS the maximum capacity is calculated at two-minute peak frequency. Concern that traffic impacts have not be assessed for maximum capacity.</p>	<p>A description of the proposed future road network operations, following the introduction of the CSELR proposal, is provided in Chapter 5 of Technical Paper 1 in Volume 2 of the EIS. The traffic assessment assumed a three minute LRV frequency (for the purposes of the planning and feasibility stages of the CSELR proposal). The future Operator would further refine and enhance the operational performance of the network.</p>	291
<p>Table 7-10 of Technical Paper 1 states that the 'estimated morning peak hour interchange patronage from bus to light rail is 635 (51 per cent) in 2021. Concerned that this figure is too low, if it is planned that half the inbound Broadway bus services terminate at Rawson Place.</p>	<p>The demand for interchange has been estimated with the aid of a multi-modal strategic transport model which has been subject to external calibration and validation reviews. Many bus routes from the Broadway corridor are proposed under the <i>Sydney City Centre Access Strategy</i> to through route to Elizabeth Street, reducing demand for interchange at Rawson Place.</p>	291
<p>The EIS does not provide an outline of proposed road closures, removal of existing right hand turns, road direction changes or traffic light signal changes.</p>	<p>Road network changes proposed as part of the CSELR (including road closures, removal of existing right hand turns, road direction changes or traffic light signal changes) are described in sections 9.2 (<i>Regional traffic, transport and accessibility</i>), 12.3 (<i>City Centre Precinct</i>), 13.3 (<i>Surry Hills Precinct</i>), 14.3 (<i>Moore Park Precinct</i>), 15.3 (<i>Randwick Precinct</i>), 16.3 (<i>Kensington/Kingsford Precinct</i>) and 17.3 (<i>Rozelle locality</i>) of the EIS (Volumes 1A and 1B), while more detailed information was presented in Technical Papers 1 and 2 in Volume 2. The road network configuration proposed during the operational phase of the CSELR proposal is also illustrated in Figures 12.5, 13.6, 14.3, 15.6 and 16.9 of the EIS (Volume 1B).</p>	359

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The Westfield/Myer loading dock was incorrectly listed as a 'private car park access' in the EIS, rather than a 'courier/delivery loading dock access'. The requirements of the loading dock vary substantially from the private car park.</p>	<p>The error in the EIS is acknowledged.</p>	<p>342</p>
<p>Notes that parking loss figures for the area of Anzac Parade adjacent to Souths Juniors are understated. The EIS states that 170 spaces will be lost; however, parking loss at this location is over 300 spaces.</p>	<p>As outlined in section 7.1 of this Submissions Report, further refinement of the parking impacts associated with the CSELR proposal has been undertaken. The quantum of parking that is proposed to be removed from Anzac Parade in the vicinity of Souths Juniors is approximately 180 spaces.</p> <p>As a result of the need for a construction compound in the vicinity, existing parking at the Rainbow Street markets site would be removed for at least the duration of construction. Cumulatively, the impact of this change would result in the loss of approximately 300 spaces, as indicated by the submission, and this omission is acknowledged.</p> <p>Further discussion on parking impacts associated with the CSELR proposal, and the measures that would be implemented to manage these impacts, is provided in section 5.8.11 of this Submissions Report.</p>	<p>435</p>

## 5.9 Land use and property

### 5.9.1 259 George Street, Sydney

#### Summary of issues raised

One submission sought clarification on the extent of encroachment (if any) of the light rail stop on the NAB building curtilage, including how the easement/right of way arrangement with 259 George Street, City of Sydney and Sydney Electricity will be addressed.

#### Submission number(s)

300

#### Response

There is no direct property impact from the CSELR on the NAB Building at 259 George Street. The issue regarding property access is addressed in section 5.8.13 of this Submissions Report.





## 5.9.2 Olivia Gardens apartment complex, Surry Hills

### Summary of issues raised

A number of submissions raised concerns with the proposed acquisition and demolition of the Olivia Gardens apartment complex in Surry Hills comprising 69 residential apartments. Issues raised are listed below:

- Concerned about the demolition/acquisition of 69 homes in the Olivia Gardens apartment complex and that residents will have to move from the Surry Hills area.
- Concerns about acquisition of properties and that the acquisition of Olivia Gardens should not proceed because the proposal will not achieve objectives.
- Create a new neighbourhood park at Olivia Gardens.
- All impacted properties along the alignment should be eligible for fair compensation, including acquired properties.
- Submits that it is bad policy to dislodge residents of Olivia Gardens, noting the broader housing shortage in Sydney.

### Submission number(s)

19, 22, 105, 154, 157, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 196, 200, 204, 218, 219, 280, 312, 323, 344, 350, 355, 376, 377, 379, 390, 391, 396, 410, 424, 425, 427, 437, 440, 444, 447

### Response

Detailed consideration was given to the route of the CSELR between Bourke Street and South Dowling Street and the various options considered are detailed in section 4.3.2, (Volume 1A) of the EIS. A total of 10 options were considered including options which avoided impact to the Olivia Gardens apartment complex. An assessment of the options concluded that the options located within the Olivia Gardens apartment complex were, collectively, preferred for the following reasons:

- 'These options have operational benefits compared to the other alignment as a result of a straighter alignment with improved sightlines for the driver, and better safety outcomes for the public.
- These options have better accessibility outcomes by avoiding closure of adjacent or nearby streets to traffic and removal of parking and access to properties on these streets.
- These options have significantly reduced environmental impacts during both construction and operation compared to the other alignments, which would pass in close proximity to residential properties along adjacent lanes and streets.
- The options through Olivia Gardens all allow for the provision of a new large open space, which would benefit the local community and is considered to compensate for any loss of open space elsewhere in Surry Hills as a result of the proposal.
- Notwithstanding the need to acquire a significant number of private properties, the acquisition process allows equitable monetary compensation of landowners.' (EIS page 4-16)

Land use and property impacts are further discussed in Section 13.4 of the EIS (Volume 1B). The associated socio-economic impacts of proposed property acquisition are also assessed in section 13.9 of the EIS (Volume 1B). Property acquisition would be undertaken in accordance with the requirements of the *NSW Land Acquisition (Just Terms Compensation) Act 1991* (refer to mitigation measure F.1 in Chapter 8 of this Submissions Report). The compensation requirements of this Act would apply to all properties proposed to be acquired as part of the CSELR proposal, which includes all owners of units at the Olivia Gardens complex.

As also identified in Chapter 8 of this Submissions Report, mitigation measure F.2 states that Transport for NSW would consult with directly affected land owners during the detailed design of the CSELR proposal. This would include assisting residents to find alternative accommodation ideally within the general vicinity of their current residence where this is requested by individual residents. It is considered that there is an appropriate housing supply within Sydney to accommodate the amount of people proposed to be displaced by the proposal.

Other than Olivia Gardens, there is no proposal to demolish or acquire other residential property along the alignment.

The CSELR proposal includes creation of a new public park (an expanded Wimbo Park) at the site of the Olivia Gardens complex, for use by the local community. Details of this park are provided in section 5.2.8 of the EIS (Volume 1A) and section 6.7 of this Submission Report.

### 5.9.3 St Peter's Church, Surry Hills

#### Summary of issues raised

One submission noted that St Peter's Parish owns property that will be affected by the proposed CSELR alignment along Devonshire Street. The affected property is located on the southern side of Devonshire Street between Marlborough Street and High Holborn Street, and on the northern side of Devonshire Street between Riley Street and Marlborough Street.

#### Submission number(s)

62

#### Response

There would be no direct property impact to St Peter's Church. The CSELR corridor would pass directly in front of the church on the southern side of Devonshire Street. A full assessment of environmental impacts is included in Chapter 13, Volume 1B of the EIS. However, there is a need to provide some offset parking for the Church as a result of the CSELR which may impact on the church's land. The design of this offset parking would be undertaken with regard to the heritage significance of the Church, in consultation with the owner during the detailed design stage.

Additional discussion regarding property accesses, including St Peter's Church, is provided in section 5.8.8 of this Submissions Report.



## 5.9.4 AFL Training Oval (Tramway Oval), Moore Park

### Summary of issues raised

The following issues have been raised in relation to their current usage of the Tramway Oval as a training ground and its proximity to the proposed Moore Park stop:

- Impacts on the oval should be minimised, with the construction footprint reduced as works progress. Avoid or minimise any loss of training field width on Tramway Oval without any reduction in the current Tramway Oval width post construction.
- Isolate any impact on the current field width of Tramway Oval to one pre-season training period, being November to March inclusive. Outside of this time, the oval is utilised for regular training.
- Do not support any redirection of the existing bus loop road or introduction of turn circles that would encroach on adjacent Oval training space or field run-off.
- Any oval reconfiguration works (drainage, irrigation, retaining walls, lighting) and safety requirements during construction (fencing, netting) should be considered with future oval needs in order to maximise longevity and minimise the visual impact on Tramway Oval. Examples include:
  - ▶ installing purpose made ball / safety netting that is to be retained post construction
  - ▶ utilising light poles as supports for ball / safety netting
  - ▶ integrating netting into the design of the Portal exit along Anzac Parade at Moore Park East.
- Do not support bus turn circle at southern end of Tramway Oval – it will impede green space behind the southern goals.
- Do not support any other encroachment of the existing bus loop road on the grass space – used during training – surrounding Tramway Oval.
- Recommend levelling the eastern side of Tramway Oval up to the bus loop road, allowing for the relocation of the oval boundaries to reduce or avoid construction impact on field width.
- Require a replacement full field night training facility for the Swans Academy.
- Would support extending the oval to the east pre-commencement of the CSELR proposal in order to limit the construction zone footprint on the western boundary. The impact of a reduced training width (projected seven metres) during peak construction would be offset by a slight increase in overall field width post-construction (approx. 4.5 metres). Any levelling works to the eastern boundary need to consider the use of retaining walls, extending the current field drainage and irrigation, relocating the existing light rowers and installing safety fencing or netting to protect players from changes in surface level and from balls entering the Bus Loop during operation.

- Recommend existing lighting at Tramway Oval is relocated to either Bat and Ball Oval (Cleveland Street) or Mackay Oval (Centennial Park) to minimise disruption to the Swans Academy program during construction (will be subject to Centennial Park and Moore Park Trust approval). This would alleviate access and safety concerns for junior athletes and parents sharing the facility with up to 90 buses per hour circling the perimeter of Tramway Oval due to the redirection of the bus loop.
- To safeguard uncertainty surrounding Tramway Oval, suggest upgrading the surface of another oval to an elite quality service, prior to construction.
- Seeks support to access SCG as an alternate training venue during construction; may require rescheduling cricket games earlier in the season.
- Do not support any redirection of the existing Bus Loop road or introduction to turn circles that would encroach on adjacent oval training space or field run off. This grass area outside the oval boundary is used at each training session for running concurrent drills, rehab sessions and warm-up and high intensity sessions to reduce impacting the surface quality on Tramway Oval. Concede the need for a turn circle within the Bus Loop road but recommend this temporary turn circle be constructed on the southern side of the existing Bus Loop road
- Does not support re-aligning the southern Bus Loop road section further north. This impact on the training space available behind the southern goals which is used at every training session.
- To minimise the impact of pre-season training on a reduced width field, the AFL would seek support to access the SCG for training from mid-February for the Sydney Swans Limited. This may require scheduling some domestic, grade or corporate games earlier in the year or at alternative cricket venues. Alternatively, it may be required to upgrade the surface at Bat & Ball Oval or Mackay Oval to an elite quality surface pre-commencement of the proposal as a back-up facility if required.

#### Submission number(s)

275, 319, 353

#### Response

The comments from the Sydney Swans and other respondents are noted in relation to the AFL Training Oval. Transport for NSW would continue to liaise with the users of the Moore Park facilities in relation to design and construction of the CSELR and potential impacts in relation to these facilities and their usage. The matters raised above would be specifically addressed during the detailed design of the proposal (refer to new mitigation measure F.3 in Chapter 8 of this Submissions Report).

The Moore Park stop is proposed to be relocated 250 metres south of the location described in the EIS, which would significantly reduce impact on the AFL Training Oval and its usage. Details of this proposed design change are provided in Section 6.8 of this Submissions Report.



As described in section 6.8 of this Submissions Report, the proposed design changes to the tunnel alignment and Moore Park stop location would result in some additional minor works being required to the existing bus loop around the existing AFL training oval. Construction of the tunnel, portal and dive structure between the busway and the Swans' training oval would require the section of the main busway to be closed between Macarthur and Gregory Avenues. Buses would be diverted on a temporary basis via the events bus loop which would be temporarily made two way. The southern end of the bus loop (near Macarthur Avenue) would be modified to provide a turning circle to allow for buses to continue to utilise the events bus stops during construction and allow buses to return to the city via the event loop. Following construction, the two way main busway would reopen and, the turning circle would be removed and access from the bus loop to the Moore Park busway would return to one way, clockwise operation for events only.

Details of the construction program and staging are included in section 6.1 and Figure 6.1 of the EIS (Volume 1A). At this stage, the program is based on the current design and construction staging and is therefore indicative only. A detailed construction plan is not available at this time and would be undertaken by the appointed contractor(s). Whilst construction of the overall CSELR proposal is expected to take approximately five to six years, this would not likely occur for all locations for the whole construction period. The precise sequencing and staging would be determined by the appointed contractor(s) in line with their preferred working method. The local community and other affected stakeholders, such as Sydney Swans would be consulted on and kept informed of the planned works and their progression through construction. Construction works would be scheduled to minimise disruption to residents, businesses and the community as much as possible.

## 5.9.5 Moore Park Tennis Centre

### Summary of issues raised

Concerns were raised regarding whether the existing facilities blocks servicing the netball and tennis courts be affected. This included questions regarding whether the car park be impacted near the tennis courts on the corner of Lang Road and Anzac Parade. Requests that replacement car parking be provided in the same area as the existing car park.

### Submission number(s)

84, 90

### Response

The CSELR proposal would require the acquisition of a small strip of land along the western side of the Parklands Sports Centre (adjacent to the Anzac Parade busway) (refer Section 14.4.2 of the EIS, Volume 1B).

This would potentially affect the parking area and facilities block adjacent to the tennis centre. This parking would be replaced with replacement off-street parking. The specific area of land required, replacement of the facilities block and the location of the replacement parking would be defined during detailed design in consultation with the Centennial Park and Moore Park Trust.

### 5.9.6 Bus terminal building (Anzac Parade at Robertson Road)

#### Summary of issues raised

One submission raised a concern over the lack of detail about the adjacent bus terminal building.

#### Submission number(s)

220

#### Response

There would be no impact to the bus terminal building adjacent to Anzac Parade, near Robertson Road, during construction or operation of the CSELR.

### 5.9.7 Stabling facility – land acquisition

#### Summary of issues raised

One submission asked a question about how much it will cost to acquire or rent the privately owned land for the stabling facility.

#### Submission number(s)

242

#### Response

The land required for the Randwick stabling facility would be acquired from the current owner. A fair market price would be negotiated in accordance with the requirements of the *NSW Land Acquisition (Just Terms Compensation) Act 1991*. The details of this transaction would be Commercial-in-confidence and the purchase price would therefore not be disclosed to the public.

### 5.9.8 Royal Randwick racecourse

#### Summary of issues raised

One submission raised concerns about the potential impacts on horses at the Racecourse.

#### Submission number(s)

242



## Response

Property acquisition required for the CSELR proposal within Royal Randwick racecourse is described in Section 15.4.2 of the EIS, Volume 1B as follows:

- 'acquisition of land between the Royal Randwick racecourse and Doncaster Avenue to allow for the Randwick stabling facility.
- acquisition of a series of strips of land currently owned by the ATC along Alison Road and Wansey Road to allow for the following:
  - ▶ the CSELR alignment
  - ▶ Royal Randwick racecourse stop, Wansey Road stop and High Street stop
  - ▶ the Royal Randwick racecourse substation.' (p 15-43)

The CSELR alignment and the proposed location of the Wansey Road stop and High Street stop as shown in the EIS would affect the horse stabling area on the eastern side of the racecourse land and its access from Wansey Road. To reduce this impact, design changes are proposed as follows and detailed in section 6.11 of this Submissions Report:

- relocation of the Wansey Road stop to the southern side of Alison Road, approximately 30 metres to the west of the intersection of Alison Road and Wansey Road
- relocation of the UNSW High Street stop to the centre of High Street approximately 40 metres east of the intersection with Wansey Road.

The Australian Turf Club (ATC) would continue to be consulted during the detailed design phase to ensure that the impact of the CSELR proposal on the racecourse and its operations is minimised (refer to mitigation measure F.2). The ATC's submission is discussed in Chapter 4 and Appendix C of this Submissions Report.

Further discussion in relation to noise impacts on horses is provided in Section 15.5 of the EIS (Volume 1B). This includes a commitment for communication with owners of the horse stables near the proposed works to clearly explain the timing, duration and likely noise levels for the works (refer to mitigation measure S.3 in and Chapter 8 of this Submissions Report).

### 5.9.9 Souths Juniors Club, Kingsford

#### Summary of issues raised

One submission raised a question about provisions made for patrons of Souths Juniors Club.

#### Submission number(s)

242

#### Response

The CSELR proposal would not have any direct property impact on the Souths Juniors Club. Issues in relation to parking and access arrangements for patrons and employees of the club are addressed in sections 5.8.11 and 5.8.13 of this Submissions Report.

### 5.9.10 Rozelle locality

#### Summary of issues raised

One submission raised concern was raised about significant disruption and impact on local residents near the proposed Rozelle maintenance depot, including a lack of integrated planning for the future mixed use and residential use of the goods yard.

#### Submission number(s)

240

#### Response

The proposed Rozelle maintenance depot would be located entirely within the former Rozelle Rail Yards on land zoned for Public Purpose under the *Leichhardt Local Environmental Plan 2000*. The land is currently owned by Sydney Trains and the Sydney Harbour Foreshore Authority and contains various existing commercial and industrial uses, including a valuers and auctioneers warehouse and a truck transport company. The proposed location of the Rozelle maintenance depot is generally consistent with the industrial nature of the existing land uses on the site.

Environmental impacts associated with the proposed Rozelle maintenance depot are assessed in Chapter 17, Volume 1B of the EIS. No significant impacts on local residents are expected. Consultation with local residents and businesses would continue during detailed design and construction phases of the proposal to minimise impact during construction and operation of the maintenance depot.

Leichhardt City Council would continue to be consulted during the detailed design and construction phases of the proposal. Future planning for the rail corridor other than works required for the CSELR is beyond the scope of this proposal.

### 5.9.11 Impact to public open space and parklands

#### Summary of issues raised

A number of submissions expressed general concern about the impact of the CSELR proposal on public open space and parklands. The issues raised are summarised below.

- Concerned about the CSELR proposal's impact on parklands and open space. Any impacts should be kept to a minimum. The loss of green space as a result of the CSELR proposal is totally unacceptable.
- Concerned about the temporary and permanent loss of parkland from the Surry Hills area and the impact that this loss will have on the community who rely on the availability of these areas.
- Concern about destruction of existing parklands (does not specify which parkland).
- All parklands should be replaced on a 1:1 basis, with improvements on facilities.





### Submission number(s)

75, 84, 90, 98, 105, 157, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 205, 251, 294, 312, 316, 391, 395, 396, 405, 407, 413, 416, 418, 425, 437, 439, 447, 449

### Response

The CSELR proposal would require the acquisition of small areas of public parkland including sections of Ward Park and Wimbo Park (in Surry Hills), Moore Park, Centennial Park and Tay Reserve (in Kensington) and High Cross Park (in Randwick). These are discussed in sections 13.4, 14.4, 15.4 and 16.4 of the EIS (Volume 1B).

During construction, temporary areas of parkland would also be required for construction compounds in First Fleet Park and Belmore Park (City Centre), Ward Park and Wimbo Park (Surry Hills) and Moore Park, Centennial Park and High Cross Park (in Randwick).

The design of the CSELR has sought to minimise the area of parkland required and to avoid or minimise direct impacts to public facilities within the parkland areas. Opportunities to offset loss of parkland have also been incorporated where possible, including the incorporation of residual land from the Olivia Gardens apartment site into an expanded Wimbo Park.

The areas of construction compound required have also been minimised and sited to mitigate impact to use of parkland. All areas of parkland required for construction worksites and compounds would be progressively rehabilitated and handed back for public use following completion of construction in that area. The final areas of land required for construction compounds would continue to be refined during the detailed design phase to assist with minimising overall impacts on open space.

Trees removed would be replaced in accordance with the Transport for NSW *'Vegetation Offset Guide'* (Transport for NSW 2013a). Trees would be replaced at a ratio of between 2:1 and 8:1 depending on the size of the tree to be removed. Further discussion in relation to planted trees is provided in Section 5.11 of this Submissions Report.

Ongoing consultation with the City of Sydney, Randwick City Council and the Centennial Park and Moore Park Trust would aim to further reduce impacts to parkland during the detailed design and construction phases of the proposal.

## 5.9.12 Impact to Ward Park, Surry Hills

### Summary of issues raised

In addition to general concerns raised regarding impacts to open space, a series of submissions were made with specific reference to Ward Park. These are summarised below.

- Objection to removal of Ward Park. This area is considered to be the only green space for many Northcott Estate residents.
- Concerned about the impact the construction zone in Ward Park will have on park users during construction period; in particular elderly and/or disabled residents of Northcott Estate.
- Concern about the impact on Ward Park and the loss of open space for this park

### Submission number(s)

219, 271, 315, 478

### Response

The CSELR proposal would require the permanent acquisition of approximately 750 square metres of parkland for the proposed Surry Hills stop. The Surry Hills station is now proposed to be relocated to a site in Wimbo Park to reduce the impact on Ward Park as described in section 6.14 of this Submissions Report, resulting in an overall reduced impact during operation of the CSELR. Planted trees directly adjacent to Devonshire Street would however be directly impacted by the CSELR permanent works.

As noted in the EIS, temporary acquisition of part of Ward Park would be required for a site compound during construction. The indicative area of land is shown on Figure 13.11 of the EIS (Volume 1B). The final site compound and access arrangements would be determined during detailed planning for construction. However, as part of the ongoing refinement of the CSELR design and construction methodology, the previously identified construction compound along the eastern edge of Ward Park has been moved to the western edge of the park (refer to section 6.15 of this Submissions Report). This change would provide more direct access for residents of the Northcott Estate (and other residents to the east of Ward Park), including elderly and disabled residents.

The CSELR proposal would affect the amenity of Ward Park including the existing landscaped seating area. To mitigate these impacts a design strategy would be developed for Ward Park in consultation with local residents and the City of Sydney which would incorporate a new frontage to Devonshire Street. Trees would generally be replaced in accordance with the Transport for NSW *Vegetation Offset Guide* (Transport for NSW 2013a) as discussed in section 5.11.1 and 5.11.4 of this Submissions Report.

The loss of parkland at Ward Park would be partially offset by the expanded Wimbo Park which is discussed in section 5.2.8 of the EIS (Volume 1A) and section 6.7 of this Submissions Report.

## 5.9.13 Impacts to Moore and Centennial Parklands

### Summary of issues raised

A number of submissions raised concern regarding the impact of the CSELR proposal on Moore Park and the Centennial Parklands. The issues raised are summarised below:

- Concern raised about the impact that the CSELR proposal will have on community open space and recreational activities within Moore Park. Many inner city residents do not have backyards. Moore Park is one of the few nearby parkland areas that such residents can utilise for recreational activities. In addition, a number of organised sporting events are held within Moore Park. Moore Park is also used by the Sydney Boys and Girls High Schools.
- There should be no net loss of parkland area or function as a result of the Moore Park tunnel and tracks. The Sydney Girls and Sydney Boys High Schools use Moore Park playing fields. If this is to be disrupted or limited during construction, acceptable alternatives must be provided, in addition to small compensation for hardship endured.



- The CSELR proposal would remove at least one hectare of land from the Moore and Centennial Parks precinct. This impact is unacceptable.
- Parkland should be maintained and enhanced once the proposal is complete, and available to the school.
- Concerned about loss of public land in Moore Park, due to tunnel portals, a separate two lane track east of the existing busway, a substation, the major event bus hub and the stop itself.

#### Submission number(s)

2, 67, 90, 106, 119, 226, 274, 457, 479

#### Response

The following areas of Moore Park would be permanently acquired for the CSELR proposal:

- a small portion of the Moore Park playing field adjacent to the southbound lane of South Dowling Street for the western tunnel portal
- a small strip of land along the western side of the Parklands Sports Centre (adjacent to the Anzac Parade busway) to allow for the alignment of the CSELR between Lang Road and approximately 80 metres south of Robertson Road.

The design of the CSELR has sought to minimise the impact on Moore Park by using a tunnel to cross under the park section between South Dowling Street and Anzac Parade. The final land required in this precinct would be determined following the completion of the detailed design.

No permanent acquisition of Centennial Park would be required.

Temporary acquisition of land in Moore Park would be required for construction compounds for the Moore Park tunnel and Moore Park stop construction worksites. These areas have been amended due to the proposed relocation of the Moore Park stop and tunnel alignment and are described in section 6.15 of this Submissions Report.

Changes to the proposed location of construction compounds described in section 6.15 of this Submissions Report minimise the number of affected playing fields. However, it may not be possible to provide access to all fields during construction. As noted in mitigation measure AM.10 (refer to the revised list of mitigation measures in Chapter 8 of this Submissions Report), parks and playing fields within Moore Park would be reinstated to their former condition as soon as possible after construction to minimise disruptions to community activities.

The Centennial and Moore Park Trust has been closely involved during the design development of the CSELR proposal and would continue to be consulted during the detailed design and construction phases of the proposal to minimise impacts to parkland areas, facilities and uses. Sydney Boys and Sydney Girls High Schools would also continue to be consulted with respect to identifying suitable alternative open space areas during construction.

A response to the submission made by the Centennial Park and Moore Park Trust is provided in Appendix C of this Submissions Report.

#### 5.9.14 Integration with Centennial Park and Moore Park Trust Master Plan

##### Summary of issues raised

One submission requested the proposal maximises consistency with the Trust's Master Plan to ensure the precinct achieves a high level of functionality and accessibility into the future and allows for future capital works identified in the Master Plan to be implemented.

##### Submission number(s)

298

##### Response

The Centennial Park and Moore Park Trust is a proposal partner for the CSELR and has been consulted extensively on the design of the proposal. Detailed design would further consider integration with the Trust's Master Plan.

#### 5.9.15 Randwick stabling facility

##### Summary of issues raised

One submission noted that the stabling yard will replace existing open space and access to open space for Doncaster Avenue residents.

##### Submission number(s)

80

##### Response

The stabling facility site is presently fenced and not available for public use. The majority of the site is approved for a multi-storey unit development and, if the stabling facility were not located at this site, would not be generally available as open space.

#### 5.9.16 Impacts to High Cross Park, Randwick

##### Summary of issues raised

A number of submissions raised concerns about the impact of the CSELR proposal on High Cross Park due to the proposed Randwick stop and bus interchange. The issues and comments are summarised below:

- The proposed Randwick stop would result in the permanent loss of the only area of public open space within the Randwick shopping village. Once lost, this public open space will not be able to be regained.
- Concerned about the impact that the CSELR proposal will have on High Cross Park. This park is an important green space in the otherwise heavily developed surrounds. Hospital patients, visitors and staff regularly use High Cross Park. Strongly objects to paving over the current grassed area within the Park.



- Concern raised about the proposed impact to High Cross Park. The establishment of the Randwick stop and associated bus interchange will result in a significant loss of amenity. The proposal will change the park from passive green space to an active urban square. The park also holds special heritage significance (war memorial and trees, including a planted olive tree).
- Concerns that the light rail terminus will remove a substantial section of High Cross Park and other open spaces in Randwick/Moore Park.
- Concerned about the loss of High Cross Park due to terminus.
- Strong objection to the use of High Cross Park for light rail as it is important green space, particularly in an area where many people don't have their own garden. It also has historical significance.

### Submission number(s)

48, 56, 72, 75, 94, 184, 202, 204, 211, 213, 216, 231, 242, 245, 258, 282, 316, 479

### Response

Proposed design changes to mitigate the impact of the CSELR proposal on High Cross Park are detailed in section 6.12 of this Submissions Report. The impact of the proposed amended design is also described in this section. Overall, the impacts on the park and its use would be reduced relative to the design presented in the EIS.

The revised design would provide a larger turfed area within the park for local residents and workers, which would be sheltered from the street by consolidated planting areas, where possible. It would also provide for an increased open setting of the existing RSL memorial in the centre of the park (relative to the EIS design), in order to retain the existing setting for the memorial.

Pathways within the park would be significantly narrowed from the design presented in the EIS, so as to maximise the amount of green space. The pathways would also be repositioned to capture the primary pedestrian movements for interchange between the proposed bus stops and the light rail platform. The required bicycle storage facilities have been positioned to the end of the Randwick stop so as to minimise the impact on the open space of the park and provide a suitable interchange with the light rail.

The substation and driver amenities building would also be slightly reconfigured within the south-eastern corner of the park, which is considered the optimal location for this facility to maximise the functionality and minimise intrusion into the park. The revised stop arrangement of the Randwick stop and revised proposal for High Cross Park is shown in Figure 6.15 of this Submissions Report.

Further measures would be considered during detailed design to further mitigate impacts to High Cross Park and its amenity as an area of public open space.

As described in section 4.4.2 of the EIS (Volume 1A) High Cross Park is the preferred location for the Randwick stop and transport interchange due to benefits in interchange function, including avoiding the need for customers to cross Avoca Street and/or Belmore Road to interchange between bus and light rail from existing bus stops.

## 5.9.17 Randwick Urban Activation Precinct (UAP)

### Summary of issues raised

A number of respondents raised objections and issues with the integration of the CSELR and the proposed Randwick UAP development with respect to impacts on future land and property development. These issues and concerns are summarised below.

- The UAP, in conjunction with the CSELR will significantly impact on traffic on the road network, particularly as the CSELR will remove three traffic lanes.
- The use of the CSELR to justify UAPs in the Randwick local government area is disingenuous and the two projects should not be linked.
- EIS does not adequately address the cumulative impacts of the Randwick UAP. There does not appear to be any serious assessment of adverse economic and environmental effects.
- Submits that light rail proposal is linked to the UAP, and does not support UAP.
- Concern that light rail is being used as a justification for high rise/increased development through the UAP process. Concern that the dense high rise development of Kensington is to be made visible by this project. Objection to the area becoming a high density area for UNSW students moving in and out.
- Transport for NSW should continue to work with P&I, local authorities and UrbanGrowth to identify opportunities for UAPs along the route and ensure a whole of government approach is taken to maximising the value of existing government assets.

### Submission number(s)

78, 100, 115, 149, 163, 228, 297, 346, 362, 375, 438, 446

### Response

The proposed Randwick UAP is not part of the CSELR proposal and forms part of the *Draft Metropolitan Strategy for Sydney 2031* (NSW Government 2013b) which is currently on public display by P&I. Ongoing consultation regarding the Randwick UAP with the Randwick community is being undertaken by P&I.

Whilst the development of the Randwick UAP is outside the scope of the CSELR proposal, the future development of the Randwick UAP would increase travel demand as a result of the proposed development within this area. While still in the early stages of planning, the NSW Government has recognised that the construction of the CSELR proposal in the precinct would provide a catalyst for urban renewal and consolidation. The delivery of a high-capacity and reliable mode of transport through the area would support the additional social and community infrastructure being delivered through the UAP program.

The patronage forecasts conducted for the CSELR proposal provide for projected population growth in the South East suburbs consistent with the Draft Metropolitan Strategy. If the Randwick UAP is adopted by the NSW Government, the CSELR proposal has sufficient capacity to cater for the increased patronage arising from this UAP.



## 5.9.18 Land and property value impacts

### Summary of issues raised

A series of issues were raised with regard to property impacts and land use. These are summarised below:

- Submits concerns that properties along the alignment will lose value, and the Government should provide compensation for loss of value or rent.
- Light rail itself should not affect land values.
- Request for information about how Surry Hills residents will be compensated due to loss of property value.
- Provide compensation to residents and businesses for loss of their property or noise-reduction installations.
- Provide compensation to the school to allow access to alternative parkland locations.

### Submission number(s)

167, 168, 170, 388, 396, 403, 405, 416, 418, 427, 439, 457

### Response

The EIS includes discussion of the potential impact of the CSELR on land and property values along the alignment (refer Technical Paper 4 in Volume 3). Overall, light rail systems have been shown to increase land values (and also rents) within walking distance of light rail stops in inner city areas, as people are generally willing to pay more to live in more accessible locations.

Under the *NSW Land Acquisition (Just Terms Compensation) Act 1991*, Transport for NSW is required to compensate property owners at market value for all property directly affected by the proposal. This refers to property that is either temporarily or permanently required for the proposal. There is no legal requirement for compensation for indirect impacts (such as amenity or public on-street parking impacts) on adjacent property or businesses. Various mitigation and management measures are, however, included in the EIS to address indirect amenity impacts such as noise, parking, dust and visual impacts. Impacts on businesses are proposed to be managed and mitigated through measures such as development of access plans, a business and landowner engagement and management plan and the construction environmental management plan (CEMP).

Further discussion of potential compensation and land property values is provided in section 5.14.8 and section 5.14.9 of this Submissions Report.

### 5.9.19 Amenity impacts – general

#### Summary of issues raised

General submissions raised concerns about loss of general amenity.

#### Submission number(s)

405, 418, 437, 443, 447

#### Response

Amenity impacts of the CSELR during construction and operation are assessed in the EIS (Chapters 12-17 in Volume 1B) in relation to general land use amenity, noise impacts, visual impacts and air quality. A range of mitigation measures is proposed to manage and mitigate anticipated impacts. The latest list of mitigation is included in Chapter 8 of this Submissions Report. Further discussion of the potential amenity impacts is provided in section 5.14 of this Submissions Report.

### 5.9.20 Direct property impacts

#### Summary of issues raised

A series of submissions raised concerns regarding direct property impacts. These are summarised below:

- Requests that a dilapidation report be prepared for 2-24 Rawson Place prior to investigative or construction works being undertaken in the vicinity.
- Concern about potential damage to buildings, especially heritage buildings (Dymocks Building, CBD and in Devonshire Street, Surry Hills).
- Notes that Transport for NSW has committed to complete dilapidation surveys prior to works commencing and requests these are completed.

#### Submission number(s)

276, 347, 418, 407, 460

#### Response

The EIS included a noise and vibration impact assessment (Technical Paper 11 in Volume 6), which included assessment of potential vibration impacts to buildings along the CSELR alignment. A more detailed noise and vibration review (for construction and operation) would be undertaken prior to construction. Site-specific construction noise and vibration management plans (CNVMPs) would be prepared, which would confirm mitigation measures. Mitigation measures that would be considered in the CNVMPs include building condition surveys before commencement of works, and after the works (if required) to identify damage due to the works (refer to mitigation measure S.7 of in Chapter 8 of this Submissions Report).

The properties to be surveyed would be identified in the detailed design stage during preparation of the CNVMPs. Any damage caused by the proposal would be rectified at no cost to the property owner.





## 5.9.21 Land use impacts – general/other

### Summary of issues raised

A series of other general land use impacts and questions were raised in some submissions. These are summarised below:

- Submits that consideration should be given to incorporating provision for a future air-rights development over the stabling depot, being mindful of Centennial Park and Moore Park Trust, ATC and Randwick UAP proposals for development.
- Create an option for residents of Parkham Street to increase the size of their properties by extending the rear.
- Public art should be relocated where moved for the route, including the mural at Wimbo Park.
- Are there plans for compulsory takeovers of any existing commercial properties at the Nine Ways intersection?

### Submission number(s)

289, 295, 396, 403, 416

### Response

The provision for future air rights at the Randwick stabling facility is outside the scope of the CSELR proposal. Additionally, consideration of the proposals for development by Centennial Park and Moore Park Trust, ATC and the Randwick UAP process were considered as part of the EIS in sections 14.4 and 15.4 (Volume 1B).

Properties on Parkham Street would not be directly affected by the CSELR, and are not therefore eligible for compensation under the *NSW Land Acquisition (Just Terms Compensation) Act 1991*. The proposal does not propose to increase the size of these properties.

As noted in the EIS (Chapter 13, Volume 1B) the mosaic mural and sandstone monument in Wimbo Park would be retained and conserved. If these cannot be retained in situ, relocation of these elements within the proposed new landscaping would be undertaken in accordance with a management plan or other approved document. The EIS also includes a commitment to relocate (within the plaza) the Ibero-American statues affected by the works in Chalmers Street.

There are no plans for acquisition of commercial properties at Nine-Ways.

## 5.10 Noise and vibration

### 5.10.1 General noise concerns

#### Summary of issues raised

Some submissions raised general concerns about noise as a result of the CSELR that did not specify whether the issue related to construction or operational noise:

- General concern raised about increased noise as a result of the CSELR proposal.
- Concerned about noise levels and noise impacts on local 'village atmosphere' in Surry Hills.
- Concerns about noise impacts in a densely populated suburb (Surry Hills).

#### Submission number(s)

28, 105, 218, 219, 233, 236, 237, 269, 312, 358, 379, 380, 388, 390, 391, 396, 415, 417, 425, 439, 440

#### Response

It is acknowledged that the CSELR would introduce a new noise source to areas such as Surry Hills, resulting in a noticeable change in the noise environment. Surry Hills is a densely populated suburb, similar to other inner-city suburbs.

The noise and vibration impacts of the proposal have been assessed in the EIS in accordance with the Environmental Protection Authority's (EPA's) guidelines for rail noise and for operational vibration (the *Rail Infrastructure Noise Guideline (2013)*, 'the RING' – <http://www.epa.nsw.gov.au/noise/railnoise/gl.htm>). At some locations, the predicted impacts require further investigation in the detailed design stage to examine whether potential noise and vibration mitigation measures identified in the EIS are reasonable and feasible. Feasibility generally relates to engineering considerations and what can practically be built. While, reasonableness relates to a judgement taking into consideration factors such as noise-mitigation benefits, cost, aesthetic impacts, noise levels and community views.

The predicted noise levels in the EIS and determination of required noise mitigation would be reviewed and verified as part of an operational noise and vibration review in the next stage of the proposal. This would determine the final design of mitigation measures, and identify any residual exceedances of the operational goals (refer mitigation measure B.1 in Chapter 8 of this Submissions Report). This review would also consider the possibility of noise mitigation options for Surry Hills identified in mitigation measure AI.1 in Chapter 8 of this Submissions Report), including things such as changes to speeds, and alternative track designs and materials.

During the detailed design phase of the proposal, the construction noise and vibration impacts would also be re-examined during preparation of CNVMPs for all work areas along the alignment. These plan(s) would consider all reasonable and feasible mitigation measures, and would provide more detail on the level of impact at sensitive receivers, and the timing and duration of works at each location.

Further responses are provided in sections 5.10.2 to 5.10.11 below in response to specific comments raised on construction and operational noise and vibration.



### 5.10.2 Construction noise and/or vibration impacts

Sub-issue	Response	Sub No.
<p>a) Concerned about noise and vibration during construction and how it will be mitigated.</p>	<p>Construction is an inherently noisy activity. It is acknowledged that construction activities in close proximity to residents and other properties would be highly intrusive at times. The impacts of construction noise on residential properties and businesses would be minimised and managed as much as is reasonable and feasible.</p> <p>During the detailed design phase of the proposal, the noise and vibration impacts would be re-examined with Construction Noise and Vibration Management Plan(s) (CNVMP) to be prepared for all work areas along the alignment. This plan(s) would consider all reasonable and feasible mitigation measures, and provide more detail on the level of impact at sensitive properties, and the timing and duration of works at each location.</p> <p>The community would be informed about upcoming works throughout the construction period, using a combination of means described in the EIS, including regular notifications, the proposal website, an email distribution list, the proposal Info-line and the Construction Response Line. These numbers provide a dedicated 24 hour contact point for any proposal enquiries and complaints regarding construction works.</p> <p>The documents found on the following websites provide more specific guidance on how construction noise is managed on such projects:</p> <ul style="list-style-type: none"> <li>▪ Transport for NSW's <i>Construction Noise Strategy</i> – <a href="http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/TP_Envionmental-Services_Construction-Noise-Strategy_April_2012.pdf">http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/TP_Envionmental-Services_Construction-Noise-Strategy_April_2012.pdf</a></li> <li>▪ EPA's <i>Interim Construction Noise Guideline</i> – <a href="http://www.environment.nsw.gov.au/resources/noise/09265cng.pdf">http://www.environment.nsw.gov.au/resources/noise/09265cng.pdf</a>.</li> </ul> <p>The CNVMP(s) would be prepared in line with the strategies and procedures outlined in these documents.</p>	<p>242, 272, 311, 320,344, 347, 358, 399, 416, 418, 444, 446, 449, 476, 478</p>

Sub-issue	Response	Sub No.
<p>b) Construction of the CSELR will produce significant levels of noise, which will affect the outdoor seating area for the Bourke Street Bakery. Noise mitigation devices must be installed around the worksite to protect the patrons and pedestrians.</p>	<p>The noise impacts on the Bourke Street Bakery would vary throughout the construction period and the various different construction activities. The bakery is around 60 metres from the Olivia Gardens facade. At this location the predicted worst-case external <math>L_{Aeq(15minute)}</math> noise level during demolition activities is up to 70 dBA. This is an ‘average’ noise parameter over 15 minutes. During much of the demolition works the noise impacts would be less, depending on where the demolition equipment is operating within the Olivia Gardens site. Mitigation of the noise impacts during demolition of the upper levels of the apartments is unlikely to be feasible due to the height of the noise source. Once the buildings have been reduced to lower levels, then noise barriers could become effective.</p> <p>The greatest noise impacts on the outdoor seating area would be during the construction of the tracks along this section of Devonshire Street. Track construction is predicted to give rise to worst case external <math>L_{Aeq(15minute)}</math> noise levels of up to 80-95 dBA (which would be highly intrusive). The noise from different track construction activities would vary considerably. (Excavation is much noisier than concrete reinforcement placing, for example). The detail of the track construction methodology has not been determined at this stage, but the duration of most track construction activities would be in the order of weeks. Provision of noise barriers around the worksite during track construction would be difficult due to the nature of the works, which would move progressively along the alignment. The feasibility and effectiveness of installing temporary mobile barriers or screens would be considered during preparation of the CNVMP(s).</p> <p>Technical Paper 11 of the EIS (Volume 6) also identifies that noise from the construction compound in Wimbo Park would impact on this location. The compound would be used to store equipment and materials. Noise generating activity in the compound would be intermittent throughout the construction period, with worst case <math>L_{Aeq(15minute)}</math> noise levels at the Bourke Street Bakery of up to 75 dBA during establishment of the compound and delivery of plant and equipment. Again, noise impacts at other times would be less. Noise barriers or solid hoardings around this construction site and the demolition site are likely to be reasonable and feasible for the duration of the works. The likely benefit of barriers would be of the order of 5 dB to 10 dB, which would provide a noticeable reduction.</p> <p>A CNVMP(s) would be prepared prior to construction commencing, to confirm the reasonable and feasible mitigation measures to be applied. At all times, the Bourke Street Bakery would be informed well in advance of upcoming construction activities, including the expected noise levels and hours of work.</p>	<p>328</p>



Sub-issue	Response	Sub No.
<p>c) 24 hour construction activities would not be suitable in Surry Hills/residential areas. Construction activities should cease at midnight.</p>	<p>Due to the early construction planning undertaken to date, the noise assessment in the EIS made a conservative assumption of 24 hour works at all locations. The purpose of this was to understand the impacts and present the worst case.</p> <p>In Surry Hills, it is anticipated that construction works would be completed during the standard daytime construction hours where possible; that is, Monday to Friday 7:00 am to 6:00 pm and Saturdays 8:00 am to 1:00 pm. Standard working hours are likely to apply at demolition sites, construction compounds, and stop locations. However, the nature of the proposal means evening and night work would also be required at times, particularly in areas around road intersections where construction work during the daytime would result in a significant impact on traffic congestion and safety. For some construction activities such as relocation of services, working from 7 am to 11 pm along the alignment is an option that would reduce the overall duration of these activities (and hence the duration of impacts). 24 hour construction in Surry Hills is not proposed except in special circumstances, such as intersection works where night works are required to minimise disruption to road traffic.</p> <p>Additionally, working at night and out-of-hours is often required for works on major roads by road authorities (such as councils and Roads and Maritime Services) to avoid impacts to traffic during daytime hours.</p>	<p>235, 271, 403</p>
<p>d) Concerned about adverse construction noise impacts to the Sydney Girls High School. Impacts are to be fully mitigated to the greatest extent possible by the terms of the proposal and any approval. This should include scheduling of potentially disruptive work and movement out of school and travel times (preferably during holidays), frequent mandatory liaison with the school and strict measures to minimise potentially adverse effects</p>	<p>For educational facilities, the Environment Protection Authority's construction noise management level (NML, or noise goal) is an internal 'average' level of <math>L_{Aeq(15minute)}</math> 45 dBA, during times when the school is in use. The construction noise impacts on educational receivers (including Sydney Girls High School) have been identified in the EIS, with predicted worst-case external noise levels of up to 69 dBA during some construction scenarios. The resulting internal noise level would depend on whether windows are open or closed.</p> <p>It is noted that the proposed CSELR alignment and location of the Moore Park stop have changed in this area. These changes and the likely expected noise impacts are discussed in section 6.8 of this Submissions Report.</p> <p>The Sydney Girls High School buildings are set back around 70 metres from the alignment, across Anzac Parade. As a result of the offset distance to the site, for many construction activities it is likely that existing noise from road traffic (in particular heavy vehicles), would be of a similar level to or higher than the construction noise levels.</p> <p>Notwithstanding the above, the construction contractor would be required to implement all feasible and reasonable noise mitigation measures to manage impacts during the works. As identified in the EIS, when working adjacent to schools, there is a requirement for particularly noisy activities to be scheduled outside normal school hours where reasonable and feasible. Consultation and liaison with the school would be undertaken to inform the school of expected impacts, and the timing and duration of upcoming works.</p>	<p>67</p>

Sub-issue	Response	Sub No.
<p>e) Concerned about the adverse noise impact that the construction of the Randwick stabling facility will have on adjacent residential properties.</p>	<p>The Randwick stabling facility is located adjacent to residential properties on Doncaster Avenue and consequently noise impacts during construction have the potential to be highly intrusive during some construction activities, even with all feasible and reasonable mitigation measures implemented. To minimise impacts on residences at this location, it is expected that construction works would be restricted to standard daytime construction hours of Monday to Friday 7:00 am to 6:00 pm, and Saturdays 8:00 am to 1:00 pm. Where reasonable and feasible, a noise barrier would also be installed along the boundary of the site as soon as possible to mitigate construction noise impacts (refer mitigation measure S.1 in Chapter 8 of this Submissions Report). A CNVMP(s) would be prepared prior to construction commencing, to confirm the reasonable and feasible mitigation measures to be applied.</p>	<p>195</p>
<p>f) Concerned about the noise impacts associated with the CSELR proposal due to the lack of details regarding construction methods and materials.</p>	<p>At any particular location, the potential noise impacts of construction can vary greatly depending on factors such as the relative proximity of sensitive receptors, the overall duration of the construction works, the intensity of the noise and vibration levels, the time at which the construction works are undertaken and the character of the noise or vibration emissions.</p> <p>There are a number of different methods and items of equipment that could potentially be used to construct the proposal. The uncertainty in methods and materials was addressed in the EIS by identifying the expected worst-case potential impacts during construction of the proposal.</p> <p>To give a broad indication, the noise and vibration assessment and associated noise predictions were based on indicative construction scenarios that represented key stages of the construction phase.</p> <p>It is also noted that the EPA's <i>Interim Construction Noise Guideline</i> states that 'As a proposal moves through the stages (from pre-approval to post-approval), more detail normally becomes available on the planned work methods, location of plant and equipment, and scheduling. The construction noise impact assessment and construction noise management plans should thus be consistent with the level of design detail available at each stage.'</p>	<p>237</p>
<p>g) Demolition of Olivia Gardens will take too long, with high noise levels.</p>	<p>The timeframe for demolition of Olivia Gardens is not yet confirmed. The noise impact assessment assumed a timeframe of 14 months as a worst case estimate for works at this site. The actual demolition works would most likely be completed within a few months. This timeframe would be refined during detailed construction planning prior to construction. The predicted noise levels associated with demolition are predicted to be highly intrusive at times; however the noise levels would be variable throughout the period, with the noise impacts depending on the activity taking place on-site, and the movement of equipment around the site.</p> <p>Mitigation of the noise impacts during demolition of the upper levels of the apartments is unlikely to be feasible due to the height of the noise source. Once the buildings have been reduced to lower levels, then temporary noise barriers may be effective.</p>	<p>403</p>



Sub-issue	Response	Sub No.
<p>h) Construction impacts (noise or physical) will interfere with access to activities held at the Quaker Meeting House, Surry Hills.</p>	<p>The noise and vibration impact assessment identified the Quaker meeting house as a sensitive receiver (refer Table 3 in Technical Paper 11, Volume 6) and potential construction noise impacts are described in section 12.5.2 of that report. The greatest noise impacts on the Quaker Meeting House would be during the construction of the tracks along this section of Devonshire Street. Noise from track construction at this property would be highly intrusive at times; however the noise from different track construction activities would vary considerably. Excavation is much noisier than concrete reinforcement placing, for example. The detail of the track construction methodology has not been determined at this stage, but the duration of most track construction activities would be in the order of weeks.</p> <p>Impacts on this location and reasonable and feasible mitigation measures would be considered further during the development of the detailed CNVMP(s).</p> <p>Regular community updates about upcoming works would be provided throughout the construction period, using a combination of the means described in section 2.4 of this Submissions Report, including regular notifications, the project website, an email distribution list, the project info-line and the construction response line. These numbers would provide a dedicated 24 hour contact point for any proposal enquiries and complaints regarding construction works.</p>	354
<p>i) Comment on noise and vibration impacts has been withheld, subject to Construction Noise and Vibration Management Plan. Seeks further and ongoing consultation with accommodation providers in impacted areas, regarding noise and vibration impacts, including Four Seasons, The Westin, Mantra 2 Bond Street, Hilton, QT, Amora, Swissôtel, Mercure Sydney, Capitol Square Hotel and The Marquee.</p>	<p>The level of detail on construction noise and vibration impacts provided in the EIS reflects the uncertainty around construction methods and equipment that could potentially be used to construct the proposal. To give a broad indication of impacts, the noise and vibration assessment and associated noise predictions were based on indicative construction scenarios that represented key stages of the construction phase. It is appropriate that these predictions be revised and updated in the detailed design stage and during preparation of the CNVMP(s) as more information comes available.</p> <p>Further and ongoing consultation with these accommodation providers is proposed as part of the proposed Community and Stakeholder Engagement Plan to be established prior to commencement of construction.</p> <p>Additionally, a Business Reference Group would be established, which would comprise independent representatives from the business community to advise on business concerns related to the proposal.</p>	436
<p>j) Concern about vibrations along George Street and possible damage to QVB.</p>	<p>Vibration impacts during construction are discussed in the EIS (refer section 12.5.3 in Volume 1B for the City Centre). Where works are required in close proximity to existing buildings (such as the QVB), impacts would need to be carefully managed to minimise the risk of any damage. Where works are needed within the identified 'safe working distances' for vibration intensive plant, and there is no opportunity to substitute less vibratory equipment, the impacts would be managed by vibration monitoring or vibration trials to ensure that levels remain below the relevant vibration criterion.</p>	415

### 5.10.3 Construction noise and/or vibration mitigation

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) The following mitigation measures should be included as a minimum in the CEMP:</p> <ul style="list-style-type: none"> <li>▪ Excessive noise and vibration generating activities outside of the core trading hours of 8am to 6pm Monday to Sunday and after late night trading in peak trading periods.</li> <li>▪ Installation of a temporary noise wall subject to the more detailed advice of an acoustic expert.</li> <li>▪ All plant, equipment and vehicles to be shut down when not in active use.</li> <li>▪ Alternative construction methods or low impact machinery to be used where possible.</li> <li>▪ Noise not to exceed a level to be agreed with the landowner and to be stated in the CEMP. This should be 45 dBA in accordance with the recommendations in the Noise Impact Assessment in the EIS for medical and training land uses.</li> <li>▪ Vibration not to exceed a level to be agreed with the landowner and to be stated in the CEMP.</li> <li>▪ Inclusion of agreed noise and vibration KPIs and penalties in contractual arrangements.</li> <li>▪ Ongoing noise and vibration monitoring to be undertaken at the proponent's expense to ensure compliance.</li> <li>▪ Respite periods where no activity is undertaken to be provided during extended noise and vibration generating activities, irrespective of level.</li> </ul>	<p>Scheduling of high noise activities during standard daytime construction hours is normally required to minimise impacts on residential receivers. At some locations in the CBD, it may be possible to schedule the timing of high noise impact activities to minimise impacts on businesses, but this is subject to ongoing consultation, scheduling, and the need to manage impacts on all sensitive receivers. Restricting construction hours would extend the overall duration of disruption during the works.</p> <p>Provision of noise barriers around the worksites during track construction is difficult due to the nature of the works, which would move progressively along the alignment. The feasibility and effectiveness of installing temporary mobile barriers or screens would be considered during preparation of the CNVMP(s).</p> <p>Shutting down equipment when not in use is a requirement of both the Transport for NSW <i>Construction Noise Strategy</i> and the EPA's <i>Interim Construction Noise Guideline</i>. The same applies to the use of alternative construction methods or machinery where reasonable and feasible to do so.</p> <p>Construction is inherently noisy and it is common for the construction noise goals (identified in the EIS) to be exceeded on infrastructure projects, even with the application of all reasonable and feasible mitigation measures. For this reason the noise goals are defined as 'noise management levels' (NMLs), rather than strict criteria to be met. If the NMLs are predicted to be exceeded, then the impacts would be managed and mitigated as much as possible. However, compliance with the NMLs is unlikely to be achieved for all construction activities. For commercial receivers, the NML is an external level of 70 dBA <math>L_{Aeq}(15\text{minute})</math>.</p> <p>Stricter limits would be set for construction vibration, at levels to minimise the risk of damage to structures in accordance with the relevant Australian and International Standards. However, it is likely that vibration would be perceptible to people during some construction activities.</p> <p>Various community and stakeholder engagement measures are proposed during construction to regularly inform businesses and residents of upcoming works and to facilitate feedback and/or complaints (refer section 2.4 of this Submissions Report for further details).</p> <p>Noise and vibration monitoring is a mitigation / management measure that is regularly employed on Transport for NSW worksites, and would also be employed on the CSELR where required.</p> <p>Respite periods are one option for managing high noise and vibration generating activities particularly on residential receivers. The requirement for respite is dependent on the level of noise generated. The suitability of respite periods at particular locations would be considered in the preparation of the CNVMP(s).</p>	<p>347, 354</p>





Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ The proposal approval and the CEMP to include a mechanism for alternative dispute resolution in the event that landowners are not satisfied with the management of noise and vibration impacts and the contractor's adherence to KPIs.</li> </ul>	<p>The EPA's pollution response line provides an alternative dispute mechanism for noise and vibration concerns.</p>	
<p>b) Noise mitigation measures should protect Bourke Street Public School from construction impacts. Transport for NSW should work with the school to determine the works schedule, noting respite requirements. Recommends that a balance is struck between expediting works and providing businesses and residents with respite.</p>	<p>The construction contractor(s) would be required to implement all feasible and reasonable noise mitigation measures to manage impacts on the school during the works. As identified in the EIS, when working adjacent to schools, there is a requirement for particularly noisy activities to be scheduled outside normal school hours where possible. Consultation and liaison with the school would be undertaken to inform the school of expected impacts, and the timing and duration of upcoming works.</p> <p>Provision of respite periods for sensitive receivers is one option to manage noise and is acknowledged in the EIS.</p>	449
<p>c) Activities that would result in 108-118 dB and vibration levels exceeding the threshold of human comfort should not be undertaken during trading hours.</p>	<p>The noise and vibration impact assessment was undertaken on the basis of a worst case scenario. Construction is an inherently noisy activity and it is acknowledged that construction activities in close proximity to businesses, residents and other properties would be highly intrusive at times. The scheduling of noisy activities requires consideration of all sensitive receiver types in the surrounding area (including residents in the CBD who are generally sensitive to noisy works at night).</p> <p>Similarly, construction vibration above the human comfort goals is sometimes unavoidable. Vibration impacts would be managed in accordance with <i>Assessing Vibration: a technical guideline</i> (DEC, February 2006). This guideline recognises that construction may sometimes result in short-term vibration levels above the human comfort goals.</p> <p>A Business Reference Group would be established, which would comprise independent representatives from the business community to advise on business concerns related to the proposal.</p>	347

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>d) To manage possible construction vibration impacts, the CEMP should include:</p> <ul style="list-style-type: none"> <li>▪ Excessive vibration generating activities outside of the core trading hours.</li> <li>▪ Alternative construction methods or low impact machinery to be used where possible.</li> <li>▪ Vibration not to exceed a level agreed with the landowner stated in the CEMP.</li> <li>▪ Inclusion of agreed vibration KPIs and penalties in contractual arrangements.</li> <li>▪ Ongoing vibration monitoring to be undertaken at the proponent's expense to ensure compliance.</li> <li>▪ Respite periods.</li> <li>▪ Immediate cessation of activities in the event of damage to the building fabric.</li> <li>▪ No excavation works close to the building.</li> <li>▪ No plant or equipment likely to fall onto the façade of the building.</li> <li>▪ Engagement of an independent property condition survey for the building by Dymocks at the proponent's cost.</li> <li>▪ The proposal approval and CEMP to include a mechanism for alternative dispute resolution if landowners are not satisfied with the management of impacts.</li> <li>▪ Any damage caused to the building as a consequence of construction to be rectified promptly to Dymocks' satisfaction at the proponent's cost.</li> </ul>	<p>Please refer to the response in row a) above regarding scheduling high noise activities, which also applies to high vibration activities.</p> <p>The use of alternative construction methods and low impact machinery where reasonable and feasible is a requirement of both the Transport for NSW <i>Construction Noise Strategy</i> and the EPA's <i>Interim Construction Noise Guideline</i>.</p> <p>For construction vibration, criteria are applicable in accordance with the relevant Australian and International Standards, at levels to minimise the risk of damage to structures. However, it is likely that vibration would be perceptible to people during some construction activities.</p> <p>Vibration monitoring is a mitigation / management measure that is regularly employed on Transport for NSW worksites, and would also be employed on the CSELR where required (refer mitigation measure S.7 in Chapter 8 of this Submissions Report).</p> <p>Respite periods are one option for managing high vibration-generating activities particularly on residential receivers. The suitability of respite periods at particular locations would be considered in the preparation of the CNVMP(s).</p> <p>Potential vibration impacts during construction in the City Centre are described in section 12.5.3 of the EIS (Volume 1A). Where works are required in close proximity to existing buildings, impacts would need to be carefully managed to minimise the risk of any damage. Where works are needed within the identified 'safe working distances' for vibration intensive plant, and there is no opportunity to substitute less vibratory equipment, the impacts would be managed by vibration monitoring or vibration trials to ensure that levels remain below the relevant vibration criterion. If required, vibration monitoring equipment with alarms would be employed, that could trigger a requirement to cease work.</p> <p>The precise locations of excavation would be determined in the detailed design stage, and the impacts would be managed through the CNVMP(s).</p> <p>Standard mitigation measures to manage vibration would include building condition surveys before commencement of works, and after the works (if required) to identify damage due to the works. These surveys would take place at properties in close proximity to vibration intensive construction work, where identified by a geotechnical engineer as likely to be affected. The properties to be surveyed would be identified in the detailed design stage during preparation of the CNVMP(s). Any damage caused by the proposal would be rectified at no cost to the property owner.</p> <p>The EPA's pollution response line provides an alternative dispute mechanism for noise and vibration concerns.</p>	<p>347</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>e) Ensure noise and vibration from the Moore Park West worksite will not impact on teaching or health at Sydney Boys High School.</p>	<p>It is noted that the proposed CSELR alignment and location of the Moore Park stop have changed in this area. These changes and the likely expected noise impacts are discussed in section 6.8 of this Submissions Report.</p> <p>The construction noise impacts on educational receivers (including Sydney Boys High School) have been identified in the EIS, with predicted worst-case external noise levels of up to 68 dBA during some construction scenarios when the construction is closest to the school. The resulting internal noise level would depend on whether windows are open or closed.</p> <p>The Sydney Boys High School buildings are set back around 60 metres from the alignment at the closest point, near the crossing beneath Anzac Parade. As a result of the offset distance to the site, for many construction activities it is likely that existing noise from road traffic (in particular heavy vehicles), would be of a similar level to or higher than the construction noise levels.</p> <p>Notwithstanding the above, all feasible and reasonable noise mitigation measures to manage impacts during the works would be implemented. As identified in the EIS, when working adjacent to schools, particularly noisy activities would be scheduled outside normal school hours where reasonable and feasible. Consultation and liaison with the school would be undertaken to inform the school of expected impacts, and the timing and duration of upcoming works. Construction noise and vibration impacts would not be at a level that would be expected to be detrimental to health.</p>	457
<p>f) Request that the proponent comply with stringent acoustic criteria to ensure there is no adverse impact on Fox Studios activities during construction. P&amp;I should include conditions of approval requiring the installation of noise and vibration loggers so impacts on studio activities can be monitored.</p>	<p>Adverse impacts on activities at Fox Studios during construction are not anticipated due to the setback distance from this site to the alignment. Notwithstanding this, the goals for management and mitigation of construction noise and vibration identified in the EIS for recording studios are applicable to Fox Studios. The details of mitigation measures and any monitoring requirements would be identified in the detailed design stage during preparation of the CNVMP(s).</p>	335
<p>g) Recommends that for the Quaker Meeting House in Surry Hills:</p> <ul style="list-style-type: none"> <li>▪ Additional construction noise mitigation measures are relevant to the appropriate noise goals.</li> <li>▪ Feasible noise mitigation options and measures should be developed in consultation with the Quaker Meeting House.</li> <li>▪ No construction work is carried out on a Sunday morning between 9.30 am and 12.30 pm so that meetings based on silence will not be disrupted.</li> </ul>	<p>Due to the close proximity of this receiver to the alignment, there is the potential for highly intrusive noise impacts. These would be managed and minimised as much as possible through the use of all feasible and reasonable mitigation measures.</p> <p>Ongoing consultation with the Quaker Meeting House would be undertaken to assist in managing the impacts and to provide information on the timing and duration of the track construction works. The Sunday morning period between 9:30 am and 12:30 pm falls outside the standard construction hours, and it is likely that this request could be accommodated, subject to any requirements from police or road authorities for out-of-hours works (e.g. for safety reasons, or to minimise disruption to road traffic).</p>	354

5.10.4 Operational noise impacts – all precincts/locations

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Concerned about operational noise from the CSELR, including:</p> <ul style="list-style-type: none"> <li>▪ The proposed speed limits, times of light rail operations and lack of details regarding tram line materials proposed to be used.</li> <li>▪ The hours of operation (5am-1am) which may exceed EPA's RING, and would compound noise and sleep disturbance impacts.</li> <li>▪ How impacts will be mitigated.</li> </ul>	<p>The operational noise and vibration impacts of the proposal have been assessed in the EIS in accordance with the EPA's RING.</p> <p>The majority of residential and other noise sensitive receptors would comply with the noise trigger levels within the RING, but some potential exceedances of the trigger levels have been identified.</p> <p>The proposed hours of operation of the system have been considered in the assessment, in accordance with the requirements of the RING. Additionally, as the proposed route is largely located on existing roads, these areas already experience some traffic noise at night. There would be a noticeable change in noise with the introduction of light rail; however this would be positive in some areas and negative in others.</p> <p>As described earlier in section 5.10.1, an operational noise and vibration review would be prepared in the next stage of the proposal to determine the final design of reasonable and feasible mitigation measures, and to identify any residual exceedances of the operational goals. This review would consider the possibility of changes to speeds, and alternative track designs and materials.</p>	<p>237, 242, 311, 334, 361, 364, 403, 418, 444, 446</p>
<p>b) Concerned that special event services will occur approximately 100 times a year, and may generate noise levels 2.0 dB higher than on nights when special events do not occur.</p>	<p>Technical Paper 11 in the EIS, Volume 6 (section 5.5.6) identifies that special event services are expected to be provided on average once a week, typically during the evening on weekends, but sometimes on weekdays. Special event services could sometimes extend into the night-time period if events finish after 10pm. The increase in <math>L_{Aeq}</math> (average) noise level would be around 0.5 dB for daytime special events (before 10pm), and 2 dB to 3 dB for events extending special event service frequencies after 10pm. The noise impacts of special event services are considered acceptable in the context of the short duration of special event services. By providing more transport options, the proposal also has the potential to reduce noise impacts from pedestrians moving through Surry Hills to Central after special events, although this benefit is difficult to quantify.</p>	<p>299</p>
<p>c) Suggests a guarantee is made that 'warning bells would not form part of normal rail operations'.</p>	<p>The EIS (and this Submissions Report) include a mitigation measure that states: 'Warning bells on LRVs would only be used in the event of emergencies or where the driver considers there is a danger to public safety. Warning bells would not form part of normal rail operations (i.e. they would not be used by default on approach or departure from stations, or at level crossings).' (refer measure A1.2 in the revised list of mitigation measures in Chapter 8 of this Submissions Report). However, in the same way that horns are required to be fitted to cars as a safety measure, there is a requirement for LRVs to be able to provide audible warning to pedestrians and other road users.</p>	<p>271</p>



### 5.10.5 Operational noise impacts – City Centre

Specific issues raised in submissions	Response to specific issues	Submission No.
a) Concern that tourists will not be attracted to Circular Quay because of sound pollution from light rail.	<p>In general terms, Circular Quay is expected to experience substantial amenity benefits from the CSELR proposal, due to the proposed closure of Alfred Street to traffic between George and Loftus Street, and urban design improvements to tie the precinct into the existing pedestrianised zones around the Tank Stream Fountain and the forecourt of the Customs House. In addition, the CSELR is designed to improve the efficiency and reliability of transport to Circular Quay.</p> <p>Noise levels from operation of the CSELR at Circular Quay are expected to comply with the EPA's RING and overall should be lower than the current background noise levels generated by existing road traffic.</p>	290

### 5.10.6 Operational noise impacts – Surry Hills

Specific issues raised in submissions	Response to specific issues	Submission No.
a) General concern about operational noise in Surry Hills, including residents and businesses along Devonshire Street.	<p>It is acknowledged that the light rail would introduce a new noise source to Surry Hills (and other locations). The noise impacts of the proposal in Surry Hills have been identified in the EIS (refer section 13.5, Volume 1B). The assessment in accordance with the EPA's RING indicates that operational noise mitigation measures are required to be considered for parts of Surry Hills, as a result of predicted noise impacts above the operational noise trigger levels (by up to 5 dB west of Marlborough Street). Potential mitigation measures are discussed in the EIS (section 13.5.4, Volume 1B), with further investigations required in the detailed design stage to determine which measures are feasible and reasonable at these locations.</p> <p>However, at these locations, even with a combination of reasonable and feasible mitigation measures, barely audible residual exceedances of the noise goals of 1 dB to 2 dB may still remain.</p>	36, 119, 168, 238, 271, 317, 331, 361, 364, 403, 405, 407, 410, 413, 437, 447, 478
b) Concerned about timing (overnight) and/or frequency of light rail services and associated noise.	<p>The EIS identifies that the expected hours of service operations would be from 5am until 1am, with the frequency of services likely to vary with demand. For example, the service may vary from every three minutes during peak times (7.30 am to 9.30 am and 5pm to 7pm) to a service every 10 minutes between 10pm and 7.30 am. The noise impacts in Surry Hills and elsewhere would therefore be greatest during peak times (which may include evenings, particularly on weekends) and on special event days.</p> <p>During special events, extra services are anticipated in combination with regular services, resulting in a service frequency of every 2.5 minutes. In addition, on average, one or two LRVs would need to travel on the CSELR network each day to and from the Rozelle maintenance depot and to distribute LRVs around the network for commencement of services at 5 am. These movements could occur at any time of the day/night.</p>	235, 200, 218-219, 170-174, 176, 181, 187-189, 191-194, 267, 271, 323

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>c) Concerned about noise impacts associated with warning bells used on LRVs. While the EIS notes that the use of bells on LRVs would be limited to emergency warnings only, this would need to be monitored. Residents should be provided with a method to report excessive noise from LRVs.</p>	<p>Warning bells would be a new noise source, and as such residents would be expected to notice the change in their noise environment. As described in the EIS, warning bells would only be used when the driver considers there is a danger to public safety. It is noted that car horns are intended to serve a similar purpose. LRV warning bells are designed to be directional, with higher noise levels towards the front of the LRV (where the warning is intended to be heard) rather than to the sides. Residents and businesses would be able to report noise levels they consider to be excessive via Transport for NSW’s transport info line (131 500). Noise levels from warning bells would also be measured once operations commence, to confirm the level of impact is within expectations. However it is noted that as the warning bells are audible safety devices, there are minimum requirements for their noise emissions to enable them to be heard.</p>	<p>18, 299</p>
<p>d) Ward Park stop should not have a PA system, to minimise noise impacts.</p>	<p>Passenger announcements from public address (PA) systems at the various stops would be infrequent and limited to emergency situations or where notable disruptions in service occur.</p> <p>The EIS (section 13.5.2 in Volume 1B) recognises that PA noise from the Surry Hills stop at Ward Park has the potential to cause annoyance to adjacent residential receivers. This is proposed to be managed through detailed design of the PA system (which would include noise mitigation measures to comply with the <i>NSW Industrial Noise Policy</i> intrusiveness and sleep disturbance criteria).</p>	<p>427</p>
<p>e) Concern about noise impacts of opening Cooper Street to Riley Street in Surry Hills on their property at 42 Adelaide Street in Surry Hills. Currently their home is protected by the park/landscaping that separates Cooper Street and Riley Street but this will be opened up to allow diverted traffic from Devonshire Street.</p>	<p>The noise impacts and any requirements for mitigation would be in accordance with the <i>NSW Road Noise Policy</i> which identifies operational road traffic noise goals on existing residential land uses. The <i>Road Noise Policy</i> recognises that mitigation options are generally limited for noise control on existing roads, and that strategies need to take into account what is feasible and reasonable.</p> <p>Given the likely level of noise impacts on these streets, consideration of mitigation may not be required. Even if consideration of mitigation is triggered under the <i>NSW Road Noise Policy</i>, mitigation (such as engineering noise controls) may not be reasonable or feasible. However, a mitigation measure has been added (refer measure B.12 in Chapter 8 of this Submissions Report) stating that further assessment of operational noise impacts on sensitive receivers associated with increased traffic due to road closures or diversions directly as a result of the proposal would be undertaken during detailed design (at which point information would become available regarding the number of vehicles forecast to use streets such as Cooper Street).</p>	<p>311</p>
<p>f) The eastern part of Devonshire Street and the section of Crown Street between Arthur and Devonshire Streets are currently very quiet and peaceful after about 5pm. The EIS underestimates the comparative noise impacts which may exceed EPA requirements.</p>	<p>The assessment of operational noise impacts has been undertaken in accordance with the EPA’s RING. This guideline requires that noise from light rail traffic be identified and assessed independently of noise from other sources. The RING states that the acceptable operational noise levels for light rail take into account that existing roadways can be converted into light rail corridors.</p> <p>This approach is consistent with that generally taken for other major infrastructure projects, such as heavy rail and roads.</p>	<p>361, 364</p>



### 5.10.7 Operational noise impacts - Randwick

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) The proposed aboveground substation at High Cross Park would have an unacceptable noise impact on the area.</p>	<p>The substation aboveground at High Cross Park would be designed to meet the noise criteria required by the <i>NSW Industrial Noise Policy</i> (for a copy refer to <a href="http://www.epa.nsw.gov.au/noise/industrial.htm">http://www.epa.nsw.gov.au/noise/industrial.htm</a>). At High Cross Park the relevant criterion is 48 dBA <math>L_{Aeq}</math>, which is equivalent to the predicted <math>L_{Aeq}</math> noise level. The main noise source at substations is the transformers. Noise from transformers can be readily mitigated by design of an appropriate acoustic enclosure. Substations are expected to be enclosed in any case, for safety and aesthetic reasons, even when enclosure is not required to meet the noise goals.</p>	48
<p>b) Concerned about noise impacts on adjacent residences (including Doncaster Avenue) during proposed 24-hour operation of stabling facility.</p>	<p>The Randwick stabling facility would be required to meet the noise criteria defined in the <i>NSW Industrial Noise Policy</i> for a copy refer to <a href="http://www.epa.nsw.gov.au/noise/industrial.htm">http://www.epa.nsw.gov.au/noise/industrial.htm</a>). This Policy sets noise limits to protect the amenity of residential land uses, on the basis of the noise environment at the affected locations prior to construction of the facility. This means that noise emissions from the stabling facility would need to be carefully controlled, particularly during the night-time period when existing background noise levels are low.</p> <p>During the detailed design stage, a review of the operational noise impacts of the facility would be prepared, which would confirm the design of noise mitigation measures. The facility would also be subject to noise compliance measurements after opening, to assess compliance with the noise goals and to determine whether any additional mitigation is required. Section 15.5.4 of the EIS (Volume 1B) identified potential mitigation measures to meet the INP criteria, including an acoustic shed, review of operational practices and noise barriers.</p> <p>With these measures in place, it is considered that the noise impacts of the facility on adjacent Doncaster Avenue residences would be controlled within acceptable limits.</p>	80, 129, 195, 327
<p>c) Concerns that noise experienced in the area (Randwick) will increase as customers have to change services/modes.</p>	<p>While it is recognised that noise generated by members of the public can disturb others, there are no guidelines applicable to noise generated by people in these circumstances. Generally, noise from members of the public would not be considered to be 'offensive noise' as defined in the <i>NSW Protection of the Environment Act 1997</i>.</p>	242
<p>d) Concerned about the impact of operational noise on Wansey Road residents.</p>	<p>Operational noise impacts on Wansey Road residents are expected to comply with the guidelines administered by the EPA for noise from light rail operations (the RING). It is acknowledged that the CSELR would introduce a new noise source in this area, with the impacts considered to be within acceptable levels for residential amenity.</p> <p>The CSELR design along Wansey Road is also proposed to be modified as explained in section 6.11 of this Submissions Report. This is expected to reduce noise impacts in Wansey Road in some cases (refer section 6.11.3), where the light rail tracks for part of Wansey Road would be lower than the road level by up to two metres.</p>	231

### 5.10.8 Operational vibration impacts

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Concern about vibrations along George Street and possible damage to QVB.</p>	<p>The levels of vibration to cause damage to buildings tend to be at least an order of magnitude (10 times) greater than levels considered acceptable by people. This also applies to heritage buildings, unless they are structurally unsound. For this reason, the controlling operational vibration criterion at most locations is determined by the criteria for human responses which are more stringent than criteria for damage to building contents or structures.</p> <p>The CSELR system would be designed to meet the appropriate operational vibration goals to prevent damage to structures.</p>	<p>415</p>
<p>b) Concern about operational vibration in Surry Hills, including Devonshire Street:</p> <ul style="list-style-type: none"> <li>▪ Buildings, including residences, along Devonshire Street will not be able to structurally withstand the vibration from LRVs.</li> <li>▪ LRVs moving up and down from the hill at Devonshire Street will experience stress on the motor and suspension system, generating vibration and noise.</li> </ul>	<p>Please refer to section 5.10.1 of this Submissions Report for discussion of the operational noise and vibration review during detailed design.</p> <p>The levels of vibration that can cause damage to buildings tend to be at least an order of magnitude (10 times) greater than levels considered acceptable by people. This also applies to heritage buildings, unless they are structurally unsound. For this reason, the controlling vibration criterion at most locations during operations is determined by the criteria for human responses, which are more stringent than criteria for damage to building contents or structures.</p> <p>Operational vibration levels would be designed to meet the human comfort criteria, and therefore the risk of damage to buildings and structures due to light rail movements is extremely low, if not negligible. No exceedances of the human comfort criteria for operational vibration are predicted for the Surry Hills Precinct or elsewhere.</p> <p>With regard to the concern about increased noise and vibration due to stress on the motor and suspension system up hills, the LRVs would be electric and would be designed to be compatible with the gradients along the route. Increased noise and vibration impacts due to gradient are not expected. The noise and vibration emissions would be subject to compliance measurements after opening to verify that this is the case.</p>	<p>235, 331, 271, 242, 311, 334, 418, 444, 446</p>
<p>c) Concerned about vibration impacts from stabling facility on Doncaster Ave residents.</p>	<p>The design of the Randwick stabling facility, including track and turnouts, would be required to meet the human comfort vibration goals at residential premises, as defined in <i>Assessing Vibration: a Technical Guideline</i> (DEC, 2006). As LRVs would be travelling very slowly into and within this facility, vibration levels are expected to easily comply with this guideline.</p>	<p>327</p>





### 5.10.9 Management and mitigation of operational noise and/or vibration – Surry Hills

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Criteria, conditions and restrictions on noise/vibration, including:</p> <ul style="list-style-type: none"> <li>▪ Need for stringent conditions to ensure adherence with prescribed acceptable noise and vibration limits for residential properties.</li> <li>▪ Concern that the State Government has recently changed the criteria for acceptable noise levels from light rail vehicles to match those of heavy rail operations.</li> <li>▪ General residential noise restrictions should apply as LRVs will operate during the night-time.</li> <li>▪ Need for compliance with EPA guidelines.</li> </ul>	<p>P&amp;I is responsible for placing conditions on the proposal for construction and operations, with the conditions requiring adherence to the relevant guidelines administered by the EPA.</p> <p>The relevant operational noise guideline is the EPA's RING (at <a href="http://www.epa.nsw.gov.au/noise/railnoiseql.htm">http://www.epa.nsw.gov.au/noise/railnoiseql.htm</a>). This guideline came into effect in May 2013. Prior to introduction of this guideline, the noise criteria applicable to light rail noise at residential receivers for day/evening/night-time periods were determined on a case-by-case basis. For the existing Sydney light rail, these criteria were <math>L_{Aeq}</math> (average) noise levels of 60 (daytime)/55 (evening)/50 (night) dB. The criterion for <math>L_{Amax}</math> (maximum) noise emissions was 82 dB. The daytime period was defined as being from 7am to 7pm, the evening period from 7pm to 11pm and the night period from 11pm to 7am.</p> <p>The RING brings the day/evening/night periods in line with the day/night periods used for other road and rail projects. There has been no change in the night-time <math>L_{Aeq}</math> (average) goal, except to make it applicable from 10pm to 7am, rather than 11pm to 7am, which is effectively more stringent than the previous Sydney light rail criterion. The daytime <math>L_{Aeq}</math> (average) goal is set at the same level as previously, but the daytime period now extends from 7am to 10pm rather than from 7am to 7pm. There is now no defined evening goal, which is consistent with guidelines for heavy rail and for road traffic noise. The maximum noise goal under the new guideline is 80 dBA, which is 2 dB more stringent than the previous criteria.</p> <p>It is noted that it is not mandatory to achieve the noise goals (trigger levels) defined in the RING. Where the noise trigger levels are exceeded, feasible and reasonable mitigation measures that could be implemented to reduce noise down the relevant overall trigger level must be considered. If it is reasonable to achieve these levels, the proponents should do so.</p> <p>The assessment should provide justification if the trigger levels cannot be met. An assessment of the acceptability of residual impacts should also be provided.</p> <p>Feasibility generally relates to engineering considerations and what can practically be built. While, reasonableness relates to a judgement taking into consideration factors such as noise-mitigation benefits, cost, aesthetic impacts, noise levels and community views.</p> <p>The EIS identifies that there are locations along the alignment (in parts of Surry Hills), where the operational noise trigger levels are predicted to be exceeded. Potential mitigation measures are discussed in the EIS, but the feasibility of all these options requires further investigation, including realistic rolling stock noise goals, operational impacts of speed restrictions, durability and maintenance requirements for absorptive trackforms, and confirmation of the effectiveness of absorptive trackforms. Even with a combination of mitigation measures, the EIS identifies that residual exceedances of the noise goals are likely to remain at some locations.</p>	<p>92, 98, 105, 168, 170-174, 176, 181, 187-189, 191-194, 323, 334, 413, 427, 447</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>b) Trackform or trackbed issues, including:</p> <ul style="list-style-type: none"> <li>▪ Consider low noise/vibration tracks along the entire length of Devonshire Street.</li> <li>▪ Use continuous rails along Devonshire Street to reduce noise emissions at expansion joints.</li> <li>▪ Use maximum noise reducing beds below the tracks.</li> <li>▪ Construct the track base to limit vibration impacts.</li> <li>▪ Use materials, structures and technologies that reduce noise and vibration impacts - especially for the construction of rail base and rails.</li> <li>▪ Set track in insulation in grass lawn between Central and Moore Park.</li> <li>▪ Use high attenuation track forms near residential buildings and sensitive receivers.</li> <li>▪ Include cost of including noise reducing beds beneath light rail tracks included in cost/benefit analysis.</li> </ul>	<p>Based on the EPA's RING, mitigation of operational noise is only required to be considered where the trigger levels identified in the guideline are exceeded. In this instance, residential properties west of Marlborough Street, within the Surry Hills Precinct fall within this category.</p> <p>Consequently, further investigation would be undertaken in the detailed design stage at these locations to examine whether potential noise and vibration mitigation measures identified in the EIS are reasonable and feasible. Feasibility generally relates to engineering considerations and what can practically be built. While, reasonableness relates to a judgement taking into consideration factors such as noise-mitigation benefits, cost, aesthetic impacts, noise levels and community views.</p> <p>Absorptive trackforms are one of a number of mitigation measures to be examined in more detail for Surry Hills, with cost versus benefit being one of the factors to be considered in determining what mitigation is feasible and reasonable. An operational noise and vibration review would be prepared to confirm the noise impacts and determine the final form of mitigation to be provided.</p> <p>Technical Paper 11 in the EIS, Volume 6 (refer Table 21) identifies that high-resilience (vibration mitigating) trackforms are likely to be required throughout the Surry Hills Precinct to control ground-borne noise and vibration impacts.</p> <p>Continuously welded rails are proposed to be used throughout the proposal area.</p>	<p>18, 160, 168, 170-174, 176, 181, 187-189, 191-194, 238, 312, 323, 366, 403, 407, 413, 418, 447</p>
<p>c) Other management/mitigation measures:</p> <ul style="list-style-type: none"> <li>▪ Use noise barriers to mitigate noise impacts on properties in quiet streets.</li> <li>▪ Run light rail for limited hours (not late at night or early in the morning).</li> <li>▪ Run LRVs at a frequency of every five to ten minutes (or less frequently) to minimise noise and vibration impacts.</li> </ul>	<p>Noise barriers are not considered appropriate in urban, city centre environments and/or where embedded rail (flush with the road surface) is installed, in order to allow easy pedestrian and vehicular access across tracks. Barriers would prevent pedestrian and vehicular access across tracks and would also have substantial amenity impacts. The proposed noise mitigation strategy is therefore to reduce the source level as far as possible, using best practice measures such as more stringent noise specification for LRVs, higher absorption track forms, speed restrictions, and minimising track and wheel roughness to minimise noise and vibration impacts.</p> <p>The EIS identifies that the expected hours of service operations would be from 5am until 1am; however the frequency of services is likely to vary with demand. For example, the service may vary from every three minutes during peak times (7.30am to 9.30am and 5pm to 7pm) to a service every 10 minutes between 10pm and 7.30am. The noise impacts in Surry Hills and elsewhere would therefore be greatest during peak times and on special event days, and less at other times.</p>	<p>233, 235, 237, 271, 312, 323, 389, 404</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ Enforce slower light rail travel (20 kilometres per hour).</li> <li>▪ Request for compensation due to noise and vibration impacts on residents, or reimbursement for the costs of soundproofing solutions for residents and businesses in Devonshire Street.</li> <li>▪ Request for conditions of approval to include the management of motorcycle/excessive noise emissions in the noise catchment areas.</li> <li>▪ Any road surface treatment on Devonshire Street to discourage cyclists should be such that it does not increase noise from motor vehicle movements.</li> </ul>	<p>As described in section 5.4.2 of the EIS (Volume 1A), LRVs would generally operate within the existing posted road speeds (with the exception of dedicated corridor sections and the George Street pedestrian zone). However, the option of speed restrictions to 30 kilometres per hour during the night-time between the Central Station and Surry Hills stops (with the exception of during special events) is also proposed to be further considered during detailed design. Any further restrictions would have an unacceptable impact on travel times along the CSELR.</p> <p>In the event that the proposal's operational noise goals cannot be met, property treatments for residential receivers would be considered as a last-resort mitigation measure in accordance with the EPA's RING. Consideration of property treatments are only applicable in the event that the noise goals cannot be met through other means. Also, as identified in the EIS, it is proposed that minor (1 dB to 2 dB) residual exceedances of the noise goals after application of reasonable and feasible source mitigation measures would be accepted without treatment, as these levels are barely audible.</p> <p>Financial compensation for noise and vibration impacts would not be provided; however all feasible and reasonable measures to mitigate noise and vibration impacts in accordance with the relevant EPA guidelines would be implemented.</p> <p>Retail premises are not considered to be 'sensitive receivers' under the RING and would not be eligible for compensation or soundproofing treatments.</p> <p>Noise from motorcycles on Elizabeth Street and Devonshire Street is outside the control of the proposal. Excessively noisy vehicles can be reported to the EPA via its website, <a href="http://www.epa.nsw.gov.au/noise/noisyexhaust.htm">http://www.epa.nsw.gov.au/noise/noisyexhaust.htm</a>.</p> <p>Any changes to road pavement surfaces would need to consider and minimise the potential for a resultant increase in noise from road traffic.</p>	

#### 5.10.10 Management and mitigation of operational noise and/or vibration – other

Specific issues raised in submissions	Response to specific issues	Submission No.
a) Hotel in City Centre Precinct requests ongoing consultation regarding hours of noisy works, to ensure guest satisfaction.	The community (including affected hotels and other businesses) would be informed about upcoming works throughout the construction period using a combination of means described in the EIS (refer Chapter 2 in Volume 1A). This includes regular mailed out notifications, the proposal website, an email distribution list, the proposal Info-line and the Construction Response Line. Specific notifications, phone calls and individual briefings would also be available if requested.	88
b) The impact on the Moore and Centennial Parks Precinct is unacceptable without a clear plan to replace any sound abatement mounds in the Robertson Road area.	The operational noise levels at residential receivers in the Robertson Road and wider area are predicted to comply with the noise goals as defined in the EPA's RING.	90

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>c) Property treatments should be used as an absolute last resort in noise mitigation strategies. Reduce the noise impact in the design and planning phases using some of the other options proposed in the EIS. Expresses support for vegetated trackforms, which has been successfully implemented in Europe.</p>	<p>It is agreed that property treatments are a last-resort mitigation measure, and are only applicable in the event that the noise goals cannot be met through other means. However, the other mitigation measures described in the EIS require further investigation to determine if they are feasible, reasonable and effective.</p> <p>Even with a combination of mitigation measures, the EIS identifies that residual exceedances of the noise goals are likely to remain at some locations. For this reason, property treatments are included in the list of potential mitigation measures.</p> <p>An operational noise and vibration review would be prepared in the next stage of the proposal to determine the final design of mitigation measures, and to identify any residual exceedances of the operational goals. This review would include investigation of absorptive trackforms and other noise and vibration reducing trackform designs.</p>	<p>182</p>
<p>d) Provide double glazing for windows and insulation of residences and businesses in close proximity to proposed stops to mitigate against noise impacts.</p> <p>e) Assess the need for, and provide, solid wood front doors, screening and sound walls for affected residents.</p>	<p>As noted in row c) above, and in the EIS, property treatments are considered a last-resort mitigation measure under the EPA's RING, and are only applicable in the event that the noise goals cannot be met through other means.</p> <p>As identified in the EIS, the operational noise levels are predicted to comply with the RING at all locations with the exception of parts of Surry Hills (residential receivers). Noise barriers are not considered appropriate in urban, city centre environments in order to allow easy pedestrian and vehicular access across tracks. Barriers would prevent pedestrian and vehicular access across tracks and would also have substantial amenity impacts.</p>	<p>271, 312, 323, 331, 389, 413, 428, 447, 449</p>
<p>f) Use subsurface technology and construction methods to isolate vibration caused by light rail operation.</p>	<p>The EIS (refer Table 21 in Technical Paper 11, Volume 6) identifies that high-resilience (vibration-mitigating) trackforms are likely to be required at various locations along the CSELR alignment to control ground-borne noise and vibration impacts (including through parts of the City Centre, Surry Hills, Randwick and Kensington/Kingsford precincts where sensitive receivers line the route). This is subject to further investigation during detailed design.</p>	<p>403</p>
<p>g) Ensure light rail rolling stock has quiet operation.</p>	<p>The noise emissions of rolling stock would be controlled by specification of best practice noise emissions in the acquisition of rolling stock, as well as requirements for the future Operator to maintain track and rolling stock to minimise noise emissions.</p>	<p>447</p>
<p>h) Use absorptive paving materials to mitigate operational noise impacts for residents of Wansey Road.</p>	<p>The operational noise levels at residential receivers on Wansey Road are predicted to comply with the noise goals as defined in the EPA's RING.</p> <p>An operational noise and vibration review would be prepared in the next stage of the proposal to confirm the EIS predictions, and to identify any residual exceedances of the operational noise levels (refer to mitigation measures B.1 to B.4 in the revised list of mitigation measures in Chapter 8 of this Submissions Report). This review would include investigation of absorptive trackforms and other noise and vibration reducing trackform designs at locations where the RING noise trigger levels are exceeded.</p>	<p>299</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
i) Given the sensitive nature of tenant businesses within the Dymocks Building, utilise high resilience rail bedding adjacent to the building to reduce vibrations of the LRVs.	Technical Paper 11 of the EIS (refer Table 21 in Volume 6) notes that standard trackform is likely to be employed between Bathurst Street and the Wynyard stop because of the low LRVs speeds proposed in this zone. Notwithstanding this, there are a number of different trackform designs available for light rail systems. The final design would be confirmed in the detailed design stage, with consideration of the requirements for vibration mitigation at all sensitive receivers along the alignment in accordance with the relevant guideline ( <i>Assessing Vibration: a Technical Guideline</i> , DEC 2006).	347

### 5.10.11 Noise and vibration impact assessment/approach and/or scope

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Noise monitoring/measurement issues:</p> <ul style="list-style-type: none"> <li>▪ Data collected during noise monitoring at 3 Wansey Road will be significantly influenced by road traffic noise on Alison Road. Existing noise levels should be measured at the midpoint of Wansey Road which correlates with the location that light rail would be operating at its highest speed.</li> <li>▪ Further noise monitoring is required to establish accurate existing levels and evaluate operational noise impacts during special events.</li> <li>▪ Concerned that noise levels recorded for the EIS (Surry Hills) were taken from outside a noisy local pub; not representative of neighbourhood noise levels.</li> <li>▪ Concern that noise recordings were taken in an environment that cannot be compared to Surry Hills.</li> <li>▪ There must be clear rules on noise measurement to determine EPA guidelines are being met at all points along the route at all times during operation.</li> <li>▪ Concern that noise monitoring results are described in terms of noise sources but do not distinguish between types of motor vehicle noise.</li> </ul>	<p>The noise logger placement at number 3 Wansey Road was chosen for its proximity to the light rail stop location proposed in the EIS. The existing noise environment at the logger locations is used to determine appropriate construction noise management levels, and operational noise goals for fixed facilities such as light rail stops (e.g. public address system noise). As described in section 6.11 of this Submissions Report, the location of the Wansey Road stop is now proposed on Alison Road near the corner with Wansey Road. The noise monitoring location is also considered appropriate for this relocated stop.</p> <p>The operational noise goals and assessment of impacts for LRVs are defined in the EPA's RING, and are independent of the existing noise environment. This comment also applies to special events – the operational rail noise goals are independent of existing noise from road traffic or other sources.</p> <p>Placing noise loggers is subject to receipt of permission from the landowner / occupier, and the security of the equipment. The position at 158 Devonshire Street was selected after failure to gain permission at nearby suitable residential properties. The results reported remain representative of the ambient noise environment at that location. It is noted that there are several licensed venues distributed along Devonshire Street, and that all these venues contribute to the ambient noise environment. Notwithstanding this, the logger at 158 Devonshire Street was not used in the assessment of noise impacts – operational rail noise goals are independent of the existing noise environment, and construction noise management levels for the Surry Hills Precinct were based on the noise logger results from 44 Parkham Street, which is expected to be conservative for other locations along Devonshire Street.</p> <p>The specific proposal requirements for post-operational noise compliance measurements would be defined by the Conditions of Approval for the proposal (if approved). Rail noise measurements would need to be undertaken in accordance with the relevant Australian Standards, including <i>AS 2377-2002 Acoustics – Methods for the measurement of railbound vehicle noise</i> and <i>AS 1055-1997 Acoustics - Description and measurement of environmental noise</i>.</p>	299, 312, 323, 354, 407, 433

Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>The attended measurements as reported in Technical Paper 11 in the EIS (Volume 6) are intended to provide indicative information on the maximum noise emissions from different sources at each location.</p>	
<p>b) Appropriate noise goal/classification as sensitive receiver:</p> <ul style="list-style-type: none"> <li>▪ Concern that external noise trigger levels have been adopted in the EIS on the assumption that a 25dB attenuation outside-to-inside is applicable to the sensitive receptors without confirmation that the assumption is valid.</li> <li>▪ The Dymocks Building should be classified as an educational facility and be included in Table 12.32 of the EIS and as a sensitive receiver in Table 14.3.1 of Technical Paper 11.</li> <li>▪ The Quaker Meeting House is a sensitive receiver. Its form of worship is characterised by people gathering together in a meditative kind of worship. Therefore, the internal noise goals would be more appropriate at a lower level, for instance at a drama theatre level.</li> </ul>	<p>The assumption of a 25 dB outside-to-inside attenuation has been applied to recording studios, theatres and auditoria, and cinemas. This assumption would be confirmed during the detailed design stage; however it is noted that these receiver types are typically well insulated from external noise break in. In most cases a greater attenuation to noise-sensitive spaces within these buildings would be expected than was assumed in the EIS.</p> <p>The 'educational' uses in the Dymocks Building are businesses providing vocational adult training, with an expected similar sensitivity to construction noise as general office spaces. These businesses are also in the upper levels of the building (levels 7-10), so are not the most affected occupants of the building. The most affected levels of the Dymocks Building are considered to be commercial receivers as defined by the relevant guidelines.</p> <p>The sensitivity of the Quaker Meeting House as a Place of Worship is noted. The EIS identifies that the operational noise impacts at this location have the potential to exceed the noise goals, triggering consideration of noise mitigation measures.</p> <p>The operational noise and vibration review to be prepared during the detailed design phase of the proposal would include investigation of source noise control, and any requirements for treatment of individual sensitive receivers. Inspection of the Quaker Meeting House to determine the existing internal noise environment and the attenuation across the facade would form part of the review of reasonable and feasible mitigation measures.</p>	<p>347, 354</p>
<p>c) Additional assessment required:</p> <ul style="list-style-type: none"> <li>▪ The EIS does not include an assessment of vibration and ground-borne noise impacts from the stabling facility on residents of Doncaster Avenue. Transport for NSW should demonstrate impacts on adjoining residential properties are acceptable.</li> <li>▪ Concern that noise assessment is incomplete. Approval should only be granted with conditions for proper assessment, verification, options and budget for noise mitigation for consultation with affected premises ('sensitive receivers').</li> </ul>	<p>It is anticipated that the design of the stabling facility would incorporate measures to mitigate ground-borne noise and vibration in accordance with the relevant guidelines. These impacts would be assessed during preparation of the operational noise and vibration review in the detailed design stage.</p> <p>The concern that approval should only be granted with conditions is noted. The noise impact assessment has been undertaken in accordance with the Director General's Requirements for the EIS. The predicted impacts would be refined, reviewed and verified going forward, both during the detailed design stage and during post-operational compliance measurements. There would be ongoing consultation and engagement with affected premises throughout this process.</p> <p>The EIS identifies that there is potential for a reduction in existing road traffic noise impacts along Devonshire Street, due to the closure of the street to westbound traffic. The impacts of road traffic changes would be refined, reviewed and verified going forward to the detailed design stage.</p> <p>The NSW EPA has had involvement in the planning approval process for the CSELR proposal and has reviewed the noise and vibration impact assessment.</p>	<p>299, 327, 354, 433</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ Concern that noise impacts of proposed traffic changes to Devonshire Street have not been assessed. Requests that operational road and traffic noise impacts be assessed based on actual changes later in proposal to inform mitigation strategy for operational noise.</li> <li>▪ P&amp;I should undertake independent noise and vibration studies.</li> </ul>	(Note: issues continued from above)	
<p>d) Clarification needed:</p> <ul style="list-style-type: none"> <li>▪ Notes that the EIS is unclear about how the noise footprints were derived.</li> <li>▪ Notes the noise and vibration assessment for Devonshire Street uses unclear LRV speeds.</li> </ul>	<p>The inputs to the noise contours in the EIS have been derived from operational noise modelling as described in section 5.4 of Technical Paper 11 (Volume 6 of the EIS).</p> <p>The speeds used in the noise and vibration assessment are shown in Figure 5 in Technical Paper 11. Along Devonshire Street, the maximum modelled speed is 40 kilometres per hour when travelling away from the city, and 45 kilometres per hour when travelling towards Central Station. Speeds would be less near stops, and intersections with roads.</p>	433

## 5.11 Planted trees

### 5.11.1 Impacts on trees – along the CSELR alignment

#### Summary of issues raised

A number of submissions made general objections to or noted concerns about tree loss along the CSELR alignment:

- Objects to the proposed removal of a large number of trees, including significant trees.
- Object strongly to removal of so many trees to bring in a public transport system that replicates existing bus routes. Would rather lose parking spaces than trees.
- Strongly disagrees with the CSELR due to the loss of trees.
- Believes light rail should not come at the expense of trees.
- Concerned about tree loss along the alignment.
- Concerned about the loss of 700+ trees along the alignment.
- Concerned about the loss of 700 mature trees along Anzac Parade, Alison Road, High Cross Park etc.
- Concerned about the number of large and historic trees that will be removed along the proposed CSELR route.
- Concerned about the loss of Moreton Bay Fig Trees.

- Concerned about the removal of trees - the balance of buildings and green space is important.
- Notes trees provide psychological benefits and add value to properties.

#### Submission number(s)

54, 59, 63, 64, 75, 79, 94, 98, 105, 114, 116, 170-174, 176, 181, 188, 189, 191-194, 198, 204, 205, 217, 222, 223, 230, 236, 250, 251, 255, 261, 283, 284, 294, 316, 323, 329, 346, 358, 372, 375, 377, 378, 379, 380, 383, 389, 390, 391, 396, 407, 410, 413, 421, 425, 437, 440, 443, 445, 446, 447, 449, 455

#### Response

As explained in the EIS, removal of a number of planted trees, including significant trees, along the alignment is unavoidable due to the need to balance minimum road design requirements, minimise property acquisition, allow for service relocations, and minimise operational safety risks within a constrained urban corridor with limited available road space and competing modes of transport.

The fact that a large number of trees would be affected by the CSELR is acknowledged in the EIS as one of the key impacts of the proposal.

The number of planted trees stated as being directly impacted by the CSELR proposal within the EIS (up to approximately 760 planted street trees across the whole alignment – all precincts included) represented a worst-case scenario, as the methodology employed to assess the impact was a preliminary assessment that assumed worst-case impacts.

Since publication of the EIS, some further design refinement has been undertaken and some modifications to the design are proposed (refer Chapter 6 of this Submissions Report). These changes have reduced the overall expected impact on planted trees by approximately 50 trees (refer section 6.16 of this Submissions Report). Key areas where trees would be saved by these design changes are along Chalmers Street in the CBD, Alison Road (southern side), north of the UNSW Anzac Parade stop, and at High Cross Park. The number of trees to be retained may also increase following detailed arborist surveys during detailed design.

Where trees cannot be retained, a strategy of tree replacement and other mitigation is also proposed based on Transport for NSW's *Vegetation Offset Guide* (Transport for NSW 2013a). This includes replacing trees that cannot be retained at a ratio of between 2:1 and 8:1, depending on the size of tree to be removed and consultations with City of Sydney or Randwick City Council and other affected stakeholders where relevant (such as the Centennial Park and Moore Park Trust). Other mitigation measures relating to tree planting and landscaping are described in Chapter 8 of this Submissions Report (refer measures C.1, N1-N.3, O.11-O.18, T.1-T.12, AJ.3 and AJ.5 to AJ.10).





### 5.11.2 Associated impacts of tree removal – along the CSELR alignment

#### Summary of issues raised

A number of submissions noted concerns about the associated impacts of tree removal along the alignment:

- Impacted trees along the CSELR route make an important contribution to the community's wellbeing. Removing these trees will have a negative impact on the environment, the area and the people who live and travel through the area. It is important that these trees are retained. 76
- Trees provide significant visual amenity.
- Trees add to the neighbourhood and enjoyment of the area.
- The large number of trees in the eastern suburbs helps to produce clean air around major roads.
- Concerned that tree loss will impact on micro-climate, air quality and/or shade for pedestrians.
- The trees also support the threatened grey-headed flying fox.
- Concerned about implications of tree loss in parklands, including shade, biodiversity, native habitat and the carbon sink mitigating climate change.
- Concerned about tree loss and impact on animal and native bird habitat.

#### Submission number(s)

76, 155, 242, 255, 284, 289, 372, 389, 423, 433

#### Response

The visual amenity, environmental and social impacts of the proposed tree removal are acknowledged in the EIS. These associated impacts are discussed in Chapters 12 to 17 of the EIS (visual and social impacts, Volume 1B) and section 10.6 (biodiversity, Volume 1A), including proposed mitigation measures where appropriate.

In regard to the air quality and/or climate related impacts of tree loss, the following points are noted:

- Street trees can assist in the removal of particulate and gaseous pollutants from the road-side environment via processes of deposition and absorption. Particulate matter is removed from the air when it deposits on leaves and branches. The deposited particles are then typically washed off in rain, re-released during higher winds or dropped with falling leaves. Gaseous pollutants such as nitrogen dioxide and carbon monoxide are absorbed through leaves. Street trees also provide localised temperature benefits from shading. Lower temperature and shade can assist in reducing the generation of street level Ozone.

- Computer model studies were undertaken on overall benefits from urban vegetation in United States cities by David J Nowak et al (2006). This study included collected pollution concentration, climate and meteorological data for 55 cities and calculated air pollution benefits from physical and chemical removal processes. The results suggested average improvements in pollutant concentration of typically less than one per cent. However, short-term one hour benefits can be higher. Although benefits are small per tree, the overall benefit for an entire city can be in the order of 10-100 tonnes removal of an individual pollutant annually.
- The loss of trees along the CSELR alignment may result in minor impacts on local air quality and shading/weather protection. However, the proposal also includes replacing trees within the proposal area at a ratio of between 2:1 and 8:1 for each single tree removed, which would offset these losses.

In regard to associated impacts of tree loss on the Grey-Headed Flying Fox, the EIS provided an assessment of the CSELR proposal's impact on this species and its habitat and other native wildlife, which included the removal of approximately 100 potential foraging trees along the nine kilometre length of roadside and park edge habitat. A significance assessment for the Grey-headed Flying-fox was provided in Appendix H of the EIS (refer to Volume 1C of the EIS). This assessment concluded that 'the Grey-headed Flying-fox is unlikely to be significantly impacted by the project.' Further discussion of biodiversity issues (including impacts of tree loss on animal and native bird habitat) is provided in section 5.18 of this Submissions Report.

### 5.11.3 Impact on trees – City Centre

Specific issues raised in submissions	Response to specific issues	Submission No.
a) Concern about removal of trees at Alfred Street Plaza which provide weather protection.	Please refer to general responses in sections 5.11.1 and 5.11.2.  The EIS (section 12.6 in Volume 1B) identified that there would be minor loss of trees along Alfred Street in the City Centre. Replacement of these trees would be undertaken as per the tree replacement strategy described in section 5.11.1 of this Submissions Report.	356

### 5.11.4 Impact on trees - Surry Hills

Specific issues raised in submissions	Response to specific issues	Submission No.
a) General concern raised about the CSELR proposal's impact on planted trees within Surry Hills: <ul style="list-style-type: none"> <li>▪ These trees contribute to the character/village atmosphere of Surry Hills.</li> <li>▪ Removal of 140-150 trees is excessive.</li> </ul>	Refer to general responses in sections 5.11.1 and 5.11.2.  The impact of the CSELR on trees in Surry Hills is acknowledged in the EIS (refer section 13.6, Volume 1B). The visual amenity, heritage and social contribution of these trees to the character of Surry Hills are also acknowledged (refer EIS sections 13.7, 13.8 and 13.9, Volume 1B).  The northern edge of Devonshire Street is proposed to be enhanced with tree planting to mitigate the character of those lost within the Devonshire Street road corridor in accordance with Transport for NSW's <i>Vegetation Offset Guide</i> (Transport for NSW 2013a) and in consultation with City of Sydney Council (refer mitigation measure AJ.7 in Chapter 8 of this Submissions Report). Specific measures are also proposed to further consider and minimise impacts on significant trees in Ward Park and trees in the vicinity of Wimbo Park (refer EIS section 13.6.3, Volume 1B). The detailed design process may also result in the saving of some further affected trees in Surry Hills.	6, 19, 169, 235, 361, 364, 433, 481



Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ The area cannot accommodate the relocation of these trees within Devonshire Street.</li> </ul>	<p>The CSELR proposal also includes an expanded Wimbo Park in the location of the existing Olivia Gardens apartment complex. An indicative plan of this new park is provided in Figure 6.5 in this Submissions Report. This park includes new areas of proposed tree plantings and landscaped areas, and is expected to contribute to the public domain of Surry Hills, including a connection through to Moore Park. The tree replacement strategy would aim to replace as many trees as possible within the local area (refer to the new mitigation measure T.12 in Chapter 8 of this Submissions Report, which states that 'Where possible, trees would be planted within the same locality from which they are removed').</p>	
<p>b) Objects to the CSELR route along Devonshire Street due to the need to remove heritage listed trees, as listed on Council's Register of Significant Trees.</p>	<p>It is acknowledged that the CSELR affects a number of trees listed on City of Sydney's Register of Significant Trees. The response to sub-issue a) above summarises the proposed approach to mitigate and/or offset these impacts.</p> <p>The route along Devonshire Street was selected following a detailed options identification and assessment process, as summarised in Chapters 3 and 4 of the EIS (Volume 1A). Please also refer to section 5.4.5 of this Submissions Report for further discussion of the justification of the selection of the Devonshire Street alignment.</p>	196
<p>c) Submits that the trees between Prince Alfred Park and Moore Park may form a migration corridor for possums.</p>	<p>The biodiversity assessment carried out as part of the EIS (refer Section 10.6 of the EIS, Volume 1A) did not identify any formal wildlife corridors within the study area. However, the assessment did assess habitat fragmentation, which is the division of a single area of habitat into two or more smaller areas. The assessment found that while the proposal would potentially increase the distance between habitat fragments, it is not likely to add significantly to distances between vegetation/habitat patches in the study area.</p> <p>With regard to the migration of possums through Surry Hills, a number of streets within Surry Hills, including Devonshire Street and adjacent streets, include street trees that, whilst not always forming a contiguous row, may provide a potential corridor for possums to travel between Prince Alfred Park and Moore Park. A number of private properties fronting streets within Surry Hills also contain large mature trees.</p> <p>The removal of trees along Devonshire Street as part of the CSELR is not expected to substantially impede the ability of arboreal wildlife such as possums to move freely within the area, owing to the retention of trees on adjacent streets and within private properties along Devonshire Street. As described in row a) above, street trees would also be replaced along the northern side of Devonshire Street as part of the proposal.</p>	291
<p>d) Concerned about tree loss on Bourke Street. Three large trees is excessive, and only the tree directly in the path of the light rail should be removed. It is not acceptable to lose trees of this scale for temporary diversions during construction.</p>	<p>The EIS states that some trees within Wimbo Park would be impacted as a result of the need for a temporary diversion of Bourke Street to allow intersection works at the Bourke Street/Devonshire Street intersection. The temporary diversion into Wimbo Park was considered the optimum solution to enable the intersection works whilst maintaining traffic on Bourke Street, without having to divert traffic through alternate streets.</p> <p>Following completion of construction, Wimbo Park and the Olivia Gardens site would be re-designed as a public park, including new planting to offset removed trees. Trees would be selected in accordance with the CSELR Landscape Strategy (Appendix F in the EIS, Volume 1C) and City of Sydney's (2011) <i>Street Tree Master Plan</i>.</p>	142

Specific issues raised in submissions	Response to specific issues	Submission No.
e) Concerned about the loss of two trees outside the Olivia Gardens boundary, on the northern side of Nobbs Lane. These established trees do not need to be removed.	Based on the current CSELR design and construction footprint in the vicinity of Olivia Gardens, it is not anticipated that any trees on the northern side of Nobbs Lane would be directly impacted by the proposal.	142
f) Will the young trees on Devonshire Street need to be removed?	<p>A number of mature and juvenile trees along Devonshire Street would be impacted by the CSELR proposal.</p> <p>Proposed construction methods would be reviewed to reduce the construction footprint, where feasible (refer to mitigation measure N.1 in the revised list of mitigation measures in Chapter 8 of this Submissions Report). Where it is possible to retain trees that would not be directly impacted by the proposed CSELR permanent works along Devonshire Street (e.g. overhead wires, kerb realignments, service relocations, etc.) these trees would be protected prior to the commencement of construction in accordance with AS4970 the <i>Australian Standard for Protection of Trees on Development Sites and Adjoining Properties</i> (refer mitigation measure T.1 in Chapter 8 of this Submissions Report).</p> <p>Street trees would be replaced along the northern side of Devonshire Street in accordance with Transport for NSW’s <i>Vegetation Offset Guide</i> (Transport for NSW 2013a) and in consultation with City of Sydney Council (refer mitigation measures T.3 and AJ.7 in Chapter 8 of this Submissions Report).</p>	354

### 5.11.5 Impact on trees – Randwick

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) General concerns and objections to removal of trees in Randwick and associated impacts:</p> <ul style="list-style-type: none"> <li>▪ Concerned about loss of 280 trees in Randwick.</li> <li>▪ Concerned about loss of significant trees and impact on leafy character of suburb (Randwick).</li> <li>▪ Trees in Randwick are important for shade and visual amenity and should be retained.</li> <li>▪ Concerns about the removal of trees along the Randwick route, particularly because of the air pollution. Question about heritage of the trees.</li> <li>▪ Loss of trees in Randwick would result in significant losses of heritage and amenity value for these areas and residents.</li> </ul>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2.</p> <p>The impact of the CSELR on trees in Randwick is acknowledged and assessed in the EIS (refer section 15.6, Volume 1B). Since publication of the EIS, some design development has occurred along parts of the Randwick alignment (refer section 6.11 of this Submissions Report). In some locations, including Alison Road and High Cross Park, this has led to a reduction in the number of trees expected to be affected, as detailed in sections 6.11 and 6.12 of this Submissions Report and discussed further below.</p> <p>Specific measures are also proposed to further consider and minimise impacts on significant and other trees in Randwick (refer EIS section 15.6.3, Volume 1B).</p> <p>The visual amenity, heritage and social contribution of the affected trees to the character of Randwick are also acknowledged in the EIS (refer EIS sections 15.7, 15.8 and 15.9, Volume 1B). The air quality and/or climatic impacts of tree removal are discussed in section 5.11.2 of this Submissions Report.</p>	116, 138, 141, 145, 242, 247, 255, 310, 329



Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ Objection to the removal of trees, particularly in Randwick. The trees add value to properties and provide shade and shelter.</li> <li>▪ Concern that the removal of trees will change the Randwick landscape and devalue properties.</li> </ul>	<p>In regard to property value impacts of tree removal, please refer to the discussion in section 5.9.18 of this Submissions Report. Property values are dependent on a range of very complex factors and it is impossible to accurately predict the influence of amenity impacts of the CSELR on values. Instead, the proposed approach is to mitigate and manage impacts through measures such as the tree replacement strategy described in section 5.11.1 of this Submissions Report.</p>	
<p>b) Concern about or objection to removal of trees in Wansey Road:</p> <ul style="list-style-type: none"> <li>▪ Objects to the proposed CSELR alignment on Wansey Road due to the loss of a large number of significant trees that positively contribute to the visual and landscape character in and around Randwick Racecourse, as well as amenity value for pedestrians.</li> <li>▪ Objection to the removal of trees along Wansey Road.</li> <li>▪ Concerned about impact on trees along Wansey Road.</li> <li>▪ Suggests trees on Wansey Road should be preserved.</li> <li>▪ Concerned about the loss of Moreton Bays along Wansey Road.</li> </ul>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2 of this Submissions Report.</p> <p>The impact of the CSELR on trees in Wansey Road is acknowledged and assessed in the EIS (refer section 15.6, Volume 1B), and the associated visual amenity impacts are also assessed (refer section 15.7, Volume 1B). Specific measures are proposed to further consider and minimise impacts on significant trees along Wansey Road (refer EIS section 15.6.3, Volume 1B).</p> <p>Since publication of the EIS, some design development has occurred in the Wansey Road area (refer section 6.11 of this Submissions Report), including the movement of the previous Wansey Road stop onto Alison Road, and a change from two-way traffic and light rail along Wansey Road to parking (eastern side), one-way traffic and light rail. Although the proposed changes have some identified benefits for local parking, there is insufficient room to also save the trees along the street that are identified as affected in the EIS. Expected tree impacts of the refined design are described in section 6.11.3 of this Submissions Report, and are essentially the same as those described in the EIS.</p>	<p>54, 59, 63, 64, 146, 184, 231, 247, 255, 284, 329, 372, 479</p>
<p>c) Concern about or objection to removal of trees on Alison Road and/or Royal Randwick racecourse:</p> <ul style="list-style-type: none"> <li>▪ Object to the loss of mature trees along Alison Road.</li> <li>▪ Concerned about removal of trees along Alison Road.</li> <li>▪ Alison Road trees have heritage significance and health/well-being benefits.</li> <li>▪ Tree loss should be avoided in Alison Road/Randwick Racecourse, Anzac Parade/Alison Road and Wansey Road/Randwick Racecourse.</li> <li>▪ Object to removing trees from along the racecourse as the trees bring life to the area, improve air quality and are home to wildlife.</li> <li>▪ Object to the removal of trees near the racecourse. Number?</li> <li>▪ Concerned about loss of significant trees along Royal Randwick racecourse.</li> </ul>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2 of this Submissions Report.</p> <p>The impact of the CSELR on trees along Alison Road and the Royal Randwick racecourse is acknowledged and assessed in the EIS (refer section 15.6, Volume 1B). The EIS includes assessment of the visual amenity, heritage, social and biodiversity impacts of the tree removal (refer sections 15.7-15.9, Volume 1B and 10.6, Volume 1A). Specific measures are proposed to further consider and minimise impacts on significant trees alongside the racecourse (refer EIS section 15.6.3, Volume 1B).</p> <p>Since publication of the EIS, further design development has occurred in the Alison Road and Royal Randwick racecourse area, including shifting of the CSELR alignment along Alison Road northwards to avoid some significant trees (refer section 6.11.3 of this Submissions Report). The previous Wansey Road stop has also shifted onto Alison Road. Together these changes are expected to save approximately 20 of the significant Fig trees along Alison Road, as explained in section 6.11.3 of this Submissions Report. Further testing of the root zones of the existing trees along Alison Road would also assist in determining additional trees that may potentially be retained along this section of the proposal. This testing would be undertaken by a suitably qualified arborist during detailed design.</p>	<p>56, 146, 148, 210, 214, 247, 255, 261, 270, 277, 284, 306, 372, 434</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ Trees around the racecourse are important habitat for endangered grey-headed flying foxes.</li> </ul>		
<p>d) Concern about or objection to removal of trees at Randwick stabling facility:</p> <ul style="list-style-type: none"> <li>▪ Opposes removal of mature Moreton Bay Fig Trees in proximity to Doncaster Avenue.</li> <li>▪ Concerned about the removal of mature trees from the proposed Randwick stabling facility site.</li> <li>▪ Concerns about potential impacts from the stabling facility on the environment. Question about how many trees will be removed.</li> <li>▪ Concerned about loss of Moreton Bay fig trees and Canary Island Date Palms which are over 100 years old (due to proposed location of Randwick stabling facility). Local wildlife exist in the trees proposed to be removed.</li> </ul>	<p>The EIS notes that the Randwick stabling facility site would be configured so as to retain the large Moreton Bay Fig at the western end of the site; however all other trees within the boundary of the facility are likely to be removed.</p> <p>Based on a further preliminary tree assessment of the stabling facility site, the majority of these (32) trees are confirmed to be mature Brushbox trees. The remainder of the affected trees comprise one Italian poplar, four wild olive trees, one Canary Island date palm, five Hackberry trees, and one Argyle apple tree. In addition, there appear to be two large Fig trees affected, which were not assessed as part of the planted tree assessment in the EIS (but were in fact considered in the heritage and visual assessments). Due to property access issues, these trees could not be surveyed as part of the additional tree assessment. However, these trees would be surveyed during detailed design, during which it would be confirmed if the trees can be retained and/or relocated.</p>	<p>80, 129, 143, 242</p>
<p>e) Concern about or objection to removal of trees at High Cross Park:</p> <ul style="list-style-type: none"> <li>▪ Objects to the loss of trees, including significant trees, in High Cross Park.</li> <li>▪ Concerned about the removal of trees (including 100 year old trees) from High Cross Park.</li> <li>▪ Tree loss should be avoided in High Cross Park.</li> <li>▪ The Cook Pines (High Cross Park) are an important part of the Randwick landscape and should be retained.</li> </ul>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2 of this Submissions Report.</p> <p>The impact of the CSELR on trees at High Cross Park is acknowledged and assessed in the EIS (refer section 15.6, Volume 1B). The EIS included assessment of the visual amenity/landscape impacts of this tree removal (refer section 15.7, Volume 1B). Specific measures are proposed to further consider and minimise impacts on trees at High Cross Park, including development of a detailed landscape strategy for the park (refer EIS section 15.6.3, Volume 1B). Since publication of the EIS, further design development has occurred for the proposed Randwick stop and bus interchange at High Cross Park, in order to minimise the impact on this park (refer section 6.12 of this Submissions Report). This design change is expected to save an additional three trees at this park, as explained in section 6.12.3 of this Submissions Report.</p>	<p>56, 133, 148, 201, 202, 255, 284, 375</p>
<p>f) Objects to the loss of any trees as a result of establishing construction compounds at High Cross Park and Wansey Road.</p>	<p>No construction compound is proposed at Wansey Road; however this road would be affected during construction of the CSELR alignment along this road. Effects on trees along this road are discussed above.</p> <p>Part of High Cross Park is proposed to be used as a construction compound during construction of the Randwick stop. As noted above and in section 6.12 of this Submissions Report, since publication of the EIS, the design of the Randwick stop has changed which is expected to slightly reduce the impact on trees in this park. The construction compound boundary at this park would be designed to minimise impacts to significant trees that would not already be impacted by the proposed permanent works for the Randwick stop. Other measures would also be implemented to avoid impacts on these trees (refer mitigation measure O.16 in Chapter 8 of this Submissions Report).</p>	<p>54, 59, 63, 64, 116, 255, 329, 443</p>



### 5.11.6 Impact to trees – Moore Park and/or Centennial Parklands

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Concerned about impact on trees in Moore Park, including heritage significant fig trees. 141, 427</p> <p>b) Concerned about tree loss in the parklands. 449</p>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2 of this Submissions Report.</p> <p>The impacts on mature trees in Moore Park are acknowledged and assessed in the EIS (refer sections 14.6, in Volume 1B). Specific measures are proposed to further consider and minimise impacts on significant trees in the Moore Park Precinct and near the Moore Park construction compounds (refer EIS section 14.6.3, Volume 1B).</p> <p>Since publication of the EIS, further design development has occurred for the proposed Moore Park stop and associated CSELR alignment (refer section 6.8 of this Submissions Report). A new pedestrian bridge is also proposed across Anzac Parade to connect to the revised Moore Park stop (which would be further south and closer to Sydney Boys and Sydney Girls High Schools), refer section 6.9 of this Submissions Report. Overall, these design changes are not expected to result in a substantial change in impacts to trees at this location, as explained in these sections.</p> <p>Additionally, up to 13 additional planted trees along Anzac Parade within the vicinity of the relocated Moore Park stop have been identified as potentially being able to be translocated from their current position to a new location as part of the proposal, resulting in an overall benefit to the Moore Park Precinct in comparison to the assessment presented in the EIS (refer section 6.8.3 in this report). Opportunities for translocating other planted trees within the Moore Park Precinct would be investigated during detailed design.</p> <p>The EIS included assessment of the associated visual amenity and heritage impacts of the proposed tree removal (refer sections 14.7-14.8, Volume 1B) and mitigation measures are proposed where appropriate.</p>	141, 427, 449

### 5.11.7 Impact to trees – along Anzac Parade

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Concerned about or objects to loss of trees along Anzac Parade:</p> <ul style="list-style-type: none"> <li>▪ Concerned about the avenue of trees that will need to be removed along Anzac Parade to accommodate the CSELR.</li> <li>▪ Opposes the loss of mature trees along Anzac Parade.</li> <li>▪ Concerned that Anzac Parade will lose greenery along the central strip and suggests plans are made to retain or re-plant trees and grassed spaces along the alignment.</li> </ul>	<p>Please refer to general responses in sections 5.11.1 and 5.11.2 of this Submissions Report.</p> <p>The impacts on mature trees along Anzac Parade in both the Moore Park and Kensington/Kingsford Precincts are acknowledged and assessed in the EIS (refer Sections 14.6 and 16.6, Volume 1B). Specific measures are proposed to further consider and minimise impacts on significant trees at UNSW, along Anzac Parade in the Moore Park Precinct and near the Moore Park construction compounds (refer EIS sections 14.6.3 and 16.6.3, Volume 1B).</p> <p>Since publication of the EIS, some design development has occurred for the proposed Moore Park stop (and associated CSELR alignment) and UNSW Anzac Parade stop (refer sections 6.8, 6.9 and 6.13 of this Submissions Report). A new pedestrian bridge is also proposed across Anzac Parade to connect to the revised Moore Park stop (which would be further south and closer to Sydney Boys and Sydney Girls High Schools). Overall impacts on planted trees are not expected to be substantially reduced by the changes to the Moore Park stop and alignment.</p>	56, 75, 116, 222, 231, 255, 272, 277, 284, 329

Specific issues raised in submissions	Response to specific issues	Submission No.
<ul style="list-style-type: none"> <li>▪ Concerned about negative visual and environmental impacts from removal of two large fig trees and one poplar tree at Anzac Road/Alison Road intersection.</li> <li>▪ Objection to removal of trees in Tay Reserve.</li> <li>▪ Concerned about loss of significant trees along UNSW.</li> </ul> <p>b) Concerned about associated impacts of tree removal:</p> <ul style="list-style-type: none"> <li>▪ Visual impact on residential units facing Anzac Parade; Loss of shade for units facing Anzac Parade; with northwest facing bedrooms losing privacy and increased heat in dwelling.</li> <li>▪ Loss of trees in Kensington/Kingsford would result in significant losses of heritage and amenity value for these areas and residents.</li> </ul>	<p>However the UNSW stop changes are expected to save an additional 23 significant trees relative to the assessment in the EIS (refer section 6.13.3 of this Submissions Report).</p> <p>The EIS included assessment of the associated visual amenity and heritage impacts of the proposed tree removal along Anzac Parade (refer sections 14.7-14.8 and 16.7-16.8, Volume 1B). Privacy impacts of the tree removal are also discussed in section 10.11 (Volume 1A). Mitigation measures are also proposed where appropriate, including providing a boulevard of street trees along Anzac Parade to improve the streetscape and extend the ceremonial avenue of street trees (refer mitigation measure AJ.10 in Chapter 8 of this Submissions Report). The proposed replacement trees should assist in mitigating visual, amenity, shade and heating impacts associated with tree removal along this road corridor.</p>	
<ul style="list-style-type: none"> <li>▪ Rejects claims that tree roots would be damaged by re-locating light rail along Anzac Road bus roadway.</li> <li>▪ Requests that additional study by another subject matter expert be undertaken to confirm this assertion.</li> </ul>	<p>Section 4.5.2 of the EIS (Volume 1A) notes that that locating the light rail along the existing busway would likely require significant pruning or removal of the large Figs adjacent to the busway to accommodate the overhead wiring system. It does not state that tree roots would be affected. Qualified arboricultural advice would be employed during detailed design and construction to confirm the expected impacts of the CSELR proposal on planted trees and to identify appropriate mitigation measures for such impacts. The advice would include root zone mapping of potentially impacted trees to determine the likely extent of their roots. This assessment would employ the most recent methods for assessing trees and impacts. The aim of this additional assessment would be to reduce the number of planted trees that would be impacted by the CSELR proposal (refer mitigation measures N.3 in Chapter 8 of this Submissions Report).</p>	84, 91
<ul style="list-style-type: none"> <li>▪ Objects to the loss of any trees as a result of establishing construction compound at Tay Reserve.</li> </ul>	<p>No construction compound is proposed at Tay Reserve; however this reserve would be affected by the proposed CSELR alignment during construction and operation. Tree impacts of this are described in section 16.6.2 of the EIS (Volume 1B) and include the removal of a Kaffir-plum and four semi-mature Queensland Kauri trees. These impacts are not able to be avoided as the trees are located within the footprint of the proposed CSELR alignment and/or road intersection works.</p>	54, 59, 63, 64, 116, 255, 329, 443





### 5.11.8 Impact assessment approach

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) Request for further studies into viability of trees along alignment (seek second opinion).</p>	<p>Further assessment of the viability of trees along the alignment is proposed as part of detailed design and prior to construction commencement, as described in various mitigation measures in Chapter 8 of this Submissions Report (e.g. measures C.1, N1-N.3, O.11-O.18, T.1-T.12).</p> <p>The assessment included in the EIS was a Preliminary Tree Assessment, which comprised a worst-case estimate of tree impacts. The assessment made a number of assumptions that are subject to detailed review by a qualified arborist and the design team during detailed design, as explained in section 12.6.2 of the EIS (Volume 1B).</p>	84
<p>b) Qualified arboricultural advice should be employed during design and construction and the most recent methods for assessing trees and impacts should be employed.</p>	<p>Refer response to sub-issue a) above regarding further assessment. An additional mitigation measure is also proposed to address this issue (see mitigation measure N.3 in Chapter 8 of this Submissions Report which states: 'Qualified arboricultural advice would be employed during detailed design and construction to confirm the expected impacts on planted trees and appropriate mitigation measures. This assessment would employ the most recent methods for assessing trees and impacts.'</p>	116, 340, 360, 378, 443
<p>c) Objects to use of SULE and Landscape Amenity Rating Scale method of assessment:</p> <ul style="list-style-type: none"> <li>▪ SULE methods should not be used as part of further tree assessment during detailed design and construction.</li> <li>▪ SULE method is outdated and does not accurately reflect tree values.</li> <li>▪ The report uses an appraisal method for ranking the suitability of trees that is out of date and critiqued by its own author. This method is not intended as an assessment tool for street trees and has been superseded by another method. This method does not provide a useful measure or realistic comparison of the amenity or environmental value of the individual trees. The assessment lacks meaningful and realistic monetary valuation of affected vegetation.</li> </ul>	<p>The approach to the planted tree impact assessment is provided in Table 8.2 of the EIS (Volume 1A).</p> <p>The SULE rating was used to characterise the condition of existing trees but was not a determinant in decisions relating to tree removal or impact. The SULE methodology is an accepted method for assessing and appraising the health and condition of trees. The SULE method is widely used in the horticultural industry and by Councils.</p> <p>The <i>Preliminary Tree Assessment</i> (Technical Paper 9 of the EIS, Volume 5) sought to identify and appraise trees within the study area. This information, including SULE ratings and Landscape Amenity Ratings, was then used as the basis of the tree impact assessment (refer sections 12.6, 13.6, 14.6, 15.6 and 16.6 of the EIS, Volume 1B) to assess the potential impact of the CSELR on the identified trees and to review in particular, how the design could be refined to avoid impacting important trees, whilst also not constraining the functional and operational requirements of the proposal.</p> <p>Proposed construction methods would be further reviewed during detailed design to reduce the construction footprint, where feasible (refer mitigation measure N.1 in Chapter 8 of this Submissions Report).</p>	116, 255, 329, 340

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>d) Other concerns about preliminary tree assessment and assessment of tree impacts in EIS:</p> <ul style="list-style-type: none"> <li>▪ It is just an inventory of trees along the alignment and does not include detailed mapping or a survey plan that can be used to accurately locate individual trees or to plan their management.</li> <li>▪ It is misleading with regard to the true extent of impacts on the trees. The footprint of the proposal will extend beyond the alignment to account for changes in ground level, earthworks batters, incorporate broader changes to drainage and service alignments, changes to road alignments, lighting, pedestrian paths and other associated works. These have the potential to negatively impact trees outside of the alignment on private and public lands. There is no statement or acknowledgement in the EIS about these trees.</li> <li>▪ Specific concerns about the use of AS 4970 to quantify the extent of tree root zone and impacts on the alignment of trees.</li> </ul>	<p>The <i>Preliminary Tree Assessment</i> (Technical Paper 9 of the EIS, Volume 5) sought to identify and appraise trees within the study area and to provide an inventory of trees along the alignment. The Preliminary Tree Assessment did not aim to assess the impacts on trees as a result of the CSELR proposal. The assessment of impacts on planted trees is presented in sections 12.6, 13.6, 14.6, 15.6 and 16.6 of the EIS, Volume 1B.</p> <p>The approach to the planted tree impact assessment is provided in Table 8.2 of the EIS (Volume 1A).</p> <p>In regard to the footprint assumed for the assessment, the 'tree study area' was defined as the area that would be directly affected by the CSELR proposal, including the likely extent of:</p> <ul style="list-style-type: none"> <li>▪ physical works (e.g. light rail tracks, earthworks, stops, overhead wires, substations and the maintenance and stabling facilities)</li> <li>▪ construction compounds</li> <li>▪ access roads</li> <li>▪ any other areas that would be physically disturbed during the construction of the proposal, including works for utilities/services relocations/protection.</li> </ul>	<p>340</p>
<ul style="list-style-type: none"> <li>▪ The primary purpose of the preliminary assessment and the EIS should be to provide some measure of the environmental and amenity value of the trees, and provide guidance in relation to design and construction methodology which will be employed to protect significant trees and mitigate impacts.</li> <li>▪ The EIS treats the issue of tree removal dismissively.</li> <li>▪ There is no statement of commitment to best practice.</li> </ul>	<p>The study area was based on a conservative assessment. The final extent of the construction footprint and associated tree study area would be refined during detailed design, and the assessment of impacts to trees and appropriate mitigation would be further refined at that time.</p> <p>If, during detailed design and/or construction, the impact area was proposed to be extended outside the tree study area, further assessment of tree impacts would be required prior to undertaking these works.</p> <ul style="list-style-type: none"> <li>▪ AS 4790 is the <i>Australian Standard for Protection of Trees on Development Sites and Adjoining Properties</i> and is the only accepted standard available for the purpose of assessing and protecting trees.</li> <li>▪ Transport for NSW does not agree that the removal of trees has been treated dismissively. Planted trees was identified as a key issue in the CSELR preliminary environmental assessment (Transport for NSW, 2013b) and requirements for the assessment of impacts on planted trees were included in the Director-Generals Requirements (DGRs) for environmental assessment (refer Appendix A of the EIS, Volume 1C). The planted trees impact assessment is considered consistent with the DGRs.</li> </ul>	



Specific issues raised in submissions	Response to specific issues	Submission No.
	<p>A suite of mitigation measures has been developed to minimise tree impacts through the design and construction phases of the proposal. These measures include reference to best practice standards, including AS4790, as well as a number of specific commitments to the protection of trees and mitigation of impacts to trees.</p>	
<p>e) Recommendations for revised/further tree assessment:</p> <ul style="list-style-type: none"> <li>▪ Provide some measurable means of valuing the tree assets so the cost of alternative alignments, mitigation measures, offsets and compensation may be tabled and negotiated in the design and construction process.</li> <li>▪ Undertake further investigation of the value of the affected trees and provide a measurable and comparative value of each tree considering all trees in the proximity.</li> <li>▪ Clearly identify the trees which are of highest amenity and environmental value and demonstrate why it is not possible to retain them or if impacts can be mitigated.</li> </ul>	<p>While there are NSW and Commonwealth guidelines for valuing native vegetation for the purpose of offsetting vegetation loss, there is currently no recognised method of valuing non-native trees. As such, it is not possible to provide estimates on compensation of offsetting costs for the potential tree impacts associated with the CSELR.</p> <p>The value of trees has been assessed in the EIS in non-monetary terms through considerations of:</p> <ul style="list-style-type: none"> <li>▪ impacts to landscape amenity as a result of removal of trees</li> <li>▪ heritage significance of trees</li> <li>▪ impact to social amenity as a result of tree removal</li> <li>▪ ecological value of trees.</li> </ul> <p>The Transport for NSW '<i>Vegetation Offset Guide</i>' (Transport for NSW 2013a), includes a principle for offsetting when clearing one tree or a group of trees that do not form part of a vegetation community but may have other intrinsic values (i.e. streetscape amenity and heritage). The Victorian principle of Net Gain was used to develop offset criteria for individual trees or a small number of trees.</p>	340
<ul style="list-style-type: none"> <li>▪ Demonstrate that the value of the assets has been adequately considered in the assessment of the alignment and costing of the proposal to incorporate best practice tree management throughout.</li> <li>▪ Demonstrate that the value of the proposed offsets (tree replacements) is a full measure of compensation for the mature trees that will be removed or damaged.</li> <li>▪ Provide a set of preliminary measures that will be employed to mitigate construction impacts where they affect tree assets (e.g. compaction and root bridging techniques, permeable paving, tunnel boring of services, hydro-excavation and judicious root pruning etc.).</li> </ul>	<p>Replacement of trees to be removed would be undertaken in accordance with the Transport for NSW '<i>Vegetation Offset Guide</i>' (Transport for NSW 2013a), and would include replacement at a ratio of between 2:1 and 8:1, in consultation with stakeholders (refer mitigation measure T.3 in Chapter 8 of this Submissions Report)</p> <p>Replacement plantings would be agreed in accordance with the CSELR Landscape Strategy (Appendix F of the EIS, Volume 1C) and consultation with relevant stakeholders.</p> <p>In addition to mitigation measures to protect trees that would not be removed during construction (refer measures T.2, T.4, T.7, T.8 and T.9 in Chapter 8 of this Submissions Report), the following measures would be employed during construction to protect trees:</p> <ul style="list-style-type: none"> <li>▪ A qualified arborist would undertake root zone mapping of potentially impacted trees during detailed design to determine the likely extent of their tree roots adjacent to and beneath the proposed light rail alignment where there is potential for tree root zones to be impacted during construction and operation of the proposal (refer to mitigation measure N.3 in Chapter 8 of this Submissions Report).</li> </ul>	

Specific issues raised in submissions	Response to specific issues	Submission No.
	<ul style="list-style-type: none"> <li>▪ Construction techniques that minimise impacts to tree root zones would be employed where practicable. This would include consideration of compaction and root bridging techniques, permeable paving, tunnel boring of services, hydro-excavation and judicious root pruning (refer to mitigation measure T.4 in Chapter 8 of this Submissions Report).</li> </ul>	
<p>f) Important trees affected at the Randwick stabling facility were missed in the assessment:</p> <ul style="list-style-type: none"> <li>▪ The EIS provided a false impression of the environmental impact of the proposed Randwick stabling facility as only one of the mature Moreton Bay fig trees impacted by the stabling facility is identified within the document. Several other fig trees (those behind the properties on Doncaster Avenue) were not identified in Chapter 15, nor were they listed in the tree survey assessment sheets in Appendix C of Technical Paper 9. In the aerial photograph presented in Figure 15.21a, they are not even visible, having been obscured by orange block shading. For these reasons, an amended EIS should be issued, at least in respect of the proposed stabling facility, with a further period for consultation provided.</li> <li>▪ Concern that the exceptionally significant trees (at stabling facility site) have been missed from the EIS survey.</li> </ul>	<p>The large Fig in the western cover of the site is proposed to be retained, as noted in the EIS.</p> <p>As noted in section 5.11.5 of this Submissions Report, further assessment of potential tree impacts on the stabling facility site has identified that two large Fig trees appear to be affected on this site. These trees would be surveyed during detailed design, at which time it would be confirmed if the trees can be retained and/or relocated. Note: Although the impact on these trees was not considered as part of the planted tree assessment in the EIS, they were assumed to be removed as part of the heritage impact and visual assessments.</p>	195, 372
<p>g) Seeks detailed justification for each and every incident of tree loss, noting details must be provided of investigations into alternatives to preserve trees.</p>	<p>Please refer to response in row a) above. Individual trees would be investigated in detail during detailed design, including investigation of alternatives to preserve trees.</p>	433

### 5.11.9 Design should avoid trees

A number of submissions suggested/requested that the design or alignment be amended to avoid impacts on trees (submissions 54, 59, 63, 64, 76, 86, 116, 248, 255, 299, 349).

These issues are discussed in section 5.5.5 of this Submissions Report. Additionally, a number of the design changes identified for the proposal (refer to Chapter 6 of this Submissions Report) have resulted in the overall reduction in impact to planted trees by about 50 trees.



### 5.11.10 Tree replacement/mitigation

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>a) General comments on replacement trees:</p> <ul style="list-style-type: none"> <li>▪ The use of new tree plantings to offset the CSELR proposal's impact on planted trees is not adequate as any replacement trees cannot replace the years of growth that the existing mature trees have.</li> <li>▪ Concerned that neighbourhoods that experience tree loss as a result of the proposal will not be the neighbourhoods that benefit from replacement trees. Suggests significant trees are replaced by tall trees with similar sentinels.</li> <li>▪ Additional information about type and location of replacement trees requested.</li> <li>▪ Replacement trees should benefit the immediate precinct.</li> <li>▪ Replacement plantings should be of a similar scale to the trees impacted. A replacement ratio of 1:8 for mature trees is admirable, however the scale of the tree is significant and an adequate replacement should be sought.</li> <li>▪ Where heritage trees are lost, they should be replaced with mature trees, which should be procured upon announcement of planning approvals.</li> <li>▪ Replacement trees should be consistent with the City of Sydney Tree Management Policy.</li> <li>▪ Concern that the 8:1 tree replacement ratio is arbitrary and not based on research into the local area – may not be achievable. The City of Sydney has an ongoing program to double canopy cover within the LGA and the largest factor limiting this is finding available space for new trees.</li> </ul>	<p>The replacement tree strategy proposed in the EIS is based on Transport for NSW's <i>Vegetation offset Guide</i> (Transport for NSW 2013a), which includes a principle of replacing 'the amenity/visual landscape value of vegetation removed'. Trees would be replaced at ratio of between 2:1 and 8:1, depending on the size of tree to be removed and consultations with City of Sydney or Randwick Council and other stakeholders such as Centennial Park and Moore Park Trust. This relatively high ratio of replacement is proposed recognising that new plantings cannot fully replace mature trees.</p> <p>Where possible, trees would be planted within the same neighbourhood from which they are removed (refer to mitigation measure T.12 in Chapter 8 of this Submissions Report).</p> <p>A high level overview of the proposed type and location of trees to be used for replacement is detailed in the CSELR Landscape Strategy in Appendix F to the EIS (Volume 1C). This is subject to further assessment and consultation with councils and the Centennial Park and Moore Park Trust during detailed design.</p> <p>The CSELR Landscape Strategy included in Appendix F of the EIS considered the <i>City of Sydney Tree Management Policy</i> (City of Sydney Council 2013). As also noted in the EIS, selection of tree species, size and planting locations during detailed design would be undertaken in close consultation with City of Sydney.</p>	<p>6, 117, 155, 216, 277, 280, 356, 360, 399, 416, 447, 449</p>
<p>b) Use of wire-free running to avoid trees:</p> <ul style="list-style-type: none"> <li>▪ Wire-free running (such as that proposed along George Street) should be applied elsewhere along the alignment to avoid impacts on tree canopies and wildlife.</li> </ul>	<p>The reasons why wire-free running is not proposed along other sections of the CSELR alignment are provided in section 4.5.3 of the EIS (Volume 1A). Constraints include steep grades and LRV power demand. The extent of wire-free running could be increased during detailed design should innovation or technology improvements permit.</p>	<p>54, 59, 63, 64, 116, 274, 332</p>

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>c) City Centre – tree replacement/mitigation:</p> <ul style="list-style-type: none"> <li>▪ 1000 litre pots should be used to replace trees in Alfred Street Plaza.</li> <li>▪ Concern that the proposal to plant Japanese Zelkova contradicts the City of Sydney's Street Tree Management Plan.</li> </ul>	<p>City of Sydney is a project partner for the CSELR and has been and would continue to be consulted about selection of the proposed replacement tree species in the City Centre along the CSELR alignment. Details of tree replacement would be further considered during detailed design, in consultation with Council.</p>	<p>356</p>
<p>d) Surry Hills – tree replacement/mitigation:</p> <ul style="list-style-type: none"> <li>▪ Concern about loss of trees - should be replaced at least one-to-one with improvements.</li> <li>▪ Requests that all trees removed from Devonshire Street are replaced.</li> <li>▪ Seeks assurance that replacement trees would be planted along the north side of Devonshire Street to replace those lost from the south side. In order to do this, cables would need to be placed underground so as to not interfere with tree growth.</li> <li>▪ Trees removed from within Surry Hills should be replaced on at least a 1:10 basis.</li> <li>▪ Enforce tree replacement at 1:7 in Surry Hills.</li> <li>▪ Devonshire Street should remain green, preferably with native plants.</li> <li>▪ Any affected mature trees should be replaced with suitable, fast growing trees.</li> <li>▪ Request to investigate the locations for 1120 replacement trees before it removes any trees from Surry Hills.</li> </ul>	<p>As noted above, trees are proposed to be replaced at ratio of between 2:1 and 8:1, depending on the size of tree to be removed and consultation with City of Sydney. It is unlikely that ratios of greater than 8:1 or greater would be achievable within Surry Hills and therefore tree replacement in this locality may not strictly comply with the City of Sydney <i>Street Tree Management Plan</i> in this regard.</p> <p>The species of trees proposed for replacement in Surry Hills are described in section 13.6.3 of the EIS (Volume 1B) and in the Landscape Strategy (Appendix F of the EIS, Volume 1C) and were selected in accordance with the City of Sydney <i>Street Tree Management Plan</i>. The selected trees are considered suitable, fast growing trees. The ultimate selection of replacement trees would be undertaken in consultation with the City of Sydney.</p> <p>The locations for replacement trees would be fully investigated prior to construction commences, as part of the detailed design process.</p>	<p>50, 142, 170-174, 176, 181, 187-189, 191-194, 312, 323, 354, 407, 413, 422</p>
<p>e) Randwick tree replacement/mitigation:</p> <ul style="list-style-type: none"> <li>▪ Request for evergreen trees to be planted in suggested sterile space (set back between Doncaster Avenue property and noise wall for stabling facility).</li> </ul>	<p>The request for sterile space between this Doncaster Avenue property and the proposed noise wall for the stabling facility is responded to in section 5.12.11 of this Submissions Report. There is insufficient room for such a buffer. However, the Randwick stabling facility site would be configured so as to retain the large Moreton Bay Fig at the western end of the site. Trees removed would be replaced nearby in accordance with the Transport for NSW <i>Vegetation Offset Guide</i> (Transport for NSW 2013a) at a ratio of between 2:1 and 8:1, depending on the size of the tree to be removed.</p>	<p>80</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>f) Moore Park – tree replacement/mitigation:</p> <ul style="list-style-type: none"> <li>▪ Any trees lost should be transplanted or replaced with mature trees, and where possible replanting should commence now (Moore Park Precinct).</li> <li>▪ The impact on the Moore and Centennial Parks precinct is unacceptable without a clear plan to replace the trees that would be removed to accommodate the CSELR project.</li> <li>▪ A net gain in trees in the parklands should be achieved, and the canopy preserved by the replanting of mature trees.</li> <li>▪ Recommends the relocation of relatively recently planted, but now quite advanced, healthy Moreton Bay Figs further to the east (in Moore Park). Notes it should be feasible and cost effective to dig trenches further to the east of the proposal and move trees to new positions.</li> </ul>	<p>Please refer to response in sub-issue a) above.</p> <p>Replanting cannot commence until planning approval is received for the proposal and further detailed design and assessment has been undertaken.</p> <p>The proposed strategy to replace trees affected by the CSELR is detailed in the EIS (refer section 14.6.3 and Appendix F, Volume 1C) and would be further developed during detailed design.</p> <p>In regard to replanting of semi-mature Figs alongside the busway, the EIS includes a mitigation measure to transplant these trees, where feasible, to an alternative suitable location, in consultation with the Moore Park and Centennial Park Trust and RMS. A detailed relocation and maintenance strategy for the impacted trees would be developed during detailed design in consultation with the Trust, Randwick City Council and the Australian Turf Club where required (refer measure T.7 in Chapter 8 of this Submissions Report).</p>	84, 90, 360, 449
<p>g) Anzac Parade – tree replacement/mitigation:</p> <ul style="list-style-type: none"> <li>▪ The trees in Anzac Parade are located in the middle of a grassed median strip and, therefore, could be saved by being trimmed and constructing CSELR tracks on either sides of the trees (i.e. trees remain in the middle of the light rail tracks). Such an option would enhance the visual amenity of the CSELR line.</li> </ul>	<p>This issue has been responded to in section 5.11.7 of this Submissions Report.</p>	56

## 5.12 Visual and landscape character

### 5.12.1 Impacts on streetscape

#### Summary of issues raised

Some submissions expressed general concern about the impact that the CSELR proposal will have on the existing landscape, streetscape and local amenity. It was suggested that advertising be limited to one side of stop shelters only.

#### Submission number(s)

167, 168, 184, 274, 455

## Response

Introduction of the CSELR would change the streetscape of the areas in which it is located. An assessment of the visual impact of the CSELR proposal has been undertaken for the various precincts traversed. The relevant assessments and associated mitigation measures are included in Volume 1B of the EIS (Volume 1B) as follows:

- City Centre Precinct – Section 12.7
- Surry Hills Precinct – Section 13.7
- Moore Park Precinct – Section 14.7
- Randwick Precinct – Section 15.7
- Kensington/Kingsford Precinct – Section 16.7
- Rozelle locality – Section 17.6

The CSELR proposal also provides the opportunity for the revitalisation of public domain as set out in Section 5.2.8, Volume 1A of the EIS. The proposed improvement to the Alfred Street plaza at Circular Quay and George Street pedestrian zone are notable aspects of the CSELR proposal which would lead to an improved streetscape.

In other locations streetscape impacts would be addressed through landscape treatments and appropriate urban design treatment of specific elements such as stops, bridges and other structures.

Changes in streetscape as a result of the CSELR are inevitable, given the introduction of new infrastructure. However, these changes need to be considered in the context of the overall benefits of the proposal.

The placement of advertising on stop shelters would be determined by the future Operator of the CSELR.

### 5.12.2 Trackform type

#### Summary of issues raised

One submission recommended that to ensure maximum positive environmental benefits, it should be a condition of approval that grassed trackform be the preferred application in the Centennial Parklands, Randwick Racecourse, Moore Park and similar CSELR traversed areas.

#### Submission number(s)

259

#### Response

Consideration was given to grass bed track during the development of the definition design. While acknowledging that grass bed track could provide some benefits with regard to visual and landscape amenity along the alignment, the ongoing maintenance of the grass bed tracks, in particular watering requirements, was not considered to be economically viable or environmentally sustainable in the long term.





### 5.12.3 Catenary type and impacts

#### Summary of issues raised

A number of submissions expressed concerns over the use of overhead catenary for power supply due to visual impacts and indicated a preference for underground (induction loop) and other wire-free options. Comments and issues raised are noted below:

- Overhead wires should not be used for the proposed CSELR route between Central Station and the Moore Park tunnel to reduce the project's impact on heritage listed properties and street trees. The power cables for the CSELR should be placed underground to minimise impacts on the environment.
- Concerned about the use of overhead line for the majority of the CSELR route. This is not best practice globally and would have significant negative visual impacts along the entire CSELR route. Every effort should be made to use wireless power options, similar to what is proposed along George Street within the CBD.
- LRVs should run on battery power between SCG/SFS stop and Alison Road, to minimise visual impact on parkland.
- LRV power cables and other electrical cables should be placed underground along the CSELR route to reduce visual clutter and allow for replacement trees to be planted. Substations should also be underground.
- Concerned that the large recharging structures necessary for a wire-free portion of light rail between Bathurst to Hunter Streets will be more unsightly than the narrow wires used overhead. Suggested other wire-free systems including on-board power and on-road power.
- Power poles should be located between tracks, not alongside, to reduce tree loss and soften visual impact.

#### Submission number(s)

6, 84, 171, 172, 173, 174, 176, 181, 182, 187, 188, 189, 191, 192, 193, 194, 264, 294, 299, 300, 310, 312, 332, 389, 445, 479

#### Response

The EIS acknowledges the visual and landscape impacts of overhead catenary for the proposal and mitigation is proposed to minimise impacts where appropriate (e.g. considering further locations for central pole catenary during detailed design as per mitigation measure C.2 in the revised list of mitigation measures in Chapter 8 of this Submissions Report).

Consideration has been given to the potential for the incorporation of wire-free running during design development of the CSELR proposal. This is discussed in Section 4.5.3 of the EIS (Volume 1A) and the assessment is reproduced below.

Whilst wire-free running is less visually intrusive than overhead wiring, there are a number of constraints to wire-free running including steep grades and high speed running. These factors require additional traction power to meet LRV power demand, which may not be possible through current wire-free technology. The distance between stops also provides a constraint to wire-free running, with greater distances providing less than optimal operations.

Through consultation with City of Sydney and in response to the *George Street Concept Design* (City of Sydney 2013b), the proposal includes wire-free running along the length of the George Street pedestrian zone. The proposed extent of wire-free operations could be increased during detailed design should design innovation or technology improvements permit.

It is noted that the extent of wire-free zone within the CBD has been reduced (refer to section 6.3 of this Submissions Report). The wire-free zone as described in the EIS extended between Circular Quay and Town Hall stops. The revised length of the wire-free zone within the CBD is between the Wynyard and Town Hall stops.

Wire-free running is achieved by incorporating batteries and capacitors in each LRV for electricity storage with energy recovery through regenerative braking. Each LRV would be recharged at each stop through overhead charging units comprising a section of catenary for the length of the platform. Induction loop technology was also considered where the power cables are located underground and energy is supplied through magnetic induction. This system was not adopted due to cost considerations and concerns regarding stray currents affecting utilities and underground structures.

Generally, substations would be located aboveground and housed in buildings within a fenced site to ensure safety and security at the facilities and to minimise visual, landscape and noise impacts on the surrounding environment. In some locations, such as at certain locations in the CBD (such as Martin Place), the substations would be located below ground level to minimise their visual impact. Additional locations for placing substations below ground would be considered during detailed design, where this is considered to be economical and feasible or where visual and landscape character impacts cannot be suitably managed by other treatments.

Additional discussion regarding power supply, catenary and wire-free technology is provided in section 5.5.1 of this Submissions Report.

#### 5.12.4 George Street pedestrian zone

##### Summary of issues raised

The Swissôtel Sydney requested consultation relating to regeneration and beautification of the area immediately in front of the hotel and also to Market Street between Pitt Street and George Street.

##### Submission number(s)

88

##### Response

No works are anticipated to be undertaken directly in front of the Swissôtel as part of the proposal. Notwithstanding, the request is noted by Transport for NSW and relevant properties would be consulted during the detailed design phase as required.



### 5.12.5 CSELR alignment at Circular Quay

#### Summary of issues raised

One submission requested more detail on the changes that will occur in the Circular Quay precinct in particular impacts on the amenity of the precinct.

#### Submission number(s)

452

#### Response

Landscape and urban design treatments proposed as visual and landscape mitigation measures for the City Centre Precinct, including Circular Quay, were set out in section 12.7 of the EIS (Volume 1B). This assessment noted that the function of this plaza would be maintained and improved during operation of the proposal. Building thresholds and entries and footpath continuity would not be adversely affected and although there would be a number of mature trees removed, the overall size of the plaza would be increased.

Consultation with the City of Sydney and the Sydney Harbour Foreshore Authority would be undertaken during detailed design in relation to specific urban and landscape design elements to be provided for this area. These measures would include landscaping and other architectural treatments to suit the needs of the community and surrounding site uses.

### 5.12.6 CSELR alignment along Devonshire Street and Surry Hills public domain

#### Summary of issues raised

A number of visual impact issues were raised regarding the potential impacts of the CSELR along Devonshire Street and through Surry Hills. Issues raised included:

- Significant screening must be provided in residential areas. Install vegetation screening between South Dowling and Bourke Streets to limit visual impact for residents, as well as for the Northcott housing estate.
- Requests that the Government works closely with residents and City of Sydney on public domain improvements to the Surry Hills area including the upgrade of Devonshire Street with footpaths and lighting (and trees).
- Request that at a minimum, green track and overhead wire-free (are) included on Devonshire Street to minimise aesthetic impact.
- Concerned about impact on visual amenity and loss of character. Surry Hills should maintain trees and reduce visual impact on parks, especially impacts relating to tree loss.
- Concerned about the operation of light rail along Devonshire Street obstructing natural light into residences along Devonshire Street.
- Concerned about visual impacts associated with increased traffic.
- Concerned about light spill and reduced privacy.

### Submission number(s)

160, 168, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 196, 212, 233, 271, 379, 382, 396, 399, 403, 407, 417, 421, 422, 427, 439, 447

### Response

Landscape and urban design treatments are proposed as visual and landscape mitigation measures for Surry Hills public domain areas, including Devonshire Street, and these are set out in section 13.7.7 of the EIS (Volume 1B).

Consultation with local residents and City of Sydney would be undertaken during detailed design in relation to specific urban and landscape design measures. This would include screening measures such as additional landscaping and architectural treatments for public domain elements such as footpaths and lighting. Any lighting designs developed for Devonshire Street would aim to reduce any impacts of light spill on existing residential properties.

Mitigation measures were identified as part of the EIS, to mitigate the loss of planted trees along Devonshire Street to assist with minimising the potential impact of the proposal on the existing visual character of Surry Hills. Mitigation measure AJ.7, which is provided in Chapter 8 of this Submissions Report states as follows:

- Enhance the northern edge of Devonshire Street with tree planting (to mitigate the character of those lost within the Devonshire Street road corridor) in consultation with the City of Sydney and in accordance with the Transport for NSW '*Vegetation Offset Guide*' (Transport for NSW 2013a).

Grassed trackform is not proposed in this location due to operational and maintenance issues as discussed in section 5.12.2 of this Submissions Report. Overhead power supply is required along Devonshire Street as the grade is too steep to accommodate wire-free operation (refer section 5.5.1 of this Submissions Report).

As discussed in section 13.4.2 of the EIS (Volume 1B), the CSELR proposal would result in an overall reduction in traffic volumes along Devonshire Street. This reduction would have the potential to result in overall benefits to the Surry Hills Precinct, including reduced visual impacts from traffic.

The CSELR proposal is not anticipated to result in additional obstruction of natural light along Devonshire Street during operation.

## 5.12.7 Olivia Gardens and Wimbo Park

### Summary of issues raised

One submission noted that the preferred alignment option through the Olivia Gardens site (Option 1B) will remove substantial mature vegetation. It is essential that applicants carry out extensive advanced landscaping between the CSELR corridor and the submitters property (located on South Dowling Street). This would create a neighbourhood precinct and an effective buffer zone between the residential developments to the south of the CSELR alignment.

Another submission noted the landscaping of Wimbo Park should be done to ensure optimum visual amenity. Concern was also raised regarding the general loss of Wimbo Park.



### Submission number(s)

92, 233, 478

### Response

The design suggestion is noted and would be considered as part of the urban and landscape design for the recreated Wimbo Park. A specific mitigation measure, mitigation measure AJ.8 (refer to in Chapter 8 of this Submissions Report) addresses this issue, as follows:

- 'Recreate Wimbo Park, together with the potential for a new Olivia Gardens park, as a high quality open space. Enhance these areas with mature tree specimens to mitigate the character of those lost, in consultation with the City of Sydney.'

## 5.12.8 Moore Park Precinct

### Summary of issues raised

A series of concerns were raised by respondents to the potential visual impacts within the Moore Park Precinct. These included:

- Proposal will degrade the appearance and physical amenity of the precinct – need for mitigation to protect and enhance natural environment and streetscape.
- Mitigation measures should be provided for visual impacts caused by tree removal, wires and poles, fencing, substations and other developments that are not addressed in the EIS, particularly as they affect residents on Robertson Road and Martin Road.
- The Moore Park tunnel entrance will adversely impact on the western landscape.
- Suggests safety barriers be discreet to minimise visual amenity impacts, preferably not fencing or bollards.
- Suggests a design competition to ensure Moore Park stop especially is minimal and striking in design.
- Concerned about negative visual and environmental impacts from removal of two large fig trees and one poplar tree at Anzac Road/Allison Road intersection.

### Submission number(s)

84, 220, 427, 274

### Response

Assessment of landscape impacts for the Moore Park Precinct is included in section 14.7, Volume 1B of the EIS and the *Visual Impact Assessment* (Technical Paper 10 of the EIS in Volume 5).

Key visual impacts identified during operation would relate to the two light rail tunnel portals, the Moore Park stop, CSELR adjacent to the existing busway, overhead wiring and removal of a number of trees along Anzac Parade. During construction temporary visual impacts would relate to construction compounds and work areas.

The potential visual impacts for the Moore Park Precinct, which includes the Robertson Road and Martin Road locality, are identified and discussed in the visual and landscape assessment in section 14.7.5, Volume 1B of the EIS. While the views from Robertson Road and Martin Road were not specifically assessed in the EIS, the mitigation measures set out in the revised list of mitigation measures in Chapter 8 of this Submissions Report are considered appropriate to address potential visual and landscape impacts from this locality.

The EIS and the revised list of mitigation measures in Chapter 8 of this Submissions Report include landscaping to mitigate tree removal and specific urban design treatments for structures and track infrastructure along the entire alignment. The mitigation measures also include measures to minimise visual impact of infrastructure (including substations and the catenary system), and measures to mitigate light spill from the Moore Park stop and LRVs. Landscape and urban design measures would be further developed during detailed design to address potential visual impacts for specific locations.

A design competition is not proposed for the design of the stop due to the potential impact to the construction program. The stop would however be designed by experienced architects and urban designers.

Design changes are also proposed for the Moore Park Precinct, including a revised stop location, together with a revised alignment and location of tunnel portals, as discussed in section 6.8 of this Submissions Report.

### 5.12.9 Bridge over Eastern Distributor

#### Summary of issues raised

One submission noted that the proposed bridge crossing over the Eastern Distributor will be an eyesore.

#### Submission number(s)

124

#### Response

The proposed bridge over the Eastern Distributor is described in section 5.2.5, Volume 1A of the EIS and the visual impacts are noted in Table 13.16, Volume 1B. Although the bridge would be visually prominent from viewpoints along South Dowling Street, it would be consistent with the scale and character of this roadway. A visualisation of the proposed bridge structure is shown in Figure 4.4, Volume 1A of the EIS.

Experienced architects and urban designers would provide design input during the detailed design phase to address bridge and tunnel portal aesthetics in order to minimise visual impact and address the compatibility of these structures with the surrounding locality. A new mitigation measure has been added to reflect this in Chapter 8 of this Submissions Report (refer to mitigation measure C.12).



### 5.12.10 Randwick Precinct

#### Summary of issues raised

A series of concerns were raised by respondents regarding the potential visual impacts within the Randwick Precinct. These included:

- Concern that the removal of trees will change the visual landscape around Randwick and devalue properties. Submits that trees provide significant visual amenity.
- Concerned the proposal will result in reduction of visual beauty of existing streetscape, due to introduction of light rail into Wansey Road and removal of existing trees. Also concerned about visual impact associated with impacts to Fig trees.

#### Submission number(s)

247, 255, 299

#### Response

The potential impacts of the CSELR proposal on planted trees within the Randwick Precinct were assessed in section 15.6 of the EIS (Volume 1B). As part of this assessment, a series of mitigation measures were proposed and are included in the revised list of mitigation measures in Chapter 8 of this Submissions Report. Further, discussion of the proposed impacts to planted trees is provided in section 5.11 of this Submissions Report.

### 5.12.11 Doncaster Avenue – Randwick stabling facility

#### Summary of issues raised

A number of submissions raised concerns in relation to visual impacts to properties in Doncaster Avenue due to the Randwick stabling facility. Specific concerns related to the noise wall (which is proposed as a potential mitigation measure), tree removal and overall visual amenity associated with the stabling facility. Specific comments are listed below:

- Objects to the proposed Randwick stabling facility location on Doncaster Avenue as it would have a significant visual and amenity impact to the area.
- Concerned about visual impacts (visual amenity impacts) of proposed six metre noise wall on Doncaster Avenue residences. Recommends consideration is given to a five metre noise wall to minimise visual and overshadowing impacts and that detailed shadow diagrams showing overshadowing impact of noise wall on Doncaster Avenue residences are provided.
- Request for six to eight metre sterile space (set back) between Doncaster Avenue property and noise wall.
- Concerned that noise wall adjacent to Doncaster Avenue will attract graffiti.
- Concerned about the adverse visual amenity that the CSELR proposal will have due to the loss of several mature Moreton Bay Fig trees that feature prominently in the view from the submitter's house (near Doncaster Avenue, Randwick).

- The EIS states that residents of Doncaster Avenue will experience high adverse visual impact. Notes the EIS does not outline mitigation measures (aside from glare and light spill minimisation). Suggests development of stabling facility adjacent to residential dwellings is inconsistent with design excellence.

#### Submission number(s)

54, 56, 63, 64, 80, 195, 255, 327, 443

#### Response

An assessment of the visual and landscape impact of the proposed Randwick stabling facility is provided in section 15.7, Volume 1B of the EIS. The assessment indicates a potentially high adverse visual impact for properties on Doncaster Avenue adjoining the stabling facility due to removal of existing trees, the infrastructure associated with the stabling facility and noise mitigation measures that may potentially be adopted (subject to detailed design).

Options currently under consideration for noise mitigation include a noise wall at the rear of properties adjoining the site or an acoustic enclosure of the stabling facility site. Consultation with residents would be undertaken to inform the final selection of noise mitigation measures. Appropriate architectural and urban design treatments would be implemented to minimise the visual impact associated with any noise mitigation structures to achieve an appropriate design outcome for this facility and local residents. The design process would include the use of shadow diagrams for any proposed structures. A new mitigation measure has been added to reflect this in Chapter 8 of this Submissions Report (refer to mitigation measure C.13)

The request for a six to eight metre sterile zone (or buffer) cannot be accommodated due to space limitations on the proposed stabling facility site. Locating the noise wall further away from residential properties would also reduce its effectiveness.

It is acknowledged that the loss of existing planted trees on the site would lead to visual and landscape impacts. An assessment in relation to planted trees on the site is incorporated in section 15.6, Volume 1B of the EIS. The Randwick stabling facility site would be configured so as to retain the large Moreton Bay Fig at the western end of the site. Trees removed would be replaced nearby in accordance with Transport for NSW's *Vegetation Offset Guide* (Transport for NSW 2013a). Trees would be replaced at a ratio of between 2:1 and 8:1, depending on the size of the tree to be removed (refer to mitigation measure T.3 in the revised list of mitigation measures in Chapter 8 of this Submissions Report). Planted trees impacts are further discussion in Section 5.11 of this Submissions Report.

### 5.12.12 High Cross Park and Randwick stop

#### Summary of issues raised

Issues and comments raised in submissions in relation to visual and landscape impacts on High Cross Park include:

- Concerned about the visual amenity impact that the proposed Randwick stop would have on both the immediate area and the entire district. The CSELR proposal (particularly the Randwick stop) should be seen as an opportunity to improve the visual amenity of the area, rather than concrete over the area.





- Concerned about the impact that the proposed awning for the Randwick stop would have on the visual amenity of the area surrounding High Cross Park. As this structure will become the single most visible structure in Randwick (given the number of vehicles and commuters that will travel past it), the Randwick stop should be a structure and a place of high public amenity and not just the 'end of the line'.
- Suggests that a design competition should be conducted for the proposed Randwick stop design, with an invitation for the best architects and designers to participate in the following categories: architecture; park and landscape design; public amenities; public art; day and night surveillance, security and enforcement (e.g. CCTV).
- Suggests relocation and underground placement of the substation should be investigated for the proposed High Cross Park above ground substation.

#### Submission number(s)

48, 206, 207, 208, 209, 255

#### Response

Visual and landscape impacts arising from the proposed Randwick stop and bus interchange at High Cross Park are assessed in section 15.7, Volume 1B of the EIS. The assessment indicates a potential high adverse visual impact at this location due to the conversion of the park into a transport interchange and the loss of up to 16 trees within High Cross Park.

In response to concerns regarding the potential landscape and visual impact, design changes are proposed to the Randwick stop and transport interchange to reduce the extent of impact. These are described and assessed in section 6.12 of this Submissions Report. In summary the proposed changes involve:

- moving the Randwick stop approximately three metres north-east towards Belmore Road by converting the existing southbound parking lane to a through-traffic lane
- minor reconfiguration of the substation and driver amenities buildings to minimise intrusion into the park
- reduced paved pathways within High Cross Park.

These measures would enable retention of an increased amount of grassed parkland and the retention of an additional two to three trees. It would also provide for an increased open setting of the existing war memorial. Opportunities for placing substations below ground would be considered during detailed design, where this is considered to be economical and feasible or where visual and landscape character impacts cannot be suitably managed by other treatments.

Further measures would be considered during detailed design to enhance the amenity of High Cross Park through landscape and urban design treatments. This design process would involve consultation with the community and other key stakeholders. A design competition is not proposed due the potential impact on the construction program. The stop would however be designed by experienced architects and urban designers.

### 5.12.13 Anzac Parade south of Alison Road

#### Summary of issues raised

Several submissions were concerned that the installation of the CSELR tracks along Anzac Parade will detract from the area, particularly as a large number of plants and trees will need to be removed from the Anzac Parade median to accommodate the project. This will adversely impact views, visual amenity and the 'Broadway' character of Anzac Parade in Kensington/Kingsford.

One submission raised concern about potential light spill at night.

#### Submission number(s)

72, 155, 385, 431, 446

#### Response

The proposed location of the CSELR alignment along the centre of Anzac Parade has been chosen to minimise traffic impacts and to provide for optimal operation. It is proposed that some of this corridor would also be used by express buses to provide improved running efficiency of these services (refer section 6.13 of this Submissions Report for details). This configuration provides for the retention of two through-traffic lanes on Anzac Parade in each direction and the utilisation of sections of the kerbside lane (where available) for parking.

The removal of median planting would be offset by the provision of additional landscaping along each side of Anzac Parade as described in Table 16.24, Volume 1B of the EIS. Where trees are removed these would be replaced in accordance with Transport for NSW's *Vegetation Offset Guide* (Transport for NSW 2013a). Trees would be replaced at a ratio of between 2:1 and 8:1, depending on the size of the tree to be removed.

The EIS identified proposed mitigation measures (measure AJ.13 in the revised list of mitigation measures in Chapter 8 of this Submissions Report) which stated that at stops and stabling areas, cut-off and directed light fittings (or similar techniques) should be used to minimise glare and light spill onto private property. This measure has been amended to note that the design of street lighting along the route would also consider the sensitive placement and specification of lighting to minimise any potential light spill into residential properties.

## 5.13 Built and non-Indigenous heritage

### 5.13.1 Surry Hills Precinct – Historic trees and parklands

#### Summary of issues raised

Several submissions raised concern about removal of historic trees and parklands in Surry Hills.

#### Submission number(s)

200, 417, 427, 433



## Response

An assessment of the potential heritage impacts for the Surry Hills Precinct is included in section 13.8 of the EIS, while impacts on planted trees were discussed in section 13.6 (Volume 1B of the EIS).

The CSELR proposal would result in the permanent loss or extensive pruning of significant trees along Devonshire Street and Bourke Street (in the vicinity of Devonshire Street). These trees are listed on the *City of Sydney Register of Significant Trees 2013*. In the case of Devonshire Street, the majority of the trees of identified significance would be removed. A detailed assessment is provided in Table 13.24 of Volume 1B of the EIS.

The CSELR proposal would also directly impact on Ward Park and Wimbo Park. While neither park is a listed heritage item these areas are likely to be of some significance to the local community. Wimbo Park was formerly the City of Sydney's stone yard, where stone for the city's many sandstone buildings was dressed. Ward Park has high potential for 19th Century and 20th Century archaeological remains to be present. A detailed assessment is provided in Table 13.24 of Volume 1B of the EIS.

Section 13.8.4 of the EIS (Volume 1B) and Chapter 8 of this Submissions Report list management and mitigation measures that would be implemented to minimise impact on the heritage values of these items.

It is acknowledged that the CSELR proposal would impact on the heritage values associated with these items. The proposed mitigation measures would mitigate impacts on heritage values by providing an integrated approach to urban design and landscaping for these areas.

### 5.13.2 Surry Hills Precinct – Devonshire Street

#### Summary of issues raised

General concerns were raised about the impact that the CSELR proposal would have on the heritage character of Devonshire Street. Specifically, it was noted that the properties at 242 and 244 Devonshire Street are heritage listed, and consideration should be given to the heritage character of the location during design of the light rail.

#### Submission number(s)

1, 271

#### Response

A detailed built and non-Indigenous heritage assessment was undertaken for the CSELR proposal and is included in Volume 4 of the EIS (refer to Technical Paper 5). A summary of the built and non-Indigenous heritage impacts that are likely to occur within the Surry Hills Precinct is provided in section 13.8 of the EIS (Volume 1B). The CSELR proposal has the potential to directly affect four heritage listed items and five heritage conservation areas within the Surry Hills Precinct (as indicated in Table 13.24 of the EIS). Heritage impact assessments for each individual heritage item and conservation area are provided in section 5.7.2 of Technical Paper 5 (Volume 4) and summarised in Table 13.24 of the EIS (Volume 1B).

In summary, the potential for heritage impacts resulting from the CSELR proposal in the Surry Hills Precinct derives from the various permanent structures in the public realm affecting the visual setting of heritage items and heritage conservation areas. These structures include stops and associated weather shelters, poles and catenary wires. Physical impacts may result from the removal of significant trees and the visual impact of the establishment and operation of worksites during construction. The heritage impact assessment concluded there would be a minor adverse heritage impact on the visual setting and appreciation of the locally listed heritage items at 242 and 244 Devonshire Street.

Environmental management measures that Transport for NSW proposes to implement to manage the potential heritage impacts of the CSELR proposal in the Surry Hills Precinct are described in section 13.8.4 of the EIS (Volume 1B) (refer to measures contained in chapter 8 of this Submissions Report).

### 5.13.3 Surry Hills Precinct – Wimbo Park

#### Summary of issues raised

One submission noted that there is a mosaic located in the existing Wimbo Park that has local significance. Suggested the preservation and relocation of the mosaic.

#### Submission number(s)

428

#### Response

As noted in the EIS (Chapter 13, Volume 1B) the mosaic mural and sandstone monument in Wimbo Park would be retained and conserved. If these cannot be retained in situ, relocation of these elements within the proposed new landscaping would be undertaken in accordance with a management plan or other approved document.

### 5.13.4 Moore Park Precinct – Centennial Parklands

#### Summary of issues raised

One submission noted there are heritage buildings located in Centennial Parklands.

#### Submission number(s)

455

#### Response

Whilst the *Heritage Impact Assessment* (Technical Paper 5 in Volume 4 of the EIS) assessed that there would be some potential impacts to heritage within the Moore Park Precinct, these impacts would not include physical impacts to buildings within the Centennial Parklands. However, it was noted that the alignment would be in close proximity to the Tennis Pavilion, south of Lang Road, an item identified as having moderate significance. Whilst the pavilion is proposed to be retained, the proximity to the CSELR route was identified as having a minor adverse impact on the setting of the building.



A full assessment of the potential impacts to heritage items and heritage characters within the wider Centennial Parklands was provided in the *Heritage Impact Assessment* (Technical Paper 5, Volume 4 of the EIS) and summarised in sections 14.8 and 15.8 of the EIS (Volume 1B). A series of overarching and specific mitigation measures were identified for the management and mitigation of potential heritage impacts to any items within these areas (refer to Chapter 8 of this Submissions Report).

### 5.13.5 Randwick Precinct – General impacts to heritage

#### Summary of issues raised

General concerns were raised regarding the CSELR proposal's impact on Randwick's environment and heritage. It was also noted that the selected route appears to cause a large amount of destruction to natural heritage sites and landmarks.

An online petition was prepared by Save Randwick's Environmental Heritage with Improved Light Rail Design, noting local residents' concerns about natural heritage impacts.

#### Submission number(s)

54, 59, 63, 64, 222, 251, 329

#### Response

A detailed built and non-Indigenous heritage assessment was undertaken for the CSELR proposal and is included in Volume 4 of the EIS (refer to Technical Paper 5). A summary of the built and non-Indigenous heritage impacts that are likely to occur within the Randwick Precinct is provided in section 15.8 of the EIS (Volume 1B). The CSELR proposal has the potential to directly affect eight heritage listed items and three heritage conservation areas within the Randwick Precinct (as indicated in Table 15.32 of the EIS). Heritage impact assessments for each individual heritage item are provided in section 5.7.2 of Technical Paper 5 and summarised in Table 15.33 of the EIS.

In summary, the heritage impact of the CSELR proposal in the Randwick Precinct would be substantial, resulting primarily from the removal of significant trees, parts of parklands and significant elements of the Royal Randwick racecourse. The EIS identified the significant trees that would be affected are located within the racecourse (which is a heritage conservation area of local significance) along its Alison Road and Wansey Road frontages (its north-western area) and at High Cross Park.

Heritage impacts on Royal Randwick racecourse and the racecourse precinct heritage conservation area would result from demolition of the Swab Building and the removal of existing historic tram infrastructure in the north-western area of the racecourse.

Visual impacts on heritage conservation areas would derive from the various permanent structures in the public realm affecting the visual setting of heritage items and heritage conservation areas. These structures include stops and associated weather shelters, poles and catenary wires. The removal of significant trees would also have adverse heritage impacts on the heritage conservation areas. It is noted, however, that design changes are proposed to reduce the impacts on significant trees along Alison Road and to reduce impacts to High Cross Park (refer to sections 6.11 and 6.12 of this Submissions Report).

Environmental management and mitigation measures that Transport for NSW proposes to implement to manage the potential heritage impacts of the CSELR proposal in the Randwick Precinct are described in section 15.8.4 of the EIS (Volume 1B). Refer to measures contained in chapter 8 of this Submissions Report for a list of these measures.

### 5.13.6 Randwick Precinct – Trees adjacent to Royal Randwick racecourse

#### Summary of issues raised

Several submissions noted that the removal of such a large number of trees would result in a significant loss of heritage for the area and residents. Concern was raised that the removal of trees in Randwick would erode the historical character of the suburb.

#### Submission number(s)

54, 59, 63, 64, 135

#### Response

Heritage impacts associated with the removal of significant trees from within the Randwick Precinct are assessed in Technical Paper 5 (*Heritage Impact Assessment*) in Volume 4 of the EIS and summarised in Table 15.33 of the EIS. The EIS concludes that the removal of the trees along Alison Road, Wansey Road and in the north-western area of Royal Randwick racecourse would result in the loss of plantings of exceptional and high significance that contribute to the aesthetic and historic significance of Royal Randwick racecourse.

The removal of significant trees within the Royal Randwick racecourse itself would also result in the loss of trees with exceptional natural and cultural values, which are of significance to the Randwick local government area and the racecourse precinct heritage conservation area. This loss would also have an impact on the aesthetic heritage values of the conservation area. The removal of these trees would be a major adverse impact on these groups of significant trees.

Since exhibition of the EIS, further consideration has been given to reducing the impact on planted trees through refinement of the design. It is proposed to realign the CSELR along Alison Road west of Darley Road. The refined design would move the previously proposed alignment approximately three to four metres to the north of its current position away from the boundary of the Royal Randwick racecourse. The shift in the alignment would occur for a length of approximately 200 metres generally between John Street and Cowper Street. The proposed design change to the alignment along Alison Road would allow for the retention of approximately 15 to 20 trees in comparison to the light rail alignment presented in the EIS. Section 6.11 of this Submissions Report provided further details of this proposed design change.

A tree root zone survey is proposed along Alison Road and in George Dan Reserve to more accurately define the extent of the root zone for individual trees to determine whether they would be impacted.



Environmental management measures that Transport for NSW proposes to implement to manage the potential impact of the CSELR proposal on significant trees located within the Randwick Precinct are described in section 15.8.4 of the EIS (Volume 1B). In summary, detailed design of the Wansey Road stop and the stabling facility would seek to retain as many of the significant trees at the Royal Randwick racecourse as practicable. Where significant trees must be removed, suitable replacements would be made in accordance with Transport for NSW's *Vegetation Offset Guide* (Transport for NSW 2013a).

### 5.13.7 Stabling facility

#### Summary of issues raised

A series of respondents raised the potential for impact to heritage at the site of the proposed stabling facility in Randwick. Specific issues raised included:

- Concern raised about the location of the light rail stabling facility adjacent to Doncaster Avenue, due to the removal of mature trees of significant heritage value.
- There is a local perception that the buildings on the proposed site for the stabling facility may be heritage listed, or have local heritage significance.
- A site specific heritage impact assessment should be prepared for the proposed location of the stabling facility adjacent to Doncaster Avenue.

#### Submission number(s)

132, 242, 327

#### Response

The proposed Randwick stabling facility site contains approximately 50 trees. These include a large Moreton Bay Fig at the western end of the site, evergreen Brush Boxes, and scattered plantings of invasive species, such as Wild Olive and Blackberry. In addition there appear to be two large Fig trees in the centre of the site. The large Moreton Bay Fig at the western end would be retained however; all other trees are likely to be removed. The two large Fig trees affected were unable to be surveyed during the preliminary tree assessment due to property access issues; however these would be surveyed during detailed design, at which time it would be confirmed if the trees can be retained or relocated.

Significant trees within the area of the proposed stabling facility at Royal Randwick Racecourse are listed on the *Randwick City Council Significant Tree Register* as Group F: Western area between the racecourse and the boundary to properties in Doncaster Avenue. The racecourse site as a whole is described as having 'exceptional natural and cultural values' in the Significant Tree Register. The impact of removing trees in the racecourse is assessed in section 5.7.3 of the Heritage Impact Assessment (refer to pages on pages 333 to 334 of Technical Paper 5 in Volume 4 of the EIS).

The Heritage Impact Assessment included an assessment of the potential impacts of the proposal on the site of the proposed stabling facility (refer to section 5.7.3 of Technical Paper 5, in Volume 4 of the EIS). The assessment concluded that the demolition of remnant tramway infrastructure and the workshop's building complex (identified as having moderate significance) would have a moderate adverse heritage impact. There were no listings specifically referencing the significance of the potential historical archaeological resource within the Randwick stabling facility, and a range of impacts were identified in section 4.7 of Technical Paper 5 (Volume 4 of the EIS), depending on the nature and extent of proposed works in this area.

The removal of so many significant trees within the Royal Randwick racecourse would result in the loss of contributory items from a site of exceptional natural and cultural values of significance to the Randwick LGA and the racecourse precinct Heritage Conservation Area. This loss would also have an impact on the aesthetic heritage values of the conservation area. The removal of so many trees in particular would be a major adverse heritage impact.

The mitigation measures proposed include retaining as many significant trees as possible at the racecourse in the detailed design of the stabling facility and CSELR alignment.

### 5.13.8 Royal Randwick racecourse

#### Summary of issues raised

One submission asked about whether buildings on the stabling facility site or on Alison Road are heritage items.

#### Submission number(s)

242

#### Response

Royal Randwick racecourse and its buildings are included in the Racecourse Precinct Heritage Conservation Area as listed on the *Randwick Local Environmental Plan 2012*. The buildings on Alison Road and the proposed stabling facility site are included in this conservation area (refer section 15.8, Volume 1B of EIS). Impacts on these buildings have been assessed in the EIS in the context of this listing (refer to the responses given in sections 5.13.5 and 5.13.7 of this Submissions Report for further discussion on this issue).

### 5.13.9 High Cross Park

#### Summary of issues raised

A series of respondents raised the potential for impact to heritage at the site of the proposed stop and bus interchange in Randwick. Specific issues raised included:

- The respondents were not in favour of locating interchange/stabling in High Cross Park stating it is a 'Heritage Conservation area' in the Randwick City Council LEP and by the National Trust of NSW. This part of Randwick was one of the first parts of the City to be developed, and was historically the most important. High Cross Park is widely recognised by the community as a central and identifying element of Randwick's historical landscape. The park was an early focal point for social gatherings in the village. The CSELR will significantly affect the heritage significance of the park.





- High Cross Park contains a significant war memorial of local importance, that may be impacted by the proposal. The war memorial is the site of annual Anzac Day services.
- Concerned about destruction of heritage protected High Cross Park.

#### Submission number(s)

48, 54, 59, 63, 64, 71, 77, 94, 135, 146, 150, 201, 231, 255, 258, 288, 294, 362, 375, 377, 432, 443

#### Response

An assessment of the potential built and non-indigenous heritage impacts on High Cross Park is provided in section 15.8 of the EIS (Volume 1B) and Technical Paper 5 (Volume 4).

The heritage listings for High Cross Park include:

- High Cross Reserve – *Randwick Local Environmental Plan 2012*
- High Cross Reserve (five Cook Pines, one Moreton Bay Fig, one Port Jackson Fig) – *Randwick City Council Register of Significant Trees 2008*
- High Cross Heritage Conservation Area – *Randwick Local Environmental Plan 2012*
- High Cross Precinct Conservation Area on the National Trust (NSW) Register (listing ID S7899).

The assessment undertaken in the EIS concluded that the proposal would have a moderate to major adverse impact on the heritage values of High Cross Park through the conversion from a Victorian era park to a contemporary transport interchange and the removal of the majority of existing trees. Detailed design of the Randwick top and bus interchange would seek to retain significant trees, where possible, and minimise the area of the reserve to be excised for the stop and associated infrastructure. The existing cenotaph would be retained in its current location (refer Section 15.8, Volume 1B of EIS).

The objection to the location of the Randwick stop and bus interchange at High Cross Park is noted; however it is considered that this site represents the optimal location in terms of providing a simple, fast and legible interchange (refer section 4.4.2, Volume 1A of EIS for discussion of design options considered for Randwick stop). However, since exhibition of the EIS and in response to a number of submissions received, further consideration has been given to reducing the impact on High Cross Park through refinement of the design. As a result, the light rail stop has been moved approximately three metres north towards Belmore Road, resulting in retention of an increased area of parkland, and also providing an increased open setting for the existing RSL memorial in the centre of the park. This design change would also result in the retention of approximately three trees previously identified as affected (refer section 6.12 of this Submissions Report for further details).

No stabling is proposed at the Randwick stop and interchange.

### 5.13.10 Tay Reserve

#### Summary of issues raised

Several submissions objected to the proposed removal of significant trees in Tay Reserve. This area has heritage significance. Alternative alignment options for the CSELR should be investigated to minimise impacts on Tay Reserve.

#### Submission number(s)

54, 59, 63, 64, 255

#### Response

An assessment of impacts on planted trees within Tay Reserve is included in section 16.6, Volume 1B of the EIS. An assessment of impacts on heritage values is included in section 16.8 of the EIS.

There are presently approximately 10 trees located within Tay Reserve including one Kaffir-plum, four semi-mature Queensland Kauri Trees and a large mature Fig tree. Tay Reserve was formerly the site of the Randwick Toll Bar Cottage (demolished c1909) and a number of the significant trees are linked to the site's former use. The reserve is listed as a heritage item on the *Randwick Local Environmental Plan 2012*.

The CSELR proposal would impact approximately five trees within Tay Reserve including the Kaffir Plum and four semi-mature Queensland Kauri Trees. The heritage assessment has assessed the overall impact as a major adverse heritage impact.

The detailed design of the CSELR proposal would seek to minimise the area of Tay Reserve to be removed.

Alternate alignments within the vicinity of Tay Reserve that would avoid impacts to the reserve are considered in section 5.4.9 of this Submissions Report.

### 5.13.11 Nine Ways intersection

#### Summary of issues raised

One submission requested that the Nine Ways roundabout be incorporated into the proposed CSELR design, rather than replacing this roundabout with a signalised intersection. This roundabout has been in Kingsford since 1945 and has historic value for the surrounding area. Options to retain the Nine Ways roundabout could include tunnelling under the intersection (cut-and-cover construction technique, which would involve rebuilding the roundabout) or turning the Gardeners Road/Bunnerong Road intersection into a roundabout.

#### Submission number(s)

7



## Response

It is acknowledged that Nine Ways may have some significance to the local community as a local landmark and historic feature of the road network. Historical aerial photographs from 1943 indicate that the roundabout was in place by that time. The aerials also indicate tram lines crossing the roundabout to continue south-east along Anzac Parade and west along Gardeners Road.

However, Nine Ways is not listed on any heritage registers and there is no substantive evidence to demonstrate that it is of sufficient heritage value to be considered for listing.

Alternatives regarding the final design of the Nine Ways intersection have been responded to in section 5.4.9 of this Submissions Report.

### 5.13.12 Site specific impacts to heritage buildings

A series of site specific heritage impact concerns were raised in submissions relating to individual buildings along the CSELR route.

Specific issues raised in submissions	Response to specific issues	Submission No.
<p><i>Heritage awning, 413 – 421 George Street</i></p> <p>Request to retain heritage awning of 413 - 421 George Street. The awning was modified to accommodate a smart/light pole in the centre of the awning. Request to retain location of smart/light pole to maintain symmetry and amenity.</p>	<p>The property at 413 – 421 George Street is a locally listed heritage item (with address 68 York Street, Sydney), known as the former Knock and Kirby Building façade. This building was not identified in Technical Paper 5 (<i>Heritage Impact Assessment</i>) in Volume 4 of the EIS as being directly affected by the CSELR proposal. The building is located next to the Commonwealth Bank at 423 – 427 George Street, which was assessed as having a minor adverse visual impact on the setting and appreciation of the lower section of the George Street elevation of the building. Should there be a potential impact to the heritage awning of 413 – 421 George Street, the landowner would be consulted during detailed design to minimise any impacts.</p>	120
<p><i>Daking House (Sydney Central YHA) and Station House (790 on George)</i></p> <p>Concerned about potential adverse impact on heritage significance of Daking House (SCYHA) and Station House (790 on George). Concerned that light rail shelter will substantially interfere with views of the heritage streetscape and views to and above the awning and barrel vault entry to SCYHA.</p>	<p>It is noted that Daking House, as indicated on Figure 12.22b of the EIS, is a local heritage item. The <i>Heritage Impact Assessment</i> (Technical Paper 5 in Volume 4 of the EIS) does identify this building as a directly affected heritage item (refer to table 12.40 of the EIS, Volume 1B) and is anticipated to have a potentially moderately adverse impact.</p> <p>Two mitigation measures were previously identified in the EIS (refer to Table 12.46 of the EIS, Volume 1B) which state as follows:</p> <ul style="list-style-type: none"> <li>The detailed design of the Rawson Place stop would consider impacts on Daking House. The proposed shelter would be designed to minimise impacts on key views of the façade of Daking House and would be set back as far as possible from its significant awning. The regrading of the road and pavement levels would be detailed to avoid adverse impacts on the fabric of Daking House at ground level, and maintain the integrity of entry doors and shopfronts.</li> <li>A photographic archival recording of the principal elevations of Daking House would be undertaken prior to works commencing.</li> </ul> <p>These mitigation measures are considered to be sufficient to reduce any potential impacts that the CSELR proposal would have on this building.</p>	151

Specific issues raised in submissions	Response to specific issues	Submission No.
<p><i>Dymocks building – George Street</i></p> <p>Concern that the proposal may cause damage to the heritage listed Dymocks building.</p>	<p>It is noted that the Dymocks building, as indicated on Figure 12.22a of the EIS (Volume 1B), is a local heritage item. The <i>Heritage Impact Assessment</i> (Technical Paper 4) does not identify this building as a directly affected heritage item (refer to table 12.40 of the EIS, Volume 1B). It is therefore considered that the overall mitigation measures proposed within the revised list of mitigation measures in Chapter 8 of this Submissions Report would be sufficient to ameliorate any potential indirect impacts to this building during construction.</p>	347
<p><i>St Peter's Church</i></p> <p>The EIS does not acknowledge the existence of the St. Peter's Church (built in 1916).</p>	<p>St Peter's Roman Catholic Church Group, located at 235 Devonshire Street, is a listed heritage item on the <i>Sydney Local Environmental Plan 2012</i> as noted in Table 13.21 in Volume 1B of the EIS. Technical Paper 5 in Volume 4 of the EIS identified that the Church would not be directly impacted by the CSELR proposal. However, there is a need to provide some offset parking for the Church as a result of the CSELR which may impact on the church land. The design of this offset parking would be undertaken with regard to the heritage significance of the Church, in consultation with the owner during the detailed design stage.</p>	62

### 5.13.13 Non-precinct specific heritage concerns

#### Summary of issues raised

Two submissions requested that the loss of heritage items and character along the alignment is avoided or minimised.

#### Submission number(s)

384, 386

#### Response

Wherever possible, impacts to heritage items (or components of them) have been avoided. However, impacts to some items are unavoidable. The preferred CSELR route would result in the need to remove or impact some items during the construction of the CSELR proposal. A full assessment of the potential impacts to heritage items and heritage characters along the length of the CSELR alignment was provided in the *Heritage Impact Assessment* (Technical Paper 5 in Volume 4 of the EIS) and is summarised in sections 12.8, 13.8, 14.8, 15.8, 16.8 and 17.7 of the EIS (Volume 1B). A series of overarching and specific mitigation measures are identified for the management and mitigation of potential heritage impacts. These measures were summarised in the revised list of mitigation measures in Chapter 8 of this Submissions Report and would be implemented throughout the construction period.

No environmental management measures are proposed during operation as impacts to heritage items would generally occur during construction. Any operational heritage impacts associated with the proposal (for example, views of the permanent works from heritage items) would be addressed during detailed design.



## 5.14 Socio-economic

### 5.14.1 Impacts to local businesses – operation

#### Summary of issues raised

A series of issues were raised regarding the potential impacts to businesses during the operation of the CSELR. Financial impacts to businesses and loss of parking relating to business impacts were also identified. A summary of these issues is presented below, along with Transport for NSW's response.

#### *General impacts to businesses*

- Concern raised about the CSELR proposal's impact on businesses along the whole of the CSELR proposal route including within the CBD (George Street), Surry Hills (Devonshire Street) and Randwick and Kingsford (Anzac Parade – particularly near the Kingsford Business Centre and in the vicinity of the Nine Ways intersection).
- A condition of approval should be imposed required the proponent to prepare a strategy for such offsets as part of a Business Stakeholder Management Plan.

#### *Loss of parking/loading/delivery areas impacting business operations*

- Loss of parking along Devonshire Street will affect a number of businesses such as the Salmon Bros Electric Business located on Devonshire Street.
- Concern regarding the impact that the loss of car parking spaces for patients will have on their medical surgery and the viability of their businesses.
- General concern that the removal of street parking throughout the route of the CSELR including the area around the Kingsford Business Centre will force customers to other suburbs to find services.
- Concern about impacts on local businesses due to loss of parking, loading zones, taxi zones and reduction in footpaths along the route of the CSELR, including the removal of the loading zone and one hour parking in Devonshire Street, in the vicinity of the Bourke Street Bakery. It was requested that there is a post-construction guarantee that the relevant councils will work with retailers to maintain delivery of goods and services despite new clearways and traffic access restrictions.

#### *Financial impacts to business operations*

- Concern about businesses going bankrupt due to loss of parking.
- The CSELR route does not provide assistance to businesses located along Cleveland Street or at the Oxford Street end of Surry Hills.
- Submits that businesses will benefit in and around areas that are connected to light rail.

### Submission number(s)

34, 77, 82, 101, 126, 130, 169, 206, 207, 208, 209, 216, 229, 238, 244, 260, 262, 289, 306, 292, 294, 303, 312, 317, 323, 328, 339, 347, 362, 369, 410, 437, 440, 446, 447, 452, 475, 478, 479

### Response

#### *General impacts to businesses*

The CSELR is anticipated to provide an overall benefit to the existing businesses along the proposed alignment, by providing improved access for a range of customers within the CBD and South East areas of Sydney. However, potential impacts to businesses are also acknowledged in the EIS. As outlined in section 12.9.4 of the EIS (Volume 1B), three main methods are proposed to be implemented during the construction and operational phases of the CSELR proposal to mitigate potential socio-economic impacts (refer to mitigation measures W.2, W.4 and W.5 of the revised list of mitigation measures in Chapter 8 of this Submissions Report). These include the following:

- Through liaison with businesses and landowners, access plans would establish existing servicing and delivery requirements, access periods or alternative arrangements for businesses and landowners affected by the proposal. These access plans would also identify alternative routes, specific activities or land uses (such as schools, medical centres etc.) within each precinct and would identify strategies to maintain emergency access throughout each precinct at all times.
- A business and landowner engagement and management plan would provide ongoing information to those businesses and landowners potentially affected by the CSELR proposal through a variety of sources including information packs, a website, regular newsletters/ brochures and email alerts. The plan would also identify effective means for ongoing cooperation and communication with the business community. This plan would be used as part of the ongoing Business Reference Group which would be established to advise the proposal on business concerns related to the proposal.
- The CEMP would outline a range of mitigation measures to minimise the level of disturbance created as a result of construction related activities. The CEMP would contain a number of additional plans to manage specific impacts such as noise and traffic. Further details regarding the CEMP for the CSELR proposal is provided in Chapter 18 of the EIS (Volume 1B).

Details of the proposed mitigation measures are presented in Technical Paper 4 in Volume 3 of the EIS. Additional precinct-specific management and mitigation measures to address the potential local economic and business impacts of the CSELR proposal are described in Chapters 12 to 17 of the EIS (Volume 1B) and the mitigation measures in the revised list of mitigation measures in Chapter 8 of this Submissions Report).

#### *Loss of parking/loading/delivery areas impacting business operations*

Measures that would be implemented to reduce the impact that the loss of parking, loading zones and taxi zones would have on surrounding businesses along the CSELR are described in the revised list of mitigation measures in Chapter 8 of this Submissions Report. This would include consultation with relevant councils during the detailed design of the proposal.



Further discussion of parking and access impacts resulting from the CSELR proposal, including discussion regarding access to some specific properties (where this has been raised in submissions) is provided in section 5.8 of this Submissions Report.

#### *Financial impacts to business operations*

It is acknowledged that some respondents noted that they expected the CSELR proposal to result in financial benefits to businesses.

Whilst it is not anticipated that the CSELR proposal would result in substantial financial disbenefits to local businesses, further discussion of the potential need for compensation to local businesses financially affected by the proposal is provided in section 5.14.11 of this Submissions Report.

Discussion of the consideration of an alternative route along Cleveland Street is provided in section 5.4.4 of this Submissions Report. As Cleveland Street was not considered to be the preferred option for the CSELR alignment, it is not anticipated that the proposal would substantially impact on the economic viability of this street. Similarly, it is not anticipated that the proposal would substantially impact on the economic viability of existing businesses along Oxford Street.

## 5.14.2 Impacts to local businesses – construction

### Summary of issues raised

A series of issues were raised regarding the potential impacts to businesses during the construction of the CSELR, both generally and in relation to specific businesses. Concerns regarding the visibility of businesses (through hoardings etc.) and loss of parking relating to business impacts were also identified. A summary of these issues is presented below.

#### *General impacts to businesses*

- Concerned for businesses along the route of the CSELR proposal alignment including businesses within the CBD (George Street), Surry Hills (Devonshire Street) and Anzac Parade in particular. Construction activities will occur for an extended period of time and may result in declining sales.
- Concerned about interruption to business along the alignment and changes to the streetscape and amenity (traffic changes, noise, dust and vibrations) for hospitality businesses which often rely on outdoor amenity. Some concern that small businesses will be forced to move or close down because of construction impacts due to loss of passing trade.
- Many restaurants have varying trading hours and extended construction may adversely affect these businesses. The ability to mitigate against major disruption through construction via a 24 hour construction process or minimise disruption of construction to low trade days and periods was requested.
- Requests a condition requiring the appointment of Place Managers throughout the construction phase as recommended in the Social Impact Assessment accompanying the EIS.

- Construction within Kensington and Kingsford would severely disrupt the functioning of the town centres.

#### *Impacts to the road network and parking*

- There is a need to negotiate and maintain delivery of goods and services through the construction phase on an individual basis for retailers.
- Concerned about disruption to local road networks which may turn customers away and impact on retailers in the City Centre Precinct.

#### *Hoardings*

- In order to maintain the optimum possible amenity for the shopping public and for the retailers, it is important that footpaths are not fully enclosed by high barriers, which would act to obscure the visibility of adjacent businesses. The maximum visibility of shopfronts should be maintained from viewpoints on the opposite side of the street.
- Detailed plans about the timing and length of construction, including the placement of hoarding, access restrictions and the operation of machinery need to be communicated to restaurant owners in advance on construction commencement. Measures such as allowing businesses to place signage on construction hoardings and providing information about business operations on the proposal website at no charge to the businesses are two possible ways to assist businesses.

#### Submission number(s)

98, 105, 120, 125, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 196, 200, 232, 235, 252, 269, 292, 295, 300, 304, 323, 347, 361, 364, 398, 403, 410, 418, 433, 476

#### Response

##### *General impacts to businesses*

Anticipated impacts (both positive and negative) to local businesses during the construction of the CSELR proposal are described in section 9.4.4 of the EIS (Volume 1A). Generally, economic impacts of the proposal have the potential to affect the viability of some businesses, workforce availability or trade, by changing factors that influence opportunities for employment or business growth, the ease of doing business and the environment in which business is conducted.

Adverse economic impacts during the construction of the CSELR proposal are likely to include (in some locations) disruptions to deliveries, distribution and customer access; reduced trade due to amenity impacts, especially for outdoor dining areas; reduced passing trade due to changes in vehicle and pedestrian flows; travel time impacts on workplace productivity and vehicle operating costs; and utility shutdowns. It is noted that various businesses have differing trading hours (such as restaurants and cafes) and that these impacts may vary throughout different times of the day. These impacts would be minimised as far as practicable at all times of the construction of the CSELR proposal.





The EIS acknowledges that a noticeable (and highly intrusive) level of noise is likely to be generated during the construction phase of the proposal along the route corridor and around construction compounds. Noise generated during the construction process has the potential to negatively affect employee productivity, interaction with clients and workplace ambience. It can also affect the function of services, especially those that are dependent on a serene environment (such as restaurants or outdoor dining areas).

Construction noise and vibration impacts to those businesses without adequate soundproofing or businesses reliant on the amenity of outdoor areas (i.e. outdoor dining) would be managed through the CEMP, which would include site specific CNVMPs. Measures that would be implemented to minimise construction noise impacts on surrounding sensitive receivers are outlined in mitigation measures S.1 to S.7 (refer to the revised list of mitigation measures in Chapter 8 of this Submissions Report), and discussed further in section 5.10 of this Submissions Report. A Business Reference Group would be established, which would comprise independent representatives from the business community to advise the proposal on business concerns related to the proposal.

As noted in section 2.3.5 of the EIS (Volume 1A), Place Managers have been established to act as the direct point of contact for the community, businesses and other stakeholders and commenced working on the CSELR proposal in May 2013. The Place Managers have conducted 'on the ground' assessments, built relationships and provided consistent information to the community and stakeholders along the route. They would continue to act as a point of contact throughout the planning and delivery phases of the CSELR, and would work with businesses to ensure that the community maintains awareness of existing retailers operations during the construction phase.

Notwithstanding the above adverse economic impacts, the CSELR proposal would also be expected to result in a number of other economic benefits during construction, including (in some locations) increase in passing trade, especially for businesses at pedestrian crossing points; trade increases for businesses close to construction sites that sell goods to construction workers; and significant growth in demand for construction-related businesses.

#### *Impacts to the road network and parking*

With respect to potential issues to parking, it is acknowledged that there would be some impacts to parking and loading zones as a result of the proposal. Measures that would be implemented to reduce the impact that the loss of parking, loading zones and taxi zones would have on surrounding businesses are provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report, and include the preparation of access management plans in consultation with businesses and landowners to understand their servicing and delivery requirements (refer to mitigation measure W.4 in Chapter 8 of this Submissions Report). Traffic and parking issues are further discussed in section 5.8 of this Submissions Report

### *Hoardings*

It is noted that the use of safety barriers and hoardings to delineate the construction sites may affect the visibility of some adjacent businesses from some viewing locations. This impact would be managed during construction through minimising the duration of construction (and hence the need for barriers/hoardings) at any particular location (where feasible and reasonable to do so) and the careful placement of hoardings and diversions to minimise impacts to surrounding businesses (whilst also not compromising the safety of pedestrians or construction workers). Consultation with businesses regarding the detailed requirements for hoardings and the potential addition of directional or business signage would be undertaken as part of the business and land owner engagement plan implemented throughout the construction of the proposal (refer to section 12.9.4 of the EIS, Volume 1B).

## 5.14.3 General amenity and socio-economic impacts – construction

### Summary of issues raised

A series of submissions were made regarding general socio-economic and amenity impacts during the construction of the proposal. These issues are identified below:

- General concerns raised regarding the CSELR proposal's impact on the amenity of the receiving environment, including construction noise, dust and pollution from heavy machinery. Such impacts would occur 24 hours a day, seven days a week for five years.
- Concerned about the CSELR proposal's impact on the amenity of George Street during construction.
- Construction impacts to the Sydney Boys and Sydney Girls High Schools should be minimised, especially during the construction of the Moore Park tunnel and stop.
- Concerned about noise, vibration and dust impacts on the Moore Park Precinct during construction. Suggests construction timing is sensitive to periods when existing AFL training field (Tramway Oval) is being used.
- Concerned about the proposed provisions for dust and noise controls, and the potential impact on the ground floor of the Myers cosmetic hall.
- Construction noise and water management methodologies are to be put in place to minimise impact on retailers and customers; establish process to give affected parties the opportunity to have impacts promptly addressed.

### Submission number(s)

79, 106, 171, 172, 173, 174, 176, 181, 184, 187, 188, 189, 191, 192, 193, 194, 200, 217, 273, 275, 292, 300, 306, 310, 312, 316, 319, 334, 353, 455, 479



## Response

Potential social impacts during the construction of the CSELR proposal are acknowledged and assessed in Technical Paper 3 (*Social Impact Assessment*) and Technical Paper 4 (*Economic Impact Assessment*) of the EIS, Volume 3) and sections 12.9.3, 13.9.3, 14.9.3, 15.9.3, 16.9.3, 17.8.3 of the EIS (Volume 1B). It is also noted that design changes have been proposed which influence the construction of the CSELR in the Moore Park area, in the vicinity of the AFL Training Oval and Sydney Boys and Sydney Girls High Schools. These are addressed in sections 6.8 and 6.9 of this Submissions Report.

It is acknowledged that the CSELR would result in some amenity impacts in particular during construction, for residents, businesses and those community members who work, study, reside, visit, or access businesses/community services within the vicinity of the proposal (e.g. due to increased noise and vibration, air quality impacts and traffic, as well as a reduction in visual amenity). The extent, duration and magnitude of impacts to local amenity would vary between locations along the CSELR route, and the phase of the proposal (construction or operation).

Construction would have negative impacts on amenity along the majority of the CSELR corridor, although these impacts would be transient. Currently busy areas such as George Street and Anzac Parade would likely be able to tolerate construction impacts better than quieter areas such as Devonshire Street, parkland areas (including Moore Park) and around Royal Randwick racecourse.

A CEMP would be prepared prior to construction, which would outline the construction conditions and temporary environmental protection measures to manage the impact of construction activities such as traffic, noise and visual amenity. The CEMP would be consistent with the environmental management measures documented in the EIS, conditions of approval and the conditions of any licences or permits issued by government authorities. Similarly, access plans for affected areas and community services would assist mitigating impacts of construction on access and connectivity.

During construction, the project team would continually look for opportunities to reduce the impacts of the proposal on the local community. The community would be kept informed of the proposal's progress, including details of potential impacts to assist the community to plan around disruptions wherever possible. As discussed in section 5.14.3 of this Submissions Report, Place Managers have been appointed for the CSELR proposal to provide a single point of contact for affected businesses and communities along the CSELR corridor, and to allow for the development of locally appropriate mitigation. Place Managers would allow for effective two-way communication by relaying important messages from the project team to the community and eliciting up-to-date information as to social impacts and suggestions for appropriate mitigation measures from affected persons. The Place Managers would continue to act as a point of contact throughout the planning and delivery phases of the CSELR proposal. A Business Reference Group would be established, which would comprise independent representatives from the business community to advise the proposal on business concerns related to the proposal.

Further discussion on the measures that would be implemented to minimise and manage adverse amenity impacts during the construction and operational phases of the CSELR proposal are provided in sections 5.10 (noise and vibration), 5.19 (air quality), 5.12 (visual amenity), 5.11 (planted trees) and 5.8 (traffic, transport and access). A summary of the proposed mitigation measures are provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report.

#### 5.14.4 General amenity and socio-economic impacts – operational

##### Summary of issues raised

###### *General amenity during operation*

A series of submissions were made regarding general socio-economic and amenity impacts during the operation of the proposal. These issues are identified below:

- The CSELR proposal will result in a significant loss of amenity for residents living on streets located off Anzac Parade.
- Concerned about the location of the proposed Randwick stabling facility due to noise and air pollution impacts on surrounding residential properties.
- Concerned about the CSELR proposal's impact on the learning environment at Randwick TAFE. Where environmental amenity criteria cannot be met, mitigation measures could include:
  - ▶ installation of noise barrier walls
  - ▶ real time noise and dust monitoring and warning system to management personnel
  - ▶ continued monitoring and specific management plans during construction with a communication protocol established with the College
  - ▶ restrictions on construction activities and truck movements during certain periods of TAFE activities (e.g. exams etc.).
- Concern about significant disruption and impact on local residents surrounding the proposed Rozelle maintenance depot, including: negative impact on residential amenity such as visual pollution, noise, light pollution, removal of trees, impacts to character of neighbourhoods.
- Concerned about the impact that the CSELR proposal will have on the communities of Randwick, Kensington, Kingsford and the surrounding areas.
- Request for amenity impacts from the CSELR proposal to be mitigated through the use of noise reducing beds for rails, screening, creation of additional parklands, etc.
- Concerns about heritage, parkland, trees, aesthetic sensitivities and commuter convenience.
- Tourism for historic La Perouse will be impacted.
- Acknowledgement that the proposal is one of a number of major transport infrastructure projects planned for Sydney and believes these are all critical to providing a safe and efficient transport system for Sydney over the next 20-30 years. All large projects create a measure of fragility in our transport system and disruption for the community's travel during the construction and commissioning.
- Light rail will significantly improve the amenity of the Sydney CBD and surrounds, providing greater access to tourism, leisure and hospitality experiences for visitors and locals.
- Footpath widening works will have some impact on amenity but they will unlikely restrict access to World Square from George Street. Pedestrian amenity will be improved which will benefit World Square.



- Amenity along Anzac Parade and at the Kensington and Kingsford Town centres would be affected by the loss of street parking and traffic travelling in the lanes closest to the footpath.

#### *Health and aging concerns*

- Concerns about passengers' health as they are required to transfer modes – for example, exposure to the elements and access for people with a disability or who are less able.
- The ageing population will experience difficulty changing/interchanging transport modes. This will be exacerbated for people with disabilities.

#### Submission number(s)

100, 132, 139, 219, 225, 240, 242, 247, 257, 271, 304, 306, 308, 316, 332, 365 445, 476, 479

#### Response

##### *General amenity during operation*

It is acknowledged that the CSELR proposal would result in a change in the character of the communities along the alignment including at Randwick, Kensington, Kingsford, and the surrounding areas due to the introduction of light rail and removal of a number of street trees, in particular those along Anzac Parade. As outlined in Chapters 12 to 17 of the EIS (Volume 1B), a range of mitigation measures (as presented in Chapter 8 of this Submissions Report), have been included to address the potential impacts of the proposal including visual, noise, light pollution, dust and other impacts during operation of the CSELR.

It is not anticipated that the CSELR proposal would result in a substantial impact to the Randwick TAFE campus. The stop location and alignment in this location was developed to facilitate safe and easy access both for residents and TAFE students and staff during normal operations, in addition to meeting the requirements for event days associated with the Royal Randwick racecourse. Consultation with the Randwick TAFE as part of the Community and Business Reference Group process would be undertaken during the ongoing design of the CSELR proposal.

A assessment of the Rozelle maintenance depot was undertaken as part of the EIS. This assessment included an assessment of traffic, visual, noise, land use, heritage and socio-economic impacts and was provided in Chapter 17 of the EIS (Volume 1B). This assessment concluded that the proposed Rozelle maintenance facility would not result in a substantial impact to the local community. A series of mitigation measures to minimise impacts such as noise and light spill were provided as part of this assessment and are included in Chapter 8 of this Submissions Report.

Further detail regarding the potential impacts of the proposal on issues such as trees, parklands, noise and visual impacts are provided throughout this Submissions Report. Further discussions on the measures that would be implemented to minimise and manage adverse amenity impacts associated with the CSELR proposal is provided in sections 5.10 (noise and vibration), 5.19 (air quality), 5.12 (visual amenity), 5.11 (planted trees) and 5.8 (traffic, transport and access) of this Submissions Report. The proposed mitigation measures are provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report.

Notwithstanding the potential impacts identified above, the CSELR proposal would result in a number of benefits during the operational phase. For example, amenity would improve in the City Centre with the pedestrianisation of George Street. The pedestrianised area of George Street would reclaim this space for the public and unlock potential for new uses such as outdoor dining. Delivery of the CSELR would include public domain improvements, such as revitalised public spaces at Circular Quay, Town Hall, Central Station, Randwick and the current Nine Ways intersection at Kingsford. Other areas of the corridor would also improve, and there would be the potential for substantial urban activation around proposed CSELR stops, including areas along Anzac Parade at Randwick and Kingsford. Urban renewal opportunities may include residential redevelopment and commercial centre hubs, particularly around proposed stops.

As noted in the *Economic Impact Assessment* (Technical Paper 4 of the EIS, Volume 3), tourism plays an important role in the economy of Sydney. The provision of the CSELR as a new public transport option is anticipated to provide enhanced benefits for tourists to move around the City Centre and South East sections of Sydney. The CSELR would assist in providing tourists access to activities within the South East such as La Perouse.

Mitigation measures, such as the use of noise walls and dust monitoring systems to address potential impacts would be considered as part of the ongoing detailed design of the CSELR.

#### *Health and aging concerns*

Potential future changes to bus operations and interchanges between bus services and the CSELR (and the effect that such changes would have on accessibility) are described in section 5.8 of this Submissions Report. As described in section 5.8, the *Disability Standards for Accessible Public Transport 2002* (DSAPT) set minimum technical requirements and operational guidelines by which public transport infrastructure and vehicles can comply with the *Disability Discrimination Act 1992* (DDA). Access to all of the stops proposed would comply with the DDA, the DSAPT, and the DDA Access Code 2010.

Reduced traffic congestion would also bring improvements in health and road safety. The CSELR would also bring benefits from enhanced active travel opportunities including walking and cycling. Social wellbeing would be enhanced by providing better urban connectivity, thus increasing mobility and social interaction.

As noted in Chapter 5 of the EIS (Volume 1A), each stop, including interchanges from other transport modes would be fully accessible to persons with a disability and other less mobile persons.

### 5.14.5 Impacts on amenity – Surry Hills Precinct

#### Summary of issues raised

Whilst general impacts to amenity have been considered above in section 5.14.4 of this Submissions Report, a series of issues were raised regarding amenity within the Surry Hills Precinct. These are addressed below:

#### *General amenity impacts*

- The CSELR proposal will offer little benefit for Surry Hills residents.
- Light rail should benefit visitors of restaurants and other places in Surry Hills.



- General concern raised about the impact that the CSELR proposal would have on the village atmosphere of Surry Hills. The CSELR will change the village feel that residents currently enjoy. The proposal for Devonshire Street will degrade the amenity around Devonshire Street and Ward Park. The streetscape along Devonshire Street is an important and integral part of the local community. The streets and wide footpath areas allow for outdoor seating and interaction between local residents. The local amenity will be affected by the loss of trees and by the noise produced by the light rail operation.
- Disputes the finding of the EIS that the operation of the CSELR proposal will have a moderately positive impact on the Wimbo Park precinct. Parkham Lane/Wimbo Park will go from being a quiet cul-de-sac to a major transport intersection.
- Concern about emotional stress of residents.
- Surry Hills residents will be required to sacrifice a lot for this project, and Ward Park should not be another sacrifice.
- Pedestrian numbers will increase, causing pedestrian congestion, stress, noise, an unpleasant environment, vandalism and sleep disturbance.
- Requests clarification about remedial plans for the section of the proposed CSELR corridor located between Bourke Street and South Dowling Street, which includes Wimbo Park.

#### *Specific amenity impacts*

- Concerned about the impact of reinstating the Cooper Street connection to Riley Street, on the 'quiet space' enjoyed by local residents. Submits the safety of children attending the nearby childcare will be adversely impacted.
- Northcott Estate is home to many frail, aged and disabled people. The loss of trees, parking and traffic access plus noise were raised as concerns by Northcott tenants.

#### *Impacts to safety and security*

- Concerned that light rail will attract more people to Surry Hills, creating the following problems:
  - ▶ alcohol fuelled violence
  - ▶ vandalism
  - ▶ decrease in resident safety
  - ▶ creating increased noise pollution.
- Concerned about the increased lack of privacy for residences along Devonshire Street, especially near to the Ward Park stop. Ward Park is a buffer from much of the anti-social behaviour experience on a large public housing estate.
- The previous closure of Ward Park resulted in physical and verbal assaults through tension and social exclusion. Concern that Ward Park stop will be dangerous due to the presence of residents with mental health and other issues, and allow for public loitering, leading to noise disturbance and anti-social behaviour.

## Submission number(s)

2, 37, 38, 99, 102, 121, 122, 124, 212, 253, 271, 280, 322, 328, 361, 364, 389, 392, 439, 481, 482

## Response

### *General amenity impacts*

It is acknowledged that the CSELR proposal would result in a change in the character of the Surry Hills Precinct associated with the construction of the light rail and removal of a number of street trees. As outlined in section 13.7.5 of the EIS (Volume 1B), moderate landscape impacts would occur along Devonshire Street during operation, largely due to the removal of the mature grouping of street trees (which are fundamental to the character of the street) and direct impacts on Ward Park and Wimbo Park. A number of mitigation measures have been recommended requiring replacement or new tree planting to offset the impacts caused by tree removal in Devonshire Street and Ward and Wimbo Parks.

During construction, additional amenity impacts would result from the establishment of construction compounds, reduced use and amenity of parks during construction, and general construction related impacts such as noise, air, and traffic related impacts).

Ward Park is not proposed to be closed as part of the CSELR operation; however partial closures would be required during construction. Design changes are proposed in section 6.6 and 6.15 of this Submissions Report in relation to the Surry Hills stop design and Ward Park construction compound. These changes are expected to provide slightly improved outcomes for Surry Hills residents.

Whilst it is acknowledged that the existing nature/appearance of Wimbo Park would change, the function of Wimbo Park would also be restored during operation of the proposal with the exclusion of the southern portion of the park, which would be used to accommodate the track infrastructure. Wimbo Park would also be expanded with a new public park that would extend into the Olivia Gardens site. The park would include new trees and planting to provide a high quality open space. The rating and assessment of potential impacts was undertaken by suitably qualified urban designers and landscape architects. The impact assessment was undertaken in with reference to a series of existing guidelines including the following:

- RMS Guidance note EIA-N04 *Guidelines for Landscape Character and Visual Impact Assessment*, 2013
- *Guidance for Landscape and Visual Impact Assessment* Third Edition, 2013, prepared by the Landscape Institute and Institute of Environmental Management & Assessment, UK
- *Landscape Aesthetics: A Handbook of Scenery Management*, US Forestry Service, 1996.

The assessment methodology for the impact assessment was detailed in Chapter 3 of the *Landscape and Visual Impact Assessment* (Technical Paper 10, Volume 5, of the EIS).

During major sporting events additional light rail services would run from Central to the Moore Park sports and entertainment complex. This is expected to reduce the numbers of spectators using Surry Hills streets to walk from Central Station to Moore Park. This would have a major amenity benefit for residents, as Surry Hills footpaths frequently become overcrowded on event days.





Further discussion on the measures that would be implemented to minimise and manage adverse amenity impacts associated with the CSELR proposal is provided in sections 5.10 (noise and vibration), 5.19 (air quality), 5.12 (visual amenity), 5.11 (planted trees) and 5.8 (traffic, transport and access) of this Submissions Report. The proposed mitigation measures are provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report.

### *Specific amenity impacts*

It is expected that the street trees removed during construction would be replaced on Devonshire Street and elsewhere in Surry Hills in accordance with Transport for NSW's *Vegetation Offset Guide* (Transport for NSW 2013a), along with a range of public realm improvements to create a high quality pedestrian street. These street trees would be smaller and less mature than the existing trees, and located only on the northern side of the street due to space restrictions. A mitigation measure is also proposed requiring semi mature tree specimens where practical and feasible to replace lost character along the CSELR (refer to mitigation measure AJ.3 in Chapter 8 of this Submissions Report).

This tree planting would provide some landscape amenity, but not the same sense of visual enclosure as the double avenue which currently exists along the section of Devonshire Street where Northcott Estate is located. With the closure of some streets intersecting with Devonshire Street, there would however be the opportunity for the creation of a number of additional pocket parks along Devonshire Street which would be available to the local community including residents of Northcott Estate. General public realm improvement works would also be undertaken including a uniform paving scheme along the footpath of Devonshire Street, the park's primary frontage. The tree loss would also be offset by proposed planting in the expanded Wimbo Park. On balance, the loss of trees in the road reserve and improvements to the public realm are changes that are compatible with the surrounding urban landscape.

As discussed in section 13.4.2 of the EIS (Volume 1B), the CSELR proposal would result in an overall reduction in traffic volumes along Devonshire Street. This reduction would have the potential to result in the following benefits to the Surry Hills Precinct:

- reductions in traffic noise and vehicle emissions
- the potential for a change in the mix of activities undertaken at ground floor levels of existing buildings due to improved amenity along Devonshire Street and improved access to the Surry Hills Precinct.

The Devonshire Street corridor would continue to provide a strong pedestrian connection through Surry Hills during the operational phase of the CSELR proposal. This pedestrian connection would be enhanced by the proposed removal of the Olivia Gardens apartment complex and the creation of an expanded Wimbo park in its place and a new pedestrian and cycle path connection to Moore Park west. This would continue to allow residents within Surry Hills, such as those who live within the Northcott Estate, to continue to access services throughout Surry Hills.

With respect to the proposal to reinstate the previous Cooper Street connection to Riley Street, it is acknowledged that there may be some increased impacts at this location including increased traffic and noise impacts. Transport for NSW, together with its contractors, would continue to engage and consult stakeholders affected by the CSELR as the proposal progresses to detailed design to identify opportunities to minimise impacts as a result of this change. The detailed design of this connection would ensure that any design developed would provide a safe outcome for the local community and take into account any nearby sensitive receivers such as existing child care centres. Noise impacts of this change would be reviewed in accordance with the *Road Noise Policy* (refer to mitigation measure B.12 in Chapter 8 of this Submissions Report)

#### *Impacts to safety and security*

Maintaining privacy of residences and sensitive business along the corridor and at proposed stops would be an important consideration for the CSELR urban design. The EIS acknowledges that there may be privacy concerns for those in the immediate vicinity of the proposed Surry Hills stop at Ward Park that would need to be mitigated through appropriate design of the stop and its surroundings. As noted in section 10.11 of the EIS (Volume 1A), potential privacy impacts may be experienced by some sensitive receivers (including residential properties, schools, businesses, hospitals) that adjoin the CSELR alignment during the proposal's operation.

Adverse local amenity and character impacts, such as the potential for vandalism, would be mitigated through urban design and/or public domain improvements. It is also considered that an increase in the number of people within the local area, associated with the provision of the CSELR light rail, would increase the level of passive surveillance within the local area, leading to an increase in overall security for local residents.

CPTED principles have been considered in the design of the CSELR proposal, in particular the design of the stops (refer to Chapter 5 and Table 5.1 of the EIS, Volume 1A). Security measures such as CCTV cameras, lighting, emergency telephone/help points and warning signs at each stop are intended to assist with safety and security.

Urban design elements proposed for light rail stops would also include the use of consistent materials, and new street tree plantings to side footpaths to unify the corridor. Public domain improvements could include the maximisation of open space (for example within Ward Park) and the replanting of street trees where possible. Additionally, the management of other potential social issues, such as amenity impacts from increased numbers of people within the area would continue to be managed by authorities (such as NSW Police) as per the current situation.

A full review and assessment of the design in accordance with CPTED principles (which include surveillance, access control, territorial reinforcement and space management) would be undertaken for each stop and along the CSELR route during detailed design (refer to section 5.2.6 of the EIS (Volume 1A) and mitigation measure E.1 in Chapter 8 of this Submissions Report).



## 5.14.6 Impact to social cohesion

### Summary of issues raised

Concerns were raised regarding the potential social cohesion impacts resulting from the CSELR proposal in particular within the Surry Hills and Randwick precincts. Specific issues raised included the following:

- The proposed CSELR alignment on Devonshire Street will cut the Surry Hills suburb in two.
- The proposed surface alignment for the CSELR proposal between Eddy Avenue and Moore Park will result in dislocation to the vibrant residential and business community of Surry Hills.
- Light rail through Randwick will dissect the area, which is currently pedestrian friendly.

### Submission number(s)

99, 124, 133, 167, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 200, 212, 219, 238, 312, 348, 437, 447

### Response

Community concerns regarding perceived impacts on community connectivity due to the installation of CSELR infrastructure (e.g. tracks, overhead wires) and the operation of LRVs are acknowledged. However, pedestrians would be able to cross the CSELR at numerous locations along its alignment.

Road safety concerns associated with the CSELR proposal (and subsequent severance issues) would be managed through detailed design of the CSELR. For example, all streets where the light rail crosses existing traffic would be signalised. This would reduce potential safety conflicts between pedestrians and the CSELR and assist in maintaining social cohesion within each of the precincts.

Overall, potential severance issues associated with the CSELR proposal are expected to be partly offset by the reduction in road vehicle traffic along sections of the alignment such as George Street, Devonshire Street, Wansey Road and High Street. While access and local traffic conditions would be permanently altered by the proposal, with clear signage and given appropriate notice, people would adjust to the new traffic conditions. Adjustment to new conditions would be accelerated if the permanent conditions planned for operational phase of the CSELR are implemented early on in the construction phase.

The Devonshire Street corridor would continue to provide a strong pedestrian connection through Surry Hills during the operational phase of the CSELR proposal. Pedestrians would benefit from improved amenity, particularly where streets are closed at their intersection with Devonshire Street, as this presents an opportunity to increase footpath area. Additionally, a new park/open space area within the site of the current Olivia Gardens apartment complex would be created following completion of construction (an expanded Wimbo Park). Similarly, connections within the other precincts would also be retained where possible as part of the operation of the CSELR.

Additionally, as outlined in section 9.3.4 of the EIS (Volume 1A), potential severance issues created by the CSELR could also be offset by the planning and creation of new dynamic public spaces. For example, concerns about severance of existing land uses along Devonshire Street could be offset by incentivising the creation of small shops and cafes around the proposed Surry Hills stop at Ward Park and along High Street between the UNSW High Street stop and Randwick stop (the development of which would be outside the scope of the CSELR proposal and would be subject to a separate development approval process).

The CSELR proposal would create the potential to improve social sustainability and community functioning across the CBD and South East regions, primarily by linking communities with recreational facilities, community services, and other communities themselves. Residents along the alignment would be able to more conveniently access a wider range of job and business opportunities. Businesses and facilities would also be able to access a wider range of customers.

Further discussion on pedestrian safety measures that would be implemented during the operational phase of the CSELR is provided in section 5.8 of this Submissions Report. Additional discussion regarding pedestrian safety is also provided in section 5.24.3.

#### 5.14.7 Impact to the High Cross Park war memorial

##### Summary of issues raised

A number of concerns were raised regarding the potential impact to the existing memorial in High Cross Park. Specific concerns included:

- Damage to the war memorial site at High Cross Park.
- While the EIS states that this memorial will remain, memorial ceremonies will be significantly affected by the large number of commuters who will be boarding/alighting from LRVs, buses and interchanging between transport modes.
- The Anzac Memorial in High Cross Park will lose all gravitas.
- Concern that High Cross Park will be lost, as it hosts important events such as a Remembrance Day ceremony.

##### Submission number(s)

81, 94, 201, 242, 247

##### Response

The significance of the RSL memorial in High Cross Park is acknowledged in section 15.9.2 of the EIS (Volume 1A) and section 5.6 of Technical Paper 3 (*Social Impact Assessment*, Volume 3). The RSL memorial in High Cross Park is used on an annual basis for the ANZAC memorial service, which attracts a high number of attendees. Both the RSL memorial in High Cross Park and High Cross Park itself are heritage listed.



As outlined in section 5.6 of Technical Paper 3 (*Social Impact Assessment*, Volume 3), the design of the proposed Randwick interchange at High Cross Park would address the retention of the heritage character of the area containing the existing RSL memorial, as well as the possibility of continuing the Anzac Day service at this location. This would likely be achieved through the use of new tree plantings, creation of a public plaza and new landscaping, which would be installed to enhance the setting of the existing memorial, which would be retained in its present location (as discussed in section 5.2.2 of the EIS, Volume 1A).

Since publication of the EIS, the design of the proposed Randwick stop and layout of High Cross Park have been revised to reduce the overall impact of the CSELR on the park (refer section 6.12 of this Submissions Report). In response to concerns raised regarding the impacts to High Cross Park, the revised design would provide a larger turfed area within the park for local residents and workers, which would be sheltered from the street by consolidated planting areas, where possible. It would also provide for an increased open setting of the memorial relative to that presented in the EIS.

Although the memorial in High Cross Park would be retained in its present location, the memorial could be inaccessible for part or all of construction. As outlined in Table 6.4 of the EIS, a construction compound is proposed to be established in High Cross Park. This construction compound would be configured so as to not impact on the memorial (either directly or indirectly). Opportunities to retain public access to the memorial, from the Avoca Street side of the park, would be further investigated during detailed design. It is noted, however, that access to the memorial may be very limited for Anzac Day ceremonies during construction.

Notwithstanding the above, environmental management measure U.9 in Chapter 8 of this Submissions Report provides that, where possible, construction works would be scheduled so as to minimise impacts on special events (such as Anzac Day). This would include the staging of works to minimise impacts on areas including High Cross Park where those works would clash with special events, where feasible.

#### 5.14.8 Impacts to specific businesses

##### Summary of issues raised

A series of issues were raised regarding the potential impacts to businesses during the construction and operation of the CSELR relating to specific businesses. A summary of these issues and responses are presented in the table below.

Sub-issue	Response	Sub No.
<b>Operation</b>		
<p>a) Impacts to Sydney Coach Terminal</p> <ul style="list-style-type: none"> <li>▪ Threats to the livelihood of the Sydney Coach Terminal and its viability mean coach passengers will have no facilities for waiting areas, information, luggage storage, toilets, lift access to main train concourse, disabled accesses, purchase coach tickets/passes, day touches and attraction tickets. Sydney Coach Terminal is the only visitor information centre located at this end of the city.</li> <li>▪ Bus bay closures for both permanent and casual bay rental will be a substantial loss of revenue and would seriously jeopardise the viability of the Sydney Coach Terminal. There would also be the potential loss of revenue for the existing café from coach passengers who currently wait for departures and arrivals.</li> </ul>	<p>As noted in the <i>Transport Operations Report</i> (Technical Paper 1 of the EIS in Volume 2), there would be some loss of existing coach parking with the introduction of the CSELR, although this would be mitigated by a proposed 4.5 metre wide dedicated island coach platform that would allow for up to four coaches to load in indented bays (a reduction from the current eight). This platform would be accessible from existing traffic lanes, and the existing six traffic lanes on Eddy Avenue would be retained as current. The existing pedestrian walkway along the southern side of Eddy Avenue (in addition to the coach terminal island adjacent to Eddy Avenue) would be maintained during operation as a waiting area for coach passengers. Coach access would continue to be accessible for people with luggage or other less mobile persons. The retention of coach facilities in this location would assist in maintaining the viability of facilities (such as cafes, the visitor centre etc.) and the Sydney Coach Terminal during operation of the CSELR.</p>	303
<p>b) Concern about the impact on the Bourke Street Bakery. Concern that extended periods of construction, including limited pedestrian access could make the business unviable.</p>	<p>Potential impacts to the accessibility of this and other businesses along the proposed CSELR route, would be further assessed by the construction contractor(s), in consultation with adjacent business owners/managers. Where pedestrian access to a business is identified to be significantly impeded by the CSELR construction works, appropriate management measures would be developed and implemented. This could include (where appropriate) the use of way-finding signage to direct pedestrians around the construction worksite and entrances to businesses.</p> <p>Additionally, an access management plans would be prepared as part of the detailed design of the proposal (refer to mitigation measure W.4, provided in Chapter 8 of this Submissions Report). These plans would be prepared in liaison with businesses and landowners to understand their servicing and delivery requirements. These plans would identify and implement means of maintaining (and where possible enhancing) access to businesses for deliveries and servicing during both the construction and operational phases of the proposal.</p>	304, 315



Sub-issue	Response	Sub No.
<p>c) Only walking and light rail will be permitted in the pedestrianised zone and light rail users will likely congregate near the light rail stops, not between them, affecting the Dymocks building which is not close to a proposed stop.</p>	<p>The George Street pedestrian zone would generally result in a significant reduction in road traffic noise relative to the current existing situation due to the removal of general vehicular traffic. This would result in improved amenity for businesses along this section of George Street and is anticipated to encourage increased active use of this space, resulting in significantly increased pedestrian and cyclist movements along the full length of the corridor. This should improve opportunities for businesses, bars and restaurants along the CSELR alignment, including those associated with the Dymocks building.</p> <p>As noted in section 5.2.2 of the EIS (Volume 1A), within the City Centre Precinct, stops would be between approximately 180 metres and 450 metres apart. Whilst some businesses would be located between these stops, the distances between stops is not considered to be prohibitive for pedestrians to walk between stops to access businesses.</p>	347
<p>d) The financial impact of the potential loss of up to 350 vehicles per day from accessing the Juniors is estimated to be a reduction in revenue of between \$78,750 and \$135,000 per week.</p>	<p>Whilst it is not anticipated that the CSELR proposal would result in substantial financial disbenefits to local businesses, further discussion of the potential need for compensation to local businesses financially affected by the proposal is provided in section 5.14.11 of this Submissions Report.</p>	126
<b>Construction</b>		
<p>e) There is the potential for significant detrimental impacts to occur to the operations of Jacksons on George during the construction phase, as a result of perceived access constraints, changes to taxi pick-up and drop-off points, as well as the reduced amenity of the George Street construction zone. Lend Lease is particularly concerned about the impact on outdoor seating. Jacksons on George currently has a licence to place chairs and tables on the George Street footpath. Requests clarification from Transport for NSW in relation to the impact on this business.</p> <p>f) Generally supportive of the project, however has serious concerns about the adverse impacts of the construction phase on operations undertaken from the Dymocks Building – particularly the unavoidable and inevitable economic losses that will result. (347)</p>	<p>It is acknowledged that a number of businesses along the length of the proposal rely on pedestrian traffic for proportions of their trade/business. As noted in section 6.10.8 of the EIS (Volume 1A), for the majority of the main construction works, existing longitudinal pedestrian movements (i.e. pedestrian movements running parallel to the CSELR alignment) would be maintained along the existing footpaths. Transverse pedestrian movements (i.e. pedestrian movements crossing the CSELR alignment) would also generally be maintained at existing pedestrian crossing facilities either at signals or controlled by traffic controller.</p> <p>Construction impacts to those businesses reliant on the amenity of outdoor areas (i.e. outdoor dining, including that currently used by businesses such as Jacksons on George) would be managed through the CEMP (refer to the revised list of mitigation measures in Chapter 8 of this Submissions Report). A Business Reference Group would also be established, which would comprise independent representatives from the business community to advise the proposal on business concerns related to the proposal.</p> <p>Notwithstanding the potential impacts identified above, the operation of the CSELR would result in a number of benefits during the operational phase. For example, amenity would improve in the City Centre with the pedestrianisation of George Street. The pedestrianised area of George Street would reclaim this space for the public and unlock potential for new uses such as outdoor dining.</p>	125, 347

Sub-issue	Response	Sub No.
	Further discussion regarding the measures proposed to be implemented to minimise and manage adverse impacts associated with the construction of the CSELR proposal are provided in sections 5.10 ( <i>noise and vibration</i> ), 5.19 ( <i>air quality</i> ), 5.12 ( <i>visual amenity</i> ), 5.11 ( <i>planted trees</i> ) and 5.8 ( <i>traffic, transport and access</i> ). A summary of the proposed mitigation measures is provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report.	

### 5.14.9 General economic impacts

#### Summary of issues raised

Some submissions raised general concerns above economic impacts of the proposal including:

- Concerns about the expense to ratepayers before, during and after the light rail is introduced due to the ramifications for major traffic arteries.
- Concern that only 200 jobs will be created for the operational phase.
- Concern about the loss of bus driving jobs and that provision should be made to assist the employment transition of staff affected by the partial replacement of bus services by the light rail.
- General concern about economic impacts of the light rail on Sydney’s economy.

#### Submission number(s)

306, 316, 415

#### Response

Final levels of employment generation during operation of the CSELR proposal would be determined by the future Operator. Whilst the CSELR proposal may only generate approximately 200 jobs, major infrastructure projects (such as the CSELR proposal) can also have flow on or indirect secondary benefits to job generation through the raw material supply chain and jobs created as a result of the new infrastructure (such as food and beverage services, public facilities and services and related infrastructure projects). Secondary indirect jobs are not however included in the job generation calculations that were presented in the EIS.

With respect to the concern regarding job losses for bus drivers, the exact number of bus changes associated with the development of the CSELR and in conjunction with the additional changes to the South East bus network (outside the scope of the CSELR proposal) are yet to be finalised. As part of the reconfiguration of the Sydney City and South East bus networks, some existing services may be re-routed, resulting in the retention of drivers/jobs. Therefore, exact potential job losses for existing bus drivers would be determined in conjunction with the finalisation of these bus strategies, which are further discussed in section 5.8.1 of this Submissions Report.

As detailed in section 9.4 of the EIS (Volume 1A), the CSELR proposal is anticipated to result in a number of positive economic benefits for Sydney’s economy including: enhanced access for customers; increased capacity and development opportunities; potential increases in land values and commercial rents; and increased staff access, recruitment and retention potential.





Whilst it is acknowledged that there may also be some negative impacts associated with the CSELR proposal including traffic and access disruptions, the overall benefits are considered to outweigh the potential negative impacts. These negative impacts would be managed through the mitigation measures presented in the revised list of mitigation measures in Chapter 8 of this Submissions Report.

Concerns regarding the expense of the proposal to ratepayers as a result of the proposal are noted. Whilst the EIS acknowledged the potential economic impacts of the proposal construction (including traffic impacts), the operational benefits of the proposal, such as reduced traffic congestion (for example through the removal of up to 220 buses within the CBD), and various economic benefits (refer to Chapter 3 of the EIS, Volume 1A) are expected to outweigh the impacts during construction.

### 5.14.10 Impact on property values

#### Summary of issues raised

A series of submissions were made regarding the CSELR proposal impacts to property values. Issues raised by respondents included the following.

- Loss of access to off-street parking spaces for George Street residential properties will have a negative impact on property values. Where access to off-street parking is not maintained, residents should receive monetary compensation for the loss of property value, in addition to access to alternative parking provisions (e.g. alternative car park).
- Concern that the CSELR proposal will adversely impact property values.
- Concerned that the uncertainty about whether George Street residential property accesses will be maintained will adversely impact on property values. Commitments in the EIS regarding further negotiations with George Street residents should be specified in the Conditions of Approval.
- Concerned that the removal of trees in Randwick will lower property value.
- Concerned about lack of consideration for loss of value to properties along the route.
- Although the EIS suggests international experience has been that land value uplift near stations can occur post-announcement and pre-construction, there is no modelling of the likely scenario in Sydney. The uplift mentioned in the EIS could also take up to ten years. This is a long time period to weather the short term and potentially significant economic losses associated with construction.

#### Submission number(s)

32, 80, 135, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 200, 219, 255, 266, 312, 329, 347

#### Response

Movements in the value of a property are difficult to predict as they are subject to many variables including specific attributes of the property, capital improvements, demand and supply factors and other changes in the wider property market.

As discussed in section 9.4.2 of the EIS (Volume 1A), land values have a tendency to move in response to positive and negative influences in a given area. As such they can be seen as a barometer of the net effectiveness of various changes. Research suggests that land values are likely to increase in response to transport infrastructure improvements in inner city areas such as the Sydney CBD, Haymarket, Surry Hills, Randwick and Kingsford, as people are willing to pay more to live in accessible locations. The intensity of the effect would be related to the net transport benefit resulting from the new system.

Discussion regarding access arrangements to George Street properties is provided in section 5.8 of this Submissions Report, including commitments to further discussions regarding access to the George Street pedestrian zone. Further discussion of the potential impacts on planted trees is provided in section 5.11 of this Submissions Report.

Transport for NSW does not propose to compensate local residents for loss of local on-street parking. Assessment of parking supply indicates that sufficient parking is available to meet demand. Residents may need to walk further to access on-street parking. Further discussion regarding the impacts associated with parking loss are discussed in section 5.8 of this Submissions Report.

#### 5.14.11 Compensation for property acquisition and property valuations

##### Summary of issues raised

A series of submissions were made regarding property acquisition and property valuations. Issues raised by respondents included the following:

##### *Compensation for property acquisition*

- Request for independent property valuation to be undertaken both before and after the delivery of the CSELR proposal.
- Concerns about properties that will be devalued as a result of the proposal, with no compensation from the Government. Residents financially impacted by the CSELR should be compensated (including acquisition and properties located along the route).
- Suggests that the acquisition of apartments within the Olivia Gardens complex contravenes the right of the residents to live in Surry Hills.
- Concerned that the emotional, social and relocation costs/impacts of residents and property owners at Olivia Gardens have not been considered. These residents will have to move further from the city and endure higher transport prices as a result.
- Concerned about demolition of Olivia Garden apartments and that insufficient compensation amounts will be provided and that they would be forced to sell at below market prices.

##### *Property valuations*

- Concerned that property owners (including residents of Olivia Gardens) will not be offered fair market value and other adversely affected properties will not be compensated.



### Submission number(s)

80, 105, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 200, 215, 226, 232, 235, 236, 238, 242, 312, 315, 323, 417, 418, 437, 440, 447

### Response

#### *Compensation for property acquisition*

Consideration of the social impact that the acquisition of private property would have on the community is provided in Technical Paper 3 (*Social Impact Assessment*), Technical Paper 4 (*Economic Impact Assessment*) and section 13.9 of the EIS (Volume 1B).

It is acknowledged that the acquisition of private property could create disturbances and costs for existing residents/property owners and, in the case of residential properties, considerable distress and uncertainty to homeowners and renters. Compared to similar transport infrastructure projects, however, the amount of private property proposed to be acquired for the CSELR proposal is relatively small.

To minimise the impact associated with the acquisition of private property, Transport for NSW would endeavour to acquire any property through negotiation and purchase rather than through compulsory acquisition (in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*). Should any property need to be acquired it would be acquired in accordance with Section 55 of the *Land Acquisition (Just Terms Compensation) Act 1991*. This means that any property owners affected by the proposal would not only be paid fair market value, but other costs and losses such as disturbances to business operation due to relocation. This approach would aim to address any potential adverse economic impacts.

No additional compensation would be paid to businesses, residents or landowners in relation to amenity impacts or other indirect impacts of the proposal.

Section 5.10.7 of Technical Paper 3 (Volume 3 of the EIS) concluded that while property acquisitions may be disruptive to affected households, they would be compensated financially and there should be no obvious long-term effect at the community level. Though there would be short-term disruption to these owners and residents, there are likely to be minimal overall effects longer term on the occupants of these properties.

#### *Property valuations*

Property valuations would only be undertaken for businesses, residents or landowners that own private property to be acquired for the CSELR proposal. Section 5.14.10 of this Submissions Report provides discussion on the CSELR proposal's anticipated impact on property values.

Further discussion on the measures that would be implemented to minimise and manage adverse amenity impacts associated with the CSELR proposal is provided in sections 5.10 (noise and vibration), 5.19 (air quality), 5.12 (visual amenity), 5.11 (planted trees) and 5.8 (traffic, transport and access) of this Submissions Report. The proposed mitigation measures are provided in the revised list of mitigation measures in Chapter 8 of this Submissions Report.

### 5.14.12 Request for financial compensation – construction

#### Summary of issues raised

Several respondents requested compensation/financial relief to reduce the financial impact that the loss of tenants would have (or the need to reduce rent for existing tenants) due to disruptions caused by CSELR construction works and operation of the proposal.

#### Submission number(s)

96, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 262, 289, 292, 323, 326, 415, 422, 433

#### Response

No compensation would be paid to local businesses in relation to amenity impacts or other indirect impacts during the construction of the CSELR proposal. Refer to sections 5.14.1 to 5.14.5 of this Submissions Report for discussion on the measures that would be implemented to minimise adverse impacts on businesses during the construction of the CSELR proposal.

### 5.14.13 Social and economic impact assessment approach

A series of specific issues regarding the impact assessment approach for social and economic issues as part of the EIS was raised by some respondents, as summarised below.

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The increase in transport capacity described in the executive summary of Technical Paper 4 (<i>Economic Impact Assessment</i>) of the EIS was not quantified.</p>	<p>Discussion on the increase in transport capacity that would be achieved by the delivery of the CSELR proposal is provided in section 3.5 of the EIS (Volume 1A). In summary, the CSELR proposal would reduce buses in the CBD by approximately 180 in the morning's busiest hour. When combined with other bus network changes this would provide a reduction of approximately 220 buses.</p> <p>Access for the inner South East suburbs to the CBD would be improved through improved reliability of travel and efficient connection to major trip generators including the Moore Park sports and entertainment complex, Royal Randwick racecourse, UNSW, and the Prince of Wales and Sydney Children's hospitals.</p> <p>Continued population and employment growth in the region would be supported by providing up to 18,600 morning peak hour boardings in both directions in 2021, growing to around 23,400 by 2036.</p> <p>By introducing a more attractive and reliable service, the CSELR proposal would attract customers from existing modes of travel, and generate a reduction in private vehicle use. This would lead to improved travel times for continuing road users.</p> <p>The George Street pedestrian zone between Hunter Street and Bathurst Street would generate significant benefits for pedestrians with the removal of buses and other traffic. Improved travel times for pedestrians would result from reduced footpath congestion and reduction in the amount of time required to cross east-west streets.</p>	<p>111</p>



Specific issues raised in submissions	Response to specific issues	Submission No.
	Further discussion on the need for, and benefits of, the CSELR proposal is provided in section 5.3 of this Submissions Report.	
The macro-economic benefits from the construction of the CSELR proposal are not relevant to the assessment of the CSELR, in comparison to other transport infrastructure projects, as those benefits apply to every project.	<p>Chapter 6 of the Economic Impact Assessment (Technical Paper 4 of the EIS, Volume 6) noted a range of economic benefits that are anticipated to occur as a result of the construction and operation of the CSELR proposal. These benefits have been identified based on reviews of international literature and complementary studies, research and economic modelling.</p> <p>Whilst these benefits may also be generated by other transport projects, they would still provide an overall benefit to the community.</p>	111
Local socio-economic positive and negative impacts listed in the executive summary of Technical Paper 4 ( <i>Economic Impact Assessment</i> ) of the EIS are likely to have overall neutral effect with CSELR only generating possible shifts in the location of some of the social or business activities rather than generating a net increase in activities.	<p>The primary purpose of the CSELR proposal is to improve connections and capacity for travel between a number of Sydney's key gateways (such as Circular Quay), the heart of Sydney (i.e. George Street) and some of the City's key clusters of leisure, entertainment, education and medical services (including Moore Park, Randwick and Kingsford).</p> <p>Whilst the CSELR proposal may have overall positive macro-economic benefits along with other benefits (social) for local areas, the primary intention of the CSELR proposal is to provide an improved transportation system for Sydney.</p>	111
Collecting evidence about how commercial/retail centres are currently accessed and used is critical to ensuring there is a robust basis from which to consider the project's impacts. Data needs to be gathered that can inform aspects of the CSELR corridor.	<p>It is agreed that further data should be collected to inform more detailed management plans. Accordingly three key commitments were recommended by the EIS as follows:</p> <ul style="list-style-type: none"> <li>• The preparation and commitment to a CEMP. Such a plan would be a comprehensive document setting out in detail means to minimise the level of disturbance created as a result of the construction process to businesses, pedestrians, visitors and workers across the study area.</li> <li>• The preparation and commitment to access management plans. These plans would be prepared in liaison with businesses and landowners to understand their servicing and delivery requirements. The plans would then identify and implement means of maintaining (and where possible enhancing) access to businesses for deliveries and servicing during both the construction and operational phases of the proposal.</li> <li>• The preparation and commitment to a Business Landowner and Engagement Management Plan. The plans would support the preparation and effective implementation of the access management plan. It would also identify and implement means by which to keep businesses informed of the proposal and methods to proactively support businesses through the construction phase.</li> </ul> <p>Refer to mitigation measures W.2, W.4 and W.5 of the revised list of mitigation measures in Chapter 8 of this Submissions Report. Ongoing discussions with key stakeholders such as relevant councils would also be undertaken during detailed design to provide additional information regarding commercial/retain centres access.</p>	126

Specific issues raised in submissions	Response to specific issues	Submission No.																				
<p>Does not agree with the conclusions made in the EIS regarding the CSELR proposal's impact on the Surry Hills Precinct. The findings of the EIS were biased towards a favourable outcome for the project.</p>	<p>As part of the preparation of the EIS, both positive and negative impacts of the proposal on all precincts were considered, including the Surry Hills Precinct. In a holistic consideration of these impacts, it was considered that, when the mitigation measures proposed throughout the EIS are implemented, that the proposal would provide an overall positive outcome for both the local Surry Hills area and the wider Sydney region.</p>	122																				
<p>The Social Impact Assessment describes Surry Hills as a mostly childless suburb, stating that there are very few children between 5 and 19 years old. Requests clarification whether this assessment also considered children under 5 years of age? Surry Hills has a rapidly increasing population of school aged children.</p>	<p>Page 27 of the CSELR Social Impact Assessment stated that in Surry Hills, '...there are very few children between 5 to 19 years of age, suggesting that Surry Hills is popular for young professionals living alone or without children.' This statement is based on the following ABS Census data:</p> <table border="1"> <thead> <tr> <th></th> <th colspan="3">Percentage of Surry Hills population</th> </tr> <tr> <th></th> <th>5-9 years</th> <th>10-14 years</th> <th>15-19 years</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>2.4</td> <td>2.5</td> <td>3.6</td> </tr> <tr> <td>2006</td> <td>1.1</td> <td>1.3</td> <td>1.9</td> </tr> <tr> <td>2011</td> <td>1.4</td> <td>0.9</td> <td>1.8</td> </tr> </tbody> </table> <p>It is acknowledged the statistical data for children under five years of age was not presented in the EIS. However the assessment did take into account a general consideration of children under five years of age through consideration of factors such as potential impacts on child care centres.</p> <p>In the impact matrix for Surry Hills (page 64 of Technical Paper 3), the assessment suggests: 'Traffic access along Devonshire Street is likely to be severely limited during various phases of construction. This would have an impact on the childcare centre on Devonshire Street (Twinkle Twinkle) and a moderate impact on the childcare centre on Riley Street (St Vincent's Hospital Children's Centre)'.</p>		Percentage of Surry Hills population				5-9 years	10-14 years	15-19 years	2001	2.4	2.5	3.6	2006	1.1	1.3	1.9	2011	1.4	0.9	1.8	122
	Percentage of Surry Hills population																					
	5-9 years	10-14 years	15-19 years																			
2001	2.4	2.5	3.6																			
2006	1.1	1.3	1.9																			
2011	1.4	0.9	1.8																			
<p>Does not adequately assess the economic impacts of the construction or operational phases of the project.</p> <p>The result is significant adverse economic impact on Dymocks. The EIS does not adequately assess this or provide appropriate mitigation, management or compensation.</p>	<p>The Economic Impact Assessment (Technical Paper 4) was completed by experienced professionals in accordance with all relevant legislation and guidelines. The assessment was considered to be comprehensive and appropriate to the level of detail required to assess both the macro and local economic impacts of the CSELR proposal during both construction and operation phases.</p> <p>Prior to public exhibition, a preliminary assessment of document adequacy was completed by the NSW P&amp;I and various other government agencies (including technical papers) and was considered adequate for public display. A range of mitigation measures to be implemented during both construction and operation were identified throughout the impact assessment of the proposal and summarised in the revised list of mitigation measures in Chapter 8 of this Submissions Report.</p>	347																				



Specific issues raised in submissions	Response to specific issues	Submission No.
<p>The EIS does not describe how/when the proponent will engage with affected landowners through any post-approval management plans.</p>	<p>Section 12.9.4 of the EIS (Volume 1B), identifies that engagement with affected landowners regarding any post-approval management plans would occur during the construction and operational phases of the CSELR proposal to mitigate potential financial impacts to businesses. This would include undertaking the measures previously outlined in section 5.14.1 and section 5.14.2 of this Submissions Report.</p> <p>Business and Community Reference Groups would be established, which would comprise independent representatives from the business and local communities to advise the proposal on business concerns related to the proposal. Please also refer to section 2.4 of this Submissions Report.</p>	347
<p>Predominantly assesses the macroeconomic impacts resulting from decreased congestion in the CBD and surrounding suburbs as a whole and broader potential for economic benefits arising out of tourism, general health and environmental improvements.</p>	<p>The <i>Economic Impact Assessment</i> (Technical Paper 4) assessed a wide range of potential economic impacts, including macro-economic impacts (Chapter 6 of the <i>Economic Impact Assessment</i> and summarised in section 9.4 of the EIS (Volume 1A)) as well as a range of local economic impacts (Chapter 7 of the <i>Economic Impact Assessment</i> and summarised in sections 12.9, 13.9, 14.9, 15.9, 16.9 and 17.8 of the EIS, Volume 1B).</p> <p>This assessment was considered to provide a broad assessment of all potential economic impacts resulting from the CSELR proposal.</p>	347
<p>At a microeconomic level the EIS relies almost exclusively on a presumption that there will be an increase in the value of land along the route.</p> <p>The presumption of increased land values also arises from the findings of a Retail and Economic Benefit Appraisal for the pedestrianisation of George Street prepared by MacroPlanDimasi in 2013 which relies on the rental uplift and lower capitalisation rates attributable to properties in the Pitt Street Mall in Sydney as well as pedestrian malls in other cities. These examples cannot be directly compared to the proposal for several reasons:</p> <ul style="list-style-type: none"> <li>• The proposal will result in two pedestrian malls in close proximity to each other.</li> <li>• The proposal is for a significant length of George Street to be pedestrianised.</li> <li>• The rental incomes of properties in the cited cities are reflective of the presence of several retail anchors in close proximity to each other – not the case for the George Street mall.</li> </ul>	<p>As noted in section 5.14.10 of this Submissions Report, movements in the value of a property are difficult to predict as they are subject to many variables including: specific attributes of the property, capital improvements, demand and supply factors and other changes in the wider property market.</p> <p>Section 9.4.2 of the EIS (Volume 1A) discusses that land values have a tendency to move in response to positive and negative influences in a given area. As such they can be seen as a barometer of the net effectiveness of various changes. Research suggests that land values are likely to increase in response to transport infrastructure improvements in inner city areas such as the Sydney CBD, Haymarket, Surry Hills, Randwick and Kingsford, as people are willing to pay more to live in accessible locations. The intensity of the effect would be related to the net transport benefit resulting from the new system.</p>	347

Specific issues raised in submissions	Response to specific issues	Submission No.
<p>Does not provide any reasonable information describing the likely increase in pedestrian footfall along the pedestrianised zone or the period over which an increase can be expected. Increase in footfall is the single largest factor that drives retail sales in this type of CBD environment.</p>	<p>Whilst accurate information regarding the potential pedestrian footfall along the pedestrianised zone during operation has not been calculated, it is anticipated that the CSELR would provide an overall increase in pedestrians along George Street.</p> <p>There is currently significant congestion on George Street footpaths and parallel north-south routes such as Pitt Street. The George Street pedestrian zone would provide a significantly wider avenue for pedestrian movements. It is also expected to attract new development, including retail, commercial and hospitality uses, thereby providing additional incentives for pedestrian movements.</p> <p>The new pedestrianised zone would also experience a significant reduction in road traffic and associated noise relative to the current existing situation. It is anticipated that this would further encourage additional pedestrians to utilise this section of the CBD to move between the northern and southern ends of the city. The pedestrianisation of part of George Street would also contribute to connecting major public squares at Town Hall and Martin Place, connecting the east and west of the city and expanding the area accessible to the public.</p>	<p>347</p>

#### 5.14.14 Suggested mitigation measures

##### Summary of issues raised

A series of suggested mitigation measures issues were identified regarding the potential impacts to businesses during the construction of the CSELR proposal. These are summarised below.

- Economic losses likely to be sustained cannot be fully offset by physical and operational mitigation measures, but potential offsets which could lessen the impact include:
  - ▶ Any reasonable expenses incurred by Dymocks in ensuring the proponent and contractor abide by the requirements set out in this submission to be met in full.
  - ▶ Advertising rights to be provided during and post construction on hoardings, street furniture etc.
  - ▶ Provision by the proponent at its expense of alternative temporary accommodation if the adverse amenity impacts during construction render occupation of the building untenable.
  - ▶ Encouragement of contractors and proponent’s proposal staff to obtain leases within the building for the duration of the proposal and beyond.
- Mitigate construction economic impacts on pharmacies along the route. Options include promoting the use of smaller delivery vehicles and loading areas, developing alternative routes, access periods or arrangements for businesses, and communicating access arrangements to businesses and consumers.
- Transport for NSW should develop a plan to support the local commercial community through Haymarket local area fund for events/celebrations and local area marketing to ensure that Haymarket is still 'open for business' during construction.





### Submission number(s)

347, 398, 461

### Response

Mitigation measures suggested to mitigate potential impacts would be considered as part of the ongoing detailed design and construction planning for the CSELR proposal. Further discussion of potential compensation as a result of the CSELR proposal is provided in section 5.14.11 of this Submissions Report.

## 5.15 Ground and surface water

### 5.15.1 Surface water impacts

#### Summary of issues raised

A number of objections were received regarding the potential for the CSELR to result in flooding impacts along the CSELR route, in particular:

- flooding of Alison Road (once Wansey Road is sealed).
- flooding impacts, around Royal Randwick racecourse.
- general flooding and erosion impacts.

Additionally, concern was identified about the potential for oil run-off from stabling and maintenance facilities.

Concern was also raised that proposed changes to the levels at the site would lead to loss of significant storage for local or regional flood events, and at this stage it is unclear whether compliance with the *NSW Floodplain Development Manual* can be achieved.

### Submission number(s)

54, 59, 63, 64, 80, 222, 242, 255, 294, 327, 329, 443

### Response

Flooding and surface water impacts are addressed in section 10.2, Volume 1A of the EIS. Table 10.3 (p 10-6) identifies the following locations with existing known flooding issues along the alignment.

- Location 1: Location of the current housing complex bound by Nobbs Lane, Parkham Lane, Parkham Place and Olivia Lane
- Location 2: Proposed location for the Moore Park tunnel portal entrance
- Location 3: Anzac Parade between Lang Road and Dacey Avenue
- Location 4: Alison Road
- Location 5: Wansey Road

- Location 6: Anzac Parade
- Location 7: Rozelle maintenance depot site.

In the case of the proposed site for the Randwick stabling facility, the Kensington Centennial Park Flood Study indicated that the site is inundated in the one in five year average recurrence interval (ARI) flood event and all events beyond this.

It is acknowledged that existing flooding in these locations needs to be specifically addressed to ensure reliable and safe operation of the CSELR and to prevent increased flood risk and hazard for property and infrastructure in the vicinity. Detailed consideration of flood issues would be undertaken during the detailed design stage of the proposal. Mitigation measure G.1 (refer to Chapter 8 of this Submissions Report) requires the CSELR to be designed to ensure compliance with the *NSW Floodplain Development Manual* in flood affected locations. This would include flood modelling to assess changes to flood behaviour (depth, velocity and hazard) and the development of detailed design and other mitigation measures where required. The EIS includes commitments to avoid increases in flood levels above existing levels and not exceeding the capacity of the downstream drainage network and receiving environments (refer to section 10.2.4 of the EIS (Volume 1A)).

Operational protocols would be developed to address CSELR operation and passenger safety in the event of flooding occurring along the alignment. This has been added as a new mitigation measure in Chapter 8 of this Submissions Report (refer to mitigation measure G.3).

The CSELR would not lead to a significant increase in runoff as the increase in impermeable area created is small compared to the overall catchments. The main issues to be addressed are potential changes to flood behaviour where there is a need to modify drainage networks in particular locations, and managing the impacts of existing flooding on CSELR operations and safety.

In relation to water quality, the EIS (section 10.2.4, in Volume 1A) identifies that water quality measures would be implemented at the Randwick stabling facility and Rozelle maintenance depot during construction and/or operation to prevent pollution from:

- oils and lubricants
- degreasers
- wash-down water.

Contemporary good practice water quality management would be undertaken. Typical measures include appropriate containment of hazardous substances and other potential stormwater containment and stormwater treatment devices.

Erosion control measures would be employed to prevent soil erosion during construction in accordance with *The Blue Book – Managing Urban Stormwater: Soils and Construction* (Landcom 2004). Stormwater collected from worksites would be treated and discharged in accordance with current water quality guidelines to avoid potential contamination of local stormwater system impacts (refer EIS section 10.2.4, Volume 1A and Chapter 8 of this Submissions Report).



## 5.16 Land stability, soils and contamination

### 5.16.1 Contamination

#### Summary of issues raised

One submission raised concern over the lack of detail about remedial work.

#### Submission number(s)

220

#### Response

The EIS includes an outline remediation strategy (refer section 10.3.5 of the EIS, Volume 1A) and high level mitigation requirements for contaminants (refer Table 10.7), which were based on results of the Phase 1 Environmental Site Assessment (ESA) described in the EIS and best practice. A Phase 2 ESA is currently underway to inform the detailed design. This would further characterise the nature of potential contamination along the alignment and confirm the remediation strategy and management approach (refer mitigation measures Y.3, Y.4 and Y.5 in Chapter 8 of this Submissions Report).

### 5.16.2 Soil erosion

#### Summary of issues raised

Several submissions noted that the proposed CSELR design does not take into consideration the effect that the removal of trees will have on erosion and slope stability. In particular, the EIS overlooks role of trees in preventing soil erosion and flooding impacts.

One submission requested that it be demonstrated how adequate soil volumes will be provided to sustain mature tree growth within newly constructed landscapes, in particular where hardstand is increased and planting verges are decreased.

#### Submission number(s)

54, 59, 63, 64, 255, 329, 340

#### Response

Transport for NSW acknowledges that trees can have substantial benefits for soil erosion and stability. Although not specifically stated in the EIS, this issue has been considered as part of the definition design, and any impacts on soil stability and erosion are considered to be manageable through design and standard mitigation measures.

In the area of Alison Road and Wansey Road, existing planted trees may play a role in stabilising soil embankments. As described in section 6.11 of this Submissions Report, some design changes are proposed along Alison Road in order to minimise the impact on significant trees alongside the Royal Randwick racecourse. In Wansey Road, the existing retaining wall structure is proposed to be retained and a new wall constructed to support the new CSELR works and avoid impacts on soil stability from tree removal.

Transport for NSW also proposes a replacement tree strategy in the EIS based on Transport for NSW's *Vegetation offset Guide* (Transport for NSW 2013a), which includes replacing trees at ratio of between 2:1 and 8:1, depending on the size of tree to be removed and consultations with City of Sydney or Randwick Council. This would have associated benefits for soil stability.

In regard to flooding impacts resulting from tree removal, in an urban setting, planted trees do not significantly influence flood behaviour. The design of drainage systems and extent of impervious surfaces (pavement, roofs, etc.) are the dominant influences. With respect to the impacts of the CSELR on flood storage and compliance with the *NSW Floodplain Development Manual*, ongoing investigations are being undertaken as part of the detailed design which would ensure that the proposal would comply with all relevant guidelines and storage requirements for flood management. Further discussion of potential flooding impacts is provided in section 5.15 of this Submissions Report.

With respect to the concern raised regarding how adequate soil volumes would be provided to sustain mature tree growth within newly constructed landscapes, this would be determined during detailed design with input from a qualified arborist in addition to landscape architects to ensure that suitable conditions are provided for the proposed planting outlined in the CSELR Landscape Strategy (refer to Appendix F of the EIS, Volume 1C).

## 5.17 Aboriginal heritage

### 5.17.1 High Cross Park

#### Summary of issues raised

Two submissions noted that High Cross Park marks the junction of early walking tracks used by the Indigenous population and first European visitors. The park hosts important civic and community ceremonies – the loss of which will be a negative impact for the local community.

#### Submission number(s)

255, 329

#### Response

An assessment of potential impacts on Aboriginal heritage is included in section 10.5, Volume 1B of the EIS and Technical Paper 5 – *Heritage Impact Assessment* (EIS Volume 4).

High Cross Park is assessed as having archaeological potential for Aboriginal objects to be found and/or impacted (classified as Zone 1). This area would be subject to further investigation including consultation with local Aboriginal stakeholders and test excavation to reassess Aboriginal archaeological potential and the need for salvage excavation prior to construction.

An appraisal of cultural significance would form part of the consultation process with Aboriginal stakeholders.

Discussion of built and non-Indigenous heritage values of High Cross Park is provided in section 5.13 of this Submissions Report.



## 5.18 Biodiversity

### 5.18.1 Biodiversity impacts — construction

#### Summary of issues raised

Several submissions raised concern about the significant loss of habitat for the endangered Grey-headed Flying-fox and other native wildlife as a result of the removal of trees along the CSELR alignment, and the proposed Randwick stabling facility site, due to the removal of large Moreton Bay Fig trees. The submission noted that the Conservation Management Plan (Map 4) for the development control plan (DCP) for the redevelopment of Royal Randwick racecourse identifies these trees as 'a group of three mature specimens' and categorises them as being of 'exceptional significance'. Moreover, the habitat provided by these trees is becoming increasingly rare in the Sydney Basin and, without active measures being taken to preserve that habitat, the flying fox colony will be at heightened risk.

#### Submission number(s)

54, 59, 63, 64, 116, 129, 132, 195, 255

#### Response

The EIS provided an assessment of the CSELR proposal's impact on the Grey-headed Flying-fox and its habitat and other native wildlife, which included the removal of approximately 100 potential foraging trees along the nine kilometre length of roadside and park edge habitat. A significance assessment for the Grey-headed Flying-fox was provided in Appendix H of the EIS (refer to Volume 1C of the EIS). This assessment concluded that 'the Grey-headed Flying-fox is unlikely to be significantly impacted by the project'.

In regard to the impact on habitat for Grey-headed Flying-fox at the proposed Randwick stabling facility site, the three large trees in the stabling area are listed as being of 'exceptional significance' in the *Draft Royal Randwick Racecourse Conservation Management Plan (CMP)* (GML 2006), based on historic, aesthetic and amenity values. However, the CMP rating does not relate to ecological significance (e.g. from a habitat perspective). Although these trees are likely to be used as a foraging resource by the Grey-headed Flying-fox, they are not likely to comprise a roosting resource and are unlikely to be of any more significance from a habitat perspective than any other large mature Figs in the area.

As outlined in section 10.6.4 of the EIS (Volume 1A), impacts to fauna would be managed through the implementation of appropriate pre-clearing and construction protocols.

### 5.18.2 Biodiversity impacts — operation

#### Summary of issues raised

One submission noted that overhead wiring presents increased threats to wildlife along Alison Road, and requested wire-free running between the Racecourse stop and Wansey Road stop.

#### Submission number(s)

255

#### Response

Overhead wires can comprise a threat to wildlife due to the potential for collision and electric shock. Collision hazards, such as existing power lines and buildings with glass facades are common in the locality. Fast-flying birds and large soaring birds with limited manoeuvrability are most at risk of injury due to collisions. However, no rare or threatened bird species are likely to be at significantly increased risk of injury from the proposed overhead wires.

Due to their generally slow flight speed when low to the ground, Grey-headed Flying-foxes are not at high risk of injury due to collision alone; however, they are susceptible to electrocution on overhead power lines as a result of touching two or more electrified components or an electrical component and an earthed component. The risk of electrocution only occurs when the distance between components is less than the animal's wingspan. The exact configuration of the overhead wires for the proposal is yet to be determined; however, wires would be separated by in excess of the one metre wingspan of an adult Grey-headed Flying-fox. Considering this, the incidence of electrocution of flying-foxes on the overhead wires is likely to be low and is not likely to significantly increase the risk of mortality in the locality posed by the existing overhead power lines.

The reasons why wire-free running is not proposed outside of the George Street pedestrian zone are described in section 4.5.3 of the EIS (Volume 1A). Constraints include steep grades and LRV power demand. The extent of wire-free running could be increased during detailed design should innovation or technology improvements permit.

### 5.18.3 General biodiversity impacts

#### Summary of issues raised

One submission was concerned about the impact that the CSELR proposal will have on wildlife and the surrounding environment.

#### Submission number(s)

60

#### Response

Refer responses in sections 18.1 and 18.2. The EIS included an ecology assessment and significance assessments for threatened species with a moderate or higher likelihood of occurrence within the study area, including the Powerful Owl, Eastern Bent-wing Bat and Grey-headed Flying-fox. The proposal is not expected to have a significant impact on this wildlife. Detailed management and mitigation measures are proposed for biodiversity issues, as detailed in section 10.6.4 of the EIS (Volume 1A).



## 5.19 Air quality

### 5.19.1 Construction air quality impacts – dust

#### Summary of issues raised

A number of submissions raised concerns regarding dust impacts during construction of the CSELR. The issues are summarised as follows:

- Concerned about adverse construction dust impacts to the Sydney Girls High School. Impacts are to be fully mitigated to the greatest extent possible by the terms of the proposal and any approval. This should include scheduling of potentially disruptive work and movement out of school and travel times (preferably during holidays), frequent mandatory liaison with the school and strict measures to minimise potentially adverse effects.
- Concerned about dust impacts during the construction of the proposed Randwick stabling facility.
- Construction of the CSELR will produce significant levels of dust, which will affect the outdoor seating area for the Bourke Street Bakery. Dust mitigation devices must be installed around the worksite to protect the patrons and pedestrians.
- Concerned about dust during construction for employees and customers.
- Concerned about dust during demolition of Olivia Gardens. Requested appropriate screening between Olivia Gardens and surrounding properties to protect from dust and particles.
- Concerned about dust emissions during construction along Anzac Parade.

#### Submission number(s)

67, 80, 269, 328, 361, 364, 388, 396, 404, 476

#### Response

An air quality impact assessment for the CSELR proposal is provided in Volume 4 of the EIS (refer to Technical Paper 7 – *Air Quality Impact Assessment*) and section 10.7 of the EIS (Volume 1A). This assessment includes air quality impacts associated with the generation of dust and emissions from the operation of on-site machinery, excavation works, materials handling and material storage. An indicative estimate of potential dust emissions (in terms of total suspended particulates, PM<sub>10</sub> (particulate matter with a diameter less than 10 micrometres) and PM<sub>2.5</sub> (particulates with a diameter less than 2.5 micrometres) during key dust generating construction activities is provided in Table 10.17 of the EIS. The EIS concludes that particulate emissions generated during the construction of the CSELR proposal are considered to be manageable through the application of standard mitigation measures.

While it is acknowledged that there would be a temporary increase in dust from earthworks and particulate emissions from the movement and use of on-site machinery and traffic during construction, these issues are typical of infrastructure projects and should be able to be successfully managed using standard environmental management measures. Measures that Transport for NSW proposes to implement to manage construction air quality impacts are listed in section 10.7.4 (Volume 1A) and the revised list of mitigation measures in Chapter 8 of this Submissions Report.

These measures would be incorporated into a CEMP to be prepared for the construction phase of the proposal.

As discussed in section 2.8 of the EIS (Volume 1A) and also Chapter 2 of this Submissions Report, Transport for NSW is committed to community and stakeholder engagement beyond the planning phase through detailed design, construction and commission of the CSELR. This would include consultation on the timing and nature of potentially disruptive works.

It is not considered feasible to limit construction activities in the vicinity of Sydney Girls High School to within school holidays due to the significant impact on the construction program. The nominated construction contractor would maintain communication with both the Sydney Boys and Girls High Schools throughout the construction of the CSELR proposal in order to identify opportunities to minimise impacts such as dust from required earthworks.

## 5.19.2 Construction air quality management

### Summary of issues raised

One respondent noted that the CEMP should include the following measures:

- excessive dust generating activities outside of the core trading hours of 8am to 6pm Monday to Sunday and after late night trading in peak trading periods
- all plant, equipment and vehicles to be shut down when not in active use
- ongoing dust monitoring to be undertaken at the proponent's expense to ensure compliance
- respite periods where no activity is undertaken to be provided during extended dust generating activities
- minimise the time where sub soils are exposed
- use of watering down and wash facilities
- materials to be covered to minimise dust impacts
- a program of regular clean of the construction site and footpaths to be agreed with the landowner and included in the CEMP or a Dust Management Plan
- the cost of all additional cleaning, maintenance and repair of the building arising from dust impacts to be borne by the proponent
- the proposal approval and the CEMP or Dust Management Plan to include a mechanism for alternative dispute resolution in the event that landowners are not satisfied with the management of dust impacts and the contractor's adherence to key performance indicators (KPIs).





### Submission number(s)

347

### Response

As described in Chapter 18 of the EIS (Volume 1B), CEMP would be prepared for the construction phase of the CSELR proposal. The CEMP would provide a centralised mechanism through which all potential environmental impacts would be managed. The CEMP would document mechanisms for demonstrating compliance with the commitments made in this EIS, this Submissions Report, as well as any other relevant statutory approvals (e.g. conditions of approval, licences and permits).

The CEMP would outline a detailed framework for the management of environmental impacts during construction, including a range of environmental issues including air quality and dust management (including dust suppression). The CEMP would be prepared by the managing contractor(s) and endorsed by the project Environmental Management Representative (EMR) to the satisfaction of the Director-General of the P&I (refer to mitigation measures in Chapter 8 of this Submissions Report).

As part of the CEMP, a range of mitigation and management methods, including those for air quality and dust management, would be developed which would be generally consistent to those measures outlined in the submission.

## 5.19.3 Operational air quality impacts

### Summary of issues raised

The following operation air quality issues were raised in submissions:

- Concerned about the air quality impact that the proposed Randwick stabling facility will have on residential properties on Doncaster Avenue.
- Light rail will adversely impact the 'healthy clean green' environment.
- Increased stop-start traffic congestion will create increased pollution levels.

### Submission number(s)

129, 153, 427

### Response

An air quality impact assessment for the CSELR proposal was provided in Volume 4 of the EIS (refer to Technical Paper 7 – *Air Quality Impact Assessment*) and section 10.7 of the EIS (Volume 1A). This assessment included a qualitative assessment of air quality impacts anticipated to be associated with the operational phase of the CSELR, which included:

- particulate emissions caused by the entrainment (lift-off) of surface particles along the CSELR corridor
- particulate emissions caused by wheel and rail wear

- particulate emissions caused by traction sanding
- gaseous emissions from maintenance vehicles and equipment
- fugitive emissions from fuel and chemicals stored at the Rozelle maintenance depot and Randwick stabling facility (e.g. liquid petroleum gas, diesel, lubricating oils, cleaning chemicals).

The EIS concluded that particulate emissions from the CSELR during the operational phase are expected to be relatively minor and would not significantly affect local air quality. Gaseous emissions from maintenance vehicles and equipment would be intermittent and transient in nature, and would be manageable through the application of standard mitigation measures. However, the EIS noted that the CSELR proposal would be expected to have a positive net benefit on local air quality in some areas like George Street, due to the reduction in buses and associated exhaust emissions in the Sydney CBD. Fugitive emissions, including those relating to potential traffic impacts as a result of the CSELR, are anticipated to be minor and would be readily manageable through the application of standard mitigation measures.

Potential air quality impacts associated with the operation of the CSELR proposal would be managed through the implementation of the following environmental management measures:

- Street sweeping of the CSELR alignment would be undertaken where an excessive build-up of material has occurred.
- Ancillary maintenance service vehicles and equipment would be maintained and operated in accordance with the manufacturers requirements.
- Unnecessary release of air pollutants would be avoided from the Rozelle maintenance depot and Randwick stabling facility.

## 5.20 Utilities and services

### 5.20.1 Construction impacts – utilities and services

#### Summary of issues raised

Issues relating to potential impacts to utilities and other services during construction were raised by a number of respondents. These issues included:

- The potential failure of sub-surface utilities (and associated emergency works to repair such utilities) on Devonshire Street has the potential to disrupt light rail services, unless these assets are relocated.
- Request for advance consultation relating to any disruptions to electricity, water and/or other services during construction and operation.
- Concerned about the potential impacts to utilities, noting that all infrastructure services should be uninterrupted throughout the construction period.
- Unobstructed access to hydrant points is required which should remain operational throughout. Street lighting should also be maintained.



- Question as to whether any consideration has been given to the practical implications that construction will have on the existing electricity, water, gas, sewerage and telecommunications infrastructure along the route. Seeks assurances that compensation will be provided in the event of any interruption. There are a number of utilities that will need to be relocated prior to the tracks being constructed. This will result in several years of disruption whilst these services are being relocated.
- Request that the NSW Government takes the opportunity created by road works to work with the relevant power company to relocate overhead power lines underground.
- During construction, power spikes may occur. Guarantee is sought that compensation will be provided for any damage caused to property 2–24 Rawson Place as a result of a power spike.
- Request that contingencies are put in place for the loss on essential infrastructure during construction. This would include services such as electricity, gas, telecommunications and water. Request this information is provided for Dymocks' review before project approval is granted.
- Concerned about cutting through power cables for traffic lights.
- The Private Clinic's (120 Devonshire Street) connection to the sewer main is located beneath Devonshire Street on the opposite (southern) side of the road. The connection to the sewer main will need to be re-routed to a new connection point.
- Seeks assurance that time related penalty clauses will be built into contracts with utility providers to ensure work is expedited so disruption to businesses is limited.

#### Submission number(s)

1, 88, 125, 184, 196, 269, 276, 294, 334, 342, 347, 415, 422, 436, 476

#### Response

Transport for NSW has consulted with the major utility providers during development of the conceptual design for the CSELR. Desktop investigations have been undertaken including dial-before-you dig enquiries (refer sections 5.2.11 and 10.8, Volume 1A of the EIS). Field investigations to locate utilities are currently in progress to inform the detailed design.

Interface agreements would be negotiated with utility providers in relation to protection, relocation, or upgrade of assets due to construction of the CSELR. Once finalised, these agreements would be incorporated into the design and delivery of the CSELR proposal. Securing active cooperation from all affected utility providers would help ensure relocation and/or protection of utilities can be designed, agreed and constructed in an efficient manner, and ongoing maintenance and access arrangements can be agreed for the construction and operation phases. These agreements would also clarify responsibility for affected assets.

Construction sequencing of the CSELR would be planned to minimise disruption to existing services. Typically disruptions would occur outside normal business hours and residents and businesses would be advised prior to works being undertaken. Transport for NSW would work closely with utility providers to ensure any disruptions are minimised.

Construction impacts on services and utilities could include potential damage to services and utilities as well as injury to persons (construction workers or the community) in the unlikely event that cables, mains or pipelines are accidentally damaged during excavation, plant movement or general civil works. Investigations would be carried out during the detailed design phase to ensure that all appropriate measures are in place to minimise the potential risks to existing utilities and services prior to commencement of construction works.

Access would be maintained to building hydrant points during construction and operation. Street lighting would also remain operational during construction. Opportunities would be considered to adopt multi-use poles to minimise obstruction and visual clutter at street level.

It is not intended that power lines along the CSELR alignment (other than those specifically required for CSELR) be relocated underground as this would add significant additional cost to the proposal and is outside the scope of this proposal.

Incentives for the nominated construction contractor(s) may be considered in the construction contract for the CSELR proposal, including works associated with utilities and utility agencies. Any incentives would be determined by the NSW Government and Transport for NSW and are outside the scope of the EIS process.

Although complex, the interactions with existing and proposed services and utilities are expected to be manageable through the process of interface agreements and ongoing consultations with utility and service providers. Consultation with the City of Sydney, Randwick City Council and other utility providers would be undertaken during detailed design to ensure that appropriate measures are taken regarding the potential integration of future utilities requirements along the alignment and to ensure that the CSELR proposal does not preclude the development or installation of any proposed utilities.

## 5.20.2 Operational impacts – utilities and services

### Summary of issues raised

Operational issues relating to utilities and other services were raised by some respondents. These issues included:

- Overhead cabling that crosses Devonshire Street near Ward Park is not shown in artists' impressions of light rail.
- Level 16 of the NAB building houses a Sydney Energy Substation which can only be accessed from the building's forecourt area facing George Street. The forecourt area is required to crane items/equipment into the building.
- Emergency vehicles may be slowed down and cause dangerous situations with large numbers of students attempting to cross Anzac Parade.
- Ongoing consultation is underway and is required to be continued with City of Sydney regarding garbage contractors and collection for hotels along the alignment.

### Submission number

142, 300, 415, 440, 457, 460



## Response

The artists impressions provided in the EIS are labelled as indicative only and are intended to provide an indication of the key features of the proposal across the CSELR alignment. As described in section 5.5.5 and 5.5.13 of this Submissions Report, power lines along the CSELR alignment would be aboveground, unless it is identified to be feasible and economical to install these services underground during construction. Where feasible, consideration would be given to combining power lines, telecommunications cables and LRV overhead wiring on common poles along the alignment to reduce visual clutter and reduce potential impacts on existing awnings and footpaths (refer mitigation measure C.2 in Chapter 8 of this Submissions Report).

Transport for NSW would consult the relevant utility provider and AMP Capital to confirm future access arrangements to the identified substation from the George Street pedestrian zone. The pedestrian zone would be accessible for service vehicles, but depending on the nature of the access or work required, this access may need to be outside normal business hours.

Emergency vehicles would continue to have access to all parts of the alignment throughout operation. The proposed addition of a pedestrian bridge across Anzac Parade (refer to section 6.9 of this Submissions Report) would minimise any potential conflicts between students crossing this road and emergency service (or other) vehicles.

Consultation with services operators, including garbage collection services, would continue to be undertaken throughout the detailed design of the proposal in conjunction with the City of Sydney and Randwick City Council.

### 5.20.3 Management and mitigation – utilities and services

#### Summary of issues raised

One submission noted that at the completion of the CSELR proposal at the Moore Park Precinct, Sydney Swans would require replacement light poles and lighting of 300 Lux for the Tramway Oval. Where possible, replacement light poles should be integrated into any safety netting installed pre or post-construction.

#### Submission number

275

#### Response

The impact of the CSELR on the AFL Training Oval (Tramway Oval) has been reduced as a result of design changes, as outlined in section 6.8 of this Submissions Report. As a result, the number of light poles impacted as also been reduced. Transport for NSW would replace or re-locate any impacted lighting to a standard equivalent to what currently exists. Transport for NSW would continue discussions on this issue and other works proposed at the AFL Training Oval during detailed design.

## 5.21 Greenhouse gases

### 5.21.1 Greenhouse gas emissions from vegetation clearing

#### Summary of issues raised

Some submissions noted that the EIS did not consider the negative impact that the loss of trees would have on greenhouse gas emissions. It was also noted that trees have environmental benefits, including improving air quality.

#### Submission number(s)

255, 329, 375

#### Response

Section 10.9.3 of the EIS (Volume 1A) notes that greenhouse gas emissions would be generated during the construction of the CSELR proposal as a result of (amongst other construction activities) vegetation clearing. This would comprise direct emissions from the decomposition of vegetative material and soil carbon releases.

It is acknowledged that no quantitative assessment of greenhouse gas emissions associated with the removal of planted trees was undertaken as part of the EIS. As outlined in section 4.1 of Technical Paper 8 (Volume 4), the net loss of carbon sequestration as greenhouse gas emissions as a result of vegetation loss was not estimated, as the quantity of emissions was below the threshold of the 'materiality test'. Therefore it is likely to be inconsequential to the estimate of total greenhouse gas emissions from the proposal.

A materiality test is defined as an exclusion test where, if it is reasonably expected that an activity would account for less than five per cent of the total emissions (for example, emissions from maintenance machinery), or if more detailed data would not likely alter the results greatly, then that item has not been considered.

Notwithstanding the above, Transport for NSW would undertake a more detailed greenhouse gas assessment (involving an inventory of Scope 1, 2 and 3 emissions) when more accurate information is available during the detailed design development stage. This assessment would be undertaken in accordance with Transport for NSW's (2013d) *Sustainable Design Guidelines for Rail (Version 2.0)*.

### 5.21.2 Greenhouse gas emissions from the light rail energy source

#### Summary of issues raised

One submission raised concern that LRVs do produce pollution but just move it elsewhere – for example the source of their electricity would mostly be coal fired power stations which produce much carbon dioxide. Gas-powered buses were suggested as an alternative.

#### Submission number(s)

284



## Response

As noted in the EIS (Chapter 7 in Volume 1A, Transport for NSW would strive to offset 100 per cent of operational energy requirements for the CSELR proposal through the purchase of renewable energy offsets. Where renewable energy use is above (approximately) 31 per cent, the light rail system would have lower carbon emissions than an average city bus operating on the Sydney city network. In addition to the objective of offsetting operational energy requirements, the EIS also commits to offsetting 20 per cent of construction energy requirements for building the CSELR.

Further clarification on energy efficiency measures for the proposal is provided in section 7.2 of this Submissions Report.

## 5.22 Climate change and adaptation

### 5.22.1 Global warming

#### Summary of issues raised

One submission suggested that global warming has been underestimated in the EIS.

#### Submission number(s)

297

#### Response

These comments do not relate directly to the CSELR proposal. However, as noted in section 10.9.1 of the EIS (Volume 1A), there is a general consensus amongst climate experts that climate change is occurring and that most of the warming observed over the last 50 years is attributable to human activities that have increased atmospheric concentrations of greenhouse gases (International Panel on Climate Change (IPCC) 2007a).

The *IPCC Fourth Assessment Report: Climate Change 2007* (IPCC 2007a) states that carbon dioxide (CO<sub>2</sub>) is the most important anthropogenic (sourced from human activities) greenhouse gas. Other important greenhouse gases include water vapour (H<sub>2</sub>O), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and ozone (O<sub>3</sub>) (IPCC 2007b).

The global warming potential of each greenhouse gas (i.e. the amount of heat that a particular greenhouse gas traps in the atmosphere) is measured relative to that of CO<sub>2</sub> (which has a global warming potential of one). For example, methane is a greenhouse gas with a global warming potential 21 times greater than that of CO<sub>2</sub> (Department of Climate Change and Energy Efficiency 2012).

For the purposes of the EIS, a range of greenhouse gases were assessed for their potential release as a result of the construction and operation of the proposal. It was concluded that the operation of light rail services would result in increased greenhouse gas direct emissions through increased electricity use; however, this increase is likely to be offset when considered in the context of the expected modal shift from private vehicles to public transport. Greenhouse gas emissions would also be generated during the construction of the CSELR proposal given the energy-consuming activities involved.

The greenhouse gas assessment undertaken as part of the EIS (Technical Paper 8 in Volume 4 of the EIS) is considered to be suitable to assess the potential impacts of the CSELR proposal and therefore the potential impacts to overall global warming.

## 5.23 Waste, energy and resources

### 5.23.1 Use of renewable energy for the CSELR proposal

#### Summary of issues raised

Some submissions suggested that renewable energy should be used for the CSELR proposal and that 'green power' should be committed to as a means of enhancing the sustainability credentials of the proposal. Where electricity demand cannot be met through the use of solar panels (such as at stops and for use in cooling LRVs etc.), consideration should be given to renewable energy procurement over and above the mandatory requirement under the Renewable Energy Target. As opposed to carbon offsets, such renewable energy procurement promotes the development of Australia's renewable energy industry in addition to reducing or avoiding emissions. Concern regarding peak oil was also raised.

#### Submission number(s)

224, 297, 345, 373

#### Response

As outlined in Table 7.3 of the EIS (Volume 1A), Objective 5 (renewable energy offsetting) of the CSELR proposal Sustainability Strategy requires the following action be undertaken: Striving to offset 100 per cent of the operational electricity requirements for the CSELR proposal through both integration of renewable energy generation within the proposal and purchase of renewable energy offsets (such as Green Power).

As discussed in Table 7.4 of the EIS (Volume 1A), Transport for NSW has committed to offsetting 20 per cent of construction energy requirements and would strive to offset 100 per cent of operational energy requirements for the CSELR proposal through the purchase of renewable energy.

Sustainability initiatives considered for the CSELR proposal are listed in Table 7.5 of the EIS (Volume 1A) and, in relation to renewable energy, include the following:

- Maximise use of solar panels or other renewable energy opportunities – Opportunities to incorporate on-site renewable energy generation would be investigated during detailed design.
- Offset carbon emissions from 100 per cent of operational energy use and 20 per cent of construction energy requirements – to be investigated by the Operator.

The sustainability initiatives listed in Table 7.5 of the EIS would be used to guide the development of the proposal, with the aim of maximising the sustainability outcomes during the planning, construction and operational phases of the CSELR.





In addition, environmental management measure J.2 (refer to Chapter 8 of this Submissions Report) states that opportunities to reduce operational greenhouse gas emissions would be investigated during detailed design. These opportunities could include purchasing electricity derived from a renewable energy source (where available), the use of regenerative braking on rolling stock, promoting the selection of energy efficient rolling stock, the use of photovoltaic powered lighting at stops and undertaking a traction power assessment. The sustainability initiatives documented in Table 7.5 of the EIS would be regularly reviewed, updated and implemented throughout the design development, construction and operational phases.

### 5.23.2 Demand on local energy supplies during the operation of the CSELR

#### Summary of issues raised

One submission raised concern that the operation of the CSELR will draw electricity from the existing local electricity grid. Assurance was sought that light rail construction and operation will not reduce reliability or significantly consume spare capacity available within the local grid.

#### Submission number(s)

276

#### Response

Ausgrid has been consulted in relation to the electricity requirements to operate the CSELR. The existing local electricity network has sufficient capacity to meet the electricity requirements. An interface agreement with utility providers, including Ausgrid, is being developed and would be incorporated into the design and delivery of the CSELR proposal. Consultation with Ausgrid would continue as part of this process during the detailed design phase.

### 5.23.3 Generation of construction waste from the CSELR proposal

#### Summary of issues raised

General concerns were raised about the generation of waste (and its subsequent disposal) during the construction of the proposal, including:

- general waste generated during the construction of the proposed Randwick stabling facility
- demolition waste from residential buildings and the disposal of this waste at a landfill site.

#### Submission number(s)

80, 219

## Response

As discussed in section 7.4.3 of the EIS (Volume 1A), a waste management plan would be prepared as part of the CEMP. Construction waste would be managed through the waste hierarchy established under the *Waste Avoidance and Recovery Act 2001*, which comprises the following principles:

1. *Avoidance of waste*: Minimising the amount of waste generated during construction by avoiding unnecessary resource consumption (e.g. avoiding the use of inefficient plant and construction equipment and avoiding materials with excess embodied energy, waste and excessive packaging).
2. *Resource recovery*: Reusing, reprocessing and recycling waste products generated during construction to minimise the amount of waste requiring disposal.
3. *Disposal*: Where resources cannot be recovered, disposing of them appropriately to minimise the potential adverse environmental impacts.

All waste requiring off-site disposal would be classified in accordance with the Office of Environment and Heritage's (2009) *Waste Classification Guidelines* prior to disposal.

Procurement of materials would be undertaken on an 'as needed' basis to reduce over-ordering and wastage, and exploring opportunities to reuse materials, where applicable.

The CSELR proposal would strive to achieve a diversion rate for construction waste from landfill of 95 per cent of waste by volume, with a minimum target of 90 per cent of waste by volume. The proposal would also strive to reuse 100 per cent of paving and other reusable materials or facilitate reuse of such materials.

Waste, energy and demand on resources during the operational phase of the proposal would be managed in accordance with the future Operator's environmental management system.

## 5.24 Hazards and risks

### 5.24.1 Hazards and risks – construction

#### Summary of issues raised

Concern was raised about potential construction hazards associated with undertaking works in the vicinity of the Sydney Girls High School. The respondent requested that impacts are to be fully mitigated to the greatest extent possible by the terms of the proposal and any approval. This should include scheduling of potentially disruptive work and movement out of school and travel times (preferably during holidays), frequent mandatory liaison with the school and strict measures to minimise potentially adverse effects.

One submission raised concern about safety, in particular during construction, including potential workplace health and safety issues for employees and customers along the CSELR route.



Safety concerns were also raised regarding the utilisation of the Moore Park bus loop service road as a daily bus route throughout construction, with particular respect to the following:

- Safe access to/from the training field over the bus loop road/
- The need to establish separation via fencing and netting within the existing oval before opening the road as a regular bus route.

Other comments on hazards and risks during construction include:

- The EIS defers detail relating to construction management, risk mitigation and management and contingencies to the post–approval stage. Based on consultation with Transport for NSW, it is understood that these will be negotiated between the proponent and contractor.
- Safety concerns were identified regarding the potential waste materials generated from the demolition of Olivia Gardens including the potential for asbestos or other harmful materials.
- Concerned about the potential for soft ground causing a sinkhole.

#### Submission number

67, 219, 269, 319, 347, 353, 415

#### Response

The EIS acknowledges the potential for safety hazards to occur throughout the construction period. Undertaking construction works close to sensitive community facilities, including schools and open spaces such as the existing AFL Training Field, is recognised in the EIS as having potential for hazards and risks. It is noted that design changes have been proposed in the Moore Park area (as outlined in section 6.8 of this Submissions Report) to minimise impacts to sensitive receivers in this area.

As indicated in the EIS, hazards and risks associated with construction would be identified prior to construction and managed by the construction contractor(s) as part of the CEMP (refer to mitigation measure AF.1 and AF.2 in Chapter 8 of this Submissions Report). The community would continue to be consulted throughout the construction phases of the proposal (refer to section 2.4 of this Submissions Report). Newsletters and other communication tools would be distributed to keep the community informed of construction progress, activities and impacts including the scheduling of potentially disruptive work. All worksites associated with the construction of the CSELR, including works to the existing bus loop, would be appropriately fenced off throughout the construction period to prevent access to the general.

Consultation would be undertaken with Sydney Girls High School with respect to scheduling of work and managing potential hazards and risks arising from the CSELR.

With respect to the potential generation of asbestos or other potentially harmful materials as part of the demolition of Olivia Gardens (or elsewhere across the remainder of the CSELR proposal) during construction, a review of potential environmentally sensitive receptors was also undertaken as part of the Phase 1 Environmental Site Assessment (ESA). The ESA identified the potential for asbestos along the CSELR alignment, including within Surry Hills.

As part of the detailed design, a Phase 2 ESA would be undertaken to further characterise the nature of potential contamination along the proposed CSELR alignment (refer to mitigation measure Y.3 in the revised list of mitigation measures in Chapter 8 of this Submissions Report). This would identify appropriate management measures to remove any asbestos or other hazardous materials identified.

A high level assessment of the potential soils and geology along the route of the CSELR proposal was undertaken as part of the EIS and is presented in section 10.3 of the EIS (Volume 1A). With respect to the concern regarding potentially soft ground along the CSELR alignment, additional detailed geotechnical investigations are currently being undertaken by Transport for NSW. These investigations would confirm the existing geology along the proposed alignment and any potentially hazardous ground conditions. Once these investigations are completed, appropriate mitigation measures would be put in place to manage any potentially hazardous (i.e. loose or soft) soils or other geological conditions.

## 5.24.2 Collisions, conflicts and accidents between road users

### Summary of issues raised

A series of concerns were raised regarding the potential safety of the CSELR with respect to the potential for collisions, conflicts and other accidents as a consequence of the proposal operations. Specific concerns regarding potential conflicts included:

- General safety concerns regarding cars and trucks sharing and crossing pedestrian space along George Street.
- Safety concerns raised about the number of accidents that could occur as a result of collisions between LRVs and other users including vehicles, pedestrians, cyclists, buses and delivery vehicles.
- General concerns about the unsafe nature of light rail.

### Submission number

72, 186, 235, 240, 301, 317, 348, 445

### Response

The safe interaction of LRVs with other road users has been a major consideration of the design development to date. For the majority of the proposed route, LRVs would operate within an exclusive right-of-way; however LRVs would share the right of way with buses at a limited number of locations including between the Kingsford stop and UNSW along Anzac Parade.

The EIS recognised the potential for collisions between road vehicles and LRVs in locations where road traffic would be maintained adjacent to the CSELR proposal. The integration of existing vehicles and the movement of LRVs through the existing road network has been cohesively managed in many major cities both locally and internationally (such as Strasbourg, France and Linz, Austria, Melbourne and Adelaide). Best practice measures from these and other examples would be applied to managing potential hazards or risks associated with the CSELR proposal.



Hazards and risks associated with accidents and collisions during operations are considered to be manageable through design (e.g. incorporation of adequate safety provisions into the design of CSELR infrastructure), application of community education programs (advertisement of potential proposal related safety risks) and standard mitigation measures such as emergency response plans.

A road safety audit would also be prepared during detailed design, which may recommend additional measures.

The EIS also recognised the potential for accidents and collisions between pedestrians and/or local vehicles and LRVs moving through highly pedestrianised areas along the CSELR route, such as the George Street pedestrian zone or the Chalmers Street pedestrian zone. This is addressed in greater detail in section 5.24.3 of this Submissions Report.

### 5.24.3 Collisions and conflicts with pedestrians/cyclists

#### Summary of issues raised

A series of concerns were raised regarding potential safety issues resulting from the CSELR with respect to the potential for collisions and conflicts with pedestrians and other adjacent users (such as cyclists and people using nearby parks). Specific concerns regarding potential conflicts with pedestrians included the following:

- Concerned regarding the proposed locations of light rail stops in the Anzac Parade median, due to the potential safety risks these station locations will pose for pedestrians. Pedestrians will have to dodge buses, cars and LRVs to access the stop from the footpath. Having safety campaigns will not change public behaviour. People will still run to catch the bus or light rail when they are running late.
- Pedestrians will be exposed to traffic without a car parking buffer, with the proposed removal of kerbside parking. The safest transport systems are separated – trains, vehicles, pedestrians etc. The current proposal has unacceptably high risks for passengers, pedestrians and other parties.
- Concerned about pedestrian and cyclist safety, with the shared path proposed to run directly alongside the alignment. Also concerned about the proposed width changes to the shared pedestrian and cycleway. Notes that a cycleway in Doncaster Avenue, linking with a dedicated cycleway in High Street and leading on to Alison Road and Centennial Park could be more easily and safely used.
- The Devonshire Street alignment is unsafe for pedestrians, due to narrow street width. Notes especially the risks for elderly people, children, disabled people and drug and alcohol affected people.
- Concerned about children's safety around tracks, including children using open spaces such as Ward Park, in addition to school children along the route.
- Concerned about pedestrians crossing the street in front of LRVs, not at dedicated crossings. This would include patrons coming out of licenced venues such as the Shakespeare Hotel in Surry Hills and the Royal Hotel in Randwick. Barriers should be installed to protect patrons from LRVs passing.
- Concerned about the proximity of light rail tracks to footpaths.

- Concerned about the safety of Ward Park stop as commuters will have to cross train lines.
- Concerned about the safety of pedestrians and light rail commuters.
- Concerned about safety issues relating to the crossing of Anzac Parade by students, including potential impacts during construction.

#### Submission number

78, 124, 200, 210, 214, 219, 228, 245, 299, 312, 314, 316, 317, 326, 348, 361, 364, 389, 396, 409, 413, 418, 419, 440, 446, 450, 456, 457, 458, 478

#### Response

Section 10.10.1 of the EIS (Volume 1A) identifies that the CSELR proposal would result in the potential risk of collisions between LRVs and pedestrians, particularly where pedestrians must cross or interact with the CSELR alignment, such as within the George Street pedestrian zone, the Chalmers Street pedestrian zone and along streets such as Devonshire Street or Anzac Parade. For shared running and pedestrianised sections, LRV drivers would be required to give due consideration to buses and pedestrian movements, and assess LRV speeds and braking requirements against their perceptions of actual or potential hazards.

LRVs would also be fitted with warning bells that would be used in the event of emergencies or where the driver considers there is a danger to public safety. It is not expected that these bells would be used as part of normal operations (i.e. on approach or departure from stations or at level crossings). The detailed design of the CSELR would be subject to detailed safety reviews and a road safety audit to identify requirements for mitigation to manage and reduce the risk of incidents arising from collisions during operation.

The management of hazards associated with the movement of LRVs through the existing road network and highly pedestrianised areas has been reinforced in many major cities (such as Strasbourg, France and Linz, Austria and Melbourne) through widespread and targeted educational programs and detailed design considerations for the vehicles and stops. A similar approach would be applied to managing potential hazards or risks associated with the CSELR proposal.

Road safety concerns associated with the CSELR proposal would be managed through design. For example, all streets where the light rail crosses traffic would be signalised. The intersection of Bourke Street and Devonshire Street would be signalised and would have turn restrictions introduced. Signals would include the Bourke Street cycleway. The intersection of Marlborough Street and Devonshire Street would be signalised to provide safe access to the Surry Hills stop at Ward Park.

Safe access to each stop was an important consideration in the development of the stop design, to ensure a customer-focused service. Particular attention was paid to providing passengers with convenient access to the CSELR network and to integrate the CSELR with other transport modes including heavy rail, buses and ferries. Each stop would be fully accessible to persons with a disability and other less mobile persons. To provide safe access to and from stops on major roads (such as Anzac Parade), signalised pedestrian crossings would be provided. Additionally pedestrian barriers would be installed where appropriate, including fencing at the UNSW Anzac Parade stop and denser planted hedges (or similar) within the new Wimbo Park to prevent access to the CSELR corridor.



Overall, safety issues associated with pedestrian crossings of the CSELR proposal are expected to be partly offset by the reduction in road vehicle traffic along George Street, Chalmers Street and Devonshire Street. While access and local traffic conditions would be permanently altered by the proposal, with clear signage and given appropriate notice, pedestrians would be expected to adjust to the new traffic conditions.

With respect to the concerns regarding cycleway impacts, all existing cycle routes that would be impacted by the CSELR proposal would be relocated and positioned with a safe buffer to the light rail. The proposed buffer between the light rail and shared path is considered to be safe and meets current guidelines and requirements.

In regard to potential safety issues related to students crossing Anzac Parade a new pedestrian bridge over Anzac Parade is now proposed as detailed in section 6.9 of this Submissions Report.

Further details regarding potential impacts to pedestrians and cyclists during operation of the CSELR are provided in section 5.8.19 of this Submissions Report.

#### 5.24.4 LRV speeds and safety

##### Summary of issues raised

A series of issues were raised regarding the speeds of LRVs during operation, including the following:

- The proposed speed of LRVs on Devonshire Street of 40 kilometres per hour is unacceptable due to the densely populated and commercially busy nature of this street. By contrast, LRV speeds on Campbell Street within the CBD (which has no residential population) would only be 20 kilometres per hour. The operation of LRVs along Devonshire Street will create unacceptable dangers for other street users, including vehicles.
- Restrict LRV speeds in pedestrian areas.
- Concerned about safety as LRV will travel at 45 kilometres per hour with pedestrians and school children nearby.
- Concerned about safety issues due to light rail speeds.

##### Submission number

124, 200, 317, 389, 404, 425

##### Response

Generally LRVs would operate within the existing posted road speeds except for the sections of the proposed CSELR route within the George Street pedestrianised zone or where LRVs are within a dedicated corridor (such as Devonshire Street).

For shared running and pedestrianised sections, LRV drivers would be required to give due consideration to buses and pedestrian movements, and assess LRV speeds and braking requirements against their perceptions of actual or potential hazards. LRVs would be limited to a maximum speed of around 20 kilometres per hour in the pedestrianised section of George Street and 40 kilometres per hour in Devonshire Street. The speed in Devonshire Street is consistent with the existing traffic speed limit along this road.

Further details regarding LRV speeds as part of the proposal are provided in section 5.4.2 of the EIS (Volume 1A), and section 5.5.10 of this Submissions Report

## 5.24.5 User safety

### Summary of issues raised

A range of issues were raised the safety of users of the CSELR (and others in the proximity). These concerns included the following:

- No determination should be made until a risk assessment has been conducted, evaluating all risks for residents, motorists, pedestrians and cyclists. Safety issues associated with the CSELR proposal need to be fully reviewed by independent consultants and the full reports made available to the public.
- If the Devonshire Street route goes ahead (with proper justification), it should be ensured that the Wimbo Park/Olivia Gardens site does not become a corridor for anti-social behaviour. This can be achieved by having wire-free operation, limiting LRVs to 20 kilometres per hour and developing a plan for this site as a condition of approval.
- Concerned about safety and security at the proposed Randwick stabling facility adjacent to Doncaster Avenue. Notes the proposal to include a 4.5 metre buffer between the facility and adjoining residential properties. LRVs will be stabled adjacent to this buffer zone overnight, blocking the buffer zone from view from most of the stabling site. This raises obvious safety and security issues for staff at the facility as well as for residents of Doncaster Avenue. A full CPTED assessment should be undertaken.
- Pedestrian numbers will increase, causing pedestrian congestion, stress, noise, an unpleasant environment, vandalism and sleep disturbance.
- Concerned that lighting on lower Devonshire Street from Ward Park to Crown Street is poor, which is a safety issue.
- Concerned about safety for blind people.
- Safety concerns associated with light rail running through Surry Hills and the stop at Ward Park.
- Ensure no shadow or black areas are created, causing safety concerns.
- Several junctions along the route are already hazardous and light rail will only add to this.

### Submission number(s)

80, 168, 170, 171, 172, 173, 174, 176, 181, 187, 188, 189, 191, 192, 193, 194, 238, 245, 281, 287, 299, 323, 327, 361, 364, 392, 403, 404, 407, 414, 418, 439, 447





## Response

Crime prevention through environmental design (CPTED) principles have been considered in the design of the CSELR proposal, in particular the design of the stops. A summary of how the CSELR proposal has considered the principles of CPTED, and the measures that have been implemented, is provided in Chapter 5, Table 5.1 of the EIS (Volume 1A).

As described in section 5.2.6 of the EIS (Volume 1A), one of the outcomes of the proposal is to ensure customers are safe and feel safe when using the CSELR – approaching stops, on stops, on board LRVs and alighting from stops. CSELR stops would be lit and located in highly visible locations with passive and active security systems to provide reassurance and comfort to waiting customers. A number of security measures would be provided including closed circuit television (CCTV) cameras, lighting, emergency telephone/help points and warning signs at each stop. CCTV cameras would also be incorporated into the proposed Randwick stabling facility to assist with maintaining security for this facility as well as adjoining residences along Doncaster Avenue. Additionally, as described in section 5.2.2 of the EIS (Volume 1A), paving for the platforms at stops and paths would be non-slip and would contain warning tactile indicators along the stops to assist people with sight difficulties.

The CSELR proposal would also allow customers to board with a seeing-eye dog, a dog for the hearing impaired or an authorised disabled person's companion animal at all times. Where possible, the levels along the outer edge of the platforms within the pedestrian zone along George Street would tie into the existing footpath levels, enabling people access from both ends of the platform and along the outer edge.

A full review and assessment in accordance with CPTED principles (which include surveillance, access control, territorial reinforcement and space management) would be undertaken for each stop and along the CSELR route during detailed design, including the proposed stabling and maintenance facilities at Randwick and Rozelle (refer to section 5.2.6 of the EIS (Volume 1A) and mitigation measure E.1 in Chapter 8 of this Submissions Report).

Regarding Ward Park (and other concerns regarding public safety from vandalism etc.), the operation of the CSELR would not substantially affect the use of a majority of the park. It is also considered that an increase in the number of people within the local area due to the CSELR, would increase the level of passive surveillance, leading to an increase in overall security for local residents. Other potential safety issues during night-time periods would continue to be managed by the appropriate authorities (such as NSW Police).

### 5.24.6 Other operational hazards

#### Summary of issues raised

##### *General operational hazards*

A series of other potential operational hazards and risks were identified by respondents including the following:

- Rescuing broken down LRVs will be a critical issue for operations. Seeks clarification about location and adequacy of cross-overs.

- Currently bays 5, 7, 9 and 11 (at the Sydney Coach Terminal) are used as a last resort as we have a duty of care to all passengers on boarding and disembarking from coaches. These bays are in the middle of the road and can be dangerous.
- Concerned about provisions for traffic to turn around, and damage to first floor balconies around Clisdell Street and Butt Street.
- Request for information about how deaths or injuries do not occur as a result of light rail operation and about how the government will respond to legal action resulting from death or an injury.

#### *Access to properties*

A number of respondents raised safety concerns regarding accessing properties along the CSELR alignment including:

- Safety concerns about residents on Alison Road reversing from garages out on to oncoming traffic.
- Safety access for the Myers staff entrance on George Street, which includes early starts and late finishes.
- Concerned regarding capacity for emergency vehicles, delivery vehicles and service vehicles to operate within Wansey Road.
- Concerned that access to/from twelve garages located on Wansey Road boundary with residents concerned they will have to back directly out into a lane of traffic rather than kerbside parking (which is their current situation).

#### *Submission number(s)*

166, 210, 214, 292, 299, 303, 403

#### *Response*

##### *General operational hazards*

As detailed in section 9.2.4 of the EIS (Volume 1A), a network management plan would be developed for the CSELR proposal during detailed design to identify key management measures that would be implemented to minimise impacts to journey times and congestion levels. The incident management strategy would be in place to increase resilience of the road network when unplanned events occur on the network. This would include detailed contingency measures to address issues such as flooding, fallen trees/branches and LRV breakdowns which could impact on the operation of CSELR services and/or other modes of transport. In addition to the proposed network management plan, a series of track cross-overs and turnbacks would be provided as part of the final design of the CSELR network. These would allow for alternate LRV movements during operation to avoid potential track closures due to issues such as a broken down LRV or other similar incident. The preliminary contingency measures that would be implemented during a range of incidents on the CSELR network were identified in Appendix J of the EIS (Volume 1C).

The detailed design for the proposed relocation of the Sydney Coach Terminal bays would include the provision of safe and suitable loading/unloading area(s) in addition to safe crossing from this platform to the pedestrian footpath on the southern side of Eddy Avenue.



The existing Sydney light rail network currently operates a safe service within parts of the CBD on the existing road network. As described above in section 5.24.3 of this Submissions Report, a widespread and targeted educational program and detailed design considerations for the vehicles and stops would be developed to assist with educating the general public about the new components of the CSELR network.

#### *Access to properties*

The concern regarding potential access to and from the twelve garages located on Wansey Road is acknowledged. The design change presented in section 6.11 of this Submissions Report identifies that a lane of parking would be reinstated along Wansey Road generally between Alison Road and Arthur Street. This design change should assist in maintaining the same level of safety for residents that currently exists, and would also assist with improving access for delivery and other service vehicles. With respect to the impacts on Alison Road, reversing into an active traffic lane is common on major arterial roads across Sydney and is considered to be acceptable for implementation along Alison Road.

Access for Myers staff along George Street would be maintained during the construction of the CSELR. Any worksites within the vicinity of this entrance would be suitably protected with hoardings and/or other barricades to prevent any impacts to staff. Ongoing consultation would continue with properties affected by construction of the CSELR proposal through the detailed design phase, the preparation of the CEMP and construction phase (as required).

## 5.25 Cumulative impacts

### 5.25.1 Construction impacts – General

#### Summary of issues raised

Submissions expressed concern about the construction impacts from a number of nearby projects as well as cumulative traffic impacts that the CSELR proposal could have with other locally occurring developments within the vicinity of The Rocks. Concern was also raised over noise, dust and vibration during construction. Appropriate mitigation and management was requested to minimise any impacts on existing premises.

Concern was also expressed for residents who have already had to deal with construction impacts of other nearby projects.

#### Submission number(s)

125, 190, 219

#### Response

An assessment of cumulative impacts (including construction traffic and general construction works) is provided in Chapter 11, Volume 1A of the EIS. Assessment of construction impact specific to the CSELR proposal in the City Centre Precinct is provided in Section 12.3, Volume 1B of the EIS.

Construction traffic modelling undertaken for the proposal has taken into account traffic generated from major CBD developments in the vicinity of the CSELR including Barangaroo. Specific measures to address construction impacts relating to noise, vibration and dust, traffic congestion, safety and access for local businesses and premises would be developed as part of a construction network management plan and CEMP during detailed design and construction planning. Areas of high tourist usage including the Rocks and Circular Quay would require specific measures to maintain safety and provide appropriate amenity. Overarching construction traffic management strategies are listed in Section 12.3.4, Volume 1B of the EIS.

Detailed planning of construction would take into account residents that have been impacted by construction from nearby projects.

The full range of mitigation measures is provided in Chapter 8 of this Submissions Report.

Transport for NSW is committed to ongoing community and stakeholder engagement during the construction and commission of the CSELR. This would include consultation in relation to specific construction impacts and concerns. A construction response line (1800 775 465) is available for all Transport for NSW projects and is a 24 hour contact point for complaints regarding construction works.

## 5.25.2 Operation impacts – General

### Summary of issues raised

General concern was expressed in some submissions in relation to cumulative impacts. It was stated that the EIS does not adequately address the cumulative impacts of the Randwick Urban Activation Precinct (UAP) and there does not appear to be any serious assessment of adverse economic, traffic and/or environmental effects. Concern was also noted that the proposed WestConnex motorway may cause increased traffic movements in Randwick and undermine carrying capacity gains from the CSELR.

### Submission number(s)

78, 115, 349, 447

### Response

The Randwick UAP is in the early planning stages. As such, it has not been assessed in detail in the EIS given key proposal information is limited. However, the UAP was considered in terms of overall patronage for the CSELR. P&I would consider the potential interaction of the CSELR with the draft UAP as part of its determination of the CSELR proposal, and further development of the UAP. Cumulative impacts are discussed in Chapter 11 of the EIS (Volume 1A).

Motorway connections to the arterial road network in the vicinity of the CBD are planned for WestConnex at the City West Link at Haberfield and Parramatta Road at Camperdown. This would lead to changes in traffic flows along these major arterials. Potential cumulative impacts relate to overlap of the CSELR and WestConnex construction timeframes, which may lead to additional traffic congestion along Parramatta Road/Broadway and City West Link/Western Distributor corridor and consequential amenity impacts in relation to noise, access and air quality (refer to Table 11.2 of the EIS, Volume 1A). It is not anticipated that the proposed WestConnex motorway would undermine any capacity gain from the CSELR network.



### 5.25.3 Other issues

#### Summary of issues raised

One submission noted that the EIS does not consider the cumulative effects of the east-west traffic resulting from the Redfern-Waterloo Authority Built Environment Plan – Stage 2.

#### Submission number(s)

115

#### Response

The traffic generated from the development detailed in this plan has been incorporated into traffic modelling conducted for the CSELR proposal. The cumulative traffic impacts have therefore been assessed in the EIS. Details of traffic modelling undertaken and developments considered are provided in Technical Paper 1 – *Transport Operations Report* and Technical Paper 2 – *Construction Traffic Management Plan* in Volume 2 of the EIS.

## 5.26 Issues external to the CSELR Proposal

### 5.26.1 Extension to the light rail network

#### Summary of issues raised

A number of submissions proposed extensions to the CSELR and expansion of light rail to other parts of Sydney including to Maroubra, Coogee, Newton, La Perouse, Bondi Junction, East Gardens, Green Square, Darling Harbour, Centennial Park, Barangaroo, Little Bay, Malabar, Botany, North Sydney, University of Sydney, Oxford Street and beyond Kingsford. One submission also suggested that the Kingsford and Randwick terminuses should be extended to form a continuous loop to service a greater patronage area. Extensions to Malabar, Maroubra and Coogee were the most mentioned suburbs. Increased population densities and future public transport challenges were cited as reasons to extend the network.

Some submissions were more specific in suggesting extensions to the proposed CSELR along particular roads. These included establishing a light rail network to the north of Alfred Street, Coogee Bay Road, Parramatta Road, Bunnerong Road and Victoria Road. Parramatta Road was mentioned for its potential to connect to bus services.

More general extensions to the network were also suggested. These included an extension of the network to major trip generators, the extremities of the city centre area, metropolitan/residential areas, retail precincts, the western suburbs, connections to tourist attractions, car parks, heavy rail stations and bus and ferry routes.

Further concern was expressed that the impacts in the EIS did not include future environmental impacts in the event that light rail operations are expanded.

### Submission number(s)

3, 10, 16, 27, 31, 46, 66, 71, 78, 114, 126, 141, 144, 165, 177, 229, 231, 245, 246, 264, 286, 292, 294, 296, 297, 300, 309, 321, 330, 338, 352, 373, 408, 414, 420, 433, 441, 453, 449, 477, 478, 480

### Response

Extension of the CSELR to the areas suggested in the submissions, including La Perouse, Maroubra or Coogee, is not part of the current proposal. However, the CSELR has been designed to enable extensions to the network if these extensions are considered to be justified in the future. The required environmental assessments would also be undertaken at that time.

Expansion of the light rail network to other parts of Sydney is subject to future consideration by the NSW Government in the context of the *NSW Long Term Transport Master Plan* and future public transport needs.

## 5.26.2 Changes to South East bus services

### Summary of issues raised

General concern was raised over a lack of information on bus services, bus stops and what bus services would be terminated. Several submissions disagreed with the need for the re-routing or removal of buses from the network including numbers 220, 339, 374, 373, 376, 377, 391, 392, 394, M50, X39, X40, X73 and X74. Submissions requested the retention of a variety of bus routes, particularly existing priority bus services that would avoid the need to interchange when travelling from areas like that of Coogee and Maroubra.

Disagreement was raised over why certain routes would be required including from Sydenham via Mascot/Airport, La Perouse to Edgecliff or direct access to Sydney University.

Other submissions supported a reduction in the number of buses in the CBD and requested that the long-term bus strategy should not be separate to the CSELR.

### Submission number(s)

20, 177, 213, 216, 220, 221, 231, 241, 242, 258, 291, 306, 312, 349, 438

### Response

These issues have been responded to in Sections 5.8.1 to 5.8.3 of this Submissions Report. The EIS outlines potential bus route options for when the CSELR is operational, based on information available at the time of preparation of the EIS. However, further assessments and consultation would be undertaken with the community before bus routes are finalised.



### 5.26.3 Special events in the City Centre

#### Summary of issues raised

Some submissions expressed concern about the increasing number of special events involving road closures and parking restrictions within the CBD. These events inconvenience residents, cause noise and sometimes require building management to make special security arrangements. The burden of special events should be more widely spread among locations with good public transport, rather than concentrated within the City Centre.

One submission recommended that special events permitted to occur within the City Centre are restricted to those with a strong local connection to the area (e.g. Anzac Day March).

#### Submission number(s)

65, 159

#### Response

Due to the CSELR proposal, special events along George Street would need to be re-routed during construction and a number of events may need to be re-routed permanently upon commencement of operation. The need to re-route special events would be assessed through the normal processes involving Transport for NSW, the Transport Management Centre, Roads and Maritime Services (RMS), Destination NSW, the City of Sydney and event organisers.

Further detail is provided in section 12.3, Volume 1B of the EIS.

The management of events within the City Centre outside of those impacted by the CSELR proposal is outside the scope of this report.

### 5.26.4 Sydney City Centre Access Strategy (SCCAS)

#### Summary of issues raised

One submission fundamentally objected to the strategy presented in the SCCAS, which reduces CBD public transport capacity instead of increasing it.

Another submission notes that the SCCAS should be phased to include initiatives to address the impacts in the CBD firstly during the construction and secondly when the scheme is operational.

#### Submission number(s)

87, 438

## Response

The CSELR is a component of the overall SCCAS. Other projects and initiatives in the SCCAS would be subject to separate planning approval processes. The SCCAS was released for public comment in September 2013. The formal comment period concluded on 25 October 2013; however further opportunities for comment would be available on individual projects within the SCCAS as these are progressed.

### 5.26.5 Other general comments

#### Summary of issues raised

A number of submissions noted issues in relation to other transport matters. These comments are listed below. No specific response has been provided as these comments are not specifically relevant to the CSELR proposal. The comments and issues have been recorded and noted by Transport for NSW:

- The heavy rail network to Newcastle must remain in place.
- Additional information requested about long-term plans to expand heavy rail to Bondi Junction, UNSW and connections with airport line.
- Request to expedite the rollout of Opal.
- Supportive of the NSW Government's submission to Infrastructure Australia for funding for the Inner Sydney Regional Bicycle Network.
- Notes the M30 bus has attracted too many people to Coogee Beach on weekends.
- Notes parking in Coogee is already difficult.
- More focus is needed on Western Suburbs of Sydney.
- Submits that the focus should be on alleviating congestion from links between the CBD and the Western Suburbs.
- Submits that transport investment is more desperately needed in the South West and North West.
- Concern that bus fares vary depending on which bus a passenger gets on, regardless of where they alight from the bus.
- Suggestions about how the Opal card can relieve congestion in bus services from the Harbour Bridge.
- Request for Stakeholder Managers from Transport for NSW to identify businesses already economically vulnerable and refer them to business services. Particularly as the retail sector is experiencing significant changes.
- Objects to the proposal for the current major event bus hub at Moore Park to be relocated north of the existing AFL training field between the bus roadway and Kippax Lane, noting that the proposal would alienate the community from public open green space.





- Submits that proposal should take an integrated approach and include a clear proposal for event parking at the SCG/Allianz Stadium.
- Submits that an underground car park north of Sydney Boys High School is superior to the parking alternatives outlined in the EIS. Notes that public access to Moore Park East should be retained.

#### Submission number(s)

44, 153, 157, 216, 305, 308, 348, 424, 430, 438, 455

#### Response

These comments do not relate directly to the CSELR proposal. The comments are noted by Transport for NSW.

