Sydney Metro Network Stage 1 (Central to Rozelle)

Submissions Report

Date: 13 November 2009

SydneyMetro

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1 Introduction

1.1 Background

1.1.1 Project background

The Sydney Metro Network Stage 1 (Central to Rozelle) would be a seven-kilometre long underground metro railway from RailCorp's Central Station to Rozelle, with new stations at Central, Town Hall Square, Martin Place, Barangaroo-Wynyard, Pyrmont and Rozelle, and the provision of infrastructure at White Bay for a future metro station (see Figure 1.1). The Sydney Metro Network Stage 1 (Central to Rozelle) would deliver a fast, frequent and reliable public transport service for Sydney's CBD and inner west, running every two to three minutes from Central Station to Rozelle during peak periods.

Sydney Metro is the NSW Government agency responsible for planning, delivering and commissioning the Sydney Metro Network Stage 1 (Central to Rozelle) and any potential future extensions. In the long term, it would oversee the ongoing metro operations and manage the service delivery standards of the private operator.

The NSW Government has committed to delivering Australia's first metro rail system, as part of a major investment in Sydney's sustainable growth and prosperity, with the Sydney Metro Network Stage 1 (Central to Rozelle) (Sydney Metro Network Stage 1) being the first step of a broader Sydney network. The project is a critical part of the government's investment plan to make Sydney's transport network more efficient which will, in turn, contribute not only to its liveability, but also to its economy.

The Environmental Assessment (EA) has been prepared in accordance with Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and to satisfy the Director-General's requirements issued by the Director-General of the NSW Department of Planning.

1.1.2 Purpose of this report

In accordance with section 75H of the *Environmental Planning and Assessment Act 1979*, the Department of Planning has requested Sydney Metro to prepare a response to submissions received during public exhibition of the Environmental Assessment of the Sydney Metro Network Stage 1 (Rozelle - Central) project.

Together with a revised Statement of Commitments (SoCs) (**Appendix A**) that reflect any refinements / improvements to mitigation measures associated with the project, Sydney Metro's responses to the issues raised in the submissions received form the basis of this report.

This submissions report is separated into the following sections:

- Chapter 1 – provides an overview of the project, purpose of this report, and an overview of the consultation activities undertaken as part of the environmental assessment process.
- Chapter 2 – provides a summary of the submissions process and a summary of the key issues raised in submissions.
- Chapter 3 – provides a summary of the Government issues raised in the submissions received and provides a response to each issue.

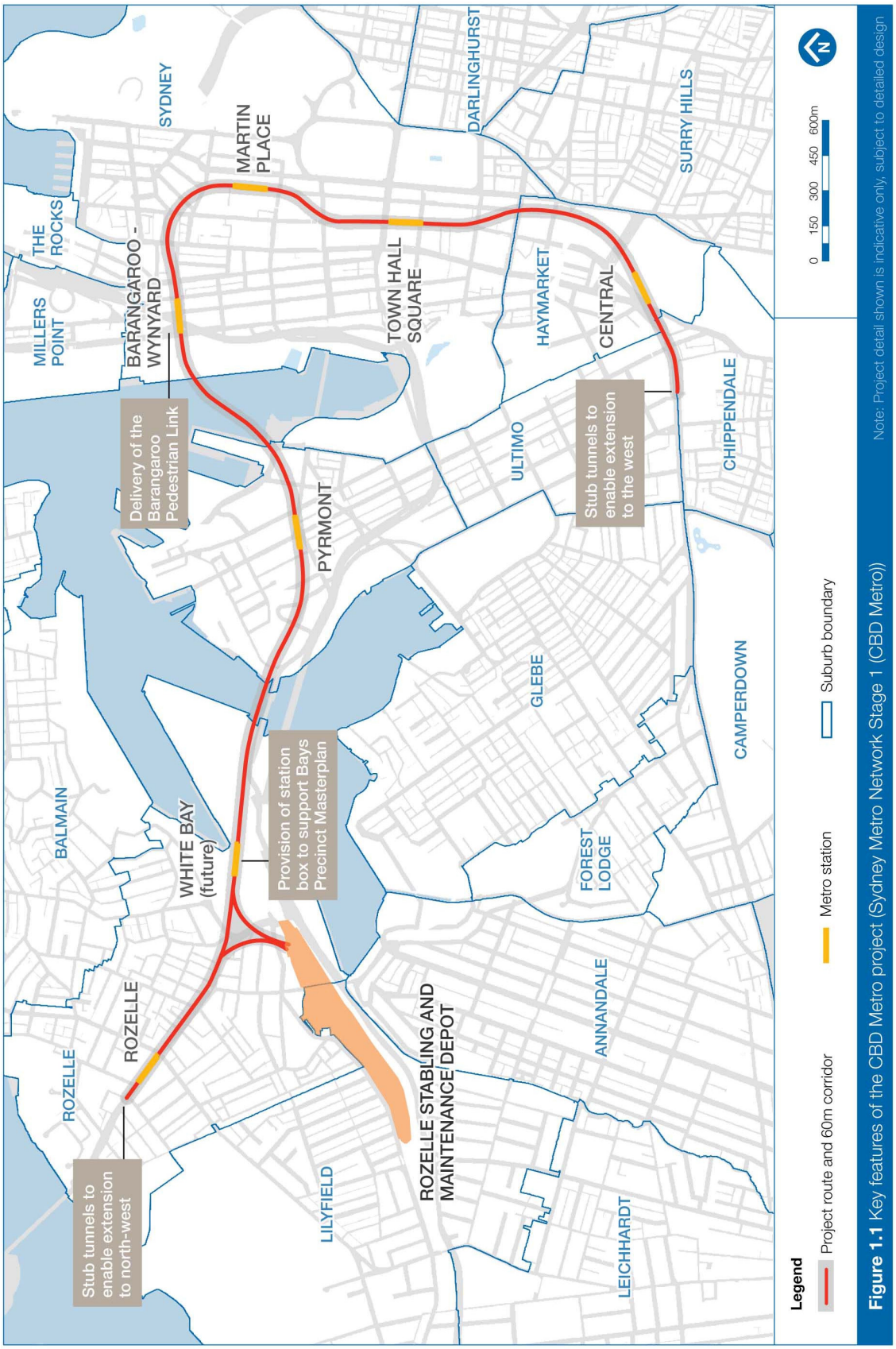


Figure 1.1 Key features of the CBD Metro project (Sydney Metro Network Stage 1 (CBD Metro))

Figure 1.1 Key features of the Sydney Metro Network Stage 1 (Central to Rozelle)

- Chapter 4 – provides a summary of the community and key non-government stakeholder issues raised in the submissions and provides a response to each issue.
- Chapter 5 – outlines changes to the preferred project Sydney Metro seeks approval for, including any revisions and /or improvements to the project.
- Chapter 6 – includes a set of revised Final Statement of Commitments.
- Chapter 7 – provides conclusions and next steps in the process.

1.1.3 The determination process

The project has been assessed and will be determined in accordance with Part 3A of the EP&A Act. Sydney Metro has considered and responded to the issues raised by submissions on the Environmental Assessment in this Submissions Report. Chapters 3 and 4 provide the issues raised in the submissions by government agencies, key non-government stakeholders and members of the general public, and the associated responses to the issues raised.

Following lodgement of this Submissions Report with the Department of Planning, the Director-General of the Department of Planning will prepare an environmental assessment report for the project (under Section 75I of the EP&A Act). The Director-General's report, which would include a copy of the Environmental Assessment, this Submissions Report and any advice provided by public authorities on the project, will be submitted to the Minister for the purpose of the Minister's consideration. The Minister will consider the Director-General's report and whether to grant approval for the project, and any conditions of approval that may apply to the approval. The Minister for Planning's determination and the Director-General's report will be published on the Department of Planning website, following the determination of the project.

1.2 General description of the project

1.2.1 Corridor design and operation

The Sydney Metro Network Stage 1 (Central to Rozelle) would comprise a seven-kilometre underground railway within twin tunnels, each about six metres in diametre. It would traverse the City of Sydney and Leichhardt local government areas. It has been designed to enable a future extension to Westmead from Central Station and extensions to the north-west from Rozelle.

Sydney Metro is seeking approval for a 60-metre wide rail corridor within which to construct these tunnels, the rail track alignment, stations, station complexes and other metro infrastructure.

This corridor is shown on plans provided within **Appendix B** of this report. The route alignment within this corridor, presented in this Environmental Assessment, is subject to further refinement during the detailed design development phase (prior to construction).

Sydney Metro Network Stage 1 (Central to Rozelle) services would operate every two to three minutes, with a daytime maximum waiting time of five minutes in off-peak times. Hours of operation would be Monday to Thursday from 5.30am to midnight, Friday and Saturday from 5.30am to 1.00am and Sunday from 6.00am to midnight.

The metro trains would be single deck made up of five carriages, but a sixth carriage could be added if required at a later date. Each train would accommodate 1065 passengers. Each carriage would be air conditioned, and would have at least three bi-parting doors on each side to allow easy entry and exit.

An initial fleet of 13 trains would be stabled and maintained at a new, purpose-built depot at the former Rozelle Marshalling Yard, adjacent to the City West Link Road. A pedestrian and cyclist bridge would be provided over the depot from Lilyfield Road to White Bay to provide pedestrian and cyclist access to the Rozelle foreshore and also to the Light Rail station, and the project would include delivery of the Barangaroo Pedestrian Link.

1.2.2 Station precinct design

New stations would be built at Central, Town Hall Square, Martin Place, Barangaroo-Wynyard, Pyrmont and Rozelle, with infrastructure at White Bay for a future station.

At each station, access to the Sydney Metro Network Stage 1 (Central to Rozelle) would be via entrances that are integrated with the existing and planned urban environment, including other transport modes. Changes to footpaths, bus stops and roads are expected in the vicinity of all stations, as well as public domain improvements around station entrances. Commercial and/or retail activities within the station complex would be constructed and operated within station precincts.

These changes are to be constructed as part of the Sydney Metro Network Stage 1 (Central to Rozelle) project and have been considered in the Environmental Assessment. They are further described by the Station Planning process, as detailed in Chapter 2 of the Environmental Assessment.

Other development, for example on surplus areas of construction sites or above service facilities, would be viable at some locations. Such development is not part of the project and would be subject to the relevant planning approvals. The Sydney Metro Network Stage 1 (Central to Rozelle) project would be designed and constructed to accommodate future development (by providing structural support, servicing and access).

The station precinct plans were placed on public exhibition concurrently with the Environmental Assessment. The elements that form part of the Sydney Metro delivery plan and scope for the project are provided at **Appendix C** of this report.

1.2.3 Construction

Subject to planning approval, construction is expected to start in 2010 and continue over the next four-year period. This would be followed by a period of testing, commissioning and preparation for operation. It is expected that the first Sydney Metro Network Stage 1 (Central to Rozelle) services would be operational from the end of 2015.

Construction sites would be located at each station location, at the site of the proposed Rozelle stabling and maintenance depot and at White Bay.

While the majority of surface construction would be undertaken within standard daytime construction hours, some surface works and the majority of underground works would need to be undertaken on a 24–hour, seven-days-per-week basis to meet the planned start of service in 2015.

General construction activities at the station work sites would include:

- Enabling works, such as demolition, temporary power supply for construction, relocation of utilities and services.
- Establishment of the work site with site offices, amenities, materials/plant storage areas, and spoil handling facilities.
- Excavation of shafts for entrances and services (such as vent shafts and emergency access).

- Below-ground station cavern excavation using roadheaders and rock breakers via the access shafts and the removal of spoil
- Construction of underground pedestrian concourse areas by a combination of mining methods (to minimise disturbance of the road surfaces) and cut and cover.
- Station building works and fitout.

Two tunnel boring machines (TBMs) would be used to excavate the tunnels between White Bay and Central, and roadheaders would be used to excavate tunnels between White Bay and Rozelle, including the connections to the depot.

The construction program and methodologies would be further developed and potentially modified by the contractors selected by Sydney Metro during the detailed construction planning phase.

The construction of the project includes the tunnels and station boxes, station fitout works (lifts, escalators, ticketing facilities, ventilation and emergency exit stairways) and the stabling and maintenance depot. It does not include or seek approval for the fitout of any over-site development beyond the station complex – these would be subject to further approvals as described within Chapter 6 of the Environmental Assessment.

1.3 Consultation

1.3.1 Environmental Assessment exhibition

The Environmental Assessment was publicly exhibited by the Department of Planning from 9 September 2009 to the 12 October 2009. In addition to this statutory period required by Part 3A assessments under the EP&A Act, the Department of Planning accepted submissions for the project up to and including the 26 October 2009, given the large amount of interest generated on the project. This report addresses all issues raised in submissions including all government stakeholder submissions received up to the 28th of October 2009.

1.3.2 Advertising

The Department of Planning placed four advertisements in the following newspapers to inform the community of the public exhibition and the submissions process:

- Sydney Morning Herald (Wednesday 9 September).
- Daily Telegraph (Wednesday 9 September).
- Inner West Courier (Thursday 10 September).
- The Central Courier (Wednesday 9 September).

In addition to the advertisements placed by the Department of Planning, Sydney Metro placed a number of large public advertisements in prominent local papers:

- MX (14, 16, 21 and 23 September)
- Inner West Courier (15 and 22 September)
- Central Magazine (16 and 23 September)

- City News (15 and 22 September).

1.3.3 Exhibition support and activities

The Environmental Assessment was placed on public exhibition from 9 September to 12 October 2009. The Environmental Assessment was exhibited at the following display locations:

- Department of Planning Information Centre, 23-33 Bridge Street, Sydney.
- Nature Conservation Council of NSW, Level 2, 301 Kent Street, Sydney.
- City of Sydney Council, Town Hall House, Level 2, 456 Kent Street, Sydney.
- Pyrmont Community Centre, Corner of John and Mount Streets, Pyrmont.
- Ultimo Community Centre, 40 William Henry Street, corner Harris Street, Ultimo.
- Leichhardt Municipal Council Citizen's Service Centre, 7-15 Wetherill Street, Leichhardt.
- Leichhardt Library, Italian Forum, Piazza Level, 23 Norton Street, Leichhardt.
- Balmain Library, 370 Darling Street, Balmain.
- Rozelle Neighbourhood Centre, 665a Darling Street, Rozelle.

During the exhibition period, the public was able to review the Environmental Assessment and send submissions to the Department of Planning. Submissions received by the Director-General of the Department of Planning were provided to Sydney Metro.

Letters were sent directly to residents and property owners within the 60 metre project corridor. Extensive letterbox drops were also undertaken.

1.3.4 Stakeholder meetings to support the exhibition period

During the exhibition of the Environmental Assessment Sydney Metro met with the following key stakeholders and non-statutory organisations to discuss the project:

- 10,000 Friends of Greater Sydney
- Annandale Precinct Committee
- ANZ Bank
- Australian Constructors Association
- Australian Institute of Architects
- Birchgrove Precinct Committee
- Hill Thalis
- Infrastructure Partnerships Australia
- KPMG
- Leichhardt Municipal Council
- Leichhardt Precinct Committee
- Lord Mayor of City of Sydney
- Planning Institute Australia
- Pyrmont Community Group
- Pyrmont Ultimo Chamber of Commerce
- RailCorp
- Rozelle/Lilyfield Precinct Committee
- Road and Traffic Authority

- Bus and Coach Association NSW
- NRMA
- Colonial First State
- Commercial Travellers Association
- Councillors of City of Sydney
- Dexus Property Group
- Future Plus Financial Services
- Gwynville Group
- Hastings Funds Management
- Henry Davis York
- Sydney Harbour Foreshore Authority
- Sydney Ports
- Metro Transport Sydney
- MLC Centre / GPT
- Moretons' Hotel
- City of Sydney Council
- National Trust
- Navitas Pty
- NSW Commuter Council
- NSW Property Council
- NSW Taxi Council
- Pedestrian Council of Australia
- NSW Maritime
- Star City Pty Ltd
- Members of the Bays Precinct community group
- Sydney Chamber of Commerce
- TAFE NSW, Sydney Institute
- Taxi Council
- TOGA Group
- University of Technology Sydney
- Urban Taskforce
- Warren Centre for Advanced Engineering
- Westpac Bank
- State Transit Authority (Sydney Buses)
- Barangaroo Delivery Authority

These meetings were designed to supplement the formal Department of Planning exhibition process. Agency reference meeting groups were also held during the exhibition period, attended by representatives from NSW Transport and Infrastructure (NSWTI), the Roads and Traffic Authority (RTA) and the Department of Environment, Climate Change and Water (DECCW). These meeting provided a project discussion forum for these agencies and Sydney Metro.

1.3.5 Community information sessions

Community information sessions were held during the exhibition period. The purpose of the information sessions was to provide an opportunity for residents, business owners and other stakeholders to discuss the Environmental Assessment with members of the Sydney Metro project team and provide comments. The location and dates of the sessions were as follows:

- Balmain Town Hall – 370 Darling Street, Balmain (19 September 2009).
- Sydney Masonic Centre – Level 1, 66 Goulburn Street, Sydney (24 September 2009).
- Australian National Maritime Museum – 2 Murray Street, Darling Harbour (26 September 2009).

Sessions included a public display providing information on the project, with large posters showing the route overlaid on aerial photographs. The sessions were advertised in local newspapers as detailed in section 1.3.2.

2 Summary of submissions process

2.1 Overview of process

During the exhibition period of the Environmental Assessment of 34 days from 9 September 2009 until the 12 October 2009, approximately 1800 submissions were received by the Department of Planning. Following the extension of the submissions period the total number of submissions received was 2539. A breakdown of submissions, detailing submission number and a summary of issues raised by each submission is provided in **Appendix D**.

A copy of all submissions received by the Department of Planning was provided to Sydney Metro for review. The Department of Planning gave each submission a unique number so to allow tracking of the submission from therewith. Upon receipt, Sydney Metro analysed each submission to determine the specific issues it raised and a summary of the specific issues was created. Details of the submission and the issues raised were then entered into a database. The specific issues were then analysed further and a response to the issues raised was prepared. Summaries of the issues raised by government agencies, key non-government organisations and the community (including individuals, businesses and community groups) is provided in section 2.2.

Sydney Metro's response to the government submissions is provided in Chapter 3 of this report and the response to key non-government and community submissions is provided in Chapter 4. The categories of issues that each respondent raised and the allocated submission numbers are provided at **Appendix D**.

To clearly identify the origin of the submissions, government agency submissions have been addressed separately from key non-government submissions and business/community submissions (see chapters 3 and 4 respectively).

Submissions that raised issues associated with the draft Station Plans are addressed in section 4.88. These issues will also be incorporated into the Station Plans as relevant.

Sydney Metro is continuing to meet with affected stakeholders and has made direct contact with individuals and organisations in response to their submissions, particularly focused on detailed issues related to property, business operations and mitigation of potential impacts.

2.2 Summary of issues raised

2.2.1 Government agencies

The State agencies that made a submission to the project during the exhibition period and the key issues raised in the submissions are provided below (submission number noted in brackets).

NSW Industry and Investment [1149]

- Spoil management.
- Surface water quality management.

NSW Maritime Authority [1150]

- Water transportation of spoil.
- Occupations on or below NSW Maritime's land and the need for consent.

Roads and Traffic Authority [1274]

- Approvals for traffic management plans and road occupancy licences.
- Construction traffic congestion.
- Construction traffic modelling.
- Consultation with stakeholders.
- Operation of the traffic network.
- Impact on other RTA developments.
- Spoil transportation traffic.

Barangaroo Delivery Authority [1300]

- Design of the Barangaroo Pedestrian Link.
- Construction worksite at Barangaroo.
- Station plans for the Barangaroo-Wynyard Station and the public domain enhancements.
- Cumulative impacts associated with Barangaroo and the need for coordination.

State Transit Authority [1319]

- Road network reconfiguration impacts to bus services.
- Pedestrian flows and safety.
- Reallocation of bus routes within the CBD.
- Changes to parking restrictions.
- Construction traffic at Rozelle.
- Station plan changes suggested at Barangaroo-Wynyard Station
- Proposed bus bay at Rozelle.

Department of Environment Climate Change and Water [1320]

- Need for environmental protection licences.
- Water pollution and management.
- Potential for ground or groundwater contamination.
- Approvals, consultation and general construction management issues.
- Construction noise and vibration impacts.

- Operational noise and vibration.

Sydney Ports Corporations [1823]

- Need for further assessment relating to barge and rail transportation.
- Construction traffic and impacts on Port users.
- Noise and vibration impacts on Port tenants.
- Impacts on Sydney Ports' heritage items.
- Changes to land use at Barangaroo and White Bay.
- Contamination issues at White Bay.

Housing NSW [2532]

- Land use and supporting higher densities and mixed use development around Metro stations.
- The need for integrated transport networks.
- The need for an integrated ticketing system.

NSW Rail Corporation [2538]

- The need for ongoing consultation.
- The strategic need.
- The project development and alternatives.
- Construction impacts (including on the CBD West Corridor).
- Heritage issues (Railway Square overbridge).
- Integration of metro and CityRail services.
- Involvement in the detailed design process.

Casino Liquor and Gaming Control Authority [972]

- Concerns over various aspects noise and vibration impacts during construction of Pyrmont Station.
- Impact to property and loss of trade and business during construction.

2.2.2 Local government

Both the City of Sydney Council and the Leichhardt Municipal Council made a submission to the Department of Planning regarding the project. In addition, Liverpool City Council also made a submission.

The key issues raised by the authorities were as follows:

City of Sydney Council [1806]

- Consideration of project alternatives.
- Robustness of the project justification (patronage, and traffic and pedestrian modelling).
- General construction impacts (traffic and pedestrians).
- Operational transport impacts (network integration).
- Socio-economic and land use impacts (operating hours, ticketing, preferred station designs).
- Heritage impacts.
- Sustainability.

Leichhardt Municipal Council [1294 / 2535]

- Project justification.
- Costs and benefits of the project.
- Social impacts.
- Need for an integrated transport plan.
- Impacts on land use.
- Construction traffic impacts.
- Noise and vibration impacts and assessment.
- Heritage impacts.
- Other environmental issues (flooding and stormwater, ecology, waste)
- Sustainability.
- Integration with other modes of transport (cycling and buses).
- Cumulative impacts with the Tigers development.
- Station and depot designs.
- Traffic around the depot site.

Liverpool City Council [1293]

- Funding mechanisms for the project.
- Need for the South West and North West Rail Link projects.

2.2.3 Other

Two submissions were received from Clover Moore MP in her roles as Lord Mayor of Sydney and State Member for Sydney. The key issues raised by Clover Moore MP were as follows:

State Member for Sydney [1870/ 2539]

- Public domain improvements and consideration of relevant design principles and consultation.
- The need for the Transport Blueprint to be finalised.
- Consideration of facilities for cyclists.
- Need for an integrated ticketing system.
- Renewable energy.
- Construction issues (including property damage, compensation, community liaison and mitigating impacts).
- Consideration of alternative station locations at Pyrmont.

2.2.4 Key non-government stakeholders

The following Table 2.1 includes all key non-government stakeholders or non-statutory agencies that made a submission to the project during the exhibition period (submission number noted in brackets) and the summary of the key issues they raised.

Table 2.1 Key non-government stakeholder issues raised

Organisation	Key issues	Section addressed in
Western Sydney Regional Organisation of Councils [1139]	• Need for an integrated transport plan for Sydney • Insufficient consideration of alternatives • Consultation wasn't adequate • Need for public transport initiatives in other areas of Sydney, including North West Rail Link / South West Rail Link • The project is proposed in an area already serviced by public transport • Inadequate justification for staging of the network with CBD section first • Concern over use of the Metro Pitt corridor • Project funds could be used more effectively elsewhere • Tunnelling is expensive and should be avoided	4.11 4.6 4.4 4.6 4.7 4.10 4.12 4.9 4.8
NSW Taxi Council [1209]	• Project integration with taxi services	4.54
EcoTransit Sydney [1263]	• Concern over use of the Metro Pitt corridor • Patronage • Cost of tunnelling • Stations are too deep • Extension of light rail / monorail as an alternative	4.12 4.7 4.8 4.8 4.6

Organisation	Key issues	Section addressed in
	• Waste of money	4.9
	• Project funding mechanism	4.9
	• Integrated ticketing and cost of fares	4.16
	• Need for public transport initiatives in other areas of Sydney, including North West Rail Link / South West Rail Link	4.6
	• Heavy (Commuter) rail as an alternative	4.6
Property Council of Australia [1265]	• Support for a metro network	
	• Need for an integrated transport plan for Sydney and consistency with Sydney Integrated Transport Strategy and the Metropolitan Strategy	4.11
	• Support the application of Part 3A to the project	4.1
	• Insufficient duration of the exhibition period	4.86
	• Concern over use of the Metro Pitt corridor	4.12
	• Project integration with CityRail and bus network plans	4.54, 4.55
	• Justification for the project in terms of low patronage	4.7
	• Concern regarding loss of pedestrian access at station construction sites	4.38
	• Comments regarding Pyrmont, White Bay station locations	4.13
	• Favour plans for improving cyclist/pedestrian facilities as part of the project	4.20
	• Comments regarding potential land use changes and introduction of high-density commercial and residential development	4.75
	• Interest and suggestions for the future consultation process	4.5
Leichhardt Bicycle Users Group [1267]	• Transportation of spoil	4.32
	• Sustainability of materials used	4.31
	• Air quality regarding construction vehicle / plant emissions	4.79
	• Enhancing cyclist access to metro stations and allowing bicycles on the metro and use at the depot	4.57
	• Favour plans for improving cyclist/pedestrian facilities as part of the project	4.20
	• Concern over size and location of station entrances	4.17
	• Provision of green space and public initiatives at depot site for cyclists	4.20
	• Ongoing consultation with councils to ensure their requirements are met and integration with council plans and visions	4.5
Australian Institute of Architects [1286]	• Support for the project with extensions of the metro	4.10
	• Need for an integrated transport plan for Sydney	
	• Concern regarding the sufficiency of assessment	4.11
	• Concern regarding loss of heritage value at Pyrmont	4.83
	• Project integration with CityRail and bus network plans	4.49
	• Making the metro more sustainable in terms of energy use	4.54,4.55
	• Concern regarding energy used for a tunnelled /	4.30

Organisation	Key issues	Section addressed in
	underground system	4.8, 4.30
	• Need for integrated ticketing	
	• Enhancing cyclist access to metro stations and allowing bicycles on the metro and use at the depot	4.16 4.57
	• Favour inclusion of the White Bay station as operational upon opening of the metro	4.13
	• Concerned over the size of Martin Place station entrance	4.17
Bicycle NSW [1302]	• Need to integrate the metro service with cycling, including station access and using bicycles on the metro	4.57
	• Insufficient emphasis given to assessment of pedestrians and cyclists	4.83
	• Need for public transport initiatives in other areas of Sydney, including North West Rail Link / South West Rail Link	4.6
	• Concern over use of the Metro Pitt corridor	4.12
Planning Institute of Australia [1318].	• Need for an integrated transport plan for Sydney	4.11
	• The application of Part 3A to the project	4.1
	• Establishment of a single authority for Sydney transport and land use planning	4.11
	• Support for a metro network	
	• Project integration with CityRail and bus network plans	4.54, 4.55
	• Need for public transport initiatives in other areas of Sydney	4.6
	• Heavy (Commuter) rail as an alternative	4.6
	• Comments regarding potential land use changes and introduction of high-density commercial and residential development	4.75
Star City Pty Ltd [1295]	• Concerns over various aspects noise & vibration impacts during construction of Pyrmont Station.	4.41
	• Project design and integration.	4.89
	• Damage to property from construction.	4.66
	• Question the energy efficiency credentials of the project.	4.27
	• Concern regarding transportation of spoil.	4.32
	• Construction traffic management at Pyrmont.	4.34
	• Loss of trade and business during construction.	4.64
	• Hazardous construction dust.	4.81
	• Concern regarding ground subsidence.	4.79
Metro Transit (Light Rail) [1859]	• Possible extension of light rail / monorail as an alternative	4.6
	• Sufficient consideration of alternatives	4.6
	• Combination of possible initiatives to deliver project objectives	4.6
	• Comparison of using metro versus bus from Rozelle to CBD	4.54

2.2.5 Community stakeholders

Community groups represented by these submissions included:

- The Southern Thunderer.
- 10,000 Friends of Greater Sydney.
- Rozelle Public School P&C Association.
- Rozelle Public School.
- Rozelle Residents Action Group.
- Darling Street Anglican Church.
- Pyrmont Community Group.
- Evolve Owners Corporation.
- Residents of Justin Street.
- Rozelle Neighbourhood Centre.
- Gallipoli Memorial Club.
- St Thomas Child Care.
- Pyrmont Action Inc.
- Residents of Waterloo Street (Rozelle).

It is noted that, of the individual submissions received, a majority of them were form letters. Table 2.2 below provides a breakdown of the 10 most frequently raised issues for all non-form submissions. Each number represents the number of submissions that raised the issue at least once.

Table 2.2 Most frequently raised issues (non-form letters)

Key issues	Sub issues
The need for alternative projects	• Possible extension of light rail / monorail as an alternative. • Commuter heavy rail as an alternative. • Need for public transport initiatives in other areas of Sydney. • Combination of possible initiatives to deliver project objectives.
Project cost	• Loss of funding for other projects. • Justification for expenditure.
The need for an integrated transport plan for Sydney	• Consistency with existing planning strategies. • Need for a transport blueprint.
The justification / need for the project	• Project proposed in an area already well serviced by public transport. • Patronage estimates.
Socio-economic impacts at Rozelle	• Impact on the Rozelle Public School and neighbourhood centre. • Impact on character of Rozelle.
Business impacts during construction	• Loss of trade / business. • Compensation. • Property acquisition.
Construction noise and vibration at station sites	• Noise at Rozelle and Pyrmont stations. • Vibration and its management.
Issues relating to the project design	• Station locations. • Entrance designs.
The metro network	• Extension of the metro. • Need for a metro network. • Selection of Rozelle as an end point.

Key issues	Sub issues
Project route development and station locations	• Use of the Metro Pitt corridor. • Pyrmont Station location. • Use of the Star City site as a station.

2.2.6 Form letters

Of the 2539 submissions, a majority were form letters. A submission was considered as a form letter if many (~more than five) of the same letters were received. Table 2.3 below provides a summary of the issues raised in each of the form letter submissions.

Table 2.3 Issues raised within form letters by type

Form and origin	Issues raised	Section addressed in
Type 1 (from an Eco Transit newsletter and a variation of same form)	• Project cost - loss of funding for other projects • Metro network - allowing for future metro networks and extensions • Need for an integrated transport plan for Sydney • Project route – use of the Metro Pitt Corridor	4.9 4.10 4.11 4.12
Type 2 (from the “Save Union Square” community group)	• Pyrmont Station heritage – protection of heritage at Union Square and general loss of heritage value • General business impacts (construction) – loss of trade, business, productivity • Socio-economic issues at Pyrmont – impact on the character of the area • Sufficiency of assessment • Station locations – alternative locations in Pyrmont	4.49 4.64 4.69 4.83 4.13
Type 3 (Statement on a Sydney Metro feedback form)	• Other design issues - provision of green space at the depot	4.20
Type 4 (from the Pyrmont Community Group)	• Pyrmont Station heritage – protection of heritage at Union Square and general loss of heritage value • Sufficiency of assessment – socio-economic impacts • Justification for the project - patronage • Need for an integrated transport plan for Sydney • Station locations – alternative locations in Pyrmont	4.49 4.83 4.7 4.11 4.13

3 Consideration of Government agency submissions

This chapter provides a complete set of the summaries of the key issues raised by each government agency and Sydney Metro's response.

3.1 Department of Industry and Investment submission

I&I NSW Issue	Sydney Metro response
Spoil Management (Minerals)	
I&I NSW supports the spoil management strategy in the EA which seeks to maximise the proportion of spoil used as in construction materials and to recover any accessible resources of 'Yellow Block' sandstone encountered during constructions.	Noted
Water Management (Fisheries)	
I&I NSW has noted that stormwater runoff from construction sites and runoff from the proposed train wash facilities could negatively impact upon the water quality and aquatic habitat of the nearby waters of Sydney Harbour. However, these impacts should be adequately mitigated by the measures proposed in section 12.4 and the draft SoCs.	Noted

3.2 NSW Maritime Authority submission

NSW Maritime Issue	Sydney Metro response
Drainage works at Rozelle Bay	
NSW Maritime was advised of proposed drainage works at the head of Rozelle Bay that are required to service the Rozelle Bay that are required to service the Rozelle holding yards. We suggest that a more detailed assessment of this aspect be included.	The proposed drainage and related structural works at Rozelle Bay will be assessed during the detailed design stage of the project when drainage aspects such as volume and flow rates of pipes into Rozelle Bay will be identified. Detailed design of drainage infrastructure and the stormwater outfall structure will be developed in consultation with NSW Maritime, including the need for seabed protection. Sydney Metro will obtain the necessary approval from NSW Maritime. Sydney Metro acknowledges that the project would be undertaken (in part) on land owned by NSW Maritime. Sydney Metro or it's contractor would obtain relevant consents and exemptions required under the Maritime Services Act. Sydney Metro has commenced the process of seeking NSW Maritime approval for works on Maritime land. An agreement between the two agencies is being developed to ensure relevant issues between the agencies are addressed in a timely manner. Sydney Metro also acknowledges that works that disturb the seabed .require approval from NSW Maritime.
Navigation	
The navigation impacts of on-water activities such as the mooring of barges should be considered as part of any assessment.	The Spoil Management Technical Paper in the EA concludes that "A review of transport alternatives for spoil removal indicated that removal of spoil from CBD construction sites would be via truck. From White Bay, however, removal by truck, rail or barge would all be logistically feasible. Removal by barge from Darling Harbour would also be feasible. Truck removal provides the greatest flexibility in terms of destination for the spoil. For barge removal a practical destination has to be established. Further assessment of spoil transport alternatives will be undertaken through the Sydney Metro procurement process to determine opportunities for removal of spoil by barge. The results of that assessment would form part of the contract obligation during construction. Statement of Commitment No. 45 in the EA provides that a Spoil Management Sub-Plan will be developed and implemented in accordance with the CEMP. It states that this Sub-Plan will include, as a minimum, a number of things including an alternative transport investigation to reduce road traffic movements. In the event that barging of spoil is a viable option, NSW Maritime would be consulted and the navigation impacts of on-water activities such as the mooring of barges would be considered as part of a more detailed assessment at that time.

NSW Maritime Issue	Sydney Metro response
Consents/exemptions	
As the project involves various occupations on or below NSW Maritime's land, it will be necessary for the proponent to obtain relevant consents or exemptions under the Maritime Services Act and to enter into appropriate tenure agreements with the NSW Maritime prior to construction.	Noted

3.3 NSW Roads and Traffic Authority submission

RTA Issue	Sydney Metro response
Construction Traffic	
Approvals	
Any proposed changes to traffic signals or their operation will require submission of plans to the RTA for specific approval and project management.	The design of local road works (including proposed changes to traffic signals or their operation) must comply with the Australian Standards, RTA requirements and the applicable local council requirements. Plans for proposed changes will be submitted to the RTA for approval, as required.
Road Occupancy Licences will be required where street or lane closures affect traffic.	Sydney Metro will require the contractor to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs). These will be submitted to the RTA for approval, as required.
The RTA should endorse and support any site traffic management plans and construction management plans prior to any activity commencing.	Noted see above
Traffic congestion during construction	
The RTA does not support construction traffic operating between 7am and 7pm due to adverse impacts on peak period traffic and also the precedent this will set for other developers in the CBD.	The project is critical infrastructure for NSW, with operations required to start in 2015. The project represents a significant public investment and has been given priority over other developments in the city. No such concession or precedent is proposed for other types of development. In order to meet the construction program, truck movements and construction activities would occur during and outside normal daytime construction hours. Some activities will require truck movements during peak periods. The general policies of *no construction traffic between 7am and 7pm* and *no construction traffic during peak periods* would not be feasible for this project.
While the traffic modelling indicates that there will only be a relatively small increase in total CBD congestion, local impacts will cause congestion at each construction site, causing delays to traffic generally and to buses particularly.	PARAMICS modelling being undertaken by the RTA has indicated that the proposed truck movements could be accommodated provided effective Construction Traffic Management Plans are implemented, including, as identified at some construction sites, restrictions on truck movements during certain times having regard to local conditions.
The EA generally indicates that construction truck traffic will not result in significant deterioration in overall traffic conditions. This would be true for any individual construction project	Sydney Metro will require contractors to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs). These will be submitted to the RTA for approval (via TTLG), as required. The TMPs & TCPs will address the following: • Measures to protect pedestrians and maintain surface public transport services during the

RTA Issue	Sydney Metro response
and hence the RTA and Sydney City Council have a general policy of no construction traffic during peak periods.	works. • Measures to manage traffic flows through and surrounding the construction routes, including regulatory and direction signposting, line marking and variable message signs. • Identify any mitigation measures to improve the efficiency of traffic and pedestrian movement and conditions. • Take into account both local and regional traffic impacts. Monitoring of construction traffic management is proposed throughout construction and delivery phases, to manage and respond appropriately to adverse impacts. There is scope to scrutinise some locations more closely such as the intersections on the City West Link and Victoria Road at Rozelle.
Traffic modelling has identified that at some sites there would be an impact on traffic signal operation and traffic flow efficiency during the PM peak. No alternatives or suggestions to improve the situation are offered. The RTA agrees that options need to be revisited and further analysis undertaken.	
Cumulative traffic impacts	
Cumulative impact descriptions are vague and not supported by detailed traffic modelling. While there is detailed information relating to truck movements and site access, information relating to supporting works and required lane closures to undertake utility relocations, kerb extensions and site activities is vague and generic. The combination of truck movements, traffic control and lane closures from other projects has the potential to be extreme when considering all sites.	Both Sydney Metro and the RTA have acknowledged the difficulties in attempting to model the cumulative impacts of other construction projects that could possibly be taking place during the constructing time period of the project, especially in the CBD. Sydney Metro notes that the RTA has agreed that, for the purpose of environmental assessment, it would be preferable to address this matter external to the Paramics Model by both identifying the potential other construction projects and addressing the likely impacts and associated mitigation measures as part of the broader traffic impact assessment. This approach is consistent with the Director-General's requirements for the project and was adopted for Chapter 18 of the EA. The impacts of road closures, kerb extensions and the like will be examined by the Contractor in the next round of TMPs and TCPs development. Further, Sydney Metro proposes two stakeholder liaison groups: the Central Project Coordination Committee (CPCC) and the Traffic and Transport Liaison Group (TTLG) to ensure that on-going Stage 1 works are coordinated with other development and public works and that construction traffic accommodates pedestrians, public transport and traffic.
Consultation with stakeholders	
Sydney Metro should liaise with Sydney Council and Leichhardt Council regarding traffic issues effecting local roads and approval of traffic signage via Traffic Committee.	Implementing a project of this scale involves significant interaction between Sydney Metro, various other organisations and the general public. Effective communication and coordination would be fundamental to delivering the metro. Proactive management by Sydney Metro and its delivery partners would reduce issues over the long term and support the effective delivery of the project. Based on previous experience, Sydney Metro proposes two stakeholder liaison groups be established – the Central Project Coordination Committee (CPCC) and the Traffic and Transport
Sydney Metro should liaise with State Rail and Sydney Buses regarding any effect on their services.	
Sydney Metro should liaise with the Taxi Council regarding any changes to taxi ranks.	

RTA Issue	Sydney Metro response
Sydney Metro will need to consult with RTA, Sydney City Council and others prior to work commencing. Full detailed concerns are available for all sites and will be supplied directly for discussion as part of the ongoing consultation process.	Liaison Group (TTLG). The Central Project Coordination Committee would: • Provide a strategic and tactical forum for ensuring the project works are coordinated with other development and public works. The CPCC would be concerned with longer term plans such as the end-state arrangements, and would coordinate with other existing groups and initiatives, to ensure an integrated planning approach before, during and after the metro is constructed. • Aim to mitigate impacts on local business, residents and CBD visitors by ensuring that construction impacts arising from the project are integrated and balanced against the construction impacts of wider redevelopment and other changes occurring within the CBD. The Traffic and Transport Liaison Group would: • Ensure that all relevant traffic management authorities affected by construction traffic are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed prior to the start of construction. • Possibly undertake the consultation functions, which would otherwise occur at forums such as the Council Traffic Committee, when determining traffic management measures to be put in place to manage construction activities. The TTLG participants may vary depending on the construction site and potential issues and areas affected. However, the core group may consist of Sydney Metro, RTA, Police, Fire and Ambulance, City of Sydney and Leichhardt Municipal Council traffic officers, State Transit Authority, RailCorp, NSW Transport and Infrastructure, Taxi Council, Bus and Coach Association, Metro representative and the Contractor's Traffic Manager.
Any Conditions of Approval should include reference to ongoing dialogue with the RTA to resolve the final proposals to the satisfaction of the RTA.	
Traffic networks and management plans	
A comprehensive TMP is needed for each construction site. Trucks must not be permitted to queue on street and dedicated off road truck waiting areas will be needed.	Sydney Metro will require the contractor to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs). These will be submitted to the RTA for approval. Due to restricted space with the worksites there may be requirements for some on road parking / waiting / unloading by construction traffic. The contractor will be required to complete a Road Occupancy Licences (ROLs) for any dedicated street truck queuing areas if necessary. This will be submitted to the RTA for approval, as required. During times of continuous construction traffic activity, it is likely that a trucks will use a truck call forward areas, and a truck call-up system be used to assist construction traffic management and minimise disruption to road users. The design of works (including proposed changes to footpaths, traffic signals, carriageways, and line markings) must comply with the Australian Standards, RTA requirements and the applicable local council requirements. The contractor will submit plans for proposed changes to the RTA for approval, as required.

RTA Issue	Sydney Metro response
The RTA has specific concerns related to the operation of the traffic network at the following site: Central Station - Eddy Ave/Elizabeth St - reduction in lane capacity	Construction works at Eddy Ave/Elizabeth St are not proposed.
The RTA has specific concerns related to the operation of the traffic network at the following site: Barangaroo-Wynyard - any closure or capacity restrictions in Margaret St	Widening of the footpaths on the southern side of Margaret Street, between York Street and Kent Street will improve pedestrian access and connectivity and accommodate also additional pedestrian demand. Footpath widening will require the reconfiguration of existing traffic lanes.
The RTA has specific concerns related to the operation of the traffic network at the following site: Rozelle Station - Victoria Rd/Wellington St/access to the Tigers site - introduction of a 4th leg and provision of right turns	Sydney Metro is working with Sydney Buses and RTA officers to refine the proposal to provide for outbound buses at the Rozelle station site. RTA concerns in relation to the right turning traffic from Victoria Road into the new access road are now being examined. The introduction of a fourth leg at the Victoria Road / Wellington Street intersection is considered to be consistent with the planning instruments in place in this locality.
The RTA has specific concerns related to the operation of the traffic network at the following site: White Bay depot access - City West Link/The Crescent - right turn access from the site for construction stage only. End stage to be via James Craig Road.	The RTA's concerns in relation to Depot access following construction are acknowledged, however, Sydney Metro prefers to retain the flexibility of longer term right term access for Depot access purposes and to minimise James Craig road impacts.
Managing construction traffic	
All traffic, pedestrian, bicycle and public transport issues need to be addressed throughout construction.	Sydney Metro is committed to minimising the impact of construction on the community and road users, including pedestrians, cyclists, public transport and traffic. All construction activity undertaken will comply with the objectives and principles set out in the Framework Traffic Management Plan. The hierarchy of access adopted for construction traffic management planning is: Incidents; events; pedestrians; service vehicles; cycles; public transport; taxis; and private vehicles. Sydney Metro will require contractors to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs). These will be submitted to the RTA for approval, as required. The TMPs & TCPs will address the following: • Measures to protect pedestrians and maintain surface public transport services during the works. • Measures to manage traffic flows through and surrounding the construction routes, including regulatory and direction signposting, line marking and variable message signs.

RTA Issue	Sydney Metro response
	• Identify any mitigation measures to improve of traffic and pedestrian movement and conditions. • Take into account both local and regional traffic impacts. Monitoring of construction traffic management is proposed throughout construction and delivery phases, to manage and respond appropriately to adverse impacts.
Spoil removal	
The operating times for spoil removal trucks needs to be further considered. Truck movements should be kept off the road network during both morning and evening peaks Monday to Friday.	The project is critical infrastructure for NSW, with operations required to start in 2015. The project represents a significant public investment and has been given priority over other developments in the city. No such concession or precedent is proposed for other types of development. As noted earlier, in order to meet the construction program, truck movements and construction activities would occur during and outside normal daytime construction hours. Some activities will require truck movements during peak periods.
Spoil removal trucks should be limited to rigid single-tray trucks for construction sites in areas with high pedestrian activity (e.g. Barangaroo-Wynyard, Pyrmont and Rozelle).	To minimise the number of truck movements the largest vehicle possible will be used, taking into account constraints of access routes, safety and site constraints. It is proposed that the standard truck vehicle would be single rigid tipper truck able to carry up to $8m^3$ or 20-22 tonnes. Longer vehicles could be appropriate at some locations where access to the arterial road network is reasonably direct. It is proposed that the standard vehicle at White Bay construction site would be either a truck and dog or semi trailer able to carry up to $12m^3$ or 32 tonnes. The use of larger vehicles reduces the total number of trucks thereby mitigating truck traffic impacts.
Additional assessment	
The justification for and impacts of ancillary projects such as footpath widening, lane closures and bus route relocations have not been sufficiently documented to consider the potential impacts on traffic.	The justification for and impacts of various projects and initiatives has been documented in the TMPs, the Technical Paper 1 Transport and Traffic (6) and through Paramics modelling. Sydney Metro had identified works within each precinct to integrate each metro station with the current and future urban context and public transport infrastructure networks, to facilitate interchange; encourage walking, cycling and public transport usage; and create a customer journey that is seamless and intuitive from trip origin to destination. The hierarchy of access adopted for planning of metro stations gives priority to the most efficient and sustainable transport modes. The rationale for precinct works is discussed within Technical Paper 1 Transport and Traffic (6). The design of works (including proposed changes to footpaths, traffic signals, carriageways, and line markings) must comply with the Australian Standards, RTA requirements and the applicable local council requirements. The contractor will submit plans for changes to the RTA for approval.

RTA Issue	Sydney Metro response
Other RTA developments	
The location where the Lilyfield Pedestrian Link crosses the City West Link Road is not acceptable taking into account future road proposals in this area. While discussions have taken place, a resolution has not yet been found. Further consultation on this issue should be a condition of approval to ensure the link does not prevent future RTA road proposals being implemented without major adjustments to the bridge.	Considerable consultation with the RTA has been undertaken to inform the design and construction activities associated with the Rozelle stabling and maintenance depot, including reservation of land to account for future road proposals in this area. The location of the Lilyfield Pedestrian Link would not preclude future RTA road proposals, although minor adjustments may be necessary. If and when proposals are put forward, Sydney Metro would be in a position to resolve any conflict. The shared pedestrian and bicycle bridge provides a significant opportunity to reduce severance for residents of two Leichhardt Municipal Council suburbs: Lilyfield and Annandale. In addition to providing safe access across the metro depot, the link crosses the busy City West Link and provides access to the Lilyfield Light Rail station. This shared path brings forward the delivery of a missing link in the existing RTA Regional Bicycle Network and provides a connection to recreational bicycle routes as well.
The construction of the project may impact on existing major road infrastructure, including the Western Distributor and Cross City Tunnel. Sydney Metro should obtain specific approval to any proposed impacts on RTA related infrastructure and deeds with motorway operators.	The design process has recognised existing structures and underground services and key constraints and has endeavoured to minimise impacts on these assets. This is evidenced by the horizontal and vertical alignment of the metro and the preference for utilising existing road alignments as far as possible for that alignment. Significant technical consultation has been undertaken with infrastructure asset owners to ensure the long-term protection of existing and proposed infrastructure, including but not limited to: • RailCorp, particularly with regard to existing and protected rail corridors through the CBD. • RTA, particularly with regard to protection of existing road tunnels through the CBD (such as the Cross City Tunnel) and safeguarding potential future road infrastructure. • EnergyAustralia, particularly with regard to existing and proposed cable tunnels and facilities. • Building owners where deep basements occur, or are proposed. The tunnel alignment, interface agreements and/or design reflect the outcomes of this ongoing consultation.

3.4 Liverpool City Council submission

LCC Issue	Sydney Metro response
Project Cost	
Council believes that Sydney Metro should be predominantly funded through private capital in a PPP, enabling the MREP to be constructed in parallel using entirely public funding from the State. This would enable both projects to proceed as well as provide a foundation for more sustainable transport within Sydney.	The NSW Government has committed to fully funding Stage 1 of the Sydney Metro Network (Rozelle to Central). This will include redeveloping part of Central Station, which has significant capacity for strong connections with CityRail services. Council's support for a Privately Financed Project (PFP) model is noted. Other projects would be subject to separate funding and approvals.

3.5 Barangaroo Delivery Authority submission

BDA Issue	Sydney Metro response
Barangaroo Pedestrian Link	
The BPL should not be considered in isolation. There is a need to also implement on-surface pedestrian enhancements along the multiple street networks as part of the strategy to enhance pedestrian connectivity between the western edge of the CBD (including the Barangaroo site), Wynyard and surrounds.	In discussion with BDA and key government stakeholders, including the City of Sydney (CoS) and Roads and Traffic Authority (RTA), Sydney Metro has sought to facilitate the inclusion of surface pedestrian enhancements works as part of the Stage 1 project. These are as illustrated within Sydney Metro's Station Plans and the EA Volume 4 Reference Scheme plans for the BPL. The implementation of plans for the reconfiguration of surface streets (such as Margaret and Napoleon Streets) and associated crossings and intersections, whilst illustrated within the Sydney Metro Station Plans, is a matter for the RTA and CoS. Sydney Metro will undertake surface pedestrian enhancements works directly associated with the construction and operation of the Sydney Metro and BPL as illustrated within the EA.
The BPL design should provide the most direct tunnel link to Wynyard in the interest of cost efficiencies.	It is intended that the Barangaroo Pedestrian Link (BPL) should be on the shortest and most direct route that can be practicably achieved. The closure of the existing Kent Street tunnel as a result of the Sydney Metro works provides an opportunity to consider a BPL on this alignment rather than the current Margaret Street alignment. A new Statement of Commitment (No.11C) provides a process to explore the feasibility of an alternative alignment for the BPL along the alignment of the existing Kent Street tunnel.
The BPL design should consider connections to other buildings and enhancements of the retail nodes along the tunnel.	The design of the BPL as illustrated within the EA and Station Plans is subject to further detail regarding the provision of: • retail at the nodal points of the plaza created east of Morton's Hotel and adjoining Westpac, and at the intersection under Margaret and Clarence Streets; and • wider design development in accordance with the safety in design principles (CPTED principles) for the bridge, tunnel and nodal components. With regard to the proposed bridge over Sussex Street, it is confirmed that the design allows for a 5.5 metres clearance.
Construction site – Barangaroo-Wynyard Station	
Need to preserve amenity in the Sydney Metro construction compound (litter, dust, noise, odour, safety, traffic, etc).	In accordance with the Statements of Commitment, (items: 9 Cumulative impacts and interactions; 44 heritage; 50 Construction waste management; 51 Construction Traffic and Transport; 53 -61 Construction noise and vibration; 62-63 Construction air quality; 64 Construction waste management; 65 Construction carbon and energy management), Sydney Metro has undertaken to manage and mitigate the impacts of construction and preserve the amenity of the Sydney Metro construction compounds and impacts on adjoining properties and parties during construction.

BDA Issue	Sydney Metro response
Pedestrian connectivity	
Need to maintain public access on all sides (Shelley Street, harbour foreshore and Hickson Road).	Sydney Metro understands the BDA aspiration to maintain public access to the waterfront, and will undertake to provide a 3 metre wide public access route along the southern boundary of its work site adjoining Shelley Street, allowing for access to the waterfront and maintaining the western pavement along Sussex Street during construction. Sydney Metro will continue to work with the BDA to facilitate the return of the Barangaroo construction site, and in particular that part of the site on the corner of Sussex Street and Margaret Street West.
Kent Street tunnel	
Potential closure of the Kent Street tunnel	In addition Sydney Metro notes BDA's comments regarding the proposed closure of the Kent Street tunnel during construction of the Sydney Metro works. Sydney Metro recognises that, whilst the existing Kent Street tunnel is not accessible to all (not being compliant with the Federal Disability Discrimination Act 1992), it does provide an important pedestrian link for many of the office workers in the western corridor of the CBD, including Westpac to the Wynyard transport precinct and wider CBD. Sydney Metro will further develop construction methodologies, including investigating options for the staging of works (new Statement of Commitment No.11C). This will seek to maximise the opportunity to keep open for as long a period as can practicably be achieved, that section of the Kent Street tunnel from Kent Street to Clarence Street. This plan will be a key input to the Construction Traffic Management Plan and Traffic Control Plans as per the SOC 51.
Barangaroo-Wynyard Station Plan	
Need to include requirements of Barangaroo into the master planning and urban design around the stations and entrance portals.	Sydney Metro will incorporate details of the BDA proposed Barangaroo development within the Station Precinct Plans. However, as the BDA tender process is underway, these details will not be publicly available for some time. It is currently intended that the Station Plans would be submitted for approval to the Department of Planning and will reflect work to incorporate BDA requirements into the master planning and urban design around the stations and entrance portals. Sydney Metro has committed to consultation with the BDA to develop the design and configuration for the proposed Sydney Metro structures located on the Barangaroo site, as well as the integration of these structures and the BPL within BDA's planning of its public domain. It is considered that potential impacts associated with operation noise can be managed to mitigate any impacts of ground borne noise levels on future building on the site. Refer to Chapter 15 of the EA and Statement of Commitment No. 22. Sydney Metro is committed to ensure consultation is undertaken in the development of the Station Plans, in accordance with its Statement of Commitment No. 11.

BDA Issue	Sydney Metro response
Broad level only public domain enhancements within the EA. Detailed plans are only indicative. Station Plan, exhibited concurrently, also does not provide firm detail in relation to surface works. BDA is unclear what, if any, above ground water Sydney Metro is seeking consent for and requests clarification. BDA requests the opportunity to comment on any subsequent detailed designs prior to determination. No development should be approved within the Barangaroo site or associated with the BPL without BDA's prior approval.	Sydney Metro will continue to work collaboratively with the BDA in the development of detailed design for the Sydney Metro project on the Barangaroo site and with regard to the development of the BPL. Any development on the Barangaroo site or associated with the BPL would not be undertaken without prior consultation with BDA, subject to achieving the NSW Governments stated commitments in terms of the successfully and timely delivery of the Sydney Metro.
Cumulative construction impacts	
Cumulative impacts associated with Barangaroo development, particularly traffic movements in the vicinity from both developments.	Sydney Metro confirms, that in accordance with its Statement of Commitments (item 9 Cumulative impacts and interactions; 45 Spoil Management; 48 Minimisation of impacts from transporting spoil; 49 Protection of the environment, workers and public and 51 Construction Traffic and Transport), that issues associated with any contaminated spoil, options for barging and cumulative impacts during construction will be addressed.
Need to ensure coordination during construction with Sydney Metro and Barangaroo.	In addition under Statement of Commitment No.9 and No.52, a Traffic and Transport Liaison Group is to be formed to ensure that all relevant agencies, including the BDA, are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed.
Suggest a Joint Spoil Management Plan and/or Joint Construction Management Plan for both developments (Metro and Barangaroo).	
Statement of Commitments	
BDA have reviewed the following draft SoCs: # 9, 10, 11, 45, 48, 49, 51 Detailed comments in Attachment 1.	In order to address the issues raised by the BDA, a new Statement of Commitment (No.11C) is proposed with regards to the Barangaroo Pedestrian Link that will ensure that the detailed environmental and pedestrian management issues are identified and managed to enable the successful construction and delivery of the Barangaroo Pedestrian Link.

3.6 State Transit Authority submission

STA Issue	Sydney Metro response
Consultation	
The STA asks that it be included in any further discussions regarding the Sydney Metro or any associated works. State Transit welcomes the inclusion of our organisation in the Traffic and Transport Liaison Group.	STA is a recommended member of the TTLG.
Construction Traffic	
Central Station	
Timeframe for construction is unclear.	Chapter 7 of the EA sets out the construction timeframe overall and at each construction site.
The EA states relocation of UNSW shuttle services out of Eddy Ave to Pitt St and Chalmers St. There is insufficient kerb space and passenger waiting facilities on these two streets.	The metro is a significant infrastructure commitment and will have construction traffic. Delays to the travelling public (including students) may occur; however, contract documentation includes the requirement to accommodate safe movement of pedestrians, cyclists, public transport users and operators (as well as road traffic) during construction and fit out. The Central Project Coordination Committee (CPCC) will provide a strategic and tactical forum for ensuring works are coordinated with other works and mitigating impacts during construction. This will include management of bus flows and relocation of UNSW shuttle services to an appropriate location. Chalmers Street is an option for the relocated UNSW buses. Scope also exists to accommodate some of these relocated services in Elizabeth Street between Eddy Avenue and Albion Street (western side).
Closing of the slip lane from Pitt Street into Eddy Avenue which will delay buses which is unacceptable. STA also question the Paramics model of the intersection.	The proposed closure of the slip lane from Pitt Street into Eddy Avenue is not critical to the project in its early stages and can be subjected to further scrutiny during the further development of Traffic Management Plans and Traffic Control Plans.
What measures will be used to manage bus flow and services due to lane closures on Eddy Avenue?	There are no lane closures proposed in Eddy Avenue during construction with the exception of the kerbside closures required to accommodate truck ingress and egress at the Belmore Park worksite. These lane occupancies will have no more impact than current kerbside UNSW bus operations.
Further information required on impacts of construction on Railway Square due to construction at forecourt and	Traffic Management Plans (TMPs) are being further developed in consultation with RailCorp which

STA Issue	Sydney Metro response
changes to kerb side restrictions.	examines in more detail the traffic, coach and pedestrian needs of the western forecourt.
Western forecourt will be reduced to 3.5 metres which will reduce pedestrian flows and compromise pedestrian safety.	Provision will be made for pedestrian access around the southern and eastern boundary of the worksite via a 3.5 metre wide pedestrian footpath. This will be external to the worksite itself and will not compromise pedestrian safety.
Town Hall	
Construction of the Town Hall Square station will impact on bus services using the Park Street interchange (Mid-City interchange).	In view of the much higher number of bus services using George Street compared with Park Street and the Mid-City interchange, the indicative Construction Traffic Management Plans (Technical Paper 1) recommends a left-out to Park Street rather than to George Street. Inconvenience to waiting bus passengers and delay to buses at Park Street is expected to be minimal as there are no bus stops in this location between George and Pitt Streets. A Construction Traffic Management Plan is required for this location. CTMPs address construction traffic impacts to pedestrians, cyclists public transport users as well as traffic.
An off-road transport interchange is required to accommodate up to twelve rigid buses, potentially in the old Woolworths site.	The Woolworths site is the proposed station construction site and its use as a bus interchange is considered incompatible with the proposed City of Sydney's proposed end-state use for this site (Technical Paper 1).
STA does not support the reallocation of kerb space in Bathurst Street (between Kent and George Streets) and proposes Kent Street (between Liverpool and Bathurst streets).	No reallocation of kerb space in Bathurst Street between Kent and George Streets is proposed.
STA suggests a dual northbound bus lane on Elizabeth Street between Liverpool and Market streets be provided 24 hours a day, 7 days a week.	As with the provision of surface bus layover, the provision of dual northbound bus lanes on Elizabeth Street is not within the scope Sydney Metro Line 1 Stage 1 project. The merits of dual northbound bus lanes could be revisited by NSWTI, the RTA and the City of Sydney, potentially within the CBD Bus Strategy; however it is not within the scope Sydney Metro Stage 1 project.
Martin Place	
STA does not support the removal of the bus zone on the eastern side of Castlereagh St, east of Hunter St as a number of bus services start at Martin Place. An alternate location may be possible, but not suggested.	The removal of the bus zone in Castlereagh Street is consistent with proposals in the on-going implementation of the CBD Bus Strategy. The proposed removal of Castlereagh Street bus services to George and Elizabeth Streets as part of the CBD Bus Strategy does not preclude the starting of bus services from Martin Place at Elizabeth Street.
STA does not support the truck access to Chifley Arcade site via Castlereagh St (southbound) and Elizabeth Street (northbound) due to bus operations at Martin Place.	With the proposed 2010 implementation date for the NSWTI CBD Bus Strategy, truck access at Chifley Arcade, via Castlereagh Street, will not interfere with bus operations, as there will be no buses in Castlereagh Street.

STA Issue	Sydney Metro response
What impacts will construction have on pedestrians and passengers waiting for the bus on Castlereagh Street?	
Barangaroo	
What measures will be used to manage impacts on bus services at Wynyard?	Construction Traffic and Transport Management Plans and Construction Traffic Control Plans are proposed for each Road Occupancy Licence and traffic change. The metro is a significant infrastructure commitment and will have construction traffic. Delay to the travelling public will occur at Wynyard; however, contract documentation includes the requirement to accommodate safe movement of pedestrians, cyclists, public transport users and operators (as well as road traffic) during construction and fit out.
Removal of the 'no right' turn prohibition from Margaret into Clarence Street will impact bus services. This restriction should remain in place, contrary to the EA.	These matters can be considered by the Traffic and Transport Liaison Group (TTLG) and/or Network Coordination Liaison Group (NCLG) in the context of consideration of the mitigation and management of construction impacts, as well as potential end state arrangements. The closure of the Kent Street pedestrian tunnel is considered further in Chapter 5 of the Submissions Report.
Closure of Margaret Street will cause numerous traffic problems and a possible solution may be to provide dual westbound lanes along Jamison and Lang streets.	
Vehicular traffic should be prohibited from turning right from Erskine Street into Clarence Street.	
STA does not support the removal of parking restrictions in Erskine Street (between York and Clarence streets).	The EA working papers assessed a range of options. The reference design for Barangaroo-Wynyard does not include any changes to parking restrictions in Erskine Street.
Rozelle	
Truck movements would affect Victoria Road buses.	Truck movements into and out of the worksites may result in some delay to bus movements inbound along Victoria Road. Truck ingress and egress will be controlled by traffic controllers to ensure that delays are minimised.
No truck movement to and from site should occur between 3:30 to 7pm, Monday to Friday.	Truck ingress and egress into and out of the Victoria Road worksites will result in some traffic delays and some reduction in performance at the intersection of Darling Street and Victoria Road. PM peak hour operation Rozelle requires further scrutiny.
Truck routes may impact on city bus services and alternate routes should be considered.	Trucks will be restricted primarily to Victoria Road. Alternate routes via lower order roads would not be appropriate.

STA Issue	Sydney Metro response
Operational traffic	
Barangaroo	
Footway closures between York and Sussex Street will impact the York Street bus set down area, particularly during the morning peak period.	Construction Traffic Management Plans and Construction Traffic Control Plans are proposed for each Road Occupancy Licence and traffic change.
Mitigation measures should be considered including a number of changes to the road system must be considered such as partial/full closure of Margaret Street, control flow in York Street (between Margaret Street and the Harbour Bridge) and dual carriageway between Land and Jamison Street.	The proposal to reduce carriageways widths along sections of Margaret Street has been addressed in the EA and is now being subjected to closer scrutiny. Contra flow bus options in York Street are also now being examined by Sydney Metro as a means of mitigating traffic and pedestrian impacts.
Mitigation measures should be considered including a number of changes to the road system must be considered such as partial/full closure of Margaret Street, control flow in York Street (between Margaret Street and the Harbour Bridge) and dual carriageway between Land and Jamison Street.	
The closure of Kent Street tunnel will affect pedestrian movement. Changes to bus services required prior to construction, and creation of bus lanes between Barrack and Jamison streets.	The proposed closure of the Kent Street pedestrian tunnel and the means of mitigating these impacts are now being examined by Sydney Metro. The proposed widening of the Margaret Street footpaths will assist in this regard. This matter can be considered by the Traffic and Transport Liaison Group (TTLG) and/or Central Project Coordination Committee (CPCC) in the context of consideration of the mitigation and management of construction impacts, as well as potential end state arrangements.
Any proposed loss of bus parking for York Street must be off-set. STA suggests in Clarence Street (between Margaret and Jamison streets).	Two bus spaces would be lost in York Street (western side) if the as a result of the proposed southern extension of the kerb blister along York Street. However, the Stage 1 project provides the opportunity to implement upgraded Wynyard Bus Interchange bus operations. The creation of bus lanes between Barrack and Jamison has not been examined and is outside the project scope.
STA does not support the loss of any bus zone on the western side of York Street.	
Consultation with Sydney Metro needed for relocation of bus zone on western side of Clarence Street before any changes are made.	Sydney Metro will consult with Sydney Buses in relation to the bus bay impacts on the western side of Clarence Street. This matter will be considered by the Traffic and Transport Liaison Group (TTLG) and/or Central Project Coordination Committee (CPCC) in the context of consideration of the mitigation and management of construction impacts, as well as potential end state arrangements.

STA Issue	Sydney Metro response
Inclusion of dual bus lane on Clarence Street between Druitt Street and the Harbour Bridge should be included as a condition of consent.	The provision of dual bus lanes on Clarence Street is not within the scope Sydney Metro Line 1 Stage 1 project. The merits of dual bus lanes at Clarence Street could be revisited by NSW Transport and Infrastructure, the RTA and the City of Sydney, potentially after the implementation of the CBD Bus Strategy. However it is not within the scope Sydney Metro Line 1 Stage 1 project.
Rozelle	
STA does not support the proposed Rozelle bus bay, with a preference to continue the use of the existing kerbside stop and pick-up. Other infrastructure such as shelter and real time information could be included. STA suggests an outbound bus lane between White Bay and Lyons Road during peak periods.	Sydney Metro is working with Sydney Buses and RTA officers to refine the proposal to provide for outbound buses at the Rozelle station site. The design of the proposed bus bay at Rozelle has been developed to address a number of issues including RTA / Sydney Buses safety requirements for safe sight distances from the crest at Darling Street, and the need for a deceleration lane for access to the proposed Balmain Leagues Club redevelopment and safe bus ingress / egress. The facility is also being designed to provide an adequate passenger waiting area and facilitate access from the metro station. Several options have been investigated in consultation with the RTA and Sydney Buses acknowledging the constraints at this site. Opportunities to reduce vehicle / bus conflict will continue to be investigated, with a view to minimising (undesirable) property impacts. Alternatives, such as changes to (or removal of) the bus lane arrangement or signalling solutions will also continue to be investigated, acknowledging that these may slightly reduce bus travel times. Finally, a bus transfer solution with fewer bus stops will also be investigated. The merits of a bus lane from White Bay to Lyons Road is outside the scope of the Sydney Metro Line 1 Stage 1 project, though this could potentially be revisited by the RTA to augment the Inner West Busway project.
STA does not support the additional inbound stop prior to Darling Street as the existing bus arrangements are satisfactory and safe.	The second inbound bus stop is proposed to provide additional set down kerbspace for bus to unload passengers and to facilitate safe access to the metro station entrance.
A layover facility (capable of handling up to 12 rigid buses) need to be provided if STA do not agree to terminate bus services.	A range of sites has been considered for a possible short stay layover facility. The Leichhardt Bus Depot, approximately 1.8 kilometres from the Rozelle Station, is considered the most suitable location for such a facility.
Network operations	
Bus bay design at Rozelle Station is inappropriate. An entrance to a private car park has been located within the bus bay which could cause a number of difficulties for bus access into the bus bay.	The design of the proposed bus bay at Rozelle has been developed to address a number of issues including RTA safety requirements for safe sight distances from the crest at Darling Street, and the need for a deceleration lane for access to the proposed Balmain Leagues Club redevelopment. It has also been designed to provide an adequate passenger waiting area and facilitate access from the metro station.

STA Issue	Sydney Metro response
The inclusion of real time information, improved passenger waiting facilities and associated improvements to bus stop signage are included as a requirement. Inclusion of off-road interchange facilities for bus services need to be considered for Rozelle, White Bay, Town Hall and Barangaroo.	Included in Technical Paper 1. The NSW Government has reaffirmed it will not be providing a bus interchange at the Rozelle station site. Provision of off-road bus interchange facilities are not proposed as part of this project.

3.7 Department of Environment, Climate Change and Water submission

DECCW Issue	Sydney Metro response
Environmental Protection Licence	
An Environment Protection Licence (EPL) will be required under the POEO Act for land-based extractive activities that involve the extraction, processing or storage of more than 30,000 tonnes per year of extractive materials for the removal of 1.27 million cubic metres of spoil.	Agreed. It is Sydney Metro's intention that the Contractors will apply for and hold the EPL. The EPL strategy will consider that there will be two Contractors, for PRI-1 and IMO. Sydney Metro notes DECCW's advice that an EPL for the operation of Stage 1 is not required.
An EPL is also required for concrete works as 323,100 cubic metres of concrete is required for the construction of the project.	As above.
Should groundwater require treatment as part of remediation activities, a licence will be required for contaminated groundwater treatment, should more than 100ML/year require treatment.	As above.
A EPL may also be required for crushing, grinding or separating if more than 30,000 tonnes of material per year or 150 tonnes of material per day are processed as part of the project.	Agreed, the PRI-1 contractor will make an assessment as to the EPL requirements for crushing, grinding or separating.
During the construction works, the project will be licensed by DECCW and construction hours will need to be specified by the EPL. When excavation works are complete, and therefore no longer licensed, the construction hours will only be specified by the Ministerial Conditions of Consent issued by DoP.	As noted by DECCW an EPL is required for extractive industries and concrete works. Working hours will be provided in the EPL and SM will not be looking to relax working hours solely as extractive activities cease.
Noise and vibration – General	
DECCW notes that the noise assessments for the project are based on a reference design that will be refined through the detailed design process. Furthermore, construction methods have not been finalised at this stage of the project. Therefore, DECCW's comments focus on performance requirements and post approval processes to allow for consideration of detailed design	The noise assessments are based on the Reference Design and the potential noise and vibration impacts, mitigation measures and management approaches are based on the proposed construction methodologies. Technical Paper 3 notes the following on Page 36: *"Should circumstances arise that result in minor changes to the Reference Design, the noise and vibration impacts as a result of the project would not be expected to be greater than those described and assessed within this report. If the detailed design phase does result in significant*

DECCW Issue	Sydney Metro response
information and proposed construction methods.	*changes, these will need to be assessed and approved on a case by case basis in consultation with the affected community. It is also noted that the project noise and vibration design goals are unlikely to change throughout the project, and that the successful tenderers would be required to comply with the SoC described in this report."* Whilst the Reference Design will be refined through the detailed design process, the construction contractor will be required to demonstrate that the potential noise and vibration impacts are not significantly different than what is documented within the Environmental Assessment. If there are significant changes, the construction contractor is required to seek approval and consult with the community. Furthermore, the Sydney Metro Construction Noise and Vibration Strategy requires the construction contractor to identify all feasible and reasonable measures to reduce potential impacts on the community and consult with the community.
Given the nature of the project, the proximity of sensitive receivers to construction sites, the duration of construction and the prediction that construction will be required to occur outside standard construction hours, the project is likely to have a significant noise impact during construction. However noise and vibration impacts from operation of the project are amenable to mitigation measures.	During construction, noise and vibration levels are anticipated to exceed the management levels at some locations even after implementation of all feasible and reasonable measures. Accordingly the Sydney Metro Construction Noise and Vibration Strategy requires the management of noise and vibration issues. During operations, the proposed mitigation measures are anticipated to be sufficient to achieve the design goals at all receivers.
Construction Noise and Vibration	
DECCW recommends that a post approval process be applied for out of hours construction activities so that noise impact assessments can consider the detailed design, construction methods and noise mitigation measures proposed.	The Environmental Assessment highlights that certain construction activities will be required outside the standard construction hours to ensure that the project is completed in a timely and cost-effective manner and minimises long-term impacts on the community. This includes, but is not limited to construction activities such as tunnel excavation using TBM's and roadheaders, excavation of the station entries, underground stations and ventilation shafts and spoil removal by trucks. Figure 2.1 in the Sydney Metro Construction Noise and Vibration Strategy illustrates the procedure for applying the Strategy and identifying all feasible and reasonable mitigation measures - and undertaking community consultation. This process also includes a requirement for the construction contractor to consider potential mitigation measures in the DECCW's Interim Construction Guideline and AS 2436:1981. Where noise and/or vibration issues have been identified after all feasible and reasonable mitigation measures have been implemented, the construction contractor is required to produce a Noise and Vibration Management Plan. The Sydney Metro Construction Noise and Vibration Strategy requires that the noise and vibration

DECCW Issue	Sydney Metro response
	management plan to be prepared by an ACCC accredited acoustical consultant and liaison with DECCW is required.
DECCW recommends that out of hours construction be assessed on a case-by-case basis by DECCW (where the activity is covered by an EPL) and DoP (in the absence of an EPL).	Worksites are only required to be fully enclosed where night-time construction works are proposed over an extended period and where the potential noise impacts requires a full enclosure to be constructed to reduce noise levels. At this stage of the design process, it is agreed that it is not appropriate to provide a commitment to fully enclose specific work sites. This provides flexibility to the successful contractor to identify alternative work practices or scheduling to reduce noise impacts by other means. As discussed in above, the Sydney Metro Construction Noise and Vibration Strategy defines the proposed procedure for assessing the potential noise impacts for out of hours works and identifying feasible and reasonable mitigation measures. It is noted that this process already includes a requirement to consult with DECCW as part of the noise and vibration management plan process
DECCW recommends consultation in the preparation of the Construction Noise and Vibration Management Plans and Environmental Noise Construction Method Statements.	Construction Noise Management Plans describe in detail the methods that will be implemented for the whole project to minimise the noise impacts. Construction Method Statements describe in detail the methods that will be implemented at a specific site to minimise a range of impacts from the works. The Sydney Metro Construction Strategy includes a requirement to prepare Noise and Vibration Management Plans where noise and/or vibration issues have been identified after all feasible and reasonable mitigation measures have been implemented. The Noise and Vibration Management Plans are project specific and cover all aspects for all sites. The Sydney Metro Construction Noise and Vibration Strategy will be updated to more clearly describe the methods that will be implemented at each site to mitigate noise and vibration levels. As discussed in above, the Sydney Metro Construction Strategy already includes a requirement to consult with DECCW as part of the noise and vibration management plan process.
DECCW does not accept the proposed vibration criteria for PCF techniques in the EA. The number of PCF initiations in an assessment period is not defined in the EA.	The proposed peak vibration criteria of 2 mm/s to 4 mm/s during the night-time period are based on the Impulsive vibration levels in the DECCW guideline *Assessing Vibration: a technical guideline* (DEC, 2006). As such, a maximum of three PCF events will be undertaken during the night-time period at specific work sites. If more than three PCF events are required during any assessment period, appropriate vibration design goals will be negotiated in consultation with DECCW.

DECCW Issue	Sydney Metro response
Operational Noise and Vibration	
DECCW recommends that surface facilities be subject to a detailed design assessment against the provisions of the INP.	The Statements of Commitments adopt the NSW Industrial Noise Policy for these activities.
DECCW recommends ground-borne noise and vibration limits for in-tunnel train operations and additional assessment of the detailed design for the track bed form and rail fixing requirements against the limits.	Refer to response given for 'Draft conditions of approval' for operational noise No.2 (Pg 56)
DECCW recommends that operational noise assessment be carried out for the surface track design and breakout from ventilation shafts, to determine if noise trigger levels in the IGANRIP are met.	Refer to response given for 'Draft conditions of approval' for operational noise No.3 (Pg 57)
In-tunnel track maintenance activities have not been assessed in the EA and should be further considered. The impacts associated with track running surface maintenance need to be considered.	Section 17 of Technical Paper 3 details the requirements for the proposed Operational Noise and Vibration Management Plan (ONVMP) for the project. The following quotation is provided in Technical Paper 3: *"The ONVMP is to address noise and vibration from all aspects of the project operations, not limited to ground-borne noise and vibration from train passbys, airborne noise from train operations between the stabling facility and tunnels, airborne noise from the train stabling and maintenance facilities, car park noise and airborne noise from other ancillary facilities including stations and tunnel ventilation shafts."* The ONVMP will also address in-tunnel maintenance activities and consider impacts associated with track running surface maintenance. Preliminary comments are provided below: In-tunnel track maintenance activities: As described in Section 15.1 of Technical Paper 3, maintenance activities will be confined to night-time periods when train operations have ceased. These activities will include routine track inspections, loading of equipment onto hi-rail vehicles, entering tunnels and operation of a diesel or battery powered maintenance locomotive for track inspections and maintenance. It is likely that the maintenance will be undertaken during the weekdays, except for the emergency works. Track maintenance vehicles operating within the tunnels will be subject to the same noise and vibration requirements for train operations and track-based monitoring equipment will be utilised to identify wheel defects that may result in exceedances of the design goals. On the basis that hi-rail vehicles and maintenance locomotives will operate at reduced speeds compared with normal operations, noise and vibration levels are anticipated to be lower than during normal operations. Surface maintenance activities (eg rail grinding): An assessment of the potential noise impacts associated with normal maintenance activities is provided in Section 15 of Technical Paper 3. In

DECCW Issue	Sydney Metro response
	relation to rail grinding activities, Technical Paper 3 notes that rail grinding will not be undertaken frequently (eg every week). Whilst the frequency of rail grinding operations is not currently known, it is likely that rail grinding will be required at the same location at periods exceeding six months. Because of the infrequent nature of these operations, it is likely that the ONVMP will require community notification prior to undertaking rail grinding on surface track to inform residents of the timing and duration of the proposed works. The potential noise impacts for these operations are not anticipated to be significant.
The potential ground-borne noise and vibration associated with 'rail grinding' should be considered in the track bed form and rail fixing analysis.	Given the infrequent nature of rail grinding operations, it is not feasible or reasonable for the track mitigation measures to be designed to achieve operational ground-borne noise limits. Experience on the Epping to Chatswood Rail Line indicates that ground-borne noise and vibration levels are not anticipated to be significantly different to normal operations. Should these works result in the ground-borne noise and vibration design goals being exceeded, then the ONVMP will require community notification prior to undertaking rail grinding within the tunnels to inform residents of the timing and duration of the proposed works.
DECCW recommends that the DoP consider imposing specific compliance assessment requirements in the conditions of approval, similar to those in the Epping to Chatswood Rail Link approval.	Whilst not stated in the DECCW submission, it is assumed that the relevant Epping to Chatswood rail Link condition is Condition 80 which is shown below: *"80. A detailed impact assessment report on operational airborne and regenerated noise and vibration shall be undertaken in accordance with the Operational Noise Management Sub Plan after two and seven years from the opening the project and at any other time as required by the Director-General. The Report shall have regard to compliance with the criteria specified in Conditions, 70, 71, 73, 74, and 76 and specific areas to be identified in consultation with the EPA. Should assessment indicate a clear trend for noise and/or vibration levels to exceed the criteria established under the ONVMP, the Proponent shall implement further reasonable and feasible mitigation measures in consultation with affected landowners and/or occupiers."* Sydney Metro does not object to the inclusion of a similar condition relating to compliance assessments.
Contamination	
DECCW recommends that prior to commencement of construction; Remediation Action Plans should be prepared and implemented with Site Auditor Approval. Waste Classification Assessments are required for spoil that is not VENM.	Agreed. Section 3.2 of Appendix A, technical 2 identifies a strategy for engaging a Site Auditor and preparing and updating RAPs.
Further investigation into groundwater quality at White Bay will be required should dewatering works be required to construct White Bay Station. The extent of lead contamination in the soil at White Bay should be delineated prior to commencement of construction and	Agreed. It is noted that Sydney Ports Corporation have indicated the removal of contaminated material at this location.

DECCW Issue	Sydney Metro response
remediated if required.	
At Rozelle Marshalling Yards and the former Millers Point Gasworks site, for all areas requiring dewatering, the groundwater quality and any potential impacts of dewatering on surrounding contaminated sites must be assessed to determine management and treatment requirements including potential reuse of groundwater.	Agreed, where dewatering is required in potential or known contaminated sites the groundwater quality will be assessed prior to identifying potential discharge, reuse or treatment options.
Water Management	
The Construction Water Management Plan should indicate whether any treated water is intended to be disposed of by the sewer or by stormwater. Any discharges to the environment are required to comply with s.120 of the POEO Act.	Agreed
The CWMP should estimate the quantity of water that is likely to be generated by the inflows of surface or groundwater into the cavers and whether these temporary water treatment plants will be adequate for this purpose.	The temporary water treatment plants will be sized and operated to accommodate the water in flow into the tunnels and caverns – where necessary water quantities will be estimated.
The EMS should determine the requirements for ongoing capture, treatment and discharge of groundwater and surface water ingress into the stations and tunnels	Agreed
Ecology	
DECCW notes that appropriate micro-bat surveys have been conducted.	Agreed.
Any buildings which may be used as habitat by bats will not be demolished.	Disagree, the demolition of buildings and structures is required in order to construct the project. The EA notes that targeted survey detected no micro-bats. The project is not considered to pose a significant impact on threatened insectivorous bats, as no building structure likely to be habitable for bat would be demolished as part of the project.
Sustainability	
DECCW supports the incorporation of sustainable development into the governance of the project including development of a Sustainability Plan and audit program to ensure sustainability is integrated into all phases of the project.	Noted

DECCW Draft Statements of Commitments	Sydney Metro response
Aboriginal cultural heritage	
SoC 18 Public Art Plan - DECCW recommends that the SoC relating to public art should include a commitment to include an interpretation of Aboriginal cultural heritage (traditional and contemporary) in design and layout of rail infrastructure such as stations, signage and pedestrian access ways. The suitability of these proposals should be discussed with relevant Aboriginal communities.	As per Statement of Commitment No. 18 a Public Art Plan will be developed in consultation with local councils, local community, local Aboriginal stakeholders, the business community and key stakeholders and the Arts Council of NSW.
The following SOC should be included: The relevant Aboriginal communities should be consulted regarding any sites of cultural significance that may be impacted by the proposal for the purposes of assessing the impact of the proposal and exploring options to avoid or mitigate cultural heritage impacts.	Consultation has already been undertaken no sites have been identified
Consultation.	
SoC 35 - Stakeholder and the community are well informed about the project. The SOC should include a requirement for the proponent to notify the public of the existence and purpose of the 24 hour complaints line.	Agreed. Statement of Commitment unchanged
Spoil management	
SoC 45 - The Spoil Management Sub Plan needs to include: • Methodologies for on-site spoil handling, including measures to minimise the environmental impacts of spoil management such as dust and sediment laden runoff; • A requirement to undertake assessments of acid sulfate soils (ASS) in areas identified as posing a potential ASS risk based on the risk maps, and	Agreed. Minor amendment to Statement of Commitment.

DECCW Draft Statements of Commitments	Sydney Metro response
managed in accordance with relevant guidelines; and • A requirement to undertake detailed Waste Classification Assessments to allow appropriate waste classification of spoil that is not virgin excavated natural material (VENM).	
SoC 49 - The SOC states that "further assessment of potential contamination will be undertaken". The SOC should also include a requirement to prepare and implement Remediation Action Plans with Site Auditor approval prior to the commencement of construction activities.	Agreed where required. Statement of Commitment unchanged.
Water quality	
SoC 64 - No impact on the water quality of surrounding surface or underground water courses This SOC should include a requirement to assess the groundwater quality and any impacts of dewatering on surrounding contaminated sites, to determine the requirement to treat contaminated groundwater and its potential for reuse.	Agreed. Minor amendment to Statement of Commitment.
SoC 74 – A high level of environmental performance and continually improve This SOC should include is a requirement to develop a sub plan for the ongoing management of groundwater and surface water ingress into the stations and tunnels.	Statement of Commitment No. 74 makes provision for the development of strategies to manage water quality and groundwater and a water resource sub-plan which will address this issue. SoC unchanged.
Air quality	
SOC# 63 Identification and management of air quality impacts during construction The Environmental Construction Method Statements should include mitigation measures for dust emissions from spoil stockpile areas and from haulage routes.	Agreed. Statement of Commitment unchanged.
Operational noise and vibration	
SOC#21 Vibration levels during train passby do not cause disturbance to building occupants • Reference to 'goal' should be changed to 'limit'	• The proposed change from 'goal' to 'limit' is acceptable. • The vibration design limits proposed by DECCW are inconsistent with the DECCW guideline 'Assessing Vibration: a technical guideline' (DEC, 2006). If DECCW requires the continuous

DECCW Draft Statements of Commitments	Sydney Metro response
• It is recommended that the residential ground-borne vibration 'limit' be amended to 103dB$_V$ (0.14mm/s) to reflect the continuous RMS level for the night time period in the former DEC guideline 'Environmental Noise Management - Assessing Vibration: a technical guideline' (DEC, 2006). • Additional text indicating that the ground-borne vibration goals are based on the maximum 1s RMS vibration level, not to be exceeded by more than 5% of train pass-bys over any 24hr period, is needed. Ground-borne vibration goals for other sensitive land uses need to be included in the SoC, for example commercial, educational, office and places of worship (refer NIA Table 77).	RMS levels to be applied to underground railway operations, then the guideline should be amended - as it currently nominates that the intermittent vibration 'goals' apply for railway projects. • Vibration design limits will be amended to 103dB$_V$ (0.14mm/s) for the night-time period and 106dB$_V$ (0.2mm/s) for the daytime period at residential receiver locations. These are based on the maximum 1s RMS vibration level, not to be exceeded by more than 5% of train passbys over any 24hr period. It is noted that it is the intention of Sydney Metro that 100% of train passbys comply with the design goals and that continuous monitoring systems will be implemented to identify and rectify trains that exceed the design goals. • SOCNo.21 will be updated to provide design limits for other sensitive land uses. • Refer also to Item 16 in relation to ONVMP requirements.
SOC#22 Minimisation of ground-borne noise levels at nearby sensitive receivers • The wording of this condition excludes a residential daytime ground-borne noise limit. It is recommended that a daytime limit be included. • Text needs to reflect that; 'LA$_{max}$ refers to the maximum noise level not to be exceeded by 95% of rail passby events over any 24hr period and is measured using the slow response setting on a sound level meter'. • The level for retail areas should be 50dB(A).	The proposed modifications are generally acceptable, however: SOCNo.22 will be updated to include a residential noise design limit of LAmax(slow) 40 dBA during the daytime period. It is noted that it is the intention of Sydney Metro that 100% of train passbys comply with the design goals and that continuous monitoring systems will be implemented to identify and rectify trains that exceed the design goals. A retail design goal of 50 dBA is acceptable.
SOC#23 Minimisation of ground-borne noise levels at nearby sensitive receivers • Text should be changed from 'ground-borne noise design goals' to 'ground-borne noise and vibration design limits'. • It is recommended that the proponent commit to engaging an independent design verifier for the track form design, to ensure, to the greatest extent practicable, that the final design will achieve the ground-borne noise and vibration limits committed to. NOTE: The ECRL project included the use of an independent design verifier, and also adopted a 5dB design buffer to account for modelling and engineering performance uncertainties.	The proposed change from 'goal' to 'limit' is acceptable. Sydney Metro agrees that the contractor should be obligated to appoint an independent design verifier for the track form design, similar to ECRL. At this stage, it is not appropriate to specify a blanket 5dB design buffer approach to overcome modelling and engineering performance uncertainties. The contractor may choose to adopt an alternative risk management strategy to achieve compliance with the design limits. Consistent with Conditions of Approval 80 and 81 of the ECRL Project, it will be necessary for the operator to prepare an Operational Noise and Vibration Management Plan (ONVMP) which provides an assessment of the ground-borne noise and vibration levels after opening and nominally 2 years and 7 years after opening. Should any of these assessments indicate a clear trend for noise and/or vibration levels to exceed the design limits, reasons for these exceedances shall be identified and the operator shall implement further feasible and reasonable mitigation measures.

DECCW Draft Statements of Commitments	Sydney Metro response
SOC#24 Minimisation of airborne noise levels at nearby sensitive receivers Text 'residential receivers, schools, educational institutions, and places of worship' needs to be amended to include 'hospitals, passive and active recreation areas' for completeness.	Noted
SOC#25 Minimisation of general train curve noise and any curve squeal noise (which may be generated from the curved underground sections) Additional text at end of sentence recommended; 'to ensure, to the greatest extent practicable, that the air-borne noise limits in SoC 24 are achieved'.	Noted
SOC#28 & 30 Minimisation of airborne noise levels Recommended the following additional text after 'Industrial Noise Policy (DECCW)' ,,, 'and applicable INP Application Notes'.	Noted
Construction noise and vibration	
SOC#32 Identification of the environmental and transport management measures that will enable demolition and early works to progress in advance of the works The proposed demolition and early works strategy needs to reference the Interim Construction Noise Guideline (DECCW, 2009).	They do via the Construction Noise and Vibration Strategy and Statement of Commitment No. 55
SOC#35 Stakeholders and the community are well informed about the project The proposed stakeholder and community involvement strategy needs to reference the Interim Construction Noise Guideline (DECCW, 2009).	It does Statement of Commitment No. 55
SOC#36, 38 & 55 Environmental management The Environment Management Plan, Construction	They do via Statement of Commitment No. 55

DECCW Draft Statements of Commitments	Sydney Metro response
Environment Management Plan, Environmental Construction Method Statements and Construction Noise and Vibration Management Sub Plan need to reference, and be guided by, the Interim Construction Noise Guideline (DECCW, 2009).	
SOC#51 Minimisation of disruption to traffic and pedestrian environment during construction Noise management should be included in the Construction Traffic Management Plan. Alternatively, DoP may wish to consider imposing a Traffic Noise Management Plan requirement that seeks to mitigate against traffic noise impacts during construction.	Disagree. Noise and Vibration addressed via Statement of Commitment No. 38 and 55
SOC#56 Minimisation of potential ground-borne noise impacts at sensitive receiver locations After 'L_{Aeq}' insert '15minutes' i.e. $L_{Aeq,15minutes}$.	Ok
SOC#57 Guidelines to provide safe vibration levels for occupants Use appropriate descriptors when quoting vibration limits i.e. RMS or Peak.	Ok
SOC#61 Minimise the potential of sleep disturbance as a result of noise from construction activities DECCW sleep disturbance screening level criteria should be stated.	Noted
SOC#'s 78-80 Noise and Vibration Management, goals and compliance Whilst the detection and reparation of wheel and track condition that may increase ground-borne noise and vibration is essential, it is also necessary to consider the impacts associated with in-tunnel track rectification. The potential ground-borne noise and vibration associated with 'rail grinding' should be considered in the track form and rail fixing analysis with the objective of satisfying operational limits during grinding.	Refer to response to 5th issue raised under operational noise and vibration above.

<table>
<tr><th>DECCW Draft Conditions of Approval</th><th>Sydney Metro response</th></tr>
<tr><td>Operational noise and vibration</td><td></td></tr>
<tr><td>1. The following facilities shall be designed and operated to satisfy project specific noise levels (PSNL) derived from the NSW Industrial Noise Policy (INP, DECCW, 2000) and acceptable vibration levels in the Assessing Vibration: a technical guideline (DECCW, 2006):
• Rozelle Stabling & Maintenance Depot
• Metro Stations at Rozelle, White Bay, Pyrmont, Barangaraoo – Wynyard, Martin Place, Town Hall Square and Central Station (excluding rail operations).
• Mechanical plant noise associated with ventilation shafts and ancillary facilities.
Prior to operational commissioning of the above facilities, the proponent shall submit to, and have approved by, the Director General, an operational noise and vibration impact assessment based on detailed design. The assessment shall identify the PSNL and acceptable vibration levels applicable to each facility and the means by which the noise and vibration levels will be satisfied. Where the noise and vibration levels cannot be achieved, the assessment shall present an analysis of feasible and reasonable noise and vibration mitigation measures, and the ‘best practice’ achievable noise and vibration outcome for each facility.</td><td>Sydney Metro does not believe that this is specifically required however Sydney Metro has no objection to this proposed condition as it is consistent with the noise and vibration technical paper and Statement of Commitment No.s 28-31.</td></tr>
<tr><td>2. Ground-borne noise and vibration from in tunnel metro train operations shall not exceed the following levels:
<table>
<tr><th>Receiver</th><th>Time of day</th><th>Ground-borne noise Limit LAmax(slow) dB(A)1</th><th>Vibration (velocity) mm/s RMS2</th></tr>
<tr><td rowspan="2">Residential</td><td>Day (7am to 10pm)</td><td>40 LAmax (slow)</td><td>0.2mm/s</td></tr>
<tr><td>Night (10pm to 7am)</td><td>35 LAmax (slow)</td><td>0.14mm/s</td></tr>
<tr><td>Schools, educational institutions, places of worship</td><td>When in use</td><td>40-45 LAmax (slow)</td><td>0.4mm/s</td></tr>
<tr><td>Retail areas</td><td>When in use</td><td>50 LAmax (slow)</td><td>0.4mm/s</td></tr>
<tr><td>General office area</td><td>When in use</td><td>45 LAmax (slow)</td><td>0.4mm/s</td></tr>
<tr><td>Private offices and conference rooms</td><td>When in use</td><td>40 LAmax (slow)</td><td>0.4mm/s</td></tr>
</table></td><td>Column heading 4 should be changed from ‘Vibration’ to ‘Vibration Limit’.
Notes 1 and 2 to the table should both refer to ‘not to be exceeded by more than 5% of train passbys over any 24hr period’ as ‘not to be exceeded by 95% of rail pass by events over any 24hr period’ means exactly the same thing and including both versions may cause confusion.
In relation to uncertainties in the design process, conservatism and safety factors, please refer to Item 16. Sydney Metro has no objection to providing a report which addresses how these concerns have been addressed in the detailed design.
However it is not considered necessary given Statement of Commitment No. 22.</td></tr>
</table>

DECCW Draft Conditions of Approval	Sydney Metro response

Theatres	When in use	35 LAmax (slow)	0.2mm/s
Critical working areas	Any time	-	0.1mm/s

1. LAmax refers to the maximum noise level not to be exceeded for 95% of rail pass-by events over any 24hr period and is measured using the slow response setting on a sound level meter.

2. Vibration limits are the maximum 1s RMS vibration level, not to be exceeded by more than 5% of train pass-bys over any 24hr period.

Prior to commencement of works associated with track bed installation and rail running surface fixing, the proponent shall submit to, and have approved by, the Director General, a train operational noise and vibration impact assessment based on detailed design. The assessment shall identify the proposed measures to be used in the project to satisfy the ground-borne noise and vibration limits identified in this condition. All uncertainties in the design process (e.g. engineering performance tolerances, modelling assumptions, transmission path assumptions etc) shall be identified and conservatively quantified. Appropriate safety factors or margins of error shall be adopted in the design process to account for design uncertainties.

3. Ventilation shafts, service facilities and metro stations, where breakout noise from in tunnel train operations may occur, shall be designed and operated to satisfy a level of LAmax(fast) 55dB(A) during train pass-bys, when assessed at 1 metre from the façade of residential receivers and LAmax(fast) 65dB(A) when assessed at commercial receivers. Prior to operational commissioning of the above facilities, the proponent shall submit to, and have approved by, the Director General, an operational noise and vibration impact assessment that demonstrates how this limit will be satisfied.

The recommended noise design goals for breakout noise are provided in Table 102 of the noise and vibration report (copy below). For residential receivers, the LAmax design goal is 55dBA to 60dBA and is dependent on the ambient noise level. A noise design goal of 55dBA in an existing high ambient noise environment (eg CBD) is considered to be too stringent and would add unnecessary additional cost to the project and provide a negligible noise benefit.

Table 102 Train Passby Noise Goals

Usage	Existing Noise Level $L_{Aeq(period)}$[1] (dBA)
Residential	≤ 50
	50-55
	> 55
Commercial	Not applicable

Note 1: Noise goals for residential receivers are based on the existing daytime, noise levels. However, the night-time noise goals are envisaged to be

4. Surface rail operations outside the Rozelle Stabling and Maintenance Depot shall be designed and undertaken to satisfy the noise trigger levels in the Interim Guideline for the Assessment of Noise from Rail

Sydney Metro has no objection to this proposed condition, however it is not

DECCW Draft Conditions of Approval	Sydney Metro response
Infrastructure Projects (DECCW / DoP, 2007). Prior to commencement of works associated with track bed installation and rail running surface fixing, the proponent shall submit to, and have approved by, the Director General, a train operational noise and vibration impact assessment for surface operations. The assessment shall identify the proposed measures to be used in the project to satisfy the noise trigger levels in the noted guideline.	required given Statement of Commitment No. 24.
Construction noise and vibration	
1. The Proponent shall only undertake construction works associated with the project, other than tunnelling activities using Tunnel Boring Machines (TBMs), during the following hours: • 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; • 8:00 am to 1:00 pm on Saturdays; and • at no time on Sundays or public holidays.	Sydney Metro objects to this proposed condition. Whilst the majority of noise and vibration intensive activities will be restricted to the standard daytime construction hours wherever possible, some activities will be required to be undertaken outside standard hours. Where the predicted noise and vibration levels are anticipated to exceed the relevant noise and vibration management levels, the potential impacts will be mitigated and managed in accordance with the Construction N&V Strategy which has been prepared for this purpose in accordance with DECCW *Interim Construction Noise Guideline*.
2. Blasting (including penetrating cone fracturing) associated with the construction of the project is only permitted during the following hours: • 9:00 am to 5:00 pm, Mondays to Fridays, inclusive; • 9:00 am to 1:00 pm on Saturdays; and • at no time on Sundays or public holidays . This condition does not apply in the event of a direction from police or other relevant authority for safety reasons.	Sydney Metro accepts the proposed condition in relation to blasting but objects to the proposed condition for the penetrating cone fracture technique. The proposed condition is contrary to the proposed DECC vibration criteria discussed in Item 7 which allows for up to three impulsive vibration events during each assessment period (including the night-time period).
3. Tunnelling activities may be undertaken 24 hour seven days per week provided the construction ground-borne noise and vibration levels below are met. • Evening (6pm to 10pm – Internal LAeq(15min) 40dB(A) • Night-time (10pm to 7am) – Internal LAeq(15min) 35dB(A) Where these ground-borne noise levels are exceeded, tunnelling activities may still be undertaken where all reasonable and feasible noise mitigation measures approved by the Director General are implemented.	Sydney Metro has no objection to this proposed condition. It is assumed that the tunnelling activities include TBM, roadheader and station cavern operations.

DECCW Draft Conditions of Approval	Sydney Metro response
These mitigation measures will be detailed in the CNVMP and ENCMS required under conditions 12 and 13.	
4. Notwithstanding condition 1, construction works associated with the project may be undertaken outside the hours specified under that condition in the following circumstances: (a) the works do not cause construction noise (as measured by LA10(15minutes) descriptor) to exceed the background LA90 noise level by more than 5dB(A) at any sensitive receiver; or (b) for the delivery of materials required by the police or other authorities for safety reasons; or (c) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or (d) as approved through the process outlined in condition 3 of this approval.	Sydney Metro objects to this condition. Sydney Metro has proposed to undertake out of standard hours construction works in accordance with the Sydney Metro Construction Noise and Vibration Strategy, which has been prepared in accordance with the DECCW's Interim Construction Noise Guideline. An onerous approval process is not acceptable. In accordance with the DECCW's Interim Construction Noise Guideline, the applicable assessment parameter is the $L_{Aeq(15minute)}$, rather than the $L_{A10(15minute)}$.
5. The hours of construction activities specified under condition 1 and 2 of this approval may be varied through an environment protection licence or, where the works are not covered by an environment protection licence, with the prior written approval of the Director-General. Any request to alter the hours of construction shall be: (a) considered on a case-by-case or activity-specific basis; (b) accompanied by details of the nature and justification for activities to be conducted during the varied construction hours; (c) accompanied by written evidence to the Director-General that appropriate consultation with potentially affected sensitive receivers and notification of relevant Council(s) (and other relevant agencies) has been and will be undertaken; (d) all reasonable and feasible noise mitigation measures have been put in place; and, (e) accompanied by a noise impact assessment consistent with the requirements of the Interim Construction Noise Guideline (DECCW, 2009).	Sydney Metro objects to this condition. An onerous approval process is not acceptable. As discussed in Item 4, the Sydney Metro Construction Strategy defines the proposed procedure for assessing the potential noise impacts for out of hours works and identifying feasible and reasonable mitigation measures. It is noted that this process already includes a requirement to consult with DECCW as part of the noise and vibration management plan process. The strategy also outlines the proposed community consultation measures for out of hours works and has been prepared in accordance with the DECCW's Interim Construction Noise Guideline. It is noted that one of the main purposes of the Sydney Metro Construction Noise and

<table>
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<tr><td></td><td>Vibration Strategy is to streamline the assessment process and provide assurance to the community that potential noise and vibration impacts will be assessed and managed in an open manner. The Sydney Metro Construction Noise and Vibration Strategy has been placed on exhibition and will continually be made available to the public for comment throughout the project.
Due to the number of activities proposed during out of hours periods, Sydney Metro considers it unreasonable to seek approval for out of hours work on a case-by-case basis.</td></tr>
<tr><td>6. Construction Noise Management Levels (CNML) shall be established using the Interim Construction Noise Guideline (DECCW, 2009). Vibration criteria shall be established using the Assessing Vibration: a technical guideline (DEC, 2006). Any construction activities identified as exceeding the CNML and/or vibration criteria shall be managed in accordance with the Construction Noise and Vibration Management Sub Plan (CNVMSP) and Construction Work Method Statements (CWMS) required by this approval. The Proponent shall implement all reasonable and feasible noise mitigation measures with the aim of achieving the CNMLs and vibration criteria.
NOTE: The ICNG (DECCW, 2009) identifies ‘particularly annoying’ activities that require the addition of 5dB(A) to the predicted level before comparing to the CNML.</td><td>These items are addressed in the Sydney Metro Construction Noise and Vibration Strategy and the noise and vibration assessment.
Condition of Approval is not required</td></tr>
<tr><td>7. The Proponent shall ensure that air blast overpressure generated by blasting associated with the project does not exceed the criteria specified in Table 1 when measured at any affected residence or other sensitive receiver.
Table 1 - Airblast Overpressure Criteria
<table>
<tr><th>Airblast Overpressure (dB(Lin Peak))</th><th>Allowable Exceedence</th></tr>
<tr><td>115</td><td>5% of total number of blasts over a 12 month period</td></tr>
<tr><td>120</td><td>Never</td></tr>
</table></td><td>These levels are provided in Section 4.5 of the Sydney Metro Construction Noise and Vibration Strategy and the noise and vibration assessment.
Condition of Approval is not required</td></tr>
<tr><td>8. The Proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at any affected residence or other sensitive receiver.</td><td>These levels are provided in Section 4.5 of the Sydney Metro Construction Noise and Vibration Strategy and the noise and vibration assessment.</td></tr>
</table>

<table>
<tr><th>DECCW Draft Conditions of Approval</th><th>Sydney Metro response</th></tr>
<tr><td>Table 2 - Peak Particle Velocity Criteria
<table>
<tr><td>Peak Particle Velocity (mms^{-1})</td><td>Allowable Exceedence</td></tr>
<tr><td>5</td><td>5% of total number of blasts over a 12 month period</td></tr>
<tr><td>10</td><td>Never</td></tr>
</table></td><td>Condition of Approval is not required</td></tr>
<tr><td>9. Production blasts shall be limited to one single detonation in any one area potentially affecting residents on any one day, unless otherwise agreed by the Director General through the Construction Noise and Vibration Management Sub Plan Process.</td><td>This proposed Condition of Approval is ambiguous. Refer to item 7. Any proposed blasting would be undertaken in consultation with DECCW.</td></tr>
<tr><td>10. For any section of the tunnel construction where blasting is proposed, or individual work site, a series of initial trials at reduced scale must be conducted prior to production blasting to determine site-specific blast response characteristics and to define allowable blast sizes to meet the airblast overpressure and ground vibration limits in this approval.</td><td>Sydney Metro has no objection to this proposed condition.</td></tr>
<tr><td>11. Prior to commencement of works, the proponent shall undertake a detailed land use survey to identify potentially critical working areas (e.g. hospital operating theatres, precision laboratories etc) that are sensitive to vibration and ground-borne noise impacts. A specific plan of management shall be submitted to, and approved by, the Director General outlining the proposed mitigation for both construction and operational impacts.</td><td>Purpose of this condition of approval is unclear.</td></tr>
<tr><td>12. Construction Noise and Vibration Management Plan
Prior to commencement of construction, the Proponent shall submit to, and have approved by, the Director General, a Construction Noise and Vibration Management Plan consistent with the guidelines contained in the Interim Construction Noise Guidelines (DECCW, 2009) to detail how construction noise and vibration impacts would be minimised and managed across the project. The Plan shall be developed in consultation with the DECCW.</td><td>The Sydney Metro Construction Noise Strategy requires that the noise and vibration management plan to be prepared by an ACCC accredited acoustical consultant and liaison with DECCW is required.</td></tr>
<tr><td>13. Environmental Noise Construction Method Statements
Environmental Noise Construction Methods Statements (ENCMS), based on the detailed design and finalised work methods, shall be prepared for each of the following distinct work sites to detail noise mitigation and management measures:
• Rozelle Stabling & Maintenance Depot
• Metro Stations at Rozelle, White Bay, Pyrmont, Barangaroo – Wynyard, Martin Place, Town Hall Square and Central Station.
• Ventilation shafts and ancillary facilities.</td><td>Information on how this condition will be addressed is contained in 3rd item under construction noise and vibration response above.
Sydney Metro objects to this condition. Statement of Commitment 38 covers these issues.
The proposed Condition of Approval is too</td></tr>
</table>

DECCW Draft Conditions of Approval	Sydney Metro response
• Tunnelling activities. The ENCMS shall include, but not be necessarily limited to: (i) Identification of sensitive noise receivers likely to be impacted by construction noise and vibration; (ii) Identification of applicable Construction Noise Management Levels (CNML), vibration criteria and ground-borne noise levels; (iii) details of construction activities and a schedule for construction works for each site; (iv) identification of construction activities that have the potential to generate noise and/or vibration levels exceeding the relevant criteria; (v) a detailed description of what feasible and reasonable actions and measures would be implemented to ensure, to the greatest extent practicable, that these works would comply with the relevant noise and vibration criteria/ guidelines or impacts mitigated by other means; (vi) procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and (vii) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, corrective preventative actions if any non-compliance is detected.	detailed. Much of this detail is better placed within the Construction Noise and Vibration Management sub Plan and in Statement of Commitment No. 55

3.8 Sydney Ports submission

Sydney Ports Issue	Sydney Metro response
Consultation	
Sydney Ports requests that it be included as a member of the Traffic and Transport Liaison Group for matters relating to the White Bay and Barangaroo sites and other matters which have the potential to impact on truck and vehicular access to those sites.	Participation of Sydney Ports officers in the TTLG is welcomed. TTLG participation will vary depending on the construction site and potential issues and areas being examined.
Transportation of Spoil	
The EA did not adequately address barge related impacts and therefore the potential impacts on the water quality of Sydney Harbour. It should be noted that Sydney Ports is the responsible agency for vessel related spills in Sydney Harbour and Botany Bay. As a minimum, the CEMP should address: spillage of spoil during loading/movement of barges, procedures in the event of an incidents (such as fuel spill or collision with structures/vessels on the water) and provide details regarding reporting of any incidents on the water.	The Spoil Management Technical Paper in the EA concludes that "*A review of transport alternatives for spoil removal indicated that removal of spoil from CBD construction sites would be via truck. From White Bay, however, removal by truck, rail or barge would all be logistically feasible.*" The alternative transport investigation is further detailed in Statement of Commitment No. 48 Statement of Commitment No. 45 in the EA provides that a Spoil Management Sub-Plan will be developed and implemented in accordance with the CEMP. It states that this Sub-Plan will include, amongst other things, an alternative transport investigation to reduce road traffic movements. Sydney Ports would be consulted with regard to vessel related spills.
The availability of rail windows and restrictions on rail movements in peak hours will affect the rate at which spoil can be moved off site by train. A more detailed assessment of volumes to be moved by rail is required to ensure that truck numbers for spoil disposal have not been underestimated.	
Construction Traffic	
CBD	
The EA has not considered traffic related movements from cruise ship and function/event operations at DH8 nor has it considered the impact that road closures and construction trucks/vehicles will have on vehicular access and operations for the DH8 Cruise Passenger Terminal Facility on ship days or for functions/events held at the facility. Sydney Ports requests that restrictions be placed	Sydney Metro notes that the required cruise ship operations traffic management will require a reconfiguration prior to April 2010 to allow construction traffic to have sole access from Shelly Street. The reconfiguration principles have been established with Sydney Ports Corporation officers based upon the development of a traffic management plan for bus and taxi access from Sussex Street only. A passenger entry portion of the passenger terminal building will be demolished and modified for continued use. The Metro related trucking activities will need to take into account the reconfigured access and operational needs of the DH8 Cruise Passenger

Sydney Ports Issue	Sydney Metro response
on truck movements on cruise ship or event/function days. This could be addressed in the site specific TMP for the site which should be agreed with Sydney Ports prior to construction works commencing.	Terminal Facility. These needs will be addressed in the Contractor TMPs and TCPs with every effort made to avoid disruption and vehicular conflict during passenger ship operations. The TMPs & TCPs will address the following: • Measures to protect pedestrians and maintain surface public transport services during the ship operation days and non-ship day operations for functions/events. • Measures to manage traffic flows through and surrounding Darling Harbour Wharf 8, including regulatory and direction signposting, line marking and variable message signs. • Identify any mitigation measures with Sydney Ports Corporation to improve the efficiency of traffic and pedestrian movement and conditions. • Take into account both local and regional traffic impacts. • Monitoring of construction traffic and potential general traffic impacts is proposed throughout construction and delivery phases, to manage and respond appropriately to adverse traffic impacts.
Sydney Ports requests that the TMPs for White Bay and Barangaroo construction sites be reviewed and agreed to by the Corporation prior to construction works commencing.	Sydney Ports officers will have the opportunity to input into the Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs) proposed by the Contractor through participation in the TTLG on a site by site basis.
White Bay and depot	
Truck and vehicles access to White Bay construction site is proposed via James Craig Road. The roads within the port are owned, operated and maintained by Sydney Ports as private roads for the benefit of port tenants. Sydney Ports is concerned that access/egress to/from and queuing of construction traffic on James Craig Road will adversely impact on existing port tenant operations. Sydney Ports prefers all construction vehicles to access and exit White Bay construction site via the proposed road from Rozelle Marshalling Yards. To further mitigate traffic and operational impacts on port users at the Glebe Island Port area, Sydney Ports suggests that employee parking, coach pickup/drop off points and truck queuing for the project be located at Glebe Island rather than along James Craig Road, Sommerville Road and White Bay construction site. Sydney Ports would be willing to enter an agreement with Sydney Metro to lease an area at Glebe Island, near the old Glebe Island Bridge, for the purpose of parking and truck queuing.	Sydney Metro has endeavoured to mitigate truck impacts on James Craig Road by providing for direct vehicular access to and from the City West Link at the Depot site and by providing for truck access via the former rail access under Victoria Road. Traffic modelling shows that there could be some queuing of trucks along James Craig Road at peak times but the above access alternatives will mitigate any impact. The use of the suggested James Craig Road for truck call forward places the trucks nearer the worksite and the intersection with the Crescent and is a preferred truck management approach. The feasibility of the use of roads within Glebe Island could be considered as part of the Contractor TMPs and TCPs. Traffic impacts have been assessed in both the EA main report and the White Bay and Depot Worksites TMP. Table 4.3 of the TMP indicates that about 40 two way trips per hour can be expected to be generated by the worker population at the White Bay work site. The bulk of these trips will be made outside the am and pm peaks and as such will not impact intersection operation.

Sydney Ports Issue	Sydney Metro response
The EA has not adequately addressed the traffic impacts the proposal will have on port operations at Glebe Island, nor has it addressed the impact of worker/employee parking at White Bay. This includes the predicted construction workforce that will park at White Bay in 2012 not being factored into the intersection modelling for the area.	
Sydney Ports requests that the TMPs for White Bay and Barangaroo construction sites be reviewed and agreed to by the Corporation prior to construction works commencing.	Sydney Ports officers will have the opportunity to input into the Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs) proposed by the Contractor through participation in the TTLG on a site by site basis.
Internal access	
The project is proposing to provide Sydney Ports with a 10-15m wide access road to provide internal vehicle access between Glebe Island and White Bay Port areas during construction works. Sydney Ports requires this road allocation is all on the paved area behind the top of the existing sea wall at White Bay 1 (not clearly shown in EA). Further, the former intake canal for White Bay Power Station (on Sydney Ports Heritage Register) enters the harbour at White Bay 1. Any activities on the land or above or adjacent to the intake canal structures, such as loaded trucks traversing area or spoil stockpiles above head, may overload the canal structures. The impact on these structures will need to be assessed and appropriate mitigation measures implemented	The preferred carriageway location in relation to the existing sea wall will need to be agreed with Sydney Ports in developing the construction lease. The presence of the former intake canal traversing the worksite leased from SPC is noted. The impact of work activities on and adjacent to the canal will be assessed for mitigation requirements to ensure the canal structural integrity is maintained.
Truck queuing	
Truck queuing is proposed along James Craig Road and also along Sommerville Road to access the port. This would significantly impact on port and other usage of these roads. At present, port trucks queue along Sommerville Road and use of this road for queuing by Sydney Metro would present a conflict and congestion during the construction period. The suitability of James Craig Road for queuing is also questionable as it was not designated for truck queuing and raises safety issues with trucks and vehicles using the two way road with a single lane in each direction. Sydney Metro recommends that	The use of the suggested James Craig Road for truck call forward places the trucks nearer the worksite and the intersection with the Crescent and is a preferred truck management approach. The feasibility of the use of roads within Glebe Island would be considered as part of the Contractor TMPs and TCPs. The project is providing alternative access and egress points to the White Bay site via entry and exit points from the City West Link.

Sydney Ports Issue	Sydney Metro response
truck queuing be undertaken at Glebe Island.	
Pedestrian access	
The project is proposing to provide pedestrian access along James Craig Road and Sommerville Road. Sydney Ports is concerned with the provision of pedestrian access along Sommerville Road due to the narrowness of Sommerville Road, safety concerns with mixing vehicles/trucks with pedestrian movements and the need to cut into the existing rock face to provide access.	Pedestrian access is currently possible along sections of James Craig Road via the existing footpaths. Sydney Metro does not envisage that there will be any need to cut into the existing rock face in order to provide pedestrian access
Bridge shipping access	
The project is proposing to use the Old Glebe Island Bridge as a truck/vehicle access route during construction. The bridge would need to be opened as required to provide shipping access to Blackwattle Bay. At present, shipping movements occur approximately three times per day	It is not proposed that the Old Glebe Island Bridge will be required for truck or vehicle access during Metro construction.
Noise and vibration	
The EA did not provide an assessment of the noise impacts on Sydney Ports' operation and tenants at Barangaroo and the Glebe Island and White Bay Port area during both construction and operation. The EA did not consider all existing commercial receivers such as the DH8 Cruise Passenger Terminal, function/event activities held at DH8 and port operations at White Bay and Glebe Island.	The noise and vibration technical paper sets out the applicable noise and vibration management levels for construction and noise and vibration design goals for operations. The management levels and design goals cover all receiver types including tenants at Barangaroo and the Glebe Island and White Bat Port area, and the DH8 Cruise Passenger Terminal. For the construction phase, Sydney Metro has developed a “Construction Noise and Vibration Strategy” to manage the potential noise and vibration impacts and implement all feasible and reasonable mitigation measures. For operations, Sydney Metro has made commitments to achieve the noise and vibration design limits.
Sydney Ports is concerned about the potential for vibration impacts on Sydney Ports' structures in close proximity to the proposed Metro tunnels particularly structures at Glebe Island during construction and operation of the project. Sydney Ports considers it necessary for Sydney Ports to undertake a dilapidation survey of the Glebe Island Silos and the ballast banks and wharf structures at Glebe Island 7&8 as well as a multi beam scan of the ballast banks to establish the condition of these structures prior to construction works	Vibration damage criteria for the project have been established based on British Standard BS 7385 Part 2-1993. Where there is a risk that vibration levels will exceed the structural damage vibration limits, detailed assessments and vibration monitoring will be undertaken to ensure that construction vibration levels do not cause damage to nearby structures. The potential for damage to structures during train operations is negligible.

Sydney Ports Issue	Sydney Metro response
commencing. Sydney Ports also considers that Sydney Metro should be required to undertake vibration/settlement monitoring of these structures during both construction and operation to monitor impacts of the works and for action to be taken by Sydney Metro should impacts be evident.	Sydney Metro, through it's tunnelling contractor will perform pre-construction surveys of structures along the tunnel alignment, including those identified by the SPC. The scope of instrumentation monitoring and the extent of the building condition surveys will be determined though a risk assessment process that will consider the concerns of the third party asset owner.
White Bay	
Heritage	
It should be noted that the Great Sydney Dyke is exposed on the existing rock face and would be impacted by works proposing to cut into the existing rock face. The Dyke is listed on Sydney Ports' Section 170 Register and the Register of the National Estate.	According to the Sydney Ports Corporation Heritage Inventory data sheet on the Glebe Island Dyke Exposures, the best exposure of the dyke is on the northern side of Victoria Road. It is understood that the only metro works to the railway cutting are on the south side of Victoria Road, more than 100 metres to the west of the under bridge, where the cliff face is lower and heavily overgrown. It therefore appears that much of the significant exposed face of the dyke will be unaffected by the works.
• Impact of the proposal on Sydney Ports' heritage items listed below and which are listed on the s170 Heritage Register and are in the vicinity of the proposed construction works and/or sites requires further assessment. These items are: - White Bay Power Station Canal (northern canal) - Glebe Island Bridge Approach - Glebe Island Dyke Exposure (also known as the Great Sydney Dyke) - Glebe Island Silos. Please note that the identified location of the Glebe Island silos is incorrect, with the silos being located to the south of the current location identified in Figure 8.1 of Technical Paper 5.	White Bay Power Station Canal (northern canal) Although part of the northern canal is within the worksite area, no excavation is proposed within this part of the worksite. Significant elements within the worksite will be recorded and protected before construction works commence. Glebe Island Bridge Approach The remains of the Glebe Island Bridge Approach are outside the White Bay worksite area. Glebe Island Silos. The presence and correct location of the Glebe Island Silos are noted. The impact of work activities in the vicinity of the Silos will be assessed for mitigation requirements to ensure the structural integrity of the silos is maintained.
Construction and land use impacts	
The EA did not address or consider the requirements of the Customs Act 1901 and the Maritime Transport and Offshore Facilities Security Act 2003 and how the project will ensure existing port operations at Barangaroo, Glebe Island and White Bay can continue to meet the legislative requirements.	The Maritime Transport and Offshore Facilities Security Act 2003 requires that maritime security plans are in place for No.8 Darling Harbour, and Glebe Island / White Bay. Section 15 of the Customs Act 1901, identifies all the wharves at Glebe Island and White Bay, as “Customs Areas”, ie. a secure zone with authorised access only. The Passenger Terminal at Wharf 8 Darling Harbour is subject to a 30 m exclusion zone which is enforceable during ship berthing days.

Sydney Ports Issue	Sydney Metro response
This includes consideration of the projects cohabitation, specifically from a construction perspective, with meeting/achieving maritime security zones, Customs and AQIS requirements as well as port operational requirements at these port facilities.	Sydney Ports Corporation will be consulted on all aspects of the Stage 1 project that may affect the operation of the Wharf 8 Passenger Terminal, port security and port operations generally.
A 'domestic' Cruise Passenger Terminal is proposed at White Bay rather than an 'international' Cruise Passenger Terminal. The current international cruise passenger terminal is located at Circular Quay and is not being proposed to be relocated. It should also be noted that the international cruise season occurs from October to April and not November to March (pg 173 of the EA). The domestic cruise season, which is catered for at DH8, occurs all year round.	In two places in the Traffic and Transport Technical Paper (s. 5.7 and s. 6.7.1) the cruise passenger terminal which currently operates at DH8 is referred to as an “International Passenger Terminal”. It is noted that this terminal is actually a domestic cruise passenger terminal which operates all year round. This error does not impact the assessment presented in the EA. It is also noted that the Overseas Passenger Terminal (OPT) is located at Circular Quay and that international cruise season occurs from October to April and not November to March as stated in section 7.13 of the Traffic and Transport Technical Paper. This slight variation in OPT operating periods does not impact the assessment presented in the EA.
Lighting required for construction activities at Glebe Island and/or White Bay needs to be downward facing to ensure no horizontal light spill occurs, which could impact on ships/vessels navigating the approaches to the Glebe Island Berths.	Section 19.1.3 of the EA states that “The construction lighting would be designed to comply with the provisions of AS 4282-1997 Control Of The Obtrusive Effects Of Outdoor Lighting, where applicable. Lighting around construction work sites would be specifically designed, positioned and directed so as not to unnecessarily intrude on adjacent buildings and to reduce light spill to nearby residents, or constitute a road, shipping or rail hazard, while still meeting public and worker safety requirements and maintaining visibility.” This would mitigate any impact of lighting on ships/vessels navigating the approaches to the Glebe island berths.
Dust issues relating to spoil handling	
There is a limited assessment of dust on neighbouring operations at Barangaroo, Glebe Island and White Bay including potential impacts on Sydney Ports’ tenant and port operations from spoil storage and spoil loading/handling activities. Sydney Ports’ operations can be sensitive to dust impacts	Sydney Metro recognises that significant spoil handling activities would occur at White Bay and Wharf 8 at Darling Harbour. It is considered that the provisions already included in the EA are adequate to manage the impacts of construction dust. Statement of Commitment No. 36 and 38 address this.

Sydney Ports Issue	Sydney Metro response
Contamination	
It should be noted that lead contamination stated in the EA as being present at White Bay was removed by Sydney Ports via excavation and offsite disposal approximately 10 years ago.	The removal of lead contamination from White Bay is noted.

3.9 Housing NSW submission

Housing NSW Issue	Sydney Metro response
Land Use	
Development around metro stations	
The strategy of providing opportunities for future development around Metro stations for higher densities is supported by Housing NSW (HNSW), however it is felt that densities will not dramatically change if developments are left to be assessed under the current local planning controls	As noted in Chapter 17 of the EA, the interface of the Sydney Metro Network Stage 1 project with both current and potential future land uses is analysed through the station master planning process. The Draft Station Plans recognise the broader land use planning and development issues that shape and influence each affected project location.
It is understood that the areas around Rozelle Station are to maintain a generally lower-scale residential character due to the constraints of heritage conservation areas and sites. It is felt that this approach will greatly restrict the benefits of the larger strategic objectives of TOD and smart growth.	For Stage 1 (Central to Rozelle), four of the new metro stations will be located within the CBD context where opportunities for increasing densities are limited due to the existing high density of the area. Where there is the potential for development to occur at station sites after construction has finished (residual development), metro facilities would be designed to allow future development by other parties. Development of these sites would not be directly related to delivery of the project and approval would be sought in accordance with the Environmental Planning & Assessment Act 1979 and/or the City of Sydney Act 1988 at a later date. Relevant planning controls, including relevant LEPs and DCPs (e.g. zoning, floor space ratios (FSR), height and setback controls) would apply.
In the Station Plan for Rozelle Station the floor space ratios (FSR) applying to the area surrounding the station are as per the Leichhardt LEP 2000. These controls will restrict development. Leichhardt Council is currently preparing to undertake a FSR review. It would be advantageous if Sydney Metro were involved in this review.	
It is felt that strategically increasing densities would not necessarily negatively impact the heritage value of the area (as some have claimed) and would greatly improve the viability of the metro network in the Rozelle area.	Rozelle and Pyrmont stations have been proposed in reference to the future extension of the metro network to the north-west and in considering the location of existing town centres. In preparing the Draft Station Plans, the existing land use, potential development opportunities as well as heritage conservation controls have been analysed to inform the orientation and design of each station entrance and their integration with their surrounding precincts.
The metro project and associated TOD principles need to be promoted as part of a broader, long term strategic investment strategy.	The viability of a metro station at Rozelle is not dependent on increased floor space ratios / higher density development. The advantages of Transport Oriented Development and integration of mixed use and affordable housing development are acknowledged. Sydney Metro also acknowledges there are further planning opportunities for Transport Orientated Development as part of Stage 2 (Central to Westmead).

Housing NSW Issue	Sydney Metro response
It is understood that teams of experts and representatives from community groups and councils will be selected to discuss design ideas for Pyrmont and Rozelle stations. As HNSW owns a number of properties in proximity to these stations, HNSW would appreciate being involved in these meetings.	Sydney Metro has recently undertaken a consultation exercise focussing on refining design principles for the station entrances and public domain at Rozelle and Pyrmont. These Design Principles Workshops have focussed on the design and integration of station architecture, urban design and public art and were not undertaken to determine land use changes. As such, involvement was limited to representatives of community groups, relevant government agencies and professional bodies concerned with heritage, architecture, urban design, and planning.
Mixed use development at transport hubs is an integral part of TOD. The construction of new transport centres presents significant opportunities to retain ownership of land around stations and provide residential development on top of and around station facilities at a later stage. This should be considered.	Sydney Metro will undertake further consultation with Housing NSW with regards to Station precinct planning and Transport Oriented Development.
Operational Transport	
Integrated transport networks	
Making the metro compatible with other transport modes is essential to achieving a seamless and integrated transport network in the Sydney CBD and inner city areas.	Agree.
Integrated ticketing	
Sydney Metro's cooperative work with the Public Transport Ticketing Corporation is supported and it is considered that the initiative outlined in section 6.8.4 of the EA is to be commended: "*It is intended that the ticketing system would be part of an integrated electronic ticketing system for Sydney and would be interoperable with other transport modes*".	Support for integrated ticketing is noted.

3.10 State Member for Sydney submissions

State Member for Sydney Issue	Sydney Metro response
Public Domain Improvements	
Design excellence principles must be applied to all development associated with the metro including ancillary structures such as entrances and ventilation shafts.	The retention and enhancement of public spaces adjacent to the Sydney Metro Stage 1 stations is a key objective of the Station Plans. Each Station Plan is focused on integrating public spaces and surrounding land uses with transport interchange facilities to maximise public domain utility. A Design Review Panel has been established to review the design of stations and associated precinct works. The Design Review Panel comprises independent specialist expertise in architecture, urban design, transport and sustainability, including representatives from the Government Architects Office and UNSW Built Environment (Architecture). All designs would be subject to review by the Design Review Panel (Statement of Commitment No. 10).
Incorporating [Council's] vision [for Town Hall Square] should be a condition of consent, with Sydney Metro working with the City of Sydney to achieve quality urban design and to reflect the important public legacy of a new civic square at the heart of our global city.	Statement of Commitment No. 13 establishes a joint design group that would include Council, to ensure that the metro project will facilitate a quality urban design outcome reflecting the important public legacy of a new civic square at the heart of our global city. Sydney Metro will continue to work with Sydney City Council to ensure an integrated solution for the Metro station and planned Square at Town Hall.
If Sydney Metro is to locate an entry at Union Square, then I support "Alternative 2" of the EA that will retain the existing buildings and ensure their activation.	Sydney Metro's preferred design for Pyrmont Station will minimise impacts on Union Square by retaining the front of the existing buildings (which would have been demolished under previous alternatives). Following construction, the terraces will be available to reopen as shops, reinforcing Union Street as a local commercial hub. The project also includes extension of the existing pedestrian space at Union Square between Paternoster Row and Pyrmont Street. This would create a social benefit for the local community through the extension of available space within the centre.
Changes to Central Station to accommodate the metro will result in the loss of the West Forecourt Garden and associated open space.	Statement of Commitment No. 12 establishes a joint design group to resolve issues at Central Station, including changes to the Western Forecourt. With respect to the garden, it is noted that significant consultation has been undertaken (and will continue) with RailCorp, the Heritage Branch and the Heritage Council.
Sydney Metro must provide green landscaping in all pedestrian plazas to reduce noise pollution and improve open space and visual amenity.	Sydney Metro has provided benchmarks of quality of design for landscaping and public domain works in the contract documentation and has referred to Sydney City Council's public domain treatments (eg paving type) to ensure consistency with Council's approach.

State Member for Sydney Issue	Sydney Metro response
Transport Integration	
The Sydney Transport Blueprint must be finalised before Sydney Metro is approved.	NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management. Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW. Further detail on this issue is provided in the main body of this report.
It is crucial that Sydney Metro maximise the convenience of this new transport mode for cyclists (including metro carriages with bike spaces and allowing bikes on trains).	Sydney Metro has and will continue to ensure that the design and operation of the Sydney Metro Network Stage 1 (Rozelle to Central) is integrated with all modes including bicycles. At all times, folded bicycles are allowed in Metro stations and on Metro services, in the folded condition. Further detail on this issue is provided in the main body of this report.
An integrated ticketing and fare system is a key component of any modern transport system.	Timetables for the metro would not be required given the high frequency of services (arriving every 2-3 minutes during peak periods and at high frequencies through the day). Information regarding Metro operating times would be displayed on the Sydney Metro website. The metro system would be part of a fully-integrated ticketing system if one is available at the time (refer section 6.8.4 of the Environmental Assessment).
Minimise the impact of any Pyrmont station entry on pedestrian and cycle links.	Reinstatement of Union Square, including the provision of the cycleway in Union Square between Paternoster Place and Pyrmont Street will be delivered as part of Metro project.
Sustainability	
Sydney Metro must purchase 100 per cent renewable energy or build green transformers (tri-generation) or use local renewable energy.	Sydney Metro has committed to 100 per cent renewable energy being purchased to off-set consumption of energy for the operation of Sydney Metro Network Stage 1. Further details are provided in the main part of this report.
Construction	
Ensure that homes and businesses are not damaged by construction, but also ensure if it does there is adequate compensation	Statement of Commitment No. 72 describes a property risk management plan for property damage will be implemented. An Independent Property Impact Assessment Panel, approved by the Director-General, will be established. Any damage to property resulting from the construction of the project will be rectified at no cost to the owner in a timely fashion.
Compensation for property acquisition	Any acquisitions required to construct the project are undertaken in accordance with Land Acquisition (Just Terms Compensation) Act 1991.

State Member for Sydney Issue	Sydney Metro response
Local businesses displaced at Union Square (3-9) should be guaranteed the option to buy or lease the premise back. Properties must remain freehold for the promotion of independent, local small businesses	The EA has documented significant mitigation measures to minimise potential impacts to businesses in the vicinity of construction activities and proposes an extensive range of standard mitigation measures that would reduce impacts on local businesses. In addition, Sydney Metro has committed to innovative and proactive strategies including a Construction Noise & Vibration Strategy and a Small Business Owners Support Program .
Establishment of a community liaison group and 24 hour complaint service during construction (with the authority to immediately cease work to address problems)	Statement of Commitment No. 72 describes the proposed strategy for stakeholder and community involvement during construction, which includes but is not limited to procedures for: • The regular dissemination of information to the community regarding the progress of the project and notifying stakeholders and community of upcoming project activities and impacts (particularly with regard out of hours work and potential noise and vibration). • Establishing the means by which the community stakeholders can discuss or provide feedback to the construction team, including regular information sessions at or near the construction sites. • Receiving and managing complaints consistent with AS 4269 Complaints Handling, including provision for a 24-hour 1800 contact number. • Managing property inspections. • Establishing community focus groups to provide input on aspects of the project such as landscaping and noise mitigation.
Investigate ways to maintain local businesses and protect local access and amenity during construction at Union Square	Sydney Metro's preferred design for Pyrmont Station will minimise impacts on Union Square by retaining the front of the existing buildings (which would have been demolished under previous alternatives). However, it is acknowledged that during construction impacts would be experienced by residents and businesses in the area. Construction will remain focused on the corner of Miller and Mount Streets, as originally proposed, which the eastern construction site being managed to expedite the most significant excavation activities.
Pedestrian access through Martin Place must be maintained during construction	Pedestrian access will be maintained through Martin Place during construction.
Demonstrate how the Union Street terraces (3-9) will be protected during construction	The risk of structural damage to the terraces at 3-9 Union Street is considered low. However, vibration monitoring will be undertaken as required.
Mitigating impacts on businesses within Union Square, including fair and reasonable compensation for business owners in the locality.	Sydney Metro recognises the importance of Union Square and Union Street to the community of Pyrmont. Considerable effort has been put into finding an acceptable solution to providing an effective outcome whilst returning the character and amenity of the area. The proposed solution substantially retains the whole section of the shops along Union Street with new Metro services facility being located to the rear. The proposed concourse link will require a construction site within Union Street on a temporary basis. It is recognised that this is an important area for the community and construction may impact some business activity. Therefore work will be fast tracked to ensure the majority of construction is contained within the main worksite.

State Member for Sydney Issue	Sydney Metro response
	Work in Union Street will be undertaken as quickly as possible to ensure inconvenience is minimised. Based on the current impact assessment all work in Union Street itself will be targeted to be completed in two years or less from commencement of work with the street returned to the community at the end of this period. Statement of Commitment No. 34 establishes a process to develop business management plans for each construction site, identifying affected businesses and associated management strategies. Importantly, Sydney Metro also proposes a Small Business Owners Support Program to provide assistance to small retail businesses adversely impacted by construction.
Alternatives (Pyrmont)	
Sydney Metro must demonstrate that there is no other possible station entrance [at Pyrmont] before the project is approved	It has been recognised that Pyrmont is located in a unique village-style location. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including Union Square and heritage buildings) and the design principles that have been used thus far, and those that will continue to guide future detailed design (e.g. station entrances designed to contribute to the streetscape of Union Square) buildings. The proposed Pyrmont Station will minimise impacts on the character of Pyrmont by retaining the front of the existing buildings (which would be demolished under previous alternatives).
Examine alternative locations for the [eastern] entry at Pyrmont (Union Square) with a view to retaining the ongoing use and character of Union Square	The metro station entrance within Union Square would respond to the urban form and activity that typifies this area. It has been recognised that Union Square is located in a unique community. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including heritage buildings and heritage conservation area) and the design principles that have been used thus far, and those that will continue to guide future detailed design (e.g. station entrances designed relate to the scale and consistency of adjacent) buildings. An interactive Design Workshop has been initiated and will be used to form the appearance and character of the Pyrmont metro station. The Design Workshop will be an opportunity to explore a large range of options to retain the original character of Pyrmont's area. Workshop participants for the charette will be selected with advice from the Royal Australian Institute of Architects, the Planning Institute of NSW, the Australian Institute of Landscape Architects and the National Trust. A Design Review Panel, comprising independent specialists, has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design.

3.11 Rail Corporation NSW submission

RailCorp Issue	Sydney Metro response
Consultation	
Partnership agreement	Sydney Metro acknowledges that RailCorp and Sydney Metro Authority have signed a Partnership Commitment document, agreeing to a long-term and collaborative partnership between the two agencies in the delivery of public transport services to the people of Sydney. This Partnership Commitment is published on the RailCorp website at http://www.railcorp.info/about_railcorp/major_projects/sydney_metro; and the Sydney Metro website at http://www.sydneymetro.nsw.gov.au/what/about_the_metro/.
Ongoing consultation	RailCorp and Sydney Metro Authority are currently working towards agreements on detailed engineering and operational issues. Significant consultation is anticipated with RailCorp during future stages of the project.
Proposed Conditions of Approval (CoA)	
The proposed conditions of approval are sought by RailCorp in the context of RailCorp and Sydney Metro's Cooperation Agreement under which a series of Interface Agreements will be developed prior to the commencement of works which will include the details of many of the matters sought below.	RailCorp's proposed Condition of Approval related to an Interface Agreement is consistent with the Partnership Commitment as follows: Sydney Metro is to enter into an Interface Agreement with RailCorp for all excavation, demolition, tunnelling/boring and construction works above, below or within 25m of an existing or proposed RailCorp infrastructure facility. Sydney Metro and RailCorp are currently engaged in a process to finalise an Interface Agreement. It is considered that the additional detailed Conditions of Approval proposed by RailCorp are better placed within the Interface Agreement that would cover the issues identified in new Statement of Commitment No.9C, which is consistent with RailCorp's requirements. It is anticipated that RailCorp would be represented on the Central Project Coordination Committee, Integrated Station Design Groups for all metro stations proposed in the Sydney CBD, and Traffic and Transport Liaison Group, in accordance with the partnership commitment. It is noted that any property or stratum issues (including easements or right of way benefits), or any leasing issues, would be resolved separate to any Conditions of Approval and in accordance with relevant legislation. An independent heritage expert to oversee works below, above or within 25m of a RailCorp heritage item is not considered necessary given the assessment undertaken to date and the proposed Statement's of Commitment (17, 38, 40, 41, 42).

RailCorp Issue	Sydney Metro response
Infrastructure SEPP and Rail Safety Act	
Application of the Infrastructure SEPP and Rail Safety Act	The Rail Safety Act 2008 will be applied to the project as required. It is noted that Sydney Metro is working with RailCorp under the terms of the Partnership Commitment to determine the items listed in Clause 86(4) of the Infrastructure SEPP.
Project Development and Alternatives	
Maintenance of the integrity of the CBD west corridor is critical to the medium to long term resolution of congestion issues on the CityRail network.	RailCorp and Sydney Metro are working together to improve public transport across Sydney – including the CBD. There are no competing agendas – in fact CityRail and metro services will complement one another, contrary to claims in recent media reports.
DoP should require that the Sydney Metro Authority to provide further information, under the terms of the Cooperation Agreement and related Interface Agreements with RailCorp, which demonstrates that the construction plan makes allowances that are consistent with the preservation of this reservation with dimensions sufficient for a heavy rail corridor.	The process undertaken to develop the Reference Design for the Stage 1 project has anticipated the potential form and function of potential future projects including an expanded metro or heavy rail network through the Sydney CBD. Currently there are two reserved rail corridors through the city known as Pitt Street Corridor on the eastern side and Western Corridor on the western side. Both are safeguarded to allow future rail extensions through the CBD. The Stage 1 project will use part of the safeguarded Pitt Street Corridor. However, the metro project has been designed to ensure the Western Corridor is preserved to allow future extensions through the CBD of the city rail network if required. Sydney Metro has liaised closely with RailCorp to ensure the safeguarding of the Western Corridor. The metro route through the city does not rule out further expansion for CityRail, contrary to inaccurate claims made in Eco Transit News. The Pitt Street Corridor was identified as a best fit for the Metro linking with existing transport services and areas within the Sydney CBD. The Western Corridor does not provide these linkages and would require unacceptably tight radius curves to achieve an alignment between Barangaroo and Pyrmont. It is intended that as part of any future metro network to the south-eastern and north-eastern suburbs, forming Metro line 2 would intersect with Martin Place station. Provisions have been made in the Stage 1 design to allow effective passenger interchange in the future. Further studies are underway regarding the exact alignment and station locations of Metro line 2.
RailCorp requires further detail of the interface between Central Station and the proposed project.	Issues related to Central Station will be addressed under the terms of the Interface Agreement and Statement of Commitment No. 12, which establishes a joint design group.
Sydney Metro Authority to work with RailCorp to develop and provide further information, which will be detailed in a series of Interface Agreements	Issues related to Town Hall Square Station will be addressed under the terms of the Interface Agreement.
Sydney Metro Authority should demonstrate that access between the proposed Metro Stations and CityRail	The proposed Metro Martin Place Station does not have a direct interchange with CityRail's Martin Place Station (rather, there is a link via the Council owned/managed pedestrian tunnel). The

RailCorp Issue	Sydney Metro response
Stations is compliant with the DDA	existing subway connections under Martin Place would not provide a DDA compliant link between the Metro and CityRail Stations. However, Sydney Metro has proposed to position the lift and set our concourse level at a height that anticipates the future upgrade of this link. Notwithstanding, two lifts would still be required (as proposed by RailCorp and Sydney Metro at each station) as it would be unreasonable to expect people with disabilities to walk a long way past either station to access a lift when other customers will retain direct access.
DoP should note that RailCorp has concerns about the pedestrian link and that a pedestrian management plan will need to be developed for both the construction phase and the project operations phase in Interface Agreements	A new Statement of Commitment No.11C is proposed to further develop and resolve the integrated design issues associated with the Barangaroo Pedestrian Link (BPL).
Construction Impacts	
RailCorp needs additional information to plan, develop and commission alternatives for its operational assets that will be impacted by the construction of the project	Additional information regarding construction will be provided to RailCorp as it becomes available.
RailCorp has also sought amendment to the draft Statement of Commitments and requests that Sydney Metro Authority incorporate those changes	RailCorp's recommended changes to Sydney Metro's Statements of Commitment are discussed below.
It is critically important that RailCorp's conditions of approval are applied to protect RailCorp's infrastructure.	Sydney Metro has accepted the principles identified in RailCorp's proposed Conditions of Approval, although the application of detailed conditions is not considered necessary.
It is important to have a public awareness campaign to keep the public informed of proposed works at specific sites prior to commencement of works.	Consultation issues are addressed by Statement of Commitment No. 35.
The Interface Agreements will detail the impact of any plans for spoil removal and should be required to take due consideration of any impact on RailCorp train service operations.	The Spoil Management Sub-Plan identified by Statement of Commitment No. 45 would consider potential impacts on RailCorp train service operations.
Ensure that impacts on the travelling public and RailCorp functions, especially at the affected CityRail Stations, are minimised or managed in acceptable manner without undue impacts upon RailCorp passengers	Statements of Commitment No.s 51 and 52 establish construction traffic management regimes. It is anticipated that RailCorp will be a member of the Traffic & Transport Liaison Group.
Further detail on potential construction noise impacts	Further details on potential construction noise impacts and mitigation measures will be provided as it becomes available.

RailCorp Issue	Sydney Metro response
RailCorp is concerned about the cumulative impacts the concurrent construction activities will have on its customers' ability and safety to access CityRail stations, most of whom travel to the rail stations on foot.	Sydney Metro agrees that it is important that cumulative impacts are minimised or managed appropriately. The Interface Agreement will identify processes to be put into place to resolve any public works that may impact upon access to RailCorp stations.
Water Management	
RailCorp provides a number of conditions of approval (attached to the cover letter) to cover this issue. DoP is requested to apply those conditions	The construction and operational water management issues identified by RailCorp are noted. Sydney Metro has accepts the principles identified in RailCorp's proposed Conditions of Approval, although the application of detailed conditions is not considered necessary.
Non-Indigenous Heritage	
Sydney Metro Authority needs to consider the Railway Square road overbridge in the detailed design of the project, and avoid any potential conflicts with the overbridge.	The detailed design at Central Station will consider the Railway Square road over bridge under the terms of the Interface Agreement and Statement of Commitment No. 12, which establishes a joint design group.
Operational Transport	
DoP should note that patronage demand for the project will be influenced by the operating patterns adopted by RailCorp at that time. RailCorp will be working closely with Sydney Metro, NSWTI and DoP to ensure the best utilisation of all relevant transport assets.	Sydney Metro concurs with these undertakings.
RailCorp, Sydney Metro and NSWTI should work together to ensure the Metro proposal provides a well-integrated transport outcome for Sydney with subsequent improvements to the service provided to the travelling public.	
Operational Noise and Vibration	
The project design should take into account the ease of replacement of any component related to acoustic amelioration, should it fail.	Noted. The design of the metro will be subject to further review by Sydney Metro and the Integrated Metro Operator. Acoustic performance is a critical element of design as evidenced by Statements of Commitment No.s 21 to 31 (inclusive).

RailCorp Issue	Sydney Metro response
Economic and Social Issues	
To promote the effective and efficient integration of the RailCorp property in the Rozelle Marshalling yards into the project network, RailCorp needs to understand its impacts on current and future operations	Further details on operation and land requirements of the Rozelle maintenance and stabling depot will be provided as it becomes available.
It is noted that that there are likely to be disturbances to social amenity of RailCorp employees and customers. Sydney Metro Authority is to liaise with RailCorp to relocate affected employees. RailCorp also provides a number of conditions of approval (attached to the cover letter) to cover this issue. DoP is requested to apply those conditions.	Further details on potential construction impacts and mitigation measures will be provided as it becomes available. The issue of relocation will be discussed on an as-needs basis.
Land Use Implications	
RailCorp requests that DoP request Sydney Metro Authority work with RailCorp to develop an Interface Agreement, under the Terms of the Cooperation Agreement that provides clarifications and additional information with respect to proposed development within RailCorp assets and operations.	RailCorp will be involved in the development of Pedestrian Management Plans, Construction Management Plans and Traffic Management Plans where construction has the potential to impact on RailCorp assets and operations. It is noted that any property or stratum issues (including easements or right of way benefits), or any leasing issues, would be resolved separate to any Conditions of Approval and in accordance with relevant legislation.
Environmental Assessment of Other Issues	
It is important for RailCorp geotechnical engineers to precisely locate the proposed tunnels and Stations with existing RailCorp infrastructure. In order to develop this database, a detailed geotechnical model needs to be prepared for each specific site that conservatively addresses all the geotechnical issues and provides recommendations for design and construction techniques, methodologies and monitoring regimes (for review and concurrence by RailCorp).	Agree. Further geotechnical and survey information will be provided to RailCorp as it becomes available.

RailCorp Issue	Sydney Metro response
Project Justification	
It is noted that the EA is for the proposed CBD metro and also includes reference to West Metro proposals. It is noted that the project will form the core for a broader Metro network, possibly servicing Sydney's West, South East, North East, and North West. It is noted that the Infrastructure SEPP does provide protection for rail corridors, however it is noted that it does not single out the project nor does it specifically protect the alignment proposed, as this moves outside the protected Metro-Pitt corridor boundaries and crosses the CBD West corridor. RailCorp provides these clarifications in relation to features of the CityRail network and operations to inform statements made in the EA.	RailCorp's clarifications are noted.
Reference Design	
Central: The proposed changes at Central, RailCorp requires further detailed information on the analysis Sydney Metro has undertaken in consideration of operational requirements. RailCorp is working with SMA and NSWTI to gain full clarity on these matters Town Hall Square: In order to achieve appropriate and efficient design solutions, RailCorp needs to be engaged as a major stakeholder in developing detailed design for Town Hall Square Station. This issue has been addressed in RailCorp's comments on the draft Statement of Commitments. Barangaroo-Wynyard and Martin Place: This issue has been addressed in RailCorp's comments on the draft Statement of Commitments.	These issues have been addressed above in response to RailCorp's proposed changes to Statements of Commitment.

RailCorp Issue	Sydney Metro response
Technical Papers	
It is noted that the Western and North Shore lines are not at capacity and where high passenger loading occurs on specific services this is not in itself causing a lowering of reliability. The integrated timetable introduced in October 2009 adds further services to both these lines expanding capacity.	RailCorp's clarifications are noted. Issues related to corridor protection have been addressed in earlier responses.
The following is noted: The timetable is not driven by sectorisation, rather the network infrastructure. The Clearways programme remains part of the medium-to-long term planning for the network are the strategic effort to address any desired sectorisation on a suburban network.	
DoP should note that patronage demand for the project will be influenced by the operating patterns adopted by RailCorp at that time. RailCorp will be working closely with SMA, NSWTI and DoP to ensure the best utilisation of all relevant transport assets.	
Maintenance of the integrity of the CBD west corridor is critical to the medium to long term resolution of congestion issues on the CityRail network.	
RailCorp should be included in relevant Liaison Groups to be set up as part of the project.	RailCorp will be included in relevant liaison and coordination groups, including joint design groups, the Central Project Coordination Committee and the Traffic and Transport Liaison Group.

RailCorp Draft Statement of Commitments	Sydney Metro response
Draft Statement of Commitments	
SoC 12 (joint design group at Central Station) To ensure impartiality in dealing with highly important transport, operational and construction issues, this design group should be chaired by NSW Transport and Infrastructure (NSWTI). The design group should also cover Martin Place and Wynyard Stations. SoC 13 (joint design group at Town Hall Square) Sydney Metro commits to establishing a joint design group with RailCorp for Central and Town Hall Stations. SoC 19 (Geotechnical and settlement management) Sydney Metro to revise Draft Commitment #19 to include suggested wording of "and stations"; Sydney Metro to revise Draft Commitment #19(b) to include wording to ensure the settlement criteria is "endorsed" by RailCorp, or at least meets pre-determined RailCorp requirements to ensure tunnels, stations and other RailCorp assets are protected. Other RailCorp also provides a condition of approval to ensure an independent heritage expert; RailCorp to be included as a stakeholder in the Traffic and Transport Liaison Group; and RailCorp also provides a condition of approval to ensure no blasting near RailCorp assets unless approved by RailCorp.	A joint design group for Central Station will be established by Sydney Metro (Statement of Commitment No. 12). Sydney Metro cannot impose a chairing role on NSW Transport and Infrastructure. NSWTI would be invited to participate as required. A joint design group for Town Hall Square Station will be established by Sydney Metro (Statement of Commitment No. 13). The focus of this group will be on the metro entrance and integration with / facilitation of Council's vision for a new public domain. Whilst the interface with RailCorp facilities is considered relatively minor at this locality, it is acknowledged that RailCorp is an important stakeholder. Therefore, Statement of Commitment No. 13 will be changed to explicitly involve RailCorp. Sydney Metro cannot impose a chairing role on NSW Transport and Infrastructure. NSWTI would be invited to participate as required. It is considered that the complexities of interfacing design between metro and CityRail stations at Martin Place and Wynyard can be resolved without specific joint design groups and therefore no specific Statements of Commitment are proposed. Notwithstanding, all design interfaces with RailCorp assets and facilities would be subject to the design review processes described in detail in the Interface Agreement. A new Statement of Commitment (No.11C) regarding the design issues associated with the Barangaroo Pedestrian Link is warranted and RailCorp is included as a key stakeholder in this regard. The proposed change to Statement of Commitment No.19 to include reference to "stations" is acceptable. It is not appropriate to include an undefined endorsement role for RailCorp within Statement of Commitment No. 19. Rather, an approval/endorsement process for RailCorp (including timing and detailed criteria) will be established via the Interface Agreement. An independent heritage expert to oversee works below, above or within 25m of a RailCorp heritage item is not considered necessary given the assessment undertaken to date and the proposed Statement's of Commitment (17, 38, 40, 41, 42). It is anticipated that RailCorp will be a participant in the Traffic and Transport Liaison Group. Sydney Metro has accepted the principles identified in RailCorp's proposed Conditions of Approval related to blasting above, below or within 25m of an existing or proposed RailCorp infrastructure facility. However, the application of detailed conditions is not considered necessary as this will be covered in the detail via the Interface Agreement.

3.12 Casino, Liquor and Gaming Authority NSW submission

Casino Authority Issue	Sydney Metro response
Noise and vibration	
The Authority, is concerned that the Lyric theatre, hotel (currently under construction) and apartments within the casino complex need to be protected with appropriate conditions related to possible noise and vibration.	Noted
The State Government considers the Lyric theatre to be of major importance to Sydney.	The sensitivity of the Lyric Theatre as a cultural facility of international quality and standard is acknowledged. Refer to later comments and inclusion in SoC 22.
The Lyric theatre was not constructed to tolerate the impacts expected from the construction and operation of a Metro train located beneath it in tunnels.	Sydney Metro has undertaken a review of the acoustic standards that were applied to the Lyric Theatre as part of the Sydney Light Rail project. In accordance with this review it is recommended that investigations be conducted to confirm the present background and ambient sound levels in the Lyric Theatre (see Item 9 below). Resolves requested condition 1 Subject to the outcome of those investigations, Sydney Metro will consider the adoption of an appropriate noise goal for train operations to maintain the high acoustic standards for this facility.
The current construction of the hotel directly above the proposed rail tunnels requires residential classification that should result in high acoustic and vibration standards for hotel guests. A high acoustic standard must also be maintained for the ground floor foyer in keeping with the five star quality of the hotel.	Sydney Metro recognises the sensitive nature of the Casino Site. It is noted that hotel apartments are classified as residential receivers in terms of the noise and vibration design limits for operations and management levels for construction. The ground foyer level of the hotel is considered to be equivalent to General Office Areas in terms of noise and vibration design limits and management levels.
With the combined operation of the light rail within the casino building and the addition of a Metro rail specialised evaluation by experienced acoustic engineers will be needed.	The successful contractor will be required to appoint an experienced acoustic engineer to ensure that operational noise and vibration levels comply with the design limits. Appropriate Design Review and Design Verification processes will also be the responsibility of the Contractors acoustic engineer. The acoustic design process and acoustic designs will be subject to review by the Sydney Metro Acoustical Technical Adviser.

Casino Authority Issue	Sydney Metro response
The high standard for train vehicles, rail and acoustic vibration need to be conditioned and enforced by State Government. Quality of maintenance, repair and renewal of the trains and rails would be a long-term issue for casino operations.	These recommendations are reflected in the noise and vibration technical paper.
The concrete lined tunnels and rail installation will need specialised acoustic performance. The Noise and Vibration Assessment indicated that the achievable ground borne noise and vibration level for most of the residential properties adjacent to Pyrmont Station could be 20dBA and below (Alternative 2). The Lyric theatre is shown to be in the order of 23 dBA or 21dBA (Alternative 1) based on the proposed high attenuation trackform, and yet a ground borne noise level of 35dBA is indicated as the 'design goal'.	The successful contractor will be required to design the track form and maintain the track and rolling stock to ensure that operational noise and vibration levels comply with the design limits on opening and during continuing service. The ground-borne noise modelling results in the noise and vibration technical paper show the predicted noise levels at all sensitive receiver locations near the proposed alignment. The track form design is based on the receiver locations closest to the alignment and hence this is the reason why noise levels are much lower than the noise design limits at some more distant locations. A conservative approach has also been adopted for the EA assessment in order to demonstrate that the noise and vibration design limits are achievable. The contractor may construct a different track form design to what has been described in the EA, however the noise and vibration design limits will remain the same.
The proposed design goal of 35 dBA should be lowered to 30 dBA. The acoustic consultant has theoretically modelled the acoustic analysis, any errors in the application of the model may have significant impacts on the Lyric theatre and hotel. Cost cutting could result in a lesser quality of rail fixing resulting in possible adverse noise and vibration impacts on the casino. Information and specifications of proposed rolling stock (carriages) that are not yet available.	The ground-borne noise design limit of 35dBA for residential receivers during the night-time period is based on the DECCW's *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects*. This level is based on the DECCW's review of the impacts associated with ground-borne noise and hence the 35dBA design limit is considered acceptable for this project. The successful contractor will need to demonstrate during the design process how the ground-borne noise limits will be achieved as part of the track form design and maintenance of the track and rolling stock.
The acoustic consultants have not tested the interior of the Lyric theatre, nor have they indicated the effects of ground borne noise inside the theatre. The Lyric theatre should be examined in detail. The acoustic impacts of the Metro should be tested concurrently with the light rail.	Sydney Metro has proposed to undertake a detailed assessment of the potential noise and vibration impacts upon the Lyric Theatre. Further, noise and vibration commitments may be made pending this assessment.

Casino Authority Issue	Sydney Metro response
Noise and vibration during construction is identified to be 40 dBA for the theatre and higher for the hotel. High levels of noise and vibration for up to 2-4 weeks may be intolerable for hotel guests and theatre performances affecting long-term bookings and contract requirements. Sydney Metro should establish construction phasing in a reasonable manner in consultation with Star City.	The detailed assessment referred to in Item 9 will also assess the potential impacts associated with the proposed tunnelling, station construction and operations. Sydney Metro would liaise with Star City to provide programming and phasing of construction details Resolves requested Condition 2
Alternative 2 identifies various noise barriers around the station construction site. The use of double skin or concrete construction with an acoustic roof is essential for the residential occupation of the hotel. This acoustic enclosure should be required rather than relying on arbitrary 'reasonableness' provisions.	The requirement for an acoustic roof over the construction site will be dependent on the construction noise levels and the requirement for long-term construction works during night-time periods. The Sydney Metro *Construction Noise and Vibration Management Strategy* outlines the approach that will be adopted to minimise noise and vibration levels and implement all feasible and reasonable mitigation measures. The reasonableness provision is not arbitrary, but based on defined processes and quantitative noise assessments. The "feasible and reasonable" approach has been successfully applied to numerous other major construction projects in the CBD and elsewhere. Resolves requested Conditions 3 and 4
Construction 24 hours/day 7 days/week will have an adverse impact on the economic viability of Pyrmont businesses. Construction should be limited to standard daytime working hours as imposed on all other building projects in Sydney.	The Sydney Metro *Construction Noise and Vibration Management Strategy* outlines the approach that will be adopted to minimise noise and vibration levels and implement all feasible and reasonable mitigation measures. Resolves requested Conditions 3 and 4
High attenuation rail track forms must be used beneath the casino to minimise any impact on the Lyric theatre, apartments and hotel.	The contractor may construct a different track form design to what has been described in the EA, however the noise and vibration design limits will remain the same. The successful contractor will need to demonstrate during the design process how the ground-borne noise limits will be achieved as part of the track form design and as part of the design and planning of maintenance of the track and rolling stock.
The EA did not provide the technical performance of any of the four types of trackform nor illustrate the proposed "Sonnerville system" except that overall noise level reductions of the high attenuation track are expected to be about 5dBA. The 'floating slab track' is indicated as the best option but its capability has not been demonstrated on noise sensitive receivers. Various train speeds have been indicated without a clear direction on the maximum train speed under the casino complex.	The modelling approach adopted for the EA was based on applying the proposed high attenuation track form at more sensitive locations and a standard attenuation track form design at all other locations in order to achieve the design goals with an acceptable margin of safety. The final track form design will be designed by the contractor to achieve the ground-borne noise and vibration design limits. Figure 21 on Page 128 of the Noise and Vibration Technical Paper indicates that the speed is variable under the casino complex and will be up to 76km/h at track chainage 3.5km (opposite the Lyric Theatre).

Casino Authority Issue	Sydney Metro response
The proposed high attenuation track form could have a level of risk that the low levels may not be achieved. The best option is a rail track system with train rails fixed to a floating concrete slab with attenuation barriers.	Refer to Items 13 and 14, which Resolves requested Condition 6
The depth of the proposed tunnel alignment could result in risks such as building damage. By increasing the depth of the tunnels the ground borne noise and vibration issues from construction and rail operation could also be reduced. The EA doesn't examine these advantages of lower tunnel depths. The tunnel should be lowered further below the car park level of the casino.	Differential settlement has been addressed in a construction agreement between Sydney Metro and Star City. This agreement has been based on an extensive engineering assessment jointly undertaken by Sydney Metro and Star City. Meets the requested Condition 7. The EA assessment indicates that the ground-borne noise and vibration limits can be achieved for the proposed alignment.
Alternative 2 is the most acceptable as it has the most generally acceptable results for the casino site.	The EA assessment indicates that the ground-borne noise and vibration limits can be achieved for the proposed alignment.
An option of removing excavated material from the tunnel using a conveyor system to a location away from residential areas should be implemented. Truck movements must be restricted to standard daytime and weekend working hours.	All construction sites generate additional construction traffic with potential impacts. This is the case with the impact of the Star City development on other land uses in the vicinity. A number of alternative options for truck movements will be further scrutinised. Sydney Metro proposes two stakeholder liaison groups be established – the Central Project Coordination Committee (CPCC) and the Traffic and Transport Liaison Group (TTLG). The CPCC will provide a strategic and tactical forum for ensuring metro construction works are coordinated with other development and public works; and will aim to mitigate impacts on events, local business, residents, and CBD visitors by ensuring that construction impacts arising from the Stage 1 are integrated and balanced against the construction impacts of wider redevelopment and other changes occurring within the CBD. The TTLG will ensure that all relevant traffic and transport management authorities, including the RTA and relevant councils, are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed prior to the start of construction. It is proposed that the TTLG would undertake the consultation functions which would otherwise occur at forums such as council traffic committees, when determining traffic management measures to be put in place to manage construction activities. Resolves requested Condition 9.

3.13 City of Sydney Council submission

No.	City of Sydney Issue	Sydney Metro response
Project Justification		
Project Alternatives		
1.	Environmental Assessment (EA) does not adequately demonstrate that a metro network is an appropriate metropolitan-level transport investment.	A metro network for Sydney is supported by the State Plan and the Metropolitan Strategy. It is also noted that Objectives 3.1 and 3.2 in Council's Sustainable Sydney 2030 include actions that support the development of Sydney Metro.
2.	EA has not demonstrated that the proposed scheme is the most effective scheme, against potential alternatives.	Chapter 5 of the EA describes alternatives to Stage 1 of the Sydney Metro Network, noting that Stage 1 (Central to Rozelle) would be the enabler for a larger network.
3.	By extending the Metro to the proposed West Metro Station location in Broadway (near Sydney University), patronage would be increased with minimal additional cost.	Agree. However, the development of Stage 1 is linked to available funding and the ability to deliver additional mass transit capacity where it is needed most – in and around the CBD. Support for Stage 2 towards Broadway/Sydney University and beyond is noted.
4.	An extension to Drummoyne would allow buses to be turned around and provide more services to North West Sydney.	Agree. However, the development of Stage 1 is linked to available funding and the ability to deliver additional mass transit capacity where it is needed most – in and around the CBD. Support for the future extension to the north west towards Drummoyne and beyond is noted.
5.	The EA does not provide alternative options for the choice of an inner city depot location.	Chapter 5.6 of the EA notes that the preferred alignment of the CBD metro dictated that the only possible location for the stabling and maintenance depot would be at the former Rozelle Marshalling Yard site. There are no other areas along the proposed route with the capacity to accommodate the depot. It is also a desirable location for operational reasons.
6.	As the EA does not adequately discuss alternatives it is not clear whether they have been evaluated and rejected or ignored. As no details of the costs of the Metro are provided, it is also unclear whether the Reference Design is cost effective.	Relates to depot – see above.

No.	City of Sydney Issue	Sydney Metro response
7.	The City of Sydney has presented concepts for alternatives which could improve the effectiveness or reduce the cost of the Sydney Metro.	The need for an underground bus interchange at Rozelle is not warranted. Effective bus transfer is provided at Rozelle via on street bus stops and a bus bay. Options to use the Iron Cove Bridge for extensions to the north west could be considered. However, capital cost could not necessarily be anticipated and there would be significant environmental impacts. Support for Stage 2 towards Broadway/Sydney University and beyond is noted.

No.	City Of Sydney Draft Conditions Of Consent	Sydney Metro response
Project Justification		
Project Alternatives		
8.	That consent shall not be granted until an economic analysis and assessment of alternative options is completed, placed on public exhibition, and public comments responded to, to the satisfaction of the Director General.	Sydney Metro considers this condition to be unreasonable and unacceptable. The EA is considered adequate to inform the Minster for Planning in making a determination.
9.	That consent shall not be granted until an analysis of an extension to Broadway (near Sydney University) and Drummoyne is completed, placed on public exhibition, and public comments responded to, to the satisfaction of the Director General.	Sydney Metro considers this condition to be unreasonable and unacceptable. Sydney Metro is seeking approval for Stage 1 (Central to Rozelle) of the Sydney Metro Network. Notwithstanding, Sydney Metro has lodged a Project Application for Stage 2 (Central to Westmead) and is currently preparing an Environmental Assessment. Extensions of the network to the north west from Rozelle would be the subject of future project applications.

No.	City of Sydney Issue	Sydney Metro response
Project Justification		
Demand Forecasting/Modelling		
10.	The EA does not give any detail as to the basis for, and the robustness of, the passenger forecasting.	See section 4.6.2, which summarises the forecasting methodology, underlying assumptions, and the forecasting results.
11.	Patronage forecasts do not contemplate the situation of the Sydney Metro being extended by the West Metro (or other stages in Metro extension).	See section 4.6.2, Table 4.1, which provides patronage estimates for the Metro Stage 1, as well as for Metro Stage 1 extended with Stage 2, and for Metro Line 1 (from Parramatta/Westmead, via Sydney CBD towards the north west).

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Project Justification		
Demand Forecasting/Modelling		
12.	a) That consent shall not be granted until a calibration report for the patronage model is completed and placed on public exhibition, and public comments responded to, to the satisfaction of the Director General.	Sydney Metro considers this condition to be unreasonable and unacceptable. The EA is considered adequate to inform the Minster for Planning in making a determination. Further patronage work associated with Stage 2 and the future Metro Network is an ongoing task.

No.	City of Sydney Issue	Sydney Metro response
Project Justification		
Traffic and Pedestrian Modelling		
13.	There has been limited traffic and no pedestrian modelling reported in the EA. Key assumptions that are not stated include the modelled years; extent and timing of proposed network extensions, fuel prices, land use and demographic changes.	Traffic and pedestrian modelling has been undertaken to inform the reference design and the EA. Traffic modelling reported in the EA has been undertaken in accordance with the Director-General's Requirements and in consultation with the RTA using PARAMICS. Pedestrian modelling has been undertaken to inform the station design

		using static analysis and MASSMOTION.
14.	The end state modelling that has been completed should be reported.	As above. The results of traffic and pedestrian modelling and proposed "end state" at each station locality is reported in Technical Paper 1.

No.	**City Of Sydney Draft Conditions of Consent**	**Sydney Metro response**
Project Justification		
Traffic and Pedestrian Modelling		
15.	a) That the Director General require full Paramics modelling of the end state of the project including: i. Reductions in vehicle traffic due to mode shift; ii. Reductions in bus numbers in the CBD associated with the project; iii. Light rail extension on Sussex St, Hickson Road and George St iv. The City's proposals for cycleway; pedestrian improvements and traffic calming around the project sites. b) That deferred commencement consent be granted subject to a calibration and validation report to the RTA's guidelines for Paramics modelling being prepared and placed on public exhibition, and public comments responded to, to the satisfaction of the Director General .	a) The Director General's requirements did not state a requirement for PARAMICS modelling. b) Sydney Metro considers this condition to be unreasonable and unacceptable
No.	**City of Sydney Issue**	**Sydney Metro response**
General Construction Impacts		
16.	Coordination of works within the City of Sydney may minimise the overall traffic impact on City and should be more fully investigated.	Agree. Sydney Metro proposes two stakeholder liaison groups be established – the Central Project Coordination Committee (CPCC) and the Traffic and Transport Liaison Group (TTLG). The CPCC will provide a strategic and tactical forum for ensuring metro construction works are coordinated with other development and public works; and will aim to mitigate impacts on events, local business, residents, and CBD visitors by ensuring that construction impacts arising from the Stage 1 are integrated and balanced against the construction impacts of

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
		wider redevelopment and other changes occurring within the CBD. The TTLG will ensure that all relevant traffic and transport management authorities, including the RTA and relevant councils, are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed prior to the start of construction. It is proposed that the TTLG would undertake the consultation functions which would otherwise occur at forums such as council traffic committees, when determining traffic management measures to be put in place to manage construction activities.
17.	Pedestrian capacity has been analysed using the Highway Capacity Manual - It is unlikely that this approach adequately caters for bi-directional pedestrian traffic and conflicting pedestrian movements	HCM capacities adopted allow for bi-directional flow, generally 50/50 spilt and for the effects of upstream platooning eg as a result of signal operation. Observations indicate that pedestrian movements at building entries adjacent to the work areas would not generate significant cross movements on the walkways. The pedestrian flows analysed are conservatively high, being based on an accumulation of surveyed flows on Martin Place and on rail station access and MLC stairways, i.e. some double counting of pedestrians moving from the surface level to stairways/ MLC entry is included. The Capacity Manual provides a useful and appropriate guide to managing pedestrian movements in a range of situations.
18.	The EA contains inadequate information about relocation of impacted Bus and Coach Operations in and around Central station. These will need to be addressed in greater detail as part of the Construction Traffic Management Plans.	Statement of Commitment No.12 establishes a joint design review group to resolve these issues. Sydney Metro and RailCorp are working together with other stakeholders to determine the management of bus, coach and taxi services during construction. Sydney Metro will require contractors to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs).

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
		The TMPs & TCPs will address the following: • Measures to protect pedestrians and maintain surface public transport services during the works. • Measures to manage traffic flows through and surrounding the construction routes, including regulatory and direction signposting, line marking and variable message signs. • Identify any mitigation measures to improve the efficiency of traffic and pedestrian movement and conditions. • Take into account both regional and local transport impacts.
19.	The existing taxi ranks in operation around Central Station are all located on State Rail Authority land. The EA does not adequately consider the need to relocate these ranks or investigate alternative locations.	As per 18.
20.	EA does not adequately consider the knock on pedestrian impacts	As per 18.
21.	TTLG will need to have suitable representation by the core Sydney Traffic Committee (STC) members	The TTLG will comprise representatives from relevant agencies most likely limited to a maximum of two officers per agency.
22.	A representative from the Traffic Operations Unit must attend all meetings of the TTLG to discuss any works impacting on the City of Sydney local government area.	Agree.
23.	Any proposal that requires the agreement of the STC should be submitted in writing to the Traffic Operation Unit at Council – 8 weeks before the date of the STC meeting.	The construction program for the Stage 1 Metro is such that matters will need to be dealt with expeditiously. It is unlikely the suggested 8 week requirement could be satisfied. TTLG processes and timings will be agreed post approval.
24.	TMPs are proposed to be reviewed by the Proponent on a regular basis during construction	Monitoring of construction traffic and potential general traffic impacts is proposed throughout construction and delivery phases, to manage and respond appropriately to adverse traffic impacts.
25.	City of Sydney should be given opportunity to comment on these revisions. It is imperative that the City of Sydney is given an opportunity to review the Construction TMPs	Review of the Construction TMPs would occur via the TTLG. Refer to 23.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
26.	The FTMP proposes that these plans will be approved by the TTLG; this is only acceptable if the City of Sydney Traffic Operations Unit has a defining say at TTLG meetings.	As per 23, noting that the process and determining roles of the TTLG would be subject to agreement between participating parties.
27.	It may be possible to permit construction activities 24 hours/7days a week provided work is underground, there are no unreasonable above ground noise impacts	Agree.
28.	Traffic Operations Unit has concerns over the Licences being issued for 3 years, it is considered more appropriate to deal with these on a case by case basis.	This request is acknowledged. Further discussion and consideration is required.
29.	All relocations of bus stops will require the agreement of the State Transit Authority (STA)	Agree. The STA would be represented on the TTLG.
30.	All Over Dimension or Over Mass Vehicles on State Roads will require the approval of the RTA	Agree. The RTA would be represented on the TTLG.
31.	All Over Dimension or Over Mass Vehicles on Local and Regional Roads will require the agreement of the Council's Traffic Operations Unit and will require a referral to the STC	Agree. The Council would be represented on the TTLG.
32.	Where possible, footways are to remain unobstructed. A minimum footway width of 3m should be maintained at all times.	The FTMP and TMPs identify safe pedestrian footway widths. In some cases widths of less than 3m would be required.
33.	If the closure of footways is required a pedestrian management plan will need to be submitted to the City's Operations Unit for assessment and approval prior to implementation of the footway closure.	As per 18. Construction Traffic Management Plans include pedestrian arrangements during construction.
34.	Removal of on-street parking spaces should be kept to a minimum. Any displaced parking (Loading Zones, Taxi Rank, Bus Stops etc.) should be reallocated into nearby streets.	Proposed changes to existing kerb controls will be kept to a minimum. However, in some temporary or permanent kerb occupancies, it may not be possible to reallocate kerb space to another location and provision of off-street car parking may actually contradict the stated project goals of promoting the most efficient and sustainable mode of access. Once the exact extent of workzone required at any onetime is identified, it may be practical to maintain a small number of loading spaces, which would be progressively relocated as the workzone shifts. This level of detail

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
		will be provided at the construction phase.
35.	City of Sydney will not provide on street parking for construction related vehicles	Sydney Metro will require the contractor to complete Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs). These will be submitted to the RTA for approval, as required in accordance with NSW legislation. Due to restricted space with the worksites there may be requirements for some on road parking / waiting / unloading by construction traffic. The contractor will be required to complete a Road Occupancy Licences (ROLs) for any dedicated street truck queuing areas if necessary. This will be submitted to the RTA for approval, as required. During times of continuous construction traffic activity, it is likely that a trucks will use a truck call forward areas, and a truck call-up system be used to assist construction traffic management and minimise disruption to road users.
36.	The applicant must include considerations of a truck call up system in TMPs	Agree. This initiative has been identified in the Appendix E to Technical Paper 1.
37.	It is recommended that the Proponent prepares an overarching Construction TMP which will address the cumulative impacts.	A Framework TMP was prepared and presented in Technical Paper 1. Refer to 16 for ongoing actions.
Central Station		
38.	Private bus and coach activities will all need to be considered at Central Station	Agree. Sydney Metro and RailCorp are working together with other stakeholders to determine the management of bus, coach and taxi services during construction.
39.	Any relocation of taxi zones onto public streets will require a referral to the STC	Refer to 38.
40.	Proponent should liaise with the City to ensure that construction processes do not hinder the installation of planned cycleways.	Agree. Refer to 16.
41.	Where possible, footways and pedestrian walk ways are to remain unobstructed	Agree. Refer to 33.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
42.	At Central The applicant must liaise with the SRA to ensure displacement of parking and access to the country platforms is suitably managed.	Agree. Refer to 18.
Town Hall		
43.	Pitt Street is the main coach route - Any reduction to the road width of Pitt Street will need to consider these operations.	Agree.
44.	The reallocation of the taxi rank into a nearby street should be in consultation with the Taxi Council of NSW	Agree. The Taxi Council of NSW would be represented on the TTLG.
45.	Special attention needs to be given to truck access to ensure pedestrian safety	Agree.
46.	Loading should not take place in or near Town Hall Square, including 307 Pitt Street	Noted
47.	The work site in Pitt Street requiring trucks to travel through to Market Street needs to be reviewed in detail.	Noted.
Martin Place		
48.	Any temporary road closures in the surrounding streets during the events will require a referral to the STC	It is anticipated that the TTLG would ensure any temporary road closures in the surrounding streets during the events are agreed with relevant parties.
49.	Access to Martin Place station needs to be re-examined to ensure safety and alternative access locations should be identified in order to plan for increased patronage.	The operational pedestrian access arrangements at Martin Place are described in the EA. Whilst aspects of the design will be subject to further consultation, alternate access points are not proposed. As noted in Chapter 5.3 of the EA, the inherent features of the Stage 1 project enable the potential future extension of the metro and the delivery of other major projects potentially influenced by metro, including CityRail network improvements.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
50.	The Proponent should continue to liaise with Sydney Buses to ensure the construction site has a minimal impact on bus operations	The STA would be represented on the TTLG.
51.	Prior to applying for changes to Taxi Zones, the Proponent must submit evidence of agreement for the change from the NSW Taxi Council.	The NSW Taxi Council would be represented on the TTLG.
52.	The Proponent should liaise with the City to ensure the applicant's construction processes do not hinder the installation of planned cycleways.	Agree.
53.	Martin Place - The City is concerned about the adverse impact the Construction site will have on pedestrian movements.	Noted. Review of the Construction TMPs would occur via the TTLG. The TMPs & TCPs will address the following: • Measures to protect pedestrians, cyclists and public transport services. • Measures to manage traffic flows through and surrounding the construction routes, including regulatory and direction signposting, line marking and variable message signs. • Mitigation measures to improve the efficiency of traffic and pedestrian movement and conditions, including cycleways. Monitoring of construction traffic management is proposed throughout construction and delivery phases, to manage and respond appropriately to adverse impacts. The suggested 4.5 metre wide pedestrian access ways on either side of the worksite in Martin Place is consistent with and in some cases better than that adopted on a regular basis in the Amphitheatre of Martin Place.
54.	Peak pedestrian periods, such as the lead up to Christmas, and during events in Martin Place, may require special arrangements to be made for pedestrians. The Proponent should continue liaising with the City to ensure these periods can be suitably managed.	Agree. Refer to 16. A new Statement of Commitment (No.9A) regarding event management has been proposed.
55.	Concerns with the large footprint of the Martin Place construction site which will have reducing the pedestrian corridors.	Refer to 53.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
56.	During construction, the removal of on-street parking spaces should be kept to a minimum	Agree.
57.	Any changes to parking in the vicinity of MLC tower will require Australian Federal Police security clearance and approval	Noted. In terms of building security, generally a reduction in parking at entry points is an advantage.
Barangaroo-Wynyard		
58.	Routes and closures: The main concern is at the Margaret, Napoleon and Kent Streets intersection. Details of such arrangements need to be examined before any determination can be agreed to by the City of Sydney	It is anticipated that the TTLG would resolve these issues
59.	The closure of Shelley at Sussex Street would increase traffic congestion in Shelley Street. It is therefore recommended that the TMP be reviewed to provide one northbound traffic lane in Shelley Street to Sussex Street.	It is anticipated that the TTLG would resolve these issues
60.	If the applicant proposes to temporarily close Shelley Street during construction, then a safe turn around area must be provided at the dead end in Lime Street at Shelley Street.	It is anticipated that the TTLG would resolve these issues
61.	The reduction of Margaret Street from 4 to 3 lanes will have an impact on traffic access and induce traffic delays in the area. This will impact on bus operations. Arrangements should be re-considered. The relocation of bus zones must be discussed with and agreed to Sydney Buses.	Council officers have previously expressed their support for the suggested initiatives in Margaret Street. The traffic modelling reaffirms that the proposed traffic capacity reductions would be feasible. The STA would be represented on the TTLG.
62.	Taxi ranks in Sussex Street, Carrington Street and Shelley Street will be impacted - Any relocation of taxi zones must be discussed with NSW Taxi Council.	The NSW Taxi Council would be represented on the TTLG.
63.	The work sites will need to be clear of materials to ensure sight distance is maintained for cyclists.	CTMPs would address this requirement.
64.	Footpaths should remain open wherever feasible, or a reasonable safe alternative path be provided for pedestrians.	CTMPs would address this requirement.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
65.	The control of vehicles entering the sites at Barangaroo/Wynyard will need to be managed by traffic controllers for pedestrians at cross over points.	Agreed.
66.	Removal of parking, and impacts on pedestrian access, bus operations and intersections in the area located adjacent to the International Cruise Terminal should be minimised.	Noted.
67.	Proposed loss of on-street parking related to this TMP may have a significant impact on servicing of the businesses in the northern part of the City. It is recommended that the Proponent review the TMP to minimise loss of parking to businesses.	It is anticipated that the TTLG would resolve these issues.
68.	The relocation and removal of loading zones and other parking restrictions must be in consultation with adjoining businesses and RailCorp.	RailCorp would be represented on the TTLG. Consultation with businesses would be ongoing to ensure safe access and servicing is maintained.
69.	The removal of right turn ban in Sussex Street to KPMG building (not Macquarie Bank building) must be in consultation with the building management and have regard to safety implications.	Consultation with businesses would be ongoing to ensure safe access and servicing is maintained. In addition, these matters will be addressed as per the Statement of Commitments, items 51 and 52.
70.	York lane - the proposed traffic arrangements in the lane would need to be reviewed and an alternative proposal prepared.	Use of York Lane during construction will be required in order to successfully construct the Metro station. Measures to minimise impacts would be further developed and approved through the TTLG.
Pyrmont		
71.	The Construction TMP for Pyrmont must take into account any current approved Star City works and also any potential future conflicts.	Agree.
72.	All construction processes are to have minimal impact on existing and proposed cycle routes	Agree.
73.	all efforts must be made to retain parking spaces in Pyrmont	Noted. The hierarchy of access adopted for planning of metro stations gives priority to the most efficient and sustainable transport modes. In some locations there will be a permanent loss of parking in order to integrate

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
		each metro station with the current and future urban context and public transport infrastructure networks, to facilitate interchange; encourage walking, cycling and public transport usage; and create a customer journey that is seamless and intuitive from trip origin to destination. The rationale for precinct works is discussed within Technical Paper 1 Transport and Traffic (6). During construction, once the exact extent of workzones required at any onetime are identified, it may be practical to maintain a small number of spaces, which would be progressively relocated as the workzone shifts. This level of detail will be provided at the construction phase.
74.	The City of Sydney does not consider Union Square to be suitable for westbound truck access. Alternative access which does not make use of Union Square (e.g., via Miller Street) should be investigated.	The proposal to route trucks westbound through Union Square is feasible but would need to be managed by traffic controllers to prevent conflict with pedestrians and other road users This can be subjected to closer scrutiny through the TTLG.
75.	It is suggested that the alternate truck routes via Harris Street should be limited to off-peak periods only.	This could potentially adversely impact the Stage 1 Metro program. Sydney Metro needs to retain the flexibility of using Harris Street for peak period trucking if required.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
General Construction Impacts		
76.	**Town Hall Station** a) Prior to any occupation of the carriageway the Proponent must submit a traffic management and traffic control plan to the Sydney Traffic Committee, via the City of Sydney's Traffic Operations Unit, for approval. Fees and charges for occupation permits and assessments shall be borne by applicant. b) The Proponent must make an application to the Sydney Traffic	The construction program for the Stage 1 Metro is such that matters will need to be dealt with expeditiously. It is unlikely the suggested 8 week requirement could be satisfied. Sydney Metro considers this condition to be unreasonable and unacceptable. The establishment of specific restrictions at this stage of the process is not

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	Committee for any temporary road closure a minimum 60 days prior to date of the road closure. c) Loading must not take place in or near Town Hall Square, including 307 Pitt Street. d) Truck routes are subject to the following: i. Detailed, site specific traffic control plans are to be provided to the City of Sydney's Traffic Operations Unit for comment prior to approval. ii. A maximum of 2 truck movements to or from the site are to take place between 7am and 9am and 4pm and 6pm Monday to Friday due to heavy pedestrian and vehicle movements on City Streets during these time periods. iii. Truck movements are to be kept to a minimum between 10pm and 6am every day. iv. Truck movements outside these hours must be approved by the City of Sydney's Construction Regulation Unit. v. No truck movements are to be undertaken on public holidays without prior approval of the Sydney Traffic Committee and the City of Sydney's Construction Regulation Unit.	warranted.
77.	**Martin Place station** a) Truck routes are subject to the following: i. Detailed, site specific traffic control plans are to be provided to the City of Sydney for assessment. ii. A maximum of 4 truck movements to or from the site take place between 7am and am and 4.45pm and 6pm Monday to Friday due to heavy pedestrian and vehicle movements on City Streets during these time periods. iii. Truck movements are to be kept to a minimum between 10pm and 6am every day. iv. Truck movements outside these hours must be approved by the City of Sydney's Construction Regulation Unit. .	Refer to 76.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	v. No truck movements are to be undertaken on public holidays without prior approval of the Sydney Traffic Committee and the City of Sydney's Construction Regulation Unit.	
78.	**General** a) The proponent is to assess footpath capacity using Fruin methodology, with model output to include densities, levels of service and friction level with mitigation measures to be agreed by the TTLG. b) CHANGES TO KERB SIDE PARKING RESTRICTIONS: The applicant must get agreement from the TTLG for all kerb side parking restriction changes. The applicant must undertake a letter box drop informing nearby properties of the changes. This letter box drop will as a minimum require information to be sent to all the properties within the block the proposed changes are to happen within, larger areas may need to be considered depending on the considered impact of the change. The number of properties to be notified can be determined on a case by case basis and will need to gain agreement from the TTLG. The notification must be undertaken a minimum of 7 days, preferred period of 14 days, before the kerb side parking changes are put into effect. All costs are to be borne by the applicant. c) VEHICLES ENTER/LEAVE IN FORWARD DIRECTION: All vehicles must always be driven onto and off the site in a forward direction. d) SIGNS AT EGRESS: The following signs must be provided and maintained within the site at the point(s) of vehicular egress: i. compelling drivers to stop before proceeding onto the public way ii. compelling drivers to "Give Way to Pedestrians" before crossing the footway; or compelling drivers to "Give Way to Pedestrians and Bicycles" before crossing a footway on an existing or identified shared path route	Sydney Metro considers this condition to be unreasonable and unacceptable. Whilst the principles below are generally acceptable, the establishment of specific restrictions at this stage of the process is not warranted. B) Agree that the TTLG is the appropriate forum to seek agreement for changes to kerb side parking restrictions. c) This is the approach being applied across the project d) Noted. e) Noted. The role of the Sydney Traffic Committee in the context of the proposed TTLG has yet to be confirmed. . f) Agree. g) Agree.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	e) TRAFFIC WORKS: Any proposals for alterations to the public road, involving traffic and parking arrangements, must be designed in accordance with RTA Technical Directives and must be referred to and approved by the Sydney Traffic Committee prior to any work commencing on site. f) ASSOCIATED ROADWAY COSTS: All costs associated with the construction of any new road works including kerb and gutter, road pavement, drainage system and footway shall be borne by the developer. The new road works must be designed and constructed in accordance with the City's "Development Specification for Civil Works Design and Construction". g) COST OF TRAFFIC MANAGEMENT: All costs associated with signposting for any kerbside parking restrictions and traffic management measures associated with the development shall be borne by the developer. h) LOADING AND UNLOADING DURING CONSTRUCTION: The following requirements apply: i. All loading and unloading associated with construction must be accommodated on site. ii. A Works Zone is required if loading and unloading is not possible on site. If a Works Zone is warranted an application must be made to Council at least 8 weeks prior to commencement of work on the site. An approval for a Works Zone may be given for a specific period and certain hours of the days to meet the particular need for the site for such •facilities at various stages of construction. The approval will be reviewed periodically for any adjustment necessitated by the progress of the construction activities. iii. The structural design of the building must permit the basement and/or the ground floor to be used as a loading and unloading area for the construction of the remainder of the development. iv. If, during excavation, it is not feasible for loading and unloading to take place on site, a Works Zone on the street may be	h) This restriction may not be possible at all sites. There will be times during the early phases of construction when some loading or unloading takes place kerbside within a Works Zone. i) Agree. However, a council notice to stop work would not be applicable to the project. j) This restriction may not be possible at all sites. k) Agree, with agreement via the TTLG. l) Agree m) Agree n) Noted, for consideration via the TTLG. o) Agree, with agreement via the TTLG.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	considered by Council. v. In addition to any approved construction zone, provision must be made for loading and unloading to be accommodated on site once the development has reached ground level. i) NO OBSTRUCTION OF PUBLIC WAY: The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances. Non-compliance with this requirement will result in the issue of a notice by Council to stop all work on site. j) ACCESS DRIVEWAYS TO BE CONSTRUCTED: Approved concrete driveways are to be constructed for all vehicular access to the construction site in accordance with the requirements of Council's "Driveway Specifications" to the satisfaction of Council. k) USE OF MOBILE CRANES: The following requirements apply: i. For special operations including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on-site tower cranes which warrant the on-street use of mobile cranes, permits must be obtained from Council for the use of a mobile crane. The permits must be obtained 48 hours beforehand for partial road closures which, in the opinion of Council will create minimal traffic disruptions and 4 weeks beforehand in the case of full road closures and partial road closures which, in the opinion of Council, will create significant traffic disruptions. ii. Mobile cranes operating from the road must not be used as a method of demolishing or constructing a building. v. Special operations and the use of mobile cranes must comply with the approved hours of construction. Mobile cranes must not be delivered to the site prior to 7.30am without the prior approval of Council. l) TRUCK ROUTES: The approved truck route plan shall form part of the contract and must be distributed to all truck drivers.	p) Noted, the traffic controllers will ensure that trucks passing over a pedestrian footpath or other pedestrian facility do so in a safe manner. It may be necessary for the traffic controllers to stop pedestrians from walking in front of an oncoming truck for safety purposes

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	m) TRAFFIC CONTROL PLANS: All Traffic Control Plans must comply with Australian Standards 1742.3 and RTA's Traffic Control At Work Sites Guidelines and must be prepared by a Certified Traffic Controller. n) TRUCK SIZE RESTRICTIONS: The applicant must provide council with details of the largest truck that will be used during the demolition, excavation and construction, prior to the start of any work on site and obtain approval from City's Construction Regulation Unit for the use of this vehicle. NOTE: No dog trailers to be used without City's Construction Regulation Unit approval. o) OBSTRUCTIONS ON PUBLIC LAND: i. The developer must obtain a permit from the City's Construction Regulation Unit regarding the placing of any plant/equipment on public ways. ii. No queuing or parking is permitted in any public road. iii. All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off street area. iv. The City will not provide on street parking for none construction related vehicles, for example. Staff parking, trade's vehicles etc. p) MOVEMENT PRIORITIES: i. Any Traffic Controllers are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. The Roads Act does not give any special treatment to trucks leaving a construction site - **the vehicles already on the road have right-of-way** so that every vehicle leaving a site MUST wait until a suitable gap in traffic allows them to exit. Secondly Trucks are not (at no time) allowed to reverse into the site from the road for safety reasons. ii. Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e. **at all times the**	

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	pedestrians have right-of-way on the footpath not the trucks. q) OTHER APPROVALS: i. Physical barriers to control pedestrian or traffic movements need to be determined by the Construction Regulations Unit prior to commencement of work. ii. Any temporary adjustment to a Bus Stop, Bus Lanes or Passenger waiting areas will require the applicant to liaise with Sydney Buses and obtain approval from the STA prior to commencement of works. Any costs associated with re-routing services or relocating stops must be borne by the applicant. The temporary changes may require a referral to the Sydney Traffic Committee. iii. Traffic Signal operation and their phasings are under the jurisdiction of the Roads and Traffic Authority. Any temporary alteration to the signals or their phasing must be approved by the RTA prior to the commencement of works iv. The developer must apply to the Construction Regulations Unit to organise appropriate approvals for cranes and barricades etc. v. The developer must apply to Construction Regulations Unit to organise appropriate approvals for hoarding prior to commencement of works. vi. All loading and unloading must be within the development site or at an approved “Works Zone". vii. The developer must apply to the Work Zones Co-ordinator to organise appropriate approvals for the Work Zones. r) SURCHARGE: Evaluation of the City pavements on all proposed truck routes should be undertaken as a basis for determination of the physical impact of the additional truck movements and calculation of a resultant maintenance surcharge to be paid to the City.	

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Operational Transport Impacts And Interactions		
Coordination		
79.	a) The proponent will form a working party or committee with relevant authorities including the City of Sydney, NSW Transport and Infrastructure, RailCorp, and the Roads and Traffic Authority, to develop, fund and implement CBD wide changes to support the project. The working party or committee will, on an ongoing and timely basis, review and improve the design and operations of Sydney Metro, and respond to significant changes, such as integrated ticketing. Such a committee should be chaired by the City of Sydney and comprise officers from the Department of Transport and Infrastructure and the Department of Planning. b) TTLG will have suitable representation of the core Sydney Traffic Committee members and representatives from the RTA, STA, Police, contractor(s), taxi council, Emergency Services, Ambulance, Fire Brigade and communications. c) The members of the TTLG will be submitted to the STC to gain agreement for the TTLG to be given the powers of the STC, thereby allowing decisions to be made without a separate submission to the STC. d) A representative from the City of Sydney Traffic Operations Unit will be invited to attend all meetings which discuss any works which will have an impact on the City of Sydney local government area.	a) Sydney Metro will not establish a working party or committee to develop, fund and implement CBD wide changes within the City of Sydney. This task is better placed with Council or the Department of Planning. Should such an initiative be implemented, Sydney Metro would be a key stakeholder. Many of the issues raised by Council would be considered as part of the Station Plan process. The Station plans will be submitted to Department of Planning for approval. b) Agree. c) Agree. d) Agree.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Operational Transport Impacts And Interactions		
Coordination		
80.	a) Prior to the commencement of the TTLG all information that requires the agreement of the Sydney Traffic Committee should be submitted in writing to the City of Sydney's Traffic Operations Unit. b) Where approval is required from the City of Sydney, all reports and plans must be submitted to the Traffic Operations Unit at least 8 weeks before the date of the Sydney Traffic Committee meeting.	a) Refer to 16. b) Refer to 16.

No.	City of Sydney Issue	Sydney Metro response
Operational Transport Impacts And Interactions		
Network Integration		
81.	The EA indicates approx. 30% buses across Anzac Bridge could be reduced, but modelling shows 61% of passengers would transfer from buses.	Transfer of passengers from bus does not equate directly to a reduction in bus numbers. Further, bus services to the CBD may be reviewed by operators following the commencement of operations.
82.	The EA should quantify the likely economic impact on the existing light rail operation.	Economic analysis of the project has been conducted in accordance with the NSW Treasury guidelines. The EA, including the consideration of social, economic and land use Implications, is in accordance with the Director-General's Requirements and is considered adequate to inform the Minster for Planning in making a determination.
83.	The metro must make provision for bicycles to be carried on train carriages. Reasons such as evacuation risk and congestion are unfounded compared with the potential increase in transport catchments.	To realise the potential transport catchment benefits, at all times, folded bicycles are allowed in metro stations and on metro services, in the folded condition as luggage. Bicycle parking will be provided at each metro station to allow cyclists to secure non-folding or "traditional" bicycles and continue their journey by metro.

No.	City of Sydney Issue	Sydney Metro response
		Non-folding or “traditional” bicycles are not comparable to mobility aids for the disabled (DDA 1992) and as such should not preclude the use of facilities provided for persons with a disability. Technical Paper 1 notes that deep-tunnel metro systems do not allow carriage of bicycle. Research on international deep-tunnel metro systems indicates that bicycles are not allowed at any time (e.g. Stockholm, Singapore, Hong Kong, and Beijing).
84.	the extent and type of real time information on all transport modes is not given in the EA.	The extent and type of real time service information will be determined by Sydney Metro during the fit-out of the metro -- so as not to preclude the use of emerging technologies.
85.	Sydney Metro proposes that all of its bicycle parking is placed within the public domain -on Council or private properly. This is not acceptable.	Sydney Metro does not propose to provide bicycle parking within Council or on private property. Bicycle parking provision for station access will be provided within the station precinct as noted in the EA.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Operational Transport Impacts And Interactions		
Network Integration		
86.	a) Provision of easy to understand real time information on bus/metro/rail/light rail services. b) Network modelling will include future stages of Metro expansion as well as likely changes to DBD transport such as:- i. Integrated ticketing ii. Light rail extension iii. Development of Barangaroo iv. Development of Carlton United Brewery site v. 2030 traffic calming initiatives.	This Sydney Metro does not consider that these issues require specific Conditions of Approval. Provision of real time information is addressed above. Future network modelling undertaken will consider a range of parameters, but is not an issue for approval of the Stage 1 project.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Operational Transport Impacts And Interactions		
Network Integration		
87.	**Integration with buses** a) That Sydney Metro is required to work with NSW Transport and Infrastructure to ensure that 61 percent of buses are withdrawn from Druitt Street following the opening of the Metro.	Sydney Metro considers this condition to be unreasonable and unacceptable. Whilst this target may be acceptable to STA and NSW Transport & Infrastructure, it is inappropriate to set as a Condition of Approval for the Metro Stage 1 project.
88.	**Impact on metro light rail** a) That the Director General require an economic impact analysis of the Metro proposal on the existing light rail and extensions to Dulwich Hill and central Sydney.	Sydney Metro considers this condition to be unreasonable and unacceptable. Economic analysis of the project has been conducted in accordance with the NSW Treasury guidelines. The EA, including the consideration of social, economic and land use Implications, is in accordance with the Director-General's Requirements, and is considered adequate to inform the Minster for Planning in making a determination.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
		The EA addresses the project's integration with existing and proposed transport infrastructure and networks.
89.	**Carriage of bicycles** a) That the Director General requires Sydney Metro to allow Bicycles into the Metro System at all times. b) That the Director General requires Sydney Metro to provide bicycle storage on the metro trains.	Sydney Metro considers this condition to be unreasonable and unacceptable. Sydney Metro's policy on bicycle use has been clearly stated in 83 above.
90.	**Provision for bicycles at stations** a) The Proponent is required to provide bicycle parking within the development. The capacity of this parking should be based on the City's Cycle Strategy and Action Plan 2007-2017 which sets a target of 10 percent of all trips in the City to be made by bike by 2016. The facilities should comply with Aust roads Guide to Engineering Practice Part 14 -Bicycles section 10.3.1 for provision of parking at public transport locations. It must include: i. An internal, secure bicycle cage or compound (AS2893.3 class 2) within the station, with easy egress for bicycle riders to and from the street entrance; ii. Short term visitor parking bicycle racks (AS2893.3 class e) near the entrance on Metro land, especially where there is retail or commercial development as part of the station; and iii. Secure parking (AS2893.3 class 2) within the station for employees of Metro and any other businesses in the Metro site as well as end of trip facilities (showers, lockers, etc) for those employees.	Sydney Metro considers this condition to be unreasonable and unacceptable. Sydney Metro's policy on bicycle use has been clearly stated in 83 above. The nominated bicycle parking provision for each station is established to meet the likely demand from metro users. Sydney Metro will provide convenient, safe, secure, weather-protected, visible bicycle parking for each station. Any bicycle parking products are required to meet current Australian Standards.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Social, Economic And Land Use Implications		
Service Quality		
91.	**Frequency and operating hours:** a) Provision of a minimum service frequency and operation hours, including a minimum of 20 hours of operation per day for Sunday to Thursday inclusive, and 24 hours of operation for Friday and Saturday inclusive. b) Frequencies shall be such that there is a significant time and cost advantage for using this system compared to private modes of transport.	Sydney Metro considers this condition to be unreasonable and unacceptable. Operational parameters are clearly identified in Chapter 6.8 of the EA and detailed patterns/frequency are subject to commercial negotiations with the Integrated Metro Operator (IMO).
92.	**Real time information:** a) Real time information on metro and all connecting modes will be widely distributed, both within the metro stations and their walking catchment. Real time information will be freely available online to all third parties, including software developers, for incorporation into mobile wireless devices.	Detailed design of real time information systems is not available at this time. IMO must provide service information to NSWTI for the Transport Info Line (e.g. 131500) however the technology is not stipulated to take advantage of any near term advances in technology. Additional to the real-time information provided to NSWTI, the metro operator may also elect to make real-time information available for commercial uses at the discretion of Sydney Metro.
93.	**Fare, ticketing and timetable integration:** a) Fares and tickets for the project will be integrated with other modes of public transport, in order to facilitate seamless transfer between modes.	Sydney Metro considers this condition to be unreasonable and unacceptable. Sydney Metro is not in a position to lead an integrated electronic ticketing system for Sydney. However, Chapter 6.8.4 of the EA clearly states that the Metro ticketing system would use the latest automatic fare collection (AFC) technology, and would be a fully gated and paperless. Frequent users would be able to buy and top up Smart Cards. It is intended that the ticketing system would be part of an integrated electronic ticketing system for Sydney and would be interoperable with other transport modes (that is, there would be one single, integrated ticketing system for all of Sydney's public transport).

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Social, Economic And Land Use Implications		
Service Quality		
94.	**Frequency and operating hours** a) The proponent is required to provide a minimum of 20 hours of operation per day for Sunday to Thursday inclusive, and 24 hours of operation for Friday and Saturday. b) The Director General shall approve service frequencies following public demonstration of the significant time and cost advantage for using this system.	Sydney Metro considers this condition to be unreasonable and unacceptable. Operational parameters are clearly identified in Chapter 6.8 of the EA and detailed patterns/frequency are subject to commercial negotiations with the Integrated Metro Operator (IMO).
95.	**Real time information** a) The proponent is required to: i. Provide real time information showing train location and next two trains for each station for any user at no cost. a) Provide real time transfer information for passengers within the system and on the Metro Trains.	Provision of passenger information is an important issue that Sydney Metro will be developing further. The information requirements will reflect the different operations to other transport services since no timetables are required for metro services.
96.	**Fare. ticketing and timetable integration** b) That the proponent is to provide a ticketing system compatible with the CityRail, Metro Light Rail and Sydney Buses networks. The proponent shall commit to the integration of timetables with complementary modes, particularly during early morning and late evening when frequencies are low.	Sydney Metro considers this condition to be unreasonable and unacceptable. As per response for item 93.

No.	City of Sydney Issue	Sydney Metro response
Social, Economic And Land Use Implications		
Station Design		
97.	EA does not discuss alternative station layouts, locations and potential costs	Chapter 5 of the EA discusses alternate station layouts and locations. The tables in Chapter 5 identify cost (and other) issues associated with station layout/location development.
98.	The supplied architectural drawings are incomplete, uncoordinated and lacking in basic information.	The architectural drawings presented in the Environmental Assessment are at a Reference Design level. It is important to note that some station elements, in particular station entrance locations, may change as a result of design development and feedback from the station master plans The key purposes of the Reference Design are as follows: • To enable Sydney Metro to confirm that the proposed performance and technical requirements can be achieved from a technical perspective. • To enable Sydney Metro to validate the feasibility and methodology of the required construction. • To assist Sydney Metro in the identification of key risks/ constraints and environmental assessment issues. The Reference Design drawings achieve these objectives. Further architectural drawings will be provided to Council as the stations designs are further developed.
99.	The location of services and the size of the Metro entry need to be re-assessed having regard to the urban design of Town Hall Square. In particular, vents and services structures should be located within building envelopes. The location of vents in the public domain cannot be contemplated.	Statement of Commitment No.13 establishes a joint design review group that would include Council, to resolve these issues.
100.	Wheelchair accessibility has not been adequately addressed.	Chapter 6 of the EA clearly states the projects commitment to an 'access-for-all' philosophy. All elements of the project would provide disabled access, access for the elderly, and access for parents with young children. The trains and stations would be wheelchair accessible and able to

No.	City of Sydney Issue	Sydney Metro response
		accommodate the needs of people with mobility and sensory impairments.
101.	The materials and finishes of the proposed structures need to be provided.	Detailed design of materials and finishes are not available at this time. Sydney Metro has provided benchmarks of quality of design in the contract documentation and has referred to Sydney City Council's public domain treatments (eg paving type) to ensure consistency with Council's approach.
102.	The City requires clarification of materials and finishes of all architectural elements.	As above
103.	The Reference Design does not give any detail of the new ferry terminal arrangement	The new ferry terminal arrangement at Barangaroo does not form part of the project.
Station Design - Integrated Design -Barangaroo-Wynyard		
104.	Metro interchange at Wynyard - there needs to be detailed study of ways of improving bus and pedestrian circulation.	Noted. Such a study is outside the scope of either Sydney Metro or the BPL works.
105.	Two pedestrian bridges across Sussex St - provision for a travelator - these elements and their effects are not clearly described and need to be assessed in pedestrian modelling.	The Barangaroo Pedestrian Link is clearly described in Chapter 6.6 of the EA. One pedestrian bridge is proposed over Sussex Street as part of the BPL as illustrated to the south of Morton's Hotel, with a clear internal width of 4.5 metres. Pedestrian modelling has been undertaken to establish the required width and likely pedestrian flows. The flows are not anticipated to be sufficient to require travelators on the bridge.
106.	It is considered that the pedestrian / bus arrangements could be improved by the closure of Margaret Street at George Street and the widening of the footpath in Margaret Street.	Noted. Localised footpath widening and changes in road configuration are proposed along Margaret Street. Further works are outside the scope of either Sydney Metro or the BPL works and are a matter for Council. This would not preclude Council pursuing separately negotiations with NSWTI, STA and RTA for additional footpath widening, road closures, or changes in bus operations along Margaret Street. This closure of Margaret Street at George Street is illustrated within the Sydney metro station Plans, for delivery by others, as these works are

No.	City of Sydney Issue	Sydney Metro response
		outside the scope of either Sydney Metro or the BPL works.
107.	The second pedestrian bridge crossing shown over Hickson Road north of Moreton's hotel has not been discussed with the City and would not be supported. As a general note, all pedestrian bridges providing access to Barangaroo should run between public spaces, i.e. not into buildings.	The second bridge over Sussex Street north of Morton's Hotel was identified as part of the Barangaroo Development Consent and has been illustrated within the plans provided to stakeholders including Council. The focus of discussion has been on the provision of a bridge to the south of Morton's hotel in the first instance with the western footings of this southern bridge located within the public domain.
108.	The alignment of the Barangaroo Pedestrian Link in a dog legged manner will disrupt the flow of the large numbers of pedestrians projected to use this.	The design of the BPL the 'Reference Scheme' as illustrated within the EA and Station Plans, is being refined. This to include the provision of: retail at the nodal points of the plaza created east of Morton's Hotel and adjoining Westpac, and at the intersection under Margaret and Clarence Streets; and wider design development in accordance with the safety in design principles (CPTED principles) for the bridge, tunnel and nodal components. Sydney Metro, in response to the opportunity provided by the closure for construction of the existing Kent Street tunnel, undertakes to explore the feasibility of an alternative alignment for the BPL along the alignment of the existing Kent Street tunnel Whilst there is currently some uncertainly as to whether this alternative alignment is feasible, Sydney Metro will continue to seek approval for the existing BPL alignment, in accordance with a new Statement of Commitment (No.11C).
109.	The inclusion of a travelator for the western section of the BPL will cover only half the distance of the tunnel so its functionality is questionable. Its conclusion at the corner of the dog leg will create potential for pedestrian injury.	Refer to 108
110.	The location of the lift on the corner of Kent and Napoleon Streets directly in front of the pram crossings at this intersection will impede accessibility to and from the lift.	Refer to 108

No.	City of Sydney Issue	Sydney Metro response
111.	The separation of the Metro entry at Barangaroo and the pedestrian bridge over Hickson Road should be addressed so there is ease of flow between these.	Refer to 108 and 104
112.	The Metro services building at Barangaroo must have active retail or commercial uses to all street frontages.	This will be considered as part of the investigations indicated above. See response 108 and 104 above.
113.	There is inadequate room for pedestrian circulation at ground level below the western end of the pedestrian bridge with approximately 2m being left between the bridge structure and the kerb.	This will be considered as part of the investigations indicated above. See response 108 and 104 above
114.	Does the pedestrian bridge clearance of 5.5m allow for light rail along Hickson Road? How will the connection to electricity supply for light rail work under the bridge structure?	The pedestrian bridges have been designed with a clearance of 5.5metres to allow for the proposed Light Rail below the bridge structure. Connections to electricity supply will be a matter of detailed design as part of the Light Rail proposals.
115.	What is the level of service provided for pedestrians on the pedestrian bridge with a 4.5m clear width?	The design standard for the BPL pedestrian modelling has been to consider pedestrian flows at level of service C and D.
Integrated Design-Pyrmont		
116.	At Pyrmont the City requires clarification of; ■ The materials and detailing of the proposed buildings. ■ The proposed skylights in Union Square.	Detailed design of buildings including materials and finishes are not available at this time. The principles for the design of the station and the Square are set out in the Master Planning and Urban Design Report.
117.	The capacity of the Rozelle bus stops to cater for projected demands (and potential growth in demand with construction of West Metro) needs to be demonstrated and tested.	The Rozelle bus stops and associated facilities have been designed with future demand and bus routing possibilities in mind.
Preferred Project Design --Central Station		
118.	The general arrangement of the proposed Central Station is supported.	Noted.
119.	Consideration should be given to making the western forecourt a	Statement of Commitment No.12 establishes a joint design review group to resolve these issues. It is noted that RailCorp is key stakeholder in this

No.	City of Sydney Issue	Sydney Metro response
	pedestrian/bicycle priority area by: ■ Relocating taxis to use of the light rail loop from Campbell Street ■ Relocating kiss and ride to Pitt Street (adjacent to the new entry on the corner of Pitt end of Eddy Avenue) ■ Eliminating City Rail staff parking	location with regards to business access and transport issues.
Preferred Project Design --Town Hall		
120.	The size of the Metro entry is excessive. The City prefers multiple, discreet entry points throughout the precinct.	Statement of Commitment No.13 establishes a joint design review group that would include Council, to resolve these issues. Sydney Metro is working with Sydney City Council to ensure an integrated solution for the Metro station and planned Square at Town Hall.
121.	The stairs from the square to the concourse should be open with nothing higher than balustrade height	Statement of Commitment No.13 establishes a joint design review group that would include Council, to resolve these issues.
122.	The location of vents in the public domain cannot be contemplated. The City requests that alternative locations be found.	Vent facilities at Town Hall Square are currently proposed within buildings. Statement of Commitment No.13 establishes a joint design review group that would include Council, to resolve these issues.
123.	The level change between the CityRail concourse and the Metro concourse is problematic.	On-going design of the Metro station will ensure efficient access between the CityRail station and the Metro station. Statement of Commitment No.13 establishes a joint design review group that would include Council, to resolve these issues.
Preferred Project Design -- Martin Place		
124.	The City supports the connection between CityRail and Metro - City of Sydney is concerned that the connection between the Metro and CityRail concourses does not provide an adequate accessible connection.	The proposed Metro station does not have a direct interchange with CityRail's Martin Place Station (rather, there is a link via the Council owned/managed pedestrian tunnel). The existing subway connections under Martin Place would not provide a DDA compliant link between the Metro and CityRail Stations. However, Sydney Metro has proposed to position the lift and set our concourse level at a height that anticipates the future upgrade of this link.

No.	City of Sydney Issue	Sydney Metro response
		Notwithstanding, even if the link were made compliant there would still need to be two lifts as it would be unreasonable to expect people with disabilities to walk a long way past either station to access a lift when other customers will retain direct access.
125.	The visual impact of the proposed lift and associated canopy structure over the stairs to the central axis of Martin Place is not acceptable	A lift from surface level is required to satisfy DDA requirements and to provide equality of access for all customers. The location of the lift structure has been proposed to enable physical access whilst minimising visual impact. The Master Planning and Urban Design Report provides principles for the design of the structures in Marin Place. These aim at minimising impact on is area. The station entry is in the location of an existing entrance into the retail arcade.
126.	The City does not support; ■ The addition of structures of any kind in Martin Place. ■ The need for a glazed roof over the entry stairway. ■ The multiple level changes between RL 17.8 and RL 14.7 which occur underneath Castlereagh Street. ■ The appearance of the services building. ■ Vent structures in the public domain of Castlereagh Street.	See above and below. The Master Planning and Urban Design Report for Martin Place states the aim to minimise changes to Martin Place. In order to achieve this, vent structures are not provided in Martin Place, but rather have been proposed for Castlereagh St.
127.D	The City does not support the above ground structures in Martin Place and the extension of pedestrian link tunnels to the block between Pitt and Castlereagh St for the following reasons: 1) The Metro station entrance, skylights and lift shafts appropriate public space and intrude upon the appreciation of a Place of cultural significance 2) The above ground structures intrude upon the setting Of State significant buildings including the MLC (38-46 Martin Place), and the Commonwealth Bank building 3) The above ground structures intrude upon the setting Of the Lloyd Rees fountain 4) The above ground structures impede the central axial vistas to the	Sydney Metro considers that the proposed Metro entrance, including a lift, within Martin Place would not result in adverse visual, cultural or heritage impacts. Rather, the proposed entrance is intended to provide equality of access to all customers and to be located with respect to safe, convenient and direct pedestrian routes, and integration with existing transport modes. As stated above, the overall aim is to minimise impacts on Martin Place. The form of the entrance and lift are to be minimal structures designed on the central axis. Chapter 19.1 of the EA describes potential visual impacts. It is noted that the proposed Metro entrance would not add any additional “subterranean spaces” beyond the existing situation within Martin Place.

No.	City of Sydney Issue	Sydney Metro response
	Cenotaph 5) The floor level of the proposed pedestrian link tunnel beneath Castlereagh Street conflicts with the level of the Bennelong Stormwater Channel *6)* The duplication of entries and extension to the west of the existing subterranean spaces creates a subterranean system that is mean and unnecessary	
128.OT	In addition to the proposals, the Metro provides an opportunity to close Castlereagh Street at Martin Place to provide safer, more convenient connections for pedestrians.	This may be the case, but is a matter outside the scope of the Stage 1.Metro project.
Preferred Project Design -Barangaroo Wynyard		
129.	The prospect of new workers and residents being obliged to access public transport away from streets along a lengthy tunnel goes against the City's policies.	The need and justification for a Barangaroo Pedestrian Link between the new development and Barangaroo and the Wynyard precinct was clearly identified in the Barangaroo Development Consent. The provision of the pedestrian link is considered by the DoP as critical in ensuring the safe and efficient pedestrian movement between Barangaroo and the transport hub of Wynyard. The Minister for Planning's approval of the Barangaroo development includes the provision of the Link as a condition of consent, with details of the proposal required with the first project applications for Stage 1 (envisaged mid 2010) and completion of the Link prior to occupation of Stage 1 (currently anticipated in 2014).
130.	The City recommends alternate options for surface level pedestrian activity, including: ■ Increased pedestrianisation of Margaret Street along its whole alignment to Barangaroo; ■ Redirected bus traffic out of Margaret Street to enable increased pedestrianisation; ■ Identification of additional connections to Barangaroo north of Margaret Street. If below-ground links are still considered necessary then redesign existing mid-block link westwards from Wynyard and increase its extent and	Council's recommendations are noted and their implementation would be complimentary to the Barangaroo Pedestrian Link. Notwithstanding, the need for an effective pedestrian link between the new development and Barangaroo and the Wynyard precinct remains. Refer to 106. Sydney Metro, in response to the opportunity provided by the closure for construction of the existing Kent Street tunnel, undertakes to explore the feasibility of an alternative alignment for the BPL along the alignment of the existing Kent Street tunnel

No.	City of Sydney Issue	Sydney Metro response
	amenity including its exposure to the sky.	Whilst there is currently some uncertainly as to whether this alternative alignment is feasible, Sydney Metro will continue to seek approval for the existing BPL alignment, in accordance with a new Statement of Commitment (No.11C). The Transport and Access Management Plan (TMAP) prepared by the then Ministry of Transport for the BDA as part of their Stage 1 Planning Application envisaged the BPL as just one of a total of nine pedestrian routes linking the site with the wider CBD. Provision of the Link does not preclude Council pursuing separately negotiations with NSWTI, STA and RTA for changes in bus operations along Margaret Street.
131.	the project should to take full advantage of existing pedestrian linkages both at ground and underground levels to resolve pedestrian access issues between Wynyard Station and the new Metro station in Barangaroo.	The BPL has been designed to be integrated with surface enhancement works as illustrated within the EA and Station Plans, including the reconfiguration of Margaret Street, with proposed footpath widening and changes in road configuration In addition CTMP and TCP's will be produced and Council will be represented at the proposed Traffic and Transport Liaison Group (Statement of Commitment No. 52).
132.	The City supports the Metro at Barangaroo but it should be redesigned to increase extent and amenity including exposure to the sky.	Noted. In addition a join design group chaired by Sydney metro will further develop and resolve the integration of the proposed Sydney Metro structures located on the Barangaroo site, as well as the integration of these structures and the BPL within BDA's planning for the public domain. The depth of the platforms at Barangaroo-Wynyard (which is driven by engineering constraints associated with the harbour crossing and existing basements) provides limited opportunities for exposure to the sky for the BPL.
133.	There is an opportunity to rationalise the surface plan of Transport House with the new Entrance Station on Clarence Street and York Lane	Noted. Sydney Metro considers that the Metro Station could support Council's Laneways Policies.
134.	There is an opportunity to convert Margaret Street to a priority pedestrian street by carrying out suitable traffic management measures including	Agree. Refer to 106.

No.	City of Sydney Issue	Sydney Metro response
	footpath widening and weather protection measures so that Margaret Street forms the main pedestrian link at ground level between Wynyard and the New Metro Station at Barangaroo in the future.	
135.	The City does not support two overhead pedestrian bridges over Hickson Road, nor does it support: ■ The pedestrian bridge ■ The underground pedestrian link.	See above. 130
136.	The access arrangements for the Wynyard-Barangaroo station are not acceptable for the following: ■ The City has existing plans to provide separated cycleways on Ken~ Napoleon, Sussex and Margaret Streets, which are required to be catered for as part of this project. The reference design does not adequately address the multiple changes in level between Barangaroo (and its proposed ferry terminal) and both the Metro and CityRail concourses.	Liaison with Council has occurred regarding design and timing of cycleways on Kent, Napoleon, Sussex and Margaret Streets. The Metro project does not preclude these proposals. A key role of the proposed Barangaroo Pedestrian Link is to address multiple changes in level. The proposed Barangaroo Pedestrian Link would provide safe, accessible and comfortable access from the bridge at Barangaroo all the way to CityRail's Wynyard Station at a single grade.
137.	■ Given this importance, and the impact of traffic on bus operations in the area, Sydney Metro should investigate permanently closing Margaret Street at George Street.	Refer to 106.
138.	It is considered that the Wynyard -Barangaroo Station design needs considerable rethought and could be improved by: Creating direct pedestrian routes between the eastern Metro access and the Margaret -York and Margaret –Clarence Street corners	The proposed metro station entrance identifies three entrances with convenient access to both the Margaret -York and Margaret –Clarence Street corners. In addition, pedestrian access is proposed under Clarence Street to provide direct access to bus stops on the western side of Clarence Street.
139.	The note to potentially extend the BPL from Clarence to George Street and Curtin Place is again not supported.	No extension of the BPL is proposed as part of the Metro project. The TMAP (as referred to above), Barangaroo Pedestrian Strategy saw the critical component being the corridor between Barangaroo and Wynyard Station and the provision of the BPL. In addition a possible extension of the Link east was considered as this could provide direct access fro pedestrians from Barangaroo to the CBD core in a complete grade

No.	City of Sydney Issue	Sydney Metro response
		separated link.
140.	Traffic and pedestrian analysis will need to be provided to support a shared zone between the Metro entry and Barangaroo. It is assumed this is proposed as a solution to the misalignment of the Metro entry and bridge. The City suggests this is resolved with the realignment of egress/entry points to these rather than relying on street calming.	Agree. Sydney Metro is working with the Barangaroo Delivery Authority to resolve the integration of the proposed Sydney Metro structures located on the Barangaroo site, as well as the integration of these structures and the BPL within BDA's planning for the public domain
141.	Any redesign of Napoleon Street will be done by the City with the intent to add a two way cycleway and improve pedestrian amenity.	This is a matter for Council. The current alignment for the BPL includes the integration of surface works on Napoleon Street, including: provision of a nodal point east of the Morton's Hotel adjoining the existing Westpac plaza; lane configuration, with removal of on street parking and the provision of a bidirectional cycle lane as illustrated within the EA and Station Plans. Should the alternative alignment for the BPL be determined, these modification works to Napoleon Street will not be required.
Preferred Project Design -Pyrmont Station		
142.	The proposed Alternative 2 is preferred as: ■ Provides the opportunity to interpret the former 'bookend' ■ consolidates the pattern of commercial development along Union Street, ■ Removes the later accretions to the rear ■ new lane at the rear of the terraces provides an opportunity for the terraces to relate front and back to the public domain. ■ The location of the western Metro Entry is supported.	Noted and agree.
143.	'Yellow Block' sandstone should be made available to assist in the preservation of heritage items within Sydney.	As stated in Chapter 9 of the EA, due to the importance of this geological resource, all practicable efforts would be made to extract accessible Yellow Block sandstone during excavation. If it occurs and is of suitable quality, the method of excavation would be via cutting in manageable blocks. Management, storage and reuse would be coordinated in consultation with the NSW Department of Commerce. Statement's of Commitment No.s 45 and 46 address this issue.

No.	City of Sydney Issue	Sydney Metro response
144.	Pedestrian and bicycle access from Blackwattle Bay to the Metro station is via Miller Street and needs to be provided for.	Agree. This upgrade has been identified by, and is the responsibility of Council.
Preferred Project Design -Depot		
145.	At Rozelle Depot the City of Sydney seeks additional commitments, including the continuation of the on-road separated cycleway for the entire length of Lilyfield road and the replacement of the existing bridge over Victoria Road	Significant public domain improvements are proposed in the vicinity of the depot as part of the project. The extent of works associated the project is clearly identified in Chapter 6 and 17 of the EA. Improved pedestrian/ bicycle facilities are proposed along part of Lilyfield Road from Grove to Gordon Streets and a shared pedestrian/ bicycle path is proposed as part of the depot public domain enhancements. The project does not include replacement of the existing bridge over Victoria Road.
146.	Consideration should be given to air rights development over the depot.	Agreed.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Social, Economic And Land Use Implications		
Station Design		
147.	**Station plans (ALL)** a) The Proponent will establish a stakeholder's liaison group to attend to consult with any land owner(s) affected by development in and around the Metro stations.	This undertaking is already included in the Statements of Commitment (eg, 11, 12, 13, 18). Many of the issues raised by Council would be considered as part of the Station Plan process. The Station plans will be submitted to Department of Planning for approval.
Central station		
148.	b) A permanent joint design group chaired by Sydney Metro will be established by Sydney Metro, with the City of Sydney, RailCorp and any other relevant transport .agencies, to investigate the City's Preferred Project Design and to further develop and resolve integrated design issues at Central station.	This undertaking is already included in Statement of Commitment No. 12.
149.	c) The proponent is required to: i. Provide an underground, direct, level, pedestrian connection, not	Statement of Commitment No. 12 establishes a joint design review group to integrated design issues. To specify particular outcomes by a condition

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
	requiring exiting the barriers between the Metro concourse and CityRail platforms 1-25. ii. Narrowing Eddy Avenue and working with the bus' and coach association to relocate the bus station to a more appropriate location; iii. Constructing separated cycleways to the City of Sydney's satisfaction on Pitt and Chalmers Streets and Eddy Avenue.	is inappropriate since RailCorp is currently preparing a Master Plan for Central Station and NSW Transport and Infrastructure are considering coach access and terminal requirements. Note that the narrowing of Eddy Avenue and construction are not required as part of the Sydney Metro project and are a matter for the Council.
150.	d) The Proponent will investigate design options that will be conducive to an appropriate interchange arrangement, including the following: i. Subsurface connection to City Rail platforms 11-25 ii. Extend new concourse to Eddy Avenue iii. New entry to Central from Chalmers Street iv. Relocate coach bays and narrow Eddy Avenue v. Relocate UNSW buses to Chalmers Street vi. Upgrade Belmore Park vii. Upgrade new Western Forecourt viii. Widen footpath in Quay Street	Items i-v, refer to 149. vi. Sydney Metro will not be upgrading the entirety of Belmore Park. Statement of Commitment No. 69 establishes a process for re-instatement of the Belmore Park construction site. vii. Within the metro project viii. Within the metro project
151.	e) The Proponent will investigate the dedication of the Western Forecourt as a pedestrian I cycle only area (apart from emergency vehicle access) by: i. Relocating taxis to use the light rail loop roadway from Campbell Street ii. Relocating kiss and ride to Pitt Street (adjacent to the new entry on the corner of Pitt end of Eddy Avenue) iii. Eliminating City Rail staff parking.	Statement of Commitment No.12 establishes a joint design review group to resolve these issues.
152.	f) The Proponent will investigate extending Sydney Metro to Sydney University/Broadway, with a view to facilitating significant opportunities for bus-Metro interchange and allowing for the reconfiguration of City Road I Parramatta Road bus	Refer to 3.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
	services, thereby reducing their need to run through the CBD.	
153.	The Proponent will ensure that station design can facilitate, or at least not preclude, any identified future changed bus arrangements and pedestrian and cycle networks.	Station design complements the existing bus and pedestrian network and does not preclude any new City Of Sydney bicycle routes.
Town Hall		
154.	g) A permanent joint design group chaired by Sydney Metro will be established by Sydney Metro, with the City of Sydney, RailCorp and any other relevant transport agencies, to investigate the City's Preferred Project Design and to further develop and resolve integrated design issues at Town Hall station.	This undertaking is already included in Statement of Commitment No. 13.
155.	h) The Proponent will investigate design options that will be conducive to an appropriate and efficient interchange arrangement, including the following: i. Construct a free-to-access (unpaid) subsurface pedestrian connection between Metro and The Galleries Victoria i. Construct a Cycle2City facility beneath Town Hall Square i. Upgrade City Rail concourse, platforms, vertical circulation and entries to improve accessibility and amenity v. Widen the footpath on the western side of Pitt Street (Park -Market) and (Park-Liverpool) v. Create bi-directional bicycle routes on Kent and Druitt Streets i. Investigate footpath widening in Bathurst Street i. Create bi-directional bicycle routes on York, Castlereagh, College and Park Streets i. Provide westbound bus lane in Park Street x. Upgrade George Street bus stops to shelters x. Locate street trees.	The integration of initiatives by others would be considered as part of the design development. Statement of Commitment No.13 establishes a joint design review group to resolve these issues. i. This is outside the scope of the project. ii. Sydney Metro will provide weather-protected bicycle parking at all Line 1 stations as described within the EA. At this stage, the design requirements for such a facility are inconsistent with the design objectives for an open public space. For example, provision of a long ramp in the Square to provide the graded access necessary for an underground cycle facility would be a significant impact on the vision for an open public Square. The co-location of bicycle hire schemes and bicycle parking centres complement public transport interchanges, but are outside the scope of the project. iii. The upgrade of CityRail facilities is a matter for City Rail. iv. The delivery of these footpath widening works are complementary to, but not a requirement of, the Metro project and as such are enabled by the metro project. This is a matter for CoS. v. The delivery of the CoS Bicycle Strategy is a matter for Council. vi. The delivery of these footpath widening works are not required as part of the Metro project and hence are a matter for CoS. vii. The delivery of the CoS Bicycle Strategy is a matter for Council.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
		viii. This is outside the scope of the project. ix. This is outside the scope of the project. x. . Street trees are shown on the Station Master Plans
156.	i) The Proponent will consider the closure of Pill Street to local traffic adjacent to the new Town Hall Square and the section of Pill Street south of the square be made two-way to Bathurst Street.	This is a matter for Council.
157.	j) The Proponent will consider making level the underground link between Town Hall railway station and the Metro station, so as to facilitate accessibility, improve sight lines and generally improve.	There will be an accessible link between the Metro Station and the CityRail station.
158.	k) The Proponent will consider making Park Street (George Street - Elizabeth Street, and Elizabeth Street -College Street) transit only (bus / taxi / bicycle), in order to facilitate transit access, improve interchange with the Metro, and allow for the widening of footpaths in Park Street.	This is outside the scope of the project. This is a matter for Council.
Martin Place		
159.	l) A permanent joint design group chaired by Sydney Metro will be established by Sydney Metro, with the City of Sydney, RailCorp and any other relevant transport agencies, to investigate the City's Preferred Project Design and to further develop and resolve integrated design issues at Martin Place station.	The design principles at Martin Place are well established and will be implemented to ensure that the future metro entrance and public domain are fully integrated within the unique Martin Place setting. The principles for the design of Martin Place station are set out in the Master Planning and Urban Design Report. Minimising impact on Martin Place is important. The Metro entry does not add an additional entry since it uses a current access to the underground retailing. The stair access and lift are aligned on the central axis to minimise impacts.
160.	m) The Proponent will investigate design options that will be conducive to an appropriate and efficient interchange arrangement, including the following: i. Widen the footpath on the eastern side of Pill Street through relocation of parking spaces ii. Extend the bi-direction cycleway along the northern side of King Street	The integration of future opportunities, delivered by others would be considered as part of the Station Plan process i. Noted. Commitment to this modal hierarchy drives the identified EA program of kerb extensions, lane closures and site activities in order to realise the active and sustainable transport goals of the Sydney Metro project. ii. The delivery of the CoS Bicycle Strategy is a matter for Council.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
	iii. Upgrade the City Rail concourse platforms vertical circulation and entries to improve accessibility and amenity iv. Relocate Castlereagh Street bus services to Elizabeth and George Streets v. Extend weather protected bus passenger waiting areas on Elizabeth Street	iii. Upgrading CityRail facilities is a matter for RailCorp. iv. This is potentially within the scope of the CBD Bus Strategy, currently under implementation by NSWTI v. The further provision of weather-protected bus passenger areas is a matter for Council.
161.	n) The Proponent will consider the closure of Castlereagh Street at Martin Place, with the remaining sections between Hunter Street and King Street to be made two-way.	This is outside the scope of project and is a matter for Council
162.	o) The Proponent will consider shared zones, widened footpaths, plantings, and provision of a bi-directional bicycle route, at Castlereagh Street.	This is outside the scope of the project, but the Metro could facilitate these and other initiatives to be delivered by others.
163.	p) The Proponent will investigate urban design considerations, including the following: i. Rationalising the number of entry points, to one central location to ensure least intervention in the public domain, such as incorporating a single lift and associated entry centrally located at the existing circular void entrance to Martin Place Station located between Castlereagh and Elizabeth Streets ii. Location of canopy structures so as to have no impact on the visual axis in Martin Place, such as the mushroom-type glass canopy over the void area in the MLC food court, having regard to the generality that the higher up Martin Place a structure is located, the least impact it will have on the visual axis in Martin Place. Design of the Castlereagh Street plant structure as an integral part of a new building whereby the plant is screened by active uses at ground level and is totally or Substantially hidden behind a commercial facade.	Refer to 124 and 127. The principles for the design of Martin Place station are set out in the Master Planning and Urban Design Report. Minimising impact on Martin Place is important. The Metro entry does not add an additional entry since it uses a current access to the underground retailing. The stair access and lift are aligned on the central axis to minimise impacts. In order to minimise impacts on Martin Place, there are no vent structures in Martin Place. Sydney Metro will incorporate services within the Castlereagh construction site. These will be designed to enable future development on the site. To ensure visual impact is minimised, the IMO contractor will be obligated to design and construct vent structures that complement and enhance the existing street elements, preferably by the integration of art in their design.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Barangaroo Wynyard		
164.	q) A permanent joint design group chaired by Sydney Metro will be established by Sydney Metro, with the City of Sydney, RailCorp and any other relevant transport agencies, to investigate the City's Preferred Project Design and to further develop and resolve integrated design issues at Barangaroo/Wynyard station.	Development of the Station Plan for Barangaroo-Wynyard will further develop and resolve integrated design issues. Note that the BDA's consent authority for development at Barangaroo is the Department of Planning, not Council.
165.	r) The Proponent, in consultation with the City of Sydney, will conduct a detailed study of ways of improving bus and pedestrian circulation at the proposed Barangaroo Wynyard Metro station, including integrated ticketing models.	Refer to 164. Refer to 93 regarding integrated ticketing.
166.	s) The proponent will: i. Provide a straight, direct, wheelchair accessible connection from Barangaroo to both the Metro and CityRail Concourses. ii. Construct separated cycleways on Sussex, Margaret and Napoleon Streets to the City's satisfaction. iii. Widen the footpath on Margaret Street between Sussex Street and George Street to provide improved pedestrian access. iv. Investigate closing Margaret Street at George Street, and fund the construction of any closure.	The integration of future opportunities, delivered by others would be considered as part of the design development. _i the project includes the BPL, which establishes a level, direct, wheelchair accessible connection from Barangaroo to CityRail Concourses. _ii The delivery of the CoS Bicycle Strategy is a matter for Council. _iii Refer to 106 _iv Refer to 106 Development of the Station Plan for Barangaroo-Wynyard will further develop and resolve integrated design issues.
167.	t) The Proponent will consider alternate options for surface level pedestrian activity, including: ■ Increased pedestrianisation of Margaret Street along its whole alignment to Barangaroo; ■ Redirected bus traffic out of Margaret Street to enable increased pedestrianisation; Identification of additional connections to Barangaroo north of Margaret Street.	Refer to 106

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Pyrmont		
168.	u) A permanent joint design group chaired by Sydney Metro will be established by Sydney Metro, with the City of Sydney, Light Rail and any other relevant transport agencies, to investigate the City's Preferred Project Design and to further develop and resolve integrated design issues at Pyrmont station.	The TTLG and CPCC will assist in addressing issues of transport integration. Statement of Commitment No. 10 establishes a Design Review Panel to assist in resolving integrated design issues.
169.	v) The Proponent will investigate design options that will be conducive to an appropriate and efficient interchange arrangement, including the following: i. Extend Union Square allowing alternative access from Paternoster Row ii. Widen the footpath on the northern side of Miller Street between Harris and Saunders Street between Pyrmont Street and Murray Street iii. Widen the footpaths on Union Street between Pyrmont Street and Murray Streets iv. Create a pedestrian link between Mount and Harris Streets along the cliff bottom v. Locate additional trees along Union and Miller Streets	Statement of Commitment No. 11 establishes a process to review changes to the public domain. _i Reinstatement works at Union Square are proposed to be inline with existing Council plans for the square. _ii Opportunities for additional footpath widening works are a matter for Council. _iii Opportunities for additional footpath widening works are a matter for Council. _iv There is no public land at the base of the cliff between Mount and Harris St to enable a pedestrian link. This is occupied by a commercial retail building. _v The station plans identify tree planting within the Sydney Metro delivery boundary of Union Square and Mount Street.
170.	w) The Proponent will: i. Construct a Union Square upgrade, including separated cycleway and reconfiguration of Paternoster Row to Council's satisfaction ii. Construct a separated cycleway and associated footpath upgrades on Miller Street from Saunders Street to Harris Street to support pedestrian and bicycle access to the Metro Station.	i Reinstatement of Union Square, including the provision of the cycleway in Union Square between Paternoster Place and Pyrmont Street will be delivered as part of Metro project. ii. The extension of the Union Street cycleway and any footpath upgrades beyond on Miller Street has been identified by, and is the responsibility of, Council.
Rozelle		

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
171.	x) The Proponent will investigate alternative Metro alignments at Rozelle -Iron Cove which could produce a cheaper and/or more effective Metro/Bus interchange arrangement.	The proposed bus passenger waiting areas and Rozelle station itself have been designed with a view to achieving smooth and efficient passenger interchange.
172.	y) The proponent will: i. Provide a separated on-road bicycle path on Lilyfield Road between Balmain Road and Victoria Road ii. Provide a 3.5 metre wide shared pedestrian and bicycle bridge over Victoria Road south of Lilyfield Road	i. a bi-directional shared path will be provided on Lilyfield Road from Grove to Gordon Streets. ii. outside the scope of the metro project
Depot		
173.	a) Depot area planning will retain the opportunity for extension of the light rail and pedestrian/cycle routes to White Bay.	The project safe guards the existing light rail station and lands (Ch 6.5). A shared bicycle and pedestrian route is proposed as part of the long term depot landscape plan (Ch. 17) Land has also been reserved for future transport infrastructure. Further review would need to be undertaken if and when there is a commitment to provide light rail White Bay. Sydney Metro considers the application of Conditions of Approval on station design to be unreasonable given that the reference design is subject to detailed review and consultation with a range of stakeholders. The proposed Conditions of Approval pose a risk to achieving an effective and agreed outcome. Many of the issues raised by Council would be considered as part of the Station Plan process. The Station plans will be submitted to Department of Planning for approval.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Social, Economic And Land Use Implications		
Station Design		
174.	a) Way finding signage which incorporates all transit modes (train, metro, monorail, bus, taxi, ferry, bikes, and pedestrians) should be included in the proposed scope of works.	Agree. Wayfinding associated with the Metro will be part of the Metro project.
Central station		
175.	b) The surface treatment of the 'lid' to the station is to be amended so that the current landscaping is retained as much as possible.	No specific conditions are required. Statement of Commitment No.12 addresses design issues at Central Station. Refer to 148
176.	c) The design of the station and all access points should anticipate the Sustainable Sydney 2030 proposal to reduce traffic and maximise pedestrian access to Railway Square and George Street.	Refer to 148
177.	d) Existing pedestrian tunnels to be co-ordinated with Sydney Metro and continue to be utilised.	Refer to 148
178.	e) Existing below ground court yard space and existing shops etc. are to continue to be utilised to reduce the amount of new fabric as far as possible.	Refer to 148
179.	f) The size of the station superstructure in the western forecourt of Sydney Terminal is to be minimised. The new metro station should be conceived as a distinct building element clearly separated from the existing heritage elements and designed to relate to the wedge shape geometry of the public domain.	Refer to 148
180.	g) Further details shall be submitted of the Quay Street 'pop-up' enclosure.	Refer to 148
181.	The integration of the proposed Quay Street pedestrian access/lift to within the boundary of the adjacent hotel site at 803-813 George Street is to be investigated. If this is not possible within the project time frame of the Metro, the design should allow for integration with this site when it is re-developed in future, to minimise structures and clutter in Quay St	Noted.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Town Hall		These issues are addressed above. It is not appropriate to address these as conditions of approval.
182.	a) No services other than escalators and a lift are to be located in Sydney Square.	Council's expectations are unrealistic. Refer to 154.
183.	b) Vent structures should be located in the building adjacent McDonalds, or otherwise outside of the public domain. The location of vents in the public domain cannot be contemplated. The location and design of all vent structures must be submitted to Council for approval.	Council's expectations are unrealistic. Refer to 154.
184.	c) The stairs from the square to the concourse must be of an open design and not higher than balustrade height (including the fire escape stairs).	Refer to 154.
185.	d) Design for accessibility within and between modes is to be maximised, and include consideration of the following: i. Construct a free-to-access (unpaid) underground pedestrian link between the Metro concourse and The Galleries Victoria ii. Provide direct, level, underground pedestrian link from the Metro concourse to the CityRail Town Hall concourse iii. Make provision for a "Cycle2City" type facility. in the Town Hall Square Cavern iv. Construct wider footpaths on Bathurst and Pitt Streets for 50 metres to the Metro Station to Council's satisfaction v. Construct a separated bi-directional separated cycleway on the northern side of • Druitt and Park Streets from Sussex Street to College Street to Council's satisfaction vi. Provide a major bus interchange on Park Street to Council and NSW Transport and Infrastructure's satisfaction.	These issues have been discussed in the response to the submission. A condition is not required.
186.	Detailed documentation is to be provided for the skylights shown in Section AA and which do not appear in plan, the element shown in Section BB which does not appear in the Site Plan but appears to be glazed, the vent structures do not appear on plan but appear in section,	Statement of Commitment No.13 establishes a joint design review group to resolve these issues. Also refer to 98.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	and the external materials and treatment of the service building.	
Martin Place		These issues have been discussed in the response to the submission. A condition is not required.
187.	a) The insertion of above ground structures within Martin Place shall be redesigned as follows: i. The duplication and lengthy extension of the existing subterranean spaces and resultant impacts above ground should be deleted in preference for an enlargement of the existing entrances and passages to form a less extensive but more consolidated and generous subterranean system.	Refer to 159 and 160.
188.	ii. The entrance canopy structure should be deleted. There is no such similar structure providing weather protection for the existing entrances to City Rail's Martin Place station.	Refer to 159 and 160.
189.	iii. The entrance between Pitt and Castlereagh Street should be deleted and the existing 'CityRail Link Entrance' between Castlereagh and Elizabeth Street enlarged laterally and in depth to form a more generous subterranean space lit from above that provides a focal point.	Refer to 159 and 160.
190.	iv. The proposed lift and access stair super structures on the centre axis of Martin Place is to be deleted. All entrance stairs should descend into voids without roofs (in the manner of existing Martin Place Station entries) in order to minimise above grade visual clutter in the axial street vistas. The lift is to be relocated to a prominent location and incorporated into the street elevation at an adjacent site, such as the redeveloped Martin Place section of the Commonwealth Bank site (108 to 120 Pitt Street), or within the open space section of the MLC Centre (19-29 Martin Place), or the Commercial Travellers' club (27-39 Castlereagh Street), or 18-30A Martin Place (ANZ).	Refer to 159 and 160. Also 163.
191.	v. The proposed service shaft structure at 8A-12 Castlereagh Street (immediately north of 48 Martin Place) is to be designed with a fully resolved street elevation in order to minimise in-active street front and to ameliorate negative impacts on the setting and heritage	Refer to 159 and 160. Also 163.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	significance of 48 Martin Place. The design must, as much as possible, be seamlessly incorporated into a re-development of the entire site.	
192.	vi. The lift is to be relocated to one side out of the central axis of Martin Place or be incorporated into aligning buildings such as Seidler's MLC centre that have no heritage significance and is listed in the .central Sydney Development Control Plan 1996 as an 'Opportunity' site.	Refer to 159 and 160. Also 163.
193.	vii. The proposed skylights in Martin Place should be trafficable and minimised in area to avoid appropriation of the space above.	Agree. However, a condition of approval is not required. Design of skylights will address pedestrian movement plus other issues including heritage and the design principles in the station plan.
194.	viii. Materials must be of high quality and complement those of Martin Place, such as sandstone, trachyte, and bronze.	Detailed design of materials and finishes are not available at this time. Sydney Metro will ensure design incorporates materials that are consistent with Council's public domain requirements.
Barangaroo-Wynyard		These issues have been discussed in the response to the submission. A condition is not required.
195.	a) Detailed documentation and materials samples for the design and construction of the pedestrian bridge(s) are to be submitted to Council for approval.	Refer to 164. In addition development of the Station Plan for Barangaroo-Wynyard will further develop and resolve the integration of the proposed Sydney Metro structures located on the Barangaroo site, as well as the integration of these structures and the BPL within BDA's planning for the public domain.
196.	b) The Metro services building at Barangaroo must have active retail or commercial uses to all street frontages.	Sydney Metro is working with BDA to ensure an integrated response between Metro facilities and structures on the BDA land.
Pyrmont		
197.	a) The building of the eastern Metro entry building is to be designed in a contemporary manner, yet reinforce the setting of the Victorian terraces and the character of Union Square. Any new additions to the rears of the Victorian terraces are to be of lesser bulk and scale, and be subsidiary to Union Street uses.	Refer to 168 and 169.

No.	City of Sydney Issue	Sydney Metro response
Social, Economic And Land Use Implications		
Building Design		
198.	The EA does not include adequate design details and key development information such as floor space calculations, for proposed new buildings at identified redevelopment sites at Castlereagh, Clarence and Bathurst Streets.	Sydney Metro is not seeking approval for future development at Bathurst Street (TH2) and Castlereagh construction site (MP2). As noted in Chapter 6.9 of the EA, at these locations the Metro facilities would be designed to allow future development by other parties. These future developments are not directly related to the project and separate planning approvals would need to be sought. Relevant planning controls, including relevant LEPs and DCPs (e.g. floor space ratios (FSR), height and setback controls) would apply.
199.	Any new buildings are to comply with the Sydney Local Environmental Plan, relevant Development Control Plans, and relevant City of Sydney policies.	As above.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Social, Economic And Land Use Implications		
Building Design		This is addressed in Statement of Commitment No. 14. No conditions are required.
200.	a) Any new building(s) at identified redevelopment sites do not form part of this application. A separate development application for any proposed new building(s) must be submitted to and approved by Council prior the erection of such building(s).	Noted.

No.	City of Sydney Issue	Sydney Metro response
Social, Economic And Land Use Implications		
Station External Works		
201.	Works "by others". There have not been agreements as to the extent, design and funding of such external works.	Comments on the Station Plans are noted. Sydney Metro has consulted a range of stakeholders, including City of Sydney Council in preparing the Draft Station Plans. The Draft Station Plans identify 'works by others' to provide the strategic context and design guidance required to ensure the integration of station entrances and public domain elements within their station precincts. Works identified beyond the Sydney Metro delivery boundary may assist in guiding and informing future improvement of the precinct areas and in identifying funding requirements by other delivery bodies, such as Council.
202.	Needs to be an ongoing process of refining the design, costing and funding such works - need for an ongoing role for a planning committee chaired by the City of Sydney.	Comments on the Station Plans are noted. Sydney Metro will deliver works within the Metro Station delivery boundary. Sydney Metro can participate in any group that considers the design and programming of other works.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Social, Economic And Land Use Implications		
203.	a) The Proponent will form a working party with the City of Sydney, NSW Transport and Infrastructure and the Roads and Traffic Authority to develop, fund and implement CBD wide changes to support the project.	Refer to 79.
204.	b) Peripheral services sites should be integrated into new or existing buildings to ensure that they do not neutralise active street fronts or facades.	Comments on the Station Plans are noted. The EA outlines the approach to services buildings. It is intended that these will form part of an integrated

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
		development. This is addressed in SoC No. 14.
205.	c) Circulation and access to metro stations should optimise and maximise movement at street level in a high quality public domain consistent with Sustainable Sydney 2030 principles.	Comments on the Station Plans are noted. The IMO contractor will be obligated to integrate and connect stations to the local pedestrian network. The Urban Design and Master Planning Report establishes principles aimed at activating pedestrian areas.

No.	City of Sydney Issue	Sydney Metro response
Social, Economic And Land Use Implications		
Assistance To Affected Businesses		
206.	EA appears to undervalue the concerns of displaced or affected small businesses	Any business acquisitions required to construct the project are undertaken in accordance with *Land Acquisition (Just Terms Compensation) Act 1991*. The EA has documented significant mitigation measures to minimise potential impacts to businesses in the vicinity of construction activities.
207.	Due to the 5 year construction program, a period roughly equivalent to the duration of many commercial leases, nearby small businesses may not survive to benefit in the longer term.	To mitigate any potential loss of business, Sydney Metro has proposed a Small Business Owners Support Program as detailed in Statement of Commitment No. 34.
208.	At Pyrmont Station particularly, loss of a few could well add to the losses of many as these small businesses depend on agglomeration.	As above.
209.	commercial vitality is something built-up over time and its loss during construction should therefore not be dismissed easily.	Noted.
210.	The EA has not adequately considered disruptions to, and potential alternative arrangements for City events, and compensation to the City for lost revenues.	Ongoing consultation with Council regarding events will be undertaken. A new Statement of Commitment (No.9A) establishes a process. Refer also 48 and 54.

No.	City of Sydney Issue	Sydney Metro response
211.	EA proposes mitigation and management regimes that are largely passive but should be more interventionist in areas where economic vitality is central to the positive character of an area	The EA proposes an extensive range of standard mitigation measures that would reduce impacts on local businesses. In addition, Sydney Metro has committed to innovative and proactive strategies including a Construction Noise & Vibration Strategy and a Small Business Owners Support Program.
212.	Construction impacts on the City's events will need to be ameliorated for events ranging from large scale celebrations to small-scale corporate promotions	Refer to 210.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Social, Economic And Land Use Implications		
Assistance To Affected Businesses		
213.	a) A character survey of commercially active precincts shall be undertaken for the purpose of identifying the contributions of small to medium enterprises to that character.	Statement of Commitment No. 34 addresses this requirement.
214.	b) A Business Management Strategy shall be developed to include active measures to preserve that character during construction. Such measures may include: i. The relocation at no cost of significant businesses to locations nearby to preserve the character identified ii. Marketing regimes designed to maintain and enhance the attractiveness of a valued locale to visitors. iii. Construction activities arranged to minimise the disruption to character, including the development of active commercial frontages to construction sites, maintenance of dust-and noise-free environment during the main operating hours of the local businesses, and the direction of construction traffic away from and out of the locale during its operating hours.	Statement of Commitment No. 34 addresses this requirement.
215.	a) The footprint of any hoarding during major events in and around Martin Place must be minimised, including for the following events:	Refer to 210 also 48 and 54.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	i. Anzac Day -Dawn Service (April) ii. City's Christmas Concert (November) iii. Sydney Festival First Night (January) iv. Other major events as notified.	
216.	b) The Proponent must meet with the organisers of affected major events to discuss alternative venues/configurations, etc.	Noted. Refer to 210 also 48 and 54.
217.	c) The City of Sydney must be compensated by the Proponent to cover:' i. Loss of revenue from hire of Martin Place ii. Additional costs to move scheduled events, such as the City's public domain policies and standards.	Compensation to the City of Sydney Council is not required or appropriate.
Public Domain		
218.	Works in the public domain should be in accordance with the City's public domain policies and standards.	Sydney Metro considers the application of Conditions of Approval on works in the public domain to be unreasonable given that the reference design is subject to detailed review and consultation with a range of stakeholders. The proposed Conditions of Approval pose a risk to achieving an effective and agreed outcome. Notwithstanding, a number of the policies and guidelines cited by Council remain valid and Sydney Metro would apply these as relevant and in consultation with Council. It is noted that Council would not have an approval role for works in the public domain with the exception of approvals required under the *Roads Act 1993*. Many of the issues raised by Council would be considered as part of the Station Plan process. The Station plans will be submitted to Department of Planning for approval. Note that works on the BDA, Barangaroo Site are subject to approval by the BDA and Department of Planning, as the consent authority, **not** the Council.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
219.	i. Public Domain areas including streetscapes, parks, squares and others public domain areas must be in accordance with the City of Sydney Council's 'Sydney Streets Design Code' and the 'Sydney Lights Design Code'.	Refer to 218
220.	ii. Three copies of a detailed Public Domain Plan for each individual Metro Station must be prepared by an architect, urban designer or landscape architect and must be submitted to and approved by Sydney City Council as part of the Station Master plan approval process, or, prior to a Construction Certificate being issued for any new building work excluding approved preparatory, demolition, excavation, tunnelling or shoring work, whichever is earliest. It is recommended that draft plans be submitted for comment prior to formal submission for approval.	Refer to 218
221.	iii. The Public Domain Plan must be prepared in accordance with the City of Sydney's 'Public Domain Manual'.	Refer to 218
222.	iv. The works to the public domain are to be completed in accordance with the approved plans and the Public Domain Manual before any Occupation Certificate is issued for each Metro Station. Note: A security deposit will be required for the public domain works, in accordance with the City of Sydney's adopted fees and charges. You should contact Council to determine deposit amount prior to payment.	Refer to 218
223.	d) ALIGNMENT LEVELS: Footpath alignment levels must meet City Standards, and be submitted in accordance with the City of Sydney's 'Public Domain Manual'. Details of the proposed alignment levels are to be submitted and approved by Sydney City Council as part of the Public Domain Plan submission.	Refer to 218
224.	e) PUBLIC DOMAIN STANDARDS: The Public Domain is to be designed, documented and constructed to comply with all relevant Australian Standards and the following City of Sydney documents: i. Public Domain Manual ii. Interim Draft Sydney Streets Design Code iii. Interim Draft Sydney Lights Design Code	Refer to 218

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	iv. City of Sydney Street Tree Master Plan 2004 v. Tree Preservation Order vi. Parks Technical Manual vii. City of Sydney Access Policy f) City of Sydney Awning Policy 2000	
225.	g) PAVING MATERIALS: i. The surface of any material used or proposed to be used for the paving of colonnades, thoroughfares, plazas, arcades and the like which are used by the public must comply with AS/NZS 4586:2004 (including amendments) "Slip resistance classification of new pedestrian surface materials". ii. The paving for public domain areas including streetscapes and parks must be in accordance with the City of Sydney's `Sydney Streets Design Code' standard pallet of materials. iii. Paving material selection, details and specification is to be submitted to and approved by Council (to be lodged with the Public Domain Section) prior to Construction Certificate being issued for the works.	Refer to 218
226.	iv. FOOTWAY WIDTHS: Minimum footway widths which are adequate for public access and circulation in accordance with the City of Sydney's Development Control Plans and Access requirements are to be maintained. Where kerb and gutter alignment adjustments are required the details are to be submitted to the City of Sydney Council for approval.	Refer to 218
227.	h) STRUCTURES IN THE PUBLIC DOMAIN: Proposed structures in the Public Domain are to be designed to consider existing and future built elements, users of the public domain, and adjoining land uses including: i. Building openings, windows and levels ii. Pedestrian circulation iii. Land marks, and features. iv. Street furniture, Street Trees and Parking Arrangements	Refer to 218

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	v. Views and vistas Details including location, materials, design, and use of the proposed structures are to be submitted to the City of Sydney Council for approval.	
228.	i) MAINTENANCE OF STRUCTURES IN THE PUBLIC DOMAIN: The ongoing ownership and maintenance of all Sydney Metro infrastructure, assets and related structures in the Public Domain are to remain the responsibility of Sydney Metro.	Noted.
229.	j) RECTIFICATION WORKS TO THE PUBLIC DOMAIN: i. Elements of the public domain such as pavers, kerbstones, street furniture, light poles and the like which are required to be temporarily removed during construction are to be salvaged, removed and stockpiled at the applicants expense during construction. Where practicable, stockpiled material is to be reinstated to their original locations. ii. All areas of the public domain which are disrupted or damaged during construction are to be `made good' to the satisfaction of `Council' prior to final Occupation Certificate.	Noted. Statement of Commitment No. 69 has been updated to reflect reinstatement of public domain.
230.	k) FOOTPATH DAMAGE BANK GUARANTEE: Prior to a Construction Certificate being issued the owner of the site must provide a bank guarantee for the sum to be determined based on the City of Sydney's Schedule of Fees and Charges as security for rectification of any damage to the public way. Note: The bank guarantee required by this condition does not need to be provided if a separate bank guarantee is lodged as part of an approval for a hoarding over the public way. However neither bank guarantee will be released until all development works are complete to the satisfaction of the City, including rectification of damage to the public way. You should contact Council to determine the bank guarantee amount prior to payment.	Refer to 218
231.	l) DESIGN MODIFICATION FOR TREE RENTENTION: The design shall be planned, reviewed and modified as required, prior to the commencement of works, to incorporate the retention of significant,	Agree. Statements of Commitment No. 38 and 67 address this issue. There are likely to be locations where tree removal is unavoidable such the

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	healthy, prominent trees located in the City streets and parks. Note: this is particularly important for the significant trees located near Central Station, including those in Belmore Park and Pitt Street, as Council requires their retention.	Central Station forecourt and Castlereagh St. Statement of Commitment No.67 ensures an appropriate approach to this issue.
232.	m) DESIGN MODIFICATIONS FOR TREE PLANTING: The design shall be planned, reviewed and modified as required, prior to the commencement of works, to ensure that opportunities for tree planting are not restricted throughout the City streets and parks. This includes ensuring adequate drained depth of soil is retained as part of the design.	Refer to 218
233.	n) TREE ASSESSMENT REPORT: An Arboriculture Assessment Report, prepared by a qualified Arborist with a minimum Australian Qualification Framework (AQF) of Level 5 in Arboriculture, must be provided to Council for consideration and approval as part of the Station Master plan approval process, or, prior to a Construction Certificate being issued for any new building work excluding approved preparatory, demolition, excavation, tunnelling or shoring work, whichever is earliest. The report is to include: i. Identification / survey of all trees that are likely be affected by the development ii. An assessment, detailed in a tree schedule / table, for each tree surveyed that includes: the common and full botanical name; the age class; the (estimated) height; the trunk diameter measured at 1.4 metres height; the canopy spread to the four cardinal points; a summary of the trees' health, vigour and structural condition; and an estimation of the trees useful life expectancy using appropriate industry methods iii. The tree assessment should be conducted and recorded in accordance with industry best practice iv. Include a suitably scaled plan of the site showing the location of all trees assessed in the report v. Identify all trees to be retained and removed during construction and	Statements of Commitment No. 38 and 67 address this issue.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	development vi. A discussion of all options available, including reasons as to why trees are, or are not being recommended for removal or retention. Recommendations for tree removal must be based on arboriculture findings only. Removals where the reason given is to permit the proposed development will not be accepted unless this can be adequately proven otherwise vii. Recommendations of any design modifications, construction techniques and/or other protection methods required to minimise adverse impact on trees that should. be retained during the demolition & construction works, and into the long term viii. A summary / discussion of other relevant tree and site information such as soil and drainage characteristics, pests and diseases, and tree hazard assessment details ix. Details of any pruning required for construction and development. This must include number of branches and orientation, branch diameter, percentage of live canopy to be removed. This information must also be detailed on either a diagram or photograph of the tree. x. A description of the recommended tree protection zones required to ensure health, vigour and stability of trees is maintained during construction and development and into the future xi. A description of the recommended protection measures to be put in place to ensure the protection of trees to be retained xii. A description of the Site Arsonist's involvement during the works xiii. Removal must not be recommended for any tree that is located on adjoining properties (including Council land) unless written consent from the tree owner is previously obtained.	
234.	o) SITE ARBORIST -SUPERVISION AND REPORTING: i. An Arborist with minimum qualifications in Arboriculture of Level 5 (under the Australian Qualification Framework) must oversee various stages of work within the Tree Protection Zone and certify compliance with each key milestone detailed below:	Statements of Commitment No. 38 and 67 address this issue.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	– The Arborist must certify the installation of the tree protection measures to Council and the Principal Certifying Authority prior to the issuing of a construction certificate. – During any demolition, excavation and trenching within a Tree Protection Zone – During any Landscape works within **10 metres** of the trees trunk vi. A **monthly** report shall be submitted to Council which provides details on the health and structure of Councils tree/s to be retained and protected and must include: – Certification of compliance with each key milestone – Details of any other works undertaken on any tree to be retained or within TPZ(s) – Documentary evidence of compliance with tree protection and measures (including photographs and site notes) – Ensure that the soil moisture is appropriate	
235.	p) PROTECTION OF STREET TREES DURING CONSTRUCTION: All street trees adjacent to the site not approved for removal must be protected at all times during demolition and construction, in accordance with Council's Tree Preservation Order. Details of the methods of protection must be submitted to and be approved by Council prior to the issue of the Construction Certificate and such approval should be forwarded to the Principal Certifying Authority. All approved protection measures must be maintained for the duration of construction and any tree on the footpath which is damaged or removed during construction must be replaced.	Statements of Commitment No. 38 and 67 address this issue.
236.	q) STREET / PARK TREE PRUNING: i. The consent from Council must be obtained prior to the undertaking of any street tree pruning works. Only minor pruning works will be approved by Council. ii. Any pruning that is required to accommodate hoardings, scaffolding, or	Statements of Commitment No. 38 and 67 address this issue.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	to accommodate the loading/unloading of vehicles, and has been approved by Council shall be carried out by a qualified Arborist (AQF3), and must be in accordance with AS4373 Australian Standards `Pruning of Amenity Trees".	
237.	r) Facilities must be made available for 24 hour reporting of community noise and vibration concerns and for full time dedicated community officers to be appointed to investigate and resolve the issues.	Statement of Commitment No. 35 addresses this issue.
238.	s) Dilapidation Surveys must be prepared by a suitably qualified person as a base line for investigation of property damage concerns.	Statement of Commitment No. 72 addresses this issue.
239.	t) Detailed documentation is to be submitted on collection, treatment and discharge of rail tunnel stormwater. (This waste will ultimately be discharged to Sydney Harbour and information has not been provided on the quantity of water or type of treatment proposed.)	Statement of Commitment No. 74 addresses this issue.
240.	u) The City of Sydney's standard palette of materials must be incorporated for all works in the public domain of the City of Sydney. Selection and detailing must be done in consultation with the City of Sydney.	The Station Plans identify the Council's standards for paving and other public domain elements. The IMO Contractor must design and deliver high quality design and to select of materials and finishes that are consistent with Council's standards.
241.	v) A geotechnical report must be submitted an include assessment of exposure to acid-sulphate soils.	Statement of Commitment No. 45 addresses this issue.
242.	w) The Works Contractor must undertake regular education of all gullies near the work sites to ensure they operate as efficiently as possible and reduce the build up of contaminants.	Statement of Commitment No. 64 addresses this issue.

No.	City of Sydney Issue	Sydney Metro response
Heritage Impacts		
Central Station		
243.	The proposal for the above ground structure is not supported for the following reasons:	Statements of Commitment No. 38 and 67 address this issue.
244.	Intrudes upon the setting of the Central Railway Terminus building	Statements of Commitment No. 38 and 67 address this issue.
245.	Requires the destruction of the West Forecourt and Main Entrance driveway concourse which has acquired social associations and significance of a National level.	Statement of Commitment No. 35 addresses this issue.
246.	Requires the destruction and excavation of the whole of the West Forecourt Garden and appropriates open space that has played a historic role in offering a place of tranquillity to travellers. The original configuration of the garden will be lost greatly reducing the ability of the west forecourt area to demonstrate its original appearance and function as a place of tranquillity and meeting point for travellers. The rare iron chain fence will be destroyed. The garden will be replaced by ventilation shafts and hard landscaping of a vastly reduced area of open space that will be surrounded by commercial paraphernalia associated with a Metro Station. The sense of tranquillity will be entirely removed.	Statement of Commitment No. 72 addresses this issue.
247.	The Metro Project will impact on significant archaeological remains some of which are of State significance. Some sites are of such significance that they warrant in situ conservation	Statement of Commitment No. 74 addresses this issue.
248.	**Town Hall station** The design of the station and associated buildings should be sensitive to the heritage context. The settings of surrounding items including Sydney Town Hall, the Criterion Hotel, Pilgrim House and the Pitt Street Uniting Church.	The Station Plans identify the Council's standards for paving and other public domain elements. The IMO Contractor must design and deliver high quality design and to select of materials and finishes that are consistent with Council's standards. Statement of Commitment No. 45 addresses this issue.

No.	City of Sydney Issue	Sydney Metro response
249.	**Martin Place station** The City considers archaeological management is required for the following: ■ The work site MP-A has the potential to disturb archaeological remains below 9 Elizabeth Street of the rear yards of houses fronting Castlereagh Street dating from the mid 1800s and earlier. ■ The work site MP-C has the potential to disturb archaeological remains associated with earlier road surfacing and services such as a branch of the Bennelong Stormwater Channel.	Statement of Commitment No. 64 addresses this issue.
250.	**Barangaroo / Wynyard station** The City does not support the proposed bridge across Sussex Street as it will obscure views of Moreton's Hotel which is of State significance eroding its setting.	Technical Paper 5 notes that the new footbridge would interfere to some extent with the setting of the hotel as viewed from Sussex Street. However, it is considered that the footbridge would give rise to only a slight negative impact, and that the preferred location is to the south of the building. The public open space to the east could have a slight positive impact on the setting of the hotel, depending on its final design. The new footbridge would be carefully designed to minimise its visual impact to Moreton's Hotel.
251.	**Pyrmont station** The City does not support the demolition of Heritage Items anywhere in the precinct.	Noted.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Heritage Impacts		
Central Station		
253	a) The project at Central Railway and Belmore Park is to be redesigned as follows: i. A full archaeological investigation should be instigated and continue to inform the design.	Full archaeological investigations will be undertaken. Statement of Commitment No. 40 addresses this requirement.
252.	ii. To ensure that the archaeological remains of the former Benevolent Society are undisturbed there should be no excavation of the area identified as being the location of the former Benevolent Society. This area includes the West Forecourt Garden and Entrance Driveway.	This condition is not practical. Refer to 247.
253.	iii. Excavation of the West Forecourt generally should be limited so as minimise the disturbance the impact upon the archaeological remains of Government Cottage Carters Barracks and Christ Church Parsonage.	Refer to 247.
254.	iv. Excavation of Belmore Park is to be limited and further informed by archaeological investigation.	Refer to 247.
255.	v. The West Forecourt Garden and Entrance Driveway is to be conserved.	Refer to 246.
256.	vi. The area of the proposed skylights within the West Forecourt should be greatly reduced to retain the historic design of the area. Any new structures within the West' Forecourt above the current ground level should be limited in footprint and should be located so as to provide adequate curtilage around the Terminus building.	Refer to 246.
257.	vii. Ventilation shafts and glazed skylights should be amended to be of comparatively minor footprint and these should be sympathetically incorporated so as to be insignificant elements that do not detract from an appreciation of the original historic design of the Forecourt and that do not intrude upon the setting of the Terminus building.	Refer to 246.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
258.	viii. The proposed entrance at Eddy Avenue and Pitt Street should be incorporated in a manner that retains the configuration of the Eddy Avenue and Pitt Street colonnades and to retain all the early shopfront joinery, glazing and metalwork. The historic fabric of the colonnades and shopfronts should be conserved as part of the works.	Refer to 246.
259.	ix. Interpretation should form part of the design.	Refer to 247
260.	x. The materials incorporated into the design need not necessarily copy that of the surrounding sandstone buildings but should be of a high quality.	Refer to 246.
261.	xi. Signage and lighting should not intrude upon the setting of heritage components and the design of these elements should be sympathetic to and recessive within the historic context.	Refer to 246.
262.	xii. The new subway accesses on each of the Country Platforms should be of minimal bulk and should not reduce the appreciation of the historic awnings and signage.	Refer to 246.
263.	xiii. The works within Belmore Park should minimise changes to the landform and reduce the removal of significant vegetation.	Agree. Statement of Commitment No. 67 addresses this issue.
264.	b) Prior to commencement of any excavation, the West Forecourt should be carefully recorded, and the stone and metal components should be carefully dismantled	Refer to 247
265.	c) Belmore Park should be archivally recorded prior to the works	Refer to 247
266.	d) A comprehensive archaeological management programme should be instigated for the Central Station West Forecourt and Belmore Park areas identified as having potential in the Non Indigenous Archaeological Assessment report by Casey and Lowe including a full archaeological excavation, recording and reporting programme is to be commenced and undertaken to a high standard and include the conservation of important artefacts.	Refer to 247
267.	e) Public Open Days should be programmed throughout the archaeological excavation.	Refer to 247

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
268.	f) Upon completion of the works: i. The disturbed areas of the West Forecourt including any areas of the Garden and Entrance Driveway are to be re established to a similar configuration and the iron and stone fencing restored ii. The works within Belmore Park should be carefully reinstated upon completion	Refer to 246 and 247. Design development is continuing on Central Station including the Western Forecourt Statement of Commitment No. 69 addresses reinstatement at Belmore Park.
269.	g) A Heritage Interpretation Plan should be completed.	Management of heritage impacts is addressed by Statement of Commitment No. 40.
270.	h) The City considers archaeological management is required for the following: i. Excavation of the worksite area TH-C may have some impact upon potential archaeological remains at Nos 125-129 and 131-135 Bathurst Street of houses dating from the 1840s ii. The design of the proposed southern emergency exit building in Bathurst Street should be carefully designed to respect the services building should echoed by lower scale podiums of contemporary developments such as Lumiere and HBSC. This height maintains historically important sight lines down Pitt Street to the original terracotta tile cladding of the northern facade of the 1939 building that matches the height of the adjacent Victorian building at the time of its construction.	Refer to 247 Statement of Commitment No. 17 addresses also addresses this design requirement.
Town Hall Station		
271.	a) The southern emergency exit and services building in Bathurst Street should be designed as follows: i. Be of a contemporary nature;	Statement of Commitment No. 14 addresses the approach to development on land required for the services building on Bathurst St. Statement of Commitment No. 17 addresses also addresses this requirement.
272.	ii. Complement the character and reinforce the setting of the Edinburgh Castle Hotel Street at 295-301 Pitt Street;	As above
273.	iii. Respect the street wall heights of the heritage buildings to the west of the site along Bathurst Street including the Edinburgh Castle Hotel Street at 295-301 Pitt Street and the former Bank of NSW on	As above

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	the corner of George and Bathurst Streets.	
274.	Archaeological management is required for the excavation of the worksite area TH-C may have some impact upon potential archaeological remains at Nos 125-129 and 131-135 Bathurst Street of houses dating from the 1840s	Refer to 247
Martin Place Station		
275.	a) Archaeological management is required for the excavation for the proposed pedestrian link tunnel beneath Castlereagh Street where it conflicts with the level of the Bennelong Stormwater Channel.	Refer to 247
276.	b) Archaeological management is required for the following: i. The work site MP-A which has the potential to disturb archaeological remains below 9 Elizabeth Street of the rear yards of houses fronting Castlereagh Street dating from the mid 1800s and earlier. ii. The work site MP-C has the potential to disturb archaeological remains associated with earlier road surfacing and services such as a branch of the Bennelong Stormwater Channel.	Refer to 247
Barangaroo / Wynyard Station		
277.	a) The design of the complex is to be designed as follows: i. The bridge across Sussex Street should be deleted in order to retain the setting of Moreton's Hotel which is of State significance.	The bridge across Sussex Street is an important element of the project and will not be deleted. Refer to 250
278.	ii. Archaeological management is required for the eastern end of the worksite BW-A.	Refer to 247
279.	iii. Excavation of eastern end of the worksite BW-A at the southern side of the Napoleon St intersection with Margaret St is to be limited.	Noted.
Pyrmont Station		
280.	a) The building of the eastern Metro entry building is to be designed as follows: i. The building is to be of a contemporary nature, yet reinforce the setting of the Victorian terraces at Nos. 1-9 Union Street and those	Statement of Commitment No. 17 addresses this requirement. In addition, a Design Principles Workshop process has been initiated to ensure acceptable outcomes are achieved. All designs would be subject to

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
	opposite at Nos. 2-20 Union Street and provide a sympathetic backdrop to Union Square.	review by the Design Review Panel (Statement of Commitment No. 10).
281.	ii. The building is to complement the character of the terraces, maintain the dominance of the surrounding historic context and strengthen the visual connection between the heritage items of Union Square at the western end from the heritage items closer to Darling Harbour, rather than isolate. Any requirement to provide an architectural relationship between other Metro stations should be a secondary consideration to the above.	As above
282.	iii. The design is to strengthen the visual connection between the heritage items of Union Square at the western end and the heritage items closer to Darling Harbour, rather than isolate them.	As above
283.	iv. The design is to reflect the Victorian subdivision pattern	As above
284.	v. The footprint, height, form, proportions and rhythm should closely match that of the former terraces demolished in the 1980s, evidence of which is provided by the photographs presented by the National Trust of Australia (NSW)	As above
285.	vi. Materials are to complement the materials of the surrounding rendered masonry and sandstone buildings, and are to be of a high quality and achieve a high level of articulation	As above
286.	vii. Any new additions to the rears of the Victorian terraces are to be of lesser bulk and scale, and be subsidiary to the main Union Street frontages	As above
287.	viii. The character of the lane at the rear of the Union St terraces is to complement that of the broader historical context	As above
288.	b) The historic character of Union Street is to be maintained as significant and fundamental to the Pyrmont Heritage Conservation Area.	As above
289.	c) Conservation works to the fabric of the front sections of the terraces must be conducted, including the provision of new shopfront joinery that is compatible with the period and style.	As above.

No.	City of Sydney Issue	Sydney Metro response
Environmental Risk Analysis/ Sustainability		
290.	EA does not adequately consider the operational use of renewable energy by Sydney Metro	Chapters 8 and 19.6 clearly assess the use of renewable energy for operation of the project. Revised Statement of Commitment No. 3 states Sydney Metro's position.
291.	Sydney Metro should be powered by new lower greenhouse gas producing power infrastructure	Revised Statement of Commitment No. 3 states Sydney Metro's position.

No.	City Of Sydney Draft Statement of Commitments	Sydney Metro response
Environmental Risk Analysis/ Sustainability		
292.	a) Sydney Metro will demonstrate leadership and use new lower greenhouse gas producing power infrastructure with recovery of heat, and without substantial losses from transmission and distribution.	Revised Statement of Commitment No. 3 states Sydney Metro's position.
293.	b) Trigeneration will receive priority consideration when comparing options for providing low-carbon thermal and electrical energy supply to Sydney Metro.	Sydney Metro will consider alternative forms of trigeneration energy supply when and if they become feasible.
294.	c) The successful Integrated Metro Operations (IMO) Tenderer will be required to work with the City's decentralised energy master plan tenderers to ensure successful integration of the programs, with tunnels providing the opportunity for distribution of thermal and electrical energy to networks in the CBD.	As above
295.	d) Energy supply options for Sydney Metro will have regard to how they will impact or contribute toward City of Sydney targets.	Council should note Revised Statement of Commitment No. 3 and consider any impacts or contributions to it's targets.

No.	City Of Sydney Draft Conditions of Consent	Sydney Metro response
Environmental Risk Analysis/ Sustainability		
296.	a) All internal lighting for Sydney Metro must incorporate energy efficient lighting or LED's to assist in the reduction of CO2 generation. This issue was inadequately covered in the Environmental Assessment.	A Condition of Approval on this issue is not required. Chapters 8 and 19.6 of the EA clearly identify energy demand management measures (including and beyond energy efficient lighting). Statements of Commitment No. 1 and 3 also address this issue.

3.14 Leichhardt Municipal Council submission

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Project Justification- Need/Alternatives		
1.	The EA does not adequately address how the vision, land use strategies and policies of the NSW Governments' own Metropolitan Strategy will be implemented through the construction of the project	The Sydney Metro Network Stage 1 (Rozelle to Central) project is proposed as part of the NSW Government's ongoing support to the City of Cities: A Plan for Sydney's Future (Department of Planning 2005) planning framework for Sydney also referred to as the Metropolitan Strategy. The association with this plan and how the project aligns with the objectives of the plan was provided in detail at section 4.4 of the EA. As noted in the EA the project is an opportunity to encourage a significant proportion of the anticipated population and economic growth into corridors supported by new, high quality transport, consistent with the Metropolitan Strategy. A metro network was first identified in the 2006 Urban Transport Statement, which recognised that metro would provide the key benefit of operational separation from existing road and rail networks as well as modern rolling stock and train control systems to enhance reliability and facilitate the rapid loading and unloading of passengers.
2.	The Environmental Assessment does not explain how the proposed project is consistent with major policy documents including The State Plan – A New Direction for NSW which provides the state government's framework for governing NSW and providing better services. The Priority E5 - Jobs Closer to Home, is designed to achieve less travel, more productive businesses, less road congestion and less pollution, and more vibrant and attractive cities and centres.	Refer to 1
3.	The proposed project is not consistent with the NSW Government's Metropolitan Strategy – the City of Cities and the NSW State Plan. The key organizing principle is expressed in its sub-title, the City of Cities. That principle emphasizes that the metropolitan area will shift towards a multi-cantered city, with a strong focus on aligning employment and population growth in major sub-regions that are linked to major centres. The proposal is based on the fundamentally flawed assumption that employment and other activities will continue to concentrate in the global centre of Sydney.	Refer to 1. In addition, Sydney Metro Network Stage 1 (Rozelle to Central) is the enabler for a metro network that will provide access to a range of centres across Sydney. Stage 2 of the metro network will service the Parramatta Road Corridor.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	The apparent focus on Barangaroo, as well as the real estate potential of the Bays Precinct seems to have distorted and narrowed the debate about how Sydney's transport system will support the successful implementation of the Metropolitan Strategy and the State Plan.	
4.	The project locks the inner city into a particular transport network, transport mode and development path which may lock out more cost effective and environmentally sustainable alternatives including light rail. Given the importance of public transport solutions for the future of a city the size of Sydney it would be expected that the strategic justification of the project would have assessed a range of options and routes.	A metro network does not preclude complimentary public transport initiatives such as Light Rail.
5.	EA does not adequately address some important metropolitan and local objectives, namely improved access to the Global Economic Corridor, the urban fringe and reduced congestion on existing infrastructure	The objectives of the Sydney Metro Network Stage 1 (Rozelle to Central) project are provided on page ii of the EA and specifically address these issues.
6.	The project locks the inner city into a particular transport solution without reference to a wider network – this could result in the loss of more appropriate alternatives or additions over time	Sydney Metro Network Stage 1 (Rozelle to Central) is an enabler for a wider network.
7.	The project needs to be considered in terms of its ability to provide high capacity access, while at the same time contend with highly congested conditions at the centre of the network. The proposed project would provide increased capacity to the CBD; however the question of whether its alignment provides the greatest potential to make use of the additional capacity is problematic. The project would also provide high capacity access to the newly proposed developments at Barangaroo, however as will be discussed in the following section, it would not provide for good interchange opportunities with other CityRail lines, which would undermines the ability to make full use of the capacity a new Metro potentially affords.	The ability of the project to provide high capacity access, while at the same time contend with highly congested conditions at the centre of the network is detailed in Chapter 22 of the EA.
8.	The proposal needs to be considered in terms of its performance, or implications, for the outer periphery of the network. The merits of the project applicable to the outer periphery of the network which should be assessed include: • Network coverage needs to be extended to key employment centres, especially those located along the Global Economic Corridor, where bus-based public transport services are now unable to accommodate growing demand e.g. the Anzac Parade corridor to UNSW. • Network coverage needs to be extended to new residential growth areas in the North-West and South-West that are currently without easy access to rail and key employment centres in the Global Economic Corridor. • Greater capacity to key centres such as the CBD needs to be provided to relieve rising congestion levels.	The Metro Network specifically targets the Global Economic Corridor – Anzac bridge to the University of NSW (Metro Line 2) and the north-west (Metro Line 1 extension from Rozelle). This is further described in Chapter 4 of the EA. Sydney Metro agrees that greater capacity to key centres such as the CBD needs to be provided to relieve rising congestion levels. Hence, the development of the Metro Network which will provide this solution. Note: The south-west will be served by the (deferred) South-West Rail Link.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
9.	There are many features relating to the alignment chosen for the current proposal that will lead to sub-optimal outcomes. These need to be addressed before more detailed planning is carried out. The project should be assessed against the following operational criteria:	Constraints to the alignment of the Sydney Metro Network Stage 1 (Rozelle to Central) project are documented throughout Chapter 6 of the EA.
	a. What is the best and most effective way to address platform congestion at CityRail stations in the CBD so as to make better use of the existing CityRail network? To improve the current network on this count, an alignment needs to be selected that creates as many opportunities as possible for passengers to interchange away from Town Hall and Wynyard stations where platform congestion is now chronic. Many passengers travelling from the west, south-west and southern reaches of the CityRail network to destinations in the northern side of the Global Economic Corridor like North Sydney, Chatswood and St Leonards, change at Town Hall and Wynyard to access NSRL services. As was shown in the MREP proposal, a wide variety of opportunities for this to occur are created by that proposal.	On the contrary, Sydney Metro Network Stage 1 (Rozelle to Central) is anticipated to relieve passenger congestion at CityRail's Town Hall and Wynyard stations. This is detailed in Chapter 14 of the EA and the Traffic and Transport Technical Paper 1 included in the EA.
	b. How can services providing greater through-routing be provided so as to increase public transport access to the CBD and associated centres within the Global Economic Corridor? The most problematic aspect of the proposal is that it uses the Pitt Street alignment, blocking it from use by the MREP proposal. This removes any future option to through-route services from the EHRL to the northern centres in the Global Economic Corridor. In using this alignment and removing the option to through-route CityRail services, the current project also removes the option to through-routing new metro services to new corridors in need of services. In this way, two through-routing opportunities are removed, severely undermining the future performance of both a new Metro service and the wider network of heavy rail services. There are very few remaining opportunities to through-route services along a north-south alignment through the CBD. The Pitt Street corridor is one of the few that remains. To use this in a way that does not provide greater access to centres along the Global Economic Corridor would be an extraordinary decision – one that has the potential to retard the long term economic development of the Global Economic Corridor while at the same time restrict the capacity of long-haul rail services from the south-west growth areas.	Use of the Interim Rail Pitt Street Corridor (protected for rail by ISEPP) does not preclude heavy rail utilising the Interim Rail Western Corridor. Contrary to reported claims, the Interim Rail Western Corridor remains available for future rail expansion in the CBD.
	c. How can higher capacity public transport services be extended to precincts within the Global Economic Corridor where bus services are currently struggling to cope with demand and job growth is expected to concentrate and increase in	Sydney Metro Network Stage 1 (Rozelle to Central) is an enabler to a metro network that will assist with the combined public transport task. Refer to Chapter 4 of the EA.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	the decades ahead? While opportunities to through-route services along a north-south alignment are limited, there are many more opportunities to through route services along east-west alignments. The project does not.	
	d. *How can rail network coverage be extended to new development areas, particularly on the fringes of Sydney, where there is currently no network coverage?* The Environmental Assessment does not demonstrate how the project will enable greater capacity and therefore extensions to the south-west of Sydney. It does offer the potential for services to the North-West; however these would be within a longer timeframe than extensions to the CityRail network as proposed under the MREP. The MREP proposal would extend services to *both* the North-West and South-West growth areas. MREP does this by making use of existing network investments through augmentation and so is likely to be able to provide greater network coverage at a comparatively lower cost than would attempting to service these new areas with Metro services. The opportunities to through-route services within the Global Economic Corridor are also greater under MREP than it is for the project, offering preferable operational conditions.	As above. In addition, Metro Line 1 will service Sydney's north-west. The South-West Rail Link is not compromised by the Metro project.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Cost/Benefit		
10.	The Environmental Assessment does not include a rigorous cost-benefit analysis of the proposal against other transport infrastructure options	Project alternatives are described in Chapter 5 of the EA.
11.	The EA does not demonstrate the potential economic impacts which may include: • high costs and few benefits • high opportunity costs • lack of consideration of induced impacts • system fragmentation • local impacts	The EA has been undertaken in accordance with NSW Government guidance and identifies and quantifies (where possible) the impacts of the Sydney Metro Network Stage 1 (Rozelle to Central) project.
12.	The EA does not provide information which confirms that the benefits of the project will outweigh the costs.	Notwithstanding the capital costs of the project, Stage 1 would establish a positive public transport legacy for future generations.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
		Most significantly, with the improvements to public transport, it would provide the key enabler for the wider metro network across the Sydney metropolitan area – providing long-term benefits in terms of the environment and urban living. It would link land use and transport planning and deliver on the state's strategic objectives for improved urban environments with reliable transport access.
13.	The economic benefits, costs and risks which may arise from the implementation of the project are not adequately addressed in the Environmental Assessment. In particular the Environmental Assessment does not provide sufficient information in relation to land values, employment, business viability, economic multipliers and potential agglomeration. Detail below:	(refer to a-j below)
	a- Area Growth - The Environmental Assessment suggests that the project will serve a rapidly growing inner city area. Leichhardt cannot be considered a rapidly growing locality as it is a well developed locality. Under no scenario is Leichhardt expected to grow rapidly.	The Metro will not only serve Leichhardt but also the rapidly growing inner Sydney area (including the CBD, the Bays Precinct and Barangaroo), as well as acting as the facilitator for future metro network expansion in to a number of high growth corridors in Sydney. This is outlined in more detail in section 4.2.1 of the EA.
	b. Existing services - The potential Leichhardt catchment area for the project includes residents of Rozelle, Lilyfield, Balmain and Birchgrove. Residents travelling to the city by public transport from these areas have a number of options including ferry, bus and light rail. Although there are always arguments in favour of improving environmentally friendly travel modes, these areas of Leichhardt are not considered to be deficient in public transport services compared to most areas of the metropolitan area.	The Metro project will greatly enhance public transport capacity in the CBD which is the highest density employment location in the metropolitan area. The project will also act as an enabler for a future metro network which will greatly enhance public transport capacity and usage across the broader metropolitan area. This will provide advantages of sustainable growth as well as improved public transport accessibility for many areas.
	c. Agglomeration • The interrelationship between the CBD metro and prospective land-uses is not analysed in the Environmental Assessment. • The project will have major induced impacts on development, particularly around the Bays Precincts. • The Barangaroo development aspiration of 20,000 new jobs is based on supply capacity of the site rather than analysis of demand for commercial office space. • Careful planning would require consideration of a number of land-use and transport infrastructure options but the Environmental Assessment does not analyse and quantify different development scenarios. The Environmental Assessment uses the employment forecasts for City of Sydney and Leichhardt provided by the Transport Data Centre, without adjusting them to take account of the proposed project. • Without a clear development concept for the Bays Precinct (and a Transport	The land use impact of the project has been assessed through the inputs of population and employment forecasts within the study area. These have been assessed both with and without the project and these assumptions underpin the transport modelling analysis. The future development of the Bays Precinct and Barangaroo has been taken account of in the analysis described above. This includes a range of land use scenarios and the subsequent impact on transport usage (see section 4.6.2) of the EA.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	Blueprint for where the metro system will end up), it is not possible to assess the economic implications.	
	d. Congestion The Environmental Assessment methodology for looking at passenger demand is considered to be flawed. There is no evidence to suggest that commuters from Rozelle and the Balmain Peninsula will shift from bus and car to metro in large numbers, or indeed will change modes from bus to metro during journeys to the city. The Environmental Assessment does not include future land use in the Bays Precinct in its consideration of potential congestion.	The transport modelling analysis has been undertaken using government guidance, and, as such, generates estimates of public transport usage across all modes with and without the metro project. The future land use for the Bays Precinct has been included in this analysis through the underpinning population and employment forecasts which input into the transport modelling analysis.
	e. Land Values International evidence suggests that property prices would increase in the vicinity of the proposed Rozelle railway station which would have some impact on the composition of businesses along Victoria Road, Balmain Road and Darling Street. Businesses with low overheads and low profitability may be squeezed out eg small business that benefit from low cost premises on Victoria Road and/or the nascent arts establishments along Balmain Road. Businesses with higher turnover and profitability are likely to replace these businesses. Hence, some businesses are likely to be negatively impacted by the project even though they have no interest in new transport infrastructure.	Council's opinion is noted.
	f. Economic Multipliers The key missing economic concept in the EA is opportunity cost. Opportunity cost will be the value of the best alternative foregone as a consequence of constructing the project. To make an assessment of the strategic justification for the project, it needs to be evaluated against the costs and benefits of alternatives. In particular, the project should be evaluated against the integration and extension of light rail services through the CBD and inner suburbs. The latter is likely to be much more cost effective, flexible and bring broader benefits to residents and businesses in the city and inner city areas. In order to demonstrate the full economic benefits and costs and multipliers, a Transport Blueprint which sets out how the project will be fully integrated into Sydney's transport network is required.	Alternatives are assessed in Chapter 5 of the EA and a series of other options has been examined (road network improvements, enhancing existing public transport networks and demand management measures) and these are summarised in section 22.4. NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management. Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW.
	g. Employment The employment estimates included in the Environmental Assessment are in line with conventional estimates for a project of this scale. However, as the Environmental Assessment doesn't look at induced impacts on land-uses, particularly around White Bay no estimates of long term employment impacts have been provided for Council to adequately assess this aspect of the project	An assessment of long-term employment impacts was not required by the Director-General's Requirements.

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	h. Property Acquisition Property acquisition would be a moderate negative economic impact for those business operations during relocation as a result of the disturbance created. Council reiterates its call on the State Government to assure Council and the community that there will be no compulsory acquisition of properties.	An extensive range of research has previously been conducted into the medium to long term impacts of new public transport systems on property prices. Over 150 previous studies were identified in a brief review. The majority of this research has been in North America with the United Kingdom and Europe also contributing significantly to the range. These studies produce a broad range of results with the overwhelming majority indicating that the post opening impact on property values is positive.
	i. Business Viability The assessment of how business viability will be affected by the proposal is inadequate. Given the scale of the project, careful analysis is required on the impact on local business viability and measures taken to compensate impacted businesses. Consideration should be given to preparing a full business impact statement, including quantification of impacts on business turnover, within broader catchment areas.	A detailed analysis of the impact on local businesses has been undertaken as part of the project. This analysis has included a series of community sessions, interviews and desk top research.
	j. Car Dependence Council is particularly concerned that the Socio-Economic Technical Paper ignores the induced impacts of the project, particularly new land-uses that may be considered for the Bays Precinct which may substantially increase car dependence as well as public transport patronage.	Sydney Metro cannot comment on other developments that may increase car dependence.

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Social Impacts		
14.	The economic impact assessment treats increase in property values near the Metro stations as a net economic benefit to residents and does not take into account residents who are in social housing, other rented properties or those wishing to rent or purchase in Leichhardt local government area but are already excluded by price. The price rise is considered likely to have the following social impacts: • An additional increase in the level of unaffordability of housing in the local government area for low to moderate income earners. An additional increase in difficulty for local organisations looking to attract staff to deliver health and other	Council's opinions are noted.

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	care services and to undertake other low to moderate paid work in the local government area. (note that Figure 5.1, p 32 in the SIA shows that the sectors currently generating the most jobs in Leichhardt are health and social care services and professional, scientific and technical services). • An additional increase in the unaffordability of rents for not for profit community organisations providing care and community services. The result will be an increased loss of such providers from locations in the local government area. • An additional increase in the number of key worker staff making long journeys to work in Leichhardt, with health and productivity/quality of work implications. • Likely strong and continuing pressure for development, including additional housing, at White Bay in order to make the most of the benefit of the station. • Likely strong and continuing pressure on Council to permit high rise and other forms of dense housing development within the 800 metre radius of Rozelle station, and possibly in due course within a radius of up to 1.5kms. • Intense pressure on the Council to review its stand on Callan Park (part of which is within 800 metres of the proposed station at Rozelle) and to permit housing at least in the south eastern part of the Park closest to the station. • Risk of continuing or repeated efforts to amend the Callan Park Act to permit this. This pressure will not go away once the station is operational but will be continually present.	
15.	Rises in property prices and values will exacerbate existing housing trends: • Add to housing unaffordability in the LGA • Add to the change occurring in the social character of the municipality from an area of lower incomes to an area of high to very high income residents • Add to the decline in the social mix in Leichhardt and increase social divisions of the residential community in which the social housing tenants are a declining proportion of the community and relative disadvantage becomes more apparent • Add to the social costs of the gap between rich and poor within Leichhardt and between Leichhardt and other parts of Sydney. These can be considered as negative impacts on life expectancy, physical and mental health, teenage pregnancy rates, incidence of obesity, crime rates, social cohesion, levels of trust and social mobility	Council's analysis is noted.

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	• Add to the range of social costs arising from these outcomes which will occur locally	
16.	The Social Impact Assessment asserts (p68) that as the stations will be fully accessible accessibility for mobility impaired people will also be improved. Council notes that the benefits to mobility impaired people are likely to be dependent on the gradient (steepness or flatness) between each individual's home and the station, and the nature of each person's impairment.	• The infrastructure has been designed so that it is accessible for people with special needs. • Sydney Metro has identified barriers to accessing transport options and will be develop ways to provide people with assistance where needed.
17.	The Social Impact Assessment also asserts that '*improved access across the project will also help to combat social isolation for some residents restricted in their movement between areas owing to mobility or financial hindrances*' (p67) and that the train service will serve groups within its catchment equally (p68). This assessment is considered incorrect as the cost of travel will be experienced differently. People on low to moderate incomes who do not qualify for transport concessions may find the cost onerous and for the sake of 12 minutes travel time saved, prefer bus travel if this is the cheaper1 option.	Sydney Metro considers that the assessment presented in the EA is correct.
18.	Access by elevator to platforms at such depth - the assessment does not take account of: • During rush hours, elevators are not able to cope with the volume of passengers, this results in pushing and queuing underground; • During non-peak periods elevators may be experienced as sites of entrapment; • During a power failure or elevator mechanical failure, access to the surface is via circular stairs, in this case for the equivalent of 12 storeys, resulting in the stranding of passengers unable to make this journey; emergency lighting and mechanical ventilation is required. • During an emergency, access to the platform is constrained particularly if the elevators are not working; • Some potential passengers may experience anxiety about the 'pithead' nature of the descent underground and prefer bus travel. • These difficulties could be partially addressed by providing escalator and elevator access to the platforms, back-up generators for the elevators, emergency plans for medical treatment at platform level and evacuation.	Vertical and horizontal circulation has been designed to cope with peak volumes, and contingency has been allowed for maintenance and emergencies (eg power failure). Crime Prevention Environmental Design Principles are applied to ensure "sites of entrapment" are not created.

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19.	The pedestrian link under Victoria Road may be subject to the following impacts: • they rapidly become dirty and smelly due to their use late at night by people who are inebriated or can't find a toilet (or one which is open); • the tunnel cannot be viewed in its entirety from the street and pedestrians can be taken by surprise by people entering behind them or from the other side of the street. Cameras do not prevent assaults. Many pedestrians will therefore avoid using the tunnel except at peak periods. As time passes and the tunnel's appearance and smell deteriorates this will become an increasing phenomenon. The suggestion that the tunnel is a safety feature is therefore not agreed. The safest place to cross a busy road, especially if you are a woman or a member of another potentially vulnerable group, is at grade and in full view of the traffic.	Sydney Metro disagrees with these statements. Stations and pedestrian links will be well maintained and designed to ensure they are safe and accessible. Activation via retail is also proposed to increase safety.
20.	The tunnel under Victoria Road is likely to require more than weekly cleaning and will need regular repainting. Council does not have the necessary resources to undertake the ongoing maintenance of the tunnel.	The pedestrian tunnel will be maintained by the Metro operator.
21.	The Social Impact Assessment also notes the possibility of a bridge over Victoria Road. Such a link is more likely to be used by cyclists than pedestrians, is a place of potential entrapment for pedestrians particularly, and is completely unsuited to people with a fear of heights because the RTA's practice is to construct such bridges without any visual barrier to the traffic passing below. Similar considerations would apply to a proposed link from Lilyfield Road across the former Rozelle Marshalling Yards to Annandale and Glebe (p68). It is likely that many pedestrians will prefer, for reasons of safety, to cross Victoria Road at street level. In preparing the final Station Plans consideration should be given to materials, form and spaces which will not inhibit people using the at-grade crossing of Victoria Road	The reference to a bridge over Victoria Road was taken from a Council proposed initiative.
22.	The depth of the platforms at the proposed Rozelle station will have serious social impacts in the event of a medical emergency, poor crowd control/behaviour, passenger on the line events, suspected or actual interference with the operation of the railway or a terrorism event. On such occasions, it will be residents of Leichhardt who are likely to be the most affected. Council seeks to ensure appropriate readiness to deal with such emergencies – for example, equipment located at platform level, equipment located at street level, special access arrangements, in-time monitoring of CCTV surveillance. Some of these require a built infrastructure response and some a funding response.	Fire and life safety and life safety generally is addressed throughout Chapter 6 of the EA.

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23.	The suggestion that a busy intersection between a six lane major route, a two lane main road and an underground station is a place where social interaction could be encouraged or community spirit will occur is inconsistent with the evidence. It takes no account of the noise, vibration and air pollution associated with the traffic, the lack of peacefulness needed to encourage conversation, the health and safety risks to children accompanying a person socialising next to a major route, or the fact that within a short distance more suitable gathering places either exist or could be established.	Council's opinions are noted.
24.	Council notes that no commitments are made in relation to mitigation of the potential adverse impacts on the occasional care centre located in the Rozelle Neighbourhood Centre. The Rozelle Neighbourhood Centre is located at 655A Darling Street in the Church premises adjacent to Rozelle Public School. Concerns include: • noise, vibration and dust impacts exceeding environmental guidelines • impacts on visitors to the Rozelle Neighbourhood Centre and the safety of workers • access during construction for both clients and staff of the Neighbourhood Centre	The preliminary environmental assessment for the project and the revised June 2009 design for the Rozelle Station identified land acquisition based upon a construction method which assumed that substantial excavation and mining of the Rozelle station would take place from the St Paul's land where the RNC is located (the land). Sydney Metro has since undertaken further design and construction reviews, resulting in a significant reduction in both the area of temporary and permanent land required to be used from the land. There has also been a significant reduction in the nature and extent of construction work which will take place from this land and from the immediately adjacent properties at 665 – 669 Darling Street. The earlier proposal required a temporary construction lease over the access driveway and much of the land's rear garden land, including the land occupied by the Garden Room. The Green Room is a critical facility to the RNC where a number of its services are offered. However, Sydney Metro's revised scheme only now requires a construction lease over the currently unused area of land between the existing fence and Victoria Road. The proposed construction lease will enable ongoing access to the RNC's lane driveway and the garden land including the Garden Room. Sydney Metro recognises that the mitigation of construction impacts will be an important consideration for the RNC. Construction impacts associated with the project were identified in the environmental assessment together with a range of mitigation measures and construction techniques to be used during construction. The deployment of these mitigation measures will be critical in continuing to enable the RNC to be able to provide its services from the current location. The mitigation measures Sydney Metro anticipates being able to use include temporary barriers and enclosures; well planned site layouts to create noise shields; good construction planning and

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		scheduling work as much as possible in standard construction hours. In particular, this would include a solid fence along the boundary between the construction site and the retained land, to provide protection and noise attenuation with a minimum height of 2.4m (please note that the final extent, height and materials will be subject to contractor/advisor recommendations and any conditions of approval). Sydney Metro has committed to managing construction noise and vibration levels in accordance with the *Sydney Metro Construction Noise and Vibration Strategy*. The strategy applies internal and external noise management levels of $L_{Aeq(15minute)}$ 50 dBA and 60 dBA respectively for schools, based on the DECC's *Interim Construction Noise Guideline*. Similar criteria would be applicable for childcare centres. The Construction Noise and Vibration Strategy provides a commitment for particularly noisy activities to be scheduled outside normal school hours, where possible and for establishing cooperative relationships with schools, local residents and building owners to assist in managing impacts from noisier operations. The Strategy provides a process for implementing all feasible and reasonable mitigation measures. Where noise and/or vibration issues have been identified after all feasible and reasonable mitigation measures have been implemented, the construction contractor is required to produce a noise and vibration management plan, which includes liaison with the sensitive receiver(s) and DECCW.

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Integrated Transport Plan		
25.	The provision of the metro will change the way people move around a city but it would also change the character of places and have significant social and economic ramifications. The EA does not adequately explain how metropolitan and local level objectives will be implemented by the proposal:	The EA and supporting documents address a range of local and broader benefits that would stem from the introduction of the Metro. Sydney Metro Network Stage 1 (Rozelle to Central) would establish a positive public transport legacy for future generations. Most significantly, with the improvements to public transport, it would provide the key enabler for the wider metro network across the Sydney metropolitan area – providing long-term benefits in terms of the environment and urban living. It would link land use and transport planning and deliver on the state's strategic objectives for improved urban environments with reliable transport access. The Government is currently preparing a Metro Network Strategy to guide and prioritise the development of a metro network for Sydney. This work includes assessment of a range of alternative alignments for future metro lines for Sydney.
	a. Services which provide greater *through-routing* must be established so as to increase public transport access to the CBD and associated centres within the Global Economic Corridor	Agreed. A Metro, by accommodating passenger throughput of between 29,000 and 40,000 passengers per hour, at high frequencies will enhance public transport accessibility significantly. In the longer term extension of the Metro Line 1 to the north west will improve accessibility to and from the global economic corridor.
	b. Higher capacity public transport services need to be extended to precincts within the Global Economic Corridor where bus services are currently struggling to cope with demand and job growth is expected to concentrate and increase in the decades ahead	See above
	c. Rail network coverage needs to be extended to new development areas, particularly on the fringes of Sydney, where there is currently no network coverage	The Sydney Metro Network Stage 1 (Rozelle to Central) is the first stage of a broader Metro network that will service the travel needs of our growing suburbs and established centres. Metro 1 comprises a new rail corridor through Sydney's CBD from Rozelle to Central, Stage 2 from Central to Westmead and the North West Metro from Rozelle to the north west.
	d. A solution is required that makes the best and most effective way to address platform congestion at CityRail stations in the CBD so as to make better use of the existing CityRail network	The Metro project will assist in relieving congestion of the CityRail network and will not prevent or limit future expansion of the heavy rail network within or external to the Sydney CBD. By relieving the

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		most congested part of the CityRail network, it will facilitate future upgrades and development of the CityRail network.
	e. An integrated land use planning approach which is underpinned by social, economic, environmental and aesthetic objectives is required for White Bay, Rozelle Stabling Yards, Callan Park, as well as lands in the City of Sydney and established communities which will be impacted by land use change. A Master planning process is required to ensure the best possible use of our physical, social, economic and environmental resources.	A Master planning process has been implemented. Draft Station Plans are available and were developed in consultation with Councils. Station plans will be updated through the Station planning process. There is no station Plan for Callan Park as the Sydney Metro Network Stage 1 (Rozelle to Central) project does not impact this site.

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Land Use		
26.	An effective EA for a major public transport project such as the project should take into account the impacts of transport on land use. The EA does not provide an evaluation of the potential impacts. Council is concerned about the ramifications for White Bay and its future role in the Bays Precinct in the absence of rigorous Master planning and community consultation.	The Master Planning of White Bay will be progressed by the Sydney Harbour Foreshore Authority under the Bays Precinct Project. Sydney Metro has provided a submission to SHFA focussing on design guidance in relation to the integration of the safeguarded metro station with future planned development.

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Construction Traffic		
27.	Truck movement table (Transport & Traffic Technical Paper Table 7.11) does not show total movements around White Bay and Rozelle and needs to be more descriptive.	The Table provides a comprehensive summary of expected truck volumes by day and peak hours.
28.	Transport & Traffic Technical Paper Fig 7.13 illustrates the truck route along Darling Street / Balmain Road. The route stops at Albert Street opposite Callan Park with no description of where the route continues to, assuming to City West Link.	Yes. This was done for presentation purposes. The trucks heading past Callan Park would have an origin or destination via the city West Link Road.
29.	Transport & Traffic Technical Paper Fig 7.13 illustrates the truck route along Darling Street / Balmain Road. The route stops at Albert Street opposite Callan Park with no description of where the route continues to, assuming to City West Link.	As above

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30.	The Environmental Assessment identifies the current situation Level of Service for Victoria Road / Darling Street and an improved LoS 'C' for the "construction period". This assertion needs to be checked as the performance of the intersection would be expected to deteriorate. The Victoria Road / Wellington Street intersection is shown as remaining at the same LoSC and this is also questioned. The removal of the right turn in Victoria Road at Evans Street would be expected to impact on the tabled results. The project should check the modelling results for Balmain Tigers against those for the Multiplex development, the effect on the PM peak period at the Victoria Road / Wellington Street intersection and confirm that the performance of the intersection will not deteriorate. Council requires an indication as to what measures can be implemented to maintain the existing performances of the intersection. Any additional delays will be unacceptable and will create redistribution of traffic within the peninsula.	Paramics modelling for the project indicates that the provision of a bus lane and bus layby should improve traffic over the alternative of a bus stop in the existing outbound traffic lane. The construction of a cross intersection at Waterloo Street could allow right turns out of the Rozelle Villages site which will aid accessibility and improve the operation of the Darling Street / Victoria Road Intersection through a small reduction in traffic using the intersection. The traffic studies undertaken for LMC indicate that impacts from the proposed Multiplex development and Tigers Club redevelopment are acceptable.
31.	Any proposed changes to construction hours will impact on hours of truck operations. Modifications to arrangements must also be forwarded to Council for its consideration and approval.	Council will be consulted as the Sydney Metro Network Stage 1 (Rozelle to Central) proposal is developed. Council officers will have the opportunity to input into the Construction Traffic Management Plans, Construction Traffic Control Plans, and Road Occupancy Licences (ROLs) proposed by the Contractor through participation in the TTLG.
32.	All at-grade pedestrian crossings are to remain operational throughout and after construction	Noted
33.	Darling Street traffic crossing Victoria Road should not be unnecessarily impeded during construction works	Noted
34.	Temporary parking areas for shoppers to be provided to replace any lost parking in the vicinity of the station and associated works	Noted. There is scope to accommodate displaced parking along the Waterloo Street frontage to the worksite. This is being explored.
35.	Construction management plans should include strategies for servicing neighbouring premises, garbage disposal, pedestrian and cycle route maintenance and maintenance of traffic routes at the intersection of Victoria Road and Darling Street	These needs will be addressed in the Contractor TMPs and TCPs with every effort made to avoid disruption and conflict.
36.	Sydney Metro should bear the cost and renewal of all public road assets damaged during the works	This request is acknowledged. Further discussion and consideration is required.
37.	Access of construction traffic should be limited to Victoria Road only, as use of Waterloo Street will detrimentally impact on residents. Use of Darling Street north of Victoria Road would detrimentally impact on operation of the intersection which has become a more important access point following closure of right turn into Evan Street at Victoria Road.	Truck access to the northern worksites will require access to the southern most section of Darling Street (Balmain side) in order to minimise impacts on intersection operation and in the interests of road user safety. Generally the approach to the management of truck traffic is to limit access to and from Victoria Street.

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38.	Detailed dilapidation surveys must be required, prior to any construction, for all surrounding Local Regional or State roads and footpath assets in say a 100m radius vicinity of the site. Details of proposed dilapidation survey parameters to be agreed with Council's Manager Assets.	Sydney Metro, through it's contractor will perform pre-construction surveys of structures along the metro route. The scope of instrumentation monitoring and the extent of the dilapidation surveys will be determined though a risk assessment process that will consider the concerns of the third party asset owner.
39.	The safety of all pedestrian / cycle traffic, including school children around site is paramount in Council's considerations. It is noted that pedestrian access around the site is proposed as a minimum footpath width. Council notes that pedestrian demand is likely to increase with the completion of the Inner West Bus way project. Design and implementation of pedestrian environments should ensure footpath widths are not constrained during or after construction activity. The needs of cyclists should also be given a high priority. Detailed site planning during and after construction must ensure that a 'squeeze' points are eliminated along shared use paths.	Noted. Pedestrian safety will be managed via the use of traffic controllers avoiding vehicular and pedestrian conflict.
40.	All parking for construction workers must be provided on site within the White Bay construction sites.	Noted.
41.	All access arrangements and intersection performance at City West Link and Victoria Road must meet all RTA requirements.	Noted.

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Noise and Vibration		
42.	There will be significant breaches of the noise criteria at both the stabling yards and the Rozelle station site (which will be greater in the vicinity of the stabling yards using Council's commissioned monitoring of ambient background noise levels). The Environmental Assessment has not addressed this adequately, leaving the matter to be resolved (if possible) to a future unspecified management plan.	The Council commissioned The Acoustics Group to undertake a review of the Noise and Vibration Technical Paper. As part of this assessment, attended measurements were undertaken by The Acoustics Group at several locations surrounding the proposed train stabling and maintenance facility and it is suggested that the background noise levels during the 10pm to 7am night-time period are lower than indicated in the EA. As the noise goals to assess the potential noise impacts from the construction works and train stabling / maintenance operations are based on the background noise levels, Council suggests that the potential noise impacts will be greater than indicated in the EA. The background noise monitoring for the EA was undertaken in accordance with the requirements of the EPA's *NSW Industrial Noise*

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		Policy (INP). For a new development, the INP specifies that *"it is important to undertake sufficient monitoring of background noise to allow intrusive noise to be assessed adequately"*. Two measurement regimes are presented in the INP for measuring the background noise environment (short-term and long-term). At the Planning and Approval Stage, the INP recommends that the 'long-term' measurement approach is applicable, which involves continuous sampling (for approximately one-week at each location), accompanied by periods of operator-attended monitoring at the most or potentially most affected sensitive location/s. For the proposed stabling and maintenance facility, background noise measurements were undertaken at six locations considered to be representative of the potentially most affected sensitive locations. These were located on both sides of the proposed stabling and maintenance facility. The quantum of background noise monitoring undertaken for the assessment is considered to be acceptable and consistent with the requirements of the INP. Whilst the measurements undertaken by The Acoustics Group were performed at many (28) locations, only spot measurements were undertaken and for periods of approximately 30 minutes at each location during the daytime and night-time periods. These measurements are not a reliable indicator of the long-term acoustical environment and should not be relied upon for assessment purposes. Heggies has undertaken a review of the spot measurements undertaken by The Acoustics Group and compared their measurement results with the long-term measurements undertaken for the EA. At similar measurement locations, the background noise levels are reasonably consistent. In some areas, the spot measurement results indicate lower background noise levels than the long-term monitoring locations. This is because the measurements undertaken by The Acoustics Group were undertaken at a greater distance from the major noise sources influencing the background noise environment (Lilyfield Road and City West Link Road) and not at receiver locations in Lilyfield Road closest to the proposed train stabling and maintenance facility. Whilst it is true that the background noise levels will be lower as one moves away from Lilyfield Road and the City West Link Road (as a result of increased separation distance), the noise levels associated with the proposed train stabling and maintenance operations will also reduce as the separation distance increases. Thus, whilst it may be argued that the project noise goals for construction and operations may be lower for receiver locations further from the proposed

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		construction works and operations, the construction and operational noise levels will also be lower. As a result, the nearer assessment locations identified in the EA are still considered to be representative of the potentially most affected sensitive locations. Further background noise surveys will also be required to be conducted by the Contractors consultant closer to the time of the construction works.
43.	The Environmental Assessment and the Draft Statement of Commitments refers to the concept of "trigger levels" instead of compliance with limits. This is unacceptable. There must be a requirement for compliance with identified limits as suggested in this submission. Compliance with the sleep arousal criterion is considered the minimum standard. In Council's view there should be no loss of acoustic amenity for our residents.	For construction works, the construction noise goals are based on the *"noise management levels"* documented in the DECCW's *Interim Construction Noise Guideline*. The adoption of "noise limits" for the construction phase is inconsistent with the Director General's requirements for the project and the Interim Construction Noise Guideline which advocate the development of a management framework (based on "management levels" not "noise limits" to ensure that impacts are mitigated, monitored and managed. This process is described in the *Sydney Metro Construction Noise and Vibration Strategy*. For operations, Sydney Metro has undertaken to adopt the noise and vibration the "trigger levels" in the DECCW's *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* as "noise limits". Sydney Metro has adopted the DECCW's Sleep Disturbance Screening Criterion as design goals for the train stabling and maintenance facility. The noise and vibration technical paper notes that *"if future brake release noise levels should be significantly higher than that specified in Table 96 there may be a requirement for some form of noise mitigation in order to minimise potential sleep disturbance at the nearest residences during the night-time period."* If this occurs, the assessment of mitigation measures would be based on a feasible and reasonable process in accordance with the applicable DECCW guidelines on potential sleep disturbance contained in the DECCW's Application Notes to the *Industrial Noise Policy*.
44.	The period of construction is over an extended period – being up to 40 months in the case of the stabling yards. As a consequence it is entirely appropriate to ensure that development satisfies the noise criteria. If the building sites cannot be enclosed then it is considered that 24 hour construction should not occur. Residents should not have to experience night time noise levels more than 20dB(A) above background levels.	The noise and vibration technical paper provides an assessment of the potential construction noise impacts associated with three scenarios comprising general earthworks, construction of buildings and facilities, and portal and dive structure construction and excavation. At this stage in the assessment process, the extent of construction works that will be required during the evening and night-time periods is unclear and hence indicative noise predictions have been undertaken for the daytime, evening and night-time periods. It should also be recognised that the construction noise levels will be

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		variable in nature and there are likely to be periods when the noise levels will be significantly lower than indicated in the EA. As the construction noise management levels are lower during the evening and night-time periods, the requirement for noise mitigation and management measures will be more stringent if significant evening and night-time works are required. Construction noise and vibration emissions will be managed in accordance with the *Sydney Metro Construction Noise and Vibration Strategy*. The Strategy provides a process for implementing all feasible and reasonable mitigation measures. If exceedances of the noise management levels remain after all feasible and reasonable mitigation measures are implemented, the contractor would be required to implement the additional mitigation measures identified in Table 6.2 of the Construction Noise Strategy. Night-time exceedances greater than 5 dBA above the noise management levels would be very unlikely for periods greater than 6 months as the Construction Noise Strategy would require alternative accommodation to be provided in this case.
45.	It is essential that acoustic and vibration criteria that protect the existing amenity be specified. Consequently alternative construction methods or additional noise control works must be considered. It is essential that both construction and operation of the development must comply with the noise and vibration limits with no exceptions.	Noise and vibration criteria for the project have been determined on the basis of the appropriate DECCW guidelines. Operational noise criteria are designed to protect the existing amenity of residential areas, whereas the construction noise management levels allow for higher noise goals on the basis of the non-permanent nature of construction activities.
46.	Monitoring of the noise and vibration levels during construction must be undertaken and be independent of the proponent, with such information being publicly available. It is appropriate that Council should oversee this monitoring with funding from the proponent.	It is anticipated that noise and vibration monitoring during the construction phase will be undertaken by the successful contractor or their appointed acoustical consultant. These assessments will be reviewed by an independent acoustical consultant appointed by Sydney Metro.
47.	The construction of the Rozelle stabling yards and Rozelle Station will create acoustic and vibration disturbance to some residents and commercial properties. Without adequate mitigation there is no alternative but to temporarily relocate those occupiers, at the proponents' expense.	Refer to Items 43-45.

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Indigenous Heritage		
48.	Council has, independently sought expert advice from the Metropolitan Local Aboriginal Land Council, whom Council recognises as the custodians of Aboriginal land, cultural sites and landscapes within the Leichhardt LGA. After a review of the Environmental Assessment and the Draft Statement of Commitments the Metropolitan Local Aboriginal Land Council concluded that the listed registered sites will not be impacted upon by the construction on the project.	Noted
Non-Indigenous Heritage		
49.	Council is concerned that the local significance of the buildings, their contribution to streetscape and place identity has not been adequately considered in the preparation of the proposed location and design of the Rozelle station. Council contends that in the event of the approval of the proposal that further, detailed design of the station and environs should be undertaken including investigation of how existing built forms can be retained and enhanced.	The metro station entrance into Darling Street would respond to the urban form and activity that typifies this part of Rozelle. It has been recognised that Rozelle is located in a unique village-style location. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including heritage buildings and heritage conservation area) and the design principles that have been used thus far, and those that will continue to guide future detailed design (e.g. station entrances designed relate to the scale and consistency of adjacent) buildings. An interactive Design Workshop has been initiated and will be used to form the appearance and character of the Rozelle metro station. The Design Workshop will be an opportunity to explore a large range of options to retain the original character of Rozelle's area. Workshop participants were selected with advice from the Royal Australian Institute of Architects, the Planning Institute of NSW, the Australian Institute of Landscape Architects and the National Trust. A Design Review Panel, comprising independent specialists, has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Flooding		
50.	Council is currently undertaking a comprehensive flood study of the entire LGA. Preliminary results from the study have identified that this site is substantially flood prone. The proposed works should not cause or exacerbate existing flooding problems, or limit Council's capacity to address flooding problems upstream or adjacent to the site. In this regard, all public drainage systems that currently run through the site should be upgraded to ensure that the combined minor/major (piped/overland) system has the capacity to convey the 100 year Average Recurrence Interval storm event. Furthermore, all works should be designed to address all the relevant guidelines of the NSW Government's Floodplain Development Manual 2005. The floor level of all buildings should be a minimum of 500 mm above the 100 year Average Recurrence Interval flood level.	Early investigations undertaken by Sydney Metro identified the potential for the former Rozelle Marshalling Yard to be prone to flooding and the existing drainage systems traversing the site. Flooding and hydrology has been considered in developing the reference design for the Rozelle Stabling and maintenance depot. Hydrology and flooding will be further considered in developing the design of buildings and plant on this site. The upgrading of existing drainage systems is outside the scope of the project, however, the depot will be designed to avoid any increase in inundation levels in a 1 in 100 year flood event, if practicable. The Rozelle Depot Master Plan outlines potential landscaping treatments that will be considered during detailed design including integration of water-sensitive urban design features (such as water detention basins) to improve water quality and create a more attractive environment.
Stormwater		
51.	Due to the likely high water demand for the site arising from activities such as train cleaning and irrigation, consideration should be given to harvesting the vast quantities of stormwater runoff generated upstream of the site. In this regard, there are a number of Council and Sydney Water owned drainage systems that discharge into and through the site. Stormwater harvesting facilities should be installed within the site to collect and harvest stormwater from existing Council or Sydney Water drainage lines within the site.	As set out in Statement of Commitment No. 5 a target of 95% recycling of train wash water has been adopted for the project. Water usage will therefore be limited, negating the need to harvest water from other sources including stormwater. The general philosophy adopted for site water management is to separate upstream stormwater runoff from site stormwater to minimise the potential for pollution to waters. It is also noted that any alternative water supply arrangements need to be available on demand and reliable and it is unlikely that the proposed stormwater harvesting can meet these requirements.
52.	It is likely that the majority of the existing residential and commercial/industrial developments in Lilyfield Road which back onto the site currently drain in part or in full towards the Rozelle Stabling Yards. Adequate drainage infrastructure must be installed adjacent to the boundaries of the affected properties, supported by drainage easements where appropriate, sufficient to accommodate connection from these properties.	As noted in the response to Comment 50, hydrology and flooding has been considered in developing the reference design and will be further considered during detailed design development.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
53.	Opportunities for on-site and off-site water harvesting to meet the requirement of 4.7 million litres of water have not been adequately investigated.	As set out in Statement of Commitment No. 5 a number of measures to minimise water usage and recycle water needed to operate the Rozelle stabling and maintenance depot have been adopted including the rainwater capture to supply non-potable requirements and a target of 95% recycling of train wash water. Also see response to Comment 51.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Flora and Fauna		
54.	The Environmental Assessment has not addressed existing fauna and habitat removal within the Rozelle Stabling Yards and a strategy for the use of local provenance vegetation to reinstate habitat is required.	Existing flora and fauna and potential impacts on biodiversity within the former Rozelle Marshalling Yard has been comprehensively assessed in the EA (see Section 19.3 and Technical Paper Proposed landscaping treatments for the Rozelle stabling and maintenance depot are set out in the Rozelle Depot Master Plan. The use of local provenance vegetation from the Rozelle Bay Community Native Nursery will be considered in finalising landscaping treatments.
55.	The noxious weeds (large amounts of lantana) located on the Rozelle Stabling yards site are likely to contain populations of Blue Wrens. The removal of all of the noxious weeds would have a devastating effect on this species and other small bird species unless it is undertaken in a staged manner which would allow for alternative planting to be established. It is also noted that although the Environmental Assessment has not identified any remnant vegetation on-site some remnant vegetation has been identified 500 metres up line from Catherine Street. Unexpected remnant vegetation should be protected if encountered.	Detailed site survey undertaken as part of the EA confirmed that no natural habitats or remnant vegetation is present within the site. The removal of noxious weeds and the landscaping of the Rozelle stabling and maintenance depot as set out in the Rozelle Depot Master Plan would assist in improving biodiversity in the locality. The staged removal of the vegetation on site is not consistent with the requirements of the *Noxious Weeds Act 1993* and is not recommended as it may actually work to exacerbate impacts on any fauna present on site. With respect to the Blue Wren (Superb Fairy-wren), it is noted that these birds typically live in family groups of between 2 to 6 individuals. All the wrens in the family group assist in feeding and protecting the nestlings and fledglings, and in defending the territory (typically 0.5-2.0 hectares) from other Blue Wrens. It is therefore unlikely the site supports a large population, if at all. Blue Wrens are also recognised for their ability live within and adapt to changing urban environments. For these reasons, the potential impacts of the project on Blue Wrens will be minimal.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
56.	A Noxious Weed Management Plan and a Landscape Management Sub-Plan which identify strategies for the protection and/or relocation of native fauna found on-site should be prepared and implemented. It is very likely that other native fauna will be encountered in the Rozelle rail corridor during any construction phase. Fauna may include at least two species of snake – the Eastern Brown and Red Bellied Black Snake. (Council receives occasional reports of these species in far busier locations than the rail corridor) The rail corridor is likely to have become a relatively safe habitat for these species. A Strategy for the capture and relocation of native fauna, including snakes, should be prepared and implemented.	Noxious weed management requirements and procedures for the relocation of any fauna found within the site will be incorporated into the Construction Environmental Method Statement for the establishment of the Rozelle stabling and maintenance depot.
57.	Fauna and flora monitoring should be undertaken by specialists prior to, during and after construction and appropriate strategies implemented to maximise the opportunities for habitat reinstatement for native species. Council does not have any resources available to undertake such work.	As above
58.	In support of re-establishing areas of habitat local provenance native plants should be used in the Rozelle depot site. Plants should be sourced from specialist nurseries or grown on from seed stock collected from the site and surrounding areas.	Given that no natural habitats or remnant vegetation is present within the former Rozelle Marshalling Yard harvesting of seed stock from the site will not be possible. As noted in response to comment 54, the use of local provenance vegetation from the Rozelle Bay Community Native Nursery will be considered in finalising landscaping treatments.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Waste		
59.	Given the depth of the stations underground and restricted spaces/excavation needs, operational waste separation should emphasise that bulk reduction (by compaction) of recyclables and waste should occur at the point of disposal with the installation of simple innovations such as can crushers adjacent to waste bins etc. All stations, the depot and construction sites should incorporate appropriate waste recycling opportunities.	Waste management facilities to be installed in and around stations and within the Rozelle stabling and maintenance depot will incorporate waste recycling opportunities, where practicable.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Sustainability		
60.	More demanding energy targets in the design, construction and operation of the Metro are sought.	Sydney Metro has committed to the purchase of 20% renewable energy during construction and 100% renewable energy during operation.
61.	The fundamental Environmentally Sustainable Development principle of inter-generational equity in relation to this project requires further, detailed consideration. Previous sections of this submission note that the project should be the subject of a rigorous Cost Benefit Analysis and Triple Bottom Line reporting. That analysis should include an assessment of whether this is the optimum solution for delivering equitable public transport to the Sydney Greater Metropolitan Region and result in more sustainable transport and land use practices.	The EA addresses the issue of inter-generational equity in the project justification, which has been informed by the social impact assessment completed for the EA.
62.	It is noted that ventilation and escalators are projected to account for over 50% of station energy use and 25% of all operational energy use. It is suggested that it is reasonable to expect that higher energy efficiency levels can be achieved in terms of station energy usage in relation to ventilation infrastructure and escalators as well as other aspects of station function and train operations.	Noted. Possible improvements in energy efficiency are a key consideration during the sustainability-in-design review.
63.	Energy Performance Contracting may be just as effective a mechanism to deliver buildings that deliver low carbon outcomes.	This is traditionally undertaken for existing buildings. It is considered that when new structures are being built, integrating sustainability into the design will generate better sustainability outcomes.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Cycling		
64.	The proposal does adequately integrate bicycle planning into the movement network. In particular, bikes will not be permitted on the trains, bike parking needs to be secure and accessible and there is no firm commitment that a linkage will be provided to the Anzac bridge route.	Bicycles are a supported access mode and may support travel behavioural change to cycling and public transport use. Folding bicycles are allowed in Metro stations and on Metro services at all times, in the folded condition. More detail is available in the operational transport section of this report.
65.	The NSW Dept of Planning Bicycle Planning Guidelines and the NSW RTA Bicycle Guidelines consider network planning and connectedness are as important to good path provision as the design of each individual piece of infrastructure. It is considered that the project has not fully demonstrated this approach in its planning. It is not clear how the project would realise the opportunity to integrate bicycles with the project. This needs to be explained in detail and would require further consideration by Council.	As above
66.	Metro operation – Bikes on trains. The Environmental Assessment states that bikes (except folding bikes) will not be allowed on the trains. The only justification given is that it will be "the same as other metro networks" – this is despite metro networks having varying policies on the carriage of bikes	As above
67.	CCTV coverage of bike parking should be included within the requirements of the scheme as where long term bike parking is on-street, theft is a major deterrent to using bikes to commute (especially if a ban on bikes on trains is implemented).	CCTV provisions are not included as part of *every* station entry bicycle parking location. Metro entries, and bicycle parking provided in close proximity to station entries, will naturally be afforded active surveillance by shops, retail frontage or nearby active travel corridors. CCTV or other passive security measures may be investigated by the IMO contractor where less active surveillance is afforded bicycle parking locations.
68.	The Environmental Assessment whilst referring to the Victoria Rd shared path does not refer to Darling St as a bike route, despite it being a strategic route for Leichhardt Municipal Council and the Victoria Rd/Darling Street junction is identified as a cycling "hot spot". The Environmental Assessment should specifically include the Darling St bike route improvements in its design.	This misdescription is noted. Improvements to the Darling Street bike route is a matter for Council
69.	The Bays Precinct Concept Path Plan, recently adopted as part of the Leichhardt Municipal Council bike plan, was explained to the project team during early consultation with LBUG and LMC (Environmental Assessment vol 2 p120). It should be noted that all of the routes as proposed in the Bays Precinct Concept Path Plan are continuous with the existing off-road path over the Anzac Bridge, all serve	Noted

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	existing identified flows to the CBD and neighbourhoods, all maximise the distance travelled, are level and off-road, all are within the area required by the project, and the only significant engineering features are ramps.	
70.	The Environmental Assessment identifies the proposed bridge as connecting the light rail stop at Annandale to Hutcheson Street. Justification for this alignment has not been provided and would be useful in considering this and other alternative options.	This location, which creates a new link across an existing barrier and provides direct access to the Light Rail stop, is considered to be appropriate.
71.	The Environmental Assessment is not explicit as to whether a path from the proposed bridge to the Anzac Bridge path is a deliverable of the project, or merely a "safeguarded route for the future" and the message is inconsistent throughout the Environmental Assessment, sometimes stating that it is “delivered within the Metro project” (p407 & 410 of the Master Planning Strategy) to just being safeguarded as an opportunity for bike routes between the Depot and White Bay (Environmental Assessment Part 2, p122 tables 6.70 and 6.71), i.e., not a deliverable of the project. Cyclists should not have to alight to go around the proposed bus stops.	A link to the Anzac Bridge is not being provided as part of the project. However, the design ensures that the ability for a link is not precluded. At this stage, the future of White Bay is subject to the Bays Precinct consultation process and issues such as access are not resolved.
72.	The Regional Bike Route (EWG) uses Lilyfield Road between Hawthorne Canal bridge and City West Link through to Victoria Road. The report suggests upgrading the route between Catherine Street overbridge and Gordon Street. This should be extended to Victoria Road. This route is on road and not on a share path as indicated in the report.	Noted
73.	Although identified in text, none of the plans show the Bays Precinct Concept Path Plan routes. There is no mention of any integration with The Greenway "green corridor" proposal, which will follow the Rozelle Goods line only a few hundred metres to the west of the Environmental Assessment area.	The Greenway proposal is noted in Chapter 6 of the EA.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Other Developments- Cumulative Impacts		
74.	A development application for redevelopment of the Balmain Leagues Club has been lodged with Council. The development application makes no reference to the project despite the Balmain Leagues Club being the proposed construction for the Rozelle Station and a proposed bus interchange. It is considered that there will be social impacts from the collocation of the proposals and the mix of uses (which includes a registered club/gaming machines). It is advised that the development application for Balmain Leagues Club, as currently lodged with Council, incorporates a design which has not integrated any component of the proposed metro development, either in regard to construction requirements or in relation to ongoing station design and access.	As Council is aware, Sydney Metro has provided conditional concurrence for the Balmain Village Development Application which only allows the current development application to become active if the land is no longer required for construction of the Metro. In effect this requires the proponent to integrate the development with the Sydney Metro Network Stage 1 (Rozelle to Central) in order for any development approval to become active. Sydney Metro is currently in discussions with the proponent to ensure a fully integrated development application is lodged by the Proponents of the Rozelle Village Development. The process of integrating the Rozelle Village application with the Metro will further address potential social impacts including safety, surveillance and access to gaming/club facilities.
75.	It is noted that Sydney Metro proposes that '*station entrance and exit points as well as the pedestrian underpass will be designed to link with the future uses on the Balmain Leagues Club site'.* That is, the public investment in the project will provide a private benefit to the Club.	Sydney Metro endeavours to ensure that all new development properly integrates with the Metro. This will ensure that transit oriented development principles can be achieved. These entrances and exist points will not only serve the Rozelle Village Development but will provide overall community benefit in terms of station access and mode swapping from metro to this district.
76.	The Social Impact Assessment does not mention that the existing Club has a large gaming room and at least one bar. The proposed station and bus interchange would therefore have a direct link into the redeveloped Balmain Leagues Club. There are a number of potential social impacts that should have been considered in the Social Impact Assessment but have been omitted, including: • There are adverse social impacts associated with gambling, particularly gaming machine gambling, including addiction and the adverse flow-on impacts on a problem gambler's family and work colleagues. • Refurbishment of a gaming venue results in increased profit per machine at that venue. Profit per machine is the same thing as gambler's loss. • Gaming take is also enhanced by the location of the venue. The new venue will presumably also have bars serving alcohol. Many social harms are associated with the consumption of alcohol and the density of liquor outlets. In this case, it is not yet known how many bars there may be in the new complex, however, the new venue will operate in area where there are other hotels and liquor	Design measures will be put into place in the integration process to ensure no direct connection between Sydney Metro Infrastructure and gamming facilities. Sydney Metro is not aware of any link between improved transport access to gambling establishments and problem gambling. The refurbishment of the Balmain Leagues club is not an issue associated with the Metro project and therefore the provision of bars and gamming areas within the Rozelle Village is an issue for the proponent and consent authority (Council) to resolve.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	outlets to which those of the new venue will be added.	
77.	If the Balmain Leagues Club site is to be utilised for construction purposes and for the integration of a bus interchange the detailed design of both facilities must be integrated to ensure the best possible urban design outcomes.	Noted. Sydney Metro is in discussions with Rozelle Village to ensure this objective is achieved.
78.	Assessment at the intersection proposed in the project Environmental Assessment at the intersection of Victoria Road and Wellington Street was not included in the Development Application which has recently been lodged with Council. The proposal to provide an indented bus bay for outbound bus services on Victoria Road needs to be reviewed with regard to the Tigers development. A more integrated approach should be taken with the development.	As outlined above Sydney Metro is working with Rozelle Village in anticipation that an integrated Development Application will be made. The project approval for the Sydney Metro Network Stage 1 (Rozelle to Central) will include access and egress arrangements for Rozelle Village from Victoria Road. The detailed interface between Rozelle Village and the Metro will be addressed in a revised application for Rozelle Village.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Other Modes of Transport-Rozelle Bus Interchange		
79.	Council notes that no bus interchange is proposed on the inbound side of Victoria Road and that the transfer of bus passengers to rail has not yet been fully resolved. The time that it would take to access the proposed station platform at Rozelle (at a depth of approximately 27m) may affect the number of passengers who will make that modal change.	There will be no bus interchange provided at Rozelle Station as part of the Sydney Metro Network Stage 1 (Rozelle to Central) project. It is acknowledged that transfer between the Metro and bus is an important determinant of the willingness to use the Metro.
80.	The Environmental Assessment does not include any details regarding the future reorganisation of bus routes either in a local or regional context, including what proposals may be being considered in terms of terminating or re-routing bus services at Rozelle. Council is therefore unable to make informed comments regarding the potential impacts of this aspect of the project upon traffic movement and congestion within the Leichhardt LGA. Council requests that detailed information is provided in relation to the potential reorganisation of bus routes and resultant impacts on traffic and accessibility.	Bus integration and re-routing opportunities have been addressed in Section 5.1.5 of the EA. Moreover, the possible bus route opportunities were communicated to Council officers and views sought during meetings at Council in September 2009.
81.	Insufficient information has been provided in relation to the proposed operation of the “interchange’ at Rozelle, with questions unanswered about where terminating buses would be rerouted.	As above

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	Design Plans- Stations	
82.	Council seeks to be involved in the design and master planning of the Rozelle station and environs. A Design Review Panel and a Design Charette are now proposed and Council needs to ensure that it has adequate representation in those forums.	Sydney Metro has engaged with Leichhardt Council and officers during the preparation of the Station Master Plans and has involved officers in the Design Principles Workshops. The Design Review Panel is an independent advisory group, made up of design, transport and sustainability representatives to provide advice to Sydney Metro during the design process. Sydney Metro will continue to consult with LMC during the IMO design process.
83.	The Environmental Assessment identifies 'others' as being responsible for implementing some of the public domain works needed to fulfil the Master plan. It is considered that the project should be wholly responsible for funding these works.	Sydney Metro is responsible for the delivery of the metro station structures, facilities and public domain works within the Sydney Metro delivery boundary. The Draft Station Plans provide the strategic vision, context and design guidance required to ensure the integration of station entrances and public domain elements within their station precincts. Works identified beyond the Sydney Metro delivery boundary are considered 'future possibilities' to assist in guiding and informing future improvement of the precinct areas and in leveraging funding by other delivery bodies, such as Council.
84.	Some of the proposed works would impinge on a current contract with JC Decaux.	Sydney Metro can discuss the current bus shelter contract with the Council.
85.	All spaces around the station need to be designed and staged to ensure that they function effectively as public or private spaces with adequate surveillance opportunities, appropriate level changes and safe pedestrian/cyclist movement systems incorporated. Council is not convinced that the proposed station plazas provide the best urban design outcomes and will welcome a further, more rigorous design development process.	Sydney Metro is currently undertaking a design exercise to further explore the design of the proposed station entrances and forecourts at Rozelle and Pyrmont. Representatives from Leichhardt Municipal Council have been involved in both Design Principles Workshops. As an outcome of this process, design principles will be prepared to be appended and appended IMO contract to provide design guidance for the IMO contractor. Surveillance, pedestrian/cyclist movement and DDA compliance principles have also been incorporated.
86.	If the proposed station at Rozelle is approved Council expects that sound urban design principles will underpin design development. (Note: Council has provided design principles in their submission).	The urban design principles identified in the Draft Station Master Plans as well as those developed as outcomes of the Design Principles Workshops will be appended to the IMO contract to underpin design development.
87.	Council notes that careful staging of works will be required to ensure that the station environs function effectively regardless of when and which parts of the Master plan are implemented. Council should be involved in all discussions regarding proposed staging of works.	

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	It should be noted that assigning works to Council as part of the staged program is unrealistic as Council has no funds to undertake the work.	No works have been assigned specifically to Leichhardt Council for delivery. However, the Draft Station Plans provide design guidance and direction for the further improvement of the station precincts should council or others wish to do so.
88.	It is also inappropriate to identify sites in the Master plans as future development sites. Strategic planning for those areas remains the responsibility of Council. To include them in the Master plans may establish inappropriate expectations regarding the future of such sites and cause unnecessary concern amongst the community. All references to future or potential development sites should be deleted.	The Draft Station Plans define 'potential development sites' as those not constrained by heritage listing, recent development, existing towers (over 100 metres in height) or strata ownership. These sites have been identified through the master plan analysis process to identify areas with potential for increased population densities and thereby inform the location and design of station entrances.
89.	Council's Parks and Streetscape section considers that the works that have been identified in Table 6.6. Public domain enhancements – Rozelle Station as being 'provided by others' should not be the responsibility of Council. The implementation of any Master plan for Rozelle Station and its environs should be the responsibility of Sydney Metro. Council notes that the proposed station plazas would require significant public domain works. The works proposed by Sydney Metro should stand alone as an integrated design and not be reliant on works to be completed by Council in order for the Master plan to function effectively and safely.	Sydney Metro is responsible for the delivery of the metro station structures, facilities and public domain works within the Sydney Metro delivery boundary including the proposed station plazas. The Draft Station Plans provide the strategic vision, context and design guidance required to ensure the integration of station entrances and public domain elements within their station precincts. Works identified beyond the Sydney Metro delivery boundary are considered 'future possibilities' to assist in guiding and informing future improvement of the precinct areas.
90.	Council does not support the future pedestrianisation of the northern end of Hancock Street. That proposal is not consistent with Councils objectives in relation to maintaining current levels of on-street parking for local residents. It is also noted that removing car access will increase the sense of alienation for those pedestrians who do use that space and would reduce vehicular access to the immediate urban environment.	The Draft Rozelle Station Plan does not propose pedestrianisation of the northern end of Hancock Street.
91.	Council requests that provision be made for public toilets within the station entrance area and that the facilities be available to the public when the station is operational. The existing toilets are open from dawn to dusk. Access to the new toilets would be required for at least those hours.	Each metro station includes at least one toilet facility within the paid area which would be available during operating hours.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Station Plans- Transport		
92.	Council has an adopted Pedestrian Access and Mobility Plan (PAMP) which indicates identified major pedestrian routes i.e. Victoria Road, Darling Street, National Street, Merton Street, Cross Street, Wellington Street, Terry Street, Wise Street and Beattie Street to the north of Rozelle Station and Cambridge Street, Moodie Street and Manning Street to the route. Robert Street and Mullens Street should also be noted for the future White Bay Station. The above routes need to be considered as part of the project.	Noted.
93.	Bicycle parking should be appropriately located within the scope of works of the project. Where long term bike parking is on-street, theft is a major deterrent to using bikes to commute (especially if a ban on bikes on trains is implemented). Best practice in this field would be to include high profile CCTV coverage of bike parking should to be integrated with other security measures, which will be a significant theft deterrent and mitigation for any ban on bikes on trains.	Passengers may use bicycles as a mode of access to the Metro, given the proposed secure and weather-protected bicycle parking facilities provided at all Sydney Metro station entries. Wherever possible to accommodate the ambitious goals of state and local government agencies to increase rates of cycling for the whole trip or just part of a trip, say combined with Metro. A monitoring strategy to trigger the additional provision of bike parking/ safety and security measures at parking locations (Technical Paper 1, p. 51).
94.	A new bus stop is proposed in Darling Street between Waterloo Street and Victoria Road and will affect Darling Street traffic. Darling Street is a State Road and any changes which will affect traffic will require RTA consideration.	Noted
95.	The implementation of a Kiss n' Ride facility will impact on traffic movements in Darling Street on either side of Victoria Road. Council is also concerned that the proposal would result in the loss of on-street parking in the Darling Street main street.	Kiss and ride options at Rozelle will be explored with RTA and Council officers. At this point the provision of spaces in Darling Street to the north and south of Victoria Road is preferred.
96.	The Master plan identifies an indented bus bay on Victoria Road (4 bus stops). That location has previously been identified as necessary as a deceleration lane for access to the Balmain Leagues Club site. Alternative access arrangements for the site will need to be resolved in conjunction with the preparation of the project Master plan.	The preferred arrangement to accommodate bus and other vehicle access at Rozelle (outbound) is being currently examined. The EA presents a solution that accommodates the required deceleration lane and moves the left in/out on Victoria Road further to the west to avoid conflicts with the bus lay-by.
97.	The Environmental Assessment does not indicate that some bus stops are proposed to be changed under the Inner West Bus way Project. 2 bus stops (with shelters) are proposed for construction north of Victoria Road and west of Darling Street. The location of those proposed bus stops should be discussed with the Inner West Bus way section of the RTA.	Noted.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
98.	The Environmental Assessment proposes two inbound bus stops (for two buses) on the approach and departure sides of Darling Street which conflicts with previous advise that a three bus lay-by would be provided on the approach side of Darling Street.	A split bus arrangement on the inbound side of Victoria Road is preferred having regard to the ease of Metro station access, the access needs of disabled persons and topographic constraints at this location.
99.	The Master plan should address ways in which commuter parking will be limited in areas around the station.	Council officers have reaffirmed that the introduction of the Sydney Metro Network Stage 1 (Rozelle to Central) will necessitate a reappraisal and possible extension of their resident parking scheme as one means of managing parking in the vicinity of the Rozelle station. No commuter car parking will be provided at Rozelle station as part of the Metro proposal.
100.	The pedestrian counts for Rozelle were undertaken on Friday 17 April 2009. Counts should have been undertaken on more than one day, including a Saturday. The pedestrian counts would be significantly different as a second hand market is located on the school grounds every Saturday and Sunday from 9am to 4pm.	We acknowledge that there are weekend off peak pedestrian demand generators in the locality, the needs of which have been taken into account in the EA assessment.
101.	The project must discuss any proposed changes to bus shelters, installation of new bus shelters with Council as Council has a bus shelter contract with JCDecaux.	Council will be consulted as the Sydney Metro Network Stage 1 (Rozelle to Central) proposal is developed.
102.	Taxi and kiss'n'ride – any opportunity for kiss'n'ride zones needs to be carefully considered, especially their size and location so as to not impact on bus services or through traffic in the shopping centre. Consideration should be given to ensuring that adequate buses service the Rozelle Station, especially using Darling Street to reduce the reliance on private motor vehicle trips. An extended bus zone would provide a better solution then providing kiss'n'ride parking which is not favoured.	Kiss and ride options at Rozelle will be explored with RTA and Council officers. At this point the provision of spaces in Darling Street to the north and south of Victoria Road is preferred.
103.	Any provision of a Taxi Rank will need to be discussed with the NSW Taxi Council and affected residents / businesses and Council.	Discussions have been held with the Taxi Council and their views taken into account.
104.	The relocation of the inbound bus stop east of Darling Street should occur to prevent likely conflicts with left turning trucks onto the St Thomas site.	Yes, this has been provided for in Section 5.6 of the Rozelle TMP.
105.	Assistance and guidance will be required for all mobility impaired and sight impaired pedestrians.	Noted
106.	Any loss of parking on the Darling Street frontage needs to be identified and Council to be advised.	Noted
107.	It is noted that most truck movements will require "left turn" movements which will involve a wider opening at the worksite driveway and boundary entrance. This movement is worse for heavy vehicles than right turn movements. The proposed alternate access routes via Terry Street / Beattie Street to Darling Street and using	Noted. Generally the approach to the management of truck traffic is to limit access to and from Victoria Street. This necessitates left turns which are less disruptive to traffic flow along Victoria Road.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	Moodie Street / Waterloo Street to Darling Street are not supported.	
108.	Council's comments on the treatment of the public domain are provided in Council's submission and should be included in the Station plans	Noted

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Rozelle Depot -Traffic		
109.	The information in the Station Plans and the Environmental Assessment does not clearly articulate how the proposal for the stabling yards and depot might integrate with the potential future extension of the M4 East extension.	The Depot Master Plan places most depot structures on the northern part of the site.
110.	No heavy vehicles should use surrounding residential streets, particularly on Lilyfield Road, Catherine Street or Gordon Street during operation of the depot.	There may be the need for some heavy vehicles to use Gordon street to access the worksite in the very early phases of development before the access intersections are available on the City West Link Road frontage to the site.
111.	Sydney Metro should provide an operational plan and meet the cost of any load limits, resident parking scheme or other traffic management LATM scheme required in the vicinity of the depot site.	This request is acknowledged. Further discussion and consideration is required.
112.	Lilyfield Road streetscape & traffic parking design to be submitted to Council for approval (& LTC approval). All works to be undertaken at no cost to Council.	Noted.
113.	Provision for loss of parking alterations to be considered only following a survey of neighbouring resident to be undertaken at the applicant's cost.	This request is acknowledged. Further discussion and consideration is required.
114.	The following issues are raised in relation to the proposed accesses to the depot and the impact on surrounding streets, including the City West Link :	Addressed below (see a-l).
	a. Access from City West Link Gordon Street – and defaults.	Potential impacts are assessed in the EA.
	b. The proposed pedestrian bridge is only 2.5 m wide. A 4 m wide bridge should be considered to accommodate cyclists and pedestrians.	The bridge as proposed by Sydney Metro is approximately 4 metres wide and will be designed in accordance with standards for pedestrian and cycle bridges.
	c. Need to consider providing a crossing/refuge in Lilyfield Road to connect to overbridge and also connection at eastern end.	This request is acknowledged. Further discussion and consideration is required although the feasibility is questioned. The bridge has been designed to link Lilyfield Road with the Light Rail stop at Annandale.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	d. The connection at the eastern end should also provide direct connection to the existing pedestrian/cycle facilities at The Crescent.	As above
	e. Fig 6.25 indicates "Reserved land for future transport infrastructure" and it is noted that the useable width of this corridor is quite narrow at the north-east end near Victoria Road and this raises what the work of this corridor is?	The station plans identify the potential for a future pedestrian cycleway to the north east. At present, community consultation is underway on the future of the Bays Precinct. The depot design reflects the aim of trying to ensure that future access proposals that might arise through that process are not precluded.
	f. Further information is required regarding the access from City West Link and how separation of bicycle and cars will be achieved.	Vehicular access via the City West Link Road has been agreed with the RTA. It is not intended that the access driveways on city West Link Road would accommodate public pedestrian or cyclist access during construction. Scope does exist to make provision for pedestrian and cyclist access post construction, however, that would need to be agreed with relevant authorities and factored into the broader master planning of the Depot site.
	g. Integration with the Road Network. Evan Street and Terry Street are not sub-arterial roads and act as collector roads and should be dealt with as such.	Noted
	h. All access for construction traffic must be via City West Link, Victoria Road and The Crescent.	Noted. There may be the need for some heavy vehicles to use Gordon street to access the worksite, particularly in the very early phases of development before the access intersections are available on the City West Link Road frontage to the site.
	i. Traffic generation figures need to be provided for Depot access via Gordon Street and Lilyfield Road.	This information is provided in the last paragraph of section 6.8.2 of Technical Paper 1.
	j. Details need to be provided on the implementation of LATM initiatives near Depot at Lilyfield Road.	Noted
	k. Heavy vehicle movements proposed outbound onto Lilyfield Road need to be reconfigured to use the main arterial road system.	A net reduction of traffic activity including heavy vehicles along Lilyfield Road is anticipated post Metro operation.
	l. Depot construction traffic to use City West Link – not Lilyfield Road or other residential streets including Gordon Street.	Noted
115.	Pedestrian cycle bridge to be DDA compliant and provided with CCTV security system 7 day 24hr and be provided with lighting at no cost to Council. Pedestrian Cycle Bridge to additionally link to the footpath level at The Crescent, Annandale with a graded ramp. Bridge to be under ownership and maintenance of the project (or other agency other than Council).	The alignment and grounding of the pedestrian and cycle-way bridge is determined DDA requirements, gradient constraints, pedestrian and cycleway linkages and spatial requirements. Bridge ownership and maintenance responsibilities will be considered further at detailed design stage.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Rozelle Depot		
116.	The applicant to meet the cost of streetscape improvements & landscape improvements in Easton Park to cater for the amenity of workers at the proposed depot.	Eastern Park is outside the Sydney Metro worksite boundary.
117.	Additional proposed Open Space and future East West pedestrian and cycleway link to be provided (as shown parallel to the City West Link) at no cost to Council. Plan of Management for Open Space to be prepared at no cost to Council. Land to be owned and managed by others.	The southern portion of the depot site has been kept free of structures and the opportunity for future access is shown on the Master Plan. This is to address potential access requirements that may arise through the community consultation on the Bays Precinct
118.	Potential visual impact of the proposed sound wall adjacent to Lilyfield Road	Sydney Metro recognises the importance of high quality design for all structures associated with the depot.
119.	Potential impact of depot lighting from the 8m high (60m diameter) landscape mounds adjacent to City West link.	The depot design will address lighting and the need to minimise light spill to surrounding areas.

No.	Leichhardt Municipal Council Issue	Sydney Metro response
Traffic and Transport		
120.	Councils proposed framework for public transport includes:	Noted
	a. Establish an integrated subregional and metropolitan public transport network Without a plan to integrate the metro rail planning with the metropolitan wide public transport network, projects such as the project will be costly and risky. A plan putting forward the proposed total Metro network and the role of the project is required. It should include routes, modes, budgets, design and implementation and construction timetables.	NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management. Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW. A key component of the blueprint is the development of a Metro Network Strategy, integrated with improved CityRail services and rail system enhancements. A sub regional plan is not envisaged at this time.
	b. Establish an integrated land-use and transport plan	As above

No.	Leichhardt Municipal Council Issue	Sydney Metro response
	A new methodology needs to be developed that more adequately addresses the interactions between land-uses and transport options.	
	c. *Establish a clear development concept* A number of land use scenarios should be prepared and debated for the strategic lands located around the Bays Precinct, including the Rozelle Depot and Stabling yards, the area around the proposed White Bay station box and Rozelle itself. This would include options for open space and recreation, commercial and residential development including affordable housing and special uses.	The Master Planning of White Bay will be progressed by the Sydney Harbour Foreshore Authority under the Bays Precinct Project. Sydney Metro has provided a submission to SHFA focussing on design guidance in relation to the integration of the safeguarded metro station with future planned development.
	d. *Undertake an evaluation of alternatives* Investment in public transport requires a rigorous assessment and evaluation of alternatives. The assessment should include light rail, metro and buses and include discussion of light rail infrastructure connections to Dulwich Hill and the CBD. All cost benefit analysis should be available for public consideration.	Alternatives are assessed in Chapter 5 of the EA.
	e. *Demonstrate significant improvements in accessibility* The project Environmental Assessment does not demonstrate how improvements in accessibility will be achieved.	Chapters 6, 14 and 22 of the EA specifically demonstrate how the design the Metro and its stations contributes to improved accessibility at the local level and how the Metro services will work with other modes to deliver regional and cross regional accessibility improvements.
	f. *Quantify impacts* The Environmental Assessment does not quantify potential economic impacts and adequately address potential social impacts of the project. It does not incorporate world-best practice. A starting point would be to consider methodologies developed by the OECD and the Eddington report into transport infrastructure in the UK.	Social and Economic trends are addressed in Chapter 16 of the EA.
	g. *Establish a partnership between the three tiers of government* Given the strategic importance of inner city lands such as the Rozelle Stabling Yards and areas in the Bays Precinct Leichhardt Council seeks mechanisms which will establish partnerships between local, state and Australian Governments in relation to transport strategies and funding.	This is a matter for Council to raise with the NSW Department of Industry and Investment.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
121.	*SoC No.4* Council seeks a more specific Statement of Commitment in relation to the waste recycling facilities to be provided at stations, the depot and all construction sites.	Addressed by Statement of Commitment No. 74
122.	*SoC No.5* Council seeks a commitment to off-site (as well as on-site) water harvesting to meet the requirement for 4.7 million litres of water required per annum for train washing and other activities at the Rozelle Stabling Yards.	As set out in Statement of Commitment No. 5 a target of 95% recycling of train wash water has been adopted for the project. Water usage will therefore be limited, negating the need to harvest water from other sources including stormwater. The general philosophy in site water management is to separate upstream stormwater runoff from site stormwater to minimise the potential for pollution to waters. It is also noted that any alternative water supply arrangements need to be available on demand and reliable and it is unlikely that the proposed stormwater harvesting can meet these requirements.
123.	*SoC No.5* Council seeks a commitment that stormwater harvesting facilities be installed within the site to collect and harvest stormwater from existing Council or Sydney Water drainage lines within the site.	See response to Comment 122.
124.	*SoC No.5* Council seeks a commitment that any proposed works do not cause or exacerbate existing flooding problems, or limit Council's capacity to address flooding problems upstream or adjacent to the site.	The depot will be designed to avoid any increase in inundation levels in a 1 in 100 year flood event.
125.	*SoC No.5* Council seeks a commitment that all public drainage systems that currently run through the site should be upgraded to ensure that the combined minor/major (piped /overland system has capacity to convey the 100 ARI storm event.	The general philosophy adopted for site water management is to separate upstream stormwater runoff from site stormwater to minimise the potential for pollution to waters. The upgrading of existing drainage systems is outside the scope of the project.
126.	*SoC No.5* Council seeks a commitment that development is designed to address all relevant guidelines of the NSW government floodplain development manual 2005, with floor level of all buildings should be a minimum of 500mm above the ARI flood level.	Hydrology and flooding will be further considered in developing the design of buildings and plant on this site in consultation with Leichhardt Council.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
127.	*SoC No.5* Council seeks a commitment that adequate drainage infrastructure be installed adjacent to the boundaries of the affected properties, supported by drainage easements where appropriate, sufficient to accommodate connection from these properties.	As noted in the response to Comment 50 hydrology and flooding has been considered in developing the reference design and will be further considered during detailed design development.
128.	*SoC No.6* Council seeks a Statement of Commitment to instigating a capture and relocation strategy for native fauna (including snakes)	As noted in the response to Comment 56, a suitably qualified and experienced fauna handler will be present on site to capture and relocate any fauna.
129.	*SoC No.6* Council seeks a Statement of Commitment to ensure the progressive removal of on-site vegetation at the Rozelle Stabling Yards to enable native fauna to relocate progressively	This recommendation is not supported as it may exacerbate potential impacts on any fauna present on site. Please see response to Comment 55.
130.	*SoC No.6* Council seeks a Statement of Commitment which will require the use of local provenance plant stock (Lower Parramatta River stock) in the Rozelle Stabling Yards.	As noted in response to comment 54, procedures for the relocation of any fauna found within the site will be incorporated into the Construction Environmental Method Statement for the establishment of the Rozelle stabling and maintenance depot.
131.	*SoC No.7* Council seeks a Statement of Commitment for monitoring of bus congestion to occur on completion of the project, as this is one of the stated aims of the project	This is not supported. Bus monitoring is a matter for the State Transit Authority.
132.	*SoC No.8* Council notes that the Green Star rating system does not yet apply to industrial spaces (although a draft tool exists). Green Star ratings themselves are not an indicator of end use energy consumption – more a design tool. Sometimes this results in over engineered designs when a simpler, lighter footprint design would be a more sustainable outcome.	Resource reduction is a basic concept of the Green Star tool. As such, it is unlikely that using it will result in over-engineered designs, as these would need to account for the large increase in resource use.
133.	*SoC No.8* Energy Performance Contracting may be just as effective a mechanism to deliver buildings that deliver low carbon outcomes. Similarly, high water conservation design could be achieved using simple, good design measures.	Energy Performance Contracting is traditionally undertaken for existing buildings. It is considered that when new structures are being built, integrating sustainability into the design will generate better sustainability outcomes. With regard to water conservation, section 12 of the EA states that WSUD principles will be used when designing the depot facility. Also, WSUD principles will be employed during the sustainability-in-design review

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
134.	*SoC No.10* Council seeks a Statement of Commitment that the Design Review Panel includes a representative of Leichhardt Council. Council also seeks a commitment that the design process be by way of a charette with community input. There should be both broad community and council representation in the charette process.	The Sydney Metro Design Review Panel is independent advisory panel comprising design, transport and sustainability specialists to provide design advice during the design process. No stakeholders have been included on the panel to ensure independence. Comment from Council related to design issues will be sought at various stages of the design process.
135.	SoC No. 11 Council seeks a Statement of Commitments relating to the design and construction of the Rozelle Station which includes: • Areas for public domain improvements and ongoing maintenance outside of the land controlled by the project to be at no cost to Council. • The Design of Main street footpath improvement areas to be in accordance with Darling Street Master plan and to be submitted for Council approval. • Streetscape paving materials to have minimum 50 year life expectancy. • The public footpaths to be upgraded with paving, footpath lighting and street furniture to Council's satisfaction on Victoria Road and Darling Street and side streets as required in area bounded by Waterloo Street, Moodie Street, Withecombe Street and National Street. • Solar access, public toilets, disabled access, general public amenity to be provided in public domain spaces to Australian Standards. Facilities to incorporate provision for public meetings / gatherings such as power and a public address system available for community use. • Proposed open public domain areas to be protected as far as practicable from vehicle exhaust and prevailing winds (some form of screening, given the noise and pollution coming from Victoria Road). • Directional signage is to be provided at Rozelle Station, with Council to review the details, with nearby facilities such as Balmain Hospital, Bay Run, Callan Park, Dawn Fraser Pool, Balmain Town Hall, Iron cove Bridge, etc • Operational Waste Management Plan to be provided to service the proposed public domain areas ideally from the project corridor (via tunnel and barge). Reliance on road transport to be negligible for cleaning and operations of proposed station. • The link from the existing Anzac Bridge path, under Victoria Rd to some point on Lilyfield Rd and Annandale will be delivered as part of the project	Sydney Metro is currently undertaking Design Principles workshops involving representatives of the community and stakeholder groups. Sydney Metro will only deliver works identified within the Sydney Metro delivery boundary. Future planning and delivery of public realm improvements outside of this boundary are the responsibility of others, such as council.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
	construction to result in a path to the Anzac Bridge path, via the railway alignment, is delivered at the same time as the new shared bridge is constructed,	
136.	SoC No.15 Council seeks a commitment that the Chemist shop at Rozelle and any other displaced retail premises should be the first to be accommodated in any new development replacing the demolished sites.	This is a commercial issue between Sydney Metro and acquired businesses. All acquisition will be undertaken in accordance with the *Land Acquisition (Just Terms) Compensation Act.*
137.	SoC No.18 Public Artwork to be provided in public domain space with final details to be submitted for Council approval. Aboriginality and interpretive signage to also be considered.	Sydney Metro has prepared a Public Art Strategy. Public Art will also be considered by the Design Review Panel.
138.	SoC No.22 Council seeks a commitment include the following: • That the concept of trigger level be removed and changed to noise limits. • That the noise management criteria include reference to the DECCW sleep arousal criteria of Background + 15dB(A)	Sydney Metro has agreed to adopt the ground-borne noise trigger levels as noise limits. The DECCW's sleep arousal screening criterion of Background + 15dBA is not applicable for background noise. The DECCW's *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* document notes that the World Health Organisation recommends that maximum noise levels greater than 45dBA should be avoided for a good night's sleep. This level of 45dBA is 10dBA higher than the 35dBA noise limit adopted by Sydney Metro
139.	SoC No.24 Council seeks a commitment that the concept of 'trigger levels" be removed and compliance required.	This is already referred to in Statement of Commitment No. 24
140.	SoC No.24 Council seeks a Commitment that the Noise Guide for Local Government sleep arousal criterion of background plus 15dB(A) is used in conjunction with background noise levels which accurately reflect noise levels currently being experienced. This means that sleep disturbance goals associated with air dryer and brake release noise levels need to be reviewed.	The DECCW's sleep disturbance screening criterion of background + 15 dBA is not applicable for train passby noise. Air Dryer and brake release noise levels are assessed as part of the train stabling and maintenance noise assessment.
141.	SoC No.24 Council seeks a Commitment that the reference to feasible and reasonable be removed.	The Construction Contractor will be required to produce a noise and vibration technical report which demonstrates how the airborne noise levels will comply with the noise limits.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
142.	SoC No.28 Further design work is required to fully contain the noise. Council seeks a Commitment that the Noise Guide for Local Government sleep arousal criteria of background plus 15dB(A) is used in conjunction with background noise levels which accurately reflect noise levels currently being experienced. This means that sleep disturbance goals associated with air dryer and brake release noise levels need to be reviewed.	Further design work will be undertaken by the contractor during the detailed design of the facilities. The assessment undertaken for the EA indicates that the adopted noise limits will be achieved with the proposed mitigation measures. The noise assessment has applied the DECCW's background + 15 dBA sleep disturbance screening criterion to assess the potential noise impacts associated with air dryer and brake release noise. The assessment undertaken for the EA indicates that noise levels from these sources will comply with the DECCW's sleep disturbance screening criterion at all locations.
143.	SoC No.30 Further design work is required to fully contain the noise.	Statement of Commitment No. 30 sets noise limits based on DECCW's Industrial Noise Policy.
144.	SoC No.32 Council seeks the following Statement of Commitments: • That there be no loss in amenity for existing residential and commercial premises in Leichhardt • That Acoustic and Vibration criteria be specified that protects the existing amenity • That additional noise control works or other construction methods must form part of the assessment That the Rozelle stabling yards be redesigned to contain the noise • That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative. • That independent noise and vibration monitoring be overseen by Council at the full cost of the proponent	Refer to Items 43-45.
145.	SoC No.34 Council is seeking a commitment that a full business impact statement is prepared, including quantification of impacts on business turnover for each affected business.	Business impacts are addressed in Chapter 16 of the EA. Statement of Commitment No. 34 commits to the establishment of a Business Management Strategy.
146.	SoC No.34 Council is seeking a commitment that any compensation for property acquisition fully compensates the affected persons, including employees.	Property acquisition will be undertaken in accordance with the *Land Acquisition (Just terms) Compensation Act.*
147.	SoC No.34	Statement of Commitment No. 34 commits to the development of a Business Management Strategy which includes the provision of

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
	Council is seeking a commitment that any business that is unable to continue to operate during the construction phase as a consequence of disturbance have all their costs borne by CBD metro to temporarily relocate. This includes community/not for profit organisations such as the Rozelle Neighbourhood Centre which is likely to be significantly adversely impacted. There needs to be a methodology to quantify impacts on businesses and an independent assessment of how much business viability is impacted during construction and businesses compensated.	Small Business Owners Support Program to provide assistance to small retail businesses adversely impacted by construction. For more information refer to the Social and Economic section of this Submissions Report.
148.	SoC No.40 Rozelle do not lead to significant loss of heritage value the following commitments should be included: • A heritage interpretation strategy be incorporated into the master plan to ensure the heritage values of the commercial precinct at Darling street & the historic development patterns of the properties either side are communicated in the station precinct. • A comprehensive photographic archival recording of the interior and exterior of the buildings is their current setting be undertaken in accordance with heritage branch of the DoP guidelines.	These activities are not required at Rozelle.
149.	SoC No.46 Council seeks a Statement of Commitment that Council will be provided an opportunity to utilise quantities of Yellow Block sandstone for local projects in recognition of its connection historically to the locality and in reducing transport-related energy consumption	Sydney Metro will consult with the Department of Commerce with regard to yellow block sandstone as they are the appropriate authority.
150.	SoC No.51 Council seeks the following Statement of Commitments: • All Traffic Management Plans to be supplied to council. • All construction waste to be removed where possible via tunnel and barge. No on road waste transfer via Council managed roads or via Darling Street / Balmain Road. • Pedestrian crossings at grade to remain operational throughout construction and after. • Darling Street traffic crossing Victoria Road to not be impeded unnecessarily during works. • Temporary parking areas for shoppers to be provided to replace any lost parking in vicinity of the station due to the works.	Refer to Items 27-41.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
	• Construction management plan to include strategy for servicing neighbouring premises, garbage disposal, pedestrian and cycle route maintenance, maintenance of traffic routes at the intersection of Victoria Road and Darling Street. • Detailed dilapidation survey required prior to any construction for all surrounding Local Regional or State roads and footpath assets in say a 100m radius vicinity of the site. • Details of proposed dilapidation survey parameters to be agreed with Council's Manager Assets. Applicant to bear the cost and renewal of all public road assets damaged during the works. • Limit access of construction traffic to Victoria Road only. (as use of Waterloo Street will detrimentally impact on residents and Darling Street north of Victoria Road would detrimentally impact on operation of intersection which becomes a more important access point following closure of right turn into Evans Street at Victoria Road.) • Pedestrian access around the site at Rozelle requires greater footpath widths to cater for increased bus patronage with the Inner West Bus way. • Safety of all pedestrian / cycle traffic, including school children around site. • All parking for construction workers must be provided on site within White Bay construction sites. • Needs of cyclists are given a high priority as well as pedestrians, and their use of shared paths around construction sites, to eliminate any "squeeze" points. • All footpath crossing to be managed for all road users. • All modelling scenarios for construction traffic to include delivery trucks, not just spoil removal figures. • That current LoS is maintained or improved for the Victoria Road / Darling Street intersections (Note: the EA has identified improved LoS and this is questioned given increased traffic/truck movements and the removal of the right turn into Evans street from Victoria Road) • That all access arrangements and intersection performance at City West Link and Victoria Road must meet all RTA requirements. • That all road users – including cyclists – require to be included in the preparation of TMl and TCP. • Any proposed changes of construction hours must also be forwarded to Council for its consideration and approval.	

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
151.	SoC No.53 Council seeks the following commitments: • That additional monitoring be undertaken in the area of the Rozelle Stabling Yards to more accurately characterise the ambient background noise levels. • That there be no loss in amenity for existing residential and commercial premises in Leichhardt • That Acoustic and Vibration criteria be specified that protects the existing acoustic and vibration amenity. • That additional noise control works or other construction methods must form part of the assessment • That the Rozelle stabling yards be redesigned to contain the noise • That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative. • That independent noise and vibration monitoring be overseen by Council at the full cost of the proponent	Refer to Items 42-47.
152.	SoC No.54 Council seeks that the Statement of Commitment include the following: • the concept of trigger level be removed and changed to noise limits. • That the noise management criteria include reference to the DECCW sleep arousal criteria of Background + 15dB(A)	In relation to the concept of trigger levels, refer to Item 43. In relation to night-time construction activities, the Sydney Metro *Construction Noise and Vibration Management Strategy* already includes a requirement to undertake an assessment of the potential sleep disturbance in accordance with the DECCW's sleep disturbance screening criterion of background + 15 dBA
153.	SoC No.55 Council seeks the following Statement of Commitments: • That the Sub plans referenced in this section require compliance with the reference 54 (amended) noise limits. • Note: the use of the sub-plan as expressed in this reference does not require any compliance with limits in the public domain. • That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative. • That independent noise and vibration monitoring be overseen by Council at the full cost to the proponent	Refer to Items 42-45.

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
154.	SoC No.58 That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative.	This is covered in the Sydney Metro *Construction Noise and Vibration Management Strategy*.
155.	SoC No.58 That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative.	This is covered in the Sydney Metro *Construction Noise and Vibration Management Strategy*.
156.	SoC No.58 Remove reference to feasible and reasonable.	Refer to Item 43.
157.	SoC No.60 That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative.	This is covered in the Sydney Metro *Construction Noise and Vibration Management Strategy*.
158.	SoC No.60 Remove reference to feasible and reasonable	Refer to Item 43.
159.	SoC No.61 That where acoustic and vibration result in reduced amenity then temporary relocation of residents/businesses must be provided as an alternative.	This is covered in the Sydney Metro *Construction Noise and Vibration Management Strategy*.
160.	SoC No.61 Remove reference to feasible and reasonable.	Refer to Item 43.
161.	SoC No.61 Compliance with the sleep arousal criterion is considered the minimum standard. In Council's view there should be no loss of acoustic amenity for our residents.	The Application Notes to the DECCW's *Industrial Noise Policy* indicate that if the background + 15dBA *"criterion is met, sleep disturbance is not likely, but where it is not met, a more detailed analysis is required"*. The Sydney Metro *Construction Noise and Vibration Management Strategy* is based on the recommended DECCW guidelines and where the screening criterion is exceeded, further detailed analysis is undertaken in order to assess the likely impacts and determine if additional mitigation measures are required.
162.	SoC No.67 Council seeks a Statement of Commitment which includes strategies for the protection and/or relocation of native fauna found onsite	As noted in the response to Comment 56, requirements and procedures for the relocation of any fauna found within the site will be incorporated into the Construction Environmental Method

No.	Leichhardt Municipal Council Draft Statement of Commitments	Sydney Metro response
		Statement for the establishment of the Rozelle stabling and maintenance depot.
163.	SoC No.68 Council seeks a Statement of Commitment to the preparation of a Noxious Weed Management Plan which addresses the protection of fauna	As noted in the response to Comment 58, noxious weed management requirements and procedures for the relocation of any fauna found within the site will be incorporated into the Construction Environmental Method Statement for the establishment of the Rozelle stabling and maintenance depot.
164.	SoC No.69 Council seeks a modified Statement of Commitment. The Landscape Management Sub-Plan should address fauna as well as flora. Fauna and flora monitoring should be undertaken by specialists prior to, during and after construction.	Fauna monitoring will also be addressed in the Landscape Management Sub Plan.
165.	SoC No.71 Council seeks a Statement of Commitment that both Leichhardt Council should beinvolved in identifying and securing opportunities for work on the project.	Sydney Metro is unsure of what roles Council wishes to secure and why this would be required.
166.	SoC No.72 Council seeks a Statement of Commitment that mechanisms be developed to compensate businesses negatively impacted by the construction and operation, not only those directly impacted by street closures and demolitions but also those indirectly impacted within a agreed catchment area.	Compensation to businesses that would not be acquired is not proposed. However, Statement of Commitment No 34 provides for the development and implementation of a Small Business Owners Support Program to provide assistance to small retail businesses adversely impacted by construction.
167.	SoC No.73 Council will require dilapidation reports prior to any heavy vehicles cross Council's footpaths.	Noted.



4 Consideration of community submissions

ASSESSMENT AND APPROVAL PROCESS

4.1 Project assessment and approval process

4.1.1 Application of Part 3A to the project

Issues included

- *The NSW planning process has a limited time for public exhibition of a large project and is likely to lack the holding of any public hearings into the project.*
- *The Sydney Metro Stage 1, Central to Rozelle project is an example of how infrastructure projects in Sydney are released without the necessary prior strategic framework. The current legislation relies on ad hoc special state policies to circumvent normal processes.*
- *The NSW planning process uses a 'heavy handed' critical infrastructure provision.*

Response

The concern regarding the duration of the public exhibition period for Part 3A projects is noted, however this is a matter for the Department of Planning (Department of Planning).

With regards to this project, the Environmental Assessment (EA) was formally exhibited for 34 days. The submission period was extended by two weeks by the Department of Planning.

With regards to public hearings, provisions have been made in the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the use of independent hearings and assessment panels (IHAPs) to strengthen the assessment process. This could be a panel of experts or a panel of officers representing the Department of Planning and other relevant public authorities. The Minister can decide to convene an IHAP and appoint panel members at any stage in the assessment process to provide important advice on issues of concern[1].

Public hearings may also be undertaken to provide input into the panel's assessment and recommendations. The IHAP then produces a report outlining the issues and making recommendations.

The project was declared as critical infrastructure by the Minister for Planning. As indicated in the EA, the critical infrastructure declaration recognises the importance of the project as the first step of a wider metro rail network and the NSW Government's commitment to its delivery. It also reflects its importance to the state for economic and social reasons, particularly in securing Sydney's future global position.

Two metro lines would form the basis of this broader metro network:

[1] Department of Planning 2006, NSW Major Projects Assessment System: A community guide, March 2006

- Metro Line 1 (City West line) – from Westmead to the CBD and then beyond Rozelle to the north-west.
- Metro Line 2 (City East line) – from Malabar via Maroubra, the Prince of Wales Hospital and University of NSW to the city and beyond to the Northern Beaches.

These lines would support future growth in the north-west, and in the longer term, in the south-east and north. In the very long term, this network could be extended to major cross-regional corridors of demand. The future development of the metro system will be guided by a wider Metro Network Strategy being developed by Sydney Metro.

4.1.2 Adequacy of the statement of commitments

Issues included

- *There is a lack of specific mitigation measures in the statement of commitments to ensure that the property won't be adversely impacted.*
- *The Statement of Commitments are not specific enough. For example, SoC #72 (property damage) does not include information/criteria to determine whether a property is at risk of damage.*
- *Stakeholders will not have an opportunity to have input in the preparation of plans, strategies or reports and most of these documents don't require post-consent approval from Department of Planning.*

Response

The purpose of Statement of Commitment No.72 is to ensure that risks of damage to property are identified and managed. This commitment includes the undertaking of risk assessments by qualified and experienced geotechnical and construction engineering experts for properties at risk of damage, consultation with property owners, the preparation of building condition inspection reports, and the establishment of an Independent Property Impact Assessment Panel for the resolution of disputes.

It is not possible to incorporate more specific mitigation measures into the Statement of Commitments until further work has been undertaken, including finalisation of the design and the construction work method, and preparation of the risk assessments. More detailed mitigation measures would be incorporated into the construction environmental management plan, in the form of site specific construction method statements.

The Construction Environmental Management Plan (CEMP) requires approval from the Department of Planning and provides an overall framework for environmental management of the project. It also provides the principles and guidance on which all sub-plans would be based. Where relevant, sub-plans would be prepared in consultation with key government agencies and stakeholders as required, to ensure all relevant issues are addressed.

4.2 Project funding

Issues included

- *Taxpayers will be liable for funding any contracts signed for the project.*
- *The metro network would be publicly funded, which would attract private-sector operators.*
- *Any money that would have been invested in the CityRail network would be used to sustain the operation of the Sydney Metro Stage 1, Central to Rozelle project.*
- *The metro network would be privately funded and operated at a significant premium.*
- *There is concern over the privatisation of public transport. It is unacceptable for the government to sell the provision of services to private companies for profit.*
- *The project will not support its own cost. Investors are required for probably two-thirds of the construction phase. Given Sydney's record of failed PPPs, will the Government have to carry 100 per cent of the risk? If the network is extended, will extensions be saddled with heavy access costs? Will Treasury have to carry contingent liability for many years even if it reduces subsidies to the heavy rail system?*
- *There is no Federal Government funding and only 10 per cent funding from the State Government.*

Response

The estimated cost of the project remains $4.8 billion. These estimates take into account the station construction and tunnelling both under the city and harbour.

The NSW Government has committed to fully funding Stage 1 of the Sydney Metro Network (Rozelle to Central).

While full Government funding is available for the project, private finance would be sought for the Integrated Metro Operation (IMO) works, which would be delivered as a privately financed project (PFP).

The PFP model would involve the creation of an asset, in this case the station fitout, rail systems and rolling stock, through private sector financing and operating control for a concession period.

The proposed concession period would be 35 years from contract award for IMO with payments based on availability, reliability and other key performance indicators for the Metro System. Patronage risk would be retained by the Government, allowing it to continue to control fares and the frequency of services.

The proposed model for IMO is considered to deliver a better customer outcome including improved service deliveries, reduced whole of life costs, innovation and improved risk management and better value for money to Government than a traditional procurement model.

The Government consistently develops genuine partnerships in financing, creating and managing some social infrastructure where they are in the public interest and would be of benefit to the community. Private financing of economic infrastructure is not new to NSW. Guidelines have been in existence since 1989 and NSW Treasury[2] notes the following:

[2] Working with Government, Private Financing of Infrastructure and Certain Government Services in NSW, NSW Government Green Paper, November 2000.



The NSW Government is strongly committed to the delivery of infrastructure and services to the people of NSW. Requirements arising from population growth, higher public expectations, and replacement of ageing infrastructure demand that the Government explore all avenues that may deliver better services and greater value for money. Privately financed Projects (PFPs) offer opportunities to bring together the ideas, experience and skills of the public and private sectors to develop innovative solutions to meet the community's needs, expectations, and aspirations.

As noted, the NSW Government has committed to fully funding Stage 1 of the Sydney Metro Network (Rozelle to Central) – ie 100 per cent. Funding from the Commonwealth Government is not required for Stage 1.

Importantly, the Commonwealth Government, through Infrastructure Australia, has contributed funding for the pre-construction phase of Stage 2 of the Sydney Metro Network (Central to Westmead).

4.3 Project timing

Issues included

- *There is concern about the speed of the planning and consultation process for the project. The project should be delayed until the public enquiry has been completed.*

Response

The project is fully compliant with the process and requirements for assessment and approval under Part 3A of the EP&A Act.

The Sydney Metro Stage 1, Central to Rozelle project falls within the terms of 'critical infrastructure' as a metro rail line for the Greater Metropolitan Region and has been considered to be essential to the State for economic, social or environmental reasons. The environmental assessment process for critical infrastructure projects is the same as for any other major project.

The critical infrastructure declaration recognises the importance of this project as the first step of a metro rail network and the NSW Government's commitment to delivering it. The provisions of critical infrastructure ensure that the project will be delivered in a timely and efficient manner, as a priority of the NSW Government.

The provision of a metro system for Sydney or the CBD is not a new concept. A metro network was first identified in the 2006 Urban Transport Statement, which recognised that metro would provide the key benefit of operational separation from existing road and rail networks as well as modern rolling stock and train control systems to enhance reliability and facilitate the rapid loading and unloading of passengers.

The original 'Sydney Link' proposal of March 2008 envisaged a North West Metro extending from the Sydney CBD via the Victoria Road corridor to Epping and beyond to Rouse Hill. However, after a review of available funding, the focus shifted to building the first stage of the metro network, between Central Station and Rozelle – the Stage 1 project.

With regards to the speed of the project, some time savings have been achieved in the design and assessment process by beginning with work already completed for the North West Metro project.

Working With Government, Guidelines for Privately Financed Projects, NSW Government White Paper, November 2001.

Accounting Policy, Accounting for Privately Financed Projects, Office of Financial Management (NSW Treasury) Policy & Guidelines Paper, June 2006.

COMMUNITY AND STAKEHOLDER ENGAGEMENT

4.4 Validity of consultation process

4.4.1 Consultation was not adequate

Issues included

- *Consultation has been inadequate as vocal parts of the community have been heard at the expense of other residents and businesses.*
- *Consultation has been inadequate as no valid, verifiable and detailed information has been provided.*
- *Consultation consisted of being advised, rather than being consulted.*
- *There has been a lack of proper information and consultation with the community, businesses and other stakeholders.*
- *The EA has been too technical and too large for the general public to understand.*
- *There was a lack of advertising regarding the information and public community sessions.*
- *Consultation with affected businesses has been inadequate given the scale of the project and the likely impacts.*
- *Residents had apparently been assured by Sydney Metro at a meeting in June 2009 that there would be no construction truck access from Waterloo Street.*
- *The consultation process has been inadequate in relation to finding an alternative site to Union Street terraces.*
- *Residents were not informed of the changes to the project during the consultation process and hence were not able to participate.*
- *Why put Rozelle Goods Yard back on the agenda for the Bay Precinct Community Reference Group when the whole area was going to be used by Sydney Metro as a stabling yard?*

Response

Sydney Metro is committed to meaningful community engagement and as such, carried out an extensive communication and consultation program throughout the development and approval process for the project. Reflecting the significance of the project, a wide range of stakeholders were identified and engaged with as part of the communication and consultation program that was implemented from February 2009, following publication of the Preliminary Environmental Assessment (PEA). Key stakeholders consulted included individual property and business owners, key community and environment groups, councils and government agencies amongst others.

A key focus of the consultation process was ensuring that stakeholders directly impacted by the project (such as residents and businesses along the alignment) had access to appropriate and timely project information. This meant having Place Managers dedicated to liaising with impacted property owners and businesses throughout the development and approvals process.

In order to reach as many stakeholders as possible, a range of communications tools were used, including:

- Letters: targeted letters were used to communicate formally with key community groups and stakeholders and to invite them to meetings, focus groups and other consultation events.
- Meetings with stakeholders: Regular meetings were held with affected landholders to keep them up to date on the latest information including alternative sites. Sydney Metro's property team and the CBD and Rozelle Place Managers chaired these meetings.
- Workshops and industry forums.
- One on one briefing sessions: community and stakeholders (landowners, community and environmental groups) were invited to attend one-on-one briefing sessions with members of the project team throughout June 2009.
- Meetings: Ongoing meetings have been conducted with state government agencies, utility providers, local government, special interest groups and business groups to discuss the project and gain feedback on key issues and concerns.
- Business and community workshops: Small focus groups were held with local Chamber of Commerce members where specific concerns and issues were discussed and noted. Similar workshops were held with key community and neighbourhood groups.
- Industry forums: Industry forums on metro systems were held in May and June 2008, and a formal process of one-on-one consultations was conducted between June and September 2008.
- Street and phone surveys: About 130 face-to-face street surveys were undertaken around the proposed station locations and surrounds. In addition, a telephone survey of residents and businesses was undertaken with 133 people contacted.
- Community updates: Letterbox drops were undertaken to provide information to households potentially affected by the project and for invitations to information sessions. The distribution was primarily to residents and businesses within 60 metres of the project corridor, and included the suburbs of Rozelle, Lilyfield, Balmain, Birchgrove, Pyrmont and businesses and residents around the station sites in the CBD. Over 46,000 letterbox drops were made.
- Media and advertising: Advertisements were placed in local and mainstream press including the Sydney Morning Herald, The Daily Telegraph, Inner West Courier, Inner West Weekly, The Glebe, The Central, City Hub, City News and MX.
- Information and feedback sessions: Information sessions were held in March/April, June/July and September 2009 to provide stakeholders with information about the project and to obtain feedback on key issues. Displays were produced including posters and information on the planning process, noise and vibration, station design and the EA. The updated alignment was shown in aerial route alignment maps and construction site maps. The information on displays etc was also made available on the Sydney Metro website.
- Email: A project email address was made available for community and stakeholders to request information on the project.
- Sydney Metro website: The Sydney Metro website (www.sydneymetro.nsw.gov.au) was established as a central point of up-to-date information about the project.
- Website forum: The Sydney Metro website includes an online discussion forum so the public can discuss and debate about the project.

- Project information hotline: A toll-free project information hotline (1800 636 910) was established to receive and respond to all direct public enquiries.

The information in the EA was available to view at nine display locations and available on CD and electronically through the project website. The EA was also summarised in a 16 page summary brochure available at the display locations, at community information sessions, on the project website and on request from Sydney Metro.

Other publications produced to inform stakeholders about project issues and available at information sessions and electronically on the project website, included:

- Noise and vibration fact sheets.
- Property and leaseholder fact sheets.
- Project updates (targeted specifically for each area along the alignment - CBD, Pyrmont and Rozelle). These updates were also letterbox dropped to relevant residents and businesses in the corridor, explaining the key changes and issues in the EA.
- Artists' impressions, station plan maps and network maps.

Sydney Metro has sought to identify, address and manage issues of interest or concern to the community, government agencies or other interested parties during the assessment and approval process. Throughout the project's development, consultation has provided insight into community and stakeholder views and helped to identify a wide range of potential impacts and mitigation measures. Feedback received from the community has resulted in design modifications, and has helped to refine and further develop the project.

Additionally, Place Managers were appointed to engage with individual residents and business owners / lessees around the CBD, Pyrmont and Rozelle station locations. Place Managers continually met with impacted residents and businesses, local councils, community groups and relevant residents groups. This has been an ongoing process, and consideration of community feedback was reflected in the realignment of station locations at Pyrmont and Rozelle, in line with issues raised by the community.

Sydney Metro is continuing to meet with affected stakeholders and has made direct contact with individuals and organisations in response to their submissions, particularly focused on detailed issues related to property, business operations and mitigation of potential impacts.

Sydney Metro met with representatives of the Waterloo Street Residents Group at a meeting on 12 June. At this meeting construction traffic management was discussed. The project team explained that the main vehicle access to the construction site would be via Victoria Road, with secondary access provided for vehicles, passing commercial premises only, on the south of Waterloo Street. Trucks would not pass residential properties at any time to use the secondary access point and would access Waterloo Street from Darling Street only.

Sydney Metro selected the Union Street location because it is close to both residential and commercial areas of Pyrmont as well as Darling Harbour, making it the best location for passenger access and generating the highest patronage compared with other sites. The EA has details of the other options considered for Pyrmont and why they were found to be unsuitable. A review of station options is attached to the EA for the community to read. It explains that other sites to the north of Union Street were considered but rejected because Union Street attracted far more passengers due to its proximity to key commercial and residential areas. Further, one on one meetings with members of the Sydney Metro project team have been held with the residents and businesses in the Pyrmont area at their request. Sydney Metro is happy to meet with interested parties on request to explain in further detail the design options that have been considered in Pyrmont.

A full and thorough process of consultation with all stakeholders has occurred throughout the life of the project as information has become available. In certain circumstances, this has meant that information has been provided only at the stage of exhibition of the EA as this new information has responded to ongoing feedback and resulted in a refinement of project designs.

Sydney Metro has provided input to Sydney Harbour Foreshore Authority regarding the Bays Precinct masterplanning activities. However Sydney Metro does not set the terms of reference for the Bays Precinct Community Reference Group.

4.4.2 Opportunity to provide feedback

Issues included

- *There should be a monetary incentive for community and businesses to provide feedback on the project. The community feedback system has not been well planned.*

Response

Community consultation for the EA has been conducted in accordance with Part 3A of the EP&A Act, including advertising and placing the EA on public exhibition for a minimum period of 30 days. During the exhibition period, government agencies, interested groups and organisations, and the community were invited to make written submissions to the Department of Planning in response to the assessment. There is no provision in the legislation to provide monetary incentive for submissions.

4.4.3 Availability/adequacy of project information

Issues included

- *Lack of information with regard to metro trains and stations on the Sydney Metro website.*
- *Information provided to the community (eg height of service buildings not shown in public displays and an ambiguous media release) has been planned to deliberately mislead residents.*
- *Station designs (for Pyrmont) were not available during public exhibition.*

Response

Details regarding the specifications of the metro trains are found in Chapter 6 of the EA. This document is also available on the project website.

Sydney Metro has engaged in an open and transparent process of community engagement with residents and businesses owners. The vent structures for Stage 1 would be carefully designed to fit in with the surrounding environment and the height of adjacent buildings. There would be opportunities for public art to be incorporated into the design. In areas like Rozelle and Pyrmont, vents would be placed behind building facades and would not be visible from the street.

Sydney Metro held a meeting with residents of Waterloo Street on 9 October to specifically explain the proposed vent structures for the Rozelle Station and to gain feedback on these proposals, which have since been used to further refine the designs.

The EA has details of the other options considered for Pyrmont and why they were found to be unsuitable. A review of station options is attached to the EA for the community to read. It explains that other sites to the north of Union Street were considered but rejected because Union Street attracted far more passengers due to its proximity to key commercial and residential areas. Further, one on one meetings with members of the Sydney Metro project team have been held with the

residents and businesses in the Pyrmont area at their request. Sydney Metro is happy to meet with interested parties on request to explain in further detail the design options that have been considered in Pyrmont.

4.5 Ongoing consultation process

4.5.1 Consultation with the community and businesses on the design process and public art

Issues included

- *The Property Council would appreciate further consultation during the detailed design process.*
- *Rozelle Neighbourhood Centre would appreciate further consultation during the detailed design of the Rozelle Station plaza adjacent to the Centre.*
- *The Reference Design plans appear to present the probable design of each station. Sydney Metro, however, is likely to vary these plans without further public consultation.*
- *Request for Sydney Metro to work with businesses and stakeholders to lessen the commercial impacts of the project.*

Response

Sydney Metro will continue to consult with the community, businesses and other stakeholders throughout the approval and construction process. This consultation will continue to identify, address and manage issues of interest or concern to the community, government agencies or other interested parties.

One example of such consultation is the Design Principles Workshop process currently being undertaken by Sydney Metro. The purpose of the workshop is to get input from a range of stakeholders regarding the development of design principles for Rozelle and Pyrmont stations. Participants include representatives from community groups, councils, professional bodies and government agencies.

Key stakeholders would be invited to participate in workshops to discuss design and public art issues.

4.5.2 Ongoing consultation with affected landowners

Issues included

- *Community notification for specifically approved exceptions should be considered for night work.*
- *Will the affected community have someone to call during construction to communicate any real or perceived problems?*
- *The school requests further consultation in the form of:*
  - Regular letter box drops.
  - Availability of face to face meetings to discuss issues with stakeholders who can make decisions.
  - A 24 hour complaints line (with a method for immediate action).

  - Community involvement in some decisions involving local impacts.

- *It is very important that the impacts of the Pyrmont Station to all business owners are considered before the project is approved.*
- *Respondents request to be included in any further consultation and be invited to participate in any consultation groups for the metro project.*
- *Respondent requests that an appropriate forum is established for the affected businesses or property owners to have input into the construction phases management plans at Martin Place.*
- *The Property Council recommends formation of a stakeholder reference group comprising representatives of all major property owners affected during the construction period. Members of the Property Council with properties would like to see early, consistent and meaningful engagement.*
- *Further community consultation is required with affected residents, businesses and tenants/landlords to minimise impacts from the project.*
- *A business respondent asks for the opportunity to participate in the development of management plans (environmental, business and property risk) and the Central Project Coordination Committee.*
- *A Construction Liaison Committee comprising interested stakeholders should be established for the direct engagement of stakeholders.*
- *Request Department of Planning facilitation with respect to construction works impacting on businesses at Martin Place.*

Response

If the Stage 1 project is approved, Sydney Metro will continue to work closely with stakeholders and the community to ensure they are well informed about the project. Key activities / tools would include:

- Development and implementation of a detailed Construction Stakeholder and Community Involvement Plan for the construction phase of the project.
- Meetings with affected residents, businesses and property owners.
- Notification (including targeted letterbox drops, email and SMS) of any works that may disturb local residents and businesses (such as noisy activities and night works).
- Notification (including targeted letterbox drops) of works that may affect transport (such as road closures, changes to pedestrian routes, and changes to bus stops).
- 24-hour toll-free community project information phone line.
- Complaints management process.
- Regular community information sessions.
- Regular updates to the Sydney Metro website (www.sydneymetro.nsw.gov.au).
- Regular community newsletters, information brochures and fact sheets.
- Clear signage at the construction sites.

For more information on Sydney Metro's response to potential business impacts see section 4.64 and 4.65.

STRATEGIC NEED

4.6 Alternatives to the metro project

4.6.1 Possible extension of light rail

Issues included

- *George Street buses should be phased out and replaced with a surface light rail loop in conjunction with the pedestrianisation of George Street.*
- *The suggestion that light rail costs as much as metro is wrong.*
- *Light rail has a lower capacity than a classic Metro style railway, but this is only an issue if demand is suitably high.*
- *Enhanced CityRail capacity through the CBD, assisted by light rail, would be sufficient to meet the needs of Barangaroo commuters.*
- *A number of studies have shown that there are very suitable streets running the length of the CBD which would do exactly as is denied. In particular George, Pitt and Castlereagh Streets have all been studied in depth, and all are viable options for light rail installation.*

Response

The general issue/concern raised in these submissions was that it would be more practical, cost effective, simpler or more expedient to extend the existing light rail system. The alternative of extending the light rail was considered in the EA (refer sections 4.3.2, 5.1.2 and 5.2.3).

As indicated, the Metro provides a much broader transport function and provides a more strategic contribution to the Sydney Transport system including capacity enhancements to Sydney's rail network as well as facilitating future public transport corridors. Light rail would be unable to satisfy the forecast passenger throughput (ie between 29,000 and 40,000 passengers per hour) that can be achieved by a Metro in the major transport corridors. Nor would light rail achieve the same travel times as metro (five minutes from Rozelle to Barangaroo-Wynyard and 10 minutes to Central). Furthermore, light rail would be unable to fully address the demand generated by the future employment function of Barangaroo, which includes planned office space for 22,000 workers.

The role of light rail is recognised for areas away from major transport corridors, where metros are able to respond to commuter demand.

In summary, light rail provides local connectivity, rather than a regional transport corridor alternative, as is the case with Metro. The continued operation of light rail as a mutually beneficial service is recognised and it will continue to provide an important service. Light rail would not able to provide the capacity required to act as an alternative service to Stage 1 Metro and would not be capable of serving the west or north-west of Sydney as effectively as future metro rail extensions as identified in the Sydney Metro network.

It is important to note that provision of a metro network through the CBD provides a catalyst to improve street amenity and reduce bus congestion, thereby facilitating the opportunity to introduce changes to the CBD environment.

A light rail system in the CBD between Central Station and Circular Quay is supported by the City of Sydney Council. Council has committed funds to study public infrastructure works required for the

extension of light rail, and will continue to call on State and Federal Governments to support the proposal.

Extension of the light rail from Lilyfield to Dulwich Hill is currently being investigated by Government and local Councils. Any extension of the light rail system would compliment the Metro Network, but as indicated above would not address the key objectives of the Metro.

Similarly, any extension of the light rail system to White Bay would compliment the Metro Network and potentially support future land uses changes in the Bays Precinct.

Any light rail extension to Balmain (via Rozelle) is likely to be difficult given the topography and land uses, which would result in considerable environmental impacts.

Alternate light rail extensions proposed in submissions, including plans to areas such as Marrickville, Ashfield, La Perouse and Waterloo, are not currently being investigated by NSW Transport and Infrastructure or local Councils.

It is noted that in the above discussion the use of light rail is considered to include the term “trams” or “tramway”. Some submissions have noted the use of trolleybus technology or monorail. Other submissions noted the use of 300-seat buses and special O-Bahn (guided busway) technology. Whilst it is noted that larger buses, O-Bahn, trolleybuses and monorail (or a “second generational monorail”) have different operating characteristics and abilities to light rail, similar issues and constraints apply as those discussed for light rail.

To clarify issues raised by Metro Transport Sydney Pty Ltd, the following responses are provided:

- Sydney Metro Stage 1 is designed as the first stage of a metro line linking both the west and north-west with the CBD with travel times significantly less than existing surface modes. The reduction in the number of services that would need to continue to operate through to the CBD would be achieved through offering travel times between Rozelle and the CBD which are up to 70-75 per cent faster than the existing bus times. Stage 2 is also likely to provide an opportunity to further reduce the number of the bus services entering the CBD, particularly from the west.

- The cost comparison between metro and light rail refers to an underground light rail system, on the basis that the absence of a suitable and feasible surface corridor for light rail which would provide similar travel times and reliability.

- Sydney Metro Stage 1 is the first stage of a metro line linking both the west and north-west and therefore is designed with the capacity to handle the increased future demand as the system expands.

- Sydney Metro Stage 1 will offer significantly higher capacity than could be provided by a light rail and upgraded CityRail station alone. Furthermore, once extended to the west and north-west, it will provide direct access to Barangaroo from Parramatta, the inner west and the Victoria Road corridor.

- The Victoria Road bus corridor is currently one of Sydney’s most congested and as a result suffers from poor peak hour service reliability. Sydney Metro stage 1 will offer additional capacity and travel time benefits of up to 70-75 per cent to residents of Rozelle. The comparison with light rail as an alternative was raised in this context.

- Sydney Metro agrees that there is scope to expand the existing light rail network in central Sydney and that the costs associated with light rail development and construction can be less than those associated with Metro facilities. Light rail, however, is unable to satisfy passenger throughput requirements (between 29,000 and 40,000 passengers per hour) that can be achieved by a Metro. Nor would light rail achieve the same travel times as metro (five minutes from Rozelle to Barangaroo-Wynyard and 10 minutes to Central). It is noted that the city waterfront development at Barangaroo is planned to become

a key commercial, residential and recreation precinct with over 22,000 workers and residents, 33,000 daily visitors and 12 million visitors each year.

- NSWTI is currently undertaking a light rail extension assessment study to examine the costs and possible benefits of an extension of the current light rail line. The study has support from four local councils: Ashfield; Marrickville; Leichhardt and City of Sydney.
- Whilst a possible light rail extension does not provide an alternative to metro, it would potentially be a complementary mode serving different markets.

4.6.2 Extension of heavy rail

Issues included

- *New heavy railway lines should be built, and existing lines should be expanded (ie duplicated and quadruplicated) before any metro is built. This should start with planned projects such as:*
  - *North West Rail Link*
  - *South West Rail Link*
  - *Parramatta to Chatswood Rail Link*
  - *Carlingford to Parramatta Link*
  - *Extension of the Eastern Suburbs railway*
  - *Metropolitan Rail Expansion Programme (MREP) projects*
- *The Rail Clearways program should be given priority. The metro project will prevent or limit further improvements/expansion of heavy rail.*
- *Sydney Metro should think of something that will complement the existing rail network, rather than starting from scratch.*
- *How is Sydney Metro planning to merge the two systems unless it starts replacing one with the other?*
- *Wouldn't it be more efficient to develop new links around the existing one and try to expand and build on it as much as possible?*
- *The metro line will not have the flexibility of being easily extended if required without the huge additional costs of more tunnels being dug. It lacks the robustness of the existing rail network.*
- *In the future a second north-south alignment (and a second new harbour crossing) also for heavy rail, will also be needed.*
- *The project holds little potential for improvement for the majority of persons who use CityRail.*
- *The Government should not have abandoned the MREP.*

Response

The NSW Government has and is continuing to invest significantly in Sydney's public transport network. A number of heavy rail upgrades and corridors are proposed or protected within Sydney and will continue to be developed.

The NSW Government has reaffirmed its commitment to completion of the rail clearways program. The Metro project will not prevent or limit future expansion of the heavy rail network within or external to the Sydney CBD. Metro corridors have been identified and are being scrutinised with other possible future heavy rail needs and opportunities in mind.

The recently completed Epping to Chatswood Rail Link (an extension of the existing heavy rail network) will assist in encouraging increased rail and public transport use at the expense of cars. The Metro will also assist in providing residents and workers with a choice other than car for a variety of trip purposes.

The Epping to Chatswood Rail Link is complete and is operational. The Sydney Metro Network Stage 1 (Rozelle to Central) is the first stage of a broader Metro network that will ultimately serve the transport needs of the north-west of Sydney.

The approved rail corridor between Epping and Parramatta is protected for future expansion of public transport. The Government will consider a range of options for the Carlingford corridor linking Epping and Parramatta as part of its long term integrated rail network.

The Metropolitan Rail Expansion Program (MREP) comprised three main elements: the North West Rail Link, CBD Rail Link and the South West Rail Link. In October 2008, the NSW Government decided to defer rail projects to the North West and stage the delivery of the South West Rail Link so the infrastructure matches growth in the area.

However, stage one of the South West Rail Link will see the delivery of a significant upgrade to Glenfield station including the construction of a major commuter car park. It is an initiative of the NSW Government to respond to issues of reliability and passenger growth on the metropolitan rail network and population growth in south-west Sydney. The Glenfield Transport Interchange and commuter car park is currently under construction and expected to be complete in 2010. Concept approval for the remainder of the South West Rail Link to Leppington has been granted and the corridor is protected.

The decision to defer the North West Metro was taken given the size of capital required and the current economic climate. Concept approval for the rail corridor between Epping and Rouse Hill has been granted and the corridor is protected.

The Northern Sydney Freight Corridor Program is an initiative of the Australian Government to remove operational impediments to rail freight traffic between North Strathfield and Broadmeadow, Newcastle. Removing operational impediments to rail freight traffic from passenger services will improve the performance of the north-south rail corridor by reducing delays caused by freight and passenger services competing for available metropolitan track capacity. The Transport Infrastructure and Development Corporation (TIDC) has commenced feasibility studies for the program, including options development and assessment.

The provision of a metro system for Sydney or the CBD is not a new concept. A metro network was first identified in the NSW Government's 2006 Urban Transport Statement, which recognised that metro would provide the key benefit of operational separation from existing road and rail networks as well as modern rolling stock and train control systems to enhance reliability and facilitate the rapid loading and unloading of passengers.

The Sydney Metro Network will become a critical component of Sydney's integrated public transport network that compliments other public transport. The Sydney Metro Network Stage 1 (Rozelle to

Central) is the first stage of a broader Metro network that will service the travel needs of our growing suburbs and established centres. Metro 1 comprises a new rail corridor through Sydney's CBD from Rozelle to Central, Stage 2 from Central to Westmead and the North West Metro from Rozelle to Macquarie Park and Epping and ultimately to the North West Growth Centre.

Stage 1, as part of a larger network will enable improvements in the existing rail system, and present the opportunity to reconfigure and reshape the network to enhance its effectiveness. There are many examples of cities in the world that operate complimentary rail networks comprising both metro and heavy rail lines which together form one complimentary integrated rail network.

Interchange will occur and has been provided for between the heavy rail system and the proposed Metro (Stage 1). The two systems are not unrelated and will continue to be developed and expanded having regard to the specific needs of each facility.

Experience in other cities reaffirms the benefits that Metro systems bring to the development of urban areas and transport within them. Metros can assist in shaping and accommodating growth in population and employment, facilitate urban renewal, connect centres, relieve public transport congestion, reduce travel times and reduce urban emissions.

Metro 1 comprises an extension from Rozelle to the north-west. This will assist in reshaping land use in the northern and western regions of Sydney improving access to jobs and residential areas.

The Metro project will assist in relieving congestion of the CityRail network and will not prevent or limit future expansion of the heavy rail network within or external to the Sydney CBD. On the contrary, by relieving the most congested part of the CityRail network, it will facilitate future upgrades and development of the CityRail network.

4.6.3 Improvements to bus and ferry systems

Issues included

- *The money would be better spent on improving ferry services. Specific suggestions included a White Bay ferry service and improvements to the Balmain ferry service.*
- *The money would be better spent on improving bus services. Suggestions included more bus lanes, specifically on Victoria Road and Anzac Bridge, and linking Barangaroo to the CBD by bus.*
- *Money should be spent on improving the already existing public transport options such as more bus lanes, increased ferry services and the reintroduction and extension of light rail from Pyrmont to Rozelle using the underused Glebe Island Bridge corridor.*
- *If the project cannot be guaranteed past Rozelle, the provision of a bus lane on Anzac bridge during peak hour would be much cheaper.*

Response

While ferries will continue to play a unique role in Sydney's transport network, especially in the morning peak for travel from suburbs along the Parramatta River and around the harbour, the scale and passenger demand for ferry operations will remain small compared with rail and bus services. Travel on Sydney ferries accounts for only three per cent of total trips to the Sydney CBD.

The NSW Government is implementing a range of measures to enhance bus services as part of its CBD Bus Strategy. The Strategy is directed at addressing short-term capacity constraints and improving access for buses into and through the CBD. An alternative to the Stage 1 Metro project would involve significant investment in bus services, which would involve many more buses on Sydney streets. However, these would provide only a partial solution to Sydney's longer term transport

capacity and congestion issues, and would not provide the enabling infrastructure for a Sydney-wide metro network.

While buses will continue to form an integral part of Sydney's public transport system, the alternative of enhancing the bus network and services is less favourable than the project because:

- Bus options alone would not be able to address passenger demand in the medium to long term. The number of buses required to provide a commensurate level of passenger capacity would potentially create major issues for the accommodation of layover and terminal space in the CBD.
- Increased volumes of buses in the Sydney CBD would significantly reduce amenity, particularly for pedestrians, through increased noise, exhaust emissions, congestion and the use of road and kerb space for bus stops.
- Buses operating on congested road corridors are currently subject to delays and unreliability associated with sharing road space with other traffic and it is very difficult, if not impractical, to give full priority (as with a bus rapid-transit type system) without complete grade separation and/or extensive land acquisition for road widening. A tunnel for use by buses over a distance such as that from the CBD to Rozelle would be impractical due to requirements for ventilation of exhaust fumes and the cost relative to the number of passengers that could be carried by a metro.
- Bus systems – even those operating within a dedicated right-of-way – are not as efficient at moving the very large numbers of people that can be carried on a rail-based metro-style operation.
- A bus rapid transit (BRT) strategy would not enable wider network benefits; it would not facilitate network benefits with regard to optimisation of the CityRail network; and it would not address the need for a new and independent transport product that has the potential to be expanded across the entire metropolitan area.
- Bus enhancement options using the existing road network would be constrained by congestion on the road network, and travel times and reliability would be inferior to the project.

It is important to note that an integrated public transport system comprises a number of different systems to undertake different transport tasks.

4.6.4 Need for public transport initiatives in other areas of Sydney

Issues included

- *There is a greater need for public transport in other areas of Sydney. Suggestions included:*
  - *the north-west (a link to Rouse Hill or the Hills District, McGraths Hill to Rouse Hill, Kellyville, Castle Hill, Epping, Ryde, under Victoria Road to the CBD)*
  - *the south-west*
  - *the west (Penrith to Liverpool)*
  - *the Northern Beaches (Dee Why to Maroubra, connecting with the North Shore Line and diverting to Crows Nest, to Mosman and the City)*
  - *Central to Taylor Square, Centennial Park, Bondi Junction, Bellevue Hill, Bondi Beach*
  - *a link to the University of NSW*

  - *a north-south link (ie Western Line to Bankstown Line to East Hills Line and down into the unserviced Menai area onto Sutherland).*

- *The EA states that the most congested transport corridor is between Parramatta to the City. Why isn't this proposal being evaluated first?*
- *The metro lines should be constructed once rail projects are completed to serve areas without rail transport.*

Response

The need for focused investment in Sydney's transport system is acknowledged. The NSW Government is committed to investing in transport infrastructure and supporting jobs and industries with a transport network that helps boost the economy. In June 2009, the Premier announced the creation of NSW Transport and Infrastructure – a transport super agency with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

The western Parramatta Road corridor and Sydney's North West sector is in need of rail infrastructure and that is why the Government's Metro development plans provide for a Metro network.

Sydney Metro is currently preparing a Metro Network Strategy to guide and prioritise the development of a metro network for Sydney. This work includes assessment of a range of alternative alignments for future metro lines for Sydney.

The Sydney Metro Network Stage 2 (Central to Westmead) project is being examined now. The NSW Government will seek the views of the community in relation to this Stage of the Metro over coming months. In relation to Rouse Hill and the Hills Districts, Metro 1 comprises a proposed new rail corridor linking Sydney's CBD with the North West. Other alternatives to Metro or heavy rail were considered (such as Transitways). However, a metro network was considered to best meet the future transport task.

The Government remains committed to building a rail link to serve the North West. Sydney Metro Stage 1 (the project) is the first step in developing that link and provides the necessary supporting infrastructure and capacity in the CBD. While a rail link between McGraths Hill and Rouse Hill does not form part of Government's rail expansion plans at the present time, Metro 1 does embrace a proposed new rail corridor linking Sydney's CBD with the North West.

The South West Rail Link will deliver public transport services to new development areas in the South West.

The broader Metro network plan includes the Metro 2 City East Line that provides for a Metro line linking the CBD with the south-east and Northern Beaches. More information is available on the Sydney Metro web site.

The work underpinning the development of the Sydney Metro Network (and the EA) has been based on advice from metro, land use and transport experts.

In summary, there are a range of transport challenges and priorities facing Sydney. However, the need for high capacity, frequent and integrated public transport is paramount. Construction of Sydney Metro Network Stage 1 will best meet these public transport needs while at the same time establishing the new Metro Network and facilitating transport improvements across other modes.

4.6.5 Combination of possible initiatives to deliver project objectives

Issues included

- *The improvement of the existing transport modes (train, tram, bicycle routes) combined with smart land-use planning might provide similar overall benefits as the proposed metro line, at lower cost.*
- *A combination of measures would be more cost effective and quicker. Suggestions included:*
  - *A more functional RailCorp system (possibly augmented by light rail and /or a second generational monorail), improved road pricing and transferring road freight to rail.*
  - *Giving inner city services priority over cars.*
  - *Integrated ticketing system and traffic hubs, a free light rail system from Central to Circular Quay, free public transport, traffic calming to reduce road rage.*

Response

It is acknowledged that solving Sydney's transport challenges requires a combination of initiatives. NSW Transport and Infrastructure is the lead public transport agency of the NSW Government, with primary responsibility for transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

Suggestions regarding complementary transport solutions will be provided to NSW Transport and Infrastructure. Suggestions included:

- Provision of free public transport.
- Integrated ticketing.
- Traffic calming measures.
- Moving walkways.

4.6.6 Demand management

Issues included

- *The government should install a congestion tax to respond to CBD congestion.*
- *Traffic and parking policies should be implemented to encourage public transport use.*
- *A metro-type solution could be implemented at one hundredth the cost by enacting Transitways from Rozelle, White Bay and Pyrmont, and installing a congestion tax on vehicles going into the city.*
- *The project does nothing to remove the number of cars clogging the inner city roads.*

Response

The issue of passenger car travel demand was address within section 5.2.4 of the EA, where it was stated that the strategies of differential pricing or 'congestion charging' and restricting parking availability and increasing parking charges would be limited in their ability to bring about significant changes to public transport networks.

In order to encourage public transport use the network needs to be in place before discouraging private vehicle use and using the funds from this congestion charging to fund the expansion of the public transport network.

Public transport infrastructure and services need to be in place to cope with the anticipated level and timing of demand, so that price-driven consumer behaviour can be reinforced by a good level of service which attracts people onto public transport.

While effective demand management can help relieve capacity concerns and are an important part of any transport strategy, they would not deliver the major capacity gains required on their own.

4.6.7 Alternative alignment – line 1 and 2

Issues included

- *Any rail line through the CBD from the north should pass through the Global Economic Corridor (via a cross-harbour link) to maximum benefit for the construction of stations.*

Response

The proposed Sydney Metro network (Metro Line 1) will provide direct access to the Global Economic Corridor via the important Victoria Road corridor to the North West. Metro Line 1 provides a "cross-harbour link" to the North West of Sydney.

Use of the Interim Rail Pitt Corridor (defined as the Global Economic Corridor in the State Environmental Planning Policy (Infrastructure)) does not reduce the ability to provide additional rail through the CBD and provide a future rail harbour crossing if required. Refer to other sections of this report regarding the safeguarding of the Interim Rail West Corridor.

4.6.8 Other alternatives

Issues included

- *The Rees Government is also planning to close the Newcastle Railway. This is like cutting back the Railway from Sydney to Redfern.*
- *A circumferential ring road in the CBD would improve amenity and functionality to a greater extent than the Gehl scheme.*

Response

Comments regarding changes to the Newcastle Railway service are noted. However, any such changes to the Newcastle Railway or related projects are unrelated to the proposed Sydney Metro network and not a matter to be considered as part of the project.

Suggestions regarding a circumferential ring road in the CBD are noted. However, any such proposal is unrelated to the proposed Sydney Metro network and not a matter to be considered as part of the project.

4.6.9 Sufficient consideration of alternatives

Issues included

- *The justification for the project and evaluation of alternatives in sections 4 and 5 of the EA is inadequate. Criticisms included:*
  - *Other alternatives were not considered (eg light rail from the CBD to Drummoyne and Ryde, Anzac metro line, heavy rail routes and high speed rail).*
  - *Arguments such as street widths not allowing expansion of the tram (light rail) are simply ignorant and untruthful.*
  - *It is difficult to voice an opinion when there aren't any options on the table.*
  - *Alternatives presented do not equate to current medium to long-term planning of those responsible for stewarding various modes.*
  - *Alternatives were assessed on their ability to meet the project objective of enabling a wider metro network.*
  - *No alternative design for the metro was considered.*
  - *Alternatives are not sufficiently detailed to consider the diligence of their development.*
  - *The alternatives were only evaluated on cost.*
  - *The 'value for money' discussion does not report any scenario testing of patronage, key economic and financial indicators, or operational indices related to customer accessibility and friction.*
- *The project would appear to justify the selected alignment choices, station location and design, stabling and other facility options without reference to the various previously studied metro options and how the selected project improves upon them.*

Response

The consideration of alternatives to the project and the justification for the project is discussed in Chapter 5 and Chapter 22 of the EA. Both the review of alternatives and the justification for the project was undertaken in accordance with the Director-General's requirements and is based on the strategic need for the project.

The Director-General's requirements for the project include the need to assess the potential impacts of the project (the preferred option). The environmental assessment is also required to justify the project in the context of potential alternatives. This involved providing a description of the project and evaluation of various alternatives to this project. The evaluation considered the alternatives against the project objectives, value for money, realisation of early benefits, engineering constraints, safety and environmental considerations, to arrive at a preferred option. A concept design developed for the project was subject to the detailed environmental assessment, as presented in the displayed report.

A similar detailed assessment of each alternative is not required as part of the environmental assessment. A detailed description of each alternative in terms of concept design and construction is not required as part of the environmental assessment.

Alternatives to the project included enhancements to the public transport networks within the city as alternatives to the project. The alternatives examined included improving CityRail's operations to embrace metro-style characteristics, and extending the system in the CBD and Inner West.

Possible metro alignments, such as those identified in the original 'Sydney Link' proposal of March 2008, are not considered alternatives to the Stage 1 project. Rather, development of the metro network and Stage 1 in particular as resulted in refinement of the alignment based on station locales and other considerations, including the need to:

- Service demand in key catchments along the corridor.
- Facilitate interchange with CityRail services and reduce overcrowding at CityRail stations.
- Provide for potential future extensions of the metro network.
- Avoid or mitigate environmental constraints and major engineering and constructability issues.

4.7 Justification for the project

4.7.1 The project proposed in an area already serviced by bus, rail and ferries

Issues included

- *The Sydney Metro Stage 1, Central to Rozelle will duplicate existing CBD transport services.*
- *The project will provide no improvement in public transport. Areas serviced by the metro are not in as much need as Sydney's west or other areas that do not have rail.*
- *The State Government should not spend $5 billion on a public transport system to serve areas already well served by public transport.*
- *The area in and around the CBD is not the most needy area. For example, St James and Museum stations are under-utilised. Passengers should be advised to use these stations more.*
- *The majority of West Metro to Parramatta is serviced by existing heavy rail now and some could be serviced at little cost by extending the light rail.*
- *This is already a free bus along the same alignment of the CBD part of the project.*
- *The route from Rozelle largely duplicates the existing light rail.*

Response

The Sydney Metro Network Stage 1 (the project) will link important suburban, commercial and education hubs with a faster and more frequent service. It will reduce the number of buses in the congested northern part of the City and take the pressure off CityRail's Wynyard and Town Hall stations which are near capacity at peak times.

However, it is important not to look at Stage 1 in isolation. International experience is that a central component of the metro is constructed first as the "enabler" of a future, much larger metro rail system. While Stage 1 is the NSW Government's first metro priority, a Project Application and Preliminary Environmental Assessment has been lodged with the Department of Planning for Stage 2 – between Westmead and the CBD. This would be the next logical step for metro rail systems in Sydney. Possible other metro links include to the north-west, the south-east and the north.

As noted in Chapter 4.3.2 of the EA, buses are pivotal to Sydney's transport system, and will continue to perform the bulk of the task in the key non-rail CBD corridors in the immediate future. However, buses servicing Rozelle and the CBD will experience declining performance as road congestion increases with population and employment growth.

Significant congestion is likely to occur on parts of the bus network by 2031, assuming current levels of planned investment. Sydney CBD would be a constraint point because of limitations on the capacity of bus access to the CBD and the need for more buses to access CBD interchange points.

Victoria Road in particular is one of the busiest bus-based corridors in Sydney, and one of the most unreliable in terms of peak travel times due to the high levels of traffic congestion. The Inner West Busway will provide additional dedicated bus lanes to address congestion in the short to medium term. However, these roads would need significant enhancement to cater for any sustained increase in demand in the long term.

Bus congestion levels on Victoria Road approaching the CBD in the AM peak by 2031 are expected to be amongst the highest of any bus corridor in Sydney.

The project will attract passengers away from existing crowded rail networks, including at key stations such as Central, Wynyard and Town Hall. At this stage, CityRail's St James and Museum stations are not directly served by the project.

While the light rail provides a link between Pyrmont and Central, there is no such link between Pyrmont and the northern end of the CBD. The metro will put Barangaroo-Wynyard and Martin Place within 1 – 3 minutes of Pyrmont. It is noted that light rail also serves Lilyfield, providing a complimentary service to the project.

While ferries will continue to play a unique role in Sydney's transport network, especially in the morning peak for travel from suburbs along the Parramatta River and around the harbour, the scale and passenger demand for ferry operations will remain small compared with rail and bus services. Travel on Sydney ferries accounts for only three per cent of total trips to the Sydney CBD.

Servicing the new development at Barangaroo will require a significant public transport initiative such as the Stage 1 project. This need was clearly recognised in the planning, design and approval of the Barangaroo development. It would be unsatisfactory to rely only on walking as an alternative mode of transport to Barangaroo.

The role of the green CBD Shuttle bus linking Circular Quay and Central stations in a 30-minute, all-stops loop is noted. The Stage 1 project would provide a rapid service between key localities rather than an all-stops street level service.

The role of walking and cycling within and to the CBD, Pyrmont and Rozelle is noted. The project includes a range of measures and strategies to encourage walking and cycling.

The project is the critical first stage of the broader metro network and is a priority project that will provide targeted public transport improvements within the CBD (where it is needed most), Pyrmont and Rozelle. Its key strategic benefits would include:

- Relief to the greatest capacity constraint on the entire transport network – the CBD – while providing for future metros to the west and north-west.
- Provision of an alternative means for commuters to move around the CBD, relieving existing crowded rail and bus networks, particularly at key locations such as Central, Wynyard and Town Hall.
- Facilitation of wider timetable and investment choices for the commuter rail network.
- Relief of heavily congested bus services operating into and through the CBD, which currently compete with pedestrians, cyclists, delivery vehicles and cars.
- Support for the planned Barangaroo development and, in the future, the Bays Precinct and Blackwattle Bay area.

While the project would provide significant benefits on its own, it would also be of strategic importance as an enabler of the entire metro network, forming the central spine to which all other metros would link or interchange. The NSW Government therefore regards it as the critical first step in the transformation of Sydney's transport system.

4.7.2 Patronage

Issues included

- *The patronage scenarios have not been satisfactorily explained and expressed. The passenger numbers and demand rationale stated seem to be questionable.*
- *Failure to see how the metro will relieve capacity with initial limited patronage as it would only provide some CBD to CBD travel. There would not be many people in the peak hour when people are arriving or leaving the city.*
- *The project will have low patronage with one sixth capacity during peak periods, six years after its scheduled opening.*
- *There is no information or analysis of the destinations of the Pyrmont Station pedestrians or their modes of travel to work to support the conclusion that the Union Square site is a 'natural, pedestrian desire line, and the locating of a station entrance there would deliver a large passenger catchment'.*
- *There is no demand or need for this service to Rozelle.*
- *Projections indicate that the patronage will be underutilised and will not have the necessary numbers to recoup the project expenditure.*
- *Without a further extension of the project, patronage would be low as people would choose to walk or use existing transport options.*
- *Patronage from heavy rail (including North West Rail, South West Rail and Parramatta to Epping) will be higher than patronage from the metro.*
- *It is important that the capacity of the project is aligned with realistic future growth targets.*

Response

The Stage 1 project is expected to serve a range of different customer markets and patronage modelling reflects this. The project would initially be a stand-alone metro line. Later, as it develops into Metro Line 1, it would extend to Parramatta/Westmead in the west and towards the Macquarie Park area in the north-west. Specific patronage for the Stage 1 project is generated from:

- Central – passengers transferring to and from CityRail services terminating at Sydney Terminal.
- Bus – metro transfers, particularly at Martin Place, Town Hall and Barangaroo-Wynyard.
- Heavy rail – metro transfers, particularly at Barangaroo-Wynyard.
- Barangaroo – as a major employment growth area and with transfers from a future ferry terminal.
- Pyrmont – particularly as an employment destination, but also as an origin and special events station.
- Rozelle – walk up and bus transfers.

- Intra CBD – business and tourism travel.

The Sydney Metro Stage 1 project would provide additional intra-CBD services and an additional north-south route through the CBD, with a capacity of 29,000 up to 40,000 passengers per hour, depending on the metro train configuration, frequency and seating arrangement. This would relieve congestion on both the bus and rail network and represent a major injection of service quality and capacity into a currently constrained network.

Patronage forecasts, including a ramp-up profile, are described in Chapter 4.6 of the EA. It is expected that demand for the project would be high upon opening, given the substantial travel time savings it would bring to public transport users. Metro trains are not expected to run empty on day one. The predicted demand is considered realistic based on significant research and review of various new rail schemes around the world (including Joondalup Perth Urban Rail, Sydney Airport Line, Hong Kong Airport Line, Croydon (London) Tramlink, and Marseilles (France) Mass Transit.

Passenger demand for each metro station is described clearly in Chapter 14 of the EA. Passenger demand is not affected by depth of the stations, which are all accessible from the surface within acceptable walking times.

Patronage modelling is one type of analytic tool and provides a critical, but not complete picture of future travel patterns. There are many different types of models to suit different purposes.

4.7.3 Project objectives

Issues included

- *The EA has not been able to frame appropriate objectives that demonstrate how the project will deliver the outcomes that address the strategic need. The objectives should be stated in terms of transport demands that are being met and indicators should be measurable so that the extent of performance against the objectives can be assessed.*
- *The objectives of the project need to reduce the requirement for driving cars to stations to encourage ESD.*
- *The connection between the uncontested transport network challenge facing Sydney and a specific context of goals and objectives to evaluate the projects merits against is not defined.*
- *Sydney Metro has not provided objectives for the project, rather the strategic need communicated project objectives.*
- *The stated performance indicators are incomplete and inadequate.*

Response

Objectives for the Stage 1 project are described in section 4.7 of the EA and were developed in response to a strategic needs analysis. This considered the strategic policy and planning framework with respect to land use, transport and the environment, population and employment trends, travel and transport network needs and constraints and the role of a new Metro product. For each of the objectives, performance indicators were developed and the project has been justified based on how it meets these indicators – refer to Chapter 22 of the EA.

The Sydney Metro modal hierarchy promotes active and public transport users above car users. Where possible within the scope of the station precinct delivery, the modal hierarchy prioritises the delivery of footpath improvements, footpath widening, weather-protected bicycle parking and weather protected bus passenger waiting areas and real-time next bus information.

4.7.4 Second Harbour Bridge crossing

Issues included

- *Ideally a north-south heavy rail alignment in the CBD (and a harbour crossing) should be built at this point in time to cope with current levels of congestion.*

Response

NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

Proposals for a second Harbour crossing will be considered by NSW Transport and Infrastructure.

Whilst the Stage 1 of Metro Line 1 is an important new project, Government continues to invest heavily (approx $1 billion per annum) in the existing CityRail network to provide an integrated transport service to Sydney.

4.7.5 The project in light of Inner West Busway project (Victoria Road upgrade)

Issues included

- *The EA does not discuss how the project is integrated with the Inner West Busway project (Victoria Road upgrade).*

Response

Victoria Road is one of the busiest bus-based corridors in Sydney, and one of the most unreliable in terms of peak travel times due to the high levels of traffic congestion. In 2008, more than 120 buses carried almost 6,000 people into the city in the morning peak two hours on Victoria Road[3]. Once these buses reach the city, they contribute significantly to congestion and suffer slow travel times as they traverse the northern part of George Street to reach Circular Quay. The Inner West Busway will provide additional dedicated bus lanes to address congestion in the short to medium term. However, these roads would need significant enhancement to cater for any sustained increase in demand in the long term.

4.7.6 The project is too short to be effective

Issues included

- *Severe congestion on Victoria Road will not be alleviated due to the short distance of the metro to Rozelle.*
- *At approximately 4 kilometres in length, the project only adds expense and time for people from further out. They will need to take two forms of public transport rather than one, to reach the city.*
- *This is too costly and is the wrong priority for funding for a short and impractical line that would have negligible economic and community benefit and would cause impacts such as noise, traffic and heritage during construction. It may be worth having if it was extended further north and west.*

[3] Ministry of Transport/State Transit 2008, State Transit Authority corridor counts (October/November 2008).



Response

The objective of the Stage 1 project is not limited to providing improved public transport services between Central and Rozelle. It is of strategic importance as an enabler of the entire metro network, forming the central spine to which all other metros would link or interchange. The NSW Government therefore regards it as the critical first step in the transformation of Sydney's transport system.

Sydney Metro Stage 1 to Rozelle is only the first stage of a longer Metro Line 1 which will ultimately extend beyond Rozelle via the Victoria Road Corridor to the north-west, as well as from the Sydney CBD to Parramatta and Westmead.

4.8 Justification for an underground system

4.8.1 Cost of tunnelling

- *Due to the extensive tunnelling required, the 7 kilometre line will cost almost $700 million per kilometre to construct compared to the $200 million per kilometre cost of the Epping to Chatswood line.*
- *Tunnelling (including two water crossing) is very expensive for areas already serviced by public transport.*
- *Why have cavern stations been chosen as opposed to stream-lined stations (eg City Circle)? These are expensive and threaten the CBD's surface and underground uses.*
- *Surface construction would be much cheaper.*
- *Tunnel boring is machine and capital intensive.*
- *Given the elevations at most stations being above 20 metres AHD, what is the estimated cost of bridges and stations vs underground tunnels and caverns?*
- *It appears that Martin Place, Barangaroo-Wynyard, Pyrmont and especially Rozelle have extremely deep stations, deeper than the existing Martin Place. Will this add immensely to the cost of the stations?*

Response

A cost comparison between the completed Epping to Chatswood Rail Line and the Metro Stage 1 project is not valid. The capital costs for the Epping to Chatswood Rail Line are based on a 12 kilometre line and five stations estimated in 2008 dollars. The capital costs for the Metro Stage 1 project are based on a 7 kilometre line, six stations (and one safeguarded station), maintenance and stabling depot and rolling stock estimated in 2015 dollars.

While tunnel construction is generally considerably more expensive than construction of a surface infrastructure, in the CBD context, the costs of acquiring property for a surface corridor would likely outweigh tunnel construction costs.

The relative environmental benefits and adverse amenity and social impacts must also be considered when comparing surface and tunnel alternatives. While linear surface infrastructure can be constructed over a shorter duration, it affects the amenity and cohesion of an entire corridor. Social impacts resulting from extensive property acquisition including heritage impacts, business impacts and community severance cannot be avoided and environmental impacts, in particular, operational noise and vibration are significantly greater and more complex to manage. The utility of public spaces and land use potential may also be stifled in the longer term.

While construction of tunnels generally requires a longer construction period relative to surface links, the impacts are confined to specific sites meaning a suite of specific management measures can be more easily and effectively implemented to minimise potential impacts. Compared to a surface link, a tunnel minimises adverse property, business and social impacts and maximises amenity benefits including relative reductions in operational noise and vibration impacts and maintenance of heritage significance.

Overall, the provision of the Sydney Metro Stage 1 in tunnel will provide better value for money to the community and result in superior environmental and social outcomes.

4.9 Project cost

4.9.1 Funding

Issues included

- *Funding from the NSW Government in the short and medium term is not guaranteed. The project should not proceed without guaranteed funding.*
- *There will not be enough funds for the metro because the financial crisis will be permanent after peak oil.*
- *Funding of the metro should be paid by the Federal Government as has been done for Western Australia and Queensland rail transport systems.*
- *Future stages of the metro network would be given a higher priority than extensions of the CityRail network. As a large proportion of the NSW budget has been given to a stand-alone link, there will be immense pressure on budgetary process to ensure that the metro network is not seen as ineffective.*

Response

The estimated cost of the project remains $4.8 billion.

The NSW Government has committed to fully funding Stage 1 of the Sydney Metro Network (Rozelle to Central). Funding from the Commonwealth Government is not required for Stage 1.

Also, refer to 4.2 regarding the use of PFP mechanisms.

4.9.2 Expenditure

Issues included

- *The project is a waste of limited public (tax payer) money and is too expensive for areas already serviced by public transport which will only benefit a limited number of people, and only goes to Rozelle.*
- *No calculations have been done for cost estimates, cost-benefit analysis, risk assessment and critical path analyses. There is no analysis of economic and social costs, or benefits for alternatives. These should be provided.*
- *The line will be extremely expensive and dominate the public transport budget for years to come.*
- *The project will have the highest possible construction costs.*

- *The project will never make a profit and will saddle the State with unacceptable debts with no income from this metro.*
- *The opportunity cost spent on initiation and planning to date would cover the cost of remaining land acquisition for the North West Rail Link.*
- *This extremely expensive project will be of little value unless it is extended to the west, and that means another large injection of money.*
- *The severely overpriced metro stations at Martin Place and Barangaroo should not be built.*
- *Without high patronage levels, it is unlikely construction and operating costs will be met. Given the low patronage figures, it is unlikely that it will be cost-effective.*
- *Any determination to allow the Metro to proceed to construction would be a sheer waste of money in the absence of such an integrated transport plan being developed, publicly exhibited and widely discussed.*
- *Sydney's population density in inner city suburbs is still too low to justify the expenditure of a metro.*

Response

Stage 1 of the Sydney Metro Network (Central to Rozelle) is the most critical and complex component of the network and provides the enabler for the entire Metro network. The high relative cost of the project is largely derived from the complexity of station construction within a high density city environment. The variable topography, including two significant water crossings also contribute to the cost.

The Stage 1 project provides the initial maintenance and stabling depot, rolling stock and six metro stations of which four are in the CBD plus a seventh safeguarded station for future development at White Bay. These seven stations are within the 7 kilometres of main alignment, which is relatively a high number for a metro network. The four stations servicing the CBD, providing the spine for future extensions to the metro network, are located within densely populated precincts that physically constrain the design resulting in stations that are relatively deep. Construction of these stations in a CBD environment is much more expensive than they would be in a less densely populated and developed area.

The alignment includes two harbour crossings requiring the level of the tunnel to be low enough to ensure that it can be safely constructed. The Darling Harbour crossing is adjacent to the steeply rising CBD topography. The stations at Pyrmont and Rozelle are located to best serve the metro users but this has resulted in these stations being located at high points on the alignment. This results in the Stations being deeper than typically expected in a flat topography, which further increases the station costs.

Being a new rail system, the cost of establishing stabling, maintenance and operational control facilities is primarily borne by the first stage. These facilities are designed for future expansion that will become proportionately cheaper per kilometre (and per train) as the metro network expands.

Stage 1 of the project also bears future proofing costs associated with the future metro network, such as ensuring stations are constructed to accommodate trains with six carriages as patronage increases (despite only requiring trains with five carriages in 2015). Other future proofing costs are associated with ensuring future access (at stations) and extensions (at both Central and Rozelle) can be easily constructed.

Additionally, with Stations being located in the CBD, property acquisition and third party asset protection costs are higher than would occur in suburban areas.

Notwithstanding the capital costs of the project, Stage 1 would establish a positive public transport legacy for future generations. Most significantly, with the improvements to public transport, it would provide the key enabler for the wider metro network across the Sydney metropolitan area – providing long-term benefits in terms of the environment and urban living. It would link land use and transport planning and deliver on the state's strategic objectives for improved urban environments with reliable transport access.

For further issues and responses regarding the need for an integrated transport plan refer to section 4.11.

4.9.3 Loss of funding for other projects

Issues included

- *The money would be better spent on extensions of heavy rail or extensions of light rail.*
- *The money would be better spent on other areas of Sydney that lack effective public transport including the north-west and south-west areas of Sydney and the Eastern Suburbs.*
- *The NSW State government should purchase the AirportLink and make this part of the CityRail system and therefore more affordable.*
- *Rail development is expensive and competes with other options for government expenditure.*

Response

The estimated cost of the project remains $4.8 billion. The NSW Government has committed to fully funding Stage 1 of the Sydney Metro Network (Rozelle to Central). Funding from the Commonwealth Government is not required for Stage 1. However, Sydney Metro is seeking funding from the Commonwealth Government for Stage 2 (Central to Westmead).

The NSW Government is continuing to invest in all areas of public transport. NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW.

The NSW Government has reaffirmed its commitment to completion of the rail clearways program. The Metro project will not prevent or limit future expansion of the heavy rail network within or external to the Sydney CBD. Metro corridors have been identified and are being scrutinised with other possible future heavy rail needs and opportunities in mind.

The recently completed Epping to Chatswood Rail Link (an extension of the existing heavy rail network) will assist in encouraging increased rail and public transport use at the expense of cars. The Metro will also assist in providing residents and workers with a choice other than car for a variety of trip purposes.

The Epping to Chatswood Rail Link is complete and is operational. The Sydney Metro Network Stage 1 (Rozelle to Central) is the first stage of a broader Metro network that will ultimately serve the transport needs of the north-west of Sydney.

The approved rail corridor between Epping and Parramatta is protected for future expansion of public transport. The Government will consider a range of options for the Carlingford corridor linking Epping and Parramatta as part of its long term integrated rail network.

In October 2008, the NSW Government decided to defer rail projects to the North West and stage the delivery of the South West Rail Link so the infrastructure matches growth in the area.

However, stage one of the South West Rail Link will see the delivery of a significant upgrade to Glenfield station including the construction of a major commuter car park. It is an initiative of the NSW Government to respond to issues of reliability and passenger growth on the metropolitan rail network and population growth in south-west Sydney. The Glenfield Transport Interchange and commuter car park is currently under construction and expected to be complete in 2010. Concept approval for the remainder of the South West Rail Link to Leppington has been granted and the corridor is protected.

The decision to defer the North West Metro was taken given the size of capital required and the current economic climate. Concept approval for the rail corridor between Epping and Rouse Hill has been granted and the corridor is protected.

The Northern Sydney Freight Corridor Program is an initiative of the Australian Government to remove operational impediments to rail freight traffic between North Strathfield and Broadmeadow, Newcastle. Removing operational impediments to rail freight traffic from passenger services will improve the performance of the north-south rail corridor by reducing delays caused by freight and passenger services competing for available metropolitan track capacity. Transport Infrastructure and Development Corporation has commenced feasibility studies for the program, including options development and assessment.

Accelerated implementation of strategic bus corridors and bus priority routes across Sydney, upgrading and expansion of bus fleets, increased use of technology to improve operations and greater integration of the bus and rail networks would improve travel times and reliability.

The projects identified above will continue to be developed in accordance with priorities set out by NSW Transport and Infrastructure as funding becomes available.

Sydney Metro is not proposing to purchase the Airport Rail Link from the current operators. This rail connection integrates with the existing CityRail network.

The Metro Network Strategy is being developed by Sydney Metro by a process of assessing a range of regional corridors and public transport solutions based on: potential demand, their role in strengthening and supporting existing centres, opportunities for urban renewal, and the adequacy of the existing transport in that corridor.

The Sydney Metro Network Stage 1, from Central to Rozelle, would form the central spine to which other metros would link or interchange. As such, it is considered by the NSW Government to be the logical and first critical step in the transformation of Sydney's transport system.

Furthermore, as the first stage of the metro network the project will:

- Introduce fast, frequent and reliable metro rail to the city, with services arriving every 2-3 minutes in the peak.
- Provide the foundation for a wider metro network for Sydney, enabling future extensions to be built to the West, North West and South East.
- Reduce travel times into the CBD, with a trip from Rozelle to Central taking approximately 10 minutes.
- Ease congestion of bus and rail services by providing a new public transport service within and across the CBD.
- Provide the opportunity to generate additional capacity on the CityRail network by using Central Station's underused country platforms as a gateway for the Metro through to the CBD.

- Reduce crowding at some of CityRail's busiest stations by providing new metro stations in the Barangaroo-Wynyard, Martin Place, Town Hall and Central precincts.
- Provide the first public transport link for the proposed new Barangaroo development precinct.
- Support the long-term global competitiveness and attractiveness of Sydney by bringing the world-class reliability and efficiency of a metro service to the city for employees, residents, students and visitors.

4.10 Metro network

4.10.1 The metro network

Issues included

- *If the metro is to go ahead it should at least go out to Ryde.*
- *The project and its termination at Rozelle were never revealed in any of the LEPs or other local planning instruments previously.*
- *Who is the Rozelle Station for and who wants it?*
- *No documents have been produced pertaining to the extension of the metro from Rozelle. Rozelle will become an 'end of line' station (another Bondi Junction).*
- *The Rozelle Station will not solve crowding in other areas.*
- *The initial announcement of the project from Rouse Hill to Rozelle seemed to have many more benefits that this small section.*
- *What are the plans to extend the metro. The metro should be extended further to other suburbs including:*
  - *Drummoyne and Five Dock*
  - *Eastern Suburbs*
  - *South of Strathfield*
  - *Ryde and West Ryde*
  - *Epping*
  - *South-eastern suburbs*
  - *North-eastern suburbs*
  - *North-western suburbs*
  - *Southern suburbs.*
- *Future governments are unlikely to extend this metro and have stated that they will cancel it.*
- *If the project is approved, conditions should be put in place and dates should be set to ensure that Metro line 1 is ultimately extended to the north-west.*

- *Although construction of the project is a necessary precursor of the West Metro line and other planned extensions, there have not yet been necessary political and funding decisions that will provide the necessary link between these assumptions and their realisation.*
- *Sydney is too far sparsely populated and under-populated compared to other metro cities (eg Paris and London).*
- *If the project went to Ryde instead of Rozelle it would mirror the West Metro plans for providing interlinking transport connections (ie with CityRail at Ryde).*
- *Because of their extreme cost, Parramatta or Ryde extensions could not be expected for at least a decade after completion of the project.*

Response

Sydney's complex network of road, rail and bus is already at capacity on key points of the network – points that are also experiencing the highest rates of population and employment growth. To maximise and support growth and sustainability, Sydney requires a comprehensive transport solution.

A metro network was first identified in the 2006 Urban Transport Statement, which recognised that metro would provide the key benefit of operational separation from existing road and rail networks as well as modern rolling stock and train control systems to enhance reliability and facilitate the rapid loading and unloading of passengers.

Metro rail has been investigated because overseas experience has shown that it has the ability to meet the sustainable mass transit challenges of modern cities.

Metro would be an essential addition to Sydney's transport system and, over time, it is expected to be as significant as, and fully integrated with, the roads, rail and buses that underpin Sydney's communities and economy. A metro system, capable of carrying 29,000–40,000 passengers per hour per direction would add a significant, high quality service to Sydney's constrained transport network.

The metro system – the currently proposed Stage 1 project and its later extensions– would also help to meet the land use challenges outlined in the Metropolitan Strategy, by driving population and employment growth around key transport centres and corridors, promoting urban renewal, reducing road congestion and promoting economic prosperity.

In the short term, the Stage 1 project would serve the area between the CBD and Rozelle. In the longer term, a broader metro network is planned, including an extension from Rozelle towards the north-west, following the Victoria Road corridor. The metro network would be targeted to serve major transport corridors that are not currently serviced by mass transit, or do not have the capacity to meet future needs. This is expected to include many of Sydney's most heavily used and congested bus corridors, such as Parramatta Road, Victoria Road, Anzac Parade and Military Road.

Two metro lines would form the basis of this broader metro network:

- Metro Line 1 (City West line) – from Westmead to the CBD and then beyond Rozelle to the northwest.
- Metro Line 2 (City East line) – from Malabar via Maroubra, the Prince of Wales Hospital and University of NSW to the city and beyond to the Northern Beaches.

These lines would support future growth in the north-west, and in the longer term, in the south-east and north. In the very long term, this network could be extended to major cross-regional corridors of demand. The future development of the metro system will be guided by a wider Metro Network Strategy being developed by Sydney Metro.

The proposed Metro Network Strategy links land use and transport planning and delivers on the state's strategic objectives for improved urban environments with reliable transport access. It would provide a fast and frequent rail service linking key population and employment centres, and support major destinations such as Parramatta and Macquarie Park, making them more attractive as employment locations.

Consistent with the Metropolitan Strategy's vision for Sydney in 2031, a metro network for Sydney would:

- Support a series of stronger centres within the metropolitan area, providing jobs and services closer to where people live.
- Support the growth and expansion of employment, housing, retailing and services within major centres.
- Support the development of the Global Economic Corridor.
- Support urban intensification to preserve valuable agricultural lands.
- Provide more equitable access to housing, employment, services and open space while preserving the character of existing neighbourhoods.
- Provide an expanded transport network to improve connectivity and access between centres and enterprise corridors.

It would also support the key objectives in *Action for Air* and the *NSW Greenhouse Plan* for protecting and improving air quality across NSW.

With its large catchment area and position at the start of a future North West metro, Rozelle was a natural choice for Stage 1 (refer to Chapter 5.3.2 of the EA).

More than 10,000 people live within an 800 metre radius of the metro station for Rozelle, providing a large number of potential users within a short walking distance.

Many people from Rozelle and surrounding areas will use the metro for the convenience of a four minute trip to the CBD. No buses will be forced to stop at Rozelle but many passengers, particularly working in the north of the CBD, will choose the metro because of the time savings and frequency of services.

At Rozelle, passengers arriving on buses on Victoria Road and Darling Street will have the opportunity to transfer to the Metro for a fast onward journey towards the city. Bus stops will be designed for easy transfer to other destinations by bus using a dedicated bus lane along Victoria Road. Those most likely to interchange to metro will be those travelling to the northern part of the CBD which will be only five minutes away by metro as against 18 minutes by bus. Similarly, by metro it will take only 10 minutes to reach Central, as against 19 minutes by bus.

Rozelle is not the end of the network. Stage 1 is Central to Rozelle - an extension of stage 1 to the North West is identified and Rozelle will become an intermediate station in this network.

Transport facilities of the same kind and scale as Bondi Junction are not proposed or required for the Stage 1 project. Commuter car parking is not proposed or required for the Stage 1 project.

The Sydney Metro Stage 1 has the potential in the longer term to provide extension towards the north-west to deliver better access to jobs in centres such as Ryde, Macquarie Park, Rouse Hill and Norwest, and provide communities in the newly developing North West Growth Centre with benefits from having access to the highest quality public transport service.

A metro extended towards the north-west would provide significant travel time savings for residents in the Hills District, with a reduction in travel times between Rouse Hill and Sydney CBD of about 50 per cent.

The process undertaken to develop the Reference Design for the Stage 1 project has anticipated the potential form and function of potential future projects including an expanded metro or heavy rail network through the Sydney CBD.

Currently there are two reserved rail corridors through the city known as Pitt Street Corridor on the eastern side and Western Corridor on the western side. Both are safeguarded to allow future rail extensions through the CBD.

The Stage 1 project will use part of the safeguarded Pitt Street Corridor. However, the metro project has been designed to ensure the Western Corridor is preserved to allow future extensions through the CBD of the city rail network if required.

Sydney Metro has liaised closely with RailCorp to ensure the safeguarding of the Western Corridor. The metro route through the city would not rule out further expansion for CityRail.

The Pitt Street Corridor was identified as a best fit for the Metro linking with existing transport services and areas within the Sydney CBD. The Western Corridor would not provide these linkages and would require unacceptably tight radius curves to achieve an alignment between Barangaroo and Pyrmont.

It is intended that as part of any future metro network to the south-eastern and north-eastern suburbs, forming Metro line 2 would intersect with Martin Place station. Provisions have been made in the Stage 1 design to allow effective passenger interchange in the future. Further studies are underway regarding the exact alignment and station locations of Metro line 2.

For further issues and responses regarding the length of the project refer to section 4.7.

4.10.2 Staging of the network with Stage 1 first

Issues included

- *The Sydney Metro Stage 1 project between Central and Rozelle should not be the first priority route. The first priority route should be one of the following:*
  - *western Sydney (including Parramatta)*
  - *north-west Sydney (including the Hills District)*
  - *south-east Sydney (including Kingsford).*
- *The Sydney Metro Stage 1, Central to Rozelle is not necessarily the most appropriate enabling project of the network.*
- *It is not apparent that rail traffic congestion at Town Hall will be relieved by the proposal in a manner superior to other plans nor is it apparent that the objective is best achieved by construction of this CBD section ahead of the outlying sectors that presently constitute later stages of the metro project.*
- *In 30 to 60 years time, will a plan using the CBD as the hub be appropriate? Shouldn't we be striving to decentralise services.*
- *A 'metro spine' will eventually need to run through the Sydney CBD. However it will need to run from North Sydney to south of Central Station and be part of a wider network.*

- *The ANZAC Metro line would be beautifully balanced east-west and have patronage and service comparable with world best-practice.*

Response

The project is being delivered as the initial stage of the broader Sydney Metro Network. Stage 1 forms the central spine of what would become Metro line 1, which would extend to the north-west of Sydney and include going beyond Rozelle to the northwest and including Drummoyne as a station.

Feasibility work on a north-western extension linking into the Macquarie Park area is also being conducted. This builds upon previous work undertaken as part of North West Metro. The scope of the current project for which Sydney Metro is seeking project approval does not preclude extension options. Indeed the tunnel stubs at Rozelle station have been design to allow for future extension of the line to the west and north-west.

Suggestions to delete the metro station at Central in favour of a Drummoyne Station are noted. However, the metro station at Central provides a critical component of Stage 1 as described in Chapter 5.3.2 (and throughout) the EA.

It is important not to look at Stage 1 in isolation. International experience is that a central component of the metro is constructed first as the “enabler” of a future, much larger metro rail system.

A Project Application and Preliminary Environmental Assessment have been lodged with the Department of Planning for Stage 2 – between Westmead and the CBD (including Strathfield). This would be the next logical step for metro rail systems in Sydney. Possible other metro links include to the north-west, the south-east and the north.

Chapter 4.4 of the EA describes the Metro Network Strategy, which includes:

- Metro Line 1 (City West line) – from Westmead to the CBD and then beyond Rozelle to the northwest
- Metro Line 2 (City East line) – from Malabar via Maroubra, the Prince of Wales Hospital and University of NSW to the city and beyond to the Northern Beaches.

Sydney Metro cannot speculate on future NSW Government policy. However, the NSW Government’s Transport Blueprint will be the basis for all transport decision making.

4.11 Need for an integrated transport plan for Sydney

4.11.1 Project not part of an integrated transport plan

Issues included

- *The project is not an integral part of the long-term plan for public transport expansion. A determination to allow it to proceed to construction would be illegitimate in the absence of such a plan being developed, publicly exhibited and widely discussed.*
- *It appears as poor strategic planning to not prioritise the remediation of current massive inefficiencies within the current public transport system.*
- *Prior to proceeding please reconsider and review recommendations and analysis from other well respected authorities such as the SMH sponsored review and Garry Glazebrook.*

- *There has not been adequate strategic planning at the local level along the proposed and future route to ensure that the economic, social and environmental implications have been addressed.*
- *There should be a single authority to plan, manage and govern land use and transport, responsible for strategic regional planning, delivery of all regional infrastructure, and long term funding.*
- *A system of transfer of people by an inner web of trains fed by an outer web of bus routes fed by an outer web of car parks/ bus transfer locations is the only workable solution to Sydney's overall passenger transport.*
- *The development of the NSW Transport Blueprint should be aligned with the release of a revised Sydney Metro Strategy in 2010.*
- *I would like to see both the comprehensive transport blueprint and financial commitment from the State Government for such a plan prior to commencement of one small section.*
- *The project contradicts the State Plan's Metro component in the Urban Transport Statement (2006).*
- *The EA appears to ignore the Metropolitan Strategy and the metro was not part of the Metropolitan Strategy.*
- *The Sydney Integrated Transport Strategy (developed by Chris Stapleton Consultants) is a soundly based integrated transport strategy. We commend this plan for all transport.*

Response

The Stage 1 project is proposed as part of the NSW Government's ongoing support to the City of Cities: A Plan for Sydney's Future[4] planning framework for Sydney also referred to as the Metropolitan Strategy. The association with this plan and how the project aligns with the objectives of the plan was provided in detail at section 4.4 of the EA.

As noted in the EA the project is an opportunity to encourage a significant proportion of the anticipated population and economic growth into corridors supported by new, high quality transport, consistent with the Metropolitan Strategy.

A metro network was first identified in the 2006 Urban Transport Statement, which recognised that metro would provide the key benefit of operational separation from existing road and rail networks as well as modern rolling stock and train control systems to enhance reliability and facilitate the rapid loading and unloading of passengers.

The EA does not cite the Sydney Integrated Transport Strategy (developed by Chris Stapleton Consultants). However, Chapter 4.1 of the EA describes the relevant strategic policy and planning framework, including reference to the State Plan (2006), City of Cities: A Plan for Sydney's Future (2005), the Inner West Subregion – Draft Subregional Strategy (2008), and the Sydney City Subregion – Draft Subregional Strategy (2008).

The need for an integrated transport and land use was acknowledged through creation of NSW Transport and Infrastructure in June 2009.

NSW Transport and Infrastructure is the transport super agency of the NSW Government, with responsibility for all transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

[4] Department of Planning 2005, City of Cities: A Plan for Sydney's Future

Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW. It will be the basis for all transport decision making between now and 2036 and includes strategies and actions necessary to achieve a transport system that boosts economic activity, has a positive impact on our social and environmental wellbeing and helps to make NSW an attractive place to call home.

The Transport Blueprint will provide for improved connections at all levels of travel, including movements across the metropolitan area and to the Sydney CBD.

Rail will be bought to new areas with a frequency and service quality that will make it a natural choice for work and recreational trips. The Blueprint will identify one rail plan for Sydney with different types of corridors. An integrated rail plan means that metro and the existing rail system will complement each other, not compete for funding or patronage. This will allow the Government to develop the rail system that Sydney needs, but also complete the task of providing rail to outer areas including a North West rail link. In some existing areas, principles of metro operation will be applied to the existing system, leading to more frequent and better services.

Stage 1 of the Sydney Metro Network is one of the highest priority transport projects in Sydney (and is considered critical infrastructure). It is the most complex component of the Metro network in the most complex urban environment. However, it is on track to be completed and operational in 2015. Therefore, in order to construct and commission the project, Sydney Metro is seeking approval for Stage 1 concurrent with the development of the Transport Blueprint. Once complete, Stage 1 will provide the enabler for future extensions that will be completed in accordance with final Transport Blueprint.



PROJECT DEVELOPMENT AND ALTERNATIVES

4.12 Project route and alignment

4.12.1 Alternative tunnel alignments

Issues included

- *The alignment of the metro should be parallel to Victoria Road on the southern side.*
- *The project should bypass inner city areas.*
- *We ask that consideration be given to tunnelling underneath the park on the northern side of the building at Pyrmont.*
- *The priority should be to start at Barangaroo, tunnel north-west and south-west and later north-east.*
- *It would be cheaper for the Central to Rozelle line to use the rail freight corridor from Broadway to Pyrmont, then underground to Balmain and Rozelle.*
- *There are other solutions and alternatives for where and how the light rail could be located which would not impact the heritage area.*

Response

The reasons for the proposed tunnel route and station locations are given within sections 5.4 and 5.5 of the EA.

The alignment shown is subject to further development within the proposed corridor and the suggestions for minor alignment changes are noted. Changes may occur as new information is obtained during the detailed design and construction phases.

4.12.2 Use of Metro Pitt corridor

Issues included

- *The proposal would compromise expansion of the CityRail network throughout the CBD and beyond by denying the reserved Pitt Street underground rail corridor from CityRail. This alignment is required for additional rail lines to support growing demand for CityRail services and has been set aside specifically for these purposes.*
- *By using the Pitt Street Corridor to expand CityRail capacity as intended, the short-term increase to CityRail passenger numbers will greatly exceed any long-term increase forecast on any of the metro lines advocated by the government.*
- *Expansion of the CityRail network could alleviate the already dangerous overcrowding at Town Hall Station.*

Response

CityRail and Sydney Metro are working together to improve public transport across Sydney – including the CBD. There are no competing agendas – in fact CityRail and metro services will complement one another, contrary to claims in recent media reports.

Sydney Metro Stage 1, Central to Rozelle, is the first part of a wider metro network for Sydney that will take rail to new places and corridors currently reliant on buses and cars. But it will also serve a more immediate need to create additional capacity in the CBD, taking pressure off CityRail and bus services.

During feasibility studies for the project, the development of the alignment took into consideration the need for separate additional heavy and metro rail alignments running north–south through the Sydney CBD.

The need to protect the rail corridors was given statutory recognition by the Infrastructure SEPP, which defines the Interim Metro Corridor (including that for the project).

Two underground rail corridors have been protected through the City. The Pitt Street Corridor is one of two feasible rail corridors through the city. Stage 1 of the Sydney Metro, from Central to Rozelle, is using part of one corridor - the Interim Rail Pitt Corridor (or Pitt Street Corridor). The other corridor available within the CBD is the Interim Rail West Corridor (or Western Corridor).

The alignment for the Stage 1 project did not use the Western Corridor alignment as this alignment failed to cover a number of station locations sought by the project. The Pitt Street Corridor alignment was selected as the best fit with the project requirements of having a metro station at Town Hall Square and Martin Place.

The Metro West alignment is proposed for a heavy rail system and although also considered suitable for a metro style system, being able to head west in the direction of Pyrmont from Barangaroo would not have been possible due to the minimum horizontal radius curves required.

Technical consultation was undertaken with infrastructure asset owners to ensure the long-term protection of existing and proposed infrastructure, including but not limited to RailCorp, particularly with regard to existing and protected rail corridors through the CBD. The Stage 1 tunnel alignment and/or design reflect the outcomes of this ongoing consultation.

The protected Western Corridor is suitable for heavy rail and remains protected for future use by RailCorp. The use of the Interim Rail West corridor for RailCorp was confirmed via detailed engineering assessments during the preliminary phases of the metro project development.

Importantly, the Stage 1project would not preclude a heavy rail alignment utilising the Interim Rail West corridor, and would not prevent future CityRail expansion.

The NSW Government's Transport Blueprint will have more detail on future directions for a combined CityRail and Sydney Metro rail network. The Blueprint will identify one rail plan for Sydney with different types of corridors. An integrated rail plan means that metro and the existing rail system will complement each other, not compete for funding or patronage. This will allow the Government to develop the metro rail system that Sydney needs, but also complete the task of providing rail to outer areas including a link to the North West. In some areas, principles of metro operation will be applied to the existing system, leading to more frequent and better services.

4.13 Station locations

4.13.1 Barangaroo-Wynyard Station location

Issues included

- *An entry in the 2005 East Darling Harbour Design Competition suggested that the southern section of Barangaroo be developed as a new underground public rail transport hub, adjacent to the CBD. A short underground walk from Barangaroo to Wynyard would give public access to all the existing heavy rail infrastructure without the need to interfere with any existing CBD facilities.*

Response

The Stage 1 project would establish a major public transport station at Barangaroo. The project would also deliver the Barangaroo Pedestrian Link, which would provide direct pedestrian access between Barangaroo and the Wynyard precinct. The need for the Barangaroo Pedestrian Link was recognised when the Barangaroo development was approved.

4.13.2 Pyrmont Station location

Issues included

- *The Star City site has not been given balanced and complete consideration in the EA. Reasons to locate the station in the Star City development site include:*
  - *It would minimise disruption to local businesses, the community and the heritage precinct.*
  - *It is already a transport hub with light rail, bus terminal and interchange.*
  - *It is in close proximity but has clear separation from Union Square.*
- *Plans for the metro at this site should have been made years ago when the NSW Government took over planning control of the Star City site.*
- *The sites have not been compared in comparable dollar terms. There is no consideration of the overall economic impact to the local Pyrmont economy.*
- *Alternative station locations for Pyrmont should be investigated.*
- *The EA emphasises that Union Square is the cheapest option. Yet other locations would allow for major property redevelopment by Sydney Metro, providing more profit.*
- *Sydney Metro was committed to the Union Square site from the beginning, as the cheapest and easiest option.*
- *The demolition of the back sections of the four terraces for the eastern entrance reduces their size rendering them unviable as homes or businesses.*
- *The aggregated development potential of a rail station entrance together with the redevelopment of some sites to heights above two stories has not been considered.*
- *The Property Council favours Alternative 2 as it provides sound access arrangements and extends the size of Union Square.*

- *The EA claims that the Pyrmont Station entrance location has been driven by the proximity to prime tourist destinations and Jacksons Landing, but all alternative sites are similarly close to these destinations. Big business, in particular Star City, is the driver for the location of this project.*
- *There are no arguments as to why these options would have less patronage benefits than Alternatives 1 and 2. No values have been given to the environmental, heritage and social costs of Alternatives 1 and 2.*

Response

Options for locating the Pyrmont Station entrance within the boundaries of the Star City casino site were detailed within Appendix C of the EA – options 3a and 3b.

Option 3a involved locating a full entrance plus all services buildings within the Star City site. Star City have indicated that they would not agree to a full station entrance within the redevelopment of the site due to the impact on their construction programme and impact on the development including loss of parking and retail space. This option was not considered to be feasible given the stage of construction of the approved Star City hotel development and the costs associated with locating the station facilities on the site.

Option 3b involved locating a main eastern side entry on the eastern side in the Star City site, thereby partly reducing the costs associated with locating the ventilation and emergency egress facilities on the approved Star City hotel development site. However, this option would still require the acquisition of buildings on the corner of Pyrmont and Union streets for tunnel and station services (ie vents and emergency egress).

In addition to not resolving issues associated with the purchase of buildings on the corner of Pyrmont and Union streets this option also:

- Required the need to divert a number of existing underground services at a significant cost of about $120 million and with the disruption of this utility service for a large catchment area creating a significant risk for the construction program.
- Required the agreement of Star City whom had commenced construction works on their Part 3A approval for Casino redevelopment and new hotel.
- Was significantly more expensive overall when compared to the options considered.

For these reasons Option 3b was not considered an appropriate station location entrance option.

Overall, the provision of a metro station entrance at the Union Street location will serve a large population, employment and retail catchment from a centralised location in Pyrmont's street grid network providing more direct walking linkages to major attractors. The preferred option retains the Union Street properties at the corner of Pyrmont and Union streets and has lower construction and property costs compared to other options.

Options for locating the Pyrmont Station entrance were detailed within Appendix C of the EA. This document identified seven primary options with additional sub-options. The Union Square option was selected based, amongst other things, on the highest patronage of all options given its central catchment and Pyrmont identity. The reasons documented in Appendix C remain valid.

The proposed option (Alternative 2) would require the acquisition of the buildings at 3-9 Union Street; however the main historic part of the buildings up to the rear later extensions would be retained. This scheme also provides for an extension of the pedestrian walkway in Union Street between Pyrmont Street and Paternoster Row.

Acquisition of the terraces on Union Street would be for the duration of construction only, with these buildings reverting back to small retail once constructed.

Union Square would be used as a temporary construction site only, with no permanent structures located within Union Square. The diversion of Paternoster Row would allow Union Square to be extended further to Pyrmont Street.

The location of the station on Union Street itself between Pyrmont and Edward Streets was considered and rejected for the following reasons:

- It would provide a poor level of access in relation to employment areas located in the eastern side of Pyrmont. This would result in less demand, with a projected loss of approximately five million passengers per annum in 2021 (representing a 83 per cent reduction in patronage at Pyrmont) compared with the Union Square option.
- The option is problematic for the Darling Harbour water crossing (under pier structures), requiring much deeper stations at Barangaroo-Wynyard and Pyrmont, therefore slowing travel times and increasing construction costs.
- There is limited available space, with any station box overhanging the cutting.

While the vacant car park option avoids heritage buildings and the heritage streetscape in Pyrmont, construction would still have a significant impact on the immediate adjacent businesses, and side access to the northern building would be restricted during the construction period. Use of this site would also impact on adjacent residents and businesses located within Harris Street and Pyrmont Street, particularly construction noise and vibration, and construction traffic. More importantly:

- The option provided only moderate access to the eastern side of Pyrmont and would reduce direct links to Darling Harbour.
- The site has considerable level changes from one end to the other making layout and access difficult.
- Construction traffic movements through the site would not be possible due to space restriction, and truck unloading would need to take place from within Pyrmont Street, utilising lane closures.
- The tunnel alignment and station cavern would need to be re-aligned below the existing quarry face at Mount Street, which has been stabilised with rock bolts and underpinning in some locations.

Overall the provision of a metro station entrance at the Union Street location would serve a large population, employment and retail catchment from a centralised location in Pyrmont's street grid network providing more direct walking linkages to major attractors. The preferred option retains the Union Street properties at the corner of Pyrmont and Union streets and has lower construction and property costs compared to other options.

4.13.3 Rozelle Station location

Issues included

- *The placement of Rozelle Station at the Tigers site is a situation of uncertainty, given the volatile financial situation of the Balmain Leagues Club.*
- *How will the metro station and Balmain Leagues Club interact?*
- *The current siting of the metro station at Rozelle is not in the interest of the Leichhardt community.*

- *Rozelle Station should be fully integrated beneath the Tigers site.*
- *The pedestrian tunnel should be built further down from Tigers and connect to the area outside the Rozelle Public School.*
- *Sydney Metro is not interested in looking at alternative station locations at Rozelle.*

Response

Sydney Metro and the Balmain Tigers Leagues Club agreed to work together to finalise an agreement to allow Sydney Metro to use part of the Tigers site for construction purposes, for which negotiations are ongoing. This agreement would involve leasing the Tigers site during construction, with the main construction activity for the Rozelle Station at this location.

The agreement would also involve purchasing a strip of land at the front of the Tigers site, alongside Victoria Road, for a bus bay. The bus lane would allow passengers to be safely dropped off and picked up, separated from general traffic. The inclusion of the bus bay alongside the Tigers construction site requires the vehicle entry for the proposed redevelopment to be moved.

Four properties at 168-174 Victoria Road are also proposed to be acquired by Sydney Metro. It is expected these properties would be used for construction activities, and afterwards, as a site for station services.

Some of the remaining land from 168-174 Victoria Road could be available to provide vehicle access to the Tigers site, to address overall traffic management and safety. There are no plans for this land to be used for retail but it would be required for ventilation and emergency egress for Rozelle Station.

A Metro station at Rozelle would serve the densely populated residential precincts of Balmain, Rozelle and Lilyfield, as well as the café/restaurant and shopping strip along Darling Street towards Balmain.

Station entrances are located on three corners that are easily accessible and form part of the main north-south route and the 'High Street' environment. Moving entrances further from the corners (ie south along Darling Street or within/underneath the Balmain Leagues Club site) would increase passenger travel times and decrease access to the Metro platforms. The location at the intersection of Victoria Road and Darling Street provides for effective passenger bus/metro mode change.

Provision would be made so that a future pedestrian connection could be constructed to the Balmain Leagues Club site.

In the early years of operation Rozelle Station would have a significant bus-Metro transfer function allowing rapid access to the CBD. While this function would diminish with the future extension of the Metro network towards the north-west, local level interchange would continue, particularly from the Balmain and Lilyfield/Leichhardt directions.

A number of station location options were considered for Rozelle Station. These were:

- Rozelle Central – Top of the hill at the Darling Street and Victoria Road intersection.
- Rozelle West – Bottom of the hill in the vicinity of Victoria Road and the Carrier Site.
- Callan Park.

The preferred location has the station positioned adjacent to the Victoria Road/Darling Street intersection and partially under Victoria Road. This site maximised station access and patronage and was seen as providing an opportunity to improve the community setting of the St Thomas Church Group, Rozelle Public School and St Pauls Church, while facilitating an improved link across Victoria Road.

4.13.4 Building White Bay Station as part of the project

Issues included

- *The White Bay Station should be built at the same time as the other stations.*

Response

The NSW Government has committed to preparing a master plan for the future use of the Bays Precinct. The NSW Government recognises that the Bays Precinct is important to both the local community and to wider Sydney.

The future White Bay Station would have a station box formed for the platforms with a view to safeguarding for future station construction. Safeguarding a site for a future metro station at White Bay provides a unique opportunity for the Bays Precinct. If required, the White Bay Station could be opened with Stage 1 and this opportunity could be realised in 2015 provided resolution of planning issues was achieved by the end of 2011.

4.14 Design process

4.14.1 Community/business input into design

Issues included

- *There should be a monetary incentive for the community and businesses to provide constructive feedback on any aspects of the metro system.*

Response

There is no legislative basis for provision of monetary incentives for making a submission.

Community and business groups will be provided with the opportunity to review the design principles for Rozelle and Pyrmont stations. Sydney Metro has initiated a Design Principles Workshop process for Rozelle and Pyrmont.

4.14.2 Validity of the design process

Issues included

- *The project has not been well planned.*

Response

A rigorous planning and engineering process has been undertaken to develop the Reference Design for the project. The selection of specific locations within each locale was based on servicing the identified catchment, pedestrian flows and connectivity, interchange, environmental constraints, alignment and major engineering and constructability issues.

The design of the project and station designs would be the subject of an ongoing design development process and stakeholder/community consultation that has involved the iterative development of design options to respond to particular issues and constraints at each location.

THE PROJECT

4.15 Metro operation

4.15.1 Driver versus driverless trains

Issues included

- *The concept of driverless metros should be dropped, particularly in a time of increasing unemployment.*
- *What are the costs and benefits of being driverless rather than having a driver?*

Response

Some of the benefits of Automatic Train Control (driverless) are:

- Trains can travel at closer intervals during peak periods of operation as the virtual blocks (in software) can be made smaller than conventional track circuit infrastructure.
- The train speed is reduced automatically as it closes up to the train ahead and does not rely on driver reaction and ability to observe signals for greater safety.
- The ability to automatically add and remove trains. Automatic Train Operation allows the train controller to add and remove trains remotely and efficiently to meet unexpected passenger demands without the need to arrange drivers at short notice.
- The reduction of risk. Train movements between the Main Line and the depot are automatic, removing the risks of mixing staff (drivers) and train traffic in the stabling area of the depot.

The additional safety features for driverless trains have been fully costed by independent professional cost consultants.

Driverless trains also provide safety, flexibility and financial savings (eg life cycle cost saving in power consumption and maintenance as trains are driven to uniform and optimal specifications). The capital costs are commensurate with conventional line side signalling schemes when onboard equipment provisions are fitted during rolling stock production.

4.15.2 Metro trains

Issues included

- *Lack of detail on the web page is part of the general misinformation presented to make a false impression that the proposed metro's passenger capacity will be superior to the existing CityRail system.*
- *The metro would have shorter trains, shorter platforms and less capacity per carriage than CityRail thus limiting the maximum passenger carrying capacity.*
- *It is unlikely that the proposed system at crush capacity will achieve the promised train frequency or total capacity as claimed on the web.*
- *People will have to stand for too long as there would be too few seats (eg from Parramatta to the city)."*

Response

Some information regarding metro trains and passenger capacity is provided on the Sydney Metro website. Further detail on the metro trains was provided in section 6.8.2 of the EA. This information is indicative and not misleading.

As noted in section 6.8.2 of the EA, each five-car train could hold 965 passengers. The two-by-two transverse seating mentioned in the EA is now being reviewed to consider longitudinal seating for greater overall capacity of 1,060 passengers per five-car train.

While this is still less than an eight-car CityRail double-deck train (1,200 passengers), the metro system capacity is greater overall due to the higher frequency of train services. It should also be noted that the metro station platforms have been designed to accommodate the future operation of six-car trains if required, which would further increase the capacity of the metro trains.

While the design of the metro trains will continue to be refined (15 to 20 doors per platform per train is being investigated), the proposed design is expected to assist rapid boarding and alighting at stations in order to minimise dwell times. The frequency of the services (arriving every 2-3 minutes during peak periods and at high frequencies throughout the day) would better avoid the system operating at 'crush capacity' as passengers would be cleared from the platform with greater frequency.

At capacity the metro trains would accommodate 254 seated and 806 standing passengers. Given the short distance of the project (approximately 10 minutes between Rozelle and Central), having this number of passengers stand is not considered to be unacceptable. With the extensions of the metro, the journey from Parramatta to Central would take 24 minutes but the majority of travellers could expect to be seated. Other metro extensions under consideration would not dictate a change of seating.

Longitudinal seating is standard practice for the metros of Rome, Bangkok, Madrid, Hong Kong, Berlin and Singapore.

4.15.3 Frequency of services

Issues included

- *It is unclear if higher service frequency is practical as it requires further stabling capacity, more rolling stock and most significantly, the station spacing and track alignment may limit operational frequency.*

Response

As noted in Chapter 6.7 of the EA, efficient signalling, communications and train control facilities are required for the safe operation of Stage 1. Trains would be automatic and driverless and controlled using an Automatic Train Control (ATC) system with associated signalling equipment. The signal system design would provide performance levels of up to 30 trains per hour.

The train stabling area would be located along the north-western boundary of the depot site, alongside the Lilyfield Road escarpment towards the Catherine Street bridge. The initial rolling stock for the project is likely to comprise 13 trains. The initial stabling area would provide space to accommodate 11 five-car trains in four stabling roads, each about 360 metres in length. The two other trains would be stabled at either end of the running tunnels.

The initial number of trains required following commissioning in 2015 is to operate 24 trains per hour. If passenger demand is increased then the frequency would be increased to up to 30 trains per hour.

The tunnels would have a maximum gradient of 4.5 per cent to accommodate a maximum metro design speed of up to 100 kilometres per hour. Six stations (plus White Bay) are located along the 7 kilometre alignment of Stage 1. Station spacing and track alignment are not limiting factors in achieving performance levels of up to 30 trains per hour.

The current station spacing and track alignment does meet the performance levels required to operate up to 30 trains per hour.

4.15.4 Travel times

Issues included

- *The proponent disputes the claim that a seven kilometre ride from Rozelle to Central will take approximately 10 minutes. The EA overstates the case for Parramatta passengers travel times.*

Response

The travel time from Central to Rozelle would be approximately 10 minutes. This is based on a speed profile that includes acceleration/deceleration rates that would not cause discomfort (or safety issues) for passengers. Travel times account for station stops. Chapter 6.8 of the EA presents conservative dwell times (the time allowed for passengers to alight and board trains) of 40 seconds at CBD stations and 30 seconds at Pyrmont Station and Rozelle Station.

Table 22.1 in the EA presents a comparison of different public transport modes in vehicle travel times from Central.

Vertical circulation at stations is specifically designed to ensure travel times from surface to platform are efficient. Typical travel times are estimated as follows:

Table 4.1 Estimated travel times to platform level (all horizontal and vertical distances)

Metro station	Depth of station (metres)	Start location (to metro platform)	Travel time (walking) (minutes)
Central	25-30	Western Forecourt CityRail Platform 4,5 Platform to Bus Stand C Eddy Avenue	2:36 3:21 5:12
Town Hall Square	23-26	South West corner Park and Pitt streets CityRail Town Hall Station platform via sub surface link	2:19 2:53
Martin Place	36-38	Martin Place (metro entry) Elizabeth Street bus stop	3:15 4:56
Barangaroo-Wynyard	17 (western) 37 (eastern)	Barangaroo (metro entry) Clarence Street bus stop CityRail platform (North Shore Line)	1:46 3:07 3:08
Pyrmont	27-30	Western metro entry (Mount Street) Eastern metro entry (Union Square) Light Rail (Casino Station)	2:13 2:15 6:18
Rozelle	27-36	South-west metro entry North-west metro entry Most remote bus stop at western end of new bus bay	3:03 3:34 4:01

It is important to note that the metro provides a turn up and go service every 2-5 minutes, so passengers do not have to wait or rely on timetables. A metro system provides significantly greater reliability in terms of travel times.

Travel times from Parramatta associated with the Sydney Metro Network Stage 2 are provided on the Sydney Metro web site.

4.16 Tickets and fares

4.16.1 Cost of fares and integrated ticketing

Issues included

- *A market analysis should be provided to show whether passengers would be prepared to change mode and pay an extra fare.*
- *There is nothing in the EA about ticket prices.*
- *EcoTransit understands that an 'access surcharge' is likely to be implemented. Such a fee would have an adverse impact on patronage.*
- *The metro must operate as part of an integrated ticketing system.*
- *Will users be charged extra for changing modes?*

Response

The Stage 1 ticketing system would use the latest automatic fare collection (AFC) technology, and would be a fully gated and paperless system. Automatic fare collection gates, with locally controlled directional settings, would be provided to allow safe and smooth passenger movement between paid and unpaid station areas, as shown in Figure 6.38 of the EA. Passengers would swipe in on entry and swipe out on exit. Passengers who use the metro infrequently would be able to buy tickets at the stations.

Frequent users would be able to buy and top up Smart Cards. It is intended that the ticketing system would be part of an integrated electronic ticketing system for Sydney and would be interoperable with other transport modes (that is, there would be one single, integrated ticketing system for all of Sydney's public transport). If the fully-integrated system is not available at the time, an automatic fare collection system would be installed and operated with a possible interface to other Sydney public transport operations. Fares would be comparable to other public transport systems at the time of opening.

Sydney Metro is not in a position to lead an integrated electronic ticketing system for Sydney. Concerns regarding the implementation of integrated ticketing have been provided to NSW Transport and Infrastructure, the lead public transport agency of the NSW Government, with primary responsibility for transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

Timetables for the metro would not be required given the high frequency of services (arriving every 2-3 minutes during peak periods and at high frequencies throughout the day). Information regarding Metro operating times would be displayed on the Sydney Metro website.

For more issues and responses on commuter behaviour refer to section 4.58.

4.17 Project design

4.17.1 Size, scale and location of the station facilities

Issues included

- *The size, scale and location of station facilities and entrances was raised for all stations, particularly Town Hall Square, Martin Place, Pyrmont and Rozelle.*

Response

Broadly, there are many factors that shape and influence each station location and footprint. The primary factors are connectivity, surrounding land use and built form (property), planning controls, pedestrian safety, other constraints and opportunities (as documented in Chapter 17 of the EA) and the overall station planning strategy (as documented in the Station Plans).

The size and location of the Metro entrances and surface structures (including all services) is of critical importance to Sydney Metro. Therefore, there would be stringent controls on the architectural and built form components of the project. It is acknowledged that the integration of the stations, their entry and exit points with the local built environment, would have an important influence on the character and social identity of areas surrounding the stations.

Many station and tunnel services are located underground or within building structures. However, each metro station requires a number of elements to be located above ground. Typically, each station has two areas for facilities including power supply, emergency egress, ventilation, communications and control systems and fire and life safety systems. These facilities must be at least partially located above ground to perform their functions. Appendix E of the EA provides indicative reference design drawings for the project that clearly identify that a substantial portion of station/tunnel service elements are in fact located underground.

The size and scale of station facilities is driven by availability of land, cost, land use and potential environmental impacts. It is noted that the Design Review Panel would evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design. The Design Review Panel would comprise independent specialist expertise in architecture, urban design, transport, heritage and sustainability.

The future end-state appearance of the above-ground and over-site elements of the project is also considered in the master planning process. The master planning strategy and principles are described in Chapter 17 of the EA.

A Design Review Panel has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design. The Design Review Panel comprises independent specialist expertise in architecture, urban design, transport, heritage and sustainability.

At all stations (and at the Rozelle stabling and maintenance depot), design principles to create safe, legible and attractive spaces would be applied. This would include the application of Crime Prevention Through Environmental Design (CPTED) principles.

Town Hall Square Station

It is noted that the project would facilitate the creation of the City of Sydney Council's proposed Town Hall Square, which would add a significant area of open space to the CBD.



Martin Place Station

Provision of a metro station entrance (and associated underground concourse) in the vicinity of Kindersley House is not proposed as part of the project. As noted in Chapter 5.5.3 of the EA, a number of issues with this scheme were identified as the design process progressed and changes at Martin Place were required.

Martin Place Station would be located under Castlereagh Street, between Martin Place and King Street amongst significant buildings including 48 Martin Place, the MLC Centre and Prudential Building. Access to Martin Place Station would be provided from one location within Martin Place, on the western side of Castlereagh Street, where there are existing entrances to Martin Place Station. It is considered inappropriate to include service facilities (vents, emergency egress) within Martin Place. Services and an emergency exit would surface within a services building located between Castlereagh and Elizabeth streets. However, tunnel vents would also be required on Castlereagh Street within the public domain.

Sydney Metro considers that the proposed vent structures within Castlereagh Street would not result in adverse visual impacts or screen active uses at ground level. Chapter 19.1 of the EA describes potential visual impacts.

It is noted that public art and/or advertising could be incorporated into the ventilation structures.

Pyrmont Station

Alternative locations for Pyrmont Station have been discussed earlier. In relation to the size and position of entrances and services at Pyrmont, significant review has been undertaken to minimise visual and property impacts, including positioning the eastern services building behind the retained terraces at 3-9 Union Street.

Provision of underground access to the Star City hotel development was not considered necessary given the surface level pedestrian environment.

Rozelle Station

The three proposed station entrances at Rozelle are required to:

- Maximise accessibility for Metro patrons from both sides of Victoria Road.
- Maximise accessibility to and from the two inbound (to the CBD) bus stops on Victoria Road on either side of the Darling Street intersection.
- Minimise pedestrian traffic crossing Darling Street at the surface (a single entrance on the Balmain side of Victoria Road would result in high pedestrian volumes across Victoria Road and Darling Street as patrons enter and depart the Metro station).

Retail and commercial properties on Darling Street are required to accommodate these entrances. Locating entrances (and services) within the existing footpaths along Victoria Road and Darling Street is not feasible due to the available space. A fourth entrance on the south-eastern corner of Victoria Road and Darling Street (within the York Buildings) or in the vicinity of Wellington Street is not considered necessary. Travel times associated with vertical and horizontal passenger circulation have been described previously.

The metro entrances at Rozelle have been planned and designed for the benefit of users. Alternative metro entrance locations (further south along Darling Street) would increase travel times and fail to integrate with bus facilities.

Use of the Tigers site for construction has been negotiated to reduce construction and property impacts on the northern side of Victoria Road. The ability to utilise the Tigers site for construction allows the most significant excavation activities to be undertaken away from sensitive receivers such as St Thomas' Child Care facility, Rozelle Public School and the Rozelle Neighbourhood Centre.

Station entrances are located on three corners of the Darling Street / Victoria Road intersection that are easily accessible and form part of the main north-south route and the 'High Street' environment. Moving entrances further from the corners (ie south along Darling Street or within the Tigers site) would increase passenger travel times and decrease access to the Metro platforms. Provision would be made so that a future entrance could be constructed within the Balmain Leagues Club site to connect it to the station.

Generally, services buildings would be located near the end of station platforms.

Proposals for any Masterplan West redevelopment are not currently known and would be subject to considerable planning and approvals (by Leichhardt Municipal Council).

4.17.2 Depth/location of tunnels and stations

Issues included

- *There are two very difficult water crossings between the CBD and Rozelle creating gradients that are at the limits of metro rail technology, and stations that are very, very deep underground - a circumstance that means there would be fewer stations.*
- *For proposed extension to Ryde, water crossings would be needed at Iron Cove and Parramatta River. On such an alignment, stations would be few and inconveniently located deep underground.*

Response

The technical difficulties of planning and designing an underground metro rail tunnel are noted. As discussed in section 6.2 of the EA, the rail level would generally be about 20-35 metres below street level, but up to 38 metres below street level at some locations. The tunnels would have a maximum gradient of 4.5 per cent to accommodate a maximum metro design speed of up to 100 kilometres per hour.

The depth and vertical gradient of the tunnels has been influenced by the harbour crossings as well as the need to provide sufficient clearance to existing and proposed building basement levels and numerous other transport and utility services that occur throughout the CBD area.

The depth of the tunnels and stations has not impacted the number of stations. The selection of station locales was influenced by the need to:

- Service demand in key catchments along the corridor.
- Facilitate interchange with CityRail services and reduce overcrowding at CityRail stations.
- Provide for potential future extensions of the metro network.

4.17.3 Suggestions for design

Issues included

- *There should be two sets of escalators at each end of the platform, and more standing areas on the metro (particularly around the door area).*
- *A pod design would be easier to find, occupies less space, and safer and easier to operate. Design should have the same appearance and be unique and modern.*
- *Structural poles and other obstructions should be minimised to allow quick and easy flow in/out of platforms.*
- *A catenary power supply should be selected because Line 1 will never be finished and will have to continue above ground.*
- *The ceiling of the Pyrmont Station concourse is within three metres of the heritage listed buildings on Union Square's northern side. A small amount of redesign would eliminate this unnecessary and unwanted risk.*
- *The alignment of the Barangaroo Pedestrian Link should be reconsidered.*
- *Reducing the tunnel diametre from 6 to 4 metres would more than halve the excavation volume and cost, and tunnelling timeframes. Suitable rolling stock for this type of tunnel is in use worldwide.*

Response

The stations have been designed on a modular basis and in response to a number of constraints such as subsurface structures (eg building basements and utilities), fire and life safety requirements (eg emergency exits), vertical circulation requirements (eg the number of lifts and escalators required), platform lengths and surface constraints (eg locations to bring out vent structures).

The detailed design process and selection of materials is ongoing. The detailed design suggestions provided in various submissions have been noted, including:

- Escalators arrangements at platform level.
- Catenary power supply.
- Depth and diametre of tunnels.

The location of the station concourse below Union Square is subject to further design, including consolidating the station concourse so that it is no longer below the properties located at 12-18 Union Street (as shown in the indicative Reference Design drawings). However, further design refinement is required. Notwithstanding, additional investigations were undertaken, including accessing approved Development Application drawings, to ensure that the Reference Design could be constructed and operated without adverse structural impacts on the heritage listed buildings that would be at least three metres above any excavation.

It is noted that the design of the bridge over Sussex Street (part of the Barangaroo Pedestrian Link) requires further review to reduce potential visual and spatial impacts on adjacent properties. The design of this bridge would be undertaken in consultation with adjacent land owners and the Barangaroo Delivery Authority.

In terms of the Rozelle stabling and maintenance depot, construction noise may at times impact significantly on residents in this location, particularly as the tunnels are constructed using

roadheaders. The Construction Noise and Vibration Strategy sets out a process to mitigate these short-term impacts.

The tunnel portals required for trains to access the Rozelle stabling and maintenance depot are located below Lilyfield Road at relatively shallow depths. However, it is anticipated that these tunnels and portals could be constructed without causing structural damage to buildings above. Building condition surveys would be undertaken in accordance with Statement of Commitment No. 72.

During operation of the metro it is anticipated that all noise criteria would be met at Lilyfield Road.

With regards to alternative locations for the portals, section 5.6 of the EA describes the limitations and options that were examined.

4.17.4 Kent Street tunnel (design and construction)

Issues included

- *Closure of the Kent Street tunnel for five years or more would result in a number of impacts,*
- *An underground walkway from Wynyard Station to the 275 Kent Street building and onto the Barangaroo site would improve access and safety.*
- *The existing tunnel should be retained by amending the demolition plan for the Clarence Street buildings. A covered street walkway, with disability access, should be provided from the rear of 80 Clarence Street to the entry of 275 Kent Street.*
- *A better route would be on the same alignment but at a greater depth and possibly exiting into the food court at Westpac Place.*

Response

The construction of Barangaroo-Wynyard Station requires the demolition of De la Salle House and 32-36 Clarence Street to provide the new station concourse and entry and exit portal and interchange with RailCorp services. Consequently sections of the existing Kent Street tunnel will have to be closed for part of the construction period.

Sydney Metro recognises that, whilst the existing Kent Street tunnel is not accessible to all (not being compliant with the *Federal Disability Discrimination Act 1992*), it does provide an important pedestrian link for many of the office workers in the western corridor of the CBD, including Westpac, to the Wynyard transport precinct and wider CBD.

Sydney Metro would develop access arrangements for pedestrians during construction, investigating options for the staging of works. The arrangements would seek to maximise the opportunity to keep open for as long a period as can practicably be achieved, that section of the Kent Street tunnel from Kent Street to Clarence Street. This plan would be a key input to the Construction Traffic Management Plan and Traffic Control Plans as per Statement of Commitment No.51.

Alternative pedestrian routes would be provided when this section of the Kent Street tunnel is closed for construction works. The alternative route would meet all accessibility and safety requirements for temporary routes of this nature, including providing cover and access for families using this route to attend childcare facilities.

Pedestrian and traffic counts, as well as dynamic modelling, would be undertaken to ensure that where pavement widening and other works are required to maintain access, this can be successfully provided.

In addition, pedestrian access during construction would be subject to the review and advice of the wider Traffic and Transport Liaison Group, including the City of Sydney Council and Roads and Traffic Authority (see Statement of Commitment No.52).

Further, it is the intent of Sydney Metro to undertake ongoing consultation with the wider business community and general public, to ensure that early advice is provided of any changes to pedestrian access during construction (see Statement of Commitment No.35).

It is intended that the Barangaroo Pedestrian Link (BPL) should be on the shortest and most direct route that can practicably be achieved. The temporary closure of the existing Kent Street tunnel as a result of the Sydney Metro works provides an opportunity to consider a BPL on this alignment rather than the current Margaret Street alignment.

Sydney Metro, on behalf of the NSW Government, is undertaking further feasibility studies to examine an alternative alignment for the Barangaroo Pedestrian Link and exploring the design, construction and impacts on adjoining properties, including Westpac and Dexus, owners of 1 Margaret Street and 83 Clarence Street. Once these plans have been further refined, including an understanding of the construction sequencing, ongoing consultation with both Westpac and Dexus can proceed and a decision can be made on whether to proceed with new detailed design engineering assessment.

New Statement of Commitment No.11C addresses the issues raised above.

4.17.5 Shadowing

Issues included

- *The height of the development in Pyrmont may overshadow our property.*
- *The overall effect of the height and proximity of the buildings would overshadow residences on Waterloo Street resulting in severe loss of amenity, shadowing and reduction in property value.*

Response

Potential overshadowing impacts associated with service buildings at Rozelle have been examined as identified in **Appendix F** and will be further refined to reduce over-shadowing impacts in consultation with affected property owners.

New Statement of Commitment No.11B requires that all services buildings in low-rise areas minimise over-shadowing of adjacent properties.

4.18 Operational safety and security

4.18.1 Ensuring passenger safety on metro stations

Issues included

- *Rail stations bring transients and crime. Can anyone guarantee that the people of Rozelle will be safe from crime once the station is operational?*
- *Upgrades of the Barangaroo-Wynyard catchment should include improvements to security including additional lighting and CCTV in areas such as York Lane and the Wynyard concourse.*
- *How are safety requirements met for staff on platforms and staff operating vehicles?*

- *CCTV coverage of bike parking should be included as a requirement.*
- *How safe will the pedestrian walkways under Darling Street be for children from Rozelle Public School and for women at night?*
- *It is likely that the public will be forced to use these pedestrian tunnels at Rozelle and that is unfair.*

Response

During operation, as noted in Chapter 22 of the EA, the project would provide world-class safety and security for customers, staff, contractors, neighbours and other stakeholders. Metro systems operate in tunnels throughout the world with a proven record of safety. The safety targets for the project would be based on the safety record of reputable metro operators.

Safety at station platforms and station entrance points would be provided through well-designed and efficiently controlled lighting systems, visible closed circuit television (CCTV) surveillance and the presence of metro staff within concourse areas during operational hours. Emergency egress and ventilation facilities would be provided at each station emergency intervention point.

Graffiti within stations and station entrance points would be removed.

Various improvements to the public domain would be undertaken as part of the project, with pedestrian safety a primary consideration, including a number of bridges and underpasses that would separate vehicle and pedestrian movements. Pedestrians would still be able to use road crossings on the surface and would not be forced to use pedestrian underpasses.

The design of bus transfer facilities, particularly at Rozelle has considered the safety and accessibility of users and adjacent pedestrians/cyclists.

Suggestions that a metro system would result in increased crime (or provide opportunities for criminals to access locations in the vicinity of Metro stations) are unfounded.

4.19 Rozelle stabling and maintenance depot

4.19.1 Access over depot

Issues included

- *The bridge over the Rozelle marshalling/goods yard is a non-negotiable and should be included in the approval conditions.*

Response

As noted in Chapter 6.6.2 of the EA, the Lilyfield Pedestrian Bridge is part of the Stage 1 project.

4.19.2 Alternative development plans

Issues included

- *Future development of the Lilyfield rail yards must not waste, compromise or destroy the future value of the land for future generations. If used as the depot the approaches must be located underground.*

Response

The NSW Government has committed to preparing a master plan for the future use of the Bays Precinct. The NSW Government recognises that the Bays Precinct is important to both the local community and to wider Sydney.

The Bays Precinct Masterplanning will need to acknowledge and adapt to the Rozelle stabling and maintenance depot. Opportunities to incorporate development adjacent to or above the depot could be explored as part of the Masterplanning process.

However, there are no other areas along the proposed route with the capacity to accommodate the depot. It is also a desirable location for operational reasons. Key considerations in selecting the depot site were:

- Ability for efficient metro operations.
- Stabling capacity for an initial fleet of 13 trains for the project.
- Scope for expansion to accommodate future metro lines, with stabling for 30 six-car trains and maintenance capacity for 59 six-car trains. (It is noted that any expansion of this facility would be subject to a separate planning assessment and approvals process).
- Suitable areas for presentation and washing facilities.
- Sufficient space for infrastructure maintenance areas, stores and parking.
- Access roads suitable for long vehicles.
- Suitable area for buildings that are not directly related to maintenance, including administration and training, traction power and bulk supply substations.
- Opportunity for adaptive reuse of a former rail site.

4.19.3 Landscaping

Issues included

- *The proposed creation of a green belt between the tunnel portal and Victoria Road is to be commended.*

Response

The development of the depot site would be a catalyst for integrating the green networks of this part of Sydney with new and enhanced pedestrian and cycle corridors. Water-sensitive urban design principles would be integrated into the site and landscaping provided to improve water quality and create a more attractive environment.

4.20 Other design issues

4.20.1 Plans for improving cyclist/pedestrian facilities as part of the project

Issues included

- *Widening of the Napoleon Steps.*
- *Access to nearby properties needs to be maintained or an agreement reached.*
- *Signage and other way-finding assistance should be provided for people seeking to access the Sydney Fish Markets.*
- *The EA should specifically include the Darling Street bike route improvements in its design.*
- *The proposals for further bicycle paths and any consequential cost of alterations for items falling under the responsibility of Leichhardt Municipal Council, must be 100 per cent funded by the project.*
- *The cycleway link from Lilyfield Road to the Rozelle Bay light rail station is to be commended; however it would be of greater use if it was extended across The Crescent.*

Response

Recommendations associated with detailed landscaping and changes to the public domain in the vicinity of metro stations will be addressed via the Station Planning process.

Some public domain improvements, such as extensive cycle routes, as suggested in some submissions are not the responsibility of Sydney Metro and do not form part of the Stage 1 project. The Station Plans clearly identify proposals that are part of the Sydney Metro Stage 1 project and proposals that are to be developed and implemented by others.

As part of construction, improvements to the Lilyfield Road bicycle lane and a new shared bicycle and pedestrian overbridge are proposed. Additional provisions are provided at the Metro Depot, including Bicycle parking for visitors and depot staff (EA p. 328). Metro provides additional opportunities for local councils and other transport infrastructure providers to bring forward or improve existing bicycle route facilities (EA p. 328).

4.20.2 Provision of green space and public initiatives

Issues included

- *A tree nursery to grow trees from local seeds and a community vegetable garden for locals in the area should be provided at the depot.*
- *Parkland should be provided at the depot.*
- *Rozelle Neighbourhood Centre is keen to develop a purpose built indoor/outdoor space at the rear of our current premises.*
- *Rozelle stabling and maintenance depot should be designed with a green roof that could become part of the proposed bridge and cycle path access increasing the amount of green space available.*

Response



The viability of a community vegetable garden or a tree nursery within or adjacent to the Rozelle stabling and maintenance depot is questionable due to accessibility and potential contamination issues. Whilst these constraints may be resolvable, the availability of an appropriate space cannot be determined at this stage as the final layout of the depot is still subject to refinement.

Therefore, at this stage it is not feasible to safeguard space for a community vegetable garden or tree nursery within or adjacent to the Rozelle stabling and maintenance depot.

The offices and rolling stock buildings at Rozelle stabling and maintenance depot would be designed to a 5 Star Green Star Office Design and Office Interiors Rating and NABERS 4.5 star performance. The application of a 'green roof' technology would not be mandated, but could contribute to these design ratings.

Additionally, the development of the depot site would be a catalyst for integrating the green networks of this part of Sydney with new and enhanced pedestrian and cycle corridors. Water-sensitive urban design principles would be integrated into the site and landscaping provided to improve water quality and create a more attractive environment.

4.20.3 Protection of other utility corridors

Issues included

- *The metro line/s and especially caverns must restrict future options for underground usage - electricity and communications, emergency and security access, and car parks and related.*

Response

Section 14.3.5 of the EA notes that the design process has recognised existing structures and underground services and key constraints and has endeavoured to minimise impacts on these assets. This is evidenced by the horizontal and vertical alignment of the project and the preference for utilising existing road alignments as far as possible for that alignment.

Significant technical consultation has been undertaken with infrastructure asset owners to ensure the long-term protection of existing and proposed infrastructure.

CONSTRUCTION OF THE PROJECT

4.21 Construction sites

4.21.1 Size/boundary/hoardings

Issues included

- *Disruption to the day-to-day functioning of Martin Place should be reduced.*
- *The six metre wide pedestrian access along the footpath next to the Pyrmont construction site will limit outdoor seating and heavily impact businesses (especially smoking customers).*
- *Any hoarding for this construction should be at least four metres from the facade of 10 Shelley Street.*

Response

Martin Place

One of the two main construction sites for Martin Place Station, located within Martin Place on the western side of Castlereagh Street (shown in Figure 7.7 of the EA), has the potential to impact the day-to-day functioning of Martin Place. The size of this construction site in Martin Place is necessary to support the station shaft and cavern excavation, and to construct the station entrance. Access to CityRail's Martin Place Station and the MLC Centre would be retained during construction.

Pedestrians would be accommodated within the northern and southern edges of Martin Place, with a proposed width of 4.5 metres for each of the access ways. An assessment of walkway requirements indicates that this width would be adequate to accommodate peak flows.

The Martin Place Station Traffic Management Plan is located in Appendix H of Technical Paper 1 of the EA and details the management measures proposed to reduce impacts on pedestrian access in Martin Place. An ongoing operational review would be undertaken to determine if additional times for traffic control of pedestrian movements would be required, ie for periods such as Thursday late night shopping, Friday and Saturday entertainment and special events.

Loss of trade and business as a result of a loss or reduction of outdoor seating is addressed in section 4.64 of this report.

Pyrmont Station

The restriction of use of outdoor areas for dining or access along Union Street for Pyrmont Station has been considered to be an economic and social impact and is discussed in section 16.4 of the EA and Technical Paper 6 (section 9.7.1). The restriction of outdoor areas is required in order to maintain pedestrian access along Union Street.

Loss of trade and business as a result of a loss or reduction of outdoor seating is addressed in section 4.64 of this report.

Barangaroo Wynyard

The Demolition and Early Works Strategy prepared as part of the CEMP for each station site would demarcate the construction sites and hoardings. The Plan would ensure hoardings and construction fencing placement takes into account adjacent property ownership and the continued functioning of

that premise in terms of maintaining access, visibility of business frontages and minimising any obstruction to the business. A set distance for the hoardings would be negotiated with adjacent construction site neighbours during pre-construction consultation.

4.21.2 Location

Issues included

- *What effect will construction have on 45 Clarence Street?*

Response

The building at 45 Clarence Street is located well away from the primary construction site for the Barangaroo-Wynyard Station located at the intersection of Sussex and Shelly streets. Occupants and users of 45 Clarence Street may be affected by traffic during construction. All aspects of the impacts associated with construction and operation of the project are addressed in detail in the EA.

4.22 Construction safety and security

4.22.1 Security around worksites

Issues included

- *Additional security measures are needed around construction zones.*
- *The security of the bank, including delivery and removal of cash, is threatened by continual truck movements. The car park is near the construction zone and is used by bank staff at all hours of the day and night.*
- *Prior to construction the St Thomas Child Care Centre should be safely fenced off and safe and convenient access provided.*

Response

A Construction Environmental Management Plan, Construction Method Statements and Business Management Plan would be prepared to incorporate appropriate site security and safety measures, and to clearly demarcate the construction sites and public safety zones. All construction sites would be managed to protect the health and safety of the community and stakeholders, including users of nearby childcare facilities and schools. Suitable worksite fencing and/or barricades would be erected where practicable to ensure the safety of the public and workers.

Construction worksites would be under the control of a principal contractor who has a statutory duty under the *NSW Occupational Health and Safety Act 2000* to prevent unauthorised access to the site and protect the public place from work activities.

To ensure that there are no security issues and that staff can utilise the Commonwealth Bank building 24 hours per day, Sydney Metro and the Contractor would set up lines of communication to ensure bank staff have full knowledge of construction activities.

4.23 Utilities and services

4.23.1 Working with utilities/service providers during project construction

Issues included

- *Any potential interruption to main electrical supplies, stormwater and water supplies will need to be coordinated.*
- *The EA doesn't provide details on how utilities (particularly fibre-optic communications and power) will be maintained during construction.*

Response

Section 7.8.2 of the EA provides details on the utilities that need to be adjusted and relocated where they would otherwise be impacted by construction. Further design works would confirm the exact locations and depths of the utilities. As described in Section 7.8.2, where the design conflicts with the existing utility, it may be necessary to provide physical protection for a utility, modify construction methods to avoid the utility, support the utility to provide mechanical protection or divert the utility around the construction site. These issues are believed to be manageable through design and construction measures. Those utilities that may be potentially affected by the project and may require protection or diversion are indicated in Table 7.9 of the EA. Appropriate protection and risk management procedures would be established to protect utilities in consultation with utility owners.

4.24 Construction program and timing

Issues included

- *The EA did not provide any time frames - when work might commence, how long it would take, what disruptions there would be.*
- *The lengthy construction timeframe will disrupt businesses for a long period of time.*
- *Construction-related disruption should be condensed as much as possible, even if this impact is greater for the relevant time period.*
- *St Thomas Child Care Centre request that all demolition work on the adjacent construction site take place during annual summer breaks.*

Response

The construction program is described in section 7.2 of the EA. Subject to planning approval, construction of the project is expected to start in 2010 with the first Metro services expected to be operational from the end of 2015. It is not expected that there would be any flexibility in the program to condense activities or works. The key construction activities are shown in Figure 7.1 of the EA. Furthermore, indicative construction timeframes for each primary station construction site are shown in section 7.7.

For construction works at Rozelle Station, it is anticipated that demolition works would occur during the second and third quarter of 2010 as shown in Table 7.7 of the EA. It is necessary for demolitions works to occur at this time as delay in demolition works would extend the overall construction timeframe beyond the anticipated completion date of 2015.

4.25 Construction demolition

Issues included

- *A detailed explanation of the time period involved and the methodology for the initial demolition phase should be provided to enable a complete assessment of impacts.*

Response

Section 7.8.1 of the EA addresses the demolition of buildings. Prior to demolition, hoardings and dust and debris screens would be erected, where practicable, in accordance with the council's requirements. Prior to demolition, the inside of the buildings would be stripped of materials such as glass, metal, bricks, timber and plastic, which would be reused, recycled or sent to a waste facility, as appropriate. All services into the building would be made redundant.

More detailed information regarding the demolition of buildings will be available once the contractor is appointed. It is anticipated that demolition works would occur during the second and third quarter of 2010.

4.26 Construction methodology

Issues included

- *The EA doesn't set out how the excavations will be made.*

Response

Section 7.3 of the EA describes the tunnelling construction methods using TBMs and roadheaders. The methodology for the construction of the stations is provided in section 7.4. Station caverns would be constructed at all stations except the future White Bay Station. An access shaft would be excavated to allow a gantry crane (or similar) to be lowered into the shaft to construct the cavern. The heading (top section of the cavern) would be excavated using roadheaders, and the bench and invert (lower section and base of the cavern) would be excavated using roadheaders, excavators with rippers, rock breakers, rock saw cutting, and line drilling. Construction plant and equipment would enter/exit through the access shaft. The main concourse (and the main ticketing area) would be constructed within the station cavern.

More detailed information at each station site would be available once the contractor is appointed. Notwithstanding, considerable geotechnical investigations have been undertaken to inform the design and the environmental assessment to date.

SUSTAINABLE DEVELOPMENT

4.27 Sustainability of the project

Issues included

- *Sydney Metro provides a clear methodology to embed the sustainability focus of the project. It is unclear neither what the targets for the project are seeking to achieve nor what overall sustainable outcomes the project delivers for the community.*

Response

The sustainability targets for the project are identified in Table 8.1 of the EA as 'Sustainability objectives'. The methodology for establishing sustainability targets for the project is clearly defined and would be addressed via Statement of Commitment No.1.

The sustainable outcomes the project delivers for the community are outlined in section 8.1.2 of the EA and include:

- Improving the attractiveness of public transport compared to private vehicle.
- Allowing complementary changes to the broader transport network.
- Enhancing access for different social groups between and within the City of Sydney and Leichhardt local government areas.
- Supporting more sustainable land use and lifestyle options around the metro stations (such as Barangaroo-Wynyard) by creating the capacity for transit-oriented infill development around higher quality public transport.
- Providing a positive public transport legacy for future generations.

4.28 Renewable energy

Issues included

- *The EA indicates 30 per cent green power will be purchased to offset GHG emissions.*
- *Sydney Metro provides a clear methodology to embed the sustainability focus of the project.*

Response

The initiatives that are incorporated into the Reference Design would be written into the contracts for construction and operation of the project as project commitments. The implementation of these sustainability commitments would be tracked and reported in accordance with the requirements of the Sydney Metro Sustainability Policy and the project Sustainability Plan.

Sydney Metro has committed to 100 per cent renewable energy being purchased to off-set consumption of energy for the operation of Stage 1 as outlined in Statement of Commitment No.3.

For every megawatt of electricity used to operate the project, a Renewable Energy Certificate (REC) would be purchased to guarantee that an equal amount of renewable energy has been generated.

The REC mechanism has been established by the Commonwealth Government to provide assurance that certified renewable energy can be purchased without direct connection to a generator.

Sydney Metro is committed to delivering long term benefits to the community by providing a high quality, environmentally sustainable transport service to our future customers. Benchmarking studies show that this will be the first major transport project in Australia to commit to 100 per cent renewable energy.

The commitment to 100 per cent renewable energy is a practical step that would offset the largest environmental impact of the Stage 1 operations. The Metro will indeed be clean and green.

By purchasing Renewable Energy Certificates, the operation of Stage 1 would also help to drive demand for the generation of renewable energy.

The estimated total annual electricity demand to operate the project is approximately 100 gigawatt hours (GWh). In the early years of operation the purchase of renewable energy would prevent the emission of approximately 89 kilo tonnes of carbon dioxide per year. This is equivalent to the emissions of over 10,500 homes.

The commitment to 100 per cent renewable energy is just part of a program of Sydney Metro environmental initiatives. Others include:

- Using solar panels on the buildings for the Rozelle stabling and maintenance depot.
- Designing the depot roof to capture rainwater and allow natural daylight into the maintenance area.
- Using recycled water for all non-drinking requirements at the depot.
- Recycling 95 per cent of water used to wash the trains.
- Purchasing 20 per cent renewable energy to off-set consumption of energy for the construction of Stage 1.
- Applying energy demand management through careful design and specifications to ensure that as little energy is required to operate the metro as possible (eg regenerative braking for the trains).

4.29 Adaptability to climate change

Issues included

- *The metro is not safe from sea level rises. Putting train stations deep underground may not be a good idea.*
- *It is unclear what the comfort for passengers and workers have to do with climate change adaptation?*

Response

Chapter 19.7 of the EA presents the potential impacts of climate change on the project. Section 19.6 addresses the greenhouse gases likely to be emitted by either the operational or construction phases of the project.

The risk of impacts on the project as a result of climate change is an ongoing consideration during the development of the project. In order to treat the risks identified in Table 19.14 of the EA, a number of

'best practice' adaptation measures have influenced elements of the design. Relevant adaptation strategies fall within the following categories:

- Suitable material selection for infrastructure exposed to changed climatic conditions, based on the desired life expectancy of the infrastructure and maintenance regime.
- Design standards to cope with expected extreme events as well as accelerated degradation of materials and structures.
- Maintenance regimes to accommodate acceleration in the degradation of materials and structures.
- Technologies to meet required standards of performance or service under changed climatic conditions.

In terms of sea level rises, the risk of seawater flooding the Rozelle stabling and maintenance depot due to sea level rise and increased storm surge was identified as high in section 19.7.2 of the EA. This potential risk would be further analysed during detailed design, paying particular attention to the necessity of raising the level of the Rozelle stabling and maintenance depot with tunnel spoil. Tunnel portals have been design to withstand flood events of up to a one in 10,000 year flood. This is an accepted engineering protection measure for all underground transport systems in NSW and Australia.

In terms of increased rainfall, drainage upgrades would be designed to prevent stormwater accumulating in the Rozelle stabling and maintenance depot under projected rainfall intensities in 2100. The stations would also be designed to withstand increased rainfall and consequent flooding of stations and tunnels.

Climate change adaptation involves changing practices today in anticipation of different climatic conditions in the future. As temperatures are expected to generally increase, the design of the metro stations and carriages should take these conditions into consideration to ensure passenger comfort, particularly on extreme weather days.

4.30 Energy use and greenhouse gases

Issues included

- *Energy hungry tunnels and underground stations should not be built. Surface transport is much more energy efficient and economic.*
- *This is not a sustainable development and will not provide any star rating for environmental offsets.*
- *Inadequate attention in the EA to how energy efficiency measures in HVAC, escalators, lighting etc and further reduction of energy use and greenhouse gas emissions during the operational phase of the metro.*
- *How will the power for the system's air conditioning be provided in a sustainable manner?*
- *The EA does not recognise that each station will and needs to attract people to it. How people travel to the station is regarded as an indirect impact in terms of assessing greenhouse gas emissions.*
- *The EA shows little understanding that good sustainable buildings with Green Star ratings are required to include sustainable transport as an element - locating proximally to public transport and having secure bicycle parking and end-of-trip facilities.*

Response

It is acknowledged that tunnels and underground stations are energy-intensive constructions, however there were many other factors that influenced the decision to provide an underground system.

While the direct energy consumption required for the construction and operation of a tunnel generate relatively more greenhouse gas emissions compared to a surface link, the broader energy and greenhouse gas emissions associated with managing the adverse environmental and social impacts of a surface link also need to be considered. While a tunnel allows for many environmental issues to be treated at the source (ie through design innovation such as high performance track to reduce noise and vibration), the majority of environmental impacts associated with a surface link can only be effectively treated at the receptor and result in additional flow on energy use and greenhouse gas emissions (ie the need for artificial ventilation or air conditioning of residences so that windows can be kept closed to reduce noise).

With regards to greenhouse gas emissions it is likely that similar benefits could be achieved with heavy rail. However heavy rail would not provide the same operational benefits as metro (refer to section 4.6 for issues and responses regarding the benefit of metro over heavy rail).

The incorporation of energy efficient measures into the design was discussed in section 19.6.3 of the EA. A number of measures to reduce energy demand were committed to, including:

- Using energy efficient equipment (lighting, control systems, motors, platform screen doors).
- Incorporating solar orientation, day-lighting, glazing and natural ventilation into station designs wherever practicable.
- Designing all occupied buildings on the Rozelle stabling and maintenance depot site (excluding industrial buildings) to a minimum five-star Green Star rating.

These measures would be incorporated into the project in more detail during the detailed design phase.

Sustainability and, in particular, avoiding and minimising greenhouse gas emissions, has been a key focus in developing the reference design. The preparation and implementation of a Sustainability Strategy would ensure that benefits are maximised to the greatest extent practicable. An Energy Management Sub-Plan would also be prepared and implemented during construction to reduce embodied energy in construction materials and ensure that energy efficiency is considered in procurement. Renewable energy would be purchased to offset greenhouse gas emissions during construction and operation of the project.

As provided in the EA Statement of Commitments, the offices and rolling stock buildings at Rozelle stabling and maintenance depot would be designed to a 5 Star Green Star Office Design and Office Interiors Rating and NABERS 4.5 star performance.

The depot is located near public transport corridors, including the light rail and Victoria Road buses and bicycle routes. Bicycle parking is proposed at depot buildings, and customer bicycle parking is proposed at each metro station entry.

4.31 Sustainability of materials used

Issues included

- *No reference has been made to the transportation of tunnel linings. In the context of sustainable transport, rail or water transport for delivery of tunnel lining or constituent material to White Bay must be used.*

Response
It is not considered that there is sufficient justification for transportation of materials to the construction site through any other means than road transport. Should the option for barging or rail transport of spoil eventuate, then the possibility of alternative transport for construction materials other than road transport may be pursed then.

The construction traffic management plans would consider the necessary management of the transportation of all materials required for the project including measures to manage traffic flows through and surrounding the construction haulage routes.

Pre-cast tunnel lining is generally produced at factories with specific capability for this task and lots of space. The location of these factories would play a role in the viability of various options for the transportation of the lining. Manufacture of pre-cast tunnel lining would be further investigated at the detailed design stage and once a contractor has been appointed. Transport options would also be assessed at this time.

SPOIL MANAGEMENT

4.32 Transportation of spoil

Issues included

- *The EA presumes that spoil removal will be by trucks, but the arguments against rail and barge are not conclusive. The project should prescribe use of rail or barge transport to its fullest capacity.*

Response

The EA states that spoil would need to be removed by truck from the cavern excavations at the CBD sites (Central, Town Hall Square, Martin Place and Barangaroo-Wynyard) and from the cavern excavation at Pyrmont and Rozelle. There is no alternative to the use of trucks from those sites, although consideration was given to barging of spoil from Barangaroo. The EA indicated that trucks would remove spoil from these locations to spoil placement sites or to White Bay where they could be transported by rail or barge to appropriate locations.

Most spoil would be generated by TBM or roadheader operations and would be transported via the excavated tunnel to White Bay. From White Bay three options were investigated – trucking to spoil placement sites, rail transport to various sites including Port Kembla, and barging to Port Kembla.

All options were fully evaluated but a decision as to the means by which spoil would be transported would depend on the timing of the availability of sites, costs associated with infrastructure and the intent of the construction contractor.

The form of transportation for spoil from the Barangaroo–Wynyard and White Bay sites would be determined through the procurement and delivery phases of the project. The availability of existing wharf infrastructure at these sites and rail access in Rozelle may facilitate spoil to be transported by

rail or barge. The options for transport by other than truck would be valued in the market place by the Sydney Metro tenderers and a decision taken in the evaluation process.

4.33 Disposal and reuse of spoil

Issues included

- *The excavated material should be barged from White Bay to Barangaroo to create the headland and entry for the Barangaroo headland/park.*
- *We note that the potential sites for spoil recycling and reuse in the EA no longer includes any facility operated by Benedict Industries (as included in the PEA).*
- *Where will the spoil be dumped and how long will it remain at White Bay?*

Response

Consideration was not given to barging spoil to Barangaroo to create the headland as there is no such requirement identified by the Barangaroo Delivery Authority. Should there be a requirement in the future then that would be a potential opportunity.

The form of transportation for spoil from the Barangaroo–Wynyard and White Bay sites would be determined through the procurement and delivery phases of the project. The availability of existing wharf infrastructure at these sites may facilitate spoil to be transported by barge. The options for transport by barge would be valued in the market place by the Sydney Metro tenderers and a decision taken in the evaluation process.

The availability of the Moorebank Quarry for recycling and reuse would be provided to the Sydney Metro tenderers.

A re-evaluation was undertaken of sites identified in the PEA for spoil placement. The sites identified in the EA were considered to be likely to be available when the spoil placement was needed. It should be noted, however, that at the appropriate time the contractor would reassess all opportunities for spoil placement locations and the means by which the spoil is transported.

The spoil storage areas at White Bay would have space for about 10,000 cubic metres and would be able to accommodate about a week of high productivity from the TBMs. Spoil may also be able to be stored at White Bay if used as a transit point to other locations.

CONSTRUCTION TRAFFIC

4.34 Construction traffic management

4.34.1 CBD and Pyrmont

Issues included

- *GPT and QIC are concerned about the impacts on vehicular egress onto Castlereagh Street from the MLC Centre's basement car park, and the impacts arising from removal of loading and parking bays along the western side of Castlereagh Street.*
- *No information is provided on how conflicts with construction vehicles will be avoided and sight lines preserved to ensure a safe exit.*
- *Construction traffic will severely diminish the quality of the surrounding environment in the CBD.*
- *Significant truck movements may have an adverse impact on construction and operation of Star City.*

Response

The MLC Centre car park egress would be maintained to ensure the safety of car park traffic (including providing adequate sight lines for exiting drivers), pedestrians on the footpath and the construction site. Management of these aspects would be incorporated into the Sydney Metro Traffic Management Plan, a requirement of the construction contracts and would be closely scrutinised by authorities responsible for approving the proposed traffic management and road occupancy arrangements.

Work hours and methods would be developed with consideration given to the requirements, and traffic controllers would monitor the pedestrian and vehicle conflicts. Given the sensitivities of Castlereagh Street and Martin Place, controllers are proposed to be available for the hours of operation of the construction site.

At present, an indicative workzone area for Castlereagh Street has been developed, although the exact extent required at any one time would be subject to detailed consideration by the contractor, and subject to authority approvals.

The high utilisation of loading facilities in this section of Castlereagh Street is acknowledged. Alternative on-street locations for compensatory additional loading zones were investigated, however standing restrictions on both King Street and Castlereagh Street in the PM peak period mean that loading areas in close proximity are not available during this time. Similarly, alternative off-street locations, such as off-street car parking areas (subject to adequate height clearance), are not conveniently located.

Once the exact extent of the workzone required at any one time is identified, it may be practical to maintain a small number of loading spaces, which would be progressively relocated as the workzone shifts. This level of detail would be provided at the construction phase.

The removal of parking bays during construction would be incorporated into the relevant Sydney Metro Traffic Management Plans. Work hours and methods would be developed with consideration given to the servicing requirements. The permanent bay allocation would be developed in consideration of City of Sydney Council requirements.

The construction site on Castlereagh Street is a minor site related to shaft construction. Forecast truck movements in the AM peak hour are low and would be managed to minimise impacts on pedestrian and traffic movements. Trucks would access the Castlereagh Street construction site primarily outside of normal business hours.

The cumulative truck movements on the southern section of Castlereagh Street (south of Martin Place) from all Martin Place Station construction sites would also be low (ie about five trucks per hour entering the Martin Place site and about four exiting, with a total of about nine trucks in and about seven out per hour from both the Martin Place and Castlereagh Street sites).

The main truck traffic for the construction site between Castlereagh and Elizabeth streets would not pass the southern section of Castlereagh Street, with entry from Castlereagh Street, north of Martin Place and exit to Elizabeth Street.

Trucks would access the Martin Place and Castlereagh Street construction sites primarily outside normal business hours. There would however be construction vehicle movements during normal business hours and these would be managed through a Sydney Metro Traffic Management Plan that would consider to the extent possible the public use and business activity of the surrounding environment.

All construction sites generate construction traffic with potential impacts. A number of alternative options for truck movements are would be further scrutinised with the aim to minimising impacts. To facilitate this, Sydney Metro proposes two stakeholder liaison groups be established – the Central Project Coordination Committee (CPCC) and the Traffic and Transport Liaison Group (TTLG).

The CPCC would provide a strategic and tactical forum for ensuring metro construction works are coordinated with other development and public works; and would aim to mitigate impacts on events, local businesses, residents, and CBD visitors by ensuring that construction impacts arising from the project are integrated and balanced against the construction impacts of wider redevelopment and other changes occurring within the CBD.

The TTLG would ensure that all relevant traffic and transport management authorities, including the RTA and relevant councils, are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed prior to the start of construction.

Development of vacant land located north of Union Street between Pyrmont and Union street by Star City Casino may coincide with construction at Pyrmont Station worksites. Sydney Metro would work closely with Star City to ensure that construction vehicle routing under Alternative 2 would not adversely impact Star City operations. Sydney Metro would consult with Star City to determine to what extent the construction and operation of the Pyrmont eastern construction site would impact both day to day operations at Star City and any proposed construction activities at Star city.

4.34.2 Rozelle

Issues included

- *Safe access to the Rozelle Neighbourhood Centre during is particularly important for young children and carers bringing people with disabilities.*
- *The following should be considered:*
  - *Restrict truck routes and access to Balmain Leagues site to avoid trucks using residential streets and in particular Waterloo Street. Access from, or to Waterloo St, should be denied after 9pm and before 7am.*

  - *Restrict truck standing areas to avoid queuing trucks waiting to load/unload.*
  - *Ensure traffic signals, etc can enable truck flow to enter road network without disruption.*
  - *Traffic control to minimise delays and ensure safe truck movements.*
  - *Monitoring and maintenance of roads affected by construction traffic.*
- *Given the proximity of Rozelle Public School, Wellington Street should be avoided as a truck route.*
- *The noise, dust and pollution level from construction trucks five metres from our property would not be bearable and would be considered a health risk.*
- *Traffic impacts during the five year construction period have not been assessed. Rozelle streets (including Darling Street and Waterloo Street) will be subjected to up to 626 daily truck movements around the three construction sites at Rozelle (Table 10.7, Volume 2, p250). The traffic modelling is incomplete with impacts on critical intersections and roads still to be assessed. The modelling already undertaken indicates that the intersections on Victoria Road around Rozelle will operate at an unsatisfactory traffic level (LoS F) at the PM peak.*
- *We would like assurance that the impact of construction on traffic congestion has been considered on weekends as well as the weekday peak periods. The local peak traffic times are Saturday and Sunday mornings.*
- *The use of Waterloo Street for truck entry and egress from the main construction site is unacceptable.*
- *Additional construction related traffic (eg concrete delivery vehicles) have not been addressed in the EA.*
- *Trucks will park on local streets whilst waiting to be called into the site posing a serious risk to the health and safety of the local residents.*
- *At a minimum access to Waterloo Street should be restricted to light vehicles only and barriers should be erected to prevent west-bound traffic travelling beyond the entrance of the site.*
- *Truck marshalling areas should be restricted to the White Bay site and/or the Rozelle stabling and maintenance depot site only.*
- *The FTMP and CTMP for Rozelle should be discussed in draft form to allow community consultation prior to being finalised.*
- *The proposed construction route in Figure 10.3 of the EA significantly differs from the construction route in Figure 3.4 of Technical Paper 1. Is this a purposeful decision or an error?*
- *I would like confirmation of truck movement times, number and period of operation during construction along Victoria Road.*
- *The traffic modelling has not included the impact of the completed Tigers, Multiplex and metro developments.*
- *The EA indicates in excess of 23,000 large truck movements from 2010-2012 for removal of spoil. These figures do not include any vehicles movements during the construction of the station and associated works. Appendix D (pg 238 to 251) indicates a higher number of truck movements. Traffic congestion throughout Rozelle will increase substantially due to the high level of construction traffic from 2010-2015. No adequate traffic management planning appears to have been done (pg 235 of the EA). All traffic and pedestrian safety mitigation measures should be*



mandated as part of any consent and done after consultation with those impacted such as the school.

- *The majority of truck convoys should occur outside of school hours.*
- *Most parents/caregivers drop off and pick up the children using their private cars. Short term parking is difficult at present. Will there any steps taken to minimise this impact?*
- *Restrictions should be put in place to limit truck movement in Waterloo Street after 9pm and before 6.30am.*

Response

Movements on local streets would be assessed and issues addressed through the contractors' Traffic and Transport Management Plan, which includes required Construction Traffic Management Plans (CTMPs) and Construction Traffic Control Plans (TCPs). Traffic impacts during the construction period have been assessed for the highest impact phase occurring during excavation of the station shafts and caverns.

The hours of operation and the location of truck loading would be subject to a noise impact assessment of the work methods (refer to Statement of Commitment No.38).

Sydney Metro would establish a monitoring regime with its contractors and DECCW. Vehicles on the public roads would be registered and subject to the pollution emission requirements of DECCW.

Estimates of truck generation reported in the EA and accompanying TMP's show the expected period of maximum truck movements for spoil removal, however truck access will be also be required for demolition and IMO stages and for the movement of structural concrete and steel, plant and equipment, fittings and fixtures, escalators, and other material during construction and fit out of the site.

These deliveries are anticipated to generate lower numbers of truck movements than the peak movements associated with spoil removal reported in the EA and accompanying TMP's.

Rozelle

The traffic studies undertaken for Leichhardt Municipal Council indicate that impacts from the proposed Multiplex development and Tigers Club redevelopment are acceptable.

The traffic management requirements associated with the work hours and methods would be developed with consideration given to the impacts upon Victoria Road. Communication with the community would be in place in accordance with Statement of Commitment No.35.

Rozelle Primary School

The Rozelle Primary School, Rozelle Neighbourhood Centre and St Thomas Child Care Centre access and traffic management requirements would be incorporated into the Sydney Metro Traffic Management Plan. Work hours and methods would be developed with consideration given to the requirements.

Balmain Leagues Club

Trucks would primarily use Victoria Road to access the Balmain Leagues Club (Tigers) construction site with a secondary access from Darling Street along Waterloo Street. The Sydney Metro Traffic Management Plan would not incorporate a standard truck route from Moodie Street along Waterloo Street. Access to and from Waterloo Street would be required at all times. The management of vehicle

type, hours of access to Waterloo Street and management of truck 'call up' would be incorporated into the Sydney Metro Traffic Management Plan. Whilst there would be impacts on local traffic from truck movements, the traffic management approach adopted throughout the project and at Rozelle is to restrict truck ingress and egress to Victoria Road and other higher order arterial roads where possible.

Traffic impact assessment and management for the streets around the Balmain Leagues Club construction site would be undertaken to inform the Sydney Metro Traffic Management Plan. The traffic management requirements would be developed from local surveys, with considerations given to activities outside of normal business hours.

4.34.3 White Bay and depot

Issues included

- *There is no evidence of a traffic management study to assess increased (and 24 hour) traffic movements on Lilyfield Road, City West Link, Gordon Street, Victoria Road and surrounding suburban roads.*

Response

These impacts and suggested mitigation responses are addressed in the White Bay and Depot Construction sites TMP. Section 7 of the Traffic and Transport Technical Paper addresses the peak period intersection impacts of the additional truck activity at White Bay and the Depot sites. The traffic management approach adopted throughout the project and at White Bay and the Depot is to restrict truck ingress and egress to City West Link Road and Victoria Road and other higher order arterial roads where possible.

4.35 Impacts to peak hour traffic

4.35.1 CBD and Pyrmont

Issues included

- *Any reduction in access or lanes will result in gridlock from Castlereagh Street into King Street and beyond, causing delays in entering and exiting our car parks.*

Response

There would be some interruption to traffic flows along Castlereagh Street at certain times, however, this would be minimised by maintaining one through traffic lane and one bus lane at all times during the daytime.

4.36 Disruption to other transport modes

4.36.1 Changes to interchange locations

Issues included

- *The coach stops at Central Station should not be moved.*

Response

There may be scope to move some or all of the coaches along the Pitt Street frontage to Central Station as one means of managing UNSW bus diversions stemming from the proposed Belmore Park construction site. It is not proposed to impact the Eddy Avenue coach spaces.

4.37 Traffic congestion and amenity impacts

Issues included

- *With over 250 car parking places lost during the Tigers renovation, the area around Rozelle Public School will suffer from increased traffic congestion.*
- *The metro construction and 24/7 truck movements will exacerbate city traffic congestion.*
- *The construction traffic report (Chapter 10) states the intersections of Victoria Road/Darling Street and Victoria Road/Wellington Street will no longer operate within acceptable limits because of construction traffic, yet no solutions are provided for this situation.*

Response

Construction traffic would replace the existing traffic associated with the current business functions at the properties that form the construction sites. However the pattern of vehicle movements would be different and the net number of movements is likely to increase. Congestion issues would be managed through the Sydney Metro Traffic Management Plan.

The access and traffic management requirements for Rozelle Public School would be incorporated into the Sydney Metro Traffic Management Plan. Work hours and methods would be developed with consideration given to the requirements.

The Victoria Road corridor is congested during peak times. The construction methodology and associated traffic and access measures would aim to reduce adverse impacts on congestion during construction.

Options to reduce impacts on traffic signal operation at Rozelle include reductions in truck traffic activity at specified busy periods. This would be explored in the Contractor's TMPs and TCPs.

4.38 Pedestrian issues

Issues included

- *The construction of the metro in Rozelle will result in pedestrian conflict with trucks crossing footpaths, particularly during the regular Saturday markets, church services and school times.*
- *Traffic movements to and from the site would cause damage to streets and footpaths and be a hazard to pedestrians, particularly small children.*
- *Pedestrian access to and around buildings in the CBD is a concern.*
- *There is no evidence of a traffic management study to assess impact on pedestrian movements resulting from road reconfiguration and diversions.*
- *Pedestrian accessibility into and out of the MLC Centre to and from Castlereagh Street and Martin Place will be obstructed and disrupted. It also appears that the existing underground pedestrian link from Martin Place Station into the MLC Centre will also be closed. This needs to be clarified.*
- *Given the intensity of pedestrian movements in Martin Place there is insufficient information in relation to hoardings (type, location, duration and visual treatment).*
- *If large quantities of concrete are delivered by ready-mix agitator trucks and then pumped from the street, further disruptions to pedestrian movements in the area and additional noise will occur.*
- *Objection to the eastern entrance of Pyrmont Station as this busy pedestrian access to and from the CBD will be drastically affected.*

Response

Movements on local streets would be assessed and issues addressed through the contractors' Traffic and Transport Management Plan, which includes required Construction Traffic Management Plans (CTMPs) and Construction Traffic Control Plans (TCPs) – developed in consultation with neighbouring businesses and occupiers, the RTA, Emergency Services, and the local Council Traffic Committee. The CTMP's will detail proposed traffic and pedestrian management responses to required road carriageway changes, diversions and lane closures.

Traffic impacts during the construction period have been assessed for the highest impact phase occurring during excavation of the station shafts and caverns.

The traffic management requirements would be developed with consideration given to pedestrian movements at road crossings and at entries to business premises for times of special events and normal business hours. Work hours and methods and material deliveries would be developed with consideration given to the requirements for traffic and pedestrian management. The hoarding and gates design would be developed from inputs from Traffic and Transport Liaison Group (TTLG) including local councils.

Martin Place

Pedestrian access to the MLC Centre will be maintained from Martin Place in lieu of the eastern footpath along Castlereagh Street. Pedestrian access in Martin Place along either side of the worksite will be possible via 4.5 metre wide accessways, similar to those adopted for special events that occur on many occasions in Martin Place throughout the year.

Details of hoarding design, location and associated pedestrian management responses are provided in the TMP for Martin Place.

Pyrmont

Section 5.3 of the Pyrmont TMP acknowledges that pedestrian changes will be required in Union Street as a result of the eastern station entry works, but that these are manageable and will not adversely impact pedestrian access or throughput.

Rozelle

At Rozelle most truck ingress and egress will be limited to Victoria Road in an effort to minimise pedestrian conflicts at the Markets and adjoining churches. Where trucks are traversing footpaths, traffic controllers will manage truck access to avoid conflict with pedestrians.

4.39 Cyclist issues

Issues included

- *Traffic movements to and from the site will be a hazard to cyclists.*
- *There is no evidence of a traffic management study to assess impact on bicycle movements resulting from road reconfiguration and diversions.*

Response

The hierarchy of access adopted for planning and construction phases of the project, gives priority to the most efficient and sustainable transport modes. Pedestrians and cyclist safety is imbedded throughout the project. Construction Traffic and Transport Management Plans must be completed by contractors, detailing safety measures for pedestrians and cyclists and reducing delay to these vulnerable members of the public.

The traffic management approach documented in all the TMPs is based on the need to mitigate and minimise impacts to pedestrians and cyclists.

The pedestrian and cycle traffic management requirements alongside the construction sites would be developed from local surveys, with considerations given to:

- Bicycle movements at road crossings and entries to business premises
- Maintaining pedestrian and cycle movements on the northern side of Victoria Road.
- Maintaining pedestrian movements with access to business premises.

Work hours and methods would be developed with consideration given to these requirements.

These considerations would be incorporated into the Sydney Metro Traffic Management Plan.

4.40 Parking issues

4.40.1 Residential areas

Issues included

- *The following should be considered:*
  - *Construction workers must use public transport - no private parking or parking on residential streets.*
  - *Loading zones should be provided in suitable areas.*
  - *Waterloo Street should be designated as 'residents only'.*
  - *Alternative parking should be provided for residents and businesses.*
  - *The removal of the community car park (behind Balmain Leagues) parking will impact on the viability of businesses. The community car park should remain on Waterloo Street during the construction period with a noise wall behind it.*
- *There is no evidence of a traffic management study to assess increased car parking along Lilyfield Road.*

Response

The worker parking and travel arrangements would be developed on a site by site basis. In general, car pooling and public transport would be encouraged. A plan to manage project worker parking requirements would be developed around the use of the White Bay and the Rozelle depot construction sites.

At the Balmain Leagues Club construction site consideration would be given, in consultation with the Leichhardt Municipal Council, to replacing the 30 (approximate) car parking spaces lost with 90 degree parking on the site fronting Waterloo Street.

4.40.2 Businesses

Issues included

- *Probable obstruction to the rear lane parking access of the medical centre and loss of patient and staff parking at and next to Balmain Leagues Club.*
- *Rozelle Public School staff should be provided with parking permits for the Council car park outside the school. The unofficial driveway from Darling Street into the front of the school playground should be legalised to be used by staff who wish to park in the playground.*
- *Parking along Pyrmont Street will be restricted and will impact trade coming from customers.*
- *The EA states that "Access to the hotel car park at the corner of Castlereagh and King Streets would be maintained" (pg 189). We believe the reference to the hotel car park should be to the MLC Centre car park egress.*

Response

As discussed in section 10.4.2 of the EA, on-street parking spaces at a number of construction sites would be temporarily occupied by 'works zones' to facilitate truck movements and minimise impacts on through traffic.

A Business Management Strategy (refer section 10.5 of the EA) would be prepared and implemented to minimise impacts on businesses adjacent to major construction sites. This would include measures to maintain vehicular and pedestrian access during business hours.

The access to rear of properties serviced by the lane from Victoria Road would be retained at all times.

The matter regarding the unofficial driveway from Darling Street into the front of the school playground is an issue for Leichhardt Municipal Council and not Sydney Metro.

The reference in the EA to 'Access to the hotel car park at the corner of Castlereagh and King streets would be maintained" (pg 189) should refer to the MLC Centre rather than the hotel.

At the Balmain Leagues Club construction site consideration would be given, in consultation with the Leichhardt Municipal Council, to replacing the 30 (approximate) car parking spaces lost with 90 degree parking on the site fronting Waterloo Street.

Sydney Metro would work with Council to develop a Local Area Parking scheme in conjunction with the development of the Traffic Management Plan.

CONSTRUCTION NOISE AND VIBRATION

4.41 Excessive noise and vibration

4.41.1 Assessment criteria

Issues included

- *Vibration levels for human discomfort are significantly lower than 7mm/sec, more in the order of 1.5mm/sec. The EA makes no reference to how the works will be managed to control vibration to this level.*
- *It is not reasonable to regard the construction period as 'temporary' given it will occur over such a long period of time. The NMLs should therefore be set at the current background levels. The night-time complying distance for rock breaking is 50-70 metres. Some properties are located within 15 metres of the site.*

Response

Sydney Metro Network Stage 1 (Central to Rozelle) in its Construction Noise and Vibration Assessment (the assessment) adopted noise and vibration management levels consistent with the Department of the Environment, Climate Change and Water's (DECCW) current *"Interim Construction Noise Guideline"*, DECCW's *"Assessing Vibration: a technical guideline"*, and British Standard BS 7385 Part 2-1993 *"Evaluation and measurement for vibration in buildings Part 2"*, (as referenced by Australian Standard Australian Standard AS 2187: Part 2-2006 *"Explosives - Storage and Use - Part 2: Use of Explosives"*). These guidelines and standards apply to residences, schools, places of worship, recreation areas, buildings, structures and other noise and vibration sensitive receivers.

The noise and vibration assessment stated that, during construction, noise and vibration levels are anticipated to exceed the management levels at some locations even after implementation of all feasible and reasonable mitigation measures. In these situations the Sydney Metro Construction Noise and Vibration Strategy requires management of these impacts through the introduction, by the Contractor, of site specific Management Plans.

4.41.2 Impacts to businesses

Issues included

- *The construction zone in will have a huge impact on the quiet enjoyment of our tenants and our tenant's ability to service their clients' requirements.*
- *We are concerned about noise and vibration in the building during construction.*
- *Explosive and blasting methods must be such that no over excavation will occur and the noise and vibration level doesn't exceed specified for the property users.*
- *Accommodation rooms in the our hotel and recreational areas, immediately adjacent to both Martin Place and Castlereagh Street, will be subject to excessive noise arising out of the proximity and duration of construction works.*
- *Appropriate noise mitigation measures for demolition, excavation and tunnelling adjacent to and under premises at Martin Place have not been identified.*

- *Construction will impact our Pyrmont business as passing trucks and construction machinery will create intolerable noise that will disturb the customer experience in our shop.*

Response

The Sydney Metro Construction Noise and Vibration Strategy illustrates the procedure for applying the Strategy and identifying all feasible and reasonable mitigation measures - and undertaking community consultation. This process also includes a requirement for the construction contractor to consider potential mitigation measures in the DECCW's *Interim Construction Guideline* and AS 2436:1981.

At each site a Construction Noise and Vibration Impact Assessment will be prepared by the construction contractor, based on the contractor's proposed methods. Where noise and/or vibration issues have been identified after all feasible and reasonable mitigation measures have been implemented, the construction contractor is required to produce a Construction Noise and Vibration Management Plan (CNVMP). This process provides flexibility to the successful contractor to identify alternative work practices or scheduling to reduce noise and vibration impacts by other means. The Sydney Metro Construction Noise and Vibration Strategy requires the CNVMP to be prepared by an AAAC accredited acoustical consultant and liaison with DECCW is required.

These management plans will be used for day to day management of noise and vibration issues. They will identify all nearby sensitive receivers so that in cases of potential exceedances of the noise management levels, consultation and liaison with that receiver can be initiated to determine appropriate mitigation options.

The management plan will identify monitoring requirements and procedures to be followed in cases of actual or expected non compliance with the noise management levels.

Consultation and liaison with the community will be an important element of this management plan so that the construction can be carried out with minimum disruption to the everyday working of the local businesses/community.

The CNVMP's are both project wide and site specific and cover all aspects for all sites. The Sydney Metro Construction Noise and Vibration Strategy will be updated to more clearly describe the requirements of the plans and how they are to be prepared.

For commercial premises, which include offices, retail outlets and small commercial premises an external noise management level of $L_{Aeq(15minute)}$ of 70 dBA has been adopted for the assessment of airborne noise. This level is consistent with current practice and the DECCW's current *"Interim Construction Noise Guideline."*

The DECCW's *Interim Construction Noise Guideline* does not currently cover potential noise impacts on outdoor dining areas. However, the Sydney Metro Construction Noise and Vibration Strategy will be updated to include a noise management level to be adopted for outdoor dining areas which will be the higher of $L_{Aeq(15minute)}$ of 60 dBA or RBL plus 5 dBA (ie equivalent to the NML for residential receivers).

DECCW Assessing Vibration: a technical guideline is applicable to the assessment of vibration in offices. For continuous vibration the preferred RMS velocity level is 0.40 mm/s and the maximum is 0.80 mm/s. For intermittent vibration the preferred vibration dose value (derived using the procedures in British Standard 6472) is 0.40 $m/s^{1.75}$ with a maximum level of 0.80 $m/s^{1.75}$.

The DECCW vibration guideline notes the following in relation to the preferred and maximum vibration levels:

"There is a low probability of adverse comment or disturbance to building occupants at vibration values below the preferred values. Activities should be designed to meet the preferred values where an area is not already exposed to vibration. Where all feasible and reasonable measures have been

applied, values up to the maximum value may be used if they can be justified. For values beyond the maximum value, the operator should negotiate directly with the affected community."

In situations where the preferred levels are anticipated to be exceeded the procedures in the Construction Noise and Vibration Strategy will be followed which will have required the contractor to produce a management plan for the site.

4.41.3 Impacts to residents

Issues included

- *Waterloo street will experience noise above the "acceptable level" 90 times per day including 30 breaches between the hours of midnight and 5am during the first two years" which is unacceptable for two years.*
- *With the noise, vibration and air quality levels predicted in the EA for some Rozelle residents, we will not be able to live here during demolition and construction.*
- *The EA highlights the use of penetrating cone fracture (PCF) methodology. We are inside the 30 metre sleep disturbance mark for PCF, making dwelling at our residence impossible during the construction phase. Our property is inside the distances set for night-time ground borne NMLs from rockbreakers.*
- *Following demolition of the Tigers site adjacent properties will be subject to increased ambient noise levels as 'dwellings to the south of the site are currently shielded by the Tigers Leagues Club...'.*
- *One particular concern regarding vehicle movements is the type of reversing beeper used.*
- *The mitigation measures suggested in the EA will not sufficiently mitigate the noise impacts, and this is acknowledged in the report.*
- *Acoustic barriers such as noise walls, even up to 6 metres in height, are inappropriate for properties overlooking the sites.*
- *The EA states that the indicative night-time complying distance to avoid sleep disturbance for PCF is 30 metres, yet some resident's properties are within 5 metres of the construction site.*
- *The EA does not appear to acknowledge that St Thomas rectory is a residence on this site. As it is a multi storey building on fairly high ground, 3-6m plywood noise walls may not work.*
- *As stated in Table 11.1 of the EA, we will suffer unacceptable ongoing breaches of noise during both night and day. We note that little can be done to prevent noise from demolition. Our property is within five metres of the construction works.*

Response

The noise and vibration management levels adopted by the project are consistent with Department of the Environment, Climate Change and Water's (DECCW's) current *"Interim Construction Noise Guideline"*. This applies to residences, schools, places of worship and other noise sensitive receivers.

Sleep disturbance assessments follow the DECCW's *"Application Notes – NSW Industrial Noise Policy"*.

The noise and vibration levels presented in the assessment were based on typical worst case impacts of excavation and construction noise and included indicative levels of mitigation. The assessment presents a worst case, potentially during the night-time period, to identify the upper level of impact.

The assessment identified a number of situations where the Noise Management Levels would be exceeded even with mitigation. The project's "Construction Noise and Vibration Strategy" was developed to provide guidance for the management of construction noise and vibration in these particular situations.

As responded in the section above, site specific Construction Noise and Vibration Impact Assessments will be prepared by the construction contractor, based on the contractor's methods. Where noise and/or vibration issues have been identified after all feasible and reasonable mitigation measures have been implemented, the construction contractor is required to produce a CNVMP. The plan will present final construction procedures and whether limitation on hours of working in specific situations will be necessary.

The question of appropriate reversing beepers would be one of the issues for the CNVMP to resolve during the consultation phase prior to commencement of construction, however its is noted that the Sydney Metro Construction Noise and Vibration Strategy requires all permanent on site plant to be fitted with non-tonal reversing alarms (subject to OH&S requirements).

Project commitments on construction noise and vibration are contained in the Statement of Commitments.

4.41.4 Other excessive noise and vibration issues

Issues included

- *We don't believe that the targeted noise levels for St Thomas should exceed 45dBA.*
- *Noise levels from demolition, excavation and truck movements will impact services, staff and clients at the Rozelle Neighbourhood Centre.*
- *Our son has autism and is extremely sensitive to noise. We ask for special consideration given our circumstances.*

Response

The internal noise management level for schools and places of worship is $L_{Aeq(15minute)}$ 45 dBA in accordance with DECCW's current "Interim Construction Noise Guideline".

In preparing the Construction Noise and Vibration Impact Assessment and subsequent CNVMP the successful contractor is required to identify all sensitive receivers in accordance with the Sydney Metro Construction Noise and Vibration Strategy. Where very sensitive receivers are identified the contractor is required to undertake a special investigation on a case by case basis to determine suitable noise levels and suitable mitigation and/or management measures.

4.41.5 Continuous 24 hour construction

Issues included

- *Noise levels in Martin Place are predicted to significantly exceed the nominated Noise Management Levels during all periods of the day. No noise levels have been provided for the night-time period.*
- *Reference to an article in the Sydney Morning Herald titled '5 years of 24 hour construction noise' that states 'Noise levels would exceed government targets at all but one of the construction sites…as construction goes on 24 hours a day, seven days a week...'.*

- *Noise should be kept to a minimum particularly at night and on weekends.*
- *Construction hours should be reviewed and construction of the proposed stabilising yards should be required to be limited between the hours of 8am-6pm weeknights and 8am-5pm weekends.*
- *I am concerned with the adverse noise and vibration from construction associated with tunnelling and building of facilities at stabling yards.*

Response

Program and site constraints require that 24 hour working would most likely be required at all metro construction sites for a significant proportion of the total construction period. In particular, noisy activities such as:

Excavation of tunnel and station caverns by Tunnel Boring Machines (TBMs) and roadheaders would be required over a 24 hour day, seven days a week. Note that TBMs typically require routine maintenance of equipment on the 7th day. Impacts from the use of TBMs and roadheaders at sensitive receivers would however only be expected to be apparent at a particular location for a maximum of one to two weeks, whilst the tunnelling equipment passes underneath.

Bulk excavation of station entry and ventilation shafts by rockbreaker, raised boring, line drilling and milling head would be required over two 9 hour shifts (nominally between 6.00 am and midnight); and blasting or equivalent methodology (eg Penetrating Cone Fracture). Excavation activities will licensed by DECCW.

Truck movements would be required during the period 6.00 am to 10.00 pm. Some truck movements are likely to be required during the night time.

The construction contractor will be required to produce a management plan, which will be required to be kept on site and used for day to day management of noise and vibration issues.

The Management Plan will identify monitoring requirements and procedures to be followed in cases of actual or expected non compliance with the Noise Management Levels.

4.41.6 Construction traffic

Issues included

- *We are concerned about noise from construction and truck movements, and vibration. We would like the department to impose specific conditions to minimise construction noise and vibration within and outside standard NSW construction hours.*
- *No mitigation is proposed for construction traffic noise.*
- *Proposed 24 hour truck movements in and out of the Rozelle site adds noise and dust pollution right next to Rozelle Public School.*

Response

The Construction Contractor's Management Plan will contain auditing of actual construction traffic used, induction of drivers to operate vehicles for "minimum noise" and community consultation and liaison for construction traffic movements.

Sydney Metro Network Stage 1 (Central to Rozelle) in its Construction Noise and Vibration Strategy has defined the maximum allowable sound power levels from construction equipment including construction traffic, but details of the anticipated construction traffic movements (and types of vehicles to be used) have yet to be finalised.

Construction traffic routings in and around the construction sites will be planned to access the primary haulage routes taking account of local sensitive receivers.

Site access will be designed to give as smooth transitions as possible to minimise noise and vibration.

The majority of truck movements will be required during the period 6.00 am to 10.00 pm however some truck movements are likely to be required during the night time.

4.42 Impacts to educational facilities

Issues included

- *Issues relating the establishment being able to continue to be able to provide a learning environment for teaching and exams.*
- *Constant drilling during construction near Rozelle Public School will exceed environmental and safety levels for children. The noise and vibration will be very disruptive and hinder their learning.*
- *The noise and vibration levels from construction of the metro is expected to consistently exceed environmental guidelines and will therefore adversely affect the wellbeing of staff and children attending the Rozelle Public School.*
- *Full encapsulation including sound-proofing of all construction sites and double glazing and air conditioning to all affected classrooms should be considered for Rozelle Public School.*
- *The metro will produce lots of noise all through the day and night. The school (Rozelle Public) will have teachers trying to teach over the noise which will be hard for both the teachers and students.*
- *Rozelle Public School is located within 30 metres of the construction site. The construction of the new school will severely reduce the available outdoor space for students and staff.*
- *Noise will affect children's learning and concentration at school. At the very least the school will require double glazing and air conditioning in all affected classrooms as well as hoardings around the western side of the school. We also ask that the site is fully encapsulated, using the best quality soundproofing of all construction areas.*

Response

DECCW's current *"Interim Construction Noise Guideline"* has been used to set the project's noise management levels for schools. This results in an internal noise management level of $L_{Aeq(15minute)}$ 45 dBA, and the Interim Construction Noise Guideline notes at this level characteristic activities should not be unduly disturbed (Interim Construction Noise Guideline –section 4.1.2). The assessment assumed an external noise to internal classroom noise reduction of 10 dBA with openable windows resulting in an external noise management level of 55 dBA.

At each site a Construction Noise and Vibration Impact Assessment will be prepared by the construction contractor, based on the contractor's methods. Where noise and/or vibration issues have been identified at schools after all feasible and reasonable mitigation measures have been implemented, the construction contractor is required to produce a CNVMP. This provides flexibility to the successful contractor to identify alternative work practices or scheduling to reduce noise and vibration impacts by other means. The Sydney Metro Construction Noise and Vibration Strategy requires the noise and vibration management plan to be prepared by an AAAC accredited acoustical consultant and liaison with DECCW is required. As part of the plan, options such as increasing the noise insulation performance provided by the school building to the sensitive internal spaces can be explored.

These management plans will be used for day to day management of noise and vibration issues. They will identify all nearby sensitive receivers and sensitive internal school areas so that in cases of potential exceedances of the noise management levels, consultation and liaison with that receiver can be initiated to determine appropriate mitigation options.

The management plan will identify monitoring requirements and procedures to be followed in cases of actual or expected non compliance with the noise management levels.

Consultation and liaison with the school will be an important element of this management plan so that the construction can be carried out with minimum disruption to the everyday working of the school.

The noise levels inside classrooms and external play areas are well below those which are considered hazardous to hearing.

The Construction Noise and Vibration Strategy provides a commitment for particularly noisy activities to be scheduled outside normal school hours, where possible and recommends establishing cooperative relationships with schools, local residents and building owners to assist in managing impacts from noisier operations.

4.43 Noise and vibration management

Issues included

- *The EA does not indicate the erection of any noise mitigating enclosures and the nature of such enclosures. Mitigation measures will be left to contractors. All noise and vibration mitigation measures should be mandated as part of any consent and done after consultation with receivers.*
- *All construction sites should be encapsulated to ensure that noise levels are minimised.*
- *We would like to be consulted regarding the level of insulation in acoustic sheds, rockbreaking techniques, the type of 'beeper' to be used on vehicles and the additional measures we require.*
- *There should be ongoing measurement by an independent 3rd party of noise and vibration at regular intervals throughout and following construction.*
- *While the EA talks about construction not occurring during times of worship and special services, it does not clearly specify how we are to bring it to the attention of management that such services are about to occur.*
- *Mitigations measures for trucking or train removal of spoil have not been fully addressed and conditions should be imposed for both methods.*
- *A noise barrier should be constructed directly adjacent to the City West Link from Victoria Road to the intersection with The Crescent to mitigate noise levels from trucks entering/exiting James Craig Road.*
- *Assistance to compensate for negative impacts through temporary relocation should be considered.*
- *It is possible for the Proponent to significantly mitigate noise and vibration impacts to acceptable levels by lowering the depth of tunnels. Dropping the vertical alignment of both tunnels by 3 metres (from 5 to 8 metres) will result in significantly lower noise and vibration impacts. This would result in less stringent track design requirements and greater maximum speeds.*
- *We would like a condition requiring Sydney Metro to consult with us in the development of the Construction Noise and Vibration Strategy for Martin Place.*

- *St Thomas Child Care Centre (STCCC) request that airborne noise levels during STCCC's operating hours to remain strictly below the NML of 55dbA. Continuous monitoring to be installed at STCCC and construction to halt if NML exceeded.*

Response

The project "Construction Noise and Vibration Strategy" identifies the project's noise management levels for airborne noise, ground borne vibration and ground-borne (regenerated) noise.

The effectiveness of different mitigation options will be assessed for each work site where impacts are predicted. This includes choice of plant, construction/demolition equipment, removal of spoil, barriers, enclosures, hours of working etc. The details of each application will emerge as the construction programme is developed through the consultation process.

The construction contractor will be required to produce a CNVMP, which will be kept on site and used for day to day management of noise and vibration issues. The management plan will identify sensitive receivers at each site, initiate a monitoring programme and implement additional measures which could include the offer of alternative accommodation where high impacts are predicted to occur at night. These issues will be considered as part of the consultation/liaison with the local community both before the construction commences and during the construction programme.

4.44 Impact of vibration on buildings

Issues included

- *The Pyrmont Station concourse is located beneath the heritage listed buildings on Union Square's northern side. Sydney Metro cannot guarantee that the Pyrmont Station would not cause possible damage to these fragile heritage-listed buildings.*
- *The following should be considered:*
  - *Pre-construction and post completion building condition surveys (this is offered in EA for properties directly above tunnelling but needs to be extended to properties within 30 metres).*
  - *Independent arbitrator to handle property damage disputes.*
- *No vibration survey has been undertaken and will impact on my residence and structural integrity.*
- *The project threatens to cause irreparable damage to the valuable heritage-listed properties.*
- *Vibrations from construction of the tunnels using roadheaders may cause structure damage or cracking to the improvements to property.*
- *Explosive and blasting methods must be such that no over excavation will occur and the noise and vibration level doesn't exceed those specified.*
- *A vibration management plan should be implemented and involve as a minimum a real time monitoring system to provide feedback to the construction team and the tenants monitoring team.*

Response

The assessment set project specific 'trigger' levels for building damage based on British Standard BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2, (as referenced by Australian Standard Australian Standard AS 2187: Part 2-2006 "Explosives - Storage and Use - Part 2: Use of Explosives"). It is noted that BS 7385 states:

"Some data suggests that the probability of damage tends towards zero at 12.5 mm/s peak component particle velocity. This is not inconsistent with an extensive review of the case history information available in the UK."

And also that:

"A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive."

Based on BS 7385 a project specific vibration damage (cosmetic) screening level of 7.5 mm/s (peak) was adopted for the assessment. As discussed above, lower screening levels may be appropriate for buildings that are structurally unsound and are of historic value. These buildings will be identified as part of the site specific construction noise and vibration assessments.

At locations where the predicted and/or measured vibration levels are greater than the screening levels, a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure would be required to determine the applicable safe vibration level.

Construction vibration for Sydney Metro Network Stage 1 (Central to Rozelle) will be managed in accordance with the Sydney Metro Construction Noise and Vibration Strategy. The strategy provides a Noise and Vibration Impact Assessment Procedure, whereby Construction Noise and Vibration Assessment and Construction Noise Impact Statements (CNIS) would be prepared for each site prior to the commencement of construction works. The predicted levels, work practices and mitigation measures to be applied would be documented in the CNIS.

The Construction Noise and Vibration Strategy also requires an Existing Condition Inspection of items to be undertaken in accordance with AS 4349.1 "Inspection of Buildings", where construction activities may cause damage through vibration to nearby public utilities, structures, buildings and their contents.

It is also noted the assessment presented 'safe' (or complying) working distances from vibration intensive plant such as impact hammers and vibratory rollers to comply with the project specific cosmetic damage limit of 7.5 mm/s. The corresponding distances range from 1 m to 15 m for a small to large impact hammer, and 1 m to 6 m for small to large vibratory roller. Peak vibration levels from the Tunnel Boring Machine (TBM) will be typically 0.6 mm/s at 10 metres (which is typically the closest distance from the TBM to building foundation), and 0.2 mm/s for a roadheader, also at a 10 metre offset distance.

Statement of Commitment No.22 established a process for property surveys and independent dispute resolution.

NON-INDIGENOUS HERITAGE

4.45 Central Station heritage

Issues included

- *This project is a nice way of preserving the historical Central Station.*

Response

Noted.

4.46 Town Hall Square Station heritage

Issues included

- *At the Town Hall work site, artefacts may be present as deep wells are largely unaffected by modern basements and the majority of artefacts tend to cluster in the lower levels of wells.*

Response

The findings regarding the various sites potential to retain archaeological remains is based on our experience of nineteenth-century sites in Sydney. Regarding the Town Hall Park Street worksite and the potential for deeper features such as wells, it is assumed that the excavation of the basement level for the extant buildings will have removed all archaeological features. As part of the southern extent of the Tank Stream valley and adjacent to the swampy area feeding the stream, the original water table need not have been at significant depth, which has obvious implications for the level of the bottom of any wells.

The potential for the Town Hall Bathurst Street worksite to retain remains is recognised and the need for archaeological input has been made.

4.47 Martin Place Station heritage

Issues included

- *No 7 Elizabeth St should be protected for its heritage. There has been no information or satisfactory reason as to why this property needs to be acquired and demolished.*

Response

Heritage values of this building are known and were identified within Technical Paper 5 (p54) of the EA. No.7 Elizabeth Street would be retained adjacent to the primary construction site for Martin Place station. The project does not require acquisition or demolition of this building.

To reduce the risk of damage to these buildings careful planning and execution of demolition of nearby buildings would be undertaken. This would include protection of adjacent structures and monitoring of the demolition process, and if deemed necessary, under the advice and supervision of a heritage specialist.

4.48 Barangaroo-Wynyard Station heritage

Issues included

- *All developments adjacent to the Railway House frontage to York Street should enhance the significant heritage value of this building.*
- *The position of the Barangaroo Pedestrian Link so close to the northern side of Moreton's would be detrimental to the presentation of this heritage building. The bridge should be moved in a northerly direction some distance from the heritage hotel building to avoid these impacts.*
- *At Barangaroo-Wynyard work site, wharfage areas can be rich sources of artefacts.*

Response

The significance of the former Railway House is noted within the EA. No work is to take place on the Railway House frontage to York Street. There will be alterations to the York Lane frontage at ground level. At the level of the CityRail station concourse, the Barangaroo Pedestrian Link would be constructed through the basement of Railway House, with some existing structural columns demolished.

To reduce the risk of damage to any original significant fabric at the former Railway House, careful planning and execution of demolition of nearby buildings would only be undertaken under heritage advice and supervision.

The EA has acknowledged the negative impact to the former Big House Hotel (Moretons Hotel) that the proposed Barangaroo Pedestrian Link would give rise to. Technical Paper 5 notes that the new bridge would interfere to some extent with the setting of the hotel as viewed from Sussex Street. The Metro project will provide for a bridge to the south of the hotel, and it is considered that a bridge in this location would give rise to only a slight negative impact. A bridge to the north is not proposed as part of the Stage 1 Metro project. This new footbridge would be carefully designed to minimise its visual impact to Moretons Hotel.

The archaeological sites identified at Barangaroo-Wynyard Station construction sites, were identified and assessed within the EA Technical Paper 4. Appropriate management measures, that include a program of archaeological investigations before construction works in the area commence, have been included within the Statement of Commitment No.40.

4.49 Pyrmont Station heritage

4.49.1 Protection of heritage at Union Square

Issues included

- *Without the heritage impact statement, we do not know if the facades will hold up during construction.*
- *Construction will endanger all the heritage buildings in the vicinity of Union Street and Union Square.*
- *The terraces on Harris Street are the only intact commercial sandstone terraces in Sydney in Regency style and are heritage items.*

Response

The scheme proposed for the eastern entrance of Pyrmont Station is to be Alternative 2 as identified within the EA. Under Alternative 2, the front sections of the existing buildings would be retained and parts of the altered rear sections and later additions to the buildings would be demolished and replaced by a station services building.

The project would thus preserve the significant full-width front parts of the buildings including the original principal rooms. Following construction of the new station, these buildings would continue to be used for retail purposes. The approach adopted for Pyrmont Alternative 2 is not façade retention. It is the retention of the great majority of the existing buildings, and the contribution of the buildings to the Pyrmont Conservation Area will be retained.

The proposed arrangement and the extent that the existing heritage fabric would be affected is shown in Figure 5.3.

The new station entrance would be located at 11 Union Street at the corner of Pyrmont Street, adjacent to the existing buildings at 3-9 Union Street. The station entrance would be sympathetically designed to interpret the original building and relate to the existing buildings opposite and adjacent.

Commitments relating to the protection of heritage at Pyrmont have been provided. Although the pedestrian precinct at Union Square is a relatively recent development, the historic buildings and street pattern are recognised in the heritage listings of some individual buildings and of the Pyrmont Conservation Area (EA Technical Paper 5, p 64).

No works are proposed to the commercial terrace on Harris Street.

The construction techniques to be adopted are tried and proven on numerous occasions over many years of construction. Sydney Metro will complete detailed modelling for noise and vibration, and plan mitigation strategies and monitoring measures for structures or buildings considered vulnerable to vibratory damage.

Building condition surveys of sites potentially affected by the works would be undertaken before any works commence. Work on heritage buildings and sites will be monitored during construction to ensure the minimum disturbance to significant fabric, with a mandatory reporting requirement on completion, and use of suitable construction methods, especially for demolition and salvage of significant materials and components.

As part of the design process, Sydney Metro is conducting studies into noise levels and potential vibration, and treatment techniques using international and Australian standards and specifications. In relation to damage to surface structures, a vibration trigger level of 7.5 mm/s at a residence or vibration sensitive receiver will be adopted for the project. The trigger level provides a threshold for further assessment and/or monitoring.

4.49.2 Loss of amenity at Union Square

Issues included

- *The commercial precinct is comprised of small scale and individually owned retail premises that make up its character. A large scale station and entrances would be better located in a similar scale precinct (eg fish markets, Star City).*
  Option 2b retains part of the facades of the buildings which leads to the rejected practice of heritage conservation known as 'facadism'.

Response

The proposed option for Pyrmont is not facadism. It is the retention of the buildings and the demolition of the altered rear additions of the buildings.

Although the works below ground are large in scale, the above-ground works are not necessarily so, and would be integrated into the surrounding heritage precinct, as has successfully been achieved in many examples throughout the world where Metro systems have been successfully integrated into the historic areas of cities such as Paris and Moscow.

Options for locating the station, and associated advantages and disadvantages, were described in detail within Appendix C of the EA.

4.49.3 Loss of heritage value

Issues included

- *Option 2 for Pyrmont is to rebuild a mock old building on a corner site in a pastiche faux-heritage style, now the site of a beer garden (see p9 of brochure) to 'conserve the majority of [the current] buildings'. But without any plans, how can the public be satisfied. This is not an acceptable design outcome.*
- *The metro will destroy the heritage value of Pyrmont.*
- *To save only the facade of a building is not to save its essence.*
- *The ceiling of the Pyrmont concourse is three metres below the heritage-listed buildings on Union Square's northern side. A redesign will eliminate any risk.*
- *Alternative 2 is preferable to Alternative 1. The NSW National Trust should be involved with preserving the building to ensure that only outbuildings/20th century additions that do not meet preservation standards be demolished.*
- *The Australian Institute of Architects does not support the faux-heritage building included in the station concept images document as Pyrmont View 2. Design for the station entrance should observe the design principles in the Institute's 2005 publication (with Heritage Council) Design in Context; it should be a contemporary design that matches the bulk and scale of the building at the other end of the Union Street row.*

Response

Sydney Metro recognises that there will be many views in the community about the architecture selected for the station building at Pyrmont.

Two of many possibilities were illustrated in the EA for the construction of a station entrance on the corner of Union Street and Pyrmont Road. Recreating the former corner building demolished some years ago is only one option available for Pyrmont. Other options are presented in the EA, and include more modern structures that are still in keeping with the streetscape. Artists impressions of some of these other options are provided for both Alternative 1 and Alternative 2.

Refer to issue above regarding how it is intended to conserve heritage in Union Square under the Alternative 2 scheme proposed for the eastern entrance of Pyrmont Station.

Alternative 2 would not involve preserving only the façade. It will also preserve the significant full-width front parts of the buildings including the original principal rooms, ensuring that the buildings could continue to be used for retail purposes following construction of the new station.

Sydney Metro has initiated a Design Principles Workshop process for Pyrmont. In addition, Statement of Commitment No.10 establishes a Design Review Panel to assist in resolving integrated design issues at the stations.

Furthermore, Sydney Metro has prepared nine draft heritage principles to guide its management of heritage matters during planning and construction. They were drafted following consultation with a number of stakeholders including the National Trust of Australia (NSW), in recognition that Sydney Metro will be developing Sydney's future transport network in areas where heritage and conservation are key issues.

1. Existing significant elements of listed heritage items or conservation areas will be conserved wherever feasible.
2. Station structures and public domain areas will be sympathetic and in context to surrounding streetscapes.
3. Design for new building or structures will be in context of significant heritage buildings or areas, responding to key proportions and materials.
4. Historic views and vistas will be preserved wherever possible.
5. Heritage will be considered at all phases of the project as follows:
    a. Heritage specialists will be included in contract design documentation and construction.
    b. The Design Review Panel, consisting of eminent architects including the NSW Government Architect, will consider heritage in its oversight of architectural design.
    c. A suitably qualified heritage architect will be employed to assist in development of station and public areas designs.
6. When a final design is proposed, a heritage impact assessment should be undertaken to clearly identify the nature and extent of any heritage impacts (either positive or negative).
7. Archival recording of affected sites will be undertaken.
8. Heritage monitoring of works will be undertaken during construction.
9. Ongoing consultation will be undertaken with the Heritage Council, the National Trust and peak bodies.

The process of excavation and construction in the vicinity of historic buildings is not new. It has been undertaken for many decades both in Australia and overseas, and the engineering and construction techniques for achieving it successfully are well established.

Building condition surveys would be undertaken before any works commence. The heritage significance of both Union Square and the buildings contained within the conservation area were covered in detail within Technical Paper 5 of the EA.

Work on heritage buildings and sites will be monitored during construction to ensure the minimum disturbance to significant fabric, with a mandatory reporting requirement on completion, and use of suitable construction methods, especially for demolition and salvage of significant materials and components.

As part of the design process, Sydney Metro is conducting studies into noise levels and potential vibration, and treatment techniques using international and Australian standards and specifications. In

relation to damage to surface structures, a vibration trigger level of 7.5 mm/s at a residence or vibration sensitive receiver will be adopted for the project. The trigger level provides a threshold for further assessment and/or monitoring.

Sydney Metro will complete detailed modelling for noise and vibration, and plan mitigation strategies and monitoring measures for structures or buildings considered vulnerable to vibratory damage.

Also refer to the Noise and Vibration responses of this report at section 4.44.

4.50 Rozelle Station heritage

Issues included

- *Removal of these three heritage buildings in Rozelle (the health and beauty chemist, 670 Darling Street - currently leased to Retravision and 669 Darling Street) is irresponsible with regards to heritage.*
- *Please consider either a heritage sensitive facade or ultra modern with glass transparent facade.*
- *The shops adjacent to the chemist do not have the same architectural merit as the chemist building.*
- *In the context of the proposed Tigers development it is even more important that the heritage buildings on Darling Street are preserved.*

Response

As noted in 5.5.7 of the EA, the proposed scheme for Rozelle responds to the principles set for the station location and the constraints posed at this location.

The five Edwardian commercial buildings on the northern side of Victoria Road to be demolished for the metro station are not individually listed structures, however they are within a broader conservation area. The station design and development process determined that the sites of these buildings were the most appropriate location for entrances to Rozelle Station, given its key intersection location and significant walk up catchment potential. In locating the station, impacts to a number other more significant buildings in the surroundings were avoided. The buildings to be demolished at the intersection were not designed as corner buildings but became so through later widening of Victoria Road. Their demolition will allow an improved urban design response to the intersection, and enhancement of the setting of the two listed churches on either side of Darling Street.

The Victorian and Edwardian commercial buildings on the southern side of Victoria Road (681-691 Darling Street) are also not individually listed structures but are within the conservation area. The character of the conservation area can be responded to by their replacement with new buildings of an appropriate scale and detail.

Sydney Metro has engaged some of Sydney's top architecture and design practitioners to participate in Station Design Principles Workshops to help shape the look and feel of Rozelle Station. This process will ensure that the design takes into account the community's vision, design stations entrances that fit into the streetscape and result in a clear direction for the contractors.

For the preferred option the number of properties directly affected has been reduced (compared to the Preliminary Environmental Assessment) and the Balmain Leagues Club site used for construction as it would be more accessible for construction purposes. Its use would result in fewer construction impacts and provide an opportunity for the future development to integrate with the metro station. Alignment constraints that originally precluded a station cavern in the proposed location have now been resolved.

4.51 Other heritage

4.51.1 Building demolition

Issues included

- *I am concerned about the number of heritage buildings that will need to be destroyed for the project.*
- *The proposed demolition of Transport House and other heritage-listed buildings in the CBD should not be allowed for a project with minimal benefit.*

Response

There are no listed heritage buildings that would be demolished for the project although it is acknowledged that a number of buildings that are not listed yet still have heritage values would need to be demolished. Transport House is not one of those building that would be demolished. Mitigation measures and commitments as part of the project would serve to protect heritage buildings that do not require demolition.

4.51.2 Archaeology

Issues included

- *Contrary to the EA assessment, the worksites at Pyrmont and Rozelle at locations where 19th century buildings or parts of buildings may be demolished have the potential for archaeological remains. This should be investigated during the archaeological reach and excavation program.*
- *The development of a Research Design and Treatment Plan for archaeology requires as much lead time as possible. With construction due to begin in 2010, this task should commence as soon possible.*

Response

The finding that the later nineteenth-century sites in Pyrmont and Rozelle have limited archaeological potential is in line with current best practice in Sydney and the archaeologist's own testing of a wide range of sites of similar date in Sydney. While sites overseas may be different, the assessment's finding is seen as accurate based on our local experience.

Full archaeological investigations will be undertaken where the EA has identified this requirement. Statement of Commitment No.40 addresses this requirement.

OPERATIONAL TRANSPORT

4.52 Parking issues during operation

4.52.1 Commuter parking at metro stations

Issues included

- *No provision has been made for people parking their car to catch the metro from Rozelle to the city.*
- *Will there be increased traffic and noise from parking?*
- *The Tigers site will provide parking for metro passengers.*
- *The metro will encourage people to drive their car to Rozelle, park and catch the metro.*
- *Further traffic modelling should be undertaken to analyse the impacts on parking at Rozelle.*
- *Inner urban metro stations in other parts of the world rarely have 'park and ride' facilities.*
- *Where will metro passengers park their cars at Pyrmont?*

Response

Commuter car parking will not be provided as part of the Metro project. Metro customers will either walk or cycle to metro, or transfer between the metro and existing public transport, such as bus and rail.

The introduction of the Stage 1 Metro will necessitate a reappraisal and possible extension of the existing resident parking schemes as one means of managing parking in the vicinity of Rozelle and Pyrmont stations. It is not anticipated that the Metro will encourage commuter car parking, especially where resident parking schemes are extended and adequately enforced.

Any future redevelopment of the Rozelle Villages site will incorporate on-site car parking with appropriate use restrictions. This parking will not be for Metro users. Provision will be made for kerbside “kiss-and-ride” car pick up and drop offs in Darling Street east and west.

Further traffic analysis may need to be undertaken in consultation with Council to determine the need for and extent of expansion of its existing resident parking scheme at Rozelle.

4.52.2 Impacts on residential parking around metro stations

Issues included

- *Parking could be prohibited in Rozelle to minimise congestion, but this would impact local residents and businesses.*
- *Don't narrow Pitt and Castlereagh streets to one lane, I don't want to get stuck behind parked vehicles.*
- *GPT and QIC are extremely concerned about the permanent removal of loading and car parking spaces along the western side of Castlereagh Street as a consequence of the proposed ventilation shafts.*

- *This car parking in front of St Thomas Church appears to be retained in the Metro Delivery Plan, but not in the longer term Master Plan for Rozelle Station. Removal of adjacent parking would have a significant impact on users of St Thomas Child Care Centre and should be retained.*

Response

Town Hall Square and Martin Place stations

At Martin Place station, Castlereagh Street will retain the through bus lane and a through traffic lanes as is the case under existing conditions. Narrowing of Castlereagh Street traffic lanes is not proposed; however there may be a loss of some parking/loading zones in order to accommodate vent structures.

At the Town Hall Station, Pitt Street will retain the existing through and turning traffic lanes as is the case under existing conditions. Widened footpaths on the western side of Pitt Street are proposed to accommodate the metro entrances and pedestrian flows.

Pyrmont and Rozelle stations

No commuter car parking will be provided at Rozelle station as part of the Metro proposal. Some kerbside changes will occur around stations, such as the provision of kiss and ride and taxi facilities. Final locations for kerbside facilities will be determined by Sydney Metro and the contractor.

The Rozelle Station master plan provides a vision for the Rozelle Station precinct. The Metro Delivery Plan (**Appendix B**) identifies the work that Sydney Metro would deliver. The provision of trees on the eastern side of Darling Street in front of St Thomas Church on the Rozelle Station master plan denotes that new landscape areas could be added by others in the future to improve the setting of the church. The car park at St Thomas Church, which is used by St Thomas Child Care Centre and others, would be retained as part of the Sydney Metro Stage 1 project.

4.53 Traffic issues during operation

4.53.1 Managing increased pedestrian traffic as a result of the metro

Issues included

- *The metro will increase pedestrian volumes around Rozelle.*
- *The metro will increase pedestrian traffic around Wynyard Green. Sydney Metro needs to undertake a major upgrade of the pedestrian network to cater for this growth.*
- *Bus loads of commuters will add to 'stranger danger' around Rozelle Public School.*
- *The metro will increase congestion on platforms and stations as people change transport modes.*

Response

The Sydney Metro Stage 1 proposal incorporates a range of initiatives designed to accommodate pedestrian activity both during construction and Metro operation. Metro stations are designed to facilitate access and multi-modal interchange for multi modal interchange, with the capacity to accommodate patronage growth.

For more information on safety around schools refer to sections 4.67 and 4.68.

Barangaroo-Wynyard

At Barangaroo-Wynyard station, the proposed Barangaroo Pedestrian Link will assist in accommodating east-west pedestrian demand during Metro operation. Possible footpath widening along Margaret and York Streets will also assist in accommodating pedestrian demand.

Rozelle

At Rozelle Station, the Metro will result in increased pedestrian activity in the precinct around the proposed station. Future traffic growth as a result of the Rozelle Villages development and other nearby residential and commercial developments is a matter for Leichhardt Municipal Council to consider.

Increased passenger activity around stations is not expected to result in reduced safety around schools. The additional pedestrian activity will contribute to improved passive surveillance across the precinct.

4.53.2 Impact of proposed bus facilities at Rozelle

Issues included

- *Bus passengers interchanging with metro at Rozelle will transform Rozelle into a major transport hub. There is concern for the safety of students going to and from Rozelle Public School. The Rozelle Public School basketball courts should be screened to minimise noise and pollution from the new bus stop.*
- *The bus bay at Tigers is not guaranteed and the DA Tigers recently placed with Council made no provision for the bus bay.*
- *It is absurd to put a bus interchange on a major road when all local streets and buildings are of heritage value and character.*
- *Buses should not terminate in Rozelle; it could not cope with the added traffic.*
- *A bus bay on the northern side of Victoria Road, adjacent to Rozelle Primary School would be more logical only if the buses are going to terminate at Rozelle for commuters to catch the metro.*
- *We were assured there would be no bus interchange as at Bondi Junction.*

Response

Forecasts indicate that the travel time benefits delivered by the Stage 1 Metro will encourage passengers to interchange from buses to Metro at Rozelle Station. Interchange with buses will occur on Victoria Road, with inbound buses stopping in the bus lane (constructed as part of the Inner West Busway) and outbound buses stopping in a new bus bay adjacent to the Rozelle Village (Tigers) development. There will, however, be no dedicated off-street interchange.

Bus services will operate along Victoria Road as they currently do, utilising the inbound bus lane. Existing levels of noise and airborne pollution are not expected to increase on Victoria Road as no additional buses are proposed as part of the Metro project.

The Metro proposal incorporates new underground pedestrian links which will reduce pedestrian-vehicular conflict at the Victoria Road / Darling Street intersection. For more information on safety around schools refer to sections 4.67 and 4.68.

Sydney Metro will continue to work will all stakeholders to deliver an optimal transport outcome at Rozelle and integration of the station with its surrounding setting. The bus facilities proposed can be delivered without adversely impacting surrounding heritage buildings.

The opposition to terminate citybound buses at Rozelle Station is noted. Bus planning in association with the Stage 1 Metro is continuing, but has always been based on giving passenger choice and, by continuing to run some services to the City, not forcing interchange. As well as operating some Victoria Road services to new destinations, it is likely that some buses could terminate at Rozelle in the future once passenger demand for buses continuing to the City has been clarified. These can, however, be accommodated without adversely impacting traffic or local residents, potentially through the use of either Leichhardt Bus Depot or White Bay as a short-term layover area.

4.53.3 Traffic congestion in Rozelle once the project is operational

Issues included

- *Traffic congestion in Rozelle will be exacerbated by passengers being dropped off and increased parking demand.*
- *A speed camera should be placed in front of Rozelle Public School and a roundabout constructed at the intersection of Merton and Darling streets to slow traffic and enable parents to turn into Darling Street safely.*
- *The effects of parking provided by the Tigers redevelopment was not addressed in the EA. Changes to the entry and exit points of the club (due to the bus interchange) have not been examined with traffic modelling, particularly the effects of the signalised intersection of Wellington Street providing access to the site.*
- *Traffic impacts on Rozelle have been assessed based on no more than 6 per cent of passengers accessing the station by car; this is some 300 cars in peak hours.*
- *Further traffic modelling should be undertaken to analyse how the saturation of Victoria Road/Darling Street can be avoided. This should include traffic flows following completion of the Tigers development, traffic flows on local streets, and traffic flows on Saturday mornings.*

Response

Patronage analysis reported in the EA for Rozelle Station forecasts that by 2021 between 4,300 and 5,000 people may board metro in the AM peak hour. The forecast number of alighting passengers could be between 800 and 1,000 people per hour. Total AM peak hour patron demand is therefore forecast to be between 5,100 and 6,000 passengers per hour. Traffic and transport analysis indicates that this volume of patrons will not result in adverse impact upon pedestrian amenity or intersection operation at this location.

The design of the station will incorporate subterranean pedestrian links beneath Darling Street and Victoria Road. This will assist in reducing surface congestion around the station precinct and also reduce the extent of traffic delay at the Victoria Road / Darling Street intersection.

Traffic analysis suggests that after the commencement of Metro operations the intersection of Victoria Road and Darling Street will operate at level of service D (LoS D) with an average vehicle delay of about 50 seconds in the AM peak hour, similar to operations under existing conditions.

Significant park and ride at Rozelle Station is not anticipated. No commuter car parking will be provided at Rozelle Station as part of the Metro proposal and the suggested Council extension of their resident parking scheme will assist in reducing park and ride traffic generation.

Kiss and ride locations are proposed on Darling Street, serving the Balmain side and the Rozelle side. The ultimate location of taxi and kiss-and-ride zones will be further developed with the RTA and LMC. No kiss and ride operations are proposed for Victoria Road due to potential interference to the inbound bus lane at this location.

Aspects of the Station Plan urban design form that Sydney Metro would deliver at Rozelle Station are detailed within **Appendix B**. The provision of a round-about at Merton and Darling Streets, speed cameras or additional kiss-and-ride zones for school traffic is outside the scope of the project.

4.53.4 Changes to traffic conditions around stations

Issues included

- *The proposed location of the taxi 'kiss and ride' zone on the Rozelle side of Darling Street is currently a clearway in peak times.*
- *The proposed alternative cycleway would have cyclists riding the wrong way down one-way Belmore Street. This is probably not in their best interests.*
- *Navitas supports the intention to rationalise street alignments and traffic movements, particularly along Margaret Street.*
- *Plans refer to the pedestrian area at Mount Street, a pedestrianised area with vehicle access. What vehicle access does this refer to - will cars or motorbikes be allowed down/or to stop on Mount Street?*
- *An issue of concern is traffic flow and control during operation of the metro.*
- *Objection to eastern entrance of Pyrmont station, as this will lead to the southern side of Union Square becoming a vehicular road to provide an entrance to Paternoster Row.*
- *Vehicular egress from Paternoster Row will be relocated to take cars through the existing Square to Harris Street, thus reducing its width at the Harris Street end.*

Response

Metro stations are located and designed to integrate with the existing pedestrian, bicycle and public transport networks and services, facilitating direct access and transfer from different modes of transport. The hierarchy of access adopted for planning of metro stations gives priority to the most efficient and sustainable transport modes.

Proposals for changes to the road network in association with metro would accommodate pedestrians, public transport services, goods and service vehicles, general traffic, on-street parking and emergency vehicle access.

Pyrmont

At Pyrmont station, the pedestrian area at Mount Street will allow access for metro service and maintenance vehicles. Shared zone arrangements may be reviewed to accommodate short-stay parking.

Paternoster Row is currently one-way northbound toward Union Square with exit available via Union Street to Pyrmont Street. During Metro operation, the station design at Pyrmont provides for the retention of the Paternoster link to Harris Street in order to create a better pedestrianised area within Union Square between Pyrmont Street and Paternoster Row.

Barangaroo-Wynyard

The support for rationalising street alignments and traffic movements near the proposed Barangaroo-Wynyard Station, particularly along Margaret Street, is acknowledged.

Rozelle

At Rozelle station, the ultimate location of taxi and kiss and ride zones will be further developed with the RTA and LMC, as part of the end-state precinct works. A kiss and ride zone is required for both the Rozelle and Balmain Darling Street approaches to Victoria Road.

The alternative outbound cycleway for Victoria Road is promoted by the RTA as part of the Inner West Busway project (Victoria Road upgrade) and is not within the scope of the Metro project. The outbound route is in the direction of Belmore Street traffic flow (westbound). An alternative arrangement on the Balmain side of Victoria Road is proposed for inbound cycling.

4.54 Project integration with transport modes

4.54.1 Distances between Metro and existing bus and rail services

Issues included

- *Transfer times between CityRail and Metro at Wynyard or Town Hall are not specified.*
- *The platforms are too far away from the existing suburban CityRail platforms to make changing modes desirable (eg 200 metres from Wynyard concourse).*
- *Why has the extreme western end of Central been selected for a terminal, so far away from the suburban platforms but close to buses and trams, both surface routes?*

Response

Vertical circulation at stations is specifically designed to ensure travel times from surface to platform are efficient. Transfer times from the Metro to CityRail are estimated in Table 4.1.

Interchange flows between rail services and Metro are facilitated via dedicated, high quality interchange concourses that minimise interchange times and congestion between metro and rail. This has been addressed throughout the EA and Technical Paper 1 and underpins the Metro design and the design of stations.

Central

The location of metro station at Central provides integration with the existing structure of the Central Station buildings. The station location allows direct and efficient connections and interchange links with CityRail services and main concourse hall of Central Station, as well as facilitating direct and efficient connections to other transport modes such as the light rail and bus interchanges in Railway Square and Eddy Avenue. The location of station and the metro corridor alignment are designed to allow for future metro extensions, including the proposed extensions to the west (Stage 2).

Barangaroo-Wynyard

The location of the metro station Barangaroo-Wynyard Station provides optimal interchange times between metro and CityRail services and the unpaid concourse of Wynyard station. The station location also allows convenient bus interchange with bus services at Wynyard.

4.54.2 Comparison of using metro versus bus from Rozelle to CBD

Issues included

- *By the time the change of modes is made, the time savings of trips to the CBD are at best marginal and outside of peak hour there is probably no time saving. No comparison studies or models have been done between modes during peak and off-peak with the Inner West Busway in place.*

Response

Analysis indicates that the travel time benefits delivered by the Stage 1 metro will encourage interchange from buses to Metro at Rozelle Station. Metro patrons will choose to commence their outbound journey from the CBD using the Metro and change to a bus at Rozelle because of the time saving derived from the Metro part of the trip. From the northern end of the CBD (about five minutes on metro compared with about 18 minutes by bus) or from the southern end of the CBD (about 10 minutes by metro compared with about 19 minutes by bus). Metro will also offer much greater travel time reliability than existing bus services.

Stage 1 of the metro also reduces travel and waiting time for other parts of the city. For example, the options for travelling to and from Pyrmont (particularly to and from the north of the CBD) are greatly improved with fast and frequent services which are unaffected by surface level road traffic delays. In addition, people travelling within the city to or from the financial district will have a fast and frequent service via Martin Place.

4.54.3 Integration with bus services

Issues included

- *There needs to be greater clarification around the details of bus-rail interchange arrangements given the current traffic management issues at Rozelle.*
- *Termination of a bus service at Rozelle will force commuters to join the metro.*
- *A metro ending in Rozelle needs a high capacity bus interchange for onward transport along Victoria Road.*
- *Most buses coming from Victoria Road and from Lilyfield/Haberfield should terminate in Rozelle. Why are so many buses shown to be going to the city in the AM? Isn't the metro going there too?*
- *White Bay Station should be the major transport interchange for termination of most Victoria Road buses to make the CBD less polluted.*
- *The change at Central from metro to heavy rail/bus would increase passenger congestion at Central.*

Response

There would be no forced interchange at Rozelle Station from bus to Metro. As it is at present, Victoria Road would continue to be a major bus corridor. Buses approaching from the west (Iron Cove direction) would stop and give passengers the choice of transferring to metro or continuing their journey by bus. Those most likely to transfer would be those travelling to the northern end of the CBD (about five minutes on metro compared with about 18 minutes by bus) or southern end of the CBD (about 10 minutes by metro compared with about 19 minutes by bus).

The metro project would increase public transport passenger choice. Some buses would continue to the city, some would proceed to other destinations such as Sydney University and Broadway, others

would terminate at Rozelle. By terminating services at Rozelle, there is scope to commence some services at Rozelle by using either the Leichhardt Bus Depot or White Bay. The actual bus services that may terminate are yet to be defined.

Two stops would be available for Victoria Road bus passengers wishing to interchange on the approach and departure sides of Darling Street, both of which would be adjacent to metro station entrances. Passengers would also be able to interchange from Darling Street buses from Balmain and Leichhardt. The outbound indented bus bay and bus lane is designed to allow for easy access from metro to bus for passengers alighting to continue their journey by bus, whilst protecting traffic flow efficiency along Victoria Road. The design of the Metro facilities at Rozelle has taken into account the access needs of less mobile and elderly persons.

As noted in section 14.3.1 of the EA, there would be the opportunity to terminate or commence some services at Rozelle, by using either Leichhardt Bus Depot or an alternative, temporary site in the vicinity of White Bay. Sydney Metro would work in partnership with the NSW Transport and Infrastructure, Roads and Traffic Authority, Sydney Transit Authority, private bus operators and local councils to integrate the future bus network with the metro and bring forward bus network improvements.

Any review of inbound bus services is a matter for NSW Transport and Infrastructure and the State Transit Authority.

As noted in section 6.4.7 of the EA, a bus interchange at White Bay does not form part of the project. A station planning strategy for White Bay Station has not been prepared, as Sydney Metro proposes to provide a station box at White Bay as part of this project with the station to be provided at a later date. Any further development of this site would be in accordance with the Glebe Island and White Bay Master Plan[5] and any subsequent plans developed for the Bays Precinct.

4.54.4 Integration with taxi services

Issues included

- *It is important for people with limited mobility (eg the elderly, parents with small children, people in wheelchairs) that taxis are in convenient and accessible locations.*
- *Consideration should be given to ensure taxi routes and ranks can function effectively when the metro is operational.*
- *Consideration needs to be given to metro stations at Barangaroo-Wynyard and Pyrmont and how these will connect to new or existing taxi ranks.*
- *NSW Taxi Council would appreciate any opportunity to provide advice and input throughout the detailed design stages.*
- *The EA refers to efficient interchanges between the metro and other forms of transport but does not present the evidence of these interchanges within the context of an overall transport plan.*

[5] Sydney Ports 2000, Glebe Island and White Bay Master Plan

Response

Sydney Metro has identified works within each precinct to integrate each metro station with the current and future urban context and public transport infrastructure networks, to facilitate interchange; encourage walking, cycling and public transport usage; and create a customer journey that is seamless and intuitive from trip origin to destination.

The hierarchy of access adopted for planning of metro stations gives priority to the most efficient and sustainable transport modes.

Metro stations provide access for people with disabilities to comply with Disability Standards on Accessible Public Transport and the intent of the *Disability Discrimination Act 1992* (DDA).

Taxi demand is anticipated in the planning of metro stations and Technical Paper 1, Chapter 6, outlines taxi stand requirements for each station, including additional taxi stands where appropriate.

Rather than require additional taxi stands at Pyrmont and Barangaroo-Wynyard, it is proposed to integrate metro station operations with existing taxis ranks.

Sydney Metro proposes two stakeholder liaison groups: the Central Project Coordination Committee (CPCC) and the Traffic and Transport Liaison Group (TTLG) to ensure that on-going Stage 1 works are coordinated with other development and public works and that construction traffic accommodates pedestrians, public transport and traffic. It is anticipated that the NSW Taxi Council would be part of the TTLG.

4.54.5 Integration with cycling

Issues included

- *There does not seem to be any specific planned integration with cycling as a mode of transport.*
- *An assessment of the likely bicycle demand generated by students at Wynyard Green should be undertaken as the existing infrastructure is limited and improved facilities are likely to generate demand.*
- *Chapter 4 of the EA understates the amount of cycling.*
- *The principles of improving pedestrian and cycle access have been overlooked and must be incorporated into the draft SoCs.*
- *The DGR "achieving additional public transport capacity to, from and within the Sydney CBD" has been overlooked with respect to any analysis of the station walking and cycling catchments. This omission is inconsistent with the objects of encouraging ESD.*
- *We request greater integration of the metro station changes with the recognised commuter and recreational cycling needs identified by each local government authority in the study area.*
- *The bicycle maps in the EA do not show all the local and recreational routes identified in the Leichhardt Municipal Council Bike Plan.*

Response

Sydney Metro will continue to ensure that the design and operation of the Sydney Metro Network Stage 1 (Rozelle to Central) is integrated with all modes including bicycles.

Bicycles are a supported access mode. Folding bicycles are allowed in Metro stations and on Metro services at all times, in the folded condition.

Non-folding or “traditional” bicycles are not comparable to mobility aids for the disabled (DDA 1992) and as such should not preclude the use of facilities provided for persons with a disability. Similar to other deep-tunnel metro systems, traditional bicycles would not be allowed in Metro stations or on trains due to risks associated with evacuation and impact on overall system capacity. Technical Paper 1 notes that deep-tunnel metro systems do not allow carriage of bicycles. Research on international metros indicates that most deep metro systems do not allow bicycles at any time (eg Stockholm, Singapore, Hong Kong, and Beijing).

Convenient, secure and weather-protected bicycle parking facilities will be provided at all Sydney Metro station entries to support the increased rates of cycling for the whole trip or part of a trip, combined with Metro. Bicycle parking provision will be coordinated with surrounding land uses, destinations and bicycle routes – as documented in the EA (EA p. 327). Design principles including: safety, security, integration, connectivity and maintenance, are addressed.

Initial and long-term bicycle parking provisions, by station, are as follows:

- Central (50 initial, 100 long-term)
- Town Hall Square (25 initial, 50 long-term).
- Martin Place (15 initial, 25 long-term).
- Barangaroo Wynyard (25 initial, 50 long-term).
- Pyrmont (25 initial, 50 long-term).
- Rozelle (50 initial, 100 long-term) (EA p. 327)

A bicycle parking monitoring strategy will ensure that abandoned bicycles are removed regularly and the additional provision of bike parking / safety and security measures at stations (Technical Paper 1, p. 51) will be undertaken when necessary.

CCTV provisions are not included as part of *every* station entry bicycle parking location. Bicycle parking would be provided near station entries and will naturally be afforded active surveillance by shops, retail frontage or nearby active travel corridors. CCTV or other passive security measures may be investigated by the IMO contractor where less active surveillance is afforded bicycle parking locations.

Metro works provide an opportunity to bring forward City of Sydney plans to provide a Cycle2City type bicycle parking facility as part of the Town Hall Square. (EA p. 318)

Communication is another important aspect of the cyclist strategy and Sydney Metro will promote cycling facilities and operational requirements for cyclists through its website, with links or maps showing the location of facilities and connections to bike paths for onward journeys as part of a route planner service.

Graphics (EA, Chapter 14) show purpose-built bicycle infrastructure provided as part of the project. Though delivering the bicycle strategy of each council is outside the scope of the metro project, several opportunities to bring forward bicycle infrastructure have been identified when restoring station and depot work sites.

4.55 Project integration with transport plans

4.55.1 Integration with other plans and visions for CBD

Issues included

- *There is little documentation available regarding long-term integration.*

Response

NSW Transport and Infrastructure is the lead transport agency of the NSW Government, with responsibility for transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW. It will be the basis for transport decision making between now and 2036 and includes strategies and actions necessary to achieve a transport system that boosts economic activity, has a positive impact on our social and environmental wellbeing and helps to make NSW an attractive place to call home. It will be a companion document to the Metropolitan Strategy and both documents will be reviewed together every five years.

The integration of the project with other transport plans is assessed in the following sections of the EA:

- Section 4.1 and 4.4 outline how the project relates to strategic policies such as the Metropolitan Strategy and other planning frameworks.
- Section 14.3.4 describes how the project would form part of a greater metro network and how it would assist or complement other transport plans such as future extension of heavy rail through the CBD, extension of the light rail, new bus routes and potential road network changes.
- Section 22.2.4 outlines how the project would integrate with the long-term plans for the new development at Barangaroo and future development at the Bays Precinct.
- Technical Paper 1 Chapter 4 identifies how the metro integrates with each transport mode and further identifies opportunities to reconfigure access modes to increase efficiency, accessibility and sustainability across an integrated transport network.

4.55.2 Integration with CityRail network plans

Issues included

- *The Metro does not integrate into the heavy rail network or help alleviate rail congestion.*
- *The project should ensure strong interchange capacity between existing and new CityRail and metro rail lines and stations.*

Response

Physical integration

Interchange with the heavy rail network will be possible at Central, Town Hall Square, Martin Place and Barangaroo-Wynyard. Station entries and subsurface connections between stations are part of the metro project. These elements integrate with the existing heavy rail network.

Service integration

As discussed in sections 14.3.1 and 22.2.3 of the EA, the project would enable improvements to and enhancement of the heavy rail network. This would be achieved by relieving pressure off the CityRail Main West corridor and potentially unlocking capacity, enabling additional services from the Western, South or Northern Lines. It could also provide the opportunity to offer a greater number of express services from the Parramatta/Blacktown corridor, which would improve travel times from that area and improve service frequencies from the Liverpool and Inner West lines.

This reconfiguration reflects the opportunities available for the CityRail network as a result of the project. Further analysis is being undertaken with RailCorp to determine if there are further benefits to the rail network, particularly if Sydney Metro Stage 2 (West Metro) is also constructed.

The introduction of a metro system to Sydney can help encourage the transition of the heavy rail network from a CBD-focused, largely peak-hour market, to a more versatile mode of choice for all trip types, which would help to ensure the development of a comprehensive and fully integrated transport network.

In recognition of the importance of the Sydney Metro Stage 1, the Chief Executives of both RailCorp and Sydney Metro made a partnership commitment in May 2009 for the delivery of public transport services. It was agreed that the two organisations would work together with NSWTI to develop transport strategies to best meet the needs of the community. In particular, it was agreed to meet the Government's commitment to deliver the Metro, including a cooperation agreement relating to construction and infrastructure interfaces, corridor protection, station precinct management, delivery timeframes and other matters.

4.55.3 Integration with RTA plans

Issues included

- *The project should not preclude or complicate future M4 East and Inner West Bypass motorway tunnels.*
- *The project will block action by the RTA in placing a Victoria Road underpass under Darling Street to allow Parramatta based traffic to bypass localised traffic.*
- *The Sydney Metro policy, as stated on its website, is to follow road tracts in the CBD. Rozelle is not in the CBD and Victoria Road should be protected for direct use by the RTA.*

Response

Considerable consultation with state and local authorities has been undertaken to inform the design and construction activities associated with the metro project, including reservation of land to account for potential future transport proposals.

Connecting NSW: The Transport Blueprint is the NSW Government's 25 year plan for integrating the delivery of transport services and land use planning in NSW. It will be the basis for all transport decision making between now and 2036 and includes strategies and actions necessary to achieve a transport system that boosts economic activity, has a positive impact on our social and environmental wellbeing and helps to make NSW an attractive place to call home.

The Transport Blueprint will provide for improved connections at all levels of travel, including movements across the metropolitan area and to the Sydney CBD.

There are currently no plans for a Victoria Road vehicular underpass of Darling Street at this intersection. This has been confirmed though discussions with the RTA and NSW Transport and Infrastructure.

4.56 Pedestrian issues during operation

4.56.1 Pedestrian access at metro stations

Issues included

- *The capacity to expand pedestrian access links into Richard Johnson Square should be preserved to increase the station's northern catchment and provide more options for office workers.*
- *St Thomas Child Care Centre should be able to approve how the property interconnects with the metro forecourt and access arrangements once operational.*
- *The pedestrian tunnel should be extended beyond its current connection to the country train platforms to ensure complete integration of the metro and CityRail.*
- *Funding should be allocated to the extension of a pedestrian tunnel under College Street to access UTS.*

Response

Central

Proposed works for a pedestrian tunnel extensions are not included as part of the project and would be subject to separate approvals and funding.

Barangaroo-Wynyard

At Barangaroo-Wynyard, the proposed footpath widening along the southern side of Margaret Street between York and Clarence Street will assist in better distributing existing and likely future pedestrian demand in and around this location. There is scope to bring forward some of the Barangaroo-Wynyard pedestrian network initiatives in order to assist in management during Stage 1 Metro construction. Possible longer term pedestrian improvements have taken into account likely demands from the proposed Barangaroo development.

Martin Place

The existing footpath network would provide pedestrian linkages to Richard Johnson Square.

Rozelle

The Rozelle Station Plan (Illustrative Master Plans) shows the opportunity to extend paving across Darling Street. This would not form part of Sydney Metro's work (which is detailed in **Appendix B**). Should LMC decide to provide this, the design would need to address equitable access.

Ongoing communication and consultation will be undertaken with key stakeholders, including St Thomas Childcare Centre, throughout the detailed design process. Access to properties will be maintained throughout construction for businesses, customers and neighbours.

The provision of additional subsurface links under Victoria Road, other than that proposed (as shown within **Appendix B**) is not within the scope of the metro project.

4.57 Cyclist issues during operation

4.57.1 Enhancing cyclist access to metro stations

Issues included

- *The metro station design should involve areas for a bicycle pick-up and deposit network.*
- *The carriage of bicycles on the proposed West Metro line needs to be considered concurrently. Suggestions that bicycle carriage will be superseded by bicycle-sharing schemes operating at railway stations seem overly ambitious.*
- *The EA states that bikes (except folding bikes) will not be allowed on trains, as this is 'the same as other metro networks'. In fact, many metro networks have favourable policies on the carriage of bikes and almost all make at least some provision for this. Arguments that platform doors, the need for short dwell times and concerns that congestion in circulating areas bring special challenges to bike riders are hardly relevant when luggage, prams and wheelchairs will be designed for, and allowed to travel without restriction.*
- *Sydney Metro has not responded to how it might encourage walking and cycling to its station. Only a macro-level transport model has been used that excludes cycling.*
- *Partnerships with local councils and bicycle user groups to develop promotional and educational initiatives should be pursued and funded by Sydney Metro.*
- *We object to the Pyrmont Station entrance in Union Square. The Square is one of the most heavily used pedestrian/cycling routes from the Inner West into the city.*

Response

Bicycle hire schemes are complementary to the operations of the metro and widen the catchment of stations. As discussed in Technical Paper 1 (p. 53) local bicycle hire schemes are usually run independently of metro systems. Within the station precincts, Sydney Metro does not preclude any potential future bicycle hire scheme at the metro station entry and does not preclude the establishment of bicycle hire docking stations (p. 54) at station entries. There is opportunity to investigate, in partnership with City of Sydney Council, the feasibility to accommodate future self-contained bicycle hire docking stations in the future.

Line 1 Stage 2 is outside the scope of the EA.

Similar to other deep-tunnel metro systems, traditional bicycles would not be allowed in metro stations or on trains due to risks associated with evacuation and impact on overall system capacity. Non-folding or “traditional” bicycles are not comparable to mobility aids for the disabled (DDA 1992) and as such should not preclude the use of facilities provided for persons with a disability. Technical Paper 1 notes that deep-tunnel metro systems do not allow carriage of bicycle. Research on international metros indicates that most deep metro systems do not allow bicycles at any time (eg Stockholm, Singapore, Hong Kong, and Beijing).

At all times folded bicycles would be allowed in metro stations and on metro services, in the folded condition. Weather-protected bicycle parking would be provided at each metro station to allow cyclists to secure bicycles and continue their journey by metro. A monitoring strategy has been identified to ensure additional bicycle parking is provided as metro passengers require it.

Metro stations are located and designed to integrate with the existing pedestrian, bicycle and public transport networks and services, facilitating easy and simple access and transfer from different modes of transport. The hierarchy of access adopted for planning of metro stations gives priority to the most

efficient and sustainable transport modes. Technical Paper 1 notes that walking would be the primary access/egress mode to metro and that Stage 1 would encourage walking by connecting metro stations to existing and planned pedestrian networks, providing localised pedestrian improvements around metro stations, and becoming a catalyst for pedestrian improvements within metro station precincts.

Technical Paper 1 notes that cycling increases the catchment of public transport stations and serves different journey types and markets. The patronage models identify all Metro users by their mode of access: rail, car, bus and 'walk'. The walk mode actually consists of all active transport modes, including cycling.

The delivery of bicycle encouragement programs is outside the scope of a metro as is the upgrade of existing and planned pedestrian and cycle path networks is outside the scope of a metro project, wider network improvements are a matter for local councils and the RTA.. Sydney Metro will work with the RTA, DECCW and local councils to investigate the delivery of encouragement programs.

4.57.2 Use of bicycles at the depot

Issues included

- *There would be large advantages of bike use by staff at the Rozelle Maintenance Depot at noise sensitive times. The IMO contractor should be encouraged to provide facilities for the use of fleet bikes for staff transport around Rozelle Maintenance Depot Site.*

Response

Bicycle parking is proposed for depot buildings and the IMO operator may use fleet bicycles at their discretion.

4.58 Commuter behaviour

4.58.1 Changing from other modes of transport to the metro

Issues included

- *At Central Station it would be easier for a passenger to transfer to a suburban train than a metro.*
- *It doesn't make sense for bus passengers to change onto the metro at Rozelle when their bus would already be going to the city anyway.*
- *Table 4.3 (Technical Paper 1) does not demonstrate passenger numbers that would interchange from heavy rail and/or buses (eg at Central). Interchange passenger flow data should be provided, along with a market analysis to show whether passengers would be prepared to change modes and pay another fare.*
- *It is unclear what improvement the project will provide for journeys with destinations in the CBD or through the CBD north across the harbour bridge via public transport. Quantum origin-destination data and behavioural studies with respect to journeys to and via the CBD have been done, yet none are referenced. Although the Zenith model has been benchmarked with some of this data, the material provided appears to be limited to considering a more parasitic modal shift analysis. This approach limits the consideration of land use changes and underestimates the mode loyalty that interchanges create.*

Response

General

Sydney Metro Stage 1 (Central to Rozelle) is designed to provide additional capacity within the CBD, and provide an alternative onward route into the city for CityRail passengers arriving on InterCity Services that terminate at the Central Station 'country' platforms.

Passenger interchange flows have been considered in the EA. An analysis is provided in Chapter 6 of Technical Paper 1. For each station an indication is provided of the interchange passenger flow - see Table 6.1 for Central, Table 6.14 for Town Hall, Table 6.24 for Martin Place, Table 6.35 for Barangaroo-Wynyard, Table 6.47 for Pyrmont, and Table 6.59 for Rozelle.

Sydney Metro does not propose forced passenger interchange at Central or Rozelle.

The project would provide a new high quality mass transit service operating every 2-3 minutes in peak periods and every five minutes at other times between Rozelle and the city, providing new travel choice and significantly faster travel times, especially to the northern end of the CBD, including Martin Place which is currently only reachable by transferring to platform 24 on the extreme eastern side of Central station.

Metro would have no impact on CityRail services coming from lines such as the Bankstown Line. These services would continue to operate into the city and around the City Circle as at present without the need for transfer.

Not all trips are work trips, last year just 15 per cent of travel on a week day was for commuting. Integrating the bus network with metro stations improves mode choice for passengers of varying degrees of mobility, extending the catchment of metro stations and the bus network.

Effective passenger interchange would be provided at all station entries. The metro would be integrated with the current and future urban context and public transport infrastructure and networks. (refer to Chapter 6 of Technical Paper 1).

Central Station

The design of the Central Metro station is such that interchange from CityRail trains to Metro trains and vice versa would be quick and easy. A pedestrian connection would link directly to the Central Station Western Forecourt and the suburban platforms. Some transfers can now be avoided such as those CityRail passengers who now transfer from a suburban CityRail train to the Eastern suburbs line by changing trains and walking to Platform 24.

Metro service at Central would increase public transport passenger mode choice. Sufficient passenger interchange facilities would be provided for the metro, augmenting several existing subsurface and surface passenger connections.

Rozelle

At Rozelle, passengers arriving on buses on Victoria Road and Darling Street would have the opportunity to transfer to the project for a fast onward journey towards the city. Bus stops would be designed for easy transfer other destinations by bus.

Bus passengers accessing Pyrmont and Wynyard may prefer the faster 1-2 stop metro services from Rozelle, especially to Barangaroo-Wynyard and Martin Place. Metro patrons would choose to commence their outbound journey from the CBD using the Metro and change to a bus at Rozelle because of the time saving derived from the Metro part of the trip. From the northern end of the CBD (about five minutes on metro compared with about 18 minutes by bus) or from the southern end of the CBD (about 10 minutes by metro compared with about 19 minutes by bus).

Some people would use bus for the entire length of their outbound journey from the CBD. However, some would choose to use the Metro for part of the journey as it would reduce the overall travel time for the journey. The design of Rozelle Station minimises interchange time between the Rozelle platforms and the bus stops in Victoria Road and Darling Street delivering travel time benefits for Metro and bus users.

4.59 Changes to the bus network

Issues included

- *The justification for the Inner West Busway was to reduce bus travel times, but the metro project proposes to reduce the number of buses travelling via Anzac Bridge to the city to force people to change to the metro system at Rozelle.*
- *No bus services should be changed to terminate at Rozelle.*
- *Where will all the terminating buses park and turn?*

Response

The Sydney Metro Stage 1 project will increase public transport passenger choice. Nor will all passengers be forced to interchange at Rozelle. The project enables the redistribution of some Victoria Road bus services to new destinations such as Broadway and Railway Square and there is also scope to terminate/commence some services at Rozelle by utilising either Leichhardt Bus Depot or White Bay as a short-term layover for buses (EA p55-56).

The redistribution of these bus services increases public transport passenger choice, enabling either increased frequencies, or services to underserved areas or new destinations.

OPERATIONAL NOISE AND VIBRATION

4.60 Station noise

4.60.1 CBD stations

Issues included

- *There is concern about noise and vibration in office buildings during operation (specifically 20 Martin Place and 55 Clarence Street).*

Response

During operation of the CBD Stations, the main source of noise and vibration will be from train passbys, commuters and equipment such as escalators, lifts, mechanical ventilation equipment and public announcement systems. The noise and vibration from train passbys will be addressed as part of the track form design and is predicted to comply with the applicable limits at all locations. Noise and vibration issues associated with commuters, mechanical ventilation equipment, escalators, lifts and public announcement systems will be addressed as part of the detailed design process for the CBD Stations, to ensure that noise and vibration levels meet the requirements in the applicable Australian Standards.

4.60.2 Pyrmont Station

Issues included

- *Will there be any additional bus services in Pyrmont? More services before 7am in the morning will create noise.*
- *Will there be any pushbike racks or motorbike spaces close to the Mount Street station entrance? Any consideration should take into account any increased noise for residents.*

Response

The EA did not assess the impacts from noise due to bus movements on public roads, as the State Transit Authority is responsible for matters pertaining to local bus changes including noise. However, as noted in section 14.3.2 of the EA, patronage from bus passengers at Pyrmont is not expected to be significant. As such, no additional bus services are considered necessary in this location and no increased noise from this source would be expected.

In the event that the project resulted in a significant change to the number of bus movements during either daytime or night-time periods, there would need to be an assessment of traffic noise levels in accordance with the DECCW guideline *Environmental Criteria for Road Traffic Noise*[6]. This assessment would likely require an assessment of the change in LAeq noise levels as a result of the project and consideration of feasible and reasonable noise mitigation measures if the noise level increase from the project is greater than 2 dBA.

The project does not provide commuter parking for either vehicles or motorbikes, therefore no additional noise is expected from these sources, and no additional noise is expected from passengers arriving by pushbikes. There will be sheltered bus passenger areas at Harris and Miler Streets, however these would not be expected to generate significant noise.

4.60.3 Rozelle Station

Issues included

- *What noise attenuation measures will be put in place between the property and Victoria Road once construction is complete? Currently, Victoria Road vehicle noise is dampened by the existing buildings, which won't exist at the end of construction.*
- *We are concerned about operational noise impacting Darling Street Anglican Church.*
- *What level of noise will be experienced once the metro is operational?*

Response

The change in road traffic noise levels resulting from the permanent demolition of existing buildings has not been addressed in the EA. The need for noise attenuation measures will be considered in parallel with resolution of the built form and public domain at the station entrances. An investigation of the change in road traffic noise levels at existing sensitive receiver locations at Rozelle will be undertaken based on the ultimate design. At this stage, it is not expected that significant additional road traffic noise would be experienced at residential receivers (using DECCW's Environmental Criteria for Road Traffic Noise (ECRTN) guideline). However, this assessment will determine the

[6] EPA 1999, Environmental Criteria for Road Traffic Noise

change in noise levels associated with the proposed demolition of existing buildings and identify any feasible and reasonable mitigation measures that are required.

4.61 Noise from the Rozelle stabling and maintenance depot

Issues included

- *The Rozelle stabling yards will be a source of continual noise from 5am to 1.15am - with a respite of less than four hours. This is a smaller period of respite than the curfew period imposed on Sydney Airport.*
- *The area affected is described as Industrial Zoning, however under a Land and Environment Court ruling, construction of Type 2 and Type 5 buildings were allowed which means the lower part of Justin Street is substantially residential.*
- *The residents of lower Justin Street request that acoustic testing is undertaken to determine that noise will not exceed the permissible levels for a residential area.*
- *The residents of lower Justin Street request that construction plans include a sound wall of at least 2-3 metres. The existing cut in the FGL changes in height according to level changes of Lilyfield Road and cannot be relied on alone to attenuate the noise.*
- *The EA should have more detailed noise assessments and mitigation measures to indicate it 'will' comply with intrusive and amenity noise goals at all residential receiver locations. There is also no information as to where residential receiver locations are to be located, as the stabling yard is faced by the hill at Lilyfield and noise will penetrate some distance from the yard.*
- *The issue of track grinding has not been addressed in the EA and mitigation needs to be conditioned.*

Response

The proposed train stabling facility will be operational on a 24/7 basis, comprising train operations between the stabling facility and tunnel portals during the operational period and train stabling/maintenance during the night-time shut down period. Noise levels from train passbys during operating hours have been assessed in accordance with the DECC's *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* and the DECC's *Industrial Noise Policy* (for maintenance activities). During the night-time 'shut down' period, noise levels from maintenance and train stabling have been assessed in accordance with the DECC's *Industrial Noise Policy*.

The noise assessment indicates that the appropriate noise design goals will be achieved at the nearest sensitive receiver locations for all of the activities proposed to be undertaken on a regular basis. It is noted that the *Industrial Noise Policy* criteria are designed to protect against intrusiveness and to preserve amenity. They are based around identifying the upper (rather than the average) level of impact and seek to restrict the risk of people being highly annoyed to less than 10 per cent, and to meet this for at least 90 per cent of the time. The *Industrial Noise Policy* notes that "there is no single identifiable noise level that all people will find acceptable or unacceptable" and that "annoyance increases with increasing noise, but at any given noise level there will be a wide variation in the range of individual reactions to noise". The noise trigger levels in the *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* also aim to protect 90% of the population from being highly annoyed.

The noise assessments indicate that the noise goals will be achieved at the depot without the need to consider noise barriers. Compliance testing will be undertaken following commissioning to ensure that the noise goals are achieved. An Operational Noise and Vibration Management Plan (ONVMP) will be

prepared by the operator to manage any concerns raised by the public as a result of the train operations or maintenance. The ONVMP will identify any additional mitigation measures to be implemented if levels are found to exceed the design goals. Regular track and rolling stock monitoring and track maintenance requirements are discussed within the Noise and Vibration Technical Paper No. 3 of the EA.

4.62 Noise or vibration from tunnels beneath property

4.62.1 From trains operating within the tunnel

Issues included

- *Both alternatives at Pyrmont place part of the station platform and the train line under our building (corner 104 Miller Street and Mount Street). Any trains passing underground should not create any sound in the apartment block.*
- *We do not have confidence that there will be no property damage or discomfort caused during operation.*
- *Although required to achieve the ground-borne noise design goals, it is not clear that any commitment to use high-attenuation trackform has been made.*
- *I cannot find a detailed map showing the location of the metro lines and their distance to local houses, and what noise and vibration will affect these houses when the metro will operate 24 hours a day.*
- *What noise and vibration will I experience (Ellen Street, Rozelle) when the metro is operational.*
- *GPT and QIC are concerned about the impacts from operational noise and vibration.*
- *The proposed location of the tunnel in relation to 33-39 Hunter Street is not entirely clear, but we remain concerned about the possibility of damage from vibration from construction and operation.*

Response

At some locations above the tunnel, it is anticipated that ground-borne noise levels from train operations may be audible inside buildings. The fact that ground-borne train noise may be audible does not necessarily indicate that it will be offensive or disturbing. In many cases, the train noise may pass unnoticed due to the “masking” effect of other ambient noise sources, activities or distractions.

The ground-borne noise limits for the project have been determined in accordance with the DECCW’s *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (IGANRIP)*. Sydney Metro has undertaken to design the underground railway to achieve the recommended limits at all receiver locations. At residential receivers, the ground-borne noise design limits are 40dBA during the daytime period and 35dBA at night. The ground-borne noise design limits at other receiver locations are documented in the EA (section 15.1).

In determining reasonable design limits for ground-borne noise emissions from underground railway operations, the DECCW undertook a review of the available information and concluded the following (as documented in IGANRIP):

- It appears reasonable to conclude that ground-borne noise at or below 30dBA LAmax will not result in adverse reactions, even where the source of noise is new and occurs in areas with low ambient noise levels.

- Levels of 35dBA to 40dBA LAmax are more typically applied and likely to be sufficient for most urban residential situations, even where there are large numbers of noisy events.
- For a good night's sleep, the World Health Organization (WHO) recommends that individual noise events exceeding 45dBA LAmax indoors (measured on 'fast' response setting) should be avoided.
- The noise trigger levels (40 dBA daytime and 35dBA night-time for residential receivers) and the associated measurement methodology described in Section 3 of IGANRIP are aimed at providing a reasonable basis for triggering the assessment of impacts from ground-borne noise. They are necessarily set to the lower end of the range of possible trigger values so that potential impacts on quieter suburban locations are addressed. In practice, higher levels of ground-borne noise than the trigger level for assessing impacts may be suitable for urban areas where background noise levels are relatively high.

Sydney Metro has undertaken to adopt the IGANRIP noise trigger levels as design limits and ensure that the underground railway line is designed and maintained accordingly (by the successful contractor) to achieve the design limits at all receiver locations.

In the EA, it is not appropriate to make a commitment to build a specific track form design, but to set the noise design standards and demonstrate that an engineering solution is feasible and reasonable to achieve the design limits. Experience on the Epping to Chatswood Rail Line indicates that the proposed ground-borne noise limits are achievable using the proposed track form designs discussed in section 15.3 of the EA. The Epping to Chatswood Rail Line passes beneath several hundred residential buildings and to date, no complaints have been received in relation to ground-borne noise and vibration levels associated with train passbys.

The vibration assessment indicates that there is a negligible risk of building damage as a result of the proposed excavation works and train operations. The potential damage due to differential settlement is addressed in the geological section of this report.

4.63 Noise from ventilation shafts

Issues included

- *Concerns regarding potential noise impacts of vents located in proximity to buildings, particularly residential premises.*
- *Given the box valley effect, the noise from the proposed stack will intensify the noise. It and needs to be above the roof level of the surrounding buildings.*
- *The project, along with the expansion of Star City will increase total noise from ventilation plants surrounding my residence.*

Response

The two main noise issues associated with the proposed ventilation shafts are from train passbys and steady noise from tunnel ventilation fans. For train passby noise, maximum train noise levels will be designed to be less than 55dBA to 60dBA outside residential buildings (depending on the ambient noise level environment). These levels are not considered to be significant and are comparable with many other typical noise events in suburban environments such as car passbys on local roads.

For steady noise emissions, lower noise goals are normally required to ensure that the noise amenity of a given area is maintained - this ensures that the cumulative noise from all industrial-type noise sources remains acceptable. The design noise goals for the ventilation shafts will be designed to comply with the maximum noise goals for train passbys and the amenity and intrusive noise goals in

the *NSW industrial Noise Policy*. Sydney Metro are not aware of the "box valley effect" terminology, however, if this refers to the additional increased noise due to reflections, then this and all other acoustics effects has been included in the EA and will be further defined as part of the detailed design process.

ECONOMIC AND SOCIAL ISSUES

4.64 General business impacts (construction)

4.64.1 Compensation for impacts/relocation

Issues included

- *The project should not cause financial hardship or negatively impact businesses. Landlords will not renew leases given that it will become a future potential redevelopment site.*
- *Compensation in accordance with the 1991 Fair Trade Compensation Act for loss of business and disruption due to diverted traffic, noise and dust impacts.*
- *It is not clear how the business management strategy (SoC #34) would compensate tenants or building owners for inconvenience/reduced access or for likely loss of trade.*
- *The Consultation Involvement Plan, which identifies 'effective means for ongoing cooperation and communication with the business community' does not provide comfort to the small businesses who will face going broke during construction.*
- *Resumption of affected business or monetary compensation under the Land Acquisition (Just Terms Compensation) Act 1991 (1991 Fair Compensation Act).*

Response

Construction activity of any type is a part and parcel of life, particularly in the Sydney CBD. Such works can typically comprise road and pavement works, replacement of utilities along roads and footpaths, and redevelopment of city buildings. The carrying out of such works always causes some inconvenience to owners and occupiers of adjoining land. Some retailers will claim that this extends to a loss of revenue while the works are being carried out. The retailers are not entitled to a contribution from the entity carrying out the works and no compensation is payable in such circumstances. By the same token the constructing entity is not entitled to a percentage of the increase in any retail revenues that may result from the improved street or trading environment.

Sydney Metro recognises that its construction activities at some sites may have potential temporary impacts upon the current retail trading environment of some retail businesses in the area immediately adjacent to some worksites. The impact of construction activity would vary from site to site, both in intensity and duration. The EA and Statement of Commitments for the project document these impacts and the mitigation measures proposed to deal with them.

Individual business management plans would be prepared for each construction site as identified in Statement of Commitment No.34 and would include, but not be limited to, maintaining access/delivery arrangements, signage, dust control and noise mitigation. Relocation of businesses in the vicinity of construction sites is generally not anticipated provided adequate mitigation measures are implemented during construction.

Cases of severe personal financial hardship may, however, still arise where Sydney Metro's construction activities may have contributed to a reduced flow of customers into a retailer's shop. In

these cases small independent retailers who directly rely on the weekly turnover of a shop to maintain a wage may experience severe personal hardship and Sydney Metro is prepared to consider assisting these retailers financially via a Small Business Owners Support Program.

There are likely to be three categories of retailers who may be affected by Sydney Metro's construction works. These are:

- Large retailers including branches of chain stores.
- Destination shops (ie shops that do not rely on passing trade) that are affected in a relatively minor way by the works.
- Small independent retailers who rely on passing trade and are more significantly affected.

Retailers in the first two categories will generally comprise larger corporate retailers including those having national store operations. These retailers are not considered appropriate for inclusion in this program because they are better able to manage any adverse impacts on the trading environment resulting from the temporary works. Destination shops are not considered appropriate for inclusion in the program because they generally do not rely on passing trade, and therefore it is unlikely that they will be affected in any significant way by the temporary works, provided adequate mitigation measures are implemented during construction.

Small independent retailers will generally comprise traders who have only one (or perhaps two) stores and whose livelihood is directly related to the operation of the shop. Home offices may also be considered on a case-by-case basis. Sydney Metro acknowledges that its worksite activities may impact on the retail trading revenues of some retailers in this category and if this occurs, there is a prospect that such retailers could suffer severe personal financial hardship.

Sydney Metro is establishing this Small Business Owners Support Program to administer financial assistance to eligible retailers.

Sydney Metro will establish a process by which small independent retailers who believe that they have suffered severe personal financial hardship as a result of the construction activities of Sydney Metro in constructing the project may apply for assistance under the program.

Any payments to be made under this Small Business Owners Support Program are not compensation for loss of trade, revenue or profit. They are to help overcome severe personal financial hardship. Severe personal financial hardship must be demonstrated.

Small independent retailers who are eligible to make a claim for compensation under the *Land Acquisition (Just Terms Compensation) Act 1991*, in connection with land acquired in relation to the construction of the project, would not be eligible to apply for assistance under the Small Business Owners Support Program.

Sydney Metro will establish a Retail Advisory/Support Panel who will administer the Small Business Owners Support Program, receive and assess all applications and make recommendations to the CEO of Sydney Metro, or his/her delegate, for the awarding of financial support.

The Retail Advisory/Support Panel will include external professional advisors with appropriate expertise in areas such as retailing, law, finance and property.

Sydney Metro is unable to comment on, nor negotiate, lease arrangements between third parties. Nor is Sydney Metro able to comment on loss of business that may be associated with current or future office tenancies.

4.64.2 Loss of trade/business/productivity

Issues included

- *There will be loss of business and disruption due to diverted traffic, noise and vibration, lighting, pedestrian obstruction, disruption to utilities and dust impacts during construction. Businesses may not survive through the construction works, and jobs will be lost.*
- *Leichhardt Municipal Council will lose money as the affected businesses close and will no longer be able to be collected.*
- *There are no comparable premises for the businesses and homes to be relocated to in Pyrmont.*
- *Revenues have dropped significantly as the customer base from nearby vacated demolition buildings has been lost, which have financial implications on owners and employees of businesses.*

Response

Concerns regarding potential impacts during construction raised by individual businesses, tenants and property owners are valid.

The potential for impacts on businesses during construction due to loss of trade was addressed in section 16.3.2 of the EA. A series of business stakeholder workshops were held during the environmental assessment as part of the economic and social assessment. Feedback from the workshops was collated and used to inform the assessment and design process.

The EA identified that some businesses within the station radii would be moderately negatively affected during the construction of the project in terms of business viability. The negative impacts during construction would include noise, access issues, traffic, vibration disturbances and changes to the customer base.

One of the objectives of the project, with regards to social and economic issues, relates to the minimisation of potential impacts of the project to businesses. This would occur by proactively working with potentially affected businesses to identify likely impacts prior to construction, and by putting in place measures to minimise these impacts. Businesses would be kept informed of the project and consulted in advance of major works that would have a direct economic impact.

Statement of Commitment No.34 commits specifically to minimising the impacts on businesses adjacent to major construction sites during construction and includes a Business Management Strategy to address these impacts. This would include measures to maintain vehicular and pedestrian access during business hours.

Sydney Metro will continue to liaise closely with all businesses that have made a submission (as well as businesses adjacent to worksites).

Significant endeavours have been undertaken to minimise construction footprints and impacts at all construction sites, including within Martin Place and Union Square.

Sydney Metro is unable to comment on, nor negotiate, lease arrangements between third parties. Nor is Sydney Metro able to comment on loss of business that may be associated with current or future office tenancies.

It is not considered that construction of the project would result in a loss of local Council income from rates.

Section 16.3 of the EA notes that as a result of the necessary property acquisitions, about 175 business tenants would require relocation to facilitate the construction of the project. It is

conservatively estimated that these businesses directly generate about 3,350 jobs; 94 per cent of which are based within Sydney CBD. It is considered likely that the vast majority of these businesses would choose to relocate within Sydney CBD owing to the benefits of agglomeration, the prestige of the address, and the accessibility to other services, businesses and clients/customers. Accordingly, the majority of these jobs would not be lost on account of the project, but redistributed within the Sydney CBD.

Some displaced businesses within Rozelle and Pyrmont may choose to relocate to alternative commercial or retail premises. The small scale of some of these businesses may result in a minor proportion choosing not to relocate and therefore become extinguished. Given the modest scale of these businesses, the corresponding loss of jobs would be slight and should be balanced against the net increase in direct and indirect employment generated by the project.

4.64.3 Parking and access

Issues included

- *The construction works will impact traffic, pedestrian flows, access to properties, removal of loading/unloading spaces and parking bays. How will these be maintained and/or managed?*
- *The street address for the building should be maintained in some form.*
- *Access to the KPMG car park at Shelley Street should be kept available 24 hours a day, 7 days a week. Ongoing dialogue with traffic management coordinators should be maintained.*

Response

As noted, a Business Management Strategy (Statement of Commitment No.34) would be implemented during construction to proactively identify businesses that may be adversely affected by the project. Individual business management plans would describe specific needs and requirements related to business parking, access, deliveries and pedestrian movements to minimise the impact of the project on the effective operation of businesses.

Traffic management plans would be produced in accordance with Statement of Commitment No.51. A number of solutions for business parking and access related issues have already been identified in Technical Paper 1 of the EA, which would be reviewed and refined during detailed construction planning.

4.64.4 Impact on public events

Issues included

- *The project will impact significant public events such as the Rosemount Sydney Fashion Festival at Martin Place, the Rozelle Markets, the Anzac Day service, Carols by Candlelight and the Pyrmont Art Festival at Union Square. Alternative locations should be identified.*

Response

A new Statement of Commitment (No.9A) is proposed to minimise impacts on events adjacent to major construction sites during construction. It includes measures to maintain pedestrian movement and the visibility of the event appropriate to its reliance on such.

The Sydney CBD is impacted by several significant scheduled events, which affect visitor numbers on city streets, bus and rail services, and general traffic lanes, but are generally of limited duration (eg

Australia Day, Anzac Day services, Mardi Gras, major sporting events, festivals and other marches/parades for which prior approval has been granted).

For traffic and transport management purposes, the RTA special event management guidelines process identifies four distinct classes of special event:

- Class 1 is an event that impacts major traffic and transport systems and where there is significant disruption to the non-event community. For example, an event that affects a principal transport route in Sydney, or one that reduces the capacity of the main highway through a country town.
- Class 2 is an event that impacts local traffic and transport systems and where there is low scale disruption to the non-event community. For example, an event that blocks off a main street town or shopping centre but does not impact a principal transport route or a highway.
- Class 3 is an event with minimal impact on local roads and negligible impact on the non-event community. For example, an on-street neighbourhood Christmas party.
- Class 4 is an event that is conducted entirely under Police control (but is not a protest or demonstration). For example a small march conducted with a Police escort vehicle.

During construction, special consideration and traffic planning would be undertaken to address the road user needs during special events, including City of Sydney festivals, public holidays and events, marches, protests etc.

The traffic management requirements of 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 project construction. The City Of Sydney Council or RTA ROL approval would identify time and day restrictions, where potential conflicts are known at the time of submission.

The Framework Traffic Management Plan outlines a process that would enable management of special events, with coordination through the Central Project Coordination Committee (CPCC). Statement of Commitment No.9 addresses this requirement.

The CPCC would provide a strategic and tactical forum for ensuring the works are coordinated with other development, events and public works; and would aim to mitigate impacts on local business, residents and CBD visitors by ensuring that construction impacts arising from the project are integrated and balanced against the construction impacts of wider redevelopment and other events or changes occurring within the CBD.

The participants of this group may include organisations such as:

- Department of Environment and Climate Change
- Department of Planning
- COS and Leichhardt Municipal Council
- Sydney Metro
- RTA
- Barangaroo Delivery Authority
- Sydney Harbour Foreshore Authority
- RailCorp

- Major Special Event proponents
- Major CBD redevelopment proponents – ie Energy Australia, land owners etc
- PRI and IMO Contractor.

A Traffic and Transport Liaison Group (TTLG) would be formed to ensure that all Authorities affected by construction traffic are aware of the proposed construction activities, upcoming works and related transport implications and have the opportunity to comment on the mitigation measures proposed prior to implementation.

Major special events include the following:

Anzac Day services

The dawn service at the Cenotaph on Martin Place is an integral component of Anzac Day services. The focus of activity is in the section of Martin Place, between George and Pitt streets. Participants may currently travel to the Martin Place rail station to the service. Pedestrian access would be affected by construction of the new Metro station in Martin Place. During this time, pedestrian access would be maintained, however there may be capacity constraints on the diverted paths.

Anzac Day services are also undertaken at Union Square in Pyrmont focused around the War Memorial.

No construction activities would be undertaken during the Anzac Day services and preparations at Martin Place or Union Square. It is noted that Anzac Day/Dawn Service preparations start from the evening before (the Cenotaph is guarded overnight).

Christmas retail

Pedestrian activity in the CBD increases significantly in the lead up to Christmas and through to the post-Christmas sales. This period coincides with a general increase in tourist activity. The City of Sydney Council has a policy of not permitting disruptive works within the retail core during the period from the first week to the end of December. Where feasible, works affecting pedestrian paths and station access should be minimised, and/or increased site supervision by traffic controllers provided.

Premium retail outlets on Martin Place, generally extending south along Castlereagh Street, will be sensitive to disruption. The staged worksite required on Castlereagh Street would be scheduled outside of the period from the first week to the end of December.

Cruise ship activity

Summer cruise ship arrivals, from November to March, generate increased visitor numbers in the CBD and The Rocks and the northern portion of the CBD in particular, due to the Overseas Passenger Terminal, tourist precinct of The Rocks, Opera House, Walsh Bay, hotels and premium retail core. This increase in tourist activity means more pedestrians who are unfamiliar with the city and related traffic operations on CBD streets. Increased site supervision by traffic controllers would assist in ensuring the safety of trucks crossing footpaths and directing/controlling pedestrian movements. Additional traffic control may be required to address times of peak pedestrian activity.

Other scheduled events

Increased visitor movements occur within the CBD on Australia Day, New Years Eve and around the Mardi Gras and other scheduled marches/parades. These events may involve temporary closures on CBD streets, restricted access for private vehicles and altered public transport schedules, and bus layover requirements. Major sporting events on the periphery of the CBD generate increased pedestrian and public transport activity. These events will generally be scheduled well in advance, are

subject to City of Sydney Council/RTA approval conditions, and occur in the evening or weekend. Construction activities involving truck movements and impacts on CBD streets would generally not coincide with these times, however consultation and monitoring of upcoming events by the contractor would permit contingency plans to be developed to mitigate potential conflicts with pedestrian or public transport movements.

Short events in and around Martin Place

In addition to Anzac Day services, Martin Place hosts events of various scales and duration, including the Rosemount Sydney Fashion Festival (August) and the Sydney Festival (January). Pedestrian access would be affected by construction of the new Metro station in Martin Place. During this time, pedestrian access would be maintained, however there may be capacity constraints on the diverted paths.

The layout and exact location of short events would need to consider the Martin Place construction site, including the management of pedestrians. In some cases events may have to move to alternate locations, such as George Street (under temporary closure arrangements), in consultation with the City of Sydney Council and the RTA.

Major special event proponents would participate in the Network Coordination Liaison Group.

Union Square and Union Street

Union Square has developed as a focal point for social interaction with an ability to host public events such as Christmas carols, Anzac Day services and street fairs.

The majority of Union Square (approximately west of Paternoster Road) would not be directly affected by construction activities and would be available to host public events. Increased site supervision by traffic controllers would assist in ensuring the safety of trucks crossing footpaths and directing/controlling pedestrian movements. During significant events, such as Anzac Day services, no audible construction activities would be undertaken.

Rozelle activities

Unlike the CBD, which hosts several significant events that affect visitor numbers on city streets, Rozelle is affected by community related activities associated with the market days, special days for Church services and school activities.

Potential issues are associated with construction activities affecting pedestrian footway capacity and bus access, together with noise and vibration sensitivities for these occasions. These potential impacts would need to be managed so as to avoid or mitigate impacts. Measures would include, but would not be limited to, staged work activities and adjustment to working hours.

4.64.5 Acquisition process

Issues included

- *There will be negative impacts on the suburbs of Rozelle, Lilyfield and Pyrmont, especially the resumption of long-term businesses.*
- *Objection to the eastern entrance of Pyrmont Station as local businesses will be destroyed by compulsory acquisition.*

Response

To enable the construction and operation of the project, it would be necessary to acquire about 33 properties within the project corridor, including three residential properties.

All property acquisition would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991.* Every effort would be made to acquire the affected properties through negotiated purchase. Where negotiation fails, properties would be acquired through compulsory acquisition in accordance with the provisions of the Act. This requires appropriate compensation to be paid; including associated legal costs, valuation fees, relocation and removal expenses, and mortgage costs. For residential acquisitions, solatium is also applicable, which is compensation for the non-economic cost of inconvenience attributed to moving residence.

Sydney Metro would liaise with the affected parties to identify alternative location options. In some cases, it would be necessary to provide additional support owing to the age or special needs of residential tenants or the important social service provided by some facilities. These requirements would be assessed on a case-by-case basis.

4.65 General business impacts (operation)

4.65.1 Parking and access

Issues included

- *The Barangaroo Pedestrian Link and stairway on the eastern side of Moretons Hotel will restrict access.*
- *The car parking area for the Rozelle Neighbourhood Centre has been allocated as part of the Rozelle plaza.*

Response

The specific design of public domain works in the vicinity of Napoleon Street and Moretons Hotel have not been resolved at this stage of the project. Further design would be undertaken in consultation with adjacent businesses, residents and property owners to ensure that appropriate access is maintained. It is considered that an acceptable solution is feasible at this location.

The specific design of public domain works in the vicinity of the Rozelle Neighbourhood Centre have not been resolved at this stage of the project. Appropriate access and parking arrangements would be maintained.

4.66 General property impacts

4.66.1 Effect of tunnel alignment on property values

Issues included

- *Have studies been done on the impact to property prices as a result of the project?*
- *Concern over value of properties.*
- *Concern over decreased quality of life.*

Response

The ability to predict the effect of a project on property values is difficult due to the complex range of factors that affect the value of a property. A number of studies have been undertaken that conclude that a correlation between a tunnel corridor and a long-term decrease in property value cannot be made.

A report titled 'Proposed Parramatta Rail Link – Impacts on Property Values – Independent Peer Review'[7] was also included in the Director General's Assessment Report for the Parramatta Rail Link, which is available from the Department of Planning.

An extensive range of research has previously been conducted into the medium to long-term impacts of new public transport systems on property prices. Over 150 previous studies were identified in a brief review. The majority of this research has been in North America with the United Kingdom and Europe also contributing significantly to the range. These studies produce a broad range of results with the overwhelming majority indicating that the post opening impact on property values is positive.

However, until construction is complete and the metro is operational, Sydney Metro recognises that the project may create negative perceptions. If a property owner is wishing to sell their property, Sydney Metro is willing to brief the real estate agent on the issues so they can then provide informed information to potential buyers.

The presence and location of a rail tunnel and/or rail corridor should not result in physical impacts to properties or facilities on the surface above the tunnel. Both ground-borne noise and vibration would be subject to stringent design requirements to ensure that potential impacts are minimised.

4.66.2 Loss of potential future development

Issues included

- *Concern over future constraints to development.*
- *Objection to the eastern entrance of Pyrmont Station due to impacts to the viability of homes and businesses.*

Response

As noted in section 14.3 of the EA, the design process has recognised existing structures and underground services and key constraints and has endeavoured to minimise impacts on these assets. This is evidenced by the horizontal and vertical alignment of the project and the preference for utilising existing road alignments as far as possible for that alignment.

Proposed development above, below and adjacent to the rail tunnel, or otherwise potentially impacting on the construction and operation of the project, would have to be designed taking the project into consideration.

The presence of the project does not preclude future development (or redevelopment of existing properties). The extent of the potential constraint can only be determined based upon the type of development proposed and the location of the development. Sensitive design of any surface development could successfully mitigate the potential for physical impacts of the development on the

[7] Proposed Parramatta Rail Link – Impacts on Property Values – Independent Peer Review' - prepared by Hill PDA consulting in December 2001

project. The project would also incorporate appropriate design parameters to ensure that the potential for operational impacts (for example, ground-borne noise), are minimised.

The resulting floor space within the properties located at 3-9 Union Street is considered more than adequate to run a viable business. In addition, there would be opportunities for the tenant at 9 Union Street to utilise part of the first floor above the services building (subject to detailed design).

4.66.3 Acquisition process / property acquisition

Issues included

- *Option 1 at Pyrmont is a blatant 'land grab'.*
- *A survey should be undertaken of owners of non-heritage buildings to determine alternative station locations.*
- *Sydney Metro has aggressively challenged local property owners to acquire their properties.*
- *There will be negative impacts of the project on the suburbs of Rozelle, Lilyfield and Pyrmont, especially the resumption of long-term residences.*
- *If Sydney Metro purchases our land by compulsory acquisition then they will subsequently transfer rights of access over our land to Balmain Leagues Club.*
- *Compulsory acquisition of properties prior to consideration of submissions and project approval amounts to pre-determination of the planning approval process.*
- *Property acquisition will be a waste of funds if the project is called off due to lack of funds.*

Response

To enable the construction and operation of the project, it would be necessary to acquire about 33 properties within the project corridor. The properties to be acquired are predominantly commercial and accommodate about 175 business tenants. Notwithstanding, three residential properties would also be acquired. Only land required to construct and operate the project would be acquired by Sydney Metro.

All property acquisition would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. Every effort would be made to acquire the affected properties through negotiated purchase. Where negotiation fails, properties would be acquired through compulsory acquisition in accordance with the provisions of the Act. This requires appropriate compensation to be paid; including associated legal costs, valuation fees, relocation and removal expenses, and mortgage costs.

Sydney Metro would liaise with the affected parties to identify alternative location options. In some cases, it would be necessary to provide additional support owing to the age or special needs of residential tenants or the important social service provided by some facilities. These requirements would be assessed on a case-by-case basis.

In addition, a number of the properties directly affected by acquisition are leased to individual business tenants. Where businesses have a lease that has a period to run after such time that the property is required, Sydney Metro would negotiate to acquire the remaining lease period from the tenant. Tenants have the same rights with respect to relocation and disturbance as property owners under the *Land Acquisition (Just Terms Compensation) Act 1991* and would be compensated for reasonable disturbance costs if the business is required to relocate.

Sydney Metro and the Balmain Tigers Leagues Club agreed to work together to finalise an agreement to allow Sydney Metro to use part of the Tigers site for construction purposes. Negotiations are ongoing. This agreement would involve leasing the Tigers site during construction, with the main construction activity for the Rozelle station at this location. It would also involve purchasing a strip of land at the front of the Tigers site, alongside Victoria Road, for a bus bay. A 'land swap' is not part of the negotiations.

Four properties at 168-174 Victoria Road are also proposed to be acquired by Sydney Metro. These properties would be used for construction activities, and afterwards, as a site for station services and to allow for the provision of like-for-like access arrangements consistent with the Local Environmental Plan and approved Development Control Plan. Sydney Metro or the Integrated Metro Operator would retain ownership of properties at 168-174 Victoria Road with a right of way access for any approved development on the Tigers site.

The inclusion of the bus bay alongside the Tigers site requires the vehicle entry for the proposed redevelopment to be moved. Some of the remaining land from 168-174 Victoria Road could be available to provide vehicle access to the Tigers site, to address overall traffic management and safety. There are no plans for this land to be used for retail or any other purpose.

Sydney Metro has made (and will continue to make) every effort to acquire the affected properties through negotiated purchase. Where negotiation fails, properties will be acquired through compulsory acquisition in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991.*

Sydney Metro is responsible for planning, delivering and commissioning the Sydney Metro network. In the long-term it will oversee the ongoing Metro operations and dictate the service delivery standards to the private operator. Sydney Metro is not a property developer.

Retail spaces within the station complexes would be owned (and rented) by Sydney Metro or the Integrated Metro Operator to ensure that station precincts are active and vibrant.

4.66.4 Compensation

Issues included

- *Compensation should be provided for property owners as a result of difficulty in finding tenants due to the proximity of construction.*
- *There is no compensation for residents in Wellington Street whose properties will be unliveable.*
- *Adequate compensation is required for residents in close proximity to the works who need to relocate or experience property damage, disturbance, infringement etc. Request indemnify buildings for any structural or other damage.*

Response

It is acknowledged that the carrying out of construction activities always causes some inconvenience to owners and occupiers of adjoining land. Some residents (or tenants) will claim that this extends to a right for monetary compensation. However, residents are not entitled to a contribution from the entity carrying out the works and no compensation is payable in such circumstances. By the same token the constructing entity is not entitled to a percentage of the increase in any property value that may result from the improved public transport services or street/public domain.

Similarly, Sydney Metro is unable to acquire adjoining properties under the *Land Acquisition (Just Terms Compensation) Act 1991*.

There is no compensation proposed for owners and occupiers of adjoining land during the construction of the project. Sydney Metro and its contractors will work closely with affected residents to ensure that impacts are minimised and managed to ensure the least possible inconvenience.

During construction, mitigation measures would be implemented as identified by the Statement of Commitments, including implementation of the Construction Noise and Vibration Strategy, which includes provisions for temporary relocation under certain circumstances.

4.66.5 Damage to property from construction

Issues included

- *Concerns raised regarding impacts to the structural integrity of buildings during construction (particularly 55 Clarence Street, Star City, MLC Centre and 48 Martin Place). Requests included consultation, structural/condition surveys, and monitoring.*
- *What will occur if structural damage is found during monitoring of impacts?*
- *Concerned that specific water management measures may be adversely impacted.*

Response

The risk of damage to buildings or other structures from vibration during construction is low given the proposed tunnel depths. The vibration level encountered at buildings above the tunnel during construction would be less than levels at which damage would be expected.

Statement of Commitment No.72 addresses this issue. As a precautionary measure, property owners within a specified distance based on a geotechnical risk assessment would be offered a pre-condition survey at no cost to the owner prior to construction commencing. If a property owner believed damage had been caused as a result of construction, the precondition survey would be used to assess the claim.

If damage to property has occurred as a direct result of construction activities, this damage would be rectified at no cost to the property owner.

A number of property/building surveys have already been undertaken (or are scheduled) for significant buildings in the vicinity of future metro stations. In particular, building condition surveys have been undertaken for properties within the heritage area at Pyrmont and heritage listed buildings in Martin Place, as well as a number of other sensitive locations along the alignment. Ongoing consultation and monitoring would continue.

Sydney Metro would work closely with adjacent developments to ensure that construction works would have minimal impacts on assets including water management measures. Sydney Metro would consult with Star City to determine to what extent the construction and operation of the Pyrmont eastern construction site would impact the sustainable water management measures for the new Star City hotel.

For further information on potential property damage from vibration during construction refer to section 4.44 of this report.

4.67 General community impacts

4.67.1 Safety and health of community and stakeholders including childcare and schools

Issues included

- *There will be a public safety risk in the vicinity of Rozelle Public School during construction (eg limited access and construction vehicles) and operation (mass transit and increase in the general public accessing Metro).*
- *The potential for increased crime is not addressed. There is concern over security at stations, graffiti management and the need for a police presence.*
- *Construction dust and noise will affect our customers' and our employees' health.*
- *Noise, vibration and air quality levels would pose a severe health and life risk to stay in our property during the construction period.*
- *Noise, dust and pollution from construction would be a health risk for school children and childcare places as well as pregnant women and children.*
- *St Thomas Child Care Centre request that prior to the commencement of any work on the metro site, it is safely fenced off and that safe and convenient access to the child care centre is provided for children, parents, staff and others.*

Response

Construction would be undertaken by an experienced contractor utilising an experienced and professional construction workforce. Safety of the workforce and community are paramount during all phases of construction.

As noted in Chapter 7 of the EA, all construction sites would be managed to protect the health and safety of the community and stakeholders, including users of nearby childcare facilities and schools. Regular communication with childcare facilities and schools would be prescribed within the Community Involvement Plan. This would include notification of works, updates, and feedback on concerns regarding the project.

Construction worksites would be under the control of a principal contractor who has a statutory duty under the *NSW Occupational Health and Safety Act 2000* to prevent unauthorised access to the site and protect the public place from work activities and comply with provisions of the Occupational Health and Safety Regulation 2001 that relate to work sites adjoining a public place.

Chapter 7 of the EA also identifies that Traffic Management Plans, which include a significant focus on safety, would be prepared for each construction site. Chapter 10 of the EA includes a plethora of best-practice construction traffic measures that maximise safety for pedestrians, cyclists and other traffic. The use of construction traffic controllers would be undertaken as required.

Regarding demolition activities, Chapter 7 of the EA notes that, prior to demolition and where practicable, hoardings that comply with Council requirements would be erected and dust and debris screens would be raised over the entire site. Hoarding design and placement in the CBD would be in accordance with the City of Sydney Council's Hoardings and Scaffolding (Local Approvals Policy). Similar formal codes as approved by Leichhardt Municipal Council for Rozelle Station would also be adhered to. The hoardings would be a safety and security feature and would also serve as a noise barrier.

Potential long-term impacts on human health during the construction phase are unlikely given environmental mitigation measures proposed.

The impacts of construction noise were assessed and acknowledged in Chapter 11 of the EA. While different people can be expected to respond to noise in different ways, the consideration of psychological stress and sleep disturbance is inherent in the consideration of relevant noise criteria (which were developed with these types of impacts in mind).

The EA acknowledges that construction of the project could result in relevant noise goals being exceeded. The predicted construction noise levels and exposure duration are not expected to present a risk of hearing loss, and are below the levels generally associated with clinical health problems. However, a commitment to noise monitoring and implementing feasible/reasonable best practice noise management measures (potentially including respite periods or temporary attenuation) is provided in the Construction Noise and Vibration Strategy.

The potential impacts of dust during construction and impacts to residents are addressed in section 19.2 of the EA. The potential for health issues associated with dust would be managed through the implementation of dust mitigation measures and also through notification of residents in the event of likely high levels of dust emission (based on activities, soil condition and prevailing weather conditions). Measures to reduce/manage dust emissions during construction would be detailed in the Air Quality Management Plan.

During operation, as noted in Chapter 22 of the EA, the project would provide world-class safety and security for customers, staff, contractors, neighbours and other stakeholders. Metro systems operate in tunnels throughout the world with a proven record of safety. The safety targets for the project would be based on the safety record of reputable metro operators.

Safety at station platforms and station entrance points would be provided through well-designed and efficiently controlled lighting systems, visible closed circuit television (CCTV) surveillance and the presence of metro staff within concourse areas during operational hours. Emergency egress and ventilation facilities would be provided at each station emergency intervention point.

Graffiti within stations and station entrance points would be removed.

Various improvements to the public domain would be undertaken as part of the project with pedestrian safety a primary consideration, including a number of bridges and underpasses that would separate vehicle and pedestrian movements.

The design of bus transfer facilities, particularly at Rozelle has considered the safety and accessibility of users and adjacent pedestrians/cyclists.

Suggestions that a metro system would result in increased crime (or provide opportunities for criminals to access locations in the vicinity of Metro stations) are unfounded.

4.67.2 Construction hours for the project and mitigating impacts on businesses and residents

Issues included

- *As the drilling will occur 24 hours a day there will be a flow on effect to parents, staff and children at Rozelle Public School. The majority of drilling should be scheduled to occur during school holidays and outside of school hours. There should be a reduction in times machinery can operate without a break.*
- *Work from home will be impossible.*

- *The construction site will operate 24 hours a day, seven days a week for up to five years, and then followed by construction at the Tiger's site.*

Response

Construction hours are described in section 7.8.6 of the EA. The majority of the aboveground construction activities would be undertaken within standard NSW construction hours (7.00am–6.00pm on weekdays and 8.00am–1.00pm on Saturdays), but some activities (as identified in Table 7.10) would need to be undertaken outside of these hours. The underground construction activities (tunnelling works and the construction of station caverns) would be undertaken 24 hours per day, up to seven days per week.

Importantly, there may be instances where construction works could be undertaken outside standard construction hours to avoid potential impacts on sensitive receivers. For example, some specific sensitive receivers are less active (or have no activities) during the weekend or night. Therefore, flexible construction hours would be investigated where there would be a better environmental outcome.

The duration of different construction activities, such as demolition, excavation and station fit-out are described for each station in Chapter 7 of the EA.

Issues regarding construction noise are discussed in more detail in section 4.41 of this report.

4.67.3 Loss of community services

Issues included

- *There will be a loss of local businesses/community services in the vicinity of the Metro project (eg Rozelle Medical Centre).*
- *A station at Rozelle is harmful to the local community organisations.*
- *The local community will no longer be able to use these businesses, some of which have had a very long standing, good service and loyalty in the community (eg the Chemist on the corner of Victoria Road and Darling Street).*

Response

Section 16.2 of the EA states its first objective is to 'Minimise the potential impact of the project to the operation of businesses and enjoyment of private and public spaces across the study area'. This objective is to be achieved by proactively working with potentially affected stakeholders to identify likely impacts prior to construction, and by putting in place measures to minimise impacts. Any mitigation strategy should be regularly reviewed and monitored to ensure it is effective.

Sydney Metro recognises that during construction, some businesses would benefit from increased local activity and demand for goods, but others would be negatively affected as a result of traffic and access and noise and vibration disturbances.

Specific mitigation measures would be adopted to minimise or ameliorate any negative economic impacts on the Rozelle Medical Centre as a result of construction. These measures would include:

- A Construction Noise and Vibration Strategy would be adopted by all contractors. The Strategy would provide guidance on minimising airborne and ground-borne noise and vibration impacts. The Strategy would set a framework for detailed construction phase noise assessment, the implementation of reasonable and reliable mitigation measures, and monitoring and reporting. This

strategy would be used to inform the Construction Noise and Vibration Management Sub-Plan, which would be implemented to manage the potential noise and vibration impacts.

- A Construction Stakeholder and Community Involvement Plan would be implemented throughout the delivery of the project. The Plan would provide procedures for the community and stakeholders to be able to provide feedback to the construction team and for the construction team to be able to respond to any enquires or feedback.
- A Business Management Strategy is also being prepared and would be implemented to minimise impacts on businesses adjacent to major construction sites during the period of construction.

Sydney Metro needs to purchase a number of strategic properties so it is able to build the metro. When designing the metro, every effort is made to minimise the needs to acquire privately owned property. As the metro would run through a densely developed area, some privately owned property would need to be acquired.

There are standard processes used by government to purchase any property interest that is required for a public purpose, such as the metro. The *Land Acquisition (Just Terms Compensation) Act 1991* prescribes the process that must be followed including how the amount of compensation is calculated.

It is Sydney Metro's preference, consistent with the objectives of the Act, to acquire interests required for the project by negotiated agreement, rather than through the compulsory acquisition process. This includes the acquisition of existing leases that undertake community roles such as a birth advisory counsellor and a physiotherapist at 670 Darling Street.

It is Sydney Metro's preference, wherever possible, to relocate businesses rather than extinguish them.

Compensation is generally payable for costs incurred as a result of an acquisition including certain costs associated with the business. In these circumstances, the assessment of compensable costs would consider the issue of whether it is reasonable for the business to be relocated or whether the business would be extinguished by the acquisition.

Sydney Metro is currently holding negotiations with the Rozelle Health and Beauty Pharmacy business owner in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. These negotiations would also cover the compensation payable for possible relocation of the business.

Impact on the community in terms of pharmacy services is minimised owing to the alternative pharmacies presently operating within Rozelle and within walking distance of the site to be acquired. Both of the existing alternative pharmacies operate seven days a week and close at 9pm at night as opposed to the 10pm closing time of the Rozelle Health and Beauty Pharmacy in its temporary location.

4.68 Socio-economic issues at Rozelle

4.68.1 Impact on the St Thomas Childcare Centre, Rozelle Public School and Rozelle Neighbourhood Centre

Issues included

- *There are safety concerns for the community centre (disabled care) within Rozelle Church and the loss of continuance of community programs and activities.*
- *There is concern over demolishing the building adjacent to St Thomas Childcare Centre as it provides noise and privacy screening. It is unlikely the childcare centre can continue to operate under these conditions.*
- *Concerns regarding the health and safety of students and staff of Rozelle Public School due to increased traffic, noise and dust. Requests for mitigation measures included fencing and noise reduction measures, 'Frontrow prodigital' sound amplification for classrooms (for child with hearing disability).*
- *Sydney Metro intends to acquire the property housing a tennis court used by Rozelle Public School.*
- *Due to major construction already underway by the Government, children will be forced to access Rozelle Public School from Victoria Road, placing them closer to construction works and associated impacts. Demolishing the shops on Victoria Road and Darling Street removes the shielding affect these have on the school.*
- *Clarification of noise and vibration monitoring frequency and mitigation to be implemented where there are exceedances.*
- *The car parking area for St Paul's Neighbourhood Centre is on the southern boundary side and has been allocated as part of the plaza.*
- *The exposed plaza would create a major noise and security problem.*
- *The security and welfare of the children at the St Paul's Neighbourhood Centre is a major concern.*
- *Concern over access to church hall through hoardings.*

Response

St Thomas Childcare Centre and Rozelle Neighbourhood Centre

Sydney Metro recognises the important community services that are provided to the community through the St Thomas Childcare Centre (on the grounds of St Thomas Church) and the Rozelle Neighbourhood Centre (on the grounds of St Paul's Church). Sydney Metro considers that two significant factors have been addressed through the environmental assessment that will ensure that both of these facilities are able to continue to provide services during both the construction and operation of the Stage 1 project. These factors are the reduction in land requirements and further construction mitigation.

It is Sydney Metro's policy to minimise both the temporary and permanent land acquisition requirements for the construction and operation of the project to assist in minimising impacts on both the owners and occupiers of affected land, together with the wider community.

The preliminary environmental assessment (PEA) for the project and the revised June 2009 design for the Rozelle Station identified land acquisition based upon a construction method that assumed that substantial excavation and mining of the Rozelle Station would take place from adjacent to St Thomas Childcare Centre and from the St Paul's land where the Rozelle Neighbourhood Centre is located.

Sydney Metro has since undertaken further design and construction reviews, resulting in a significant reduction in both the area of temporary and permanent land required. There has also been a significant reduction in the nature and extent of construction work that would take place adjacent to St Thomas Childcare Centre, from the St Paul's land and from the immediately adjacent properties at 665 – 669 Darling Street. The earlier proposal required a temporary construction lease over the access driveway of the St Paul's land and much of the land's rear garden, including the land occupied by the Garden Room. The Garden Room is a critical facility to the Rozelle Neighbourhood Centre where a number of its services are offered.

However, Sydney Metro's revised scheme only requires a construction lease over the currently unused area of land between the existing fence and Victoria Road, and no longer encroaches into the operational area of the Rozelle Neighbourhood Centre. The proposed construction lease would enable ongoing access to the lane driveway and the garden land, including the Garden Room.

Sydney Metro recognises that the mitigation of construction impacts is an important consideration for these facilities. Construction impacts associated with the project were identified in the EA together with a range of mitigation measures and construction techniques to be used during construction. The deployment of these mitigation measures would be critical in continuing to ensure that the St Thomas Child Care Centre and the Rozelle Neighbourhood Centre are able to effectively provide their services.

The mitigation measures Sydney Metro anticipates using include temporary noise barriers or enclosures, well planned site layouts to create noise shields, good construction planning, and scheduling work as much as possible during standard construction hours. In particular, this would include a solid fence (with a minimum height of 2.4 metres) along the boundary with the construction site, to provide protection and noise attenuation (including from Victoria Road traffic noise). The final extent, height and materials would be subject to the contractor's acoustic advisor recommendations and relevant conditions of approval.

The project would require a partial acquisition of a small parcel of the St Paul's church land (approximately 60 square metres) adjoining Victoria Road, but this would not impact on the current grounds in use by the Rozelle Neighbourhood Centre. Accessible and safe access to the church and the Rozelle Neighbourhood Centre would be maintained throughout construction and once the project is operational.

Rozelle Public School

The issue of safety and health of community/stakeholders including childcare and schools has been addressed previously in section 4.67. More specifically, Sydney Metro recognises that the mitigation of construction impacts will be an important consideration for the Rozelle Public School. Construction impacts associated with the project were identified in the EA together with a range of mitigation measures and construction techniques to be used during construction. The deployment of these mitigation measures would be critical in continuing to ensure that the Rozelle Public School is able to operate.

The EA acknowledges that construction of the project could result in relevant noise goals being exceeded. The predicted construction noise levels and exposure duration are not expected to present a risk of hearing loss, and are below the levels generally associated with clinical health problems. However, a commitment to noise monitoring and implementing feasible/reasonable best practice noise management measures (potentially including respite periods or temporary attenuation) is provided in the Construction Noise and Vibration Strategy.

Sydney Metro considers that its mitigation measures need to ideally operate from the source first, with wider treatment measures being used as needed. The mitigation measures Sydney Metro anticipates being able to use include temporary barriers and enclosures, well planned site layouts to create noise shields, good construction planning, and scheduling work as much as possible in standard construction hours. In particular, this would include a solid fence along the boundary of the construction site to provide protection and noise attenuation. The use of full acoustic enclosures would also be considered if noise goals are expected to be exceeded. The use of specific wireless sound amplification products within classrooms is not considered a reasonable or feasible approach to construction noise mitigation.

Sydney Metro has met with the Rozelle Public School on a number of occasions to develop a better understanding of the needs and requirements of the school. As a result of these meetings, Sydney Metro is aware of the construction activity planned at the Rozelle Public School during 2010, which includes the construction of a new, multi-purpose hall. During the hall's construction the outdoor space available for staff and students will be reduced. The staging of the construction of the metro would mean that the majority of the construction activity on the north-west corner of Victoria Road/Darling Street intersection would occur after the construction of the school hall is complete.

Construction of Sydney Metro's site on the north-eastern corner of the Victoria Road/Darling Street intersection would not interrupt the staff and students' use of Rozelle Public School's land.

The proposed worksite near the Rozelle Public School does not include the tennis court within the school grounds. In fact, no acquisition of school grounds is proposed.

Use of the Tigers site for construction has been negotiated to reduce construction and property impacts on the northern side of Victoria Road. The ability to utilise the Tigers site for construction allows the most significant excavation activities to be undertaken away from sensitive receivers such as St Thomas' Child Care facility, Rozelle Public School and the Rozelle Neighbourhood Centre.

Other related issues include:

- Health and safety of the community - section 4.67.
- Noise and vibration – sections 4.41-4.44.
- Air quality – section 4.79.
- Environmental management – section 4.82.
- Station plans – section 4.88.

4.68.2 Impact on places of worship

Issues included

- *Noise impacts at St Thomas' church from traffic.*
- *Concerns over noise and dust for St Thomas Church and request for mitigation in the form of sealing of buildings and sound insulation.*

Response

Potential noise impacts on places of worship/churches are discussed in the noise and vibration section of this report at section 4.41.

4.68.3 Metro's impact on character of area

Issues included

- *Heritage places and the 'village' feel and sense of community of Rozelle is under threat from the project. The project fails to appreciate that Darling Street is already a distinct and successful public space. The development would reduce the number of Victorian era shops and has the potential to damage the public space by diffusing continuity of the high street.*
- *Use of the Balmain Leagues Club owned land (Byers Butcher) would preserve the heritage chemist building and provide an aesthetic balance of architectural importance with the York buildings and the chemist shop.*
- *Rozelle will be a more attractive place to live in as a result of the metro.*
- *The cumulative effect of Metro and Tiger's will have a negative effect on the surrounding community.*
- *Should a public transport organisation (Metro) be undertaking 're-imagining' of an area like Rozelle? Joint planning (Metro, Department of Planning and LMC) should be undertaken to maintain or exceed the current levels of high street retail.*
- *I am concerned about the unacceptable style of landscaping proposed for Rozelle after construction.*
- *The replacement buildings in Rozelle (as per the artist's impressions) are unacceptable in their style and architectural character.*
- *Without firm plans for extension to the north-west, the project could result in transformation of the Rozelle area into a transport hub.*

Response

The metro station entrance on Darling Street would respond to the urban form and activity that typifies this part of Rozelle. It has been recognised that Rozelle is located in a unique village-style location. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including heritage buildings and the heritage conservation area), the design principles that have been used thus far, and those that would continue to guide future detailed design (eg station entrances designed relating to the scale and consistency of adjacent buildings).

A Design Principles Workshop has been initiated and would be used to form the appearance and character of Rozelle Station. The workshop would be an opportunity to explore a large range of options to retain the original character of Rozelle's area. Workshop participants would be selected with advice from the Royal Australian Institute of Architects, the Planning Institute of NSW, the Australian Institute of Landscape Architects and the National Trust.

A Design Review Panel, comprising independent specialists, has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design.

The detailed design associated with landscaping has yet to be determined. However Sydney Metro has provided benchmarks of quality of design in the contract documentation and has referred to City of Sydney Council's public domain treatments (eg paving type) to ensure consistency with Council's approach. A number of the policies and guidelines cited by City of Sydney Council remain valid and Sydney Metro would apply these as relevant and in consultation with Council.

It is noted that Council would not have an approval role for works in the public domain with the exception of approvals required under the *Roads Act 1993*.

The EA consistently states (Chapters 6, 16, 17 and section 19.1 in particular) that development at Rozelle and Pyrmont would be required to reflect the existing scale and definition of the streetscape heritage character. At Rozelle active retail uses would be incorporated into the station complex on the north-west corner of Victoria Road and Darling Street, which would comprise a two-storey development consistent with the existing streetscape.

Suggestions that the introduction of public transport *per se* would alter the character and 'village atmosphere' of Rozelle are speculative and unsubstantiated.

Any potential impacts on local character as a result of the proposed Rozelle Village (Tigers) development would be a matter for Leichhardt Municipal Council as part of the Development Application process.

Any other new residential or commercial development proposed would be subject to local planning controls.

4.69 Socio-economic issues at Pyrmont

4.69.1 Metro's impact on character of area

Issues included

- *The heritage and village area of Pyrmont, in particular Union Square, will be destroyed or altered in such a way that the character and community feel will be lost. Design plans are not in keeping with the character of the area.*
- *An upgrade of Union Square should be included as part of the works.*
- *Concerns of impacts to amenity of residents in the vicinity from noise, access lanes etc.*

Response

Sydney Metro's preferred design for Pyrmont Station would minimise impacts on Union Square by retaining the front of the existing buildings (which would have been demolished under previous alternatives). Following construction, the terraces would be available to reopen as shops, reinforcing Union Street as a local commercial hub. The project also includes extension of the existing pedestrian space at Union Square between Paternoster Row and Pyrmont Street. This would create a social benefit for the local community through the extension of available space within the centre.

It is acknowledged that local residents and businesses may experience impacts during construction. Construction would remain focused on the corner of Miller and Mount streets, as originally proposed, with the eastern construction site being managed to expediate the most significant excavation activities.

Sydney Metro recognises the importance of Union Square and Union Street to the community of Pyrmont. Considerable effort has been made to find an acceptable solution to providing an effective outcome while retaining the character and amenity of the area. The proposed solution substantially retains the whole section of the shops along Union Street with new Metro services being located to the rear.

The proposed concourse link would require a temporary construction site within Union Street. It is recognised that this is an important area for the community and construction may impact some business activity, therefore work would be fast tracked to ensure inconvenience is minimised and the majority of construction is contained within the main construction site. Based on the current impact

assessment, all work in Union Street itself would be targeted to be completed in two years or less, with the street returned to the community at the end of this period.

The Statement of Commitments establishes a management framework to mitigate residual impacts of construction, including implementation of the Construction Noise and Vibration Strategy and a Small Business Owners Support Program.

Event management within Union Square would be undertaken in accordance with a new Statement of Commitment (No.9A) related to events management (refer section 4.64).

It has been recognised that Pyrmont is located in a unique village-style location. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including Union Square and heritage buildings) and the design principles that have been used thus far, and those that would continue to guide future detailed design (eg station entrances designed to contribute to the streetscape of Union Square buildings). The metro station entrance within Union Square would respond to the urban form and activity that typifies this area.

A Design Principles Workshop has been initiated and would be used to form the appearance and character of Pyrmont Station. The workshop would be an opportunity to explore a large range of options to retain the original character of the Pyrmont area. Workshop participants would be selected with advice from the Royal Australian Institute of Architects, the Planning Institute of NSW, the Australian Institute of Landscape Architects and the National Trust.

A Design Review Panel, comprising independent specialists, has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design.

The EA consistently states (Chapters 6, 16, 17 and section 19.1 in particular) that development at Rozelle and Pyrmont would be required to reflect the existing scale and definition of the streetscape heritage character. At Pyrmont, active retail uses would be reinstated within the existing buildings at 3-9 Union Street and additional pedestrian space would be created (by realigning Paternoster Road). The types of retail would be determined by Sydney Metro under an open and transparent commercial process.

Suggestions that the introduction of public transport *per se* would alter the character, history or atmosphere of Union Square are unsubstantiated.

Any other new residential or commercial development proposed would be subject to local planning controls.

4.70 Socio-economic issues at the depot

4.70.1 Impacts to community (eg noise and light, staff parking)

Issues included

- *Concern over increased traffic as well as safety of residents and cyclists from vehicle traffic. Suggestion of additional speed humps to manage.*
- *We are concerned about light pollution from the depot on nearby residences.*
- *Concern over noise from depot at night and in early mornings and the effect this will have on residences in the vicinity.*



Response

Traffic due to operations at the Rozelle stabling and maintenance depot would be minimal. Access to the administration building, infrastructure maintenance facility, wash plant and electrical substations would be from Gordon Street and would comprise mostly light vehicles. Access for heavy vehicles to the rolling stock maintenance facility and wheel maintenance facility would be provided from James Craig Road (or City West Link Road).

The provision of speed bumps on Lilyfield Road is a matter for Leichhardt Municipal Council. However, this will be considered when updating the Station Plans.

Section 19.1 of the EA notes the following measures to minimise light spill:

- Directing lights away from adjacent residences, properties and roads, where possible.
- Designing and positioning light fittings to comply with relevant light spill limitations onto the surrounding properties (such as AS 4282-1997 Control Of The Obtrusive Effects Of Outdoor Lighting).

4.71 Lifestyle issues

Issues included

- *Assistance requested to compensate for negative impacts including relocation, disruptions to lifestyle and additional costs incurred as result of project.*
- *Property uninhabitable due to the proximity of the works.*
- *A social impact analysis should be undertaken to assess the impact of having a major poker machine venue co-habiting a metro station and bus interchange.*

Response

The suggestion that the project would provide a catalyst to increase opportunities for problem gamblers to access poker machines is unfounded. Sydney Metro is not aware of any link between improved transport access to gambling establishments and problem gambling.

Further issues and responses regarding lifestyle impacts may be found at the following sections: construction noise impacts (section 4.41), construction traffic impacts (section 4.37) and operational noise impacts (sections 4.60-63).

LAND USE IMPLICATIONS

4.72 Land use and planning at Barangaroo

4.72.1 Future planning and impact on site development

Issues included

- *There has not been sufficient consideration on how the project will affect major development plans for Barangaroo.*

Response

Preliminary discussions have been held with the Barangaroo Delivery Authority. The Barangaroo Delivery Authority supports the Sydney Metro Stage 1, Central to Rozelle project and considers the project to be an important initiative in the NSW Government's commitment to the redevelopment of the Barangaroo site. The Barangaroo-Wynyard Station will provide access to the Barangaroo development. In addition, the Barangaroo Delivery Authority also strongly supports the inclusion of the Barangaroo Pedestrian Link as this will provide pedestrian access from the Barangaroo development to the Barangaroo-Wynyard Station.

The timing of the Stage 1 of the Barangaroo development will coincide with the construction of the project from 2010 to 2015. Sydney Metro will continue to work closely with the Barangaroo Delivery Authority to manage cumulative impacts during construction and any subsequent plans developed for the Barangaroo area.

4.73 Land use and planning at White Bay

4.73.1 Future planning for Bays Precinct

Issues included

- *There has not been sufficient consideration of how the project will affect major development plans for the Bays Precincts, particularly the areas of Glebe Island and White Bay.*

Response

The NSW Government has committed to preparing a master plan for the future use of the Bays Precinct with particular emphasis on the renewal of White Bay and the former Rozelle Marshalling Yards.

The future safeguarded metro station site will be within the State Environmental Planning Policy (SEPP) corridor in the White Bay precinct. A SEPP protects the future rail corridor, ensuring that all future planning and development is coordinated with Sydney Metro.

A metro station will be needed at this location to cater for the future urban growth of the Bays Precinct under Sydney Harbour Foreshore Authority development plans. The metro will be integrated into these

development plans and would be in accordance with the Glebe Island and White Bay Master Plan[8] and any subsequent plans developed for the Bays Precinct.

As part of this work, an underground station 'box' will be built for the future White Bay station. The White Bay Station fitout would occur at a later date.

4.74 Land use and planning at the depot site

4.74.1 Integration with future land uses, eg transport corridors

Issues included

- *Will the Rozelle depot inhibit proper redevelopment of the large area of railway land? The space should be master planned properly.*
- *The construction of the stabling facilities has not considered its impact on extension of the light rail to the White Bay Overseas Passenger Terminal and residential developments in East Balmain.*

Response

The depot, located on the former Rozelle Marshalling Yards land, would be required for the operation of Sydney Metro Stage 1, Central to Rozelle. Preliminary discussions have been held with the Sydney Harbour Foreshore Authority and NSW Ports Authority regarding the possible future uses of the Bays Precinct and potential impacts of the depot within the precinct. Sydney Metro will consult with stakeholders to ensure that the depot will be designed and constructed to minimise impacts on the Bays Precinct, and would be incorporated into any plans developed in the future including any extension of the light rail.

4.75 Land use changes

4.75.1 Possibility of high-density commercial and residential redevelopment

Issues included

- *The planning for routes and station siting should look at opportunities for value capture early in the planning process.*
- *Density and public transport must be linked. High intensity land uses cannot reasonably function without quality mass transport systems.*
- *The potential to increase the catchment of the station at Rozelle by assessing any FSR and zoning changes has not been considered by the Government. The area has the potential to absorb medium density housing to reinforce the Government's substantial investment in metro rail lines.*
- *The station will increase the value of immediate surrounding land, hence local council acceptance to rezone should be part of any transport project.*
- *Only limited medium density residential developments should be allowed within close proximity of the station.*

[8] Sydney Ports 2000, Glebe Island and White Bay Master Plan

- *It appears that the huge glass building at Town Hall Square has been designed to provide extra commercial space, and consequent income to Sydney Metro.*
- *The surrounding zonings have been manipulated in excess of the norm in the placement of the Rozelle Station.*
- *The Tigers development has proposed high rise apartment blocks directly opposite the school, giving people the opportunity to look into the playground and watch children playing. The apartment blocks should be low rise to suit the village-style atmosphere of this historic area, and a high screening wall should be constructed along the Victoria Road side of the school."*
- *I do not want to see Rozelle become another Chatswood or Bondi Junction with high levels of retail and residential development.*
- *The 'car focused' Tigers redevelopment is at odds with Sydney Metro's aim to 'encourage greater use of public transport'.*
- *New investors will want to cash in on people in transit at Rozelle Station with fast food chains, convenience stores or possibly even a mall.*
- *The metro may lead to increased pressures for higher density development around Rozelle Station and put pressure on local services.*

Response

General

Rezoning is not required for the project, and therefore has not been prepared as part of the metro stations for Sydney Metro Stage 1. The existing planning controls would continue to regulate new development at all stations. Existing and potential land use changes as a result of the project were included in Chapter 17 of the EA.

Sydney Metro has prepared Draft Station Plans which aim to provide the spatial framework and design guidance for the development of metro Stations and their integration with surrounding precincts. The Station Plans provide the context for the metro project described in the EA and show how the project can integrate with the wider area of each station. In turn they will provide the spatial context for the preparation of future planning strategies or documents (such as DCPs) as well as provide guidance in the development of future works.

A background analysis has been undertaken for each Station, which has included analysis of surrounding land use, potential future development and walk-up catchment areas as well as the broader strategic planning context provided by the Sydney Metropolitan Strategy and City of Sydney 2030 Strategic Plan. This analysis has informed the design and orientation of the station entrances and public domain.

Further land use planning will be undertaken by Department of Planning and respective councils and Sydney Metro cannot speculate on value capture mechanisms.

Town Hall Square

The Town Hall Square Station buildings would be designed with relevant planning controls, including relevant Local Environmental Plans (LEPs) and Development Control Plans (DCPs) (eg floor space ratio, height and setback controls). The proposed Town Hall Square site is zoned City Centre under the *Sydney Local Environment Plan 2005* as indicated in section 17.3.3 of the EA. The proposed site is within the bounds of the existing zone, and therefore rezoning is not required. The Town Hall Square Station building will be within the CBD where high density development is typical.

Rozelle Station buildings

The Rozelle Station buildings would be designed with relevant planning controls, including relevant Local Environmental Plans (LEPs) and Development Control Plans (DCPs) (eg floor space ratio, height and setback controls). Rezoning is not required for Rozelle Station or any of the other Sydney Metro Stage 1, Central to Rozelle stations. Therefore, the zoning surrounding the stations will remain unchanged. The Rozelle station will be located within an existing medium to high density walk-up catchment. Future development around the station is guided by Leichhardt Municipal Council's planning controls. The general floor space ratio control on the Rozelle side of Victoria Road is 0.5:1 while on the Balmain side it is 0.7:1.

Any development surrounding the station would be subject to planning controls and local council development approval processes. It would be Leichhardt Municipal Council's decision, and not Sydney Metro's decision, on whether to approve developments (including high rise buildings and higher density retail developments) in the vicinity of the stations.

The Balmain Leagues Club site (Tigers site) would be the primary temporary construction site for Rozelle Station. The site has already been earmarked for demolition and redevelopment, and development applications for the site have been received by Leichhardt Municipal Council.

Any proposals for the site after construction of the project would be the responsibility of the Balmain Leagues Club and subject to planning controls and local council development approval processes and do not form part of the project.

CUMULATIVE IMPACTS AND INTERACTIONS

4.76 Relationship to other projects and infrastructure

Issues included

- *The cumulative impacts of the project and the Inner West Busway project in Rozelle must be addressed.*
- *The scale of the Tigers development was restricted based on the volume of traffic that was estimated the development would generate. Any additional increase in vehicle movements caused by the metro could easily have exponential effects.*
- *The Rozelle Public School works combined with noise, vibration and dust from the metro construction will severely limit outdoor play areas and exacerbate noise, dust, vibration and truck movements*
- *A DA has been submitted for demolition and construction of the eastern half, and refurbishment of the western half of 120 Pitt Street.*
- *Any impacts and monitoring of Sydney Metro excavation and piling works relative to the existing railway lines will need to be undertaken.*
- *Concern that construction activities will have an adverse impact on the implementation of measures designed to address environmental impacts associated with a nearby redevelopment.*

Response

Road works in Rozelle for the Inner West Busway project are expected to be completed in the first quarter of 2010, with the completion of all construction work for the project (ie bridge works) by the end of that year[9]. Construction of the metro station at Rozelle is expected to commence in mid 2010 (demolition and site establishment), with shaft and cavern excavation commencing at the end of 2010. Therefore there is likely to be little or no overlap between the construction periods of these projects.

However, Sydney Metro does acknowledge that some residents may experience 'construction fatigue' as a result of multiple projects being constructed in the vicinity of their homes over a long period of time, with little or no breaks between construction periods. The potential for cumulative impacts from other nearby projects has been taken into consideration when determining detailed mitigation measures, particularly relating to traffic and noise impacts.

Traffic analysis suggests that after the commencement of Metro operations the intersection of Victoria Road and Darling Street will operate at a level of service D (LoS D) with an average vehicle delay of about 50 seconds in the AM peak hour, which is similar to operations under existing conditions.

In addition, an environmental impact assessment of the Balmain Tiger's Leagues Club development is still required before any development on the site is approved. That assessment should address potential land use changes as a result of the metro.

Sydney Metro and RailCorp have entered into a partnership agreement and various interface agreements to ensure construction impacts are mitigated, including stringent monitoring regimes.

Coordination with other development, including approved Development Applications in Martin Place, is proposed via Statement of Commitment No.9.

4.77 Cumulative traffic issues

Issues included

- *More extensive traffic studies are needed to take into consideration other developments planned in this busy area (eg Tigers Club redevelopment, Callan Park and White Bay).*
- *Construction of the new school hall at Rozelle Public School will generate additional construction traffic throughout 2010.*
- *The current disruption along Victoria Road due to the Iron Cove Bridge redevelopment is already creating dangerous traffic conditions and will be exacerbated by metro construction.*

Response

Sydney Metros' traffic and transport advisors note that based on the Paramics modelling undertaken for the project, the provision of a bus lane and bus lay-by at Rozelle Station should improve traffic over the alternative of a bus stop in the existing outbound traffic lane. The construction of a cross intersection at Waterloo Street will allow right turns out of the Tigers Club which will aid accessibility and improve the operation of the Darling Street / Victoria Road Intersection through a small reduction in traffic using the intersection. The traffic studies undertaken for Leichhardt Municipal Council indicate that impacts from the proposed Multiplex development and Tigers Club redevelopment are acceptable.

[9] RTA 2009, Program of works July 2009-April 2011, http://www.innerwestbusway.com.au/program_of_works_july_2009_-_april_2011.pdf

The Tigers redevelopment will provide a pedestrian bridge over Victoria Road. Pedestrian underpasses will be constructed as part of the project beneath Victoria Road and Darling Street to provide safe passageways for users of the Metro as well as general pedestrians.

Traffic analysis suggests that after the commencement of Metro operations the intersection of Victoria Road and Darling Street will operate at LoS D with an average vehicle delay of about 50 seconds in the AM peak hour, similar to operations under existing conditions. Nevertheless, there may be the need for supplementary traffic analysis in the vicinity of the Rozelle Station precinct to assess the traffic and transport implications of aspects of the Metro proposal.

As discussed above, road works in Rozelle for the Inner West Busway project are expected to be completed in the first quarter of 2010, with the completion of all construction work for the project (ie bridge works) by the end of that year[10]. Construction of the metro station at Rozelle is expected to commence in mid 2010 (demolition and site establishment), with shaft and cavern excavation commencing at the end of 2010. Therefore there is likely to be little or no overlap between the construction periods of these projects, and therefore no or only minor cumulative traffic impacts.

It is proposed that construction traffic changes and impacts will be monitored by a Traffic and Transport Liaison Group. The CTMPs and TCPs will address any cumulative impacts of multiple construction sites to build the metro project.

OTHER ENVIRONMENTAL ISSUES

4.78 Visual and urban design

4.78.1 Loss of amenity of area during construction

Issues included

- *Since buildings and factories have been removed from the rail yard, we have been left to experience a high level of aural and visual pollution.*
- *The construction phase will be 24 hours a day, seven days a week for five years, hoardings and truck movements will make our business an unpleasant place to visit.*
- *Three metre hoardings will block some natural light to the first floor and six metre hoardings will severely affect the first floor and partially affect the second floor. We suggest a condition imposing the height limit of hoardings in this location to three metres.*

Response

Hoardings will be constructed around construction sites to alleviate noise, dust and visual impacts during construction. Hoarding design and placement will be in accordance with relevant local Council policies including the City of Sydney's Hoarding and Scaffolding (Local Approvals Policy). Adjacent residents and businesses will be consulted regarding hoarding design. Potential issues such as visual amenity, the need to maintain visual access for businesses and solar access will be considered on a case by case basis.

Existing visual and amenity issues are noted.

[10] RTA 2009, Program of works July 2009-April 2011, http://www.innerwestbusway.com.au/program_of_works_july_2009_-_april_2011.pdf

4.78.2 Loss of urban trees

Issues included

- *The vegetation on the cliff face provides camouflage of some of the aural and visual pollution of the Rail Yard and City West Link.*
- *There will be a loss of mature trees in Union Street due to the eastern entrance.*

Response

The clearing of vegetation and, in particular, mature trees will be minimised to the greatest extent practicable and trees to be retained during construction will be clearly marked on Environmental Construction Method Statements.

The preferred Pyrmont station location will necessitate the loss of mature trees in Union Street. The Pyrmont Station Plan includes extensive planting of street trees along Union Street to replace the trees to be lost during construction and improve visual amenity.

4.78.3 Impacts to public domain

Issues included

- *The preservation and improvement to Wynyard Park and other proposed public spaces that will form part of the Barangaroo-Wynyard Station master plan is supported.*
- *The upgrade of York Lane is a very positive initiative.*
- *Landscaping will impact on ground floor tenancies.*
- *An open plaza at Rozelle would have unacceptable impacts to the very sensitive historical buildings and uses, and also would be noisy.*
- *Adjacent and corner buildings currently shield St Thomas Anglican Church from noise, wind and rain. It would be a disaster to have the buildings exposed to the full noise of Victoria Road. Church and school services would be unworkable and buildings would have to be sealed, double glazed, sound insulated and air conditioned. Outdoor activities would have to be restricted. This may affect its long-term viability.*

Response

The retention and enhancement of public spaces adjacent to the Sydney Metro Stage 1 stations is a key objective of the Station Plans. Each Station Plan is focused on integrating public spaces and surrounding land uses with transport interchange facilities to maximise public domain utility.

Station entrances have been strategically located in developing the Barangaroo-Wynyard Station Plan to improve accessibility and assist in revitalising the York Lane precinct. Personal safety including the need for additional street lighting will be considered during detailed design.

Improving urban amenity and maintaining heritage significance is a key objective of the Rozelle Station Plan. Potential noise impacts and changes to the micro-climate of this precinct would be considered during design development

Landscaping adjacent to businesses will be developed in accordance with the Business Management Strategy and will consider the need for visual access on a case by case basis.

The ventilation infrastructure required in Castlereagh Street as part of the Martin Place Station will be designed and located to maximise amenity and visibility of surrounding retail shopfronts.

4.78.4 Visual impact of the metro structures

Issues included

- *The area of the Rail Yard and City West Link has been a considerable eyesore for many years.*
- *The vents outside the MLC Centre in Castlereagh Street will have negative impacts on the surrounding precinct.*
- *The stabling yard will have visual impacts on nearby residences.*
- *The residents of lower Justin Street request a landscape plan that includes substantial shrub and tree planting to mask the visual and illumination impact of the stabling yards.*
- *The 7.5 metre high services building on the northern boundary of north-facing courtyards of Waterloo Street residences would result in overshadowing, visual impact, loss of amenity etc.*
- *The vents for Martin Place should not occur on a street frontage but be carried through any new construction to roof level.*
- *Concern over impact of station.*

Response

The Rozelle stabling and maintenance facility will be landscaped in accordance with a site specific Landscape Management Sub-Plan. The Rozelle Depot Master Plan outlines potential landscaping treatments that will be considered during detailed design including:

- Edge planting along the boundaries with Lilyfield Road and the City West Link, and a various locations within the depot.
- Creation of an open space and wetland area along the north-eastern boundary with the City West Link.
- Provision of a wide landscape strip along the northern boundary above the portal entry.
- Integration of water-sensitive urban design features (such as water detention basins) to improve water quality and create a more attractive environment.

External operational lighting will be designed in accordance with relevant Australian Standards to minimise the potential for light intrusion impacts on adjacent residences.

4.79 Air quality

4.79.1 Dust issues relating to spoil/hazardous construction dust

Issues included

- *Dust during demolition, excavation and spoil removal has not been adequately addressed. Without full encapsulation of the site during demolition and the truck loading areas, airborne dust will be an ongoing hazard to residents.*
- *The EA does not indicate whether dust enclosures will be erected and the location and nature of the enclosures. Mitigation measures will be left to contractors who will presumably put in place the cheapest rather than the most effective measures.*
- *The Tigers demolition in itself will create a large amount of dust.*
- *Dust levels will affect businesses and people living or working near construction sites, and will affect the health (including hayfever and asthma) of residents, staff and children at Rozelle Public School.*
- *Specific dust management measures should be specified. The following should be considered: encapsulated site, dampening sites, covering loads, controlling and covering spoil heaps, wheel wash or wheel rubble, maintaining or providing air conditioning to buildings.*
- *Polluted air will be discharged from the construction sites' shafts and tunnels.*
- *Strong wind will carry dust from construction sites and affect a larger area.*
- *Fresh air unit filters in the buildings will be blocked easily, which will reduce the fresh air supply.*
- *Sydney Metro should specify compensation they will provide if specific dust management measures are not applied or are not effective.*
- *The marshalling yard site will be cleared and excavated for about 18 months. The only method to stop the dispersion of contaminants is to keep the ground constantly wet. We are concerned about exposure to contaminants (eg lead and asbestos) if this procedure is not adequately enforced.*
- *An independent third party should perform regular and frequent monitoring of dust and enforce air quality requirements (eg halt construction if outside DECCW standards).*
- *There is a concern that emissions from Air vents and water treatment facilities may have adverse impacts on construction and operation of the new Star City hotel.*

Response

Section 19.2 of the EA describes the potential impacts of the Sydney Metro Stage 1 project on existing air quality at each of the construction worksites. The EA identified that the main potential impact to air quality during construction would be associated with dust. The major sources of dust during construction would be from demolition of existing buildings, excavation works and spoil stock piles at the station and depot construction sites. Dust is most likely to be generated during initial construction site establishment, with controls such as sealing of sites (hardstanding) and enclosing spoil handling areas greatly reducing the potential for dust generation during later construction phases.

Overall, construction air quality impacts would be short term in nature and managed in accordance with established standard practices. While some dust generation during construction is inevitable,

dust emissions are unlikely to substantially alter background air quality and would not present an unacceptable risk to human health.

Construction dust emissions would be managed in accordance with the Environment Protection Licence from the Department of Environment, Climate Change and Water (DECCW). The DECCW would regulate and independently review dust monitoring and management across the project.

Where practicable, the demolition of buildings would commence with internal works and external walls would be left intact as long as possible to minimise potential dust impacts. The EA identifies a range of mitigation and management measures to control impacts on air quality (section 19.2.3). These measures include the dampening down work areas and ensuring materials likely to be a potential source of dust are enclosed or stored in a shielded location. Additional controls for specific sites or phases of construction deemed to be high-risk dust activities may include the screening of buildings where dust-producing activities are taking place, and the consideration of full enclosure of sites.

A Construction Air Quality Management Sub-Plan would be prepared and implemented to manage air quality impacts during construction. Monitoring of air quality during construction would be undertaken to ensure compliance with the Sub-Plan and the DECCW Licence. The Sub-Plan would also include a dust contingency plan to address instances where observed dust levels are elevated or dust-related complaints. The contractor is obliged to conduct construction activities in accordance with the CEMP, Sub-Plan, Statement of Commitments and conditions of approval. The construction contractor would be internally and externally audited on their environmental compliance with the CEMP, Sub-Plan, Statement of Commitments and Conditions of Approval.

Impacts on businesses would be managed in accordance with the Business Management Strategy. Measures to minimise and mitigate construction impacts on businesses including dust impacts would be considered on a case by case basis.

Any asbestos encountered during construction will be managed and disposed of in accordance with the Code of Practice for the Safe Removal of Asbestos (National Occupational Health and Safety Committee 2002 [1998]) and Australian Standard AS-2601 1191 – Demolition of Structures.

4.79.2 Ventilation shaft air quality

Issues included

- *Will effective filtration be fitted to the vents?*
- *There are a number of children at the centre who have asthma. What can Sydney Metro do to ensure their health is not compromised?*
- *The placement of the ventilation stack in such close proximity to residential premises is unacceptable due to particulate dust (from brakes).*
- *Where will the exhaust fans be placed for air conditioning units etc?*

Response

Each Station will include a ventilation system incorporating ventilation shafts. The metro trains are electric and emissions will be limited to brake dust, which will be minimised through the implementation of a regenerative brake system. The quality of air emitted from the ventilation shafts will be consistent with background ambient air quality and no additional management measures will be required.

4.79.3 Construction vehicle/plant emissions

Issues included

- *Traffic jams from loading trucks will result in high levels of carbon dioxide emissions.*
- *The use of bio-diesel should be investigated in place of mineral-diesel.*

Response

The emissions from construction vehicles and plant and equipment will not be of a magnitude likely to result in substantial changes in local road side air quality. Emissions would be minimised where reasonably practicable through:

- Ensuring that engines of all vehicles and plant are not left running unnecessarily.
- Using low emission vehicles and plant fitted with catalytic converters, particulate filters or similar devices.
- Using ultra-low sulphur fuels.
- Requiring that plant is well maintained and serviced regularly.
- Siting haul roads and operating plant away from sensitive receivers

The use of biodiesel in plant and equipment will be considered during construction planning. Feasibility considerations will include quality and availability of biodiesel, fuel price comparison and any impacts on maintenance regimes.

4.80 Indigenous heritage

Issues included

- *Buried sites may exist in the project area.*
- *Monitoring for indigenous sites should be recommended across the project.*
- *If a site is discovered, the appropriate course of action is for an archaeologist to be present on site to monitor heavy equipment and for an archaeologist to remain on site until he or she is satisfied that undisturbed natural deposits or bedrock have been reached.*

Response

The material extracted from bores and other test excavations conducted to date for the Sydney Metro Stage 1 has not contained any archaeological relics. All construction personnel will be trained on their responsibilities under the *National Parks and Wildlife Act 1974* and the procedure to be implemented in the event that any archaeological relics are uncovered.

If any archaeological relics are uncovered during construction, work in that area will cease and an indigenous heritage specialist will be consulted. Work in the affected area will not resume until any required approval(s) have been granted.

4.81 Geology and groundwater

4.81.1 Subsidence

Issues included

- *Tunnel excavation and associated lowering of groundwater levels may cause possible subsidence/ground settlement that may damage properties (including those of historical importance) and utilities.*
- *Sydney Metro is requested to submit the following: structural drawings and geotechnical reports, predicted settlement (in particular, differential settlement), predicted lateral movement, built information of tunnels and support details (including geological maps).*
- *Selection of the tunnelling methods must consider the ground conditions (including groundwater), and potential impacts on underground services/structures.*
- *Exploration ahead of the tunnel borer should be undertaken to identify any unexpected ground conditions.*
- *Concern regarding settlement or rock collapse impacting buildings, including 55 Clarence Street, 48 Martin Place and Star City.*

Response

In addition to project specific investigations, the previous geotechnical studies and tunnel and basement excavations completed within the CBD to date indicate that the tunnel and stations caverns will predominately be driven through Hawkesbury Sandstone. These conditions are favourable for the excavation of tunnels using conventional techniques. Groundwater inflow into the excavations will be generally low due to low rock permeability and this, combined with the storage capacity of Hawkesbury Sandstone reduces the possibility of ground settlement resulting from excavation.

Geotechnical and groundwater considerations have been a focus in developing the reference design. A Geotechnical and Settlement Management Strategy will be prepared and implemented to ensure that geotechnical conditions and the likely effects of any groundwater drawdown is considered during detailed design and construction planning. The development of a detailed model of ground conditions including the full details of existing and approved excavations, basements, tunnels and other sub surface infrastructure will be a central element of this Strategy. Settlement criteria for utilities and other potentially sensitive structure including heritage buildings will be identified prior to the commencement of excavation in the vicinity of these structures.

Where the geotechnical model indicates the potential for ground settlement, reasonable and feasible management measures to minimise ground settlement would be implemented. Building condition surveys will be undertaken on all building and structures in the vicinity of the tunnel and station cavern excavations and groundwater levels will be periodically monitored.

Any damage to property resulting from the project will be rectified at no cost to the owner.

4.81.2 Groundwater treatment

Issues included

- *An issue of concern is groundwater impacts such as collection and treatment.*

Response

The presence of perched aquifers and the nature of the geology along the route alignment suggest that some limited groundwater inflows may be encountered during excavation. The main tunnels will be designed to be watertight so no groundwater egress is expected in these areas. All practicable measures to limited operational groundwater inflows for station caverns and crossovers to between 6.5 and 11 litres per day per square metre will be implemented, subject to ground conditions.

Groundwater in the Sydney Basin generally has a low pH (high acidity), is relatively high in total dissolved salt and may contain manganese and other contaminants. All groundwater captured during construction and operation would be treated prior to discharge. As a minimum, treatment will include flocculation to remove any suspended sediment and the addition of caustic to neutralise the pH. The required treatment strategy would be finalised in close consultation with DECCW during detailed design taking into consideration the results of groundwater quality monitoring.

4.82 Environmental management

4.82.1 Reporting and monitoring of environmental impacts

Issues included

- *An independent assessor should be required to:*
  - *Test the impacts on Rozelle Public School.*
  - *Measure noise and vibration at regular intervals during and after construction.*
  - *Monitor and enforce contractual conditions and standards.*
- *A mechanism should be adopted to ensure appropriate measures and safeguards are implemented during construction, are not removed to reduce costs and are complied with.*
- *No consideration has or will be given to measure sound, lighting and vibration levels at St Thomas Church.*
- *How will noise, dust and vibration be managed and controlled?*
- *There is no assessment of management or minimisation of pollution for maintenance activities at the stabling yard including cleaning of trains.*
- *A mechanism should be adopted to ensure appropriate measures and safeguards are implemented during construction, are not removed to reduce costs and are complied with.*

Response

A detailed draft Statements of Commitments is included in the EA for Minister for Planning to consider in determining appropriate Conditions of Approval. These commitments are based on the detailed assessment documented in the EA and set out a comprehensive Environmental Management System

(EMS) that will be adopted by Sydney Metro and its contractors to maximise environmental benefits and avoid and minimise potential environmental impacts over the project lifecycle.

Key elements of this EMS include the preparation and implementation of a Sustainability Plan, a Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan. In accordance with ISO 14001, continual improvement will be a key focus of the EMS and comprehensive procedures for inspections and auditing and incident and emergency response will be incorporated into the CEMP. The Operational Environmental Management Plan would apply also to the metro operator (IMO) and all activities required to be undertaken at the Rozelle stabling and maintenance depot.

Specialist advisors on key environmental issues such as noise and non-indigenous heritage will continue to provide guidance on management strategies during construction. In addition, an independent Environmental Representative will oversee compliance with the Statement of Commitments and any Conditions of Approval required by the Minister for Planning.

Construction of the project will be managed in accordance with the Environment Protection Licence from the Environment Protection Licence from the Department of Environment, Climate Change and Water (DECCW). The DECCW will regulate and independently review environmental monitoring and management across the project.

ENVIRONMENTAL ASSESSMENT DOCUMENTATION

4.83 Sufficiency of assessment

4.83.1 Insufficiency of planning studies

Issues included

- *A preliminary environmental, social and cost-benefit analysis has not been presented for public scrutiny.*
- *Legal planning and environmental studies have not been carried out for the project.*
- *The EA does not demonstrate what strategic transport need is being addressed and therefore cannot justify that the project is the best choice to meet a strategic transport need.*
- *The EA fails to adequately consider an assessment of the environmental impact of the project and suitability of the site for the project.*

Response

The EA documentation is fully compliant with the processes and requirements of the *Environmental Planning and Assessment Act 1979*. Prior to exhibition, the EA was reviewed by the Department of Planning and other regulatory agencies, including the Heritage Branch, DECCW and RTA, to ensure adequacy of the assessment.

Specialist technical papers were prepared and exhibited as part of the EA as follows:

- Technical Paper 1 – Transport and traffic.
- Technical Paper 2 – Spoil management.
- Technical Paper 3 – Noise and vibration.

- Technical Paper 4 – Archaeological heritage.
- Technical Paper 5 – Non-archaeological heritage.
- Technical Paper 6 – Economic and social.
- Technical Paper 7 – Ecology.

The EA and all Technical Papers have been prepared by experienced professional organisations using established methodologies.

The studies prepared for the EA were presented within the EA and were available as part of the exhibition of the documentation. The Department of Planning provided advice to the community as to how copies of the documents could be inspected.

4.83.2 Inadequate plans

Issues included

- *The Reference Design was inadequate and unclear.*
- *The plans on exhibition didn't show the height, scale and design of large air stacks proposed and didn't show the heritage buildings to be demolished or individual scaled, station floor plans as publicly promised.*

Response

The plans provided in the EA are conceptual and would be available in more detail when the detailed design is undertaken. The detail provided is adequate to allow an understanding of what is proposed and to assess the impacts of the proposal. The ventilation areas and station floor plans are shown in sufficient detail to understand the intent of the work and the possible extent of impacts. The effects on heritage buildings are described in Technical Paper 5 – Non archaeological heritage assessment.

The studies prepared for the EA were presented within the EA and were available as part of the exhibition of the documentation. The Department of Planning provided advice to the community as to how copies of the documents could be inspected.

4.83.3 Strategic need and business case

Issues included

- *It should have undergone both the Strategic Review and Business Case review prior to reaching the EA development.*
- *The Treasury guidelines should have been applied.*
- *A description of current transport demand and supply has been substituted for an analysis of the transport requirements to identify the highest priority strategic needs.*

Response

Chapter 4 of the EA addresses the strategic need for a metro system for Sydney. The need for improved public transport systems to cater for future population is demonstrated and a case is made for that population to be served by a metro system. The Stage 1 is presented as the enabler for a city wide metro network.

There is no requirement to provide a review of the business case in the EA. The strategic need in Chapter 4 and project justification in Chapter 22 of the EA provided an overview of why the metro project is needed and what benefits would result from it.

There is no requirement to undertaken an assessment according to Treasury guidelines within an EA context. A more general economic assessment of the project was summarised within Chapter 22 of the EA.

4.83.4 Inadequate heritage reporting

Issues included

- *A heritage impact statement has not been prepared.*
- *The heritage impact assessment of Union Square is inadequate.*
- *The heritage assessment did not recognise the heritage values of Union Square (local heritage) and the former Pyrmont Post Office (state heritage) and all other buildings forming the northern perimetre which are items of local heritage significance.*

Response

Heritage buildings affected by the proposal are detailed in Chapter 13 – Non-Indigenous Heritage, Technical Paper 4 – Non-Indigenous Archaeological Heritage and Technical Paper 5 – Non-archaeological Heritage of the EA. Scaled plans are provided for each station and the depot in Appendix E of the EA. Plans provided include (but are not limited to):

- Location plans
- Street level plans
- Concourse level plans
- Mezzanine and platform plans
- Sections and elevations.

A heritage impact assessment detailing the potential impacts on heritage buildings was undertaken in accordance with the Heritage Council's Guidelines "Archaeological Assessments"[11], and the revised criteria for assessing heritage significance in "Assessing Heritage Significance" a NSW Heritage Manual update[12].

Technical Paper 5 – Non-archaeological Heritage identifies Alternative 2 as a preferred option from a heritage perspective. The scheme proposed for the eastern entrance of Pyrmont Station is to be Alternative 2 as identified within the EA.

Further responses regarding potential heritage impacts are in sections 4.45 to 4.51 of this report.

[11] Heritage Office & Department of Urban Affairs and Planning 1996, Archaeological Assessments (NSW Heritage Manual)

[12] NSW Heritage Office 2001, Assessing Heritage Significance (NSW Heritage Manual).

4.83.5 Traffic assessment

Issues included

- *The current traffic assessment is inadequate as it does not address impacts to local roads, does not consider truck movements relating to all construction activities, doesn't consider local traffic conditions (eg Saturday morning flows), and doesn't fully assess the demand for parking on local streets.*
- *Full traffic modelling has not been undertaken.*

Response

Information on construction traffic was provided in Volume 2 of the EA, comprising Technical Paper 1 – Traffic and Transport. This working paper provides an analysis of the potential impacts associated with construction works on the road network operation. The report is supported by a series of draft Traffic Management Plans for each construction site. These plans address issues associated with parking, access, cyclists and pedestrians. They will be further developed by the contractor as the design and construction methodology is further developed.

Technical Paper 1 and Chapter 14 of the EA provide an assessment of the existing use of walking and cycling in NSW and proposed integration of pedestrians and cyclists with the metro system.

Further responses regarding construction traffic management are provided in section 4.34.

4.83.6 Socio-economic impacts

Issues included

- *There is no examination of the financial and social cost benefit analysis.*

Response

The economic and social impacts at a local scale are addressed in Technical Paper 6 – Economic and social assessment. Relevant economic impacts on Pyrmont due to construction are addressed in the report.

The social impact assessment of likely impacts resulting from a particular development proposal allows for the identification, prediction and where possible quantification, of impacts as either likely benefits or negative impacts. Unlike other sciences it is difficult to always quantify benefits or impacts in numeric terms. The assessment was, however, undertaken from the point of view of the person or business affected. A financial cost analysis at a local scale was not undertaken as part of the EA, but financial issues would be considered in negotiations with leaseholders and land owners where property acquisition is required.

4.83.7 Station locations

Issues included

- *Specific station designs for Pyrmont Station options were not available during the public exhibition and consultation period.*
- *Insufficient detail is provided in the Preliminary Environmental Assessment (PEA) to undertake detailed assessments of potential impacts.*

Response

Alternative sites for station entrances were assessed as part of the process for selecting station locations. This is discussed in section 5.5 of the EA.

Alternative sites for a metro station at Pyrmont and the reason for selecting the preferred site were addressed in section 5.5 of the EA. The assessment of alternatives was in sufficient detail to demonstrate how the preferred site was chosen.

4.83.8 Other impacts

Issues included

- *No details are provided as to the materials to be used in the construction of the above-ground structures.*
- *There is a lack of detail on how work sites are configured, location of hoardings, etc. This makes the impact to these businesses impossible to assess.*
- *The EA provides only an outline of the construction methodology and a reference design, all of which are subject to change by the contractors without further review by concerned stakeholders.*
- *The treatment of dust and air quality is flawed and should be key issues. The proposal to deal with air quality in Construction Air Quality Management Sub-Plan of the CEMP is inadequate.*
- *There is little assessment on ecology.*
- *There is inadequate information provided within the EA to undertake detailed assessment of the nature and significance of the potential adverse impacts.*
- *There is a lack of information and assessment regarding the environmental impacts on local amenity, traffic and environment from the stabling and maintenance yard and future extension of the yard.*

Response

Construction methods and operation of work sites are described in Chapter 7 of the EA. The detail provided is based on the reference design provided and is in sufficient detail to allow an adequate assessment of the construction impacts. More detail on construction activities will become available as the design is further developed.

The construction methodology and reference design were provided in the EA as an indication of what the project would look like, how it would be constructed and what the potential consequences on the environment would be. The design and construction methodology will be further developed by the contractors and designers and the details of these would be subject to further scrutiny by the department of planning through the requirement for it to review and authorise management and design plans prepared by the contractors.

Details on the management of traffic at the construction sites is provided in Technical Paper 2 – Traffic and transport and in the draft Traffic Management Plans for each site found in the appendices.

Key issues were identified by the Department of planning when the Director-General's requirements were issued. The DGRs also required the proponent to review other issues with a view to determining whether they should be regarded as key issues and assessed accordingly. This was undertaken in Chapter 20 of the EA and air quality and ecology were regarded as having a low residual risk rating.

Potential impacts and appropriate mitigation measures for air quality control and impacts to ecology were described in section 19.2 and 19.3 of the EA.

55 Clarence Street is not addressed specifically within the EA as it is not directly affected by the proposed development. Where possible indirect impacts may result these are addressed within the relevant impact categories.

It was noted in the EA in section 6.5 that any extension to the stabling facilities to accommodate Stage 2 of the Sydney Metro Network would be addressed in a separate EA prepared for Stage 2. That EA is currently being prepared.

4.83.9 Cyclists and pedestrian issues

Issues included

- *There is no mapping of cycle catchments or pedestrian flows.*
- *No proposals are listed to improve accessibility for pedestrians or cyclists apart from the immediate vicinity of the stations or the depot.*

Response

An assessment of the existing cyclist and pedestrian environment was provided in section 4.3.2 of the EA.

Some public domain improvements, such as extensive cycle routes, as suggested in some submissions are not the responsibility of Sydney Metro and do not form part of the Stage 1 project. The Station Plans clearly identify proposals (including pedestrian and cyclist facilities) that are part of the Sydney Metro Stage 1 project and proposals that are to be developed and implemented by others.

4.84 Methodology of assessment

Issues included

- *The Social Impact Study is packed with value judgements. What might be a 'slight' impact to those who focus on the bottom line, can be described as 'significant' by those directly affected.*

Response

The social impact assessment of likely impacts resulting from a particular development proposal allows for the identification, prediction and where possible quantification, of impacts as either likely benefits or negative impacts. Unlike other sciences it is difficult to always quantify benefits or impacts in numeric terms. The assessment was, however, undertaken from the point of view of the person or business affected.

4.85 Quality of documents

Issues included

- *The brochure is poorly designed and misleading as it shows an image of the QVB building on its front cover as representing the Pyrmont precinct.*
- *The Reference Design plans - Revision 1 drawings are unclear and inadequate.*

Response

The summary brochure refers to the entire project from Central to Rozelle. The cover design therefore includes images of the city generally and these do not represent specific proposed stations. It is a graphic representation of life within the study area – the city of Sydney.

Figures relating specifically to Pyrmont are provided in the EA.

Public communications as part of the EA display process included direct mail information sheets for the CBD, Pyrmont and Rozelle respectively.

The purpose of the Reference Designs is described above.

ENVIRONMENTAL ASSESSMENT EXHIBITION

4.86 Duration of the display

Issues included

- *The period available for reading and commenting - 30 days - is far too short, particularly for such a large and complex project. The period should be at least three months.*
- *The Department of Planning should allow a reasonable 'grace' period for submissions to be received and considered beyond the nominated deadline.*

Response

The Department of Planning sets out the consultation requirements to be undertaken by the proponent for the project for which it is seeking approval. This is done through the Director-General's requirements (DGRs) for the proponent's environmental assessment.

The NSW Department of Planning clearly defines the exhibition period for public display of Environmental Assessments under Part 3A of the EP&A Act. This includes advertising requirements and a requirement to place the EA on public exhibition for a minimum period of 30 days. Once on exhibition, the community is invited to make formal submissions.

The EA for the project was available to view at nine locations, at community information sessions, and was available on CD and electronically through the project website. The EA was also available through the Department of Planning.

Submissions on the project were still accepted after the end of the formal exhibition period to allow community and stakeholders additional time to complete their submissions.

The information in the EA was also summarised in a 16 page summary brochure, which was available at the display locations, at community information sessions, through the project website and on request from Sydney Metro for the duration of the exhibition period.

Other publications produced to inform stakeholders about project issues and available at information sessions and electronically on the project website, included:

- Noise and vibration fact sheets.
- Property and leaseholder fact sheets.

- Project updates (targeted specifically for each area along the alignment - CBD, Pyrmont and Rozelle). These updates were also letterbox dropped to relevant residents and businesses in the corridor, explaining the key changes and issues in the EA document.
- Artists' impressions, station plan maps and network maps.

4.87 Availability of the documents

Issues included

- *There was no full Environmental Assessment, just a brief, glossy summary brochure.*
- *The full environment and heritage impact assessments should both be available to the public, as should the detailed station plans, including the locations and design of air vent stacks.*
- *Metro station plans and route plans need to be provided on a free CD.*
- *It has been difficult to access the relevant documents online or in hard copy as they are large in volume and complex in content.*

Response

The full EA was on display from Wednesday 9 September to Monday 26 October (inclusive) at the following locations:

- Department of Planning – Information Centre, 23-33 Bridge Street, Sydney, Monday to Friday 9am – 5pm.
- Nature Conservation Council of NSW – Level 2, 301 Kent Street, Sydney, Monday to Friday 9am – 5pm.
- City of Sydney Council – Level 2, Town Hall House, 456 Kent Street, Sydney, Monday to Friday 8am – 6pm.
- Pyrmont Community Centre – corner John and Mount Streets, Monday to Thursday 9am – 9pm, Friday 9am – 6pm, Saturday 10am – 4pm.
- Ultimo Community Centre – 40 William Henry Street, corner Harris Street, Monday to Friday 10am – 8pm, Saturday and Sunday 10am – 4pm.
- Leichhardt Municipal Council Citizen's Service Centre – 7-15 Wetherill Street, Monday to Friday 8.30am – 5.15pm.
- Leichhardt Library – Italian Forum, Piazza Level, 23 Norton Street, Monday to Friday 9.30am – 8pm, Saturday 9.30am – 4pm, Sunday 10am – 4pm.
- Balmain Library – Rear of Balmain Town Hall, 370 Darling Street, Monday, Thursday, Friday 9.30am – 5.30pm, Tuesday-Wednesday 9.30am – 8pm, Saturday 9:30am – 4pm.
- Rozelle Neighbourhood Centre – 665a Darling Street, Monday to Friday 9am – 4.30pm.

In addition, the full EA was (and currently remains) publicly available on the Sydney Metro and NSW Department of Planning websites, as well as on free CDs that were available at information days and on request.

Sydney Metro's detailed Station Plans were on public display from Wednesday 9 September to Monday 26 October inclusive. Printed copies of the Station Plans were available at each of the EA display locations, and were available to view on the Sydney Metro website.

STATION PLANS

4.88 Station planning process

Issues included

- *We would like to see Wynyard Green recognised as an educational attraction given it is the largest teaching campus in the Sydney CBD.*
- *Should Sydney Metro, whose main role is public transport, be undertaking a re-imagining of an area like Rozelle?*
- *Local council and Sydney Metro should have joint planning for any urban development in and around the station.*
- *Sydney Metro documents identify 55 Clarence Street as a 'future development site'.*

Response

Section 55D of the *Transport Administration Act 1988* enables Sydney Metro to prepare station plans for land on which metro stations are to be situated, and land in the vicinity of such metro railway stations, for the purpose of developing a metro railway system.

The role of the Station Plans is to ensure that the station entrances and their public domain integrates with the station precinct environs by providing the strategic context, vision and guiding principles to achieve this.

The master planning process has included a background analysis of various elements implicating the location and design of station entrances and their public domain. Included in this analysis the consideration of potential development sites to consider customer demand.

Local councils have been involved in the preparation of the Station Plans as well as the Design Principles Workshops that focus on developing design principles for Rozelle and Pyrmont stations.

Sydney Metro has also consulted with other relevant public authorities such as the RTA, Ministry of Transport, Department of Planning, Premiers Department, Sydney Harbour Foreshore Authority and Barangaroo Delivery Authority.

The aim of the station plans is to consolidate existing strategies and provide a vision for the future development of the station and surrounding precincts. The station plans identify the works required for delivering this vision, and as such, they illustrate what is delivered by Sydney Metro. What is to be delivered by Sydney Metro at each station site is depicted in plans within **Appendix B** of this submissions report.

The property at 55 Clarence Street would not require acquisition for the Sydney Metro Stage 1, Central to Rozelle project. Potential for future development sites have been analysed from Land Use Zoning, Height Controls and Floor Space Ratio Controls form the City of Sydney LEP. The LEP has identified 55 Clarence Street as an 'opportunity site'. The City of Sydney Council has determined a number of 'opportunity sites' in the CBD where the existing buildings do not adequately contribute to the amenity of pedestrians, the street or the public environment, whereby the Council could achieve a

higher level of amenity through a variety of mechanisms. Use of the site occupied by 55 Clarence Street does not form part of the proposed Sydney Metro Stage 1, Central to Rozelle project.

Sydney Metro recognises the importance of Navitas Wynyard Green teaching campus to the Sydney CBD.

4.89 Integration of station design and local character

4.89.1 Rozelle

Issues included

- *Objection to the Rozelle station plan proposals from an urban design perspective.*
- *Should all planning and construction options be exhausted, then the proposed station entries should fit into new buildings of the same urban form.*
- *Visual objectives such as 'the view towards the Rozelle gateway" are overriding more important objectives such as maintaining the integrity of the main street built form and retail experience.*
- *Retail/pedestrian energy is strongest where block edge buildings occur on both sides of Darling Street and weakest where built frontage is broken by open space.*
- *Rozelle Station should also offer floor space for mixed uses on the upper floors similar to the York Buildings opposite.*
- *The car park in front of St Thomas Church should be retained.*
- *The 'car focused' Tigers redevelopment is at odds with Sydney Metro's aim to 'encourage greater use of public transport'.*

Response

Rozelle urban form

The metro station entrance into Darling Street would respond to the urban form and activity that typifies this part of Rozelle. It has been recognised that Rozelle is located in a unique village-style location. Section 19.1.2 of the EA outlines the factors that were considered in the design of the metro structures (including heritage buildings and the heritage conservation area) and the design principles that have been used thus far, and those that will continue to guide future detailed design (eg station entrances designed relate to the scale and consistency of adjacent buildings).

The five Edwardian commercial buildings on the northern side of Victoria Road to be demolished for the metro station are not individually listed structures, however they are within a broader conservation area. The station design and development process determined that the sites of these buildings were the most appropriate location for entrances to Rozelle Station, given its key intersection location and significant walk up catchment potential. In locating the station, impacts to a number of other more significant buildings in the surroundings were avoided. The buildings to be demolished at the intersection were not designed as corner buildings but became so through later road widening. Their demolition will allow an improved urban design response to the intersection, and enhancement of the setting of the two listed churches on either side of Darling Street.

Statement of Commitments No.10 in the EA identified that a Sydney Metro Design Review Panel would be formed to oversee the design process and review the design of stations and associated precinct works developed by the IMO contractor. The Design Review Panel would comprise

independent specialists and would be established to evaluate the detailed design of stations and associated precinct works, with particular focus on at-surface design.

Sydney Metro is also undertaking Design Principles Workshops to develop and test design principles for the station entrances and public domain at Rozelle and Pyrmont. These workshops have involved representatives from a range of government, professional, stakeholder and community groups in order to enable an inclusive approach to informing and guiding the design of the stations at Rozelle and Pyrmont.

The treatment of the Rozelle Station entrances will be tested by design teams and presented at the workshops to assist in establishing guiding design principles for the station designs. This will include the exploration of built form at the station entrances on the northern corners of Victoria Street and Darling Streets.

The outcomes of the workshops will be a refined set of design principles for Rozelle and Pyrmont Stations that will be appended to the IMO contract. This will act as a design brief for the IMO contractor when designing the station entrances and their public domain.

Sydney Metro will deliver works identified within the delivery boundary. Suggestions relating to works outside this boundary provide strategic guidance for future improvement works. This work will be subject to further design and planning by the relevant delivery agency.

St Thomas Child Care Centre

The Rozelle Station master plan provides a vision for the Rozelle Station precinct. The Metro Delivery Plan (included in **Appendix B**) identifies the work that Sydney Metro would deliver. The provision of trees on the eastern side of Darling Street in front of St Thomas Church on the Rozelle Station master plan denotes that new landscape areas could be added by others in the future to improve the setting of the church. The car park at St Thomas Church, which is used by St Thomas Child Care Centre and others would be retained.

Balmain Leagues Club redevelopment

Sydney Metro and the Balmain Tigers Leagues Club have agreed to work together to finalise an agreement to allow Sydney Metro to use part of the Tigers redevelopment site for construction purposes. These negotiations are ongoing. This agreement would involve leasing the Tigers site during construction, with the main construction activity for the Rozelle Station occurring at this location.

Sydney Metro is working with the proponent of Rozelle Village Development for the integration of the Rozelle Village Development Application and the project.

The Development Application lodged by Tigers is independent of the Sydney Metro proposal and is being considered by Leichhardt Municipal Council. In regard to car parking, Sydney Metro is not seeking approval for any commuter parking at Rozelle. Rather, customers would walk, cycle, or transfer between the metro and existing public transport (bus).

Sydney Metro encourages sustainable travel behaviour measures including restrictive parking policy in areas of high transport accessibility. The proponents of the Rozelle Village Development will be encouraged to provide parking commensurate with the level of accessibility provided by the Metro. However, any decision regarding vehicle parking spaces below the proposed Rozelle Village Development is a matter for Leichhardt Municipal Council as part of the Development Application process.

4.89.2 Pyrmont

Issues included

- *The urban design and form of Pyrmont Station and precinct is likely to conflict with and adversely affect the approved urban form and fabric of adjacent development.*

Response

A Design Review Panel has been established to evaluate the detailed design of stations and associated precinct works with particular focus on at-surface design. The Design Review Panel comprises independent specialist expertise in architecture, urban design, transport, heritage and sustainability.

Furthermore, a number of design principles workshops have been held to develop and test a set of design principles for the metro station entrances and public domain at Rozelle and Pyrmont. These workshops have involved a range of stakeholder and community representatives in order to enable an inclusive approach to informing and guiding the design of the stations at Rozelle and Pyrmont.

4.89.3 Barangaroo-Wynyard

Issues included

- *The location of an island kiosk behind the Moretons Hotel building.*
- *On the plan there appears to be a triangular shaped structure in the new forecourt area with no clear explanation. We believe that the positioning of a structure in front of the hotel would hinder pedestrian flows.*

Response

The “island kiosk” shown near Moretons Hotel was indicative only. The purpose was to indicate means of activating the BPL. It is recognised that Moretons (and the adjacent tenancies) require access to their property. The design of the Napoleon Street area, including incorporation of the BPL, would be developed further in consultation with stakeholders.

4.89.4 Depot

Issues included

- *The residents of lower Justin Street request that revised plans be made available to residents for community consultation.*

Response

Sydney Metro will continue to work closely with stakeholders and the community to ensure they are well informed about the project, including any changes that will potentially impact the community.

OTHER

4.90 Other issues raised

4.90.1 Peak oil

Issues included

- *The project doesn't replace car traffic and will therefore not help in the second phase of peak oil.*
- *Sydney is ill-structured and unprepared for a period of declining oil and energy supplies.*
- *The objective must be to provide rail connectivity (independent of oil) for all subcentres not yet served by rail. Only surface rail on existing road corridors can be implemented fast enough. As an emergency measure, electric trolley buses are the best solution.*
- *All buses should be converted to compressed natural gas.*
- *Large and expensive metro or other rail projects (except for short sections at critical points) and long tunnels should not be started up as they will get stuck in funding problems and diesel shortages.*
- *A properly planned metro (which will be longer than the project) will assist in reducing dependence on imported oil.*

Response

"Peak oil is the point in time when oil production reaches its maximum annual rate, after which the annual production rate declines each year. While the term is currently used to describe a possible peak in total world oil production, in practice a succession of peaks have already occurred in different oil-producing regions throughout the world."[13]

While there is considerable debate about this contention[14] (Bureau of Transport and Regional Economics Working Paper 61: *Is the world running out of oil?*) governments and industry are taking the view that, whilst the timing remains problematic, it is prudent to assume that peak oil is likely to happen (or may have already happened) and that there is a need to establish alternatives to oil as a fuel for transport and to improve the energy efficiency of transport. This aligns with recognition of the greenhouse effect and the need to reduce greenhouse gas emissions.

Initiatives to reduce energy consumption by the project are detailed in section 19.6.3 of the EA.

The conversion of all buses to natural gas is not a part of this project. The government has committed to a $34 million redevelopment of State Transit's bus depot at Leichhardt. The redevelopment will support a fleet of up to 200 buses, the vast majority of which will be environmentally friendly, low-emission gas-powered buses making this the home for Australia's largest environmentally friendly bus fleet[15].

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[13] Source: CSIRO 2008, Future fuel forums June 2008

[14] Bureau of Transport and Regional Economics 2005, Working Paper 61: *Is the world running out of oil?*

[15] Source: http://www.leichhardtdepot.com.au/

The fact that tunnels are energy-intensive constructions is acknowledged, however there were many other factors that influenced the decision to provide an underground system as detailed in section 4.8 of this report.

The metro would improve the attractiveness of public transport compared to private vehicle by relieving pressure on existing public transport modes (by providing additional public transport capacity) and integrating with the existing public transport system to improve commuter choice and travel experience (for example, through shorter travel and interchange time).

The metro system is being planned to provide additional capacity to the existing public transport system so that it is able to manage larger numbers of commuters. Metro lines are also being planned to the west, north-west and south-east to improve services to these regions.

The metro system has been planned as part of a long-term solution for Sydney's transport problems. Although it is acknowledged that some alternatives could be implemented within a shorter timeframe (eg increasing bus and ferry services), these alternatives would not deliver the long-term gains to be provided by a metro system.

In terms of enhancing the existing surface rail, the government did consider enhancements to the CityRail network as a possible alternative to the project (refer section 5.2.3 of the EA).

The project has not been planned as an isolated project; it is the critical first stage of a wider metro network. While the Stage 1 project would provide significant benefits as a standalone project, it would also be of strategic importance as an enabler of the entire metro network, forming the central spine to which all other metros would link or interchange.

4.90.2 Funding of light rail

Issues included

- *The City of Sydney light rail proposals from Central to Circular Quay and Barangaroo should be financed by the City Council and a private operator to provide an important link for commuters similar to Melbourne.*

Response

The funding of light rail is not a matter than can be addressed within this project submissions report.

4.90.3 Old coal mines

Issues included

- *There is no mention of 'fugitive' CO2 or methane gases escaping from old mine workings although Rozelle station is less than 1,000 metres from the old main shaft.*
- *No mention of coal appears in the EA although it is well known that Rozelle and Balmain have coal mines under them.*

Response

Sydney metro advisors are aware of the historical mining activities in the area. As discussed in section 19.5.3 of the EA, a detailed geotechnical model for the route and its surroundings would be developed and progressively updated during design and construction.

Site investigations include the sampling of rock and testing for a range of characteristics including for the presence of coal. There has been no evidence found of methane or CO2 gases to date.

4.90.4 Transport Administration Amendment Bill (Rail Trails) 2009

Issues included

- *Opposition to the Transport Administration Amendment Bill (Rail Trails) 2009.*

Response

The Transport Administration Amendment Bill (Rail Trails) 2009 does not apply to the Metro network. As such, this Bill has no application to the Sydney Metro Stage 1, Central to Rozelle project.

5 The Preferred Project

5.1 Design changes

5.1.1 Overview

Subsequent to the consideration of the submissions received and additional design information becoming available, Sydney Metro proposes a number of minor modifications to the project design as presented in the Environmental Assessment. The proposed design changes to the project are described in the following sections.

The following sections also provide an assessment of the impacts likely to be associated with each design change. These assessments demonstrate that such design changes are minor and can be adequately managed with the application of suitable mitigation measures, and as such do not require a Preferred Project Report in accordance with Section 75H(6) of the EP&A Act.

5.1.2 White Bay Station location and rail alignment

The proposed rail alignment and associated location of the White Bay Station box, as described in section 6.4.7 and shown in Figure 7.12 of the Environmental Assessment, has been amended. The new preferred horizontal alignment of the White Bay Station box would be approximately 25 to 50 metres further south than the location described in the Environmental Assessment (refer Figure 5.1).

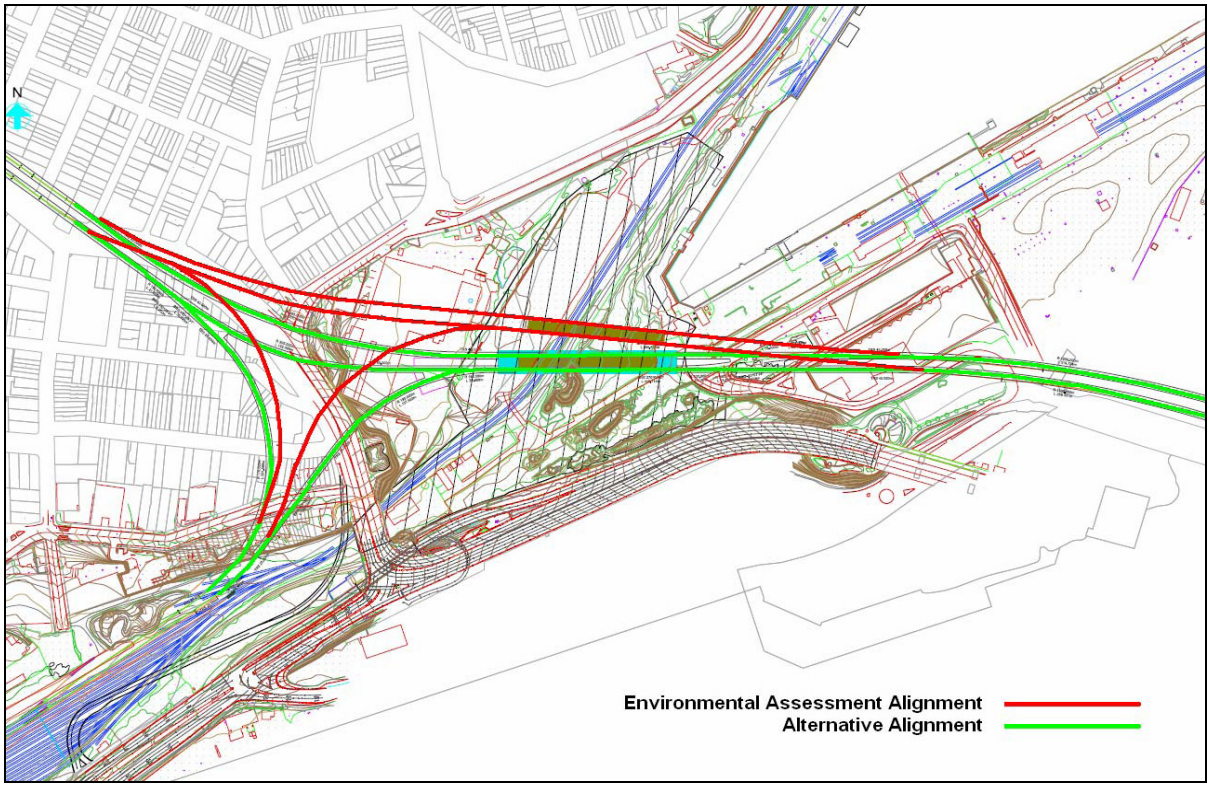


Figure 5.1 Alternative alignments at White Bay Station

The amendment is primarily due to new geotechnical borehole data and the consequential re-assessment of the ground conditions at the White Bay Power Station. Additional geotechnical investigations conducted along the Sydney Metro Network Stage 1 (Central to Rozelle) alignment have shown that the ground conditions beneath the power station and the proposed areas of excavation surrounding the White Bay Station, comprise poor, soft ground material extending to depths of RL-16m AHD or greater and contain the remnants of timber piles used in the construction of the power station. These conditions pose significant program and safety risks as it would not be possible to support the soft, water logged material without high risks to construction workers. As a result, an alternative alignment has been developed to avoid the soft ground where possible.

Moving the alignment south would be sufficient to avoid any piles below the boiler house structure. This would also result in the depot connection being situated within rock, making tunnelling of the necessary turnout cavern more viable, but also allowing for cut and cover construction should mining prove unfeasible.

White Bay Station would be rotated approximately 6 degrees in an anti-clockwise direction to more of an east-west orientation. In addition, to increase the clearance to the power station and optimise the radii between White Bay and Rozelle stations, the station box has been moved eastward towards the construction boundary.

Horizontal alterations to the alignment extend from Johnsons Bay to the Rozelle crossover. Vertical alterations extend fully from Pyrmont to Rozelle due to the need to tie in the grades.

As a result of the alignment alterations the total tunnel length would be increased by 16 metres on the Rozelle Down Main and by 15 metres on the Up Main. The main line gradients would also be altered for the new station location and chainages however these changes are not significant. The eastern depot connection from the main line to the portal is decreased in length by 47 metres and the western depot connection by 15 metres.

The revised main line tunnels would impact on the alignment of the depot connections. To avoid significant alterations at the tunnel portal, the radius on the western connection has been reduced to 180 metres. Track radii of 160 metres would allow the eastern connection to remain predominantly within the existing SEPP corridor boundary until nearing the station, where of necessity the whole construction is outside of the existing boundary. As this is an undesirably tight radius, it has been realigned outside of the SEPP boundary for a short distance within the White Bay development site and the 190 metre radius has been retained. This will produce significant improvements in rail wear and track maintenance over the life of the project and reduce ground borne vibration below the residences in this area.

Further detail regarding the design changes at White Bay and the surrounding features affected by the station is shown in Figure 5.2.

5.1.3 Assessment of White Bay Station location and rail alignment

Noise and Vibration

An assessment of the revised alignment for White Bay was undertaken and is provided at **Appendix E**. The assessment was made on the basis of a more southern alignment and a changed horizontal alignment of the east and west depot connection, as compared with the Environmental Assessment design for White Bay Station.

The purpose of the assessment was to calculate the ground-borne noise and vibration levels during operations and determine whether the future ground-borne noise and vibration levels would comply with the design goals.

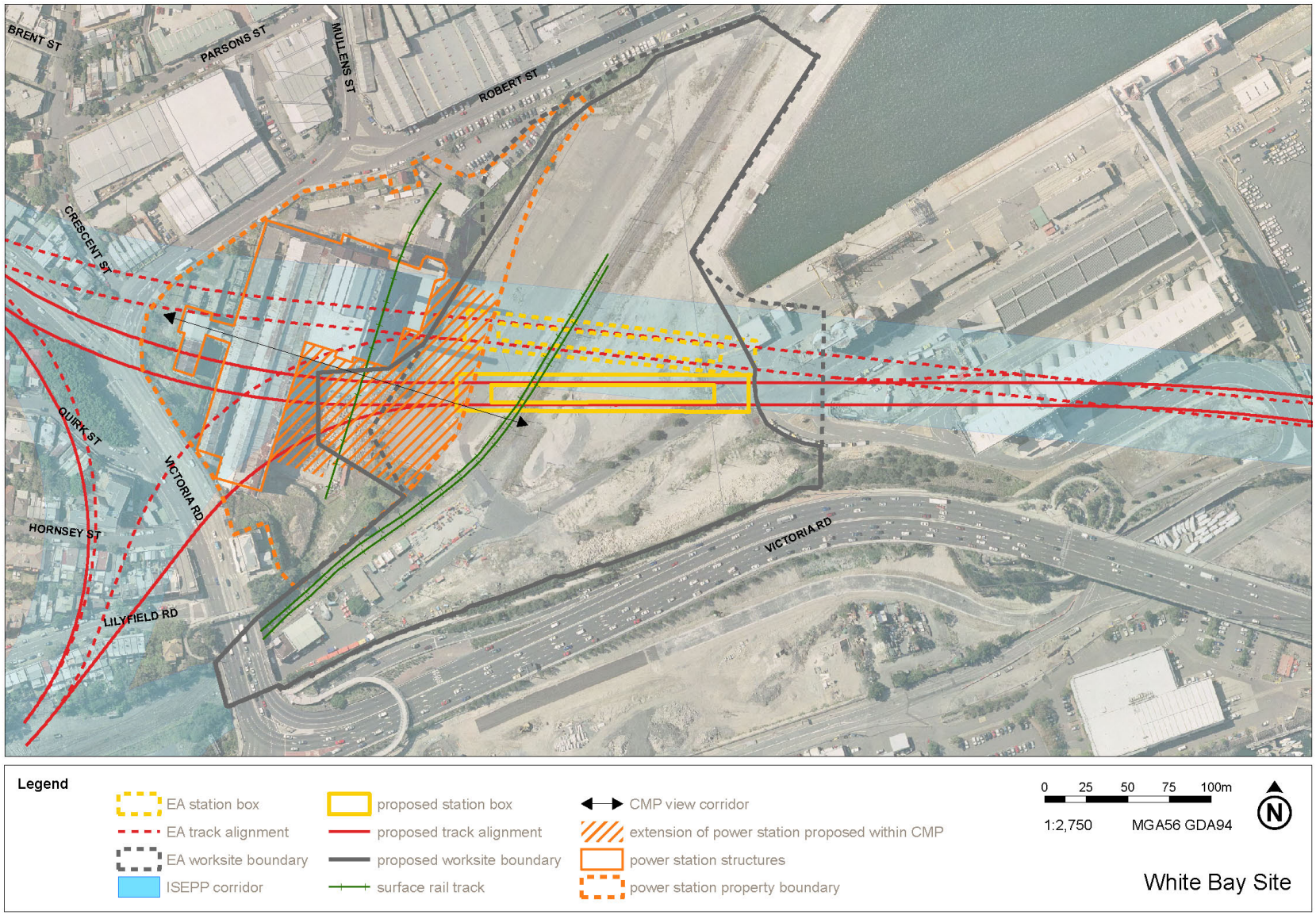


Figure 5.2 White Bay Station box and alignment changes

Ground-borne noise and vibration – main alignment

As shown in Figure 2 of **Appendix E**, the modelling results indicate that predicted ground-borne vibration levels for buildings located above or near the main alignment between Anzac Bridge and Gordon Street would be below the residential design goal. Compliance with the ground-borne vibration goals would be achieved for all sensitive receiver locations above or near the alignment, with the predicted ground-borne vibration levels below 90 dBV at all receivers.

Consistent with the Environmental Assessment, a high attenuation trackform is proposed for both depot connections (near Lilyfield Road) and the main alignment (near Robert/Gordon streets) in order to achieve compliance with the ground-borne noise design goals.

A summary of the predicted ground-borne noise levels with the proposed trackform is provided in Figure 3 of **Appendix E** for buildings located above or near the alignment between the Anzac Bridge and Gordon Street. The modelling results indicate that compliance with the ground-borne noise goals would be achieved for all sensitive receiver locations above or near the alignment.

Ground-borne noise and vibration - depot connection

The predicted ground-borne noise levels at the depot connections are provided in Figure 4 of **Appendix E**. The modelling results indicate that compliance with the ground-borne noise goals would be achieved for all sensitive receiver locations above or near the alignment.

Mitigation and management

The ground-borne noise and vibration modelling indicates that a trackform design that incorporates high attenuation rail fasteners would be sufficient to achieve compliance with the ground-borne noise and vibration goals at all sensitive receiver locations between the Anzac Bridge and Gordon Street, Rozelle for the revised alignment at White Bay. This is consistent with the ground-borne noise and vibration assessment for the alignment assessed in the Environmental Assessment.

Property and Master Planning

The re-positioning of the station box would require the alignment to move outside of the State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) interim corridor in the vicinity of the White Bay Station box (as shown in Figure 5.2). This would affect additional industrial land at White Bay. No additional residential land outside the interim corridor would be affected. The construction zone would also need to extend to the western boundary adjacent to the power station, thereby temporarily affecting the lands owned and managed by Sydney Harbour Foreshore Authority.

The new station location possibly improves the future development potential of the site. So that the future use of the site is not compromised and maximum flexibility remains in the site, the design of the station box would sustain development loads.

There is currently no requirement for surface buildings at the site other than a large, low level roof structure covering the station box, thereby having minimal impact on the view corridor. However the reference design does include two-storey service buildings at the platform ends, housing plant and ventilation vents and these buildings may be perceived as having an unacceptable impact on the view corridor. Given the open site, the current reference design would be amended as part of a master planning exercise to incorporate the view corridor.

Mitigation and management

The station should be designed so that the temporary and future permanent structures facilitate adaptive reuse of the Power Station and its future conservation.

Sydney Metro would consult with Sydney Harbour Foreshore Authority during the development of the detailed design. Upon finalisation of the detailed design, Sydney Metro would advise Sydney Harbour Foreshore Authority of land acquisition requirements for the project.

Heritage

As described in the Environmental Assessment (section 13.5.5 Volume One and in section 8.5 of Technical Paper 5 *Non-archaeological heritage*), the White Bay Station (item WB1 in Figure 8.1 of the Technical Paper) has been assessed as having state significance and is listed on the State Heritage Register.

The Environmental Assessment determined that the construction site on the eastern side of White Bay Power Station would likely impact archaeological items, including any remnant rail lines and services connected to the operation of the power station, should they exist in the area. These items were regarded as having low heritage significance. It was assessed that the permanent works of the station would lie outside of the power station boundary and the overall heritage impact on the power station would be neutral to slight.

In the revised design the station box would be moved approximately 25 to 50 metres south. No movement of the station box west would be required, However the extended construction zone for the cut-and-cover construction of the turn-out to the stabling yard would extend into the power station curtilage by approximately 35 metres further than the previous reference design. These changes are shown in Figure 5.2.

The relocated station box would extend into the area of the former Coal Yards, which are assessed in the Conservation Management Plan (CMP) for the White Bay Power Station (Design 5 Architects 2004) as being of little or neutral significance.

The CMP includes a plan showing areas appropriate for future development. The plan identifies a significant view corridor through the site to the south of Boiler House No. 1 that needs to be protected in any future development. The design of the station box assessed in the Environmental Assessment would not have interfered with either the development area or the view corridor. However, under the revised design the station box would impact on both.

In summary, the relocation of the station box would intrude into the curtilage of a building that is of state heritage significance and could influence the future development potential (and thus the conservation) of the power station. However, the final design of the above-ground elements of White Bay Station (height, scale etc) would address the significant view corridor within the power station group.

The western extension to the construction zone, to enable cut-and-cover construction of the turn-out to the stabling yard, would extend into an area assessed in the CMP as having high heritage significance (the site of the former Boiler House No. 2) and another area of exceptional significance (the Railway Corridor). The revised design would not include permanent above or below ground structures other than the running tunnels, which would be located below the existing ground surface.

The CMP envisages a new building on the site of the former Boiler House No. 2 to recreate its original volume, and the maintenance of the former railway corridor as an open area. This suggests that, at least in the case of the Boiler House site, the surviving physical fabric may be less significant than the ability to interpret the former structure. Policy 1.1.2 of the CMP states:

> *It may be that a proposal for change may include alteration to some highly significant elements or spaces. Where such changes retain and, most importantly, respect the overall significance and quality of the space or element, and are ultimately reversible (i.e. the removed or altered elements can be returned to their original configuration without damage should the use or requirements change again) then such changes may be considered acceptable.*

Therefore, provided appropriate prior investigation and recording is undertaken before works commence (possibly involving careful relocation of significant elements), and the affected area is reconstructed on completion of the works in a way that does not preclude the future redevelopment of

the Boiler House No 2 site, the heritage impact of the western extension of the construction zone into the power station site should be able to be managed without undue adverse heritage impact.

Mitigation and management

Although the exposed railway tracks in concrete paving do not appear to be affected by the proposed construction zone, there may be more track concealed under the later bitumen/gravel finish to the west and this would need to be investigated carefully before work begins. In addition, the site of the former Boiler House No 2 could be expected to retain a range of remains connected to the operation of the power station, some of which would be disturbed by any sub-surface impacts within the extended worksite.

Further physical investigation would be carried out in accordance with the Statements of Commitment to identify the likelihood of encountering any surviving sub-surface items. Any significant items found would require appropriate recording and may also require careful relocation and storage, followed by reconstruction on completion of the works. Any existing stored items on the site affected by the project should be relocated by SHFA before work begins.

The impacts associated with the relocation of the station box could be reduced through detailed design of the western end of the above ground component. There may also be opportunities for the integration of a future metro station into the redevelopment of White Bay Power Station.

5.1.4 Preferred station design for Pyrmont Station (eastern entrance)

The environmental assessment provided two main alternatives for the station entrance design for the eastern entrance of Pyrmont Station. The preferred alternative, as highlighted in the Environmental Assessment, was the Alternative 2 option. Alternative 2 is confirmed as being the proposed option that will be developed further during the detailed design phase of the project.

The design for Pyrmont Station will have the following inclusions:

- Partial demolition of the rear of the terraced shops (about 145m^2) at 3-9 Union Street to allow construction of the eastern entrance building, a services building and egress shafts behind the four retail tenancies.
- Retention of about 90 per cent of the buildings that make up the terraced shops at 3-9 Union Street, including the facade and the bulk of the buildings that have pre-1900 structural elements.
- A new three-story station entrance structure on the vacant corner block (currently occupied by *Bartino's Cafe* outdoor seating at 11 Union Street). The structure would re-establish a building in keeping with the scale of the Victorian-era terrace that once stood at the end of the row of shops at the corner of Union and Pyrmont streets.
- Construction of the station box using open-cut construction methods, within a Union Street construction site that is approximately 1230 m^2 in size, with hoardings within three metres of the front of the properties on the northern side of Union Street.
- The acquisition of the four tenancies (No's 3, 5, 7 and 9 Union Street) for the duration of the construction phase, which is necessary to allow construction in front of these buildings in the area currently occupied by Union Street. Following construction of the new station, the terraced buildings would be available to reopen for retail purposes.
- Provision of a rear lane at the back of the terraces for access to the service buildings and to the rear of the terraces.
- Extending Union Square between Paternoster Row and Pyrmont Street and reconfiguring Union Square to allow access from Paternoster Row.

The proposed arrangement and the extent that the existing heritage fabric would be affected are shown in Figure 5.3. It is noted that the terraced shops at 3-9 Union Street are not individually heritage listed, but are within the Pyrmont Heritage Conservation Area.

Figure 5.3 demonstrates that whilst some of the building structure and heritage value would be lost due to the construction of Pyrmont Station eastern entrance, the majority of the original 1888 construction would be retained. In addition, a preliminary survey of the buildings found that much of the 1888 building fabric in the areas proposed for demolition has been significantly altered, with little of the original fabric (wall mouldings, fireplaces etc) remaining.

The adoption of this station design would also require a shift in the alignment to the north, so that the station cavern would be located below more terrace properties on Union Street. This adjustment of the station box to the north is depicted in Figure 5.4.

Given the importance of designing the station entrance within the Heritage Conservation Area, Sydney Metro has initiated a Design Principles Workshop process for Pyrmont. The aim of the Workshops is to seek input from a range of stakeholders in the development of design principles. Participants include representatives from the community, local businesses, local councils, professional bodies and government agencies The design principles will be developed further in consultation with the Design Review Panel (Statement of Commitment No.10). In addition, Statement of Commitment No.17 notes that the design of these elements will be guided by established principles for contextual design, such as those set out in the publication Design in Context (NSW Heritage Office and Royal Australian Institute of Architects).

In addition, Statement of Commitment No. 10 establishes a Design Review Panel to assist in resolving integrated design issues at the stations.

5.1.5 Barangaroo-Wynyard Station - interface with Kent Street Pedestrian Tunnel

The Environmental Assessment indicates that the Barangaroo-Wynyard Station would be located beneath Margaret Street between Clarence and York streets, about 17–37 metres below street level. The eastern station entrances are proposed at the current Kent Street pedestrian subway entrance at 1 Margaret Street and at 30-38 Clarence Street at the De La Salle House building adjacent to York Lane.

The Environmental Assessment notes that the most significant pedestrian impact associated with construction of the subway entrance at 1 Margaret Street would be the closure of the Kent Street pedestrian tunnel, which provides pedestrian access between CityRail's Wynyard Station, Erskine Street and Kent Street.

The closure of the existing Kent Street tunnel as a result of the Sydney Metro works provides an opportunity to consider the Barangaroo Pedestrian Link on this alignment rather than the current Margaret Street alignment. A new Statement of Commitment will establish a mechanism to review the feasibility of an alternative alignment for the Barangaroo Pedestrian Link along the alignment of the existing Kent Street tunnel.

Construction impacts would still be anticipated, including the short-term closure of the Kent Street pedestrian tunnel. However, Sydney Metro will develop options for the staging of works seeking to maximise the opportunity to keep open for as long a period as can practicably be achieved, that section of the Kent Street tunnel from Kent Street to Clarence Street.

Alternative pedestrian routes will be provided when this section of the Kent Street tunnel is closed for construction works. This route will meet all accessibility and safety requirements for temporary routes of this nature, including providing cover and access for families accessing this route to attend childcare facilities.



NOTE: INITIAL SURVEY INDICATES ALTERATIONS AND ADDITIONS BOTH AT REAR AND WITHIN FOOTPRINT OF 1888 BUILDINGS

Indicative only, subject to detailed design.

Figure 5.3 Proposed Pyrmont Station design overlaid with current building outlines and 1888 building survey outlines



Figure 5.4 Change in project alignment at Pyrmont Station

6 Final Statement of Commitments

As a result of the submissions received during the exhibition period, the draft Statement of Commitments outlined in Chapter 21 of the Environmental Assessment has been amended and finalised. The final modified Statement of Commitments proposed is provided in **Appendix A**.

The final Statement of Commitments aims to specify what environmental outcomes would be achieved and is presented in a format that is readily auditable and transparent.

Following project approval, the finalised Statement of Commitments would guide subsequent phases of the proposed development. Any consortium or contractor selected to undertake planning, design, construction and/or operation of Stage 1 would be required to undertake all works in accordance with the final Statement of Commitments and the Conditions of Approval set by the Department of Planning.

The Statement of Commitments provided in **Appendix A** requires documentation preparation and the implementation of a management structure as detailed in the following listings.

General commitments

1) A sustainability plan
2) Sydney Metro / RailCorp interface Agreement
3) Establishment of an agency Central Project Coordination Committee

Design phase commitments

4) Establishment of a design review panel
5) Station design plans
6) Design principles report
7) Joint design groups for:
   - Barangaroo / Wynyard precinct
   - Central Station
   - Town Hall Square Station
8) Heritage interpretation strategy
9) Public art plan
10) Transport integration
11) Geotechnical and settlement management
12) Noise and vibration limits

Construction phase commitments

1) Events Management Strategy
2) Barangaroo Construction Management Committee
3) Demolition and other early works strategy
4) Assistance to affected businesses
5) Stakeholder and community involvement strategy
6) Environmental management strategy, with sub-plans and strategies for:
   - Heritage management
   - Spoil management (including Yellow Block sandstone, contaminated spoil and acid sulfate soil)
   - Waste management
   - Noise and vibration
   - Construction air quality management
   - Construction water management
   - Carbon/energy management
   - Landscaping
   - Compliance tracking
   - Site-specific environmental management
7) Traffic and transport management

Operational commitments

1) Sustainability strategy.

2) Environmental management, including:
   - Carbon and energy management
   - Water resources management
   - Waste management
   - Noise and vibration management

3) Transport integration strategy

7 Conclusions and next steps

This Submissions Report has addressed the outcomes of the consultative process conducted during and following the public exhibition of the Environmental Assessment for the proposed Sydney Metro Network Stage 1 (Central to Rozelle) project.

In addressing compliance with legislative requirements and the requirements of the consultative process, this Submissions Report demonstrates that:

- Sydney Metro has considered all issues arising from the submissions and provided a written response to the issues (chapters 3 and 4).
- Where required, minor modifications to the reference design have been proposed and a justification that each modification is minor or beneficial has been included (Chapter 5).
- The final Statement of Commitments (**Appendix A**), which has been amended as a result of the submissions received, demonstrates the proponent's commitment to a comprehensive management approach to minimise environmental impacts.

In consideration of the above, Sydney Metro seeks the approval of the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* for the proposal as described in Chapter 6 and 7 of the Environmental Assessment and Chapter 5 of this Submissions Report.

Appendix A Final Statement of Commitments





Table 1.1 Final Statement of Commitments

Outcome	Ref #	Commitment	Project phase
Sustainable design and construction			
Governance			
Sustainability is embedded in project design and decision making.	1	A Sustainability Plan will be developed and implemented for the project. It will include: a. Overview of the sustainability policy framework in NSW and Australia. b. Objectives and strategies for, as a minimum: – Adaptation to climate change. – Greenhouse gas emissions and energy use. – Minimisation of resource use and recycling. – Water management. – Biodiversity. – Community benefit. c. A methodology for embedding sustainability initiatives into the design development and construction process, including: – A sustainability initiatives database that tracks the identification and implementation of sustainability initiatives. – A specific sustainability review as part of each design package. – Guidelines to enable innovation in design and construction. d. A monitoring and reporting framework. e. Engagement of a Sustainability Manager with appropriate qualifications, experience and technical resources. f. A list of roles, responsibilities and resourcing. g. A listing of sustainability matters in the project issue registers and risk register. h. A Sustainable Procurement Strategy identifying opportunities to reduce the volume and carbon footprint of the amount of resources required to construct and operate the project.	Design and construction

Outcome	Ref #	Commitment	Project phase
Adaptation to climate change			
A design and finish that can adapt to the effects of climate change.	2	a. Hydrology and drainage design at the Rozelle stabling and maintenance depot will address current predictions of future sea level rise, increased rainfall intensity and storm surge, due to climate change. b. Resilient finishes and materials to withstand likely future solar radiation will be used where practicable. c. Station and rolling stock ventilation systems will be designed for future peak temperatures.	Design
Greenhouse gas emissions and energy use			
Contributions to climate change are minimised by reducing the energy consumption and greenhouse gas emissions of the project.	3	a. Operational energy emissions offset by purchasing 100 per cent renewable energy. b. Construction energy emissions partially offset by purchasing 20 per cent renewable energy. c. Strategies to lower the embodied energy of concrete will be investigated and implemented, where reasonable and feasible. d. Metro trains will use regenerative braking to reduce traction energy demand, thereby boosting the energy efficiency. e. Demand management measures will be implemented to reduce building energy consumption.	Design and construction
Resource minimisation/recycling			
Resources are used to their maximum efficiency over the project lifecycle.	4	a. Where reasonable and feasible, fill material for the Rozelle stabling and maintenance depot site will be sourced from spoil arising from the project. b. All stations will have facilities for on-site waste separation. c. Strategies to optimise the use of recycled steel in concrete reinforcement will be investigated and implemented, where reasonable and feasible.	Design and construction
Water management and flooding			
Water is managed to maximise its beneficial use. The risk of flooding is minimised.	5	a. Rozelle stabling and maintenance depot will capture rainwater to supply the depot's non-potable requirements. b. Rozelle stabling and maintenance depot will aim to recycle 95 per cent of train wash water. c. Rozelle stabling and maintenance depot will have water-sensitive urban design features, including permeable paving and vegetated swales. d. Water-efficient fixtures and fittings will be utilised across the project. e. Construction water will be recycled where practicable.	Design and construction

Outcome	Ref #	Commitment	Project phase
Biodiversity			
Enhanced habitat for native fauna.	6	Native species will be used in preference to introduced species in landscaping where appropriate.	Design and construction
Community benefit			
A project that provides maximum benefit to the community.	7	a. Passengers will be provided with access to real-time transit information. b. There will be a high quality public domain around stations.	Design and construction
Sustainable office design			
Green building design and operation at the Rozelle stabling and maintenance depot.	8	The offices and rolling stock buildings at Rozelle stabling and maintenance depot will be designed to a 5 Star Green Star Office Design and Office Interiors Rating and NABERS 4.5 star performance.	Design and Construction
Cumulative impacts and interactions			
A coordinated agency response to infrastructure development.	9	a. The Proponent will establish a Central Project Coordination Committee (CPCC) with the Department of Planning (DoP) and other agencies as required The CPCC will: – Provide strategic input into the management and coordination of concurrent major projects so as to minimise potential cumulative impacts arising during construction. – Will also identify complimentary activities that may benefit from a whole-of-government approach to planning, design and/or construction. a. The CPCC shall meet no less than monthly. Invited authorities will have no more than two delegates and delegates must be vested with decision making powers on behalf of the authority.	Design and Construction

Outcome	Ref #	Commitment	Project phase
Integration with major events organisers and management of impacts on events.	9A	An Events Management Strategy will be prepared and implemented to minimise impacts on cultural / special events adjacent to major project construction sites during construction. The strategy will include: a. Consultation procedures with local Councils, the CPCC, Events NSW, Tourism NSW and event proponents. b. Individual event management plans for each significant event, identifying potential impacts and associated management strategies. c. Procedures for modifying working hours and construction activities for significant and/or sensitive events, such as Anzac Day Services. d. Procedures for modifying the location and layout of events. e. Communication protocols for advising the public of changes to events and construction activities.	Construction
An integrated construction strategy for metro and the Barangaroo Development.	9B	A Barangaroo Construction Management Committee will be established between the proponent and the Barangaroo Delivery Authority (BDA) as a working group to the CPCC. The Committee will be established to coordinate construction activities at Barangaroo and manage cumulative impacts. The committee will identify strategies for: a. Traffic management b. Pedestrian access c. Spoil management (including disposal and reuse) and contamination d. Stakeholder consultation e. Site amenity with regard to presentation hoardings, fencing and site offices f. Early return of the metro construction site to BDA	Design and construction

Outcome	Ref #	Commitment	Project phase
Integration of metro design, construction and operations with RailCorp activities.	9C	The proponent and RailCorp will enter into an Interface Agreement for the project. The interface agreement will include: a. Approval, certification and endorsement processes by RailCorp prior to the commencement of works. b. Requirements for: – geotechnical and structural modelling and reporting – noise and vibration monitoring and reporting – electrolysis reporting – transformer substations and high voltage cable routes – Stormwater and waterborne contaminants management c. Survey information including the vertical and horizontal relationship of the proposed Works with regard to existing and proposed rail infrastructure. d. Monitoring during excavation, tunnelling and construction phases. e. Detailed requirements for drawings and other design information. f. A process to establish rail safety plans including instrumentation and the monitoring regime. g. Detailed service searches from RailCorp. h. Any blasting approvals required. i. A joint inspection process for the rail infrastructure and property in the vicinity of the project. j. A process to develop a Risk Assessment/Management Plan and detailed Safe Work Method Statements (SWMS). k. A process to resolve impacts on RailCorp designated parking areas for emergency or maintenance access to critical rail infrastructure. l. A process to resolve and monitor changes impacting pedestrians, passengers, cyclists, taxi and kiss-and-ride during construction and fit-out m. A process to prepare and submit Rail Safety Plans (RSP) as required that meet RailCorp's requirements prior to the commencement of works. n. The requirement for Specifications for Emergency Management System hardware for the end state, and detailed Emergency Management Plans or Protocols. o. A management plan to address the impacts associated with access disruptions to the loading dock and other back of house facilities at Central Station. p. A process to ensure that any proposal to remove the slip lane at the Pitt Street/Eddy Avenue intersection has written agreement from RailCorp as this will impact on RailCorp Emergency Response Group facilities. q. Dispute resolution process developed in consultation with the Director General NSWTI.	Design, construction and operation

Outcome	Ref #	Commitment	Project phase
Project design principles			
A design that is consistent and fully integrated within its urban context and urban form.	10	a. A Design Review Panel will be established to review the design of stations and associated precinct works. b. The Design Review Panel will comprise independent specialist expertise in architecture, urban design, transport and sustainability.	Design, construction and operation
Station plans that consider all aspects of the project.	11	a. The Proponent will ensure that station plans are reviewed in response to project changes. Station plans will address: – Development of the land, including development for integrated transport facilities such as bus or other transport interchanges. – Traffic and parking arrangements. – Pedestrian links and access facilities. – Retail and commercial development associated with metro railway stations. – Public domain amenities and improvements. – Station design and amenity. – Other matters ancillary to the operation of metro stations and any associated transport or other facilities. b. The Proponent will ensure that consultation has occurred with other relevant public authorities when preparing a station plan or making amendments to a plan. c. These plans will be provided to the Minister for Planning and other relevant public authorities in connection with the exercise by the Minister or authorities of statutory functions relating to the subject land.	Design
High quality design outcomes for all stations, structures, depot and public domain.	11A	The proponent will demonstrate the achievement of high quality design of the stations, structures, depot and public domain through: a. Application of the principles and directions contained in the Sydney Metro Station Plans and Urban Design and Master Planning Report. b. Providing a report that: – Documents how the design (overall project design and the design of individual elements) addresses the design principles and directions. – Provides advice on agency and council consultation in the preparation of the designs. – Provides advice on how the design has responded to feedback from the Design Review Panel. – Is submitted to the Department of Planning prior to commencement of construction of above ground structures.	Design

Outcome	Ref #	Commitment	Project phase
Minimised overshadowing from buildings at Rozelle and Pyrmont.	11B	The design of new buildings at Pyrmont and Rozelle Stations will specifically consider measures to minimise overshadowing on adjoining residential properties at 9.00 a.m., noon and 3.00 pm on 21 June.	
Identification of management issues that will enable the successful construction and delivery of the Barangaroo Wynyard Precinct.	11C	The proponent will establish a joint design group with NSWTI, BDA, RailCorp, RTA and City of Sydney to further develop and resolve the integrated design issues associated within the Barangaroo Wynyard Precinct. This strategy will describe: a. The surface pedestrian enhancements works directly associated with the construction and operation of the project and the Barangaroo Pedestrian Link (BPL). b. The design and integration for the proposed project structures located on the Barangaroo site. c. Construction access arrangements, including: the opportunity to keep open, for as long a period as can practicably be achieved, that section of the Kent Street tunnel from Kent Street to Clarence Street; access arrangements to CityRail's Wynyard Station; and the maintenance of public access and setbacks to the waterfront at Barangaroo. d. Investigations into the feasibility of an alternative alignment for the BPL along the alignment of the existing Kent Street tunnel.	
Integrated design at Central Station.	12	Sydney Metro will establish a joint design group with RailCorp to further develop and resolve the integrated design issues at Central Station. The Proponent will submit the agreed detailed design, including staging, to Department of Planning for information.	Detailed design
Integrated design at Town Hall Square Station.	13	Sydney Metro will establish a joint design group with City of Sydney Council and other parties as required to further develop and resolve the integration of Town Hall Square Station with Council's proposal for a public space. The Proponent will submit the agreed detailed design, including staging, to DoP for information	Detailed design
Developments that comply with council development controls.	14	<u>Residual Development – general approach</u> Residual development on land acquired for the project will be subject to relevant planning controls, including relevant LEPs and DCPs (eg. FSR, height and setback controls). The project will be designed and constructed to allow for future development. Approval for development sites will be sought in accordance with the *Environmental Planning & Assessment Act 1979*.	Design, construction and operation

Outcome	Ref #	Commitment	Project phase
	15	Development on eastern construction site at the Metro Barangaroo-Wynyard Station (integrated with station complex) The development of a future commercial building above eastern construction site at Metro Barangaroo-Wynyard Station will be subject to further approval from the relevant approval authority, or delegate.	Design, construction and operation
	16	Interim uses Following construction of the project, the Proponent will manage any vacant construction sites before transferring them to third parties for redevelopment in the longer term. Where residual development may not occur in conjunction with operation of the project, the Proponent will provide interim uses with the aim of activating street frontages. Interim activities undertaken as part of the project, including retail/commercial uses, will be implemented in consultation with the relevant local Council.	Design, construction and operation
Heritage			
Provision of heritage input into the design process	17	Where new built elements associated with the metro project are adjacent to significant heritage buildings or conservation areas, the design of these elements will be guided by established principles for contextual design, such as those set out in the publication *Design in Context* (NSW Heritage Office and Royal Australian Institute of Architects).	Pre-construction
	17A	A Heritage Interpretation Strategy will be developed, for indigenous and non-indigenous heritage, by a suitably qualified heritage consultant to inform station design. The proponent will engage an independent heritage architect to review all design plans that affect a heritage item and validate that the design complies with a relevant Heritage Interpretation Strategy and any approved Conservation Management Plan.	Design
Public art strategy			
Attractive public domain area, with greater sense of community interaction.	18	A Public Art Plan will be developed in consultation with local councils, local community, local Aboriginal stakeholders, the business community and key stakeholders and the Arts Council of NSW. It will be implemented to ensure that: • The passenger experience is enhanced. • Public art is integrated into station design. • Public art is used to enhance public spaces. • An ongoing arts and cultural program is established for the operational phase of the project.	Design

Outcome	Ref #	Commitment	Project phase
Geotechnical and settlement management			
Adoption of settlement management strategy to minimise risk of ground settlement during construction.	19	a. A Geotechnical and Settlement Management Strategy will be prepared and implemented to ensure that geotechnical conditions are modelled and the likely effects of any groundwater drawdown is considered as part of the detailed design development process. This strategy will include a process for ensuring that full details of existing and approved excavations, basements, tunnels, stations and other subsurface structures are identified. b. Settlement criteria for individual sensitive utility structures (including CityRail tunnels, stations and the Cross City Tunnel, brick sewers, gas, electricity and telecommunication services) will be determined in consultation with the relevant authorities and owners prior to the start of tunnelling in the vicinity of these structures.	Design
	20	Groundwater levels and ground settlement will be monitored. Monitoring locations and durations will be determined from the detailed geotechnical model.	Construction
Operational noise and vibration design			
Ground-borne noise and vibration– train operations			
Vibration levels during train passbys do not cause disturbance to building occupants.	21	a. Ground-borne vibration design limits of 103dBV (0.14mm/s) for the night-time period and 106dBV (0.2mm/s) for the daytime period will be adopted at residential receivers. b. For critical working areas such as hospital operating theatres and precision laboratories, vibration design limits of 100 dBV (0.1mm/s) will be adopted. c. For offices, schools, educational institutions and places of worship, vibration design limits of 112 dBV (0.4mm/s) will be adopted. d. For workshops, vibration design limits of 118 dBV (0.8mm/s) will be adopted. e. Vibration limits are based on the maximum 1s RMS vibration level, not to be exceeded over any 24hr period and are based on the preferred continuous vibration levels in the 'Assessing Vibration: a technical guideline' (DEC, 2006).	Design
Minimisation of ground-borne noise levels at nearby sensitive receivers.	22	The following limits for ground-borne noise will be adopted for nearby sensitive receivers.	Design
		Receiver / **Noise trigger level ($dBA_{LAmax\ (slow)}$[2])**	
		Residential – night-time (10pm to 7am) / 35 dBA	
		Schools, educational institutions, places of worship[1] / 40 dBA to 45 dBA	
		Retail areas[1] / 50 dBA	

Outcome	Ref #	Commitment		Project phase
		General office areas[1]	45 dBA	
		Private offices and conference rooms[1]	40 dBA	
		Theatres[1]	35 dBA[3]	
		[1] When in use. [2] LA_{MAX} refers to the maximum noise level not to be exceeded over any 24hr period and is measured using slow response setting on a sound l level meter. [3] 35dBa or lower level subject to further assessment for the Lyric Theatre		
Minimisation of ground-borne noise levels at nearby sensitive receivers.	23	The track design will incorporate moderately resilient and/or highly resilient rail support systems to the greatest extent practicable, to achieve compliance with the ground-borne noise design limits.		Design
Airborne noise– train operations				
Minimisation of airborne noise levels at nearby sensitive receivers.	24	For residential receivers, schools, educational institutions, hospitals, passive and active recreation areas, and places of worship, the 'noise trigger' levels in the *'Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects'* (DECCW) will be adopted as design limits for the operation of the project. All reasonable and feasible measures will be implemented to meet the limits.		Design
Minimisation of general train noise and any curve squeal noise (which may be generated from the curved underground sections).	25	The portal extensions near Rozelle stabling and maintenance depot will be internally lined with acoustically absorptive material to ensure, to the greatest extent practicable, that the air-borne noise limits are achieved.		Design

Outcome	Ref #	Commitment	Project phase
Minimisation of general train noise and any curve squeal noise (which may be generated from the curved underground sections).	26	During the detailed design stage, the risk of curve flanging and curve squeal will be considered at locations where the curve radius is less than about 300 metres, and reasonable and feasible measures will be taken to ensure that noise and vibration levels are within specified limits.	Design
Minimisation of noise within rolling stock and stations.	27	Measures to address noise levels within rolling stock and stations will be identified and implemented where reasonable and feasible.	Design
Airborne noise – train stabling and maintenance			
Minimisation of airborne noise levels at nearby residential receivers.	28	For residential receivers, the operational noise goals specified in 'Industrial Noise Policy' (DECCW) and applicable INP Application Notes will be adopted as design limits for noise from the Rozelle stabling and maintenance depot.	Design
Minimisation of alarm system noise levels at nearby residential receivers.	29	All audible alarm systems within Rozelle stabling and maintenance depot will be non-tonal.	Design
Airborne noise – ancillary facilities			
Minimisation of airborne noise levels from ancillary facilities at sensitive receivers.	30	For steady noise emissions from tunnel ventilation equipment and other ancillary equipment, the operational noise goals specified in 'Industrial Noise Policy' (DECCW) will be adopted as design limits. All reasonable and feasible measures will be implemented to meet the limits.	Design

Outcome	Ref #	Commitment	Project phase
Minimisation of airborne noise levels from ancillary facilities at sensitive receivers.	31	For noise breakout from the ventilation shafts and service facilities during train passbys, adopt airborne noise limits (external) of $L_{Amax(Fast)}$ 55 dBA at residential facades and $L_{Amax(Fast)}$ 65 dBA at commercial facades. All reasonable and feasible measures will be implemented to meet the limits.	Design
Demolition and early works strategy			
Identification of the environmental and transport management measures that will enable demolition and early works to progress in advance of project works.	32	A Demolition and Early Works Strategy will be prepared to address the project works that are to commence prior to the finalisation of the Construction Environmental Management Plan. This strategy will be certified by the Environmental Management Representative and shall include: a. Overview of construction activities. b. Identification of any additional approvals and other statutory responsibilities. c. Notification of adjacent residents and businesses. d. Specific hours of work. e. Measures to avoid and/or control the occurrence of environmental impacts. f. Measures to avoid and/or control the occurrence of traffic, transport and road network impacts. A copy of this Strategy will be submitted to DoP prior to the commencement of demolition and other early construction works.	Pre-construction
Minimisation of noise impacts from demolition.	33	Where practicable, the demolition of buildings will commence with internal works. External walls will be left intact as long as possible to minimise noise and dust impacts and maximise opportunities for the recycling of building waste.	Construction

Outcome	Ref #	Commitment	Project phase
Assistance to affected businesses			
Minimisation of impacts on affected businesses during construction.	34	A Business Management Strategy will be prepared and implemented to minimise impacts on businesses adjacent to major construction sites during construction. It will include measures to maintain vehicular and pedestrian access during business hours and the visibility of the business appropriate to its reliance on such. The strategy will include: a. Business management plans for each construction site, identifying affected businesses and associated management strategies. b. A Small Business Owners Support Program to provide assistance to small retail business owners adversely impacted by construction. The program will be administered by a Retail Advisory/Support Panel to be established by the Proponent. The program will have appropriate specialist representatives and report to the CEO of Sydney Metro.	Pre-construction
Stakeholder and community involvement during construction			
Stakeholders and the community are well informed about the project.	35	A strategy for stakeholder and community involvement will be implemented throughout the delivery of the project. It will include: a. Identification of necessary staffing resources. b. Provision of a Construction Stakeholder and Community Involvement Plan (SCIP), which will provide procedures for: – Regular communication with the Environmental Representative and government stakeholders including, but not limited to, DECCW, DoP, RTA, RailCorp and relevant local councils. – The regular dissemination of information to the community regarding the progress of the project and notifying stakeholders and community of upcoming project activities and impacts (particularly with regard out of hours work and potential noise and vibration). – The holding of public displays, local events and activities. – Establishing the means by which the community stakeholders can discuss or provide feedback to the construction team, including regular information sessions at or near the construction sites. – Responding to any enquires or feedback from the community and stakeholders in relation to the environmental management and delivery of the project. – Receiving and managing complaints consistent with AS 4269 Complaints Handling, including provision for a 24-hour 1800 contact number. – Managing site visits. – Managing property inspections. – Establishing community focus groups to provide input on aspects of the project such as landscaping and noise mitigation.	Pre-construction and construction

Outcome	Ref #	Commitment	Project phase
		c. The Proponent will appoint an Independent Stakeholder and Community Liaison Representative for the duration of construction to provide advice on communications, review of the SCIP and facilitation and reporting of any community meetings. d. A website will be established to provide electronic information associated with the construction of the project. Each major construction site will have a designated contact person to enable public contact during construction in relation to conditions of approval.	
Construction environmental management			
Clear definition of environmental management activities during design and construction.	36	An Environmental Management System (EMS) consistent with the principles of ISO 14001, will be documented in a Construction Environmental Management Plan (CEMP). The CEMP outlining the environmental protection measures to mitigate the impact of construction activities and identify opportunities to provide environmental benefit, such as resource use minimisation, will be prepared prior to construction and submitted to the Director-General of the DoP for approval. In particular, the CEMP will document: a. The statutory and policy framework for the environmental management of the project. b. Roles, responsibilities and resourcing of key project personnel. c. An environmental risk and opportunities matrix. d. Environmental key performance indicators (KPIs) and targets. e. The environmental management documentation structure. This will include the scoping of various sub-plans (refer below) to the CEMP, including: – Carbon/energy Management Sub-Plan. – Construction Water Management Sub-Plan. – Construction Noise and Vibration Management Sub-Plan. – Landscape Management Sub-Plan. – Heritage Management Sub-Plan. – Construction Waste Management Sub-Plan. – Spoil Management Sub-Plan (including management of Yellow Block sandstone, contaminated material and acid sulfate soils). – Construction Air Quality Management Sub-Plan. f. A matrix of environmental issues against each construction site and the requirement to produce site-specific Environmental Construction Method Statements (refer below) and a template ECMS.	Pre-construction and construction

Outcome	Ref #	Commitment	Project phase
		g. The Environmental Management System, will include: – A documentation preparation and management system incorporating reporting/ review requirements of Sydney Metro and the Environmental Representative. – A Compliance Tracking Program with procedures for non-conformance, corrective and preventive action. – Procedures for inspections and auditing. – Procedures for incident and emergency response. – Environmental inductions and training requirements. h. An environmental design management procedure to ensure design compliance with the Statement of Commitments and the Project Approval.	
Identification of site-specific environmental measures that implement the sub-plans.	38	Environmental Construction Method Statements (ECMSs) will be prepared and implemented in accordance with the matrix included in the CEMP to document all environmental management measures to be implemented on each construction site. Each ECMS shall be endorsed by the Environmental Representative prior to implementation. ECMSs will be: a. Plan-based, with relevant environmental aspects covered in separate tables that clearly indicate at which construction phase the measures apply. b. Prepared to include a site layout and locality plan that clearly shows significant trees, heritage items, spoil waste management areas, and noise, dust and water monitoring locations. c. Prepared for all sites including, but not limited to: – Central Station. – Town Hall Station. – Martin Place Station. – Barangaroo-Wynyard Station. – Barangaroo Pedestrian Link. – Pyrmont Station. – White Bay Station. – Rozelle Station. – Rozelle stabling and maintenance depot. – Tunnelling activities.	Pre-construction
Independent review and reporting of environmental compliance.	39	The Proponent will appoint suitably qualified and experienced Environmental Representatives – independent of the project design and construction personnel – to advise the Proponent on environmental compliance matters, undertake regular inspections of construction sites and undertake other activities as specified in the SoC and the CEMP.	Pre-construction and construction

Outcome	Ref #	Commitment	Project phase
Heritage management			
A documented construction management plan for non-indigenous heritage with project-wide and site-specific measures.	40	A Heritage Management Sub-Plan will be prepared and implemented and will include as a minimum: a. Statement of heritage management objectives. b. Review of the statutory and policy framework and application to the project. c. Register of directly and indirectly affected heritage items. d. Identification of required consultation, approvals and process for obtaining the approvals. e. Management measures to be applied across the project, and site-specific measures, for documentation in the respective ECMS. It will include the adoption of vibration testing to develop safe working distances to heritage items for various construction activities. f. Identification of site-specific heritage management plans and a program of works and investigations. These plans could apply to individual items or items within a precinct. g. Monitoring and reporting against the sub-plan. h. Roles and responsibilities of contractors, including training and pre-construction induction requirements. i. Separate contingency plans for indigenous and non-indigenous heritage.	Pre-construction
Increased awareness of non-indigenous heritage by people working on the project.	41	An overview of all relevant affected heritage sites and mitigation and management measures will be included in site inductions and these sites will be marked on plan(s) within the ECMS.	Construction
Minimisation of impacts to heritage structures.	42	Work on heritage buildings and sites will be regularly monitored and reported by a heritage specialist during construction to ensure the minimum disturbance to significant fabric and ensure use of suitable construction methods, especially for demolition and salvage of significant materials and components	Construction
Increased awareness of indigenous heritage by people working on the project.	43	All personnel working on site will be trained about their responsibilities under the *National Parks and Wildlife Act 1974* and the procedure to follow in the event an indigenous item is discovered.	Construction

Outcome	Ref #	Commitment	Project phase
Minimisation of impacts to indigenous heritage.	44	During construction, if any previously unidentified relics are identified, stop-work procedures will be implemented and an indigenous heritage specialist consulted. Work in the affected areas will not resume until any required approvals have been received.	Construction
Spoil management			
Beneficial reuse of spoil from the project, where possible.	45	A Spoil Management Sub-Plan will be developed and implemented in accordance with the CEMP. It will include as a minimum: a. Statement of spoil management objectives. b. Review of the statutory and policy framework as relevant to the project. c. Description of expected spoil volumes by source and category, including categories for reuse. d. A documented spoil management hierarchy as follows: – On-site reuse/recycling, for example as fill material. – Beneficial reuse as engineering fill on other approved construction sites, including identification of those sites. – Off-site recycling for use in construction after processing (eg crushing) including the identification of sites. – Disposal to landfill, including the identification of sites. e. Spoil management targets. f. Alternative transport investigation to reduce road traffic movements (see 48 below). g. Methodologies for on-site spoil handling, testing – including for contamination and acid sulfate soil (ASS), in areas identified as posing a potential ASS risk – and transportation.. h. Monitoring and reporting, including extraction volumes and reuse and disposal locations. i. Roles and responsibilities, including identification of project personnel to oversee the implementation of the sub-plan. j. Contingency plans for managing ASS. k. Contingency plan for managing contaminated spoil, including the development of Remedial Action Plans and engagement of a NSW accredited site auditor, if required. l.	Pre-construction

Outcome	Ref #	Commitment	Project phase
Conservation of Yellow Block sandstone for reuse off site.	46	a. The proponent will prepare a plan for extracting, storing and reusing Yellow Block sandstone in agreement with the Department of Commerce. • Where Yellow Block sandstone is found on site the proponent will undertake extraction, transporting and storage in accordance with Plan.	Pre-construction and construction
High target for reuse and recycling virgin excavated natural material.	47	A target of 100 per cent reuse or recycling (on or off-site) of virgin excavated natural material (VENM), identified through detailed Waste Classification Assessment, will be adopted for the project.	Construction
Minimisation of impacts from transporting spoil.	48	The Proponent will undertake a feasibility assessment of barging spoil and using disused rail infrastructure to transport spoil to appropriate sites. The assessment will have regard to program constraints and practicable access to rail and barge by the project's source sites.	Pre-construction
Protection of the environment, workers and public.	49	a. Further assessment of potential contamination will be undertaken, to assess the extent or presence of contamination or hazardous materials within the project construction footprint. b. Remediation Action Plans with Site Auditor approval will be prepared where required.	Pre-construction
Construction waste management			
Documented waste management strategy.	50	A Construction Waste Management Sub-Plan will be prepared and implemented in accordance with the CEMP, and will include as a minimum: a. Statement of waste management objectives. b. Review of the statutory and policy framework as relevant to the project. c. Description of the hierarchy for sustainable waste management (avoid/reuse/recycle/ resource recovery/disposal) in accordance with NSW Government's Waste Avoidance and Resource Recovery Strategy 2007. d. Waste stream analysis for each site and each phase of the construction. e. Waste management KPIs and targets for each site and across the project. f. Management measures to be applied across the project with site specific management measures to be incorporated in the relevant ECMS.	Pre-construction and construction

Outcome	Ref #	Commitment	Project phase
		g. Centralised reporting and auditing of waste volumes and disposal destination. h. Roles and responsibilities, including the provision of a dedicated Waste Manager for the project. i. A procedure for implementation of the Sustainable Procurement Strategy, documented as part of the Sustainability Plan.	
Construction traffic and transport			
Minimisation of disruption to traffic and transport movements. Minimisation of impacts on access to properties.	51	A Construction Traffic Management Plan and Traffic Control Plans will be prepared consistent with the Framework Traffic Management Plan (FTMP) and site specific Traffic Management Plans. The FTMP is one of a series of management plans that has been developed for the construction of the CBD Metro. The four levels of traffic and transport construction related documentation are therefore as follows: a. Framework Traffic Management Plan b. Traffic Management Plans c. Construction Traffic Management Plans (CTMP) d. Traffic Control Plans (TCP). The CTMPs and TCPs will address the following: a. Measures to protect pedestrians and maintain surface public transport services throughout the CBD. b. Measures to manage traffic flows through and surrounding the construction and spoil haulage routes, including regulatory and direction signposting, line-marking and variable message signs. c. Any mitigation measures to improve the efficiency of traffic and pedestrian movement and conditions. d. Local and regional traffic impacts. e. Cumulative impacts of multiple construction sites to build the project.	Pre-construction
Relevant transport authorities are well informed of project activities.	52	a. A Traffic and Transport Liaison Group will be established to ensure that all relevant transport authorities and councils are aware of the proposed construction activities, upcoming works and related transport implication. The TTLG will progress key traffic and transport decisions during construction and undertake the consultation functions, which would otherwise occur at forums such as council traffic committees. b. The TTLG shall meet no less than fortnightly, unless otherwise agreed. Invited transport authorities and councils will have no more than two delegates and delegates must be vested with decision making powers on behalf of the authority and council.	Pre-construction

<table>
<tr><th>Outcome</th><th>Ref #</th><th>Commitment</th><th>Project phase</th></tr>
<tr><td colspan="4">Construction noise and vibration</td></tr>
<tr><td colspan="4">Construction noise and vibration goals</td></tr>
<tr><td>Minimisation of potential noise and vibration impacts at sensitive receiver locations.</td><td>53</td><td colspan="2">Noise and vibration trigger levels will be adopted for the project. Where these trigger levels are exceeded or expected to be exceeded, the Proponent will:
a. Identify additional management measures where reasonable and feasible.
b. Increase monitoring at affected sensitive receivers.
c. Notify and consult with landowners and occupants, to identify appropriate mitigation, in accordance with need. (Refer to noise strategy being developed and implemented.)</td><td>Pre-construction and construction</td></tr>
<tr><td>Minimisation of potential noise impacts at sensitive receiver locations.</td><td>54</td><td colspan="2">The following airborne construction noise management trigger levels (LAeq 15 minute) will be adopted for the project:
<table>
<tr><th>Sensitive receiver</th><th colspan="4">Time</th></tr>
<tr><td></td><td>When in use</td><td>Daytime
7.00am-6.00pm (Monday to Friday)
8.00am-1.00pm (Saturday)</td><td>Evening
6.00pm-10.00pm</td><td>Night-time
10.00pm-7.00am</td></tr>
<tr><td>Residential</td><td>N/A</td><td>RBL or LA90 Background +10 dBA</td><td>RBL or LA90 Background + 5 dBA</td><td>RBL or LA90 Background + 5 dBA</td></tr>
<tr><td>Commercial</td><td>70dBA</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Schools/child care centres</td><td>55dBA</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Places of worship</td><td>50dBA[1]</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="5">[1] The NML is 60 dBA if windows in the facility are fixed (i.e. cannot be opened)</td></tr>
</table></td><td>Pre-construction and construction</td></tr>
</table>

Outcome	Ref #	Commitment	Project phase
Identification and management of noise and vibration impacts during construction.	55	A Construction Noise and Vibration Management Sub-Plan will be prepared and implemented. It will include as a minimum: Objectives for construction noise and vibration management. a. Noise and vibration trigger levels to be adopted by the project. b. Noise and vibration impact assessment process, including the preparation of individual site specific noise impact statements (NIS) for each ECMS and for regenerated noise from shaft sinking, cavern excavation and tunnelling. The sub-plan will provide a template for the NIS. c. Mitigation and management strategies, to be applied across the project, for example: – Standard management practices for all works. – Management for works which are likely to be close to, or marginally exceeding, established trigger levels for the project. – Management for works which are likely to significantly exceed established trigger levels for the project. d. A blast management strategy (if blasting is proposed), which identifies: – Details of blasting to be undertaken. – Potential noise and vibration sensitive sites, including heritage items and RailCorp operational assets. – Noise and vibration criteria. – Requirements for asset protection. – Program of trial blasts. – Management measures including timing. – Noise and vibration criteria – Monitoring e. Provisions for stakeholder and community consultation including approval requirement of RailCorp. f. Monitoring and reporting of noise and vibration levels. g. Roles, responsibilities and resourcing. h. Reference and application of *Interim Construction Noise Guideline (DECCW, 2009)*. i. The requirements of the Sydney Metro's Construction Noise and Vibration Strategy	Pre-construction and construction

Outcome	Ref #	Commitment	Project phase
Minimisation of potential ground-borne noise impacts at sensitive receiver locations.	56	For underground excavation works, the ground-borne noise trigger levels (internal) will be $L_{Aeq,\ 15\ minutes}$ 40 dBA during the evening period and 35 dBA during the night-time period.	Pre-construction and construction
Guidelines to provide safe vibration levels for occupants.	57	In relation to human comfort, the following trigger levels (maximum 1s RMS vibration level) will be adopted for the project: • Continuous vibration (typically from TBM and roadheader operations). – Residential – 0.2 mm/s (daytime) and 0.14 mm/s (night-time). – Commercial offices – 0.4 mm/s. • Continuous intermittent vibration (such as from rock breakers or similar operations). – 0.2 mm/s (daytime). • Impulsive vibration (such as from demolition and piling). – Residential – 6 mm/s (daytime). • Commercial office – 13 mm/s.	Construction
Guidelines to provide safe vibration levels to prevent minor cosmetic damage to various structures and impact on occupants.	58	In relation to damage to surface structures, a vibration trigger level of 7.5 mm/s at a residence or vibration-sensitive receiver will be adopted for the project. The trigger level provides a threshold for further assessment and/or monitoring. All vibration levels relating to potential building damage refer to the Peak vibration level.	Pre-construction and construction
Minimisation of potential noise impacts at sensitive receiver locations.	59	Noise mitigation will be adopted for construction activities where reasonable and feasible, to meet noise trigger levels or where noise goals are likely to be exceeded.	Construction

Outcome	Ref #	Commitment	Project phase
Minimisation of noise and vibration levels at nearby sensitive receivers.	60	At project construction sites, demolition works will be undertaken during the daytime period (7.00am-6.00pm Monday to Friday, and 8.00am-1.00pm Saturday) where practicable. If outside these times, all reasonable and feasible mitigation measures will be used..	Construction
Minimisation of the potential of awakening reactions as a result of noise from construction activities during the night-time period at residential receivers.	61	Where night-time works are required, the DECCW's 'Sleep disturbance screening criterion' will be adopted as the screening level at which further analysis will be undertaken if exceedances are predicted. If required, all reasonable and feasible mitigation measures will be implemented.	Construction
Construction air quality			
Identification and management of air quality impacts during construction.	62	A Construction Air Quality Management Sub-Plan will be prepared and implemented, and will include as a minimum: a. Statutory and policy framework b. Objectives for air quality management. c. Relevant criteria and goals. d. Monitoring against the sub-plan and reporting. a. Dust contingency plan to address where observed dust levels are elevated or dust-related complaints are received.	Pre-construction

Outcome	Ref #	Commitment	Project phase
	63	Management measures will be applied across the project with site-specific measures to be incorporated in ECMS, including: – Implementation of a construction ventilation system utilising bag filters where required. Bag filters will be dampened prior to emptying. – Sealing of all spoil handling areas with hardstand or equivalent. – Erection of solid hoardings around spoil and other dust-generating material handling sites, if practicable.	Construction
Construction water management			
Minimisation of potable water demand during construction. No impact on the water quality of surrounding surface or underground watercourses.	64	A Construction Water Management Sub-Plan will be prepared and implemented, and will include as a minimum: e. Objectives for construction water management with particular respect to minimising potable water use and maximising rainwater harvesting and recycling opportunities. f. Statutory and policy framework. g. Relevant criteria and goals for discharge, marine works (where required) and water reuse, including an assessment of groundwater quality to determine the requirement to treat contaminated groundwater prior to discharge or reuse. h. Management measures to be applied across the project with site-specific measures to be incorporated in ECMS, including: – Practices consistent with the requirements of Managing Urban Stormwater: Soils and Construction (Landcom 2004). – Description of water treatment plant(s), controls and water quality requirements (eg for ancillary construction facilities and tunnelling operations). – Water recycling opportunities to be incorporated into ECMSs. i. Roles and responsibilities. j. Monitoring and reporting. k. Spill management and other contingency plans, including incident response.	Pre-construction

Outcome	Ref #	Commitment	Project phase
Construction carbon and energy management			
Minimisation of contributions to climate change by reducing the greenhouse gas emissions of the project and by increasing public transport patronage.	65	A Construction Carbon and Energy Management Sub-Plan will be prepared and implemented and will include as a minimum: a. Objectives. b. Statutory and policy framework, including compliance matters in relation to *Energy Efficiency Opportunities Act 2006* (EEO) and National Greenhouse and Energy Reporting System (NGERS). c. Roles and responsibilities. d. Conducting awareness programs as part of induction for all site personnel regarding energy conservation methods. e. Targets and KPIs. f. Energy-to-carbon calculation methodology. g. Baseline energy demand and analysis – ongoing through each project phase.	Design and pre-construction
Minimisation of energy demand of the project.	66	Energy reduction measures will be applied across the project (site-specific management measures will be incorporated in the ECMS), including: a. Selection of equipment with consideration of energy efficiencies. b. Use of energy-efficient site lighting. c. Incentives for construction workers to use public transport, green travel plan targets and incentives. d. Sourcing of material from the Sydney region, where possible, to avoid transport-related energy consumption. e. Modular construction, where practicable. f. Dematerialisation of surface finishes, where practicable. g. Use of prefabricated components, where practicable. h. Green site office selection/fitout. i. Centralised monitoring and reporting of energy usage data.	Design and construction
Ecology management			
Minimisation of disturbance to local flora and fauna.	67	Prior to commencement of construction significant (based on species or age and size) that may be affected during construction will be identified and appropriate management measures incorporated into the relevant ECMS. Measures to be considered include, but are not limited to, fencing, ongoing maintenance and pruning. Any tree removal within or adjacent to construction sites will be subject to further assessment and approval by the Proponent. Consultation with the local council will be undertaken where relevant.	Construction

Outcome	Ref #	Commitment	Project phase
Reduced spread of weeds.	68	All weeds will be removed in accordance with the *Noxious Weeds Act 1993*.	Construction
Reinstatement of disturbed areas.	69	A Landscape Management Sub-Plan will be prepared in consultation with relevant local councils and will address: a. Tree protection measures. b. Monitoring during construction. c. Replanting. d. Reinstatement of relevant sites, including Public Domain and use of salvaged materials. e. Post-construction monitoring. In accordance with the Landscape Management Plan: f. Revegetation and landscape planting will be undertaken in all public spaces, as appropriate. Locally indigenous species will be planted in preference to introduced species where appropriate. Revegetation and landscaping activities will be undertaken progressively, where possible, and in consultation with the affected landowner.	Design and construction
Visual amenity			
Minimal light spill.	70	Lighting around construction sites will be specifically designed to minimise light spill to nearby residents, while still meeting public and worker safety requirements and maintaining visibility.	Construction
Social and economic			
Capacity-building and generation of skilled employment.	71	a. As a component of the employment to be generated, the project will meet the NSW Government publication 'Training Management Guidelines' (February 2009). The guideline target covers apprentices and trainees registered under the NSW Apprenticeship and Traineeship Act 2001. b. The project will take advantage of the NSW Government's Green Skills program which is directed at apprentices and trainees requiring skills in green buildings, energy and water efficiency, recycling, and horticulture; as well as business administration trainees requiring skills in environmental advisory services, green procurement, environmental auditing accounting and design. c. The project will meet the requirements of the guidelines for Category 3 projects in the NSW Government publication 'Aboriginal Participation in Construction Guidelines' (January 2007).	Construction

Outcome	Ref #	Commitment	Project phase
Property impacts			
Risks of damage to property are identified and managed.	72	A property risk management plan for property damage will be implemented, including: a. Risk assessments by qualified and experienced geotechnical and construction engineering experts for properties at risk of damage. b. Consultation with property owners to advise on the timing, scope and methodology for the inspection, and of the process for making a property damage claim. c. Preparation and provision to owners, of building condition inspection reports. d. A register of all properties inspected. e. Prior to substantial construction commencing, an Independent Property Impact Assessment Panel, approved by the Director-General, will be established. Either the affected property owner or the Proponent may refer any unresolved disputes arising from the potential and/or actual physical property impacts to the panel for resolution. All costs incurred in establishing and implementing the panel shall be borne by the Proponent. The purpose of the Assessment Panel shall not be to address impact on property values, nor address issues otherwise covered under the Land Acquisition (Just Terms) Compensation Act 1991. f. Any damage to property resulting from the construction of the project will be rectified at no cost to the owner in a timely fashion.	Construction and operation
Operational sustainability management			
Sustainability is embedded in the operations of the project.	73	A Sustainability Plan will be developed and implemented for the operation of the project. This will include: a. Documentation of a sustainability corporate governance framework, including a review of sustainability drivers to identify those that are material to the operation of the metro. b. Objectives and strategies for, as a minimum: – Adaptation to climate change. – Greenhouse gas emissions and energy use. – Minimisation of resource use and recycling. – Water management. – Community benefit. – Economic vitality. c. A methodology for embedding sustainability initiatives into the operation of the project. d. Monitoring and reporting. e. Roles, responsibilities and resourcing, including securing a full-time sustainability manager.	Operation

Outcome	Ref #	Commitment	Project phase
		f. Inclusion of sustainability matters in project risk register. g. A Sustainable Procurement Strategy for suppliers and materials. h. Publicly available web-based reporting of sustainability performance.	
Operational environmental management			
A high level of environmental performance and continually improve.	74	An Environmental Management System (EMS) consistent with the principles of ISO 14001 for operation will be documented in an Operational EMP (OEMP). The OEMP will address: a. Identification of the statutory and other obligations which the Proponent is required to fulfil, including all licences/approvals and consultations/agreements required from authorities and other stakeholders, and key legislation and policies which control the operation of the project. b. Monitoring, inspection and test plans for all activities and environmental qualities which are important to the environmental performance of the project during its operation, including a description of potential site impacts, performance criteria, specific tests and monitoring requirements, protocols (eg frequency and location) and procedures to follow. c. Steps to ensure compliance with all plans and procedures. d. Notification of adjacent residents and businesses prior to planned maintenance activities and complaints-handling procedures. e. Strategies for the main environmental system elements including, but not limited to: carbon and energy, water resources, noise, water quality, access and traffic, groundwater, settlement, waste/resource management/removal/disposal, hydrology and flooding, visual screening, landscaping and rehabilitation, hazards and risks, and energy use, resource use and recycling. f. Development of sub-plans for the management of: – Energy. – Water resources. – Waste. – Noise and vibration.	Operation
Operational carbon management			
Minimisation of contributions to climate change by reducing the greenhouse gas emissions of the project.	75	An Operational Energy Management Sub-Plan will be prepared within two years of approval or as otherwise agreed. The Operational Energy Management Sub-Plan will identify methods for the ongoing monitoring and reporting of energy use and the means to reduce energy demand on a periodic basis, where practicable. A component of energy supply should be sourced from accredited 'Green Power'. The sub-plan would also identify the compliance requirements of the *National Greenhouse and Energy Reporting Act 2007* and *Energy Efficiency Operations Act 2006*.	Commissioning

Outcome	Ref #	Commitment	Project phase
Operational waste management			
Minimisation of waste generation. Maximisation of opportunities for recycling by passengers and workers.	76	An Operational Waste Management Sub-Plan will be developed and implemented during the operation of the project in accordance with the NSW Government's *Waste Avoidance and Resource Recovery Strategy 2007* to minimise waste during the operation of the project.	Commissioning
Operational water management			
Minimisation of potable water demand during operation.	77	An Operational Water Management Sub-Plan will be developed and implemented to address the management of groundwater inflows, wash water and deluge water. Opportunities for recycling and reuse of wastewater will be considered. Relevant water quality guidelines, including ANZECC (2000), will be used to identify requirements for water quality prior to discharge to stormwater or directly to receiving waters.	Commissioning
Operational noise and vibration management			
Management of operational noise and vibration impacts.	78	An Operational Noise and Vibration Management Sub-Plan will be prepared prior to commissioning. The plan will document: • Relevant criteria. • Design mitigation and management measures. • Commissioning plan. • Monitoring and reporting requirements.	Pre-commissioning
Maintenance of ground-borne noise goals within the design goals on a long-term basis.	79	a. Wheel and track maintenance procedures will be adopted to ensure that source vibration levels are within the specified limits. b. Monitoring systems will be implemented to measure the condition of the wheels and track. A track grinding machine, or other methods, will be used to restore the track condition to specified limits when required. If wheel flats or other wheel defects do occur, these will be rectified using a wheel lathe or other measures to return the wheel condition to an acceptable degree of smoothness. A permanent wheel monitoring station will be established to detect wheel flats.	Operation

Outcome	Ref #	Commitment	Project phase
Assessment of compliance with the ground-borne noise design goals.	80	The Operational Noise and Vibration Management Plan will provide an assessment, based on compliance monitoring, of the ground-borne noise and vibration levels after opening and nominally 2 years and 7 years after opening. Should any of these assessments indicate a clear trend for noise and/or vibration levels to exceed the design limits, reasons for these exceedances shall be identified and the operator shall implement further feasible and reasonable mitigation measures.	Commissioning and operation
Integrate the project with existing transport infrastructure, facilities and operations.	81	The proponent will commit to integrate the project with station precincts and existing transport networks, and: a. Achieve transport integration outcomes for Metro Line 1 (Stage 1) customers. b. Coordinate Metro Line 1 (Stage 1) rail operations with services of other transport operators and authorities. c. Integrate Metro Line 1 (Stage 1) station infrastructure with other transport facilities within the metro station interchange and precinct. d. Monitor integration of transport infrastructure and operations. e. Identify and respond to change within station precincts and transport operations.	Commissioning and operation

Appendix B Project design alignment



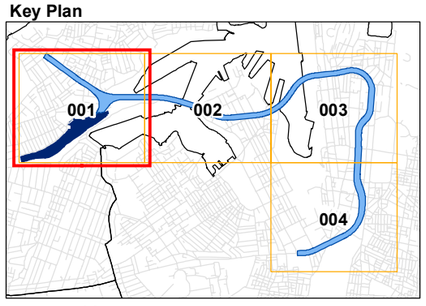


SydneyMetro

SYDNEY METRO NETWORK STAGE 1
Submissions Report
Sheet EA-001
Map 1 of 4

- Preferred Alignment
- Preferred Platform Location
- Metro Stage 1 - Tunnel Protection Zone
- Metro Stage 1 - Surface Works
- LGA Boundary
- Land Title Boundary 20/07/08 © Dept of Lands

Key Plan



N

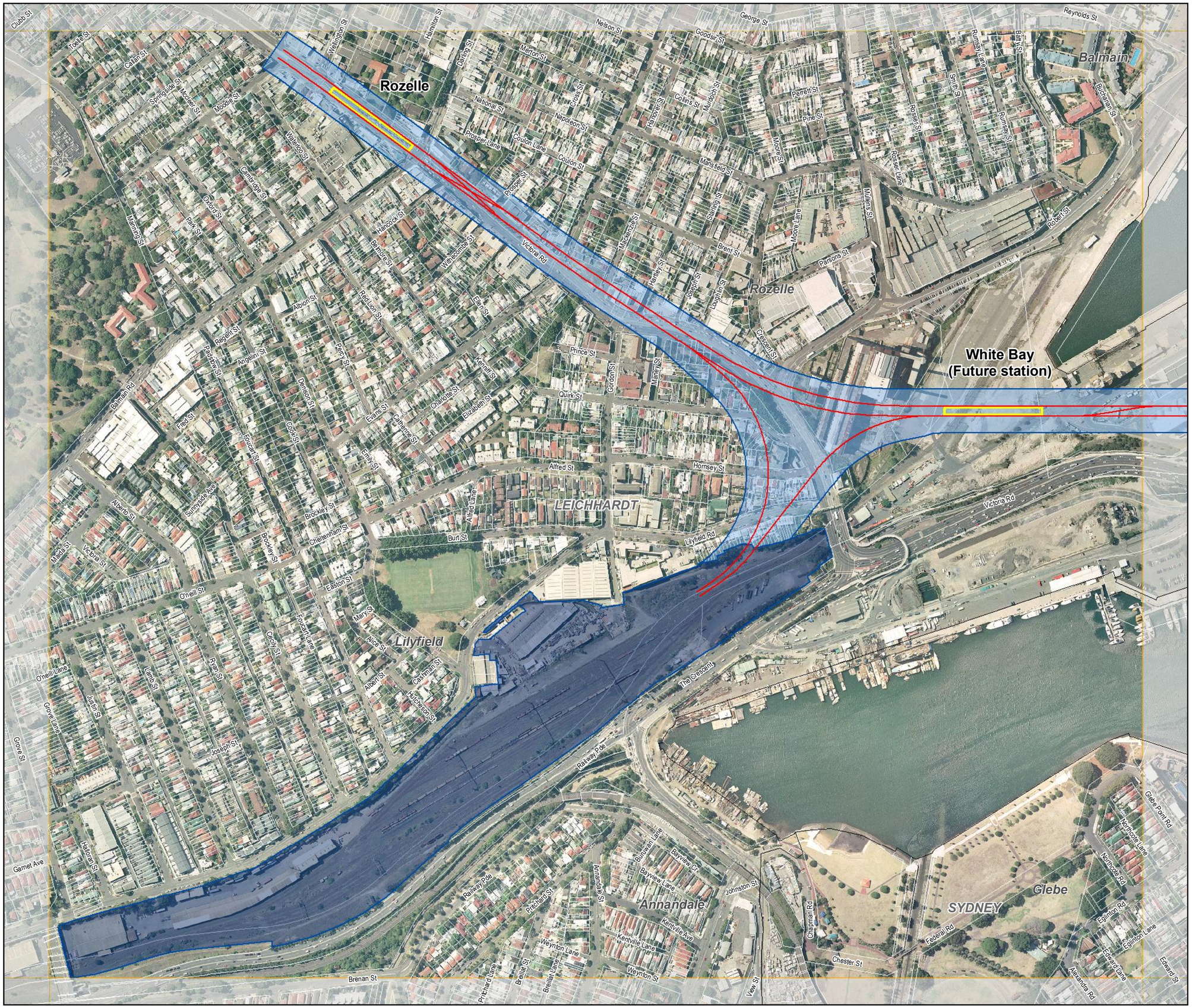
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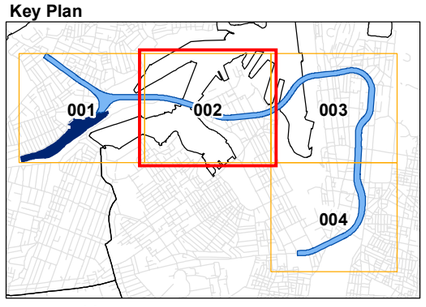


SydneyMetro

SYDNEY METRO NETWORK STAGE 1
Submissions Report
Sheet EA-002
Map 2 of 4

- Preferred Alignment
- Preferred Platform Location
- Metro Stage 1 - Tunnel Protection Zone
- Metro Stage 1 - Surface Works
- LGA Boundary
- Land Title Boundary 20/07/08 © Dept of Lands

Key Plan



N

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Scale: 1:5,000 @ A3

Projection: GDA 1994
MGA Zone 56

Map identification number:

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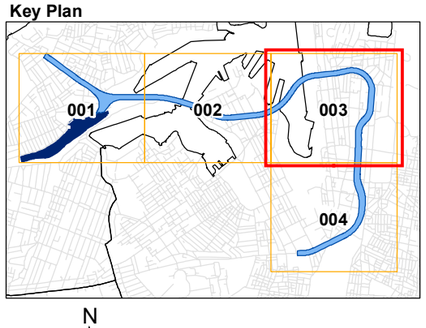
SydneyMetro

SYDNEY METRO NETWORK STAGE 1
Submissions Report
Sheet EA-003
Map 1 of 3

- Preferred Alignment
- Preferred Platform Location
- Metro Stage 1 - Tunnel Protection Zone
- Metro Stage 1 - Surface Works
- LGA Boundary
- Land Title Boundary 20/07/08 © Dept of Lands



Key Plan



N

Projection: GDA 1994
MGA Zone 56

0 50 100 Metres

Scale: 1:5,000 @ A3

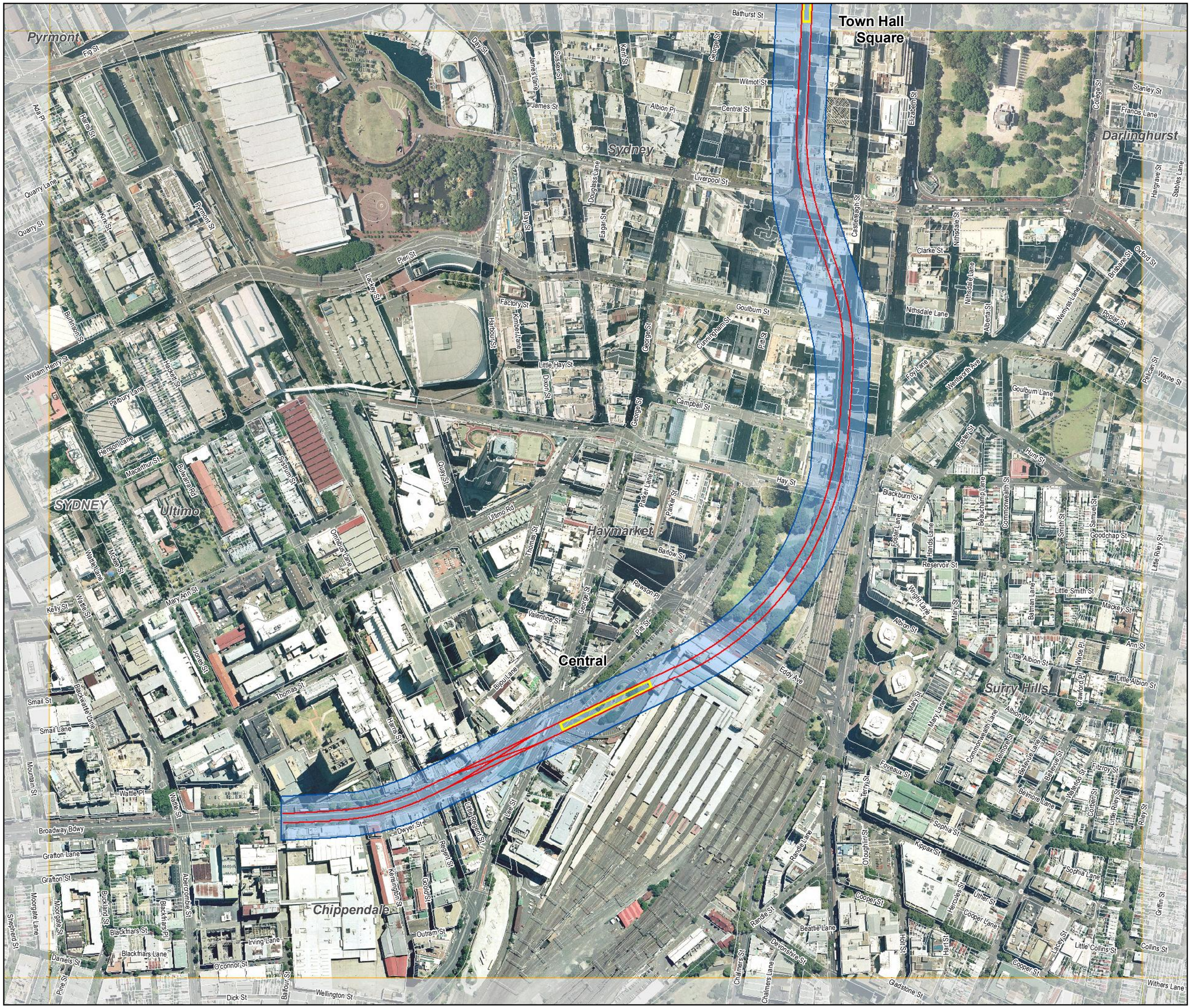
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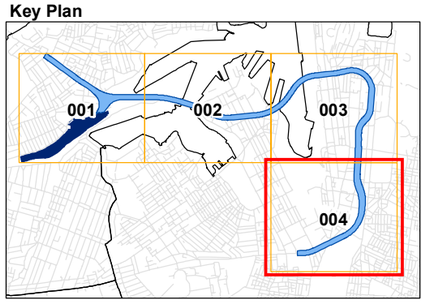
SydneyMetro

SYDNEY METRO NETWORK STAGE 1
Submissions Report
Sheet EA-004
Map 4 of 4

- Preferred Alignment
- Preferred Platform Location
- Metro Stage 1 - Tunnel Protection Zone
- Metro Stage 1 - Surface Works
- LGA Boundary
- Land Title Boundary 20/07/08 © Dept of Lands



Key Plan



N

Projection: GDA 1994
MGA Zone 56

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Map identification number:

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Appendix C Station plan elements delivered by Sydney Metro







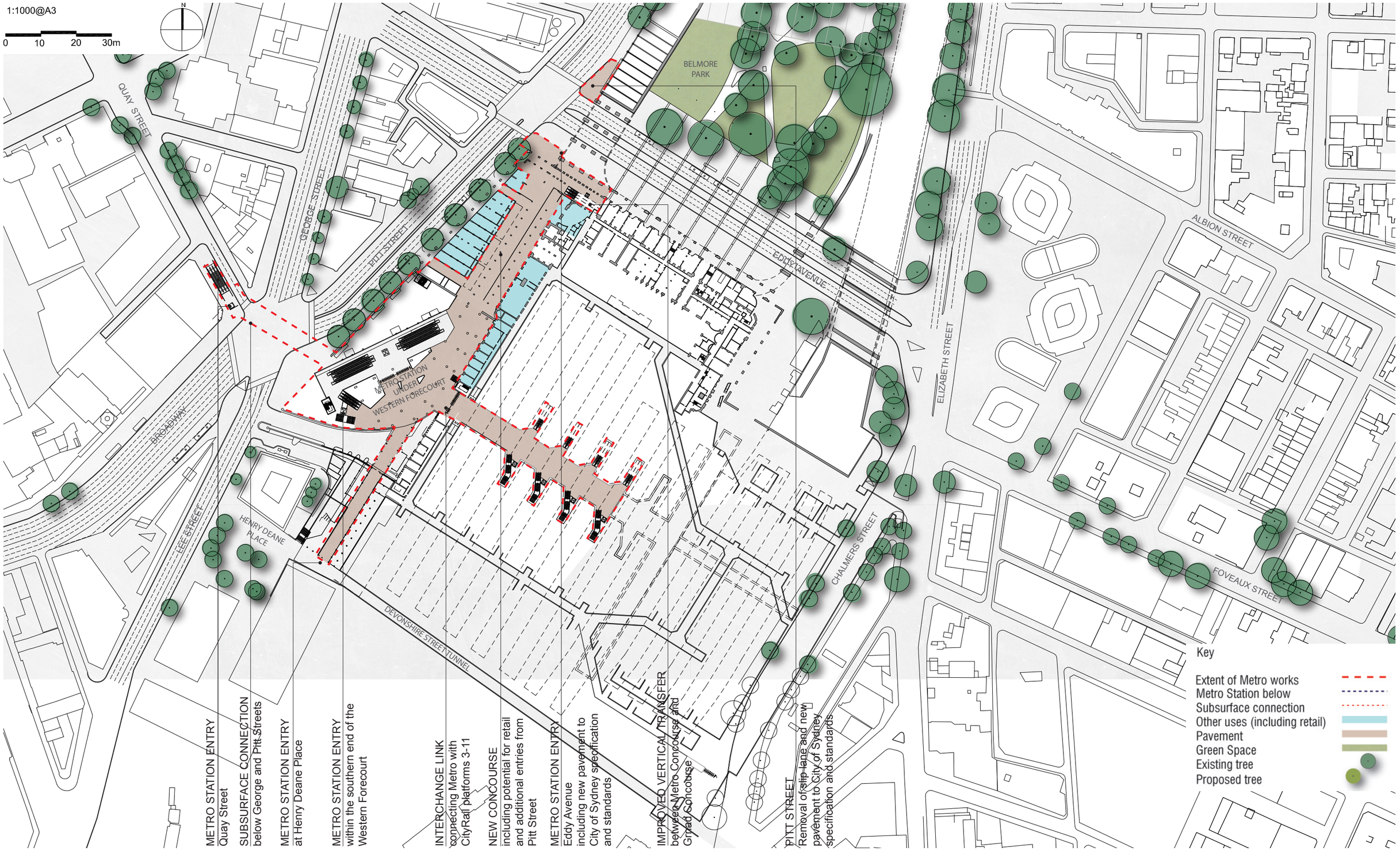
METRO DELIVERY PLAN (Upper level)

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

CENTRAL



METRO DELIVERY PLAN (Lower level)

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

CENTRAL

1:1000@A3

0 10 20 30m

N

DRUITT STREET

YORK STREET

GEORGE STREET

TOWN HALL

TOWN HALL SQUARE

PARK STREET

UNITING CHURCH

ST ANDREWS CATHEDRAL

PITT STREET

CASTLEREAGH STREET

BATHURST STREET

METRO STATION ENTRY
located within existing footpath with pavement reinstated to finish and quality according to City of Sydney guidelines

PITT STREET
footpath widening adjacent to station

METRO STATION ENTRY BUILDING
including retail tenancies with potential for future development above

SUBSURFACE CONNECTION
between Metro and Town Hall stations

TOWN HALL SQUARE
surface reinstated to allow future delivery of new square by City of Sydney

METRO SERVICES BUILDING
with retail frontage and potential for future development above

Key

- Extent of Metro works
- Metro Station below
- Subsurface connection
- Other uses (including retail)
- Pavement
- Green Space
- Existing tree
- Proposed tree

METRO DELIVERY PLAN

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

TOWN HALL SQUARE

HASSELL + COX



HASSELL + COX

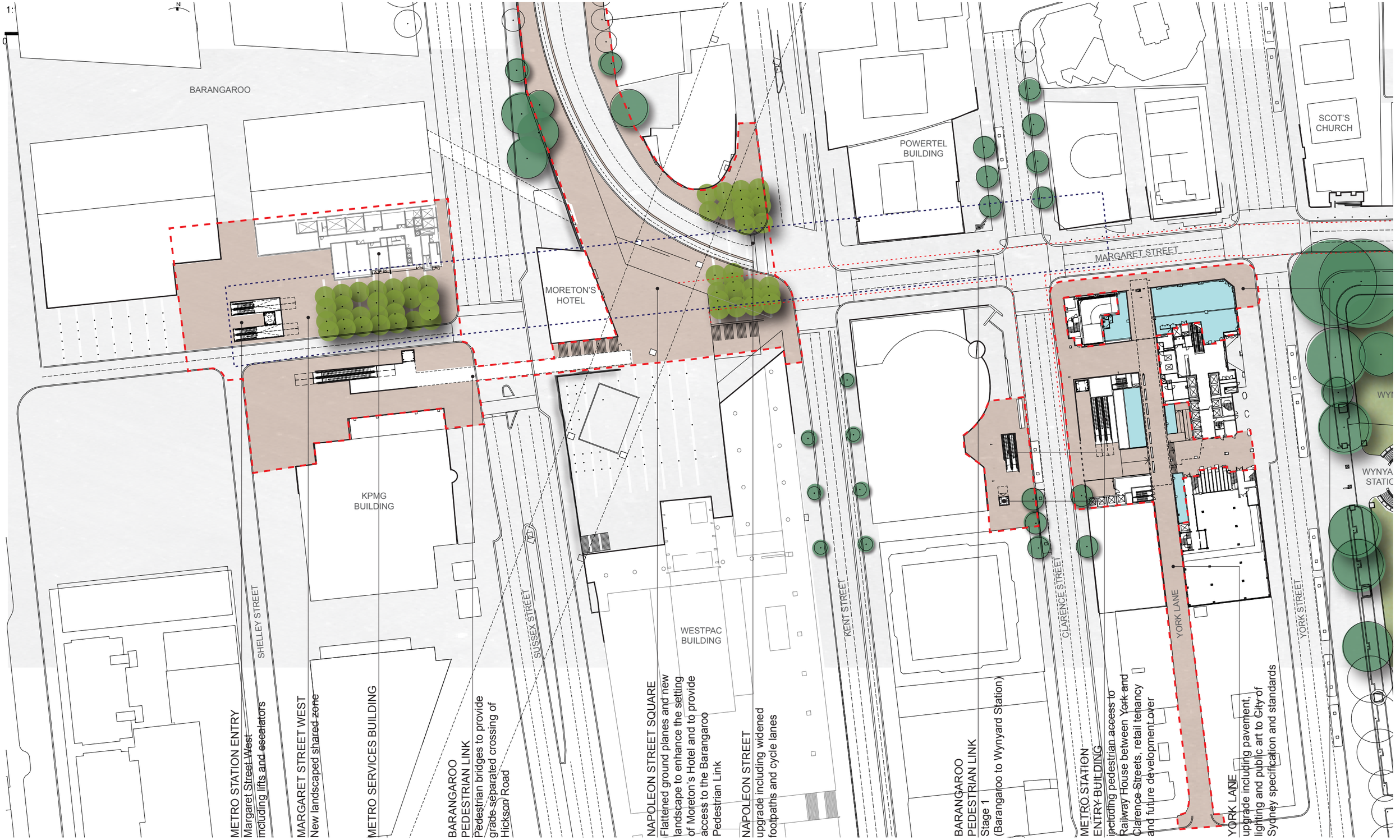
METRO DELIVERY PLAN

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

MARTIN PLACE



METRO DELIVERY PLAN

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

BARANGAROO-WYNYARD

1:1000@A3

0 10 20 30m

N

STARCITY CASINO

UNION SQUARE

MOUNT STREET

MILLER STREET

BULWARRA STREET

LITTLE MOUNT STREET

HARRIS STREET

PATERNOSTER ROW

UNION STREET

PYRMONT STREET

MOUNT STREET SHARED ZONE
pavement to finish and quality according to City of Sydney guidelines

METRO STATION ENTRY BUILDING
including retail tenancy

UNION SQUARE
pavement to finish and quality according to City of Sydney guidelines and new tree planting

PATERNOSTER ROW
reconfigured to exit to Harris Street

METRO STATION ENTRY BUILDING
including retail tenancy
configuration to be determined - refer page 295

Key

- Extent of Metro works
- Metro Station below
- Subsurface connection
- Other uses (including retail)
- Pavement
- Green Space
- Existing tree
- Proposed tree

HASSELL + COX

METRO DELIVERY PLAN

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN

PYRMONT

1:1000@A3

0 10 20 30m

N

Key

- Extent of Metro works
- Metro Station below
- Subsurface connection
- Other uses (including retail)
- Pavement
- Green Space
- Existing tree
- Proposed tree

ROZELLE PUBLIC SCHOOL

ST PAULS

VICTORIA ROAD

DARLING STREET

NATIONAL STREET

PROSPER LANE

ST THOMAS

BALMAIN LEAGUES CLUB

WATERLOO STREET

METRO SERVICES BUILDING

NEW BUS LANE AND STOPS with passenger waiting area provided along the frontage of the Balmain Leagues Club site

NEW BUS LANE AND STORS to provide direct interchange with the Metro station

METRO STATION ENTRY BUILDING including through site connection to the bus waiting area and retail tenancy

METRO STATION ENTRY located to create a landscaped forecourt to the north while providing a noise buffer to Victoria Road, with retail tenancy

STATION FORECOURT landscaped open space and footpath upgrades

DARLING STREET forecourt pavement continued across street to emphasise pedestrian priority

METRO STATION ENTRY located to create a landscaped forecourt to the north while providing a noise buffer to Victoria Road, with retail tenancy

HASSELL + COX

METRO DELIVERY PLAN

This plan identifies the scope of works of the Metro project, including new station buildings, public domain works and other elements

SydneyMetro

MASTER PLANNING & URBAN DESIGN **ROZELLE**



- extent of works
- buildings/structures
- existing vegetation retained & protected
- mass native tree planting
- advanced street tree planting - *locally occuring species*
- bioswales - *native grass & tree planting*
- mass planting - *low height native shrubs & grasses*
- turf
- semi-permeable paving - *all paved areas on site except roads & track foundations*
- viewing platforms/seating courts - *select locations along Lilyfield Road*
- 3.6m (min.) wide pedestrian/bicycle bridge - *grade connections to Lilyfield Road, Annandale LRT & new open space area*
- asphalt paved and broken concrete kerbs - *all site roads*
- concrete paving strips - *track foundations*
- 1.2m high public domain fence & gates - *painted steel palisade*
- public domain external fence & gates - *painted steel palisade*
- internal site security fence & gates
- acoustic barrier - *adjacent to portal*
- 2.5m wide asphalt pathway - *Lilyfield Road & new open space in south-east of site*
- future potential vehicle access to White Bay

Notes:
1. Refer to Indicative Plans/Sections & design quality images in Design Concept Report for additional requirements
2. Lighting, signage retaining walls & other elements also included but not indicated on this drawing - refer to Design Concept Report and specifications

Refer to 'Detail Areas and Design Guidelines' section of report for detailed concept plans and sections and design quality requirements.

0 25 50 100 200m

HASSELL + COX

SydneyMetro

MASTER PLANNING & URBAN DESIGN

ROZELLE DEPOT

Appendix D Submissions database





Appendix E Acoustic assessment



HEGGIES

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2 Lincoln Street
Lane Cove NSW 2066 Australia
PO Box 176 Lane Cove NSW 1595 Australia
Tel 61 2 9427 8100 Fax 61 2 9427 8200
Email sydney@heggies.com Website www.heggies.com

MEMORANDUM

10-8268 T1 CBD Metro White Bay Option 20090921.doc

peter.bourke@sydneymetro.nsw.gov.au	Peter Bourke	DATE:	21 September 2009
	Sydney Metro	NO OF PAGES:	2
		TO BE MAILED:	No

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Dear Peter

CBD Metro
White Bay - Alternative Alignment Option

1 Introduction

An alternative CBD Metro track alignment is currently being considered near White Bay (between the Anzac Bridge and Gordon Street Rozelle).

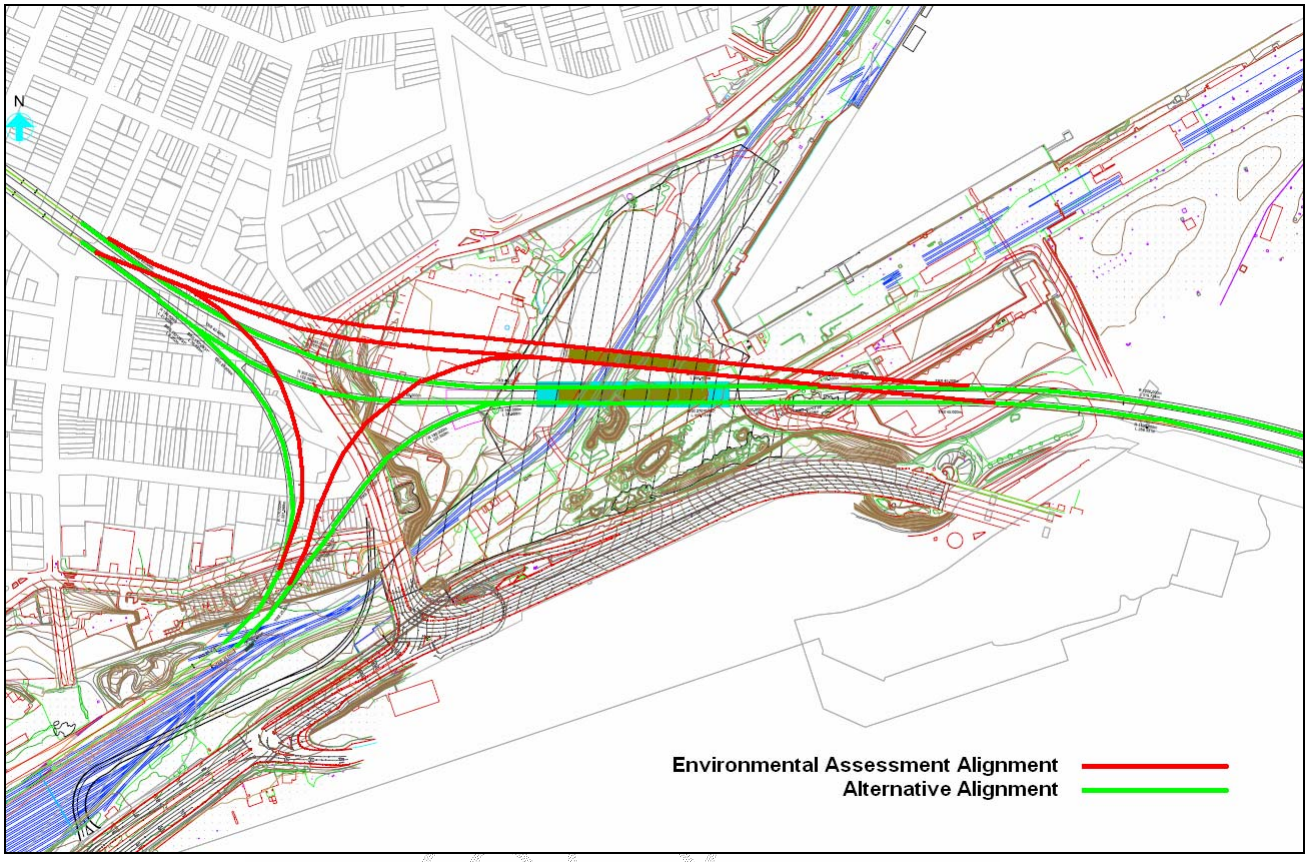
The purpose of this report is to calculate the ground-borne noise and vibration levels during operations and determine whether the future ground-borne noise and vibration levels comply with the design goals.

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2 Description of Alignment Options

A sketch of the Environmental Assessment and Alternative alignments near White Bay is provided in **Figure 1**.

Figure 1 Horizontal Alignment Sketch of Environmental Assessment and Alternative Alignments



On the basis of the above sketch, it can be seen that the Environmental Assessment option is located on a more northern alignment compared with the Alternative option at White Bay Station. Additionally, the horizontal alignments of the east and west depot connections are also different for the Alternative option.

For the western depot connection, the Alternative alignment is located beneath a larger number of residential receivers compared with the Environmental Assessment alignment. For the eastern depot connection, the Alternative alignment is located beneath a smaller number of residential receivers compared with the Environmental Assessment alignment. For both depot connections, the distance between the ground surface and rail is greater than 20 m at all receiver locations on the northern side of Lilyfield Road where the Alternative alignment varies from the Environmental Assessment Alignment.

For the main alignment (between White Bay and Rozelle), both tracks are located beneath residential receivers on the western side of Victoria Road (opposite Robert Street) for the Alternative option. For the Environmental Assessment option, the main alignments avoided these receivers, however pass beneath several residential receivers in Crescent Street (on the northern side of Victoria Road). Crescent Street receivers are located further from the Alternative alignment.

3 Operational Noise and Vibration Assessment

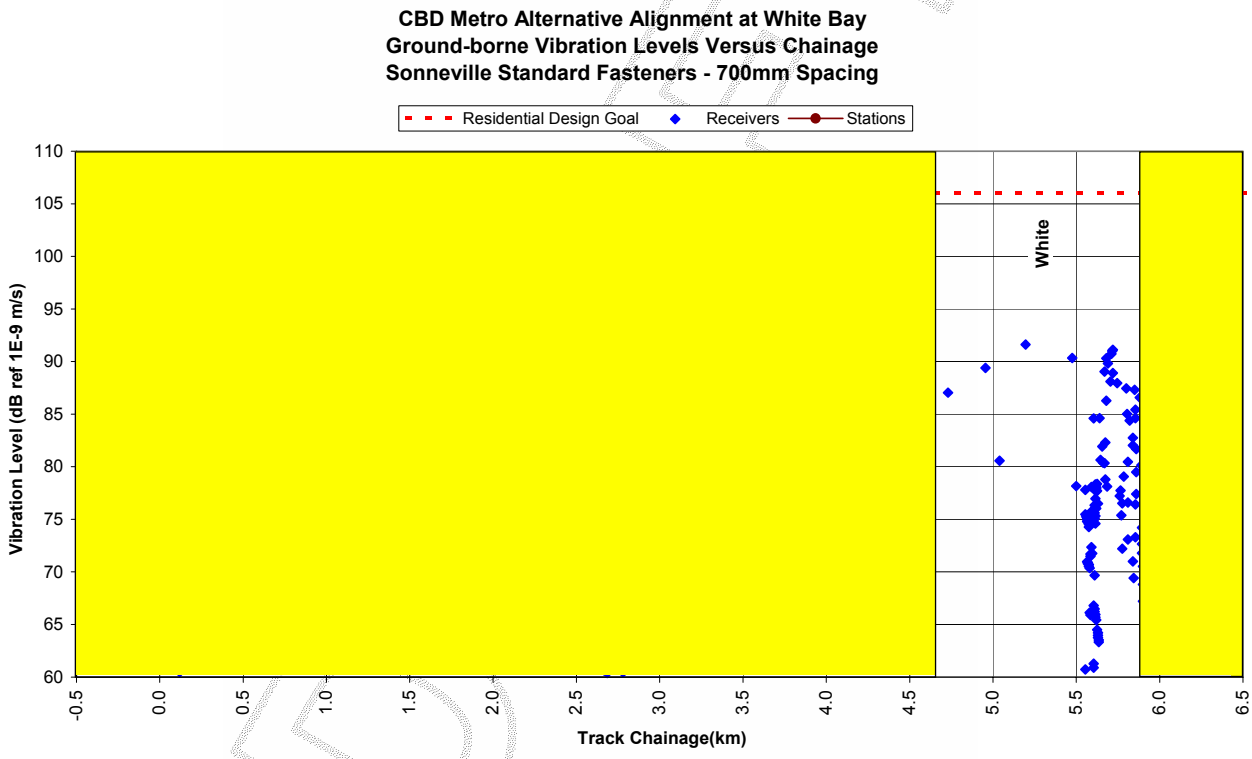
The calculation process for determining the ground-borne noise and vibration levels during train operations is described in the Noise and Vibration technical paper in the Environmental Assessment.

3.1 Ground-borne Vibration Assessment

On the basis of the ground-borne vibration modelling assumptions, the proposed speed profile and the vertical and horizontal alignments for the Alternative alignment, **Figure 2** presents a summary of the predicted ground-borne vibration levels for buildings located above or near the alignment between Anzac Bridge and Gordon Street. The modelling results indicate that compliance with the ground-borne vibration goals will be achieved for all sensitive receiver locations above or near the alignment.

For the western and eastern depot connections, the predicted ground-borne vibration levels are below 90 dB_V at all receivers.

Figure 2 Predicted Ground-borne Vibration Levels (Standard Attenuation Track) - Alternative Alignment at White Bay



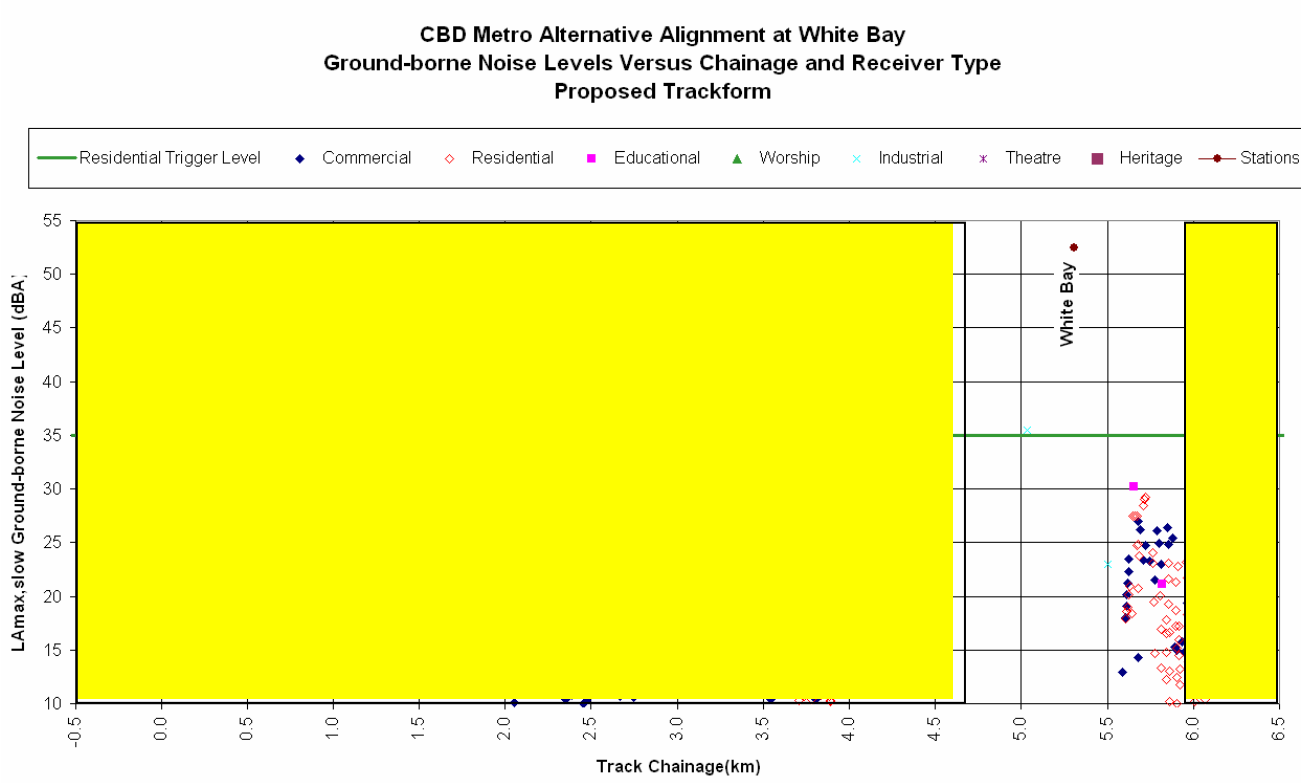
Note: Calculated vibration levels in the shaded regions are the same as indicated in the Environmental Assessment.

3.2 Ground-borne Noise Assessment

Consistent with the Environmental Assessment, a high attenuation trackform is proposed for both depot connections (near Lilyfield Road) and the main alignment (near Robert/Gordon Street) in order to achieve compliance with the ground-borne noise design goals.

A summary of the predicted ground-borne noise levels with the proposed trackform is provided in **Figure 3** for buildings located above or near the alignment between the Anzac Bridge and Gordon Street. The modelling results indicate that compliance with the ground-borne noise goals will be achieved for all sensitive receiver locations above or near the alignment.

Figure 3 Predicted Ground-borne Noise Levels (Proposed Track) - Alterative Alignment at White Bay

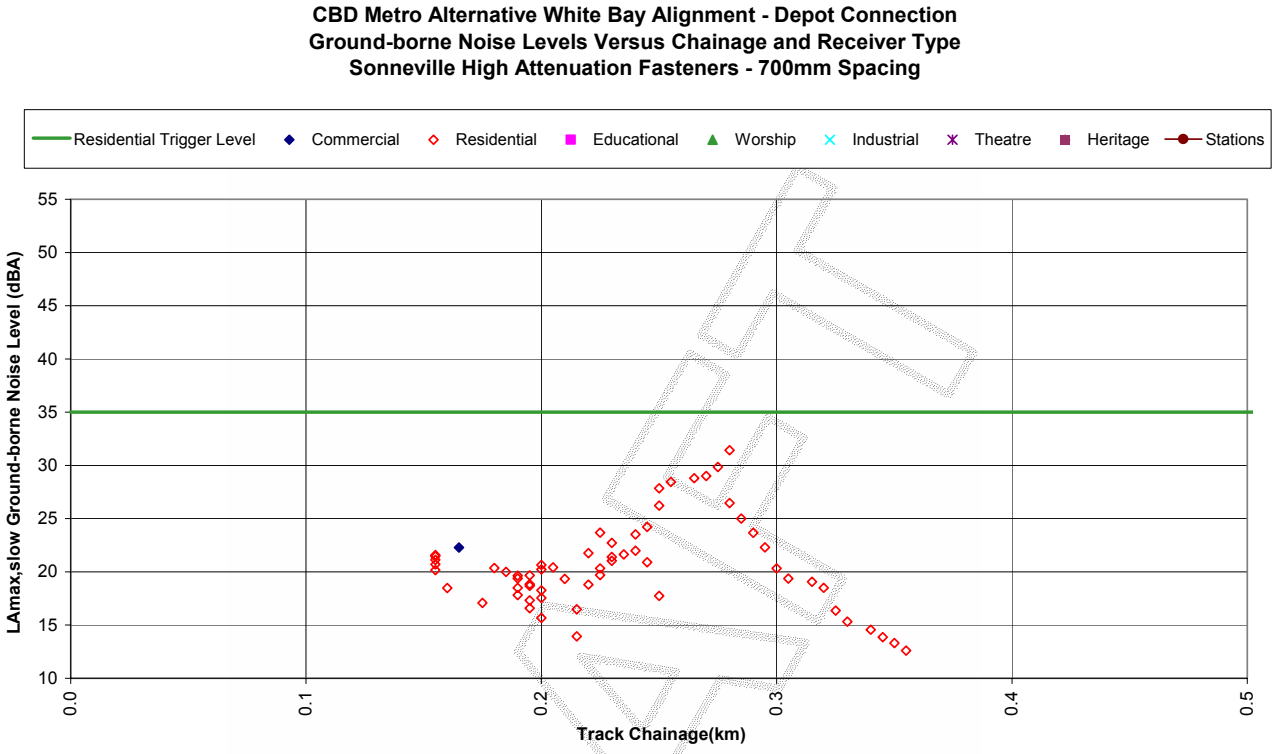


Note: Calculated Ground-borne noise levels in the shaded regions are the same as indicated in the Environmental Assessment

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The predicted ground-borne noise levels at the Depot Connections are provided in **Figure 4**. The modelling results indicate that compliance with the ground-borne noise goals will be achieved for all sensitive receiver locations above or near the alignment.

Figure 4 Predicted Ground-borne Noise Levels for Depot Connections - Alterative Alignment at White Bay



4 Conclusion for Ground-borne Noise and Vibration Assessment during Operations

The ground-borne noise and vibration modelling indicates that a trackform design which incorporates high attenuation rail fasteners will be sufficient to achieve compliance with the ground-borne noise and vibration goals at all sensitive receiver locations between the Anzac Bridge and Gordon Street, Rozelle for the Alternative alignment option at White Bay.

This is consistent with the ground-borne noise and vibration assessment for the alignment assessed in the main body of the Environmental Assessment.

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Appendix F Shadow assessment



Rozelle West Sun-study

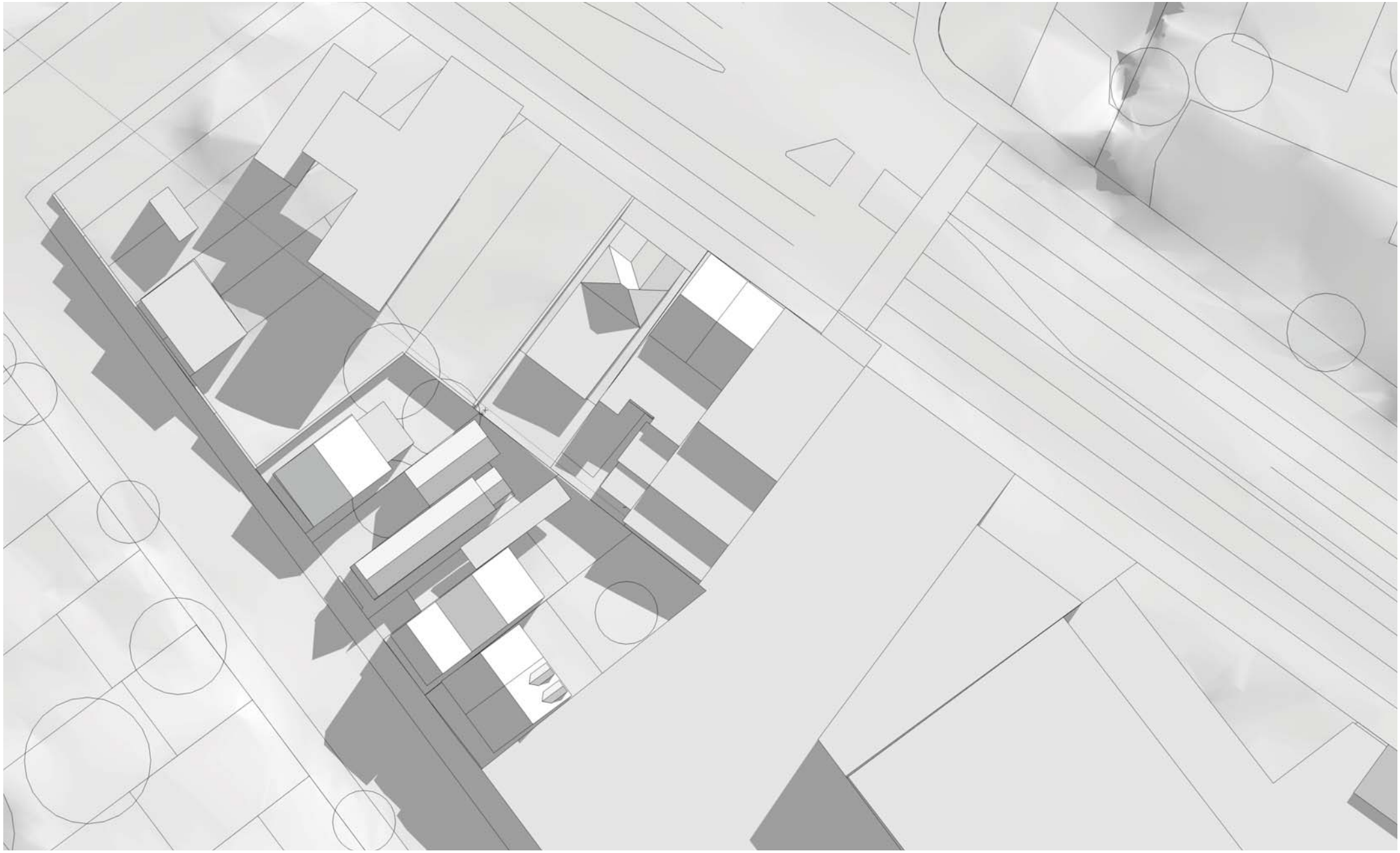






NOTE: Building profiles of existing buildings shown in the diagrams for the purposes of casting shadows are indicative only, as estimated from site and aerial photographs. Survey information will be required to confirm actual extent of overshadowing impact prior to detailed design stages.

21st June 10 am
Existing



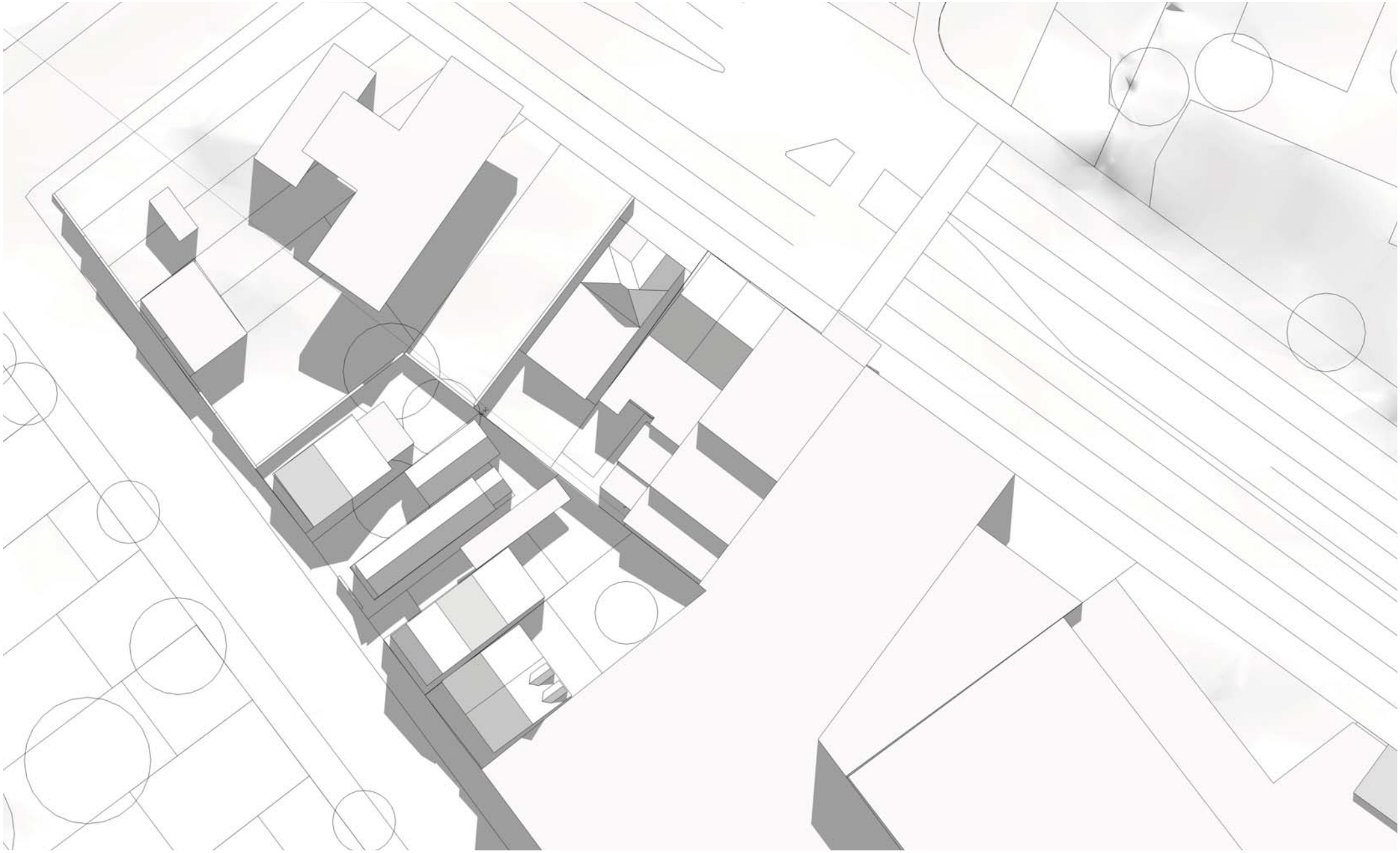
Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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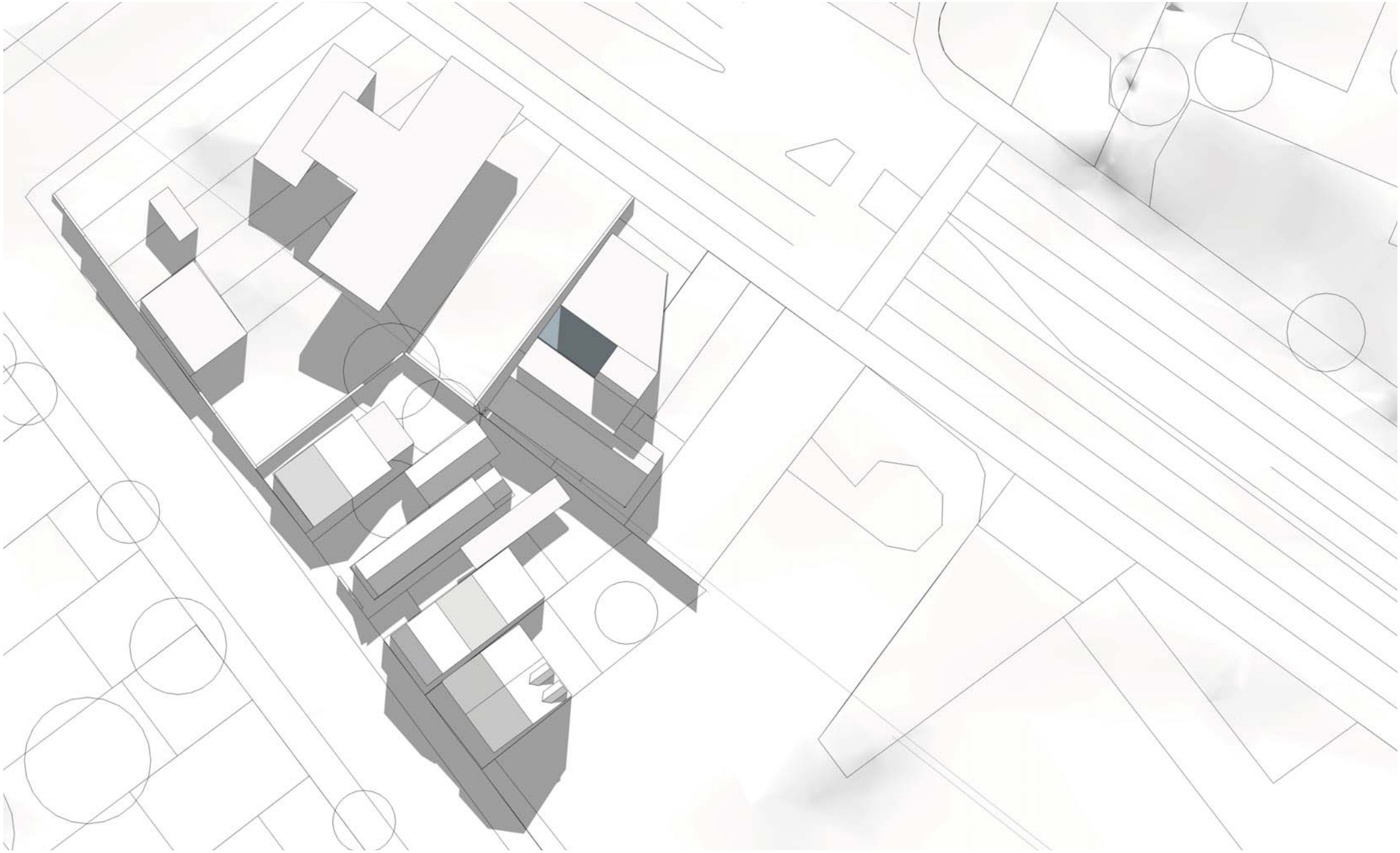
21st June 10 am
Proposed



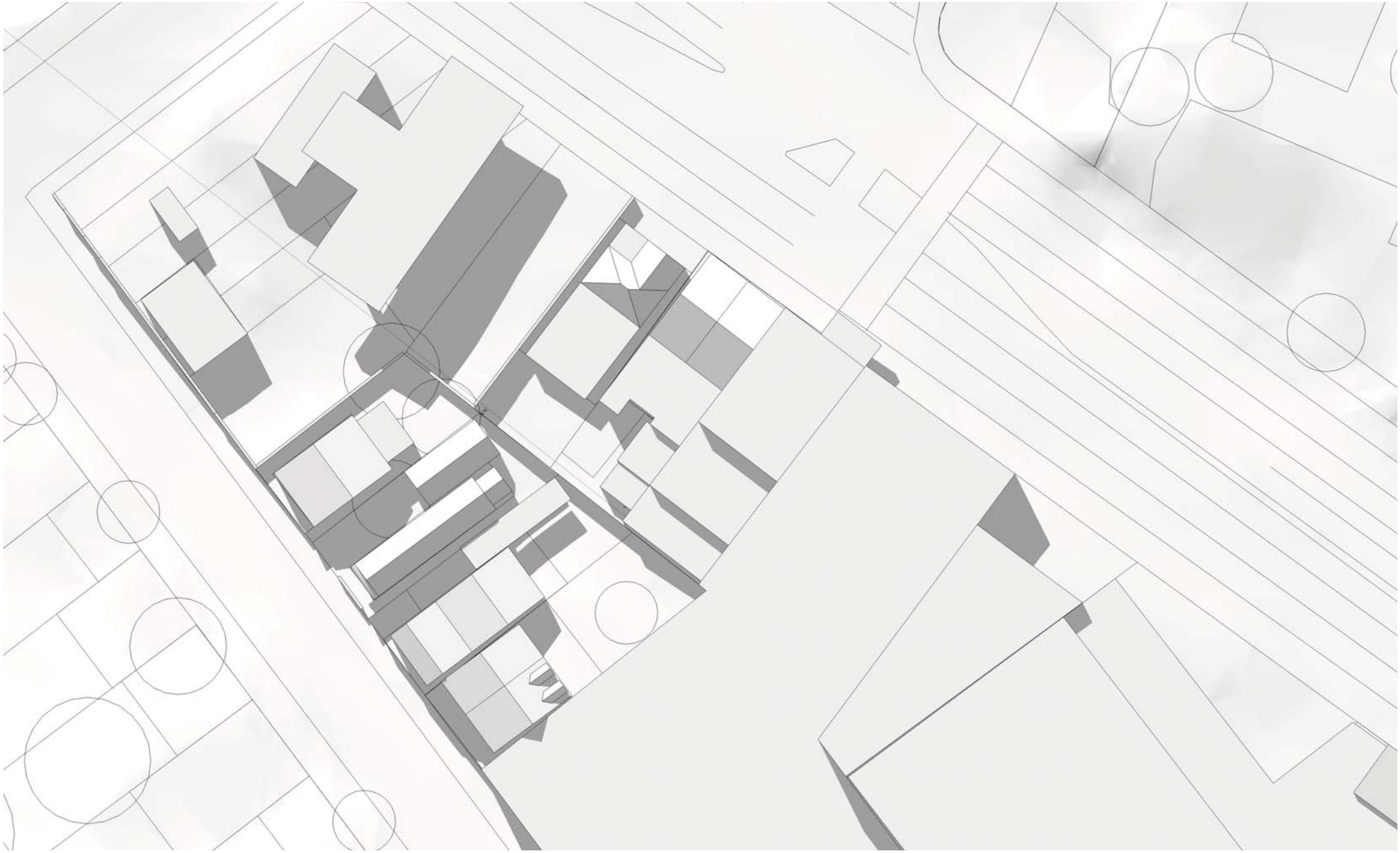
21st June 12 pm
Existing



21st June 12 pm
Proposed



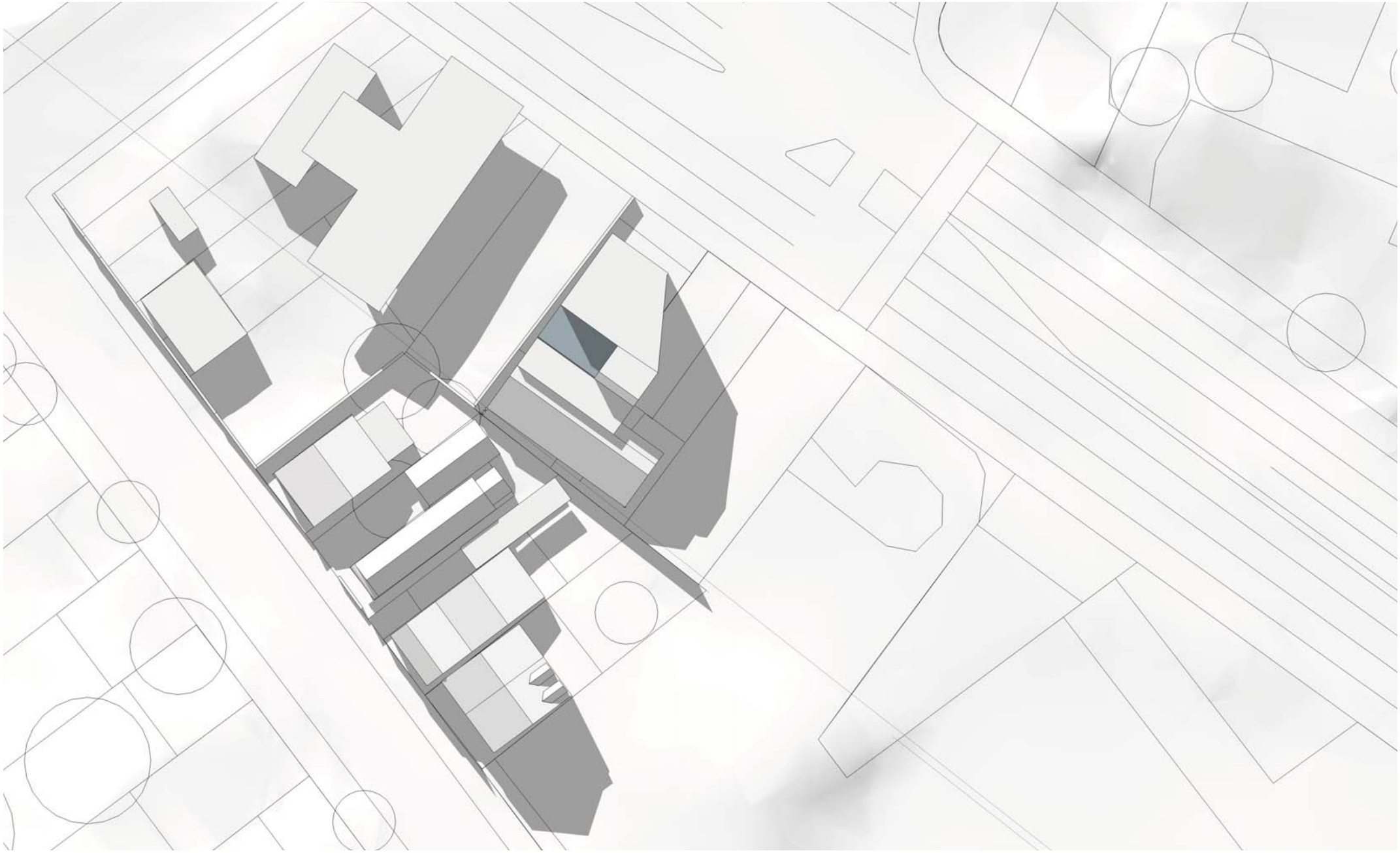
21st June 2 pm
Existing



Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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21st June 2 pm
Proposed



Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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21st Dec. 10 am
Existing



Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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21st Dec. 10 am
Proposed



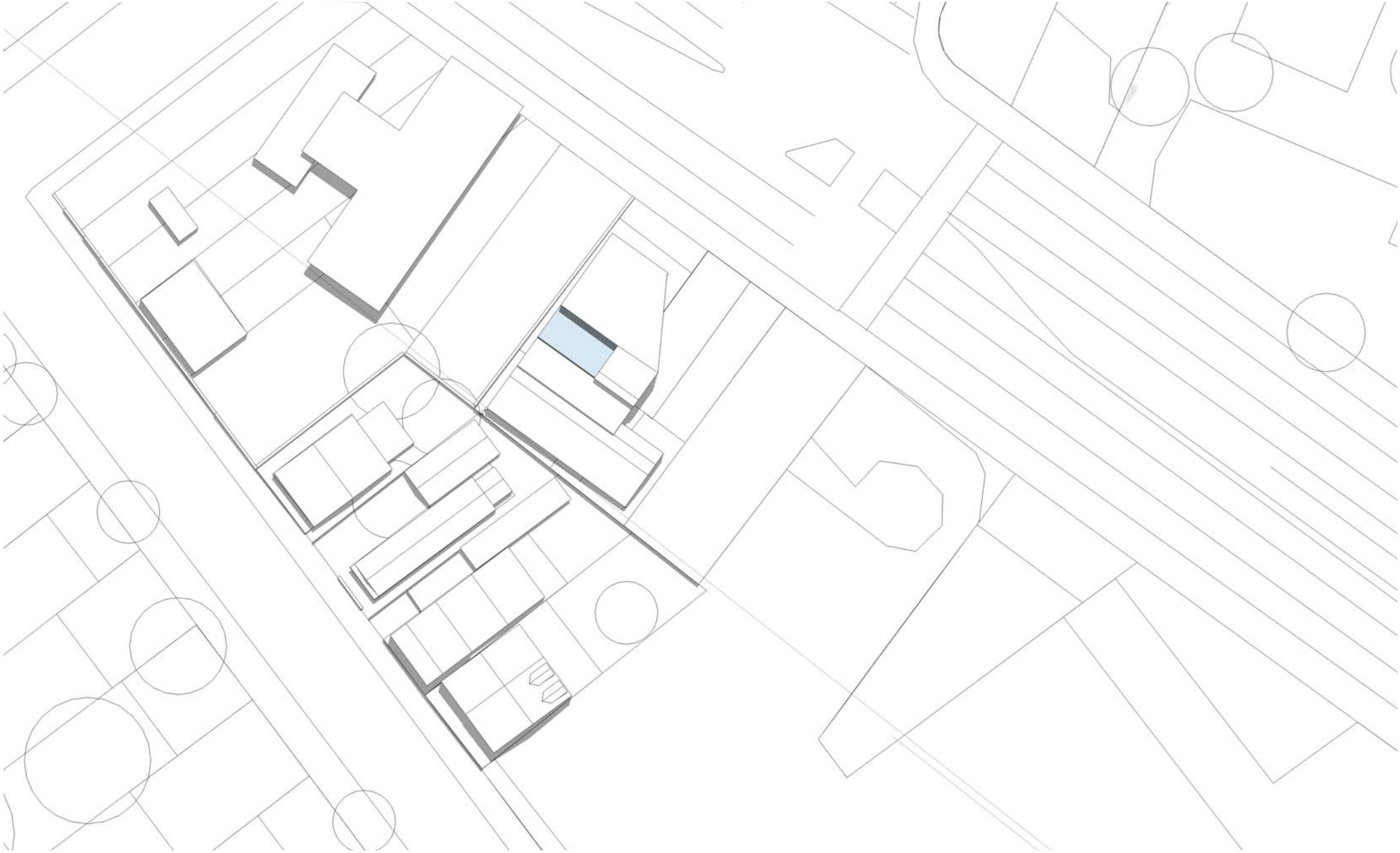
Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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21st Dec. 12 pm
Existing



21st Dec. 12 pm
Proposed



Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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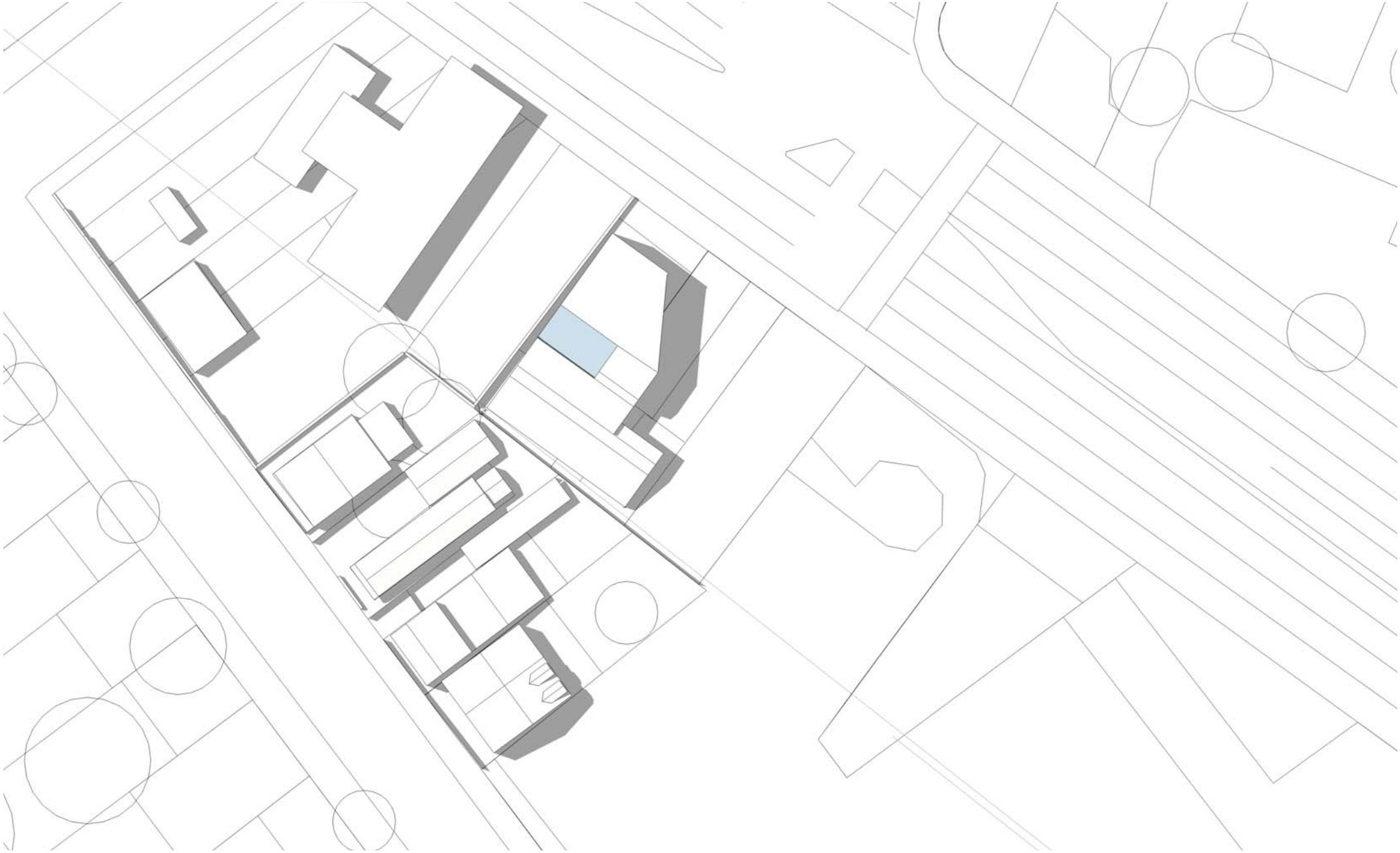
21st Dec. 2 pm
Existing



Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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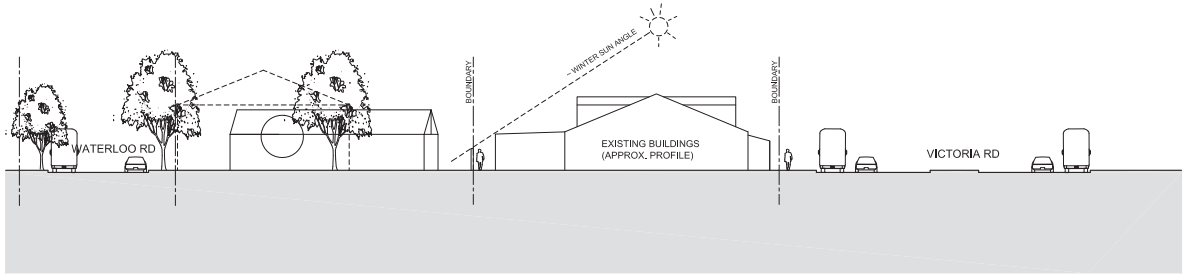
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Proposed



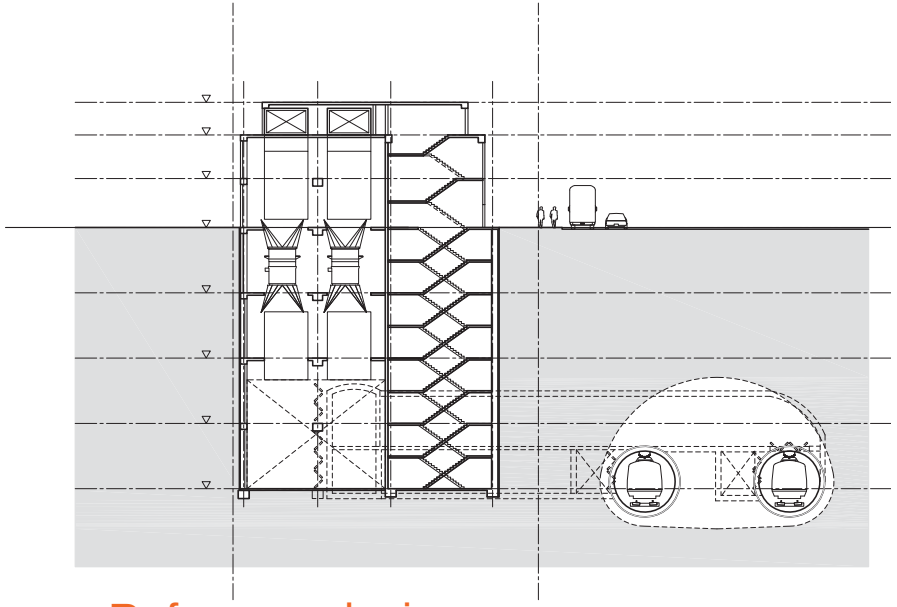
Rozelle Sun Study - 03.11.09 - Indicative shadow diagram

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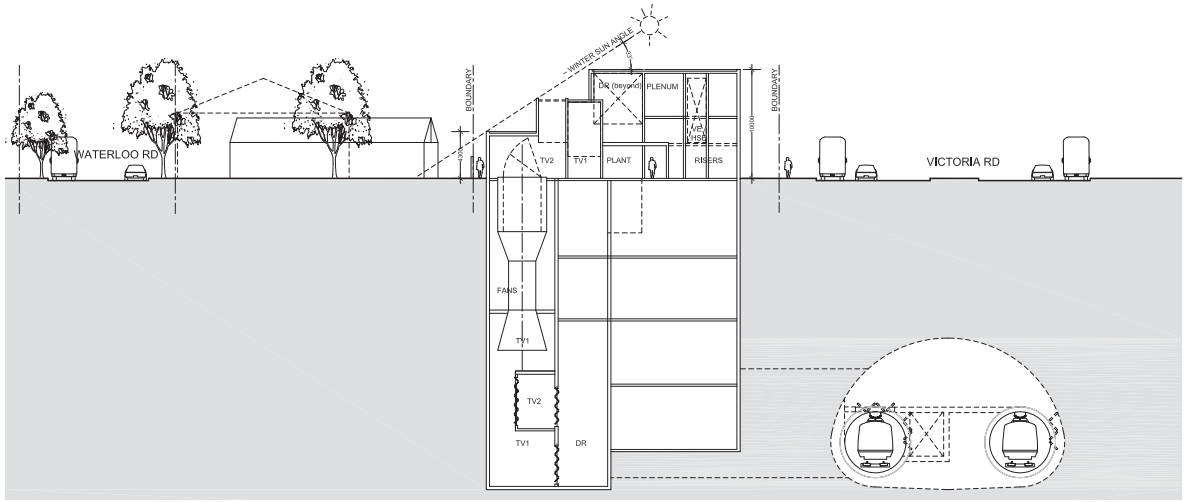
Cross Sections



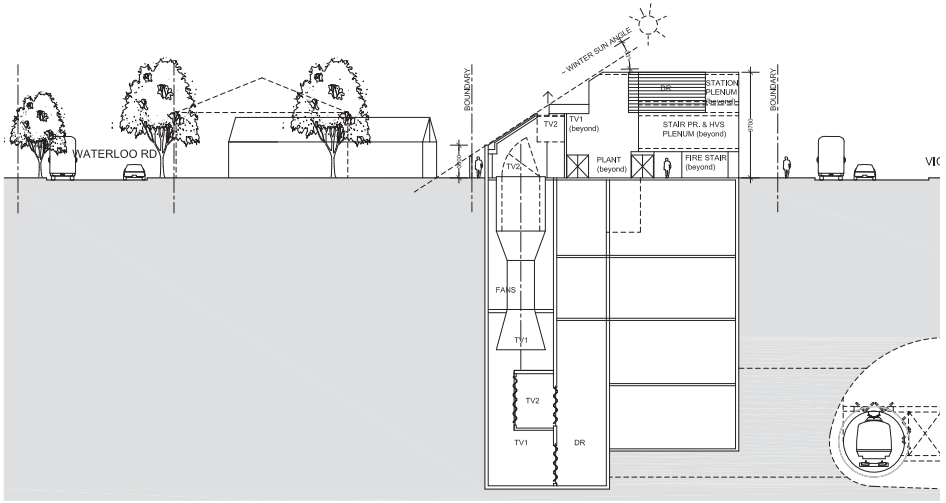
Existing



Reference design



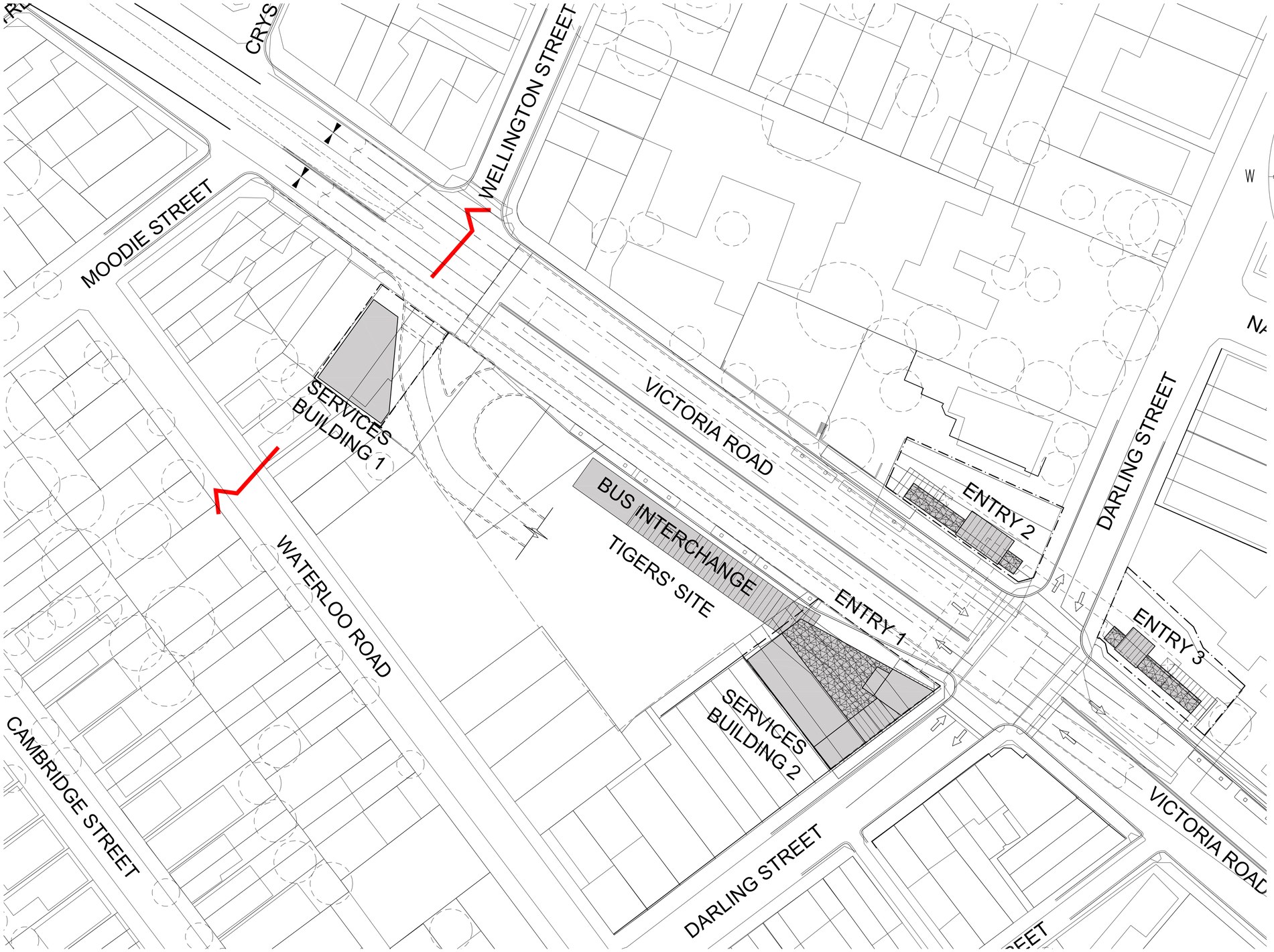
01. Reduced height from previous study



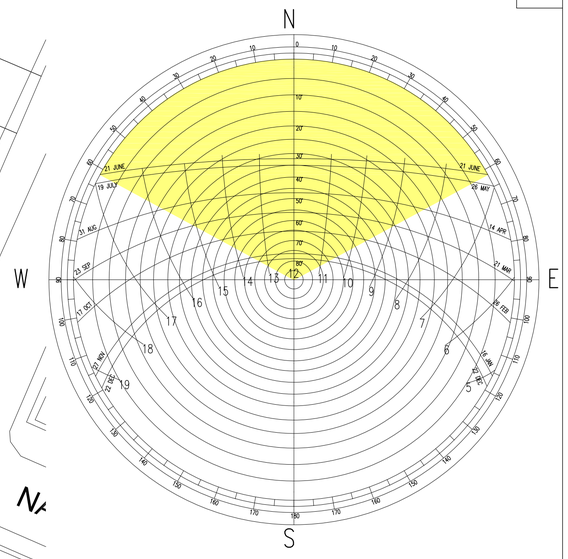
02. Reduced height per attached diagrams

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A1



01 - LOCATION PLAN



02 - WINTER SUN CHART

No.	BY	DATE	DESCRIPTION	APPD
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SydneyMetro

Project Title
SYDNEY METRO NETWORK STAGE ONE

Drawing Title
ROZELLE STATION
SITE PLAN

Status

Drg No. SITE PLAN

Rev. 00