

Appendix L White Bay and Depot Worksites Traffic Management Plan





CBD Metro TA 2108 Transport and Access Advisor

White Bay and Depot Worksites – Traffic Management Plan

Sydney Metro

19 August 2009

Document Reference: **CBD-2108-MSM-EP-DO-086**

White Bay and Depot Worksites – Traffic Management Plan

Prepared for

Sydney Metro

Prepared by

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Glossary

| Term | Acronym / Abbreviation | Description |
|--|------------------------|--|
| Acoustic | | Pertaining to the sense of organs of hearing, or to the science of sound. |
| Ambient | | Surrounding or existing. |
| Bored tunnel | | An underground tunnel constructed by a tunnel boring machine. |
| CityRail Station | | Existing rail station on the CityRail network |
| Construction Environmental Management Plan | CEMP | A document setting out the management, control and monitoring measures to be implemented during construction of a development, to avoid or minimise the potential environmental impacts identified during an environmental impact assessment process. |
| Construction site (or worksite) | | Land required for construction activities associated with the project (including storage, amenities, site offices, etc), and may be required for the construction and commissioning phases. A construction site may be temporary (e.g. for Enabling Works such as adjustment to a water main) or long term (e.g. a station construction worksite). |
| Construction Traffic Management Plan | CTMP | Construction Traffic Management Plan is a document prepared for each stage of construction work, and describes the impact and mitigation measures to address changes to traffic conditions resulting from discrete elements and stages of construction activity. |
| Crossover | | Track form to allow trains to move to an adjacent track. |
| Cut and cover construction | | Method of construction for underground structures where a hole is excavated from the surface down, the structure is built and then covered. |
| Director-General's requirements | | Requirements for an environmental assessment issued by the Director-General of the Department of Planning in accordance with the Environmental Planning & Assessment Act 1979. |
| Diamond Crossover | | Two crossovers located adjacent to each other in a diamond formation. |
| Earth Pressure Balance Machine | | Is a mechanised tunnelling method in which spoil is admitted into the tunnel boring machine (TBM) via an arrangement which allows the pressure at the face of the TBM to remain balanced without the use of slurry. |
| Framework Traffic Management Plan | FTMP | Framework Traffic Management Plan is a document which outlines the processes and systems to be established to control traffic issues which are common to all Metro Worksite locations. |
| Integrated Metro Operations | IMO | Integrated Metro Operations is responsible for running the Metro Operation, within the permanent route infrastructure and refers to all running systems and operations required to operate the Metro. |
| IMO contractor | | Integrated Metro Operations contractor responsible for rollingstock, rail systems, tunnel services, and station building works, fitout and services including mechanical and electrical. |
| IMO construction contract | | The agreement between the project company and the construction contractor to undertake the IMO works |

| Term | Acronym / Abbreviation | Description |
|--|------------------------|---|
| IMO site access plan | | The plans of that name that form part of the project management plans and must be updated by the project company in accordance with the plan and reports schedule |
| IMO construction traffic management plan | | Plan for site access for contractors and public during construction and operation phases |
| Geotechnical conditions | | Relating to the form, arrangement and structure of geology, soils etc. |
| Kiss-and-ride | | Where a car passenger is dropped off at a public transport station/bus interchange by a private car. This is generally by a family member, hence the 'kiss' goodbye. |
| Maintenance depot | | Land including buildings and facilities for the maintenance of the Metro system, including rolling stock and the infrastructure. |
| Metro railway | | A guided system designed to transport passengers on a railway track, together with its infrastructure and associated sidings, that: (a) provides high-frequency commuter and other passenger services, and (b) is operated using automated systems, that are integrated with trains, from one or more central control points, and (c) is operated using dedicated rail infrastructure facilities that are not operationally connected with other types of rail infrastructure facilities. |
| Metro railway system | | (a) a metro railway and its rail infrastructure facilities, and (b) stations, platforms, maintenance facilities, depots and other transport interchanges, works, structures and facilities associated with or incidental to the metro railway or rail infrastructure facilities (including commercial and retail facilities). |
| Ministry of Transport | MOT | NSW Government Ministry of Transport. |
| Paid concourse | | Area of the station that can only be accessed by ticket holders. |
| NCLG | | The Network Coordination Liaison Group is a group of stakeholders who are to be formed to ensure that construction related impacts of the CBD Metro are managed with respect to changing road demands and competing interests in the CBD over the life of the construction of the project. |
| Proponent | | The person proposing to carry out development comprising all or any part of the project, including any person certified by the Minister for Planning to be the proponent (such certification to be obtained prior to commencement of the relevant part of the project). Sydney Metro is the proponent for the CBD Metro project. |
| Permanent Route Infrastructure | PRI | Comprises the civil, tunnelling works and station excavations to be designed and constructed by the PRI Contractor on behalf of Sydney Metro, for handover to the IMO contractor for construction of the IMO Works. |
| PRI Contractor | | (PRI) contractor, responsible for surface works for construction of the Stabling and Maintenance Depot, tunnelling works, and excavation and retaining structures associated with the station boxes |
| Product | | The new metro railway in total including assets, brand, systems, |

| Term | Acronym / Abbreviation | Description |
|-------------------------------------|------------------------|---|
| | | intellectual property, interfaces and metro services |
| Road header | | Machine used to excavate tunnels with a boom-mounted cutting head. |
| Road User | | A road user is any person who uses a road, driveway or footpath, and includes motorists, buses, pedestrians, cyclists, taxis etc. |
| Rolling stock | | Standard single deck metro trains used on the metro railway. |
| Road Occupancy License | ROL | A Road Occupancy License is a process whereby an Authority (primarily RTA) gives its approval for an activity which involves removing one or more lane of the road from traffic or parking use to another use – usually temporary construction. |
| Spoil | | Excess material resulting from the cut and fill balance. Generally comprises soil and rock material. All volumes refer to solid volume. |
| Stabling facility | | Location where rolling stock (trains) are stored when not in service. |
| Station | | Refers to proposed Metro station infrastructure, including platforms, concourse, entrance, pedestrian connections, staff facilities and associated requirements/facilities to service the station. |
| Station Plan | | Plans that may be prepared for land on which metro railway stations are to be situated, and land in the vicinity of such metro railway stations, with respect to development, traffic and parking management arrangements, pedestrian links and access facilities, retail and commercial development associated with metro railway stations, public domain amenities and improvements, and other matters ancillary to the operation of metro railway stations and any associated transport or other facilities. |
| Sydney Metro | | Sydney Metro is the NSW Government agency constituted under the Transport Administration Act 1988 to develop a metro railway system, including procuring the CBD Metro and possible future extensions of it. |
| Speed Zone Authorisation | SZA | A speed Zone Authorisation is a process whereby the RTA gives permission for a change to the speed limit. |
| Traffic Management Plan | TMP | A traffic management plan is a document which describes the traffic impact and management measures for a specific work area. |
| Traffic and Transport Liaison Group | TTLG | The Traffic and Transport Liaison Group is a group of stakeholders which will be formed to ensure those stakeholders have the opportunity to review and comment on the traffic management measures and road changes proposed to be put into place to manage traffic on and adjacent to the project. |
| Tunnel boring machine | TBM | Machine used to excavate tunnels with a circular cross section through a variety of soil and rock strata. |
| Turnback | | Configuration of tracks allowing a train to terminate a service and return to its starting point. |
| Unpaid concourse | | Areas of the station that can be accessed by any member of the public. |
| Virgin excavated natural material | VENM | Natural material (such as clay, gravel, sand, soil and rock) that: (a) is not mixed with any other type of waste; and (b) has been excavated from areas of land that are not contaminated. |

| Term | Acronym / Abbreviation | Description |
|-----------------------|------------------------|--|
| Variable Message Sign | VMS | Portable variable message signs are trailer mounted electronic signs used to display traffic messages to motorists. Permanent Variable Message signs are large gantry signs permanently installed at the side of the road which are owned and operated by the RTA. |

Executive Summary

This Traffic Management Plan outlines the traffic impact and traffic mitigation measures proposed to be put in place to manage construction of the White Bay and Depot worksites for CBD Metro.

This Plan has been developed at an early stage based on the anticipated traffic management measures that could be selected by the successful contractor/s, once awarded. The Plan demonstrates the impacts and mitigation measures for a feasible traffic management scenario.

Traffic impacts have been determined based on worksite layouts and construction methodologies provided by the CBD Metro TA2100 adviser and are current as to the date of this report. PARAMICS modelling has been undertaken by the RTA to determine the traffic impact of the proposed construction traffic, utilising the Victoria Road network model.

The primary network adjustments resulting from this Plan are:

- Creation of a new left in left out access point from the City West Link Road eastbound, approximately 200m west of the intersection with The Crescent; and
- Creation of a new right out movement from the Lilyfield Rail Marshalling Yards on the northern leg of the intersection with City West Link Road and The Crescent.

The major mitigation strategies recommended for implementation to manage construction impacts resulting from this Plan are:

- Pedestrian and site security management measures to be put in place for access to the private port areas adjoining Sommerville Road;
- Traffic control on arterial roads, if required, is restricted to certain night time and weekend periods;
- A Traffic and Transport Liaison Group to be formed to oversee construction traffic issues; and
- No heavy vehicles to use Lilyfield Road between Gordon Street and Victoria Road, no heavy vehicles to use Gordon Street between Lilyfield Road and Victoria Road.

The major residual impacts of the construction traffic on the road network highlighted in this Plan are:

- Increase of truck movements at the intersection of The Crescent and James Craig Road resulting in a requirement for additional green time to the James Craig Road and eastbound right turn in;
- Increase of truck and light vehicle movements on the private road network of James Craig Road and Sommerville Road; and
- Trucks may use areas within White Bay and Glebe Island Terminal as a marshalling area prior to being called forward to serve CBD worksites.

1.0 Introduction

1.1 Project background

The CBD metro is a 7 km metro railway from Central to Rozelle and will be the first metro in a Sydney wide metro network. It will create new metro stations at:

- Central;
- Town Hall Square;
- Martin Place;
- Barangaroo-Wynyard;
- Pyrmont; and
- Rozelle.

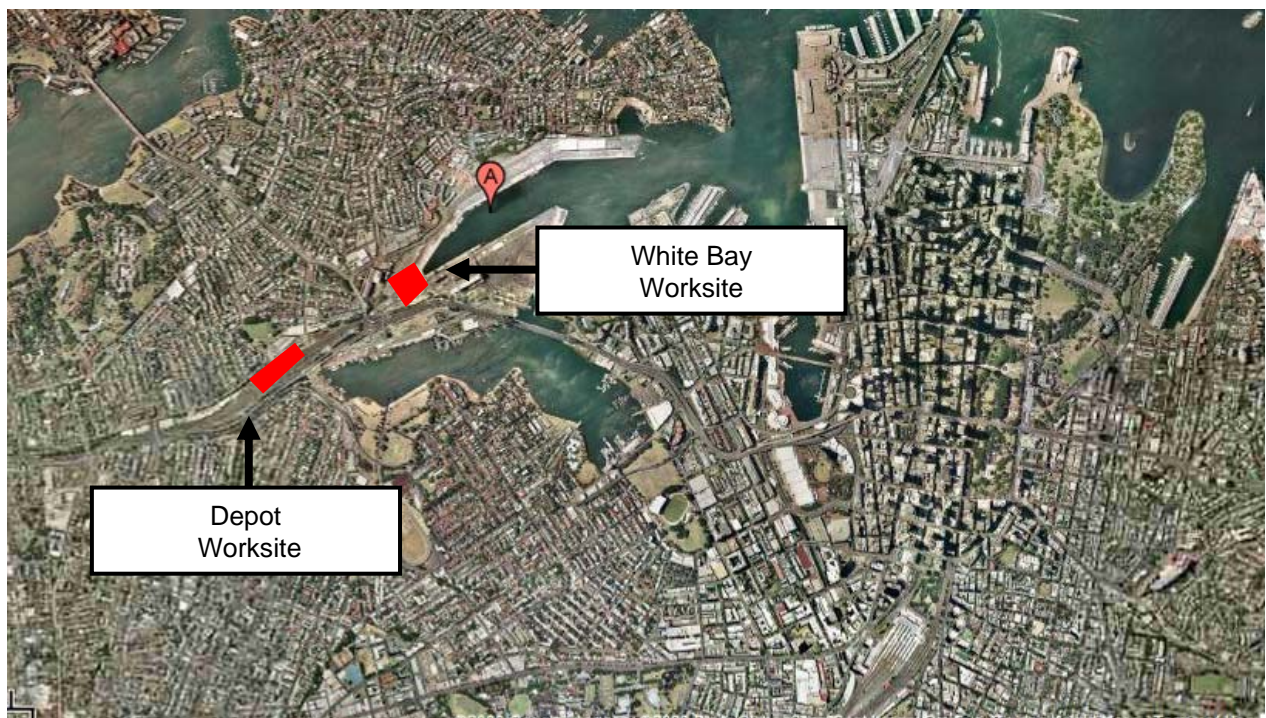
There is also a possible future station safe guarded at the White Bay development.

The White Bay Metro Station is located in the existing Port Authority land adjoining the disused White Bay Power Station near Rozelle / Balmain. White Bay will be the main construction site for the driven tunnels, running approximately 6km in two separate tunnels towards Central. The construction method for the driven tunnels will be via Tunnel Boring Machines (TBM's) while the safeguarded Station construction will be via cut and cover.

Approximately 1km to the west, on the western side of Victoria Road in the disused Rozelle Rail Yards, the Depot is proposed to be constructed to service operations of the Metro Line as well as stabling of Metro rail carriages.

Figure 1.1 shows the location of the worksites at White Bay and the Depot.

Figure 1.1: Location of the White Bay and Depot worksites



1.2 Scope of this report

This Traffic Management Plan (TMP) for the White Bay and Depot worksites outlines the construction methodology and timeframes and is based on advice from the CBD Metro Construction Technical Advisors (TA2100). The intent of the document is to determine the feasibility of construction as it relates to traffic management, and outline the mitigation measures and impacts that are anticipated to result, at this stage of planning. The Plan also covers concept staging of works impacting on roads, transport, road works and traffic management measures to mitigate the impacts of construction.

This TMP contains information about:

- The existing traffic situation at the worksite location(s);
- What works will be carried out;
- What the resulting traffic and transport impacts will be;
- How those impacts will be managed and reduced; and
- A summary of any changes or residual impacts.

The TMP has been prepared through a consultative process with relevant stakeholders. The traffic management strategies include comments made by Sydney Ports Corporation in their letter dated May 2009 where these relate to construction traffic management issues. However it is noted that further detailed consultation with all stakeholders, subsequent changes to construction methodology including those developed by the successful construction contractor/s and development of this plan may require alternate traffic impacts and revisions to the management arrangements proposed.

This TMP operates under the Framework Traffic Management Plan (FTMP), which covers traffic management responses and strategic processes, which are common to all work sites, to enable construction of the CBD Metro.

The FTMP identifies a hierarchy of access that was applied in developing traffic management arrangements, i.e.:

- Incidents;
- Events;
- Pedestrians;
- Service Vehicles;
- Cycles;
- Public Transport – Buses;
- Coaches;
- Taxis; and
- Kiss n' Ride.

A further level of traffic management detail will be contained in the Construction Traffic Management Plans (CTMP's), which will be the responsibility of the CBD Metro PRI and IMO contractors to develop, once appointed.

The traffic management plan hierarchy is as follows:

- 1) Framework TMP (Sydney Metro)
- 2) Site Specific TMPs (Sydney Metro)
- 3) Construction TMPs (PRI & IMO Contractors)
- 4) Construction TCPs (PRI & IMO Contractors)

CTMP's will utilise the approvals framework created by the FTMP and information contained within the TMP documents to develop a further level of detail, once specific and detailed construction methodologies and timeframes are confirmed.

The CTMP's will be prepared to support submissions for Road Occupancy Licenses (ROL's) and Speed Zoning Applications (SZA's) for works requiring diversions or temporary lane closures. The Traffic Control Plans (TCP's) developed as part of the CTMP's will provide details of changes to delineation, signage and other temporary traffic control devices, site access, public transport and pedestrian management, specific to the work activity.

This document is a live document and will evolve throughout the pre-tender phase of the project, as well as throughout the construction period.

1.3 Plan structure

This plan operates under the general project requirements and policies outlined in the Framework Traffic Management Plan. The report outlines the site specific strategies for the White Bay and Depot worksites and is structured as follows:

| | |
|-----------|--|
| Section 1 | Describes the CDB Metro project and TMP process |
| Section 2 | Describes the Existing Transport context for White Bay and Depot sites |
| Section 3 | Proposed Work Method |
| Section 4 | Worksite Operation and Management |
| Section 5 | Traffic Management Impacts and Mitigation Measures |
| Section 6 | TMP Compliance and Approvals |

2.0 Existing Situation

2.1 Transport

2.1.1 Pedestrian movements and volumes

Pedestrian movements around the White Bay worksite are very low. There is very limited pedestrian activity associated with the operation of the Glebe Island Silo's, and the majority of this movement is internal to the various leased areas rather than across and along roads in the area.

There is limited pedestrian movement between other tenants on SPC lands located off James Craig Road. A minor movement is observed accessing the cafeteria located in the NSW Maritime building.

There is a strong pedestrian movement along the pedestrian/cycle shared path which runs from Victoria Road along the northern side of the Anzac Bridge. There is a connecting path which links to an extended shared pedestrian cycle path along James Craig Road, however observed pedestrian volumes on this path are low.

The shared path over the Anzac Bridge continues on the southern side of The Crescent after crossing Victoria Road (Anzac Bridge Approach Road) via a grade separated bridge to the east of Victoria Road intersection. An at-grade crossing is also provided at the intersection from the western side of Victoria Road. The shared path crosses the left turn slip lane into James Craig Road via a wide pedestrian zebra crossing and also continues into James Craig Road. There is a signalised pedestrian crossing installed across the entrance to James Craig Road to enable pedestrians and cyclists to cross the remaining width after the left turn slip lane. This footpath carries a moderate level of pedestrian and cycle movement, as it serves as a pedestrian and cycle link connecting Anzac Bridge and Victoria Road to other destinations in Annandale and further west.

There is very little pedestrian activity adjacent to the White Bay worksite outside of the major shared pedestrian/cycle paths on Victoria Road, Anzac Bridge and The Crescent.

At the Depot site, there are pedestrian footpaths on both sides of Lilyfield Road. Onsite observations indicate that there is a low level of utilisation of these footpaths given the footpath does not serve any strategic function, rather it provides for local access to residential areas and businesses along Lilyfield Road and adjoining streets.

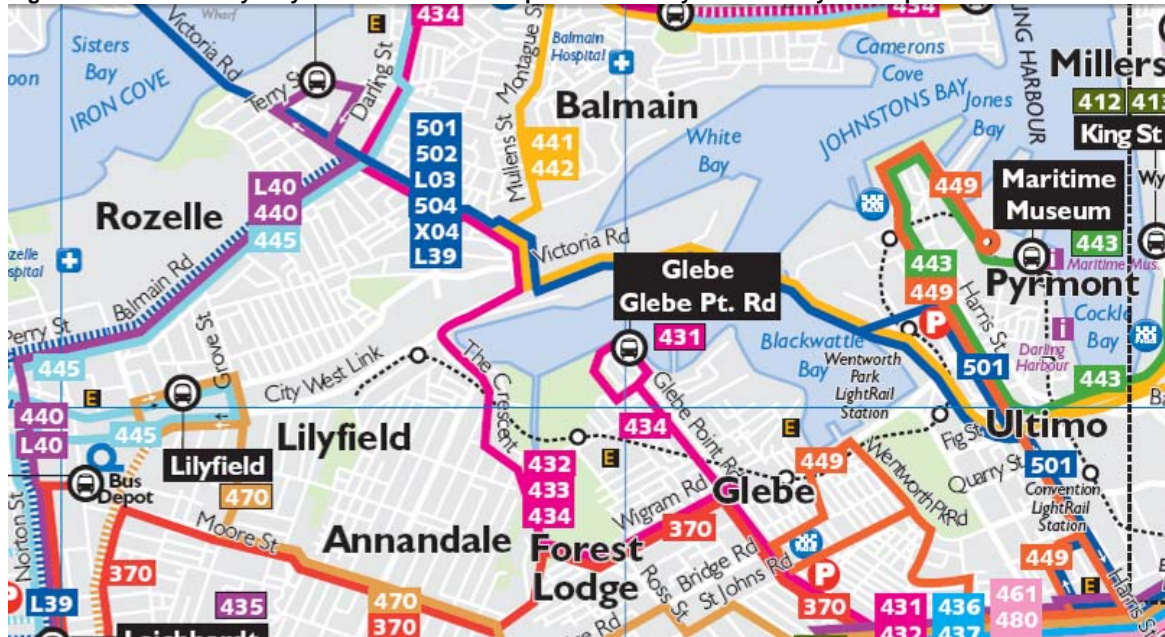
There is no pedestrian access to the Depot site, being disused Rail yards. There is a limited pedestrian movement accessing the adjoining businesses in Lilyfield Road and Gordon Street along Lilyfield Road.

2.1.2 Bus routes and stops

There is limited provision for bus stops adjacent to the proposed White Bay and Depot worksites.

An extract from Sydney Buses Route Map showing the extent of existing bus routes is shown in **Figure 2.1**.

Figure 2.1: Extract of Sydney Buses routes and stops in the vicinity of White Bay and Depot worksites



Source: http://www.131500.com.au/pdf/southern_region_guide_map.pdf 4/6/09

As can be seen from the plan, there are no scheduled bus services on Lilyfield Road east of Catherine Street or on the City West Link adjacent to the site. There are a high number of buses which use Victoria Road and the Anzac Bridge. Buses also use The Crescent and Roberts Road.

There is the possibility that School or special bus services use City West Link or Lilyfield Road, however there appear to be limited destinations in the adjacent road network on Lilyfield Road which would have a requirement for these services.

2.1.3 Taxis

There are no specific provisions for taxis on any of the roads immediately adjoining the worksite areas. Taxis use the arterial and local roads adjacent to the sites, and any impact to their operations will be the same as for general traffic.

2.1.4 Cyclists

The Anzac Bridge is a key strategic cycle corridor, providing cycle access from the inner west suburbs to the CBD. Observations indicate that this is a high frequency corridor for cyclists.

There is a shared cycle pedestrian path on the northern side of the Anzac Bridge to facilitate cycle movement towards the CBD. Principally the Anzac Bridge provides access between Victoria Road, Lilyfield Road and The Crescent to/from Pymont.

On the CBD inbound approach to the Anzac Bridge a connection is made to the shared path on the western bridge abutment. An access is provided underneath the Anzac Bridge via a shared path which continues along the northern side of James Craig Road and connects back to a shared path on The Crescent. This route provides an access point to cycle lanes which connect through to the direction of Leichhardt.

The Anzac Bridge cycle shared path continues along Victoria Road, with an overbridge to access Lilyfield Road. Lilyfield Road has on road cycle lanes in each direction providing access to the west via Haberfield.

An on road cycle path is provided on the northern and southern side of Lilyfield Road, connecting between the Victoria Road pedestrian overbridge (south of Lilyfield Road), and destinations such as Five Dock and Haberfield.

A shared pedestrian and cycle path is provided on the eastern side footpath of Victoria Road, between the Anzac Bridge and north past Darling Street Balmain. The footpath is narrow, and cyclists currently compete for space with pedestrians and waiting bus passengers. Bus shelters and other street furniture further reduce the width available for cyclists to ride.

Figure 2.2: Indicative extent of cycle paths adjacent to the White Bay and Depot worksites



Source: Extract from RTA Bike Map (http://www.rta.nsw.gov.au/usingroads/downloads/sydney_parramatta_bikemap_p1.pdf)

No formal cycle parking facilities have been observed in the vicinity of either the White Bay or Depot worksites.

2.1.5 Parking

White Bay worksite

Parking in White Bay is limited for unauthorised vehicles (i.e. vehicles which are not directly related to the White Bay or Glebe Island port tenants). Access for members of the general public to the Glebe Island Silo's is prohibited. There are areas within this site for staff parking and arrival / unloading management of heavy vehicles carrying bulk goods to be unloaded and stored in the Silo's. Within the site, there is provision for staff parking, and provision for heavy vehicles to queue while waiting to access the bulk goods drop off points.

There is a long section of 'No Parking' along the northern kerb line of James Craig Road. There are several tenants of the SPC lands who have private parking, such as NSW Maritime, the Super Yacht Marina, the Glebe Island Depot, various maritime repair businesses and a dry-dock facility.

Depot worksite

Parking is currently provided on both sides of Gordon Street on approach to the proposed depot worksite. Additionally, parking in a narrow shoulder area is provided on both sides of Lilyfield Road to the east and west of Gordon Street. Various businesses have off street parking provided onsite for both light and heavy vehicles.

It has been observed that the parking lane on Lilyfield Road is not wide enough to allow for the parking of heavy vehicles, without intruding into the adjacent cycle lane. Refer to **Figure 2.3** below:

Figure 2.3: Lilyfield Road heavy vehicle parking, looking west along Lilyfield Road east of Foucart Street, April 2009



2.1.6 Traffic signals

All major intersections in the area are controlled by traffic signals. All signals are assumed to be linked to the RTA SCATS network which allows dynamic response of the traffic signal timings to adjust to changing traffic flows, as well as remote manual adjustment.

The signalised intersections adjacent to the site are of strategic importance to the Sydney arterial network. These include:

- The Crescent and City West Link;
- The Crescent and James Craig Road;
- The Crescent and Victoria Road;
- City West Link and Balmain Road;
- City West Link and Catherine Street; and
- Victoria Road and Roberts Street.

2.1.7 Other traffic controls

Traffic calming is provided on Lilyfield Road between Gordon Street and Victoria Road.

A 4 ton load limit is in place on Lilyfield Road between Catherine Street and Victoria Road. The load limit applies to through vehicles, and does not apply to vehicles with destinations in Lilyfield Road.

A 4 ton load limit applies to Gordon Street, north of Lilyfield Road.

There is a restriction to private vehicles and members of the public entering the Sommersville Road/Glebe Island Silo and wharf area.

Two roundabouts are installed in James Craig Road at local road intersections. The roundabouts have been designed to accommodate the operation of heavy vehicles.

2.1.8 Existing road network

The existing road network is dominated by the Anzac Bridge, Victoria Road, The Crescent and the City West Link, which are all classified arterial roads with multiple lanes in each direction.

James Craig Road is a private road owned by NSW Maritime and provides access to various port tenancies in Rozelle and White Bay, including the Glebe Island Silo's and the former international car terminal. The circulating road network around the Glebe Island Silo's is owned by Sydney Ports.

Figure 2.4 shows the ownership of land adjoining the White Bay worksite:

Figure 2.4: Land ownership adjoining White Bay Worksite



Source – TA2100 16 June 2009

Lilyfield Road and Gordon Roads are local roads under the care and control of Leichhardt Municipal Council serving predominantly residential development. Lilyfield Road has a number of semi industrial businesses fronting it including Gillespies Cranes, a recycled timber yard and a freight forwarding trucking company which has a small container depot attached to it, amongst other light industrial users.

2.1.9 Traffic volumes and turning movements

Traffic volumes have been obtained from permanent count station data published by the RTA (2005). Results of locations near to White Bay and Depot worksites are presented in **Table 2.1**:

Table 2.1: Traffic volumes on adjoining road network

| Site/ Frontage Road | Existing | | |
|--|------------------------------|------------------------|------------------------|
| | Average Daily Flow | AM Peak Hour | PM Peak Hour |
| James Craig Road | | | |
| The Crescent (east of City West Link Rd) | 31,962 (e/b) | 2,909 (e/b) | 2,168 (e/b) |
| City West Link (west of The Crescent) | 32,895 (e/b) 31,163 (w/b) | | |
| Balmain Road (west of Cecily St) | 8,921 (e/b) 8,839 (w/b) | 783 (e/b) 558 (w/b) | 654 (e/b) 741 (w/b) |
| Anzac Bridge (east of Victoria Road) | 68,566 (e/b) 59,531 (w/b) | | |
| Lilyfield Road (west of Cecily St) | 2,817 (e/b) 3,391 (w/b) | 493 (e/b) 272 (w/b) | 263 (e/b) 457 (w/b) |

Source: RTA Permanent Traffic Counts, 2005 at various locations

2.2 Other

2.2.1 Adjacent developments

The following adjacent traffic generating developments has been identified:

White Bay/Glebe Island:

- Sydney Ports;
- Australia Sugar;
- Cement;
- Sydney Ports / NSW Maritime Depot (including emergency spill response);
- Car terminal (disused);
- Dry Dock;
- NSW Maritime Headquarters; and
- Super Yacht Marina.

Depot:

- Residential;
- Gillespies Cranes;
- Recycled Timber Yard;
- Trucking Depot;
- Auction House;
- Hardware/Timber Store; and
- Lighting and Sound/Productions Company.

It is noted that other development exists in the area not noted above.

It is also noted that several redevelopment opportunities exist in the White Bay Port precinct. These include relocation of the International Cruise Ship Terminal and creation of a Marine Refuelling Depot, of which further detail is covered in **Section 5.14.2** of this report.

2.2.2 Access

Access for all Sydney Ports tenants is via various driveway entrances off James Craig Road. All driveways currently have a good level of accessibility to James Craig Road. The nature of traffic generation for the existing and previous uses of James Craig Road is predominantly for heavy vehicles. Driveway entrances to adjoining land users have been constructed and previously operated with due consideration of the high volume of heavy vehicles which use this route.

Many of the existing land users have heavy vehicles as part of their operations with driveways designed for this purpose, including those at the western and eastern ends of James Craig Drive.

The adjoining development from Lilyfield Road is mixed and comprises residential, business and light industrial uses. Business and light industrial uses access Lilyfield Road from predominantly driveway access points, many of which are designed for heavy vehicle use. Residential development accesses Lilyfield Road is from direct frontage and driveways.

There is currently limited access off City West Link into the Depot site. A gravel entrance road on the northern side of City West Link provides access to the rail yards through a locked gate. This access is used for low frequency activities such as servicing an advertising structure located within the rail yards and can also be used as a general access the rail yards. This access is left in left out, and has limited visibility to approaching vehicles on City West Link, which is a 70km/hr zone road. No acceleration or deceleration lanes are provided and the access is over a dish drain type kerb arrangement.

There is an additional formed left in/left out access point on The Crescent, located between James Craig Road and City West Link on the northern side of the road. This area is used as a general access point to the rail yards and also to access a hard stand area which is currently used to store large crane elements and associated transportation equipment when not in use. The entrance to both the rail yards and hard stand area is gated, albeit separately. Access to the sites is across a kerb return.

3.0 Proposed Work Method

The underground stations along the proposed CBD Metro route will be cavern stations with the exception of White Bay station, which will be constructed using cut and cover techniques

Cavern stations are planned at locations where there are depth or land use restrictions for construction of cut and cover stations. Caverns are required to be in competent ground conditions to ensure the large spans required for the stations can be supported.

Cavern stations will primarily be mined with surface structure elements such as entrance, emergency egress and ventilation shafts constructed using cut and cover techniques similar to typical building basement methods.

A primary worksite will be established at the surface to support all stages of cavern station construction and secondary worksites will be required to support shaft construction activities. The site constraints at the surface are considerable with impacts on pedestrian and vehicular traffic for four or more years at each station primary worksite and to a lesser extent at secondary worksites.

Station shafts will be excavated using conventional excavation methods and the caverns will be excavated using roadheaders and rock breakers. It is envisaged that cavern excavation would be completed prior to the arrival of the Tunnel Boring Machines (TBMs) constructing the running tunnels. TBMs will be pulled through the station and prepared for the tunnel drive to the next station. A range of activities will be required at the primary worksite to support this process.

The main truck generating activity will be associated with spoil removal from the excavation of cavern stations, entrance, emergency egress and ventilation shafts, as discussed in Section 4. Other activities that will be supported by truck movements include:

- Enabling works will include building demolition works for property at primary worksites; temporary construction power supply installation; utilities/services relocation or diversion clear of the works and site establishment of station worksites;
- Ground support and lining works for station caverns with plant and material delivered to the underground cavern from the surface;
- Structural concrete works for station entrances, emergency egress and ventilation shafts, followed by internal building works and station architectural fit-out/finishes;
- Specialised installation works associated with station platforms, concourses, accommodation and circulation areas, services and other amenities, station entry/exit gates, platform screen doors and barrier installation.
- Mechanical and electrical fitout of station services and communication systems (including local power supply, lighting, public address, plant room cooling/humidity control; building management systems, smoke exhaust, gas purging, water and waste water, mechanical ventilation, etc.);
- Underground pedestrian concourse areas are to be constructed by combination of mining methods (to minimise disturbance of the road surfaces); and
- Testing and commissioning station systems.

The indicative station construction staging and indicative construction timeframe for the construction activities are summarised in **Table 3.1**.

Table 3.1 Proposed Construction Activities and Indicative Program

| Construction Staging Activities | Indicative Station Construction Timeframe | | | | | | |
|-------------------------------------|---|------|------|------|------|------|---|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | |
| Enabling & Site Establishment Works | █ | █ | █ | | | | |
| Shaft & Cavern Excavation | | █ | █ | █ | | | |
| Ground Support and Cavern Lining | | | █ | █ | | | |
| Structural Concrete Works | | | | █ | █ | | |
| Specialised Installation Works | | | | | █ | █ | █ |
| Mechanical and Electrical Services | | | | | █ | █ | |
| Underground Pedestrian Link Works | | | █ | █ | █ | | |
| Systems Testing and Commissioning | | | | | | | █ |

Source: CBD Metro TA2100 July 2009

Depot:

The proposed stabling and maintenance depot is to be located at the decommissioned Rozelle marshalling rail yard. The construction of the Depot will involve the construction of:

- The dive structure for Up and Down connections to the running lines;
- Stabling facilities for multiple 6 car train sets;
- Maintenance building;
- Control building and carpark; and
- Power supply infrastructure.

4.0 Worksite Operation and Management

4.1 Worksite locations

There are two worksites proposed to enable construction of the White Bay Safeguarded Station and the Depot site:

- White Bay worksite - The primary construction site for the Metro running tunnels and White Bay safeguarded Station will be at White Bay, located between the Glebe Island Silo's and White Bay power station. This worksite will be constructed on currently disused land and in place of the existing Glebe Island Maritime Depot; and
- Depot worksite - The second worksite will be located in the decommissioned Roselle Rail Yards located between Lilyfield Road and City West Link.

4.2 Site access and egress

4.2.1 Truck access locations

The following potential truck access and egress points are planned:

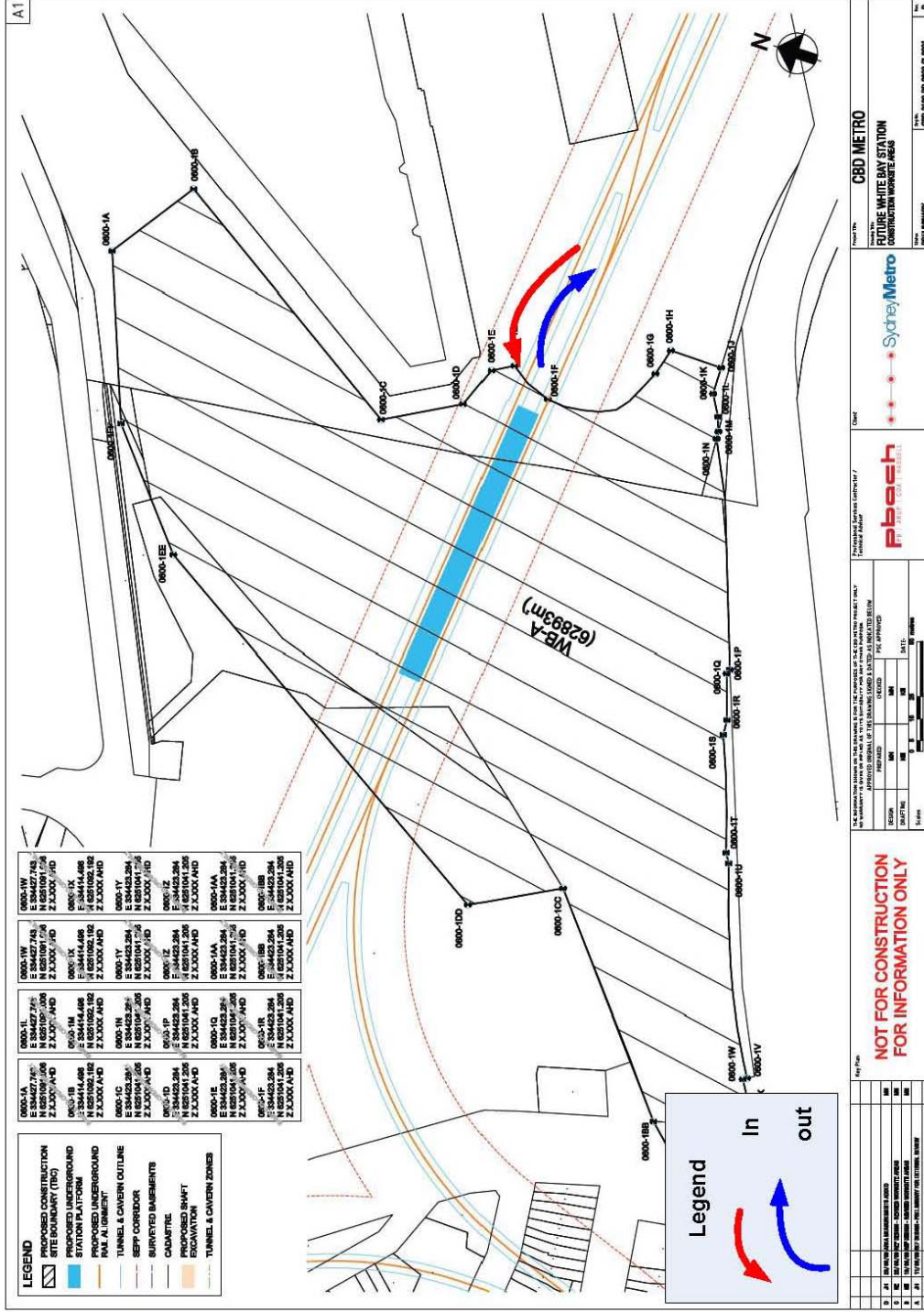
- White Bay worksite:
Entrance and exit via James Craig Road intersection with The Crescent. Optional exit provided via right turn out from the northern side of The Crescent to access City West Link Road westbound, if a connection is made between the worksites underneath Victoria Road Bridge. The James Craig Road intersection provides access to and from all directions – i.e. to Victoria Road, Anzac Bridge, The Crescent and City West Link Road. The internal site access will be via James Craig Road to the Glebe Island Silo access and circulating roads, using the existing traffic management in place for the Silo's.
- Depot worksite:
Access for heavy construction vehicles will be via the City West Link Road (CWL) via either a left in left out access way located on the western extremity of the site (at least 200m west of the CWL/The Crescent intersection) and/or a new four way intersection at the Crescent intersection. Ingress will be left turn in via the CWL at one or both locations.

Egress for heavy vehicles will be via left turn out onto the CWL at one or both locations. Egress may also be possible via a right turn out of the new four way intersection at The Crescent for westbound heavy vehicles.

Access is also proposed via direct driveway entrance/exit to Lilyfield Road and for light vehicles via Gordon Street. (All heavy vehicle access to use Lilyfield Road west of Gordon Street only).

Entrances and exits are shown on the construction worksite layout drawings (**Figure 4.1**, and **Figure 4.2**).

Figure 4.1: White Bay worksite



Source: TA2100 base map overlaid with TA2108 truck turn movements, July 2009

4.2.2 Approach and departure routes for trucks

There are several different potential truck approach and departure routes on the arterial road network. The selection of these routes will depend on the eventual spoil disposal location used.

The level of congestion on the adjoining arterial network varies depending on the time of day and peak under consideration as well as the time of year. The volume of traffic which will be generated by the construction activity is relatively minor in the context of the existing road volumes. It is not proposed that the route trucks take while operating in the peak periods will be varied.

Network modelling will be used to identify whether the impact entering and exiting the arterial road network will be acceptable.

The routes proposed in this Plan are based on traffic engineering judgement as well as knowledge of traffic patterns and existing operational traffic management. There may be minor modifications to these routes do not serve required origins and destinations.

4.2.2.1 White Bay worksite

Inbound:

Route 1 – Anzac Bridge westbound, left turn into James Craig Road, left into Sommerville Road, left into site.

Route 2 – Victoria Road southbound, right turn into the Crescent, left turn into James Craig Road, left into Sommerville Road, left into site.

Route 3 – The Crescent eastbound, right into James Craig Road, left into Sommerville Road, left into site.

Outbound:

Route 1 – Right out of site into Sommerville Road, right into James Craig Road, right onto Anzac Bridge approach road.

Route 2 – Right out of site into Sommerville Road, right into James Craig Road, right onto The Crescent and to Victoria Road.

Route 3 – Right out of site into Sommerville Road, right into James Craig Road, left onto The Crescent westbound.

Access from White Bay worksite through the Depot Worksite and to egress at the new right turn out at The Crescent intersection should also be possible, if required.

4.2.2.2 Depot worksite

Inbound:

Route 1 – Eastbound City West Link and left into site.

Route 2 – From any direction onto James Craig Road, into Sommerville Road, under Victoria Road bridge and into site.

Route 3 – City West Link to Balmain Road, right into Lilyfield Road, right into driveway entrance to site

Outbound:

Route 1 – Exit via right turn at The Crescent/City West Link traffic signals into City West Link westbound.

Route 2 – Left turn out of site onto City West Link eastbound, west of The Crescent intersection.

Route 3 – Out of site under Victoria Road bridge, into Sommerville Road, into James Craig Road and to any direction at The Crescent.

Route 4 – Left out of site driveway (most likely in the vicinity of existing recycled timber yard) onto Lilyfield Road, left onto Catherine Street and left or right into City West Link.

Heavy vehicle movements on Lilyfield Road are likely to be restricted to only those that are required for deliveries of plant or equipment etc which are not suitable to deliver via access from City West Link/Sommerville Road due to internal site constraints.

This restriction is expected to significantly reduce the heavy vehicle trip generation on Lilyfield Road resulting from construction of the Depot. The requirement to provide a site access point which utilises Lilyfield Road results from potential construction stages of the Depot where construction work, including excavations or end state built infrastructure, prevent suitable access from the City West Link access/egress point at the southern boundary of the site across to areas of construction activity including the Control Centre building and end state access points, located to the north of the site.

No ongoing heavy vehicle movements are currently proposed to use Lilyfield Road between Victoria Road and Gordon Street. No heavy vehicle movements are proposed to use Gordon Street between Lilyfield Road and Victoria Road. Light vehicles may use Gordon Street and Lilyfield Road to access the depot worksite

The primary heavy vehicle routes are detailed in **Figure 4.3**.

4.2.3 Truck manoeuvring requirements

White Bay worksite

The existing private road network around White Bay to and from the Glebe Island Silo's to the arterial road network has been designed for heavy vehicle movement. The access gate to and from the worksite will also be designed for heavy vehicle movement. Given the existing use of the network adjoining the White Bay site by a high percentage of heavy vehicles, no adjustment is believed to be required or needed to facilitate manoeuvring of trucks.

Additional details regarding the management of truck access through White Bay is outlined in **Section 5.11**.

Depot

Heavy vehicles may be required to turn in and out of the site from City West Link Road. In addition, a right hand turn movement out of the Rail Yards at the existing intersection with The Crescent is proposed. There is also potential for use of an existing driveway access point to be created from the worksite directly to Lilyfield Road.

The road environment in Gordon Street is unsuitable for two way truck working without modification due to limited road width and car parking being provided on both sides of the road. The intersection geometry at Lilyfield Road and Gordon Street further reduces the attractiveness of using Gordon Street for heavy vehicle access. **Figure 4.4** below shows the existing intersection of Gordon Street and Lilyfield Road.

Figure 4.4 – Intersection of Lilyfield Road and Gordon Street, looking south:



Source: TA2108 June 2009

It is noted that Gillespies Cranes, a current land user fronting the western side of Gordon Street, use Gordon Street for one way semi trailer access to their warehouse. The street is also used to access loading docks for other adjacent businesses on the east and western sides of the street.

The narrow width of Gordon Street which limits two way heavy vehicle operations does not limit two way light vehicle working, which can be accommodated satisfactorily within the existing configuration.

There is the potential for heavy vehicles to use an existing driveway access point to Lilyfield Road from the Depot worksite, at the location where the existing recycled timber yard currently has its entrance. The movement into and out of the driveway would be right turn in and left turn out for heavy vehicles. **Figure 4.5 and 4.6** below shows the potential location of a driveway access point.

Figure 4.5 and 4.6 – Lilyfield Road driveway access point to recycled timber yard



Source: TA2108, June 2009

The driveway is currently used by heavy vehicles originating from the Recycled Timber Yard and Hardware store, and the intersection geometry and wide kerb splay appears to be sufficient to allow for large heavy vehicles to turn into and out of the site.

Turning paths of over-dimension vehicles will be addressed on an as required basis (though the CTMP process and TTLG), with the potential for traffic control to be required to facilitate entry at appropriate times of the day if deemed to be required.

There is sufficient room within the Rail Yards to accommodate heavy vehicle movements.

4.2.4 Access for workers

Access for workers will be via the existing road network to onsite parking areas provided off Sommerville Road for the White Bay worksite, or via the Lilyfield Road/Gordon Street or City West Link entrances for the Depot site.

Pedestrian access is also available via James Craig Road, however there is no footpath network to link the entrance to the Glebe Island Silo's to the actual worksite located near to the disused White Bay Power Station. Safe footpath access will need to be made for workers walking between the gate and worksite would be on the road.

Pedestrian access to the site for workers will also be available from Lilyfield Road and/or Gordon Street. There is an existing footpath network on both Lilyfield Road and Gordon Street, and will need to be supplemented by appropriate internal site access for pedestrians.

There is the potential for White Bay to act as a parking facility for staff who are working at other CBD Metro worksites. Workers would then travel to other worksites via a shuttle bus service provided by the PRI or IMO contractor. Location of the parking area has not yet been determined and will depend on available vacant land.

4.2.5 On site parking

There is significant scope for parking onsite at both the Depot and White Bay worksites due to the size of these worksites. There is also scope for worker parking in adjacent streets, including Lilyfield Road which has sections of timed and untimed parking on both sides of the road.

4.3 Management of site access

4.3.1 Site security

The Depot and White Bay worksites will be fenced and gated, possibly by use of existing fences, to provide public safety and site security. There is the potential for the White Bay worksite to have a noise shed constructed in order to minimise disturbance from construction activity to adjoining sensitive receivers. The need for a noise shed is being determined but does not have any ongoing traffic implications.

The entry to the Glebe Island Wharf area is signposted as being restricted access to members of the public. If this route is to be used, management of access for site visitors will be required.

4.3.2 Truck access

Truck access to worksites will be via existing formed heavy vehicle access points and new points to be constructed suitable for heavy vehicle access. Trucks will enter the worksites and exit in a forward direction at all worksites. No pedestrian conflict is anticipated other than for potential access point on Lilyfield Road where the driveway crosses a low utilisation pedestrian footpath. (Refer to **Figure 4.5 and 4.6**)

4.4 Management of pedestrians at worksites

Public pedestrian access to the White Bay and Depot worksites will not be possible. As such, there is not anticipated to be any interaction with or management of pedestrians at either worksite, with the exception of worksite visitors and workers

Pedestrian management is not anticipated to be required at driveway entrances to worksites for the general public due to low levels of existing pedestrian movement.

Internal site pedestrian management will be required for both worksites. For the White Bay worksite, this includes the management of pedestrians who may access the worksite from James Craig Road, as there is currently no provision for pedestrian movements in Sommersville Road.

4.5 Hours of work

Standard NSW construction hours are 7.00am to 6.00pm on weekdays and 8.00am to 1.00pm on Saturdays. While some of the construction work would be undertaken within these standard construction hours, the majority of the works would need to be undertaken on a 24 hour six day week basis. The proposed construction hours for the below-ground and above-ground activities are outlined below in **Table 4.1**. In exceptional cases of urgency it may be necessary to depart from these assumed hours. This would not take place without prior discussion with and/or notification of local residents and the department of Environment and Climate Change.

Table 4.1: Expected hours of work

| Activity | Construction Hours | Comment/expectations |
|---|-------------------------------------|---|
| Below-ground construction activities | | |
| Tunnelling | 24 hours per day, six days per week | <ul style="list-style-type: none"> Some activities that support tunnelling and fitout works may need to occur 24 hours per day, seven days per week Rock hammering in the tunnel between 10.00pm and 7.00am is likely to be precluded where it may impact on residential receivers |
| Construction of station caverns | As above | |
| Above-ground construction activities | | |
| Construction Sites | Standard DECC construction hours | <p>The following activities would be undertaken 24 hours per day, six days per week where noise impact management measures have been established:</p> <ul style="list-style-type: none"> Surface works supporting underground construction (e.g. concrete pumping, truck loading) Excavation in hard ground <p>Non-disruptive preparatory work, repairs or maintenance may be carried out on Saturday afternoons or Sundays between 8am and 5pm.</p> <p>Activities requiring temporary possession of roads may need to be undertaken outside the assumed hours to minimise safety impacts and inconvenience to commuters. Similarly, works involving utilities would need to be undertaken during periods of low demand likely to be outside of standard hours.</p> |
| Construction Traffic | 24hours per day, 7 days per week | <ul style="list-style-type: none"> Spoil trucking operations are likely to occur between 7am to 10pm, seven days per week. Spoil trucking from the White Bay worksite will take place 24hours per day, 7 days per week. At locations where sensitive noise receptors are close to construction sites, significant construction vehicle movements are likely to be restricted during evening and night-time periods. Extended periods of localised lane and road closures would likely be required for safety purposes for the demolition of multi-storey buildings. |

4.6 Truck movements associated with spoil excavation

The removal of excavated spoil is anticipated to generate the maximum number of truck movements from the worksites and represents the worst ongoing case of all construction periods. **Table 4.** summarises the maximum number of truck movements per day, based on the average spoil production per day and removal by articulated or dog and trailer type trucks.

In addition to the locally generated spoil movements, there is the potential to utilise White Bay as a spoil handling area for spoil generated overnight from CBD station site excavation and stockpiled at White Bay until the spoil receiving location opens the next day. The arrival of these trucks will be single unit trucks and is assumed to be from all other worksites.

It is also proposed to utilise White Bay as a truck call forward location, where trucks returning empty from the spoil disposal location wait at White Bay until the relevant CBD worksite is ready to receive them and advice is given via the radio for them to drive from White Bay to the worksite.

The following assumptions have been made regarding the percentage splits of this traffic generation.

White Bay assumptions

- Truck access and movements will be 18 hour operation (potentially 24 hour operation however 18 hour shift assumed provides conservative approach for modelling of peak hour trip generation).
- The site will operate 6 days per week (potentially 7 day operation however 6 days assumed provides conservative approach for modelling of peak hour trip generation)
- Semi-trailers or truck and dog type trucks will be used for spoil removal/deliveries, capacity 10m³.
- The number of deliveries to White Bay to serve the tunnel and station construction (i.e. concrete, steel, plant, etc) will be approximately equal to 50% of the number of trucks removing extracted material.
- White Bay will be potentially used to facilitate parking of contractors vehicles working at station sites elsewhere on the project (particularly in the IMO stage of work). However these vehicle movements generated will not occur simultaneously with PRI main excavation stage of work and hence are not included in the worst case (excavation period).
- White Bay will be used as a main construction office for the project with engineers and other office personnel working onsite, with trip generation indicatively estimated.
- White Bay will be used as a general materials set down/consolidation centre/depot serving the other Metro construction sites, with trip generation indicatively estimated.
- Peak excavation spoil generation occurs when both TBM drives are operating, and one road header drive is underway.
- Approximately 60% of the trucks serving the other station worksites will use White Bay as a call forwarding storage location. Central and Wynyard can cater for call forwarding trucks onsite and are not included in this value.
- Trucks movements expressed as two way trips per hour.
- The removal of all spoil by road is assumed as the worst case scenario for traffic impact. Potential reuse of spoil onsite (i.e. at the Depot) or removal by barge is not assumed.

Table 4.2: Summary of Excavated Spoil Quantities and Associated Number of Trucks per day

| Location | Excavation (m ³) | Average Production (m ³ per day) | Truck movements per day ^{1/2} (trips per day) | Average Truck Movements per hour ⁴ (trips per hour) |
|----------------------------|------------------------------|---|--|--|
| White Bay | | | | |
| Diaphragm wall | Soft: 3,916 Rock:1,100 | 53 18 | 12 2 | 1 <1 |
| Station Box | Soft: 36,282 Rock:30,824 | 772 204 | 156 42 | 11 3 |
| Running Tunnels to Rozelle | Rock:51,114 | 329 | 66 ⁽²⁾ | 5 |
| Running Tunnel to Central | Soft: 13,902 Rock:256,988 | 951 614 | 192 ⁽²⁾ 124 | 13 9 |
| Cross passages/crossover | Rock:6,000 | 389 | 78 | 6 |
| Subtotal Rock ⁵ | 346,026 | 389 | 78 | 6 |

| Location | Excavation (m ³) | Average Production (m ³ per day) | Truck movements per day ^{1/2} (trips per day) | Average Truck Movements per hour ⁴ (trips per hour) |
|------------------------------|------------------------------|---|--|--|
| Subtotal Soft ⁵ | 54,100 | 951 | 192 | 13 |
| Total Spoil | 400,136 | | | |
| Depot⁽³⁾ | | | | |
| Remove unsuitable topsoil | Soft:57,000 | 386 | 78 | 6 |
| Running tunnels to main line | Rock:29,208 | 329 | 66 | 5 |
| Subtotal Rock ⁵ | 29,208 | 329 | 66 | 5 |
| Subtotal Soft ⁵ | 57000 | 386 | 78 | 6 |
| Subtotal Spoil | 86,208 | | | |

Source: Preliminary estimates of truck movements, CBD Metro TA 2104, 27/ 05/09, based on spoil quantities as of 15/05/09.

Note:

1. Number of trucks per day estimated on the basis of 10m³ per single truck (semi trailer or truck and dog).
2. White Bay production consists of one road header drive and two TBM drives occurring simultaneously.
3. Depot production is indicatively estimated
4. Hourly truck movements estimated on the basis of 15 hours per day operation,
5. Subtotals utilise maximum production rates to give worst case scenario, as different production activities are not concurrent.

4.6.1.1 Trip generation

The truck trip generation, based on the spoil removal activity, as outlined in **Table 4.2**, has been adopted to estimate hourly truck movements, as summarised in **Table 4.3**. Trucks are expected to be articulated or dog and trailer type trucks, given the generous worksite layouts and accessibility to the arterial road network as well as lack of pedestrian conflict which is experienced at other CBD worksites. The use of low loader or other over-dimension vehicles may be required for deliveries or other irregular loads, however this is not considered for the ongoing trip generation table.

In addition to the trip generation resulting from spoil removal, additional truck movements associated with the other uses of White Bay and Depot Worksites have been indicatively estimated. The estimates are considered conservative (i.e. representative or a worst case scenario) and are based on the following assumptions:

- Deliveries of plant, materials and supplies to serve White Bay is approximately equal to 50% of the trip generation of spoil removal;
- A main project office onsite, allowing for an average of 12 light vehicles per hour arriving and departing over 10 hours;
- Overnight spoil storage generated from other CBD worksites is not concurrent with peak hour of traffic generation, so not included in calculations to determine peak hour truck movements for modelling;
- White Bay is used as a Depot for storage of plant and equipment for other worksites, with an average of 10 trips per hour arriving/departing; and
- Arrival to White Bay for worker parking and a shuttle service to other CBD worksites where worker parking is not provided is not concurrent with major spoil generating activity and so not included in calculation of peak hour traffic generation.

Table 4.3: Peak Hourly Truck Trips (two way)

| Worksite Location | Activity | Daily Movements ¹ (two way trips per day) | Average Movements ² (two way trips per hour) | Maximum Movements ³ (two way trips per hour) |
|-------------------|---|---|--|--|
| White Bay | Spoil | 258 | 16 | N/A |
| | Deliveries | 130 | 8 | N/A |
| | Project Office ⁵ (light vehicles) | 400 | 40 | N/A |
| | Truck Marshalling/Call Forward | 779 | 58 | N/A |
| | Depot Facility ⁴ | 160 | 20 | N/A |
| Depot | Spoil | 78 | 6 | N/A |
| | Deliveries | 75 | 10 | N/A |

Source: Preliminary estimates of hourly truck movements, CBD Metro TA 2108 estimates and TA2100 spoil generation 27/5/09

Note:

- 1 Daily trucks movements from Table 1 generating one inbound and 1 outbound trips per tuck. Does not include use of White Bay as a overnight spoil handling depot
- 2 Average truck trips per hour, based on 16 hours per day for White Bay and 8 hours per day for Depot
- 3 Maximum truck trips per hour, based on the maximum throughput of one truck per 5 minutes
- 4 Depot facility operates 8 hours per day, in line with approximate delivery hours of suppliers
- 5 Strategically estimated based on site operation of 10hours per day

4.6.2 Other activities generating truck movements

Structural concrete and steel, plant and equipment, fittings and fixtures, escalators, and other engineering material will be required to be delivered to each of the sites for construction and fit out of the site.

It is not possible to accurately determine the volume of truck movements that will access the site for the purpose of making deliveries, and it is likely that this will change over the course of the various stages of construction activity. Given that the White Bay and the Depot worksites are not as constrained in size compared to the CBD worksites, deliveries and spoil movements can take place concurrently which will increase the overall vehicle generation above that which would be generated by spoil movement alone. The volume of vehicles making deliveries for the purpose of traffic modelling has been estimated to be approximately equal to 50% of the volume of vehicles transporting spoil from the site.

There is the potential for the White Bay worksite to function as a depot/consolidation centre, for the delivery and storage of plant and material not required for immediate use at the other Metro worksites. The use of a central depot may be necessary due to the limited worksite space available at other Metro worksites, and can also reduce the overall volume of trips required on the network by creation of a central repository from where stocks can be obtained when required, rather than multiple deliveries from suppliers in smaller batches. The traffic generation of the depot use has been indicatively estimated at 10 vehicles per hour.

The White Bay worksite, due to its size, also has the potential to be used as the main onsite project office for management of the overall project. This use has not been confirmed, but it has been accounted for in the traffic modelling. It is expected that this use will only generate light vehicle volumes, which have been indicatively estimated at an average of 12 vehicles per hour, occurring over 10 hours.

There is also the potential for James Craig Road to be utilised as a truck call forward storage location. Trucks returning from the depositing of spoil may become bunched or surplus to those which can be

accommodated on the limited space available at some CBD Metro worksites. To ensure the minimum of disruption to the CBD network due to surplus trucks having to circulate or store within the CBD, it may be required to utilise James Craig Road for the storage and arrival management of spoil trucks serving other CBD Metro stations.

It has been assumed that due to site size, Central and Barangaroo-Wynyard sites could accommodate the storage of trucks onsite. For other worksites, an assumption has been made that approximately 60% of trucks on route to the worksites will utilise James Craig Road to store temporarily while waiting to be called forward via radio to the site.

This trip generation has been incorporated into **Table 4.3**, and is considered to represent a worse case scenario. Due to the length of travel time between James Craig Road and the CBD worksites, it is anticipated that the use of James Craig Road as a call forward location will also need to be supplemented with another location on-route to the CBD worksites within a reliable 1 minute travel time.

4.7 Parking requirements

Due to the accessibility and size of the construction sites at Depot and White Bay worksites, as well as under utilised land nearby, there is the potential to accommodate significant worker and truck parking onsite.

Details relating to the proposed use of White Bay as a truck call forward location and for management of trucks waiting to load spoil from White Bay is included in **Section 5.11**.

In addition to truck parking, the opportunity exists to allow worker parking on or off the White Bay worksite, as well as on the Depot worksite.

The decision to utilise this facility and its management will be up to the PRI or IMO contractor to determine, with additional analysis required to determine the impact of parking vehicles on the adjoining road network. It is noted that the start and end of shift times associated with Metro construction are unlikely to coincide with the peak hour traffic periods on the road network.

Regardless of the need to provide offsite parking for other CBD Metro worksites, there will be worker parking provided at both White Bay and Depot worksites for onsite staff. Due to the expected limited light vehicle traffic generation at the Depot Worksite, no provision for impact of this parking has been made. At the White Bay worksite, the trip generation of this worksite has been indicatively estimated in **Table 4.3**.

4.8 Disposal locations and proposed haulage routes

The disposal locations for the excavated spoil are not yet available as these will be determined by the PRI contractor; however they are likely to be located in Western Sydney.

Once on the arterial network, the impact of the heavy vehicle movement is diminished.

Truck routes locally to the Depot and White Bay work sites are outlined in **Section 4.2** of this Plan.

The disposal location of any demolition material or contaminated spoil is likely to be different from the disposal of the majority of previously undisturbed tunnel generated virgin natural excavated material.

4.9 Provision for over-dimension vehicles

Processes are required where over dimension or over mass vehicles are required to access the worksites. This may include low loaders transporting equipment, Road Headers/TBM's or Metro rolling stock etc. The haulage contractor will be responsible for complying with RTA and/or Local

Council/private land owner restrictions on access routes and travel times, together with obtaining any approvals.

It is anticipated that there will be a number of over dimension vehicles accessing the Depot worksite for items such as the delivery of rolling stock. It is anticipated that these vehicles will travel via the City West Link westbound and directly into site, potentially under traffic control if the swept path of these vehicles requires them to turn from lanes other than the kerbside, or other manoeuvring movements are required to access or egress the site.

Processes to facilitate over dimension or over mass vehicles are outlined in the FTMP, and restrictions on the use of traffic control outlined in **Section 4.5.2**.

4.10 Other temporary worksites

In addition to the main construction sites identified, other temporary worksites would be required from time to time, as part of the enabling works, PRI works, IMO works and/or other minor works packages.

The temporary worksites would be short in duration in comparison with the main CBD Metro construction sites. Duration for these worksites would range from less than 24 hours (for overnight delivery of oversized loads to site), to longer durations of up to 12 months (for worksites required for utility diversions, initial stages of building demolition works, and other staged areas to facilitate infrastructure construction).

The size, location and extent of temporary worksites have not been determined at this stage of the project, however the activities would likely be for work items such as:

- Delivery and lifting of large construction equipment, materials, and components of the works (e.g. escalators, lifts, steel or concrete beams/columns, etc) from within the road reserve, that cannot be undertaken from within the main construction sites due to space limitations;
- Removal and lifting of large construction equipment and material (e.g. TBM components at Belmore Park (Central Station), materials from demolition of existing building, etc) that cannot be undertaken from within the main construction sites due to space limitations;
- Pit and duct systems for 11kV construction power supply for all station sites, and 33kV supply at Pyrmont and Rozelle/Lilyfield;
- Other utility/services connections for construction purposes (e.g. water supply points, connections for telecommunications, etc);
- Construction and permanent depot access connections onto City West Link Road at Lilyfield;
- Pit and duct systems for bulk power supply routes at Central/Surry Hills and Rozelle/Lilyfield;
- Relocation or diversion of existing services/utilities clear of the main CBD Metro construction sites;
- Initial stages of building demolition works where there is no suitable vehicular access within the property boundary;
- Utility/services connections for the CBD Metro infrastructure in the vicinity of stations, and the stabling and maintenance depot (e.g. water supply, sewer, stormwater, power supply, telecommunications, data, etc);
- Other staged temporary areas to facilitate infrastructure construction works;
- Station precinct and stabling and maintenance depot urban domain and finalisation works external to the main worksite locations including minor adjustment/interface with roads; provision of bicycle ways, pedestrian areas and footpaths; hard and soft landscaping; relocation or adjustment to bus stops and taxi ranks; provision of bicycle storage facilities; wayfinding and signage; line marking; exterior lighting; and other urban domain treatment works.

Measures and management processes that would be implemented to minimise impact associated with temporary worksites would include items such as the following:

- Coordination of works to ensure concurrent worksites at any one location do not coincide (for example a water main diversion on one side of the road would not be undertaken at the same time as installing a telecommunications cable pathway on the opposite side of the road);
- Staging of the works to ensure extent of impact is minimised. For example 'rolling' worksites would be used for linear worksites required for utilities. Trenches for utilities within roads would be excavated, pipework/ducts installed, and backfilled in short (easier to manage) sections along the length of the utility works wherever practicable;
- Alternative 'trenchless' construction methods including pipe jacking, auger boring, microtunnelling, pipe ramming, pilot tube, and horizontal directional drilling could be used where space and methods permitted reduces disturbance on the surface;
- Where works in roadways are required to cross through or are in proximity of intersections, or other constrained areas, night works and the use of road plates would be employed to ensure day-time traffic is not impacted;
- The construction contractors would be required to prepare Traffic Control Plans (TCPs) and road occupancy permits for each worksite for approval by the relevant authorities (e.g. RTA and/or Council) prior to the works commencing on site;
- Provision of suitable traffic control and warning devices as detailed in the TCPs such as traffic control personnel, signage, etc;
- Provision of suitable worksite fencing/barricades to ensure safety of the public and the workers. Where works are proposed in or adjacent to the road reserve, vehicular barricades would be used, otherwise chain wire/mesh type fencing would be used around worksites within footpath areas;
- Access and security of temporary worksites would be carefully managed at all times including when no activity is being undertaken within the sites;
- Minimising storage of materials and equipment within temporary worksites;
- Selection of noisy construction equipment and methods (such as jack picks, jack hammers, rockbreakers, concrete cutting, cranes, etc) would include consideration of proposed working hours, duration of works, and proximity of residential and other sensitive receivers;
- Use and management of suitable environmental controls such as cleaning of truck wheels, sweeping or pavements, control of excavated material to prevent mud tracking and dust, silt socks around stormwater inlets, etc;
- Maintaining and coordinating access to adjacent properties, and access for emergency services at all times;
- Undertaking appropriate community notification and liaison prior to and during the works.

Trenchless construction methods

Trenchless construction methods are an alternative to open trenching. There are different methods depending on the sites specific requirements. Trenchless methods use either steerable or non-steerable equipment. The steerable equipment can provide pipelines at accurate lines and grades, which is essential for certain applications such as gravity flow sewers. Each different method has its advantages and limitations and the selection of the appropriate method is crucial. The various trenchless methods available are pipe jacking, auger boring, microtunnelling, pipe ramming, pilot tube, and horizontal directional drilling. The particular trenchless techniques also vary depending on whether pressure conduits, gravity flow conduits, where and under what facility they are being installed, length of the installation, and the diameter.

5.0 Traffic & Pedestrian Management Impacts and Mitigation Measures

5.1 Primary construction impacts

Primary traffic impacts of construction are anticipated to relate to:

- Additional traffic generated on the arterial network;
- Additional traffic generated on the private roads of James Craig Road and Sommersville Road;
- The need to provide heavy vehicle access to the Depot worksite;
- Temporary lane occupancies for the diversion of services/utilities; and
- Temporary traffic control to facilitate the arrival of over dimension loads.

5.2 Incidents and events

5.2.1 Incidents

Incident response and relevant responsibilities for managing incidents are outlined in the FTMP.

5.2.2 Emergency vehicle access

As there are no ongoing road occupancies, road or lane closures proposed as part of the works, there is not expected to be any impact or restriction to emergency services, including fire brigade, vehicles from accessing any buildings.

The location of fire hydrants and access requirements has not been established.

Liaison with adjoining buildings to the White Bay and the Depot worksites will need to take place to ensure these buildings update their emergency evacuation procedures to ensure the emergency routes do not rely on access or congregation points which have been closed or occupied by CBD Metro construction activities.

The Glebe Island Depot (incorporating emergency spill response equipment) is currently located with its access from James Craig Road and Sommersville Road, is proposed to be relocated as part of the construction works. If not relocated, the existing access will be maintained to the current depot location. As such, there is not anticipated to be any impact of construction vehicle traffic or access to the depot.

5.2.3 Size of emergency vehicle

As there are no ongoing lane closures currently anticipated for construction of the Depot or White Bay worksites, there should not be any impact on the size of vehicle which can access the adjoining road network.

There should be no restriction on accessibility of emergency vehicles to adjoining buildings.

The SPC requirement to provide “truck access” between Glebe Island Terminal and Berths to the north/east is for heavy articulated vehicles. The geometric and structural requirements of a heavy articulated vehicle will be considered when designing or facilitating available space for this movement when setting out the White Bay worksite layout plans.

5.2.4 Events

Processes for the management of special events are outlined in the FTMP.

There is the potential that James Craig Road, being a private road, may be used for events such as filming or other special purposes, which would be negotiated with the road owner, NSW Maritime and the SPC. There may be times that where congestion on the adjoining road network may arise from special events elsewhere in Sydney. Procedures for managing this are outlined in the FTMP.

5.3 Pedestrian management

5.3.1 Footpath narrowing

There is no footpath narrowing proposed in the vicinity of either worksite.

5.3.2 Pedestrian capacity

Existing footpath capacity will not be impacted by the two worksites.

5.3.3 Provision for vulnerable users (school children, elderly and mobility impaired)

No additional provision for vulnerable road users will be made by the construction. Any traffic calming or footpath treatment for vulnerable users which is disturbed by construction activity will be re-instated following completion of the work, with consideration given to temporary facilities during the work.

Temporary footpaths within the worksites will be maintained at a minimum width to allow passage of a wheel chair user and comply with minimum footpath widths.

5.3.4 Site access management

Details of traffic management measures to be in place at each worksite are discussed elsewhere in this TMP.

5.4 Assumptions

This Plan has been developed based on the following assumptions:

- Sydney Ports and NSW Maritime consent to use of their private roads;
- Worksites consistent with Construction Staging and Sequencing Report;
- White Bay used as a consolidation centre/depot;
- White Bay used for worker parking;
- White Bay used for truck marshalling;
- White Bay used for main project office;
- Trip generation assumptions as per **Section 4.6**;
- Heavy vehicle access is possible under the Victoria Road rail bridge between White Bay and the Depot worksites; and
- Recycled Timber Yard resumed for Depot construction and shared driveway access for heavy vehicles can be negotiated with adjoining land owners.

5.5 Servicing

White Bay:

There are several adjoining buildings which need to be considered to ensure suitable servicing and access arrangements are maintained when undertaking construction activity at the White Bay worksite. As there are no proposed changes to access, there should be no restriction in servicing these existing tenants. Some service vehicles may continue to use Lilyfield road and Gordon street.

Sydney Ports have advised that a two lane access road is required between Sommerville Road and berths located to the north of this point. This will require provision of space to allow a road to be constructed if one is required to allow for flexibility of port access between Sommerville Road, past the worksite.

Depot:

The space required to house the Depot will require the resumption of some of the existing land uses adjacent to the Rail Yards. This will require the potential relocation of some existing businesses, some of which share access points to Lilyfield Road.

Existing access points from City West Link to advertising structures (if retained), Light Rail (if required) and storage area for crane/equipment (if required) will require review, as will the ongoing use of the land for these purposes.

There is not anticipated to be significant impact to existing businesses that have servicing from Gordon Street. Similarly, the impact to businesses who have servicing from Lilyfield Road, and who are not impacted by construction or end state land requirements, are not anticipated to have significant impact to servicing arrangements.

5.5.1 Provision for adjacent development

Given the extent of proposed change to existing on and off-street servicing facilities and worksites outlined above, the following provision for adjacent developed is anticipated:

- Liaison with SPC and tenants if storage of heavy vehicles on the circulating road environment around the Silo's is proposed;
- Liaison with NSW Maritime and SPC/other tenants if marshalling of heavy vehicles on James Craig Road is proposed (SPC has been consulted as part of the CBD Metro EA process);
- Liaison with Light Rail operator in regard to the need for any service access from City West Link and the Rail Yards;
- Liaison with the owner of any existing advertising structure within the Rail Yards to determine the need for vehicular service access if this structure is to be retained;
- Liaison with leaseholders who uses sections of the rail yards for the storage of equipment; and
- Liaison with any land owner/tenant who shares a driveway access point with property being acquired for construction or end state of the Depot.

Details regarding provision for known future development are provided in **Section 5.14.2**.

5.5.2 Cash in transit

Given the nature of adjoining business, and the extent of proposed disruption to existing traffic conditions being minor, no provision for cash in transit is proposed.

Regardless of this TMP making no specific provision for changed access arrangements, it will be the responsibility of the cash in transit companies to determine how best to respond to any change in access arrangements to ensure the security of their operations. Any liaison required should be directed through the TTLG.

5.6 Cycle routes and access

The proposed White Bay worksite will have no impact on the existing cycle facilities located in James Craig Road, Victoria Road or The Crescent. As such, no specific provision is required to be made for cyclists who use these routes.

The Depot has the potential to impact on the Lilyfield Road on-road cycle lane, due to the movement of vehicles in and out of the site onto Lilyfield Road. There is no proposal to modify the on-road cycle lanes or provide for additional heavy vehicle parking on Lilyfield Road at this time. As such, no specific provision for cyclists is proposed to be made. Should it become apparent during the construction process that cyclists on Lilyfield Road or elsewhere are being impacted by the project; arrangements will be made via the TTLG to remediate the situation.

5.7 Bus routes and stops

The construction traffic management results in no change to existing public transport bus provisions.

There is the potential minor impact to travel time for bus operation on the adjoining road network, particularly Victoria Road and Anzac Bridge. These impacts are expected to be minor, and will be quantified through network modelling.

5.8 Coaches

There is very little coach activity in the area and as such, there is not anticipated to be any impact on coach activities. Therefore, no traffic management strategies are proposed. Should the International Cruise Ship Terminal be relocated to White Bay, the impact on coaches of this relocation would be examined as part of the relocation.

5.9 Taxis

As there is no specific provision for taxis adjoining the worksites, the impacts to Taxi operation will be minimal. There may be a minor impact related to an increase in travel time on arterial routes adjoining the worksites. Changes in overall network travel times will be evidenced by modelling.

Liaison with Taxi Council through the TTLG will be undertaken should adverse impacts on taxi operation become evident or required through the construction process.

5.10 Kiss and Ride

There are no formal Kiss and Ride facilities which are in the vicinity of the worksites.

5.11 Parking and Truck Call Forwarding

White Bay trucks:

The majority of truck movements originating from spoil removal and loading/deliveries at the White Bay worksite are anticipated to be able to store and marshal within the proposed worksite. However, there may be the occasional need for trucks serving the White Bay worksite to store offsite while waiting to access the station sites.

It is noted that traffic management measures within Sommerville Road have been arranged to provide maximum capacity to store trucks that are arriving to drop off bulk goods at the wharf. It is assumed that the times when this capacity is required are infrequent, perhaps coinciding with the arrival of a ship, or at harvest time.

On the occasional times when circumstances within the White Bay worksite prevent heavy vehicles access to the White Bay site, it is necessary to minimise the impact of queued Metro heavy vehicles. During periods of nil or minimal bulk goods truck movements associated with use of the Port, It is proposed that Metro truck will utilise a dedicated section of the existing truck storage areas within Sommerville Road on the approach to the worksite. This will require the development of a process which facilitates communication from SPC/port tenants of these busy times and communication with Metro truck drivers of the closure of storage areas within Sommerville Road. A possible forum for this could be the TTLG.

When truck storage within Sommerville Road is not available, any overflow truck movements arising from the CBD Metro White Bay worksite will utilise the James Craig Road truck marshalling area described below.

Truck marshalling area:

A core mitigating strategy to reduce the impact of CBD Metro truck operations within the CBD is the use of call forwarding locations to queue and marshal trucks when they are waiting to access CBD worksites. Intermediate (within 10minutes travel time, i.e. White Bay) and local (within a few minutes travel time to worksites) call forwarding locations are proposed. This strategy aims to remove circulating truck movements from the CBD network. The use of the northern side of James Craig Road on the approach to Sommerville Road as the intermediate call forwarding location has been identified as the preferential location to undertake this marshalling, as it provides relatively few conflicts with other road users and is within a reliable and appropriate travel time to the CBD.

Trucks are proposed to utilise the existing length of 'No Parking' in the northern shoulder lane of James Craig Road on the approach to Sommerville Road to queue, prior to being called forward to the worksites. Upon being called to the worksites, trucks will U-Turn at the James Craig Road/Sommerville Road intersection and travel back towards The Crescent/Anzac Bridge.

An alternative to storage on the northern shoulder of James Craig Road may be to utilise the decommissioned length of James Craig Road running closer to the water edge, subject to appropriate traffic control measures to preclude use of this length of road by other vehicles. In this instance, vehicles would travel eastbound in James Craig Road and U-Turn at Sommerville Road roundabout to enter the decommissioned section of James Craig Road. Once ready to drive to the other worksites, they would proceed west to rejoin James Craig Road and travel straight through the western roundabout in order to reach the traffic signals at The Crescent. The decommissioned length of James Craig Road provides a more appropriate storage location, subject to the land use remaining available and suitable for heavy vehicle use.

A truck movement plan for will be developed for the White Bay area following further liaison with SPC, with further details provided in the White Bay CTMP.

5.12 Traffic

5.12.1 Vehicle speeds

The existing posted speed limits on roads adjoining the worksites is as follows:

- Lilyfield Road – 50kph
- City West Link – 70kph
- James Craig Road – 50kph
- Glebe Island Silo (Sommerville Road) circulation road – 40kph, with section 25kph on approach to Metro worksite
- Gordon Street – 50kph

It is not anticipated that reductions in speed limit will be required to facilitate White Bay or Depot construction.

Short term road occupancies may require a temporary reduction in speed limits while workers are onsite, and if required, all changes to speed limit will be undertaken in accordance with the process outlined in the FTMP.

5.12.2 Road network changes

The construction activities will all take place in fenced and gated worksites for the majority of the work. Some enabling activities may require the use of road space on a temporary basis in order to undertake excavations or adjustments to utilities in footpaths and roads adjoining the worksites.

The Depot is proposed to utilise a left in and left out intersection with the City West Link for heavy vehicle access. Other arrangements (including a right turn out of the Rail Yards) are also proposed at the intersection of The Crescent and City West Link Road. Upgrading of the road linking the rail yards to White Bay may be undertaken to allow the Depot to utilise James Craig Road traffic signals with The Crescent.

No other ongoing road changes are proposed related to the construction of White Bay or the Depot worksites.

5.12.3 Intersection operation

PARAMICS modelling will be undertaken and the results discussed with relevant agencies.

5.12.4 Impact on local roads – Lilyfield Road, Balmain Road and Catherine Street

It is estimated that there may be up to an average of 10 truck movements per hour (i.e. 5 inbound and 5 outbound) on Lilyfield Road to undertake deliveries to/from the Lilyfield Depot worksite, occurring at times in the construction staging when these movements cannot be accommodated via access from City West Link Road. These trucks will use Balmain Road and Catherine Street to access and depart from Lilyfield Road back onto the City West Link, at a rate of up to an estimated 5 truck movements per hour.

There will be some reduction in the existing truck trip generation in Lilyfield Road due to the conversion of some existing land uses to CBD Metro use. The scope of the depot and hence number of land users impacted is currently unknown.

Given the relatively low heavy vehicle trip generation expected for Lilyfield Road, the offset of these volumes due to changes to existing land uses and the proposed hours of regular truck movements, the impact of Depot construction traffic generation on local roads is expected to be minor, and not significantly different from the existing heavy vehicle generation on Lilyfield Road.

Restrictions to the section of Lilyfield Road that will be used for heavy vehicle movements (i.e. only the section of Lilyfield Road west of Gordon Street) and to the hours that truck movements can occur on Lilyfield Road will assist to mitigate any residual traffic impact.

5.13 Project impacts and sensitivities

The construction timeframe for the CBD Metro project is planned with consistent rates of spoil removal, based on average daily and hourly throughputs.

Night time movement of spoil is proposed, with spoil potentially being stored at the White Bay or the Depot sites if the spoil receiving locations are unable to accept spoil overnight. Noise and light emissions from this activity have the potential to impact adjoining residents. These impacts are the subject of other studies.

5.13.1 Other adjoining redevelopment

There is the potential for redevelopment of lands adjoining White Bay to take place during the 5 year period of construction of the CBD Metro. There is a proposal that areas of White Bay may be redeveloped for residential or other commercial uses, however planning for this is at an early stage. It is not anticipated that CBD Metro construction activity or traffic impacts will preclude the advancement of this potential redevelopment. Liaison between the land owner, other stakeholders and the Sydney Metro will be facilitated through the TTLG in the first instance if traffic impacts arise during the period of construction.

There is also the proposal to relocate the International Cruise Terminal to the White Bay area. It is understood that the International Cruise Terminal would have primary access from Roberts Road, rather than SPC access roads including James Craig Road. As such, the impact on this development on Metro activities is not anticipated to be significant.

It is also understood that a proposal to construct a marine refuelling terminal has been submitted for Department of Planning Approval. The terminal is proposed to be located in the White Bay berths located to the north east of the White Bay Metro Site, with access from Roberts Road for construction and end state rather than the Port access roads including James Craig Road. As such, the impact on this development on Metro activities is not anticipated to be significant.

The TTLG will be able to co-ordinate and respond to changing construction activity in adjacent worksites, as detailed in the FTMP.

5.14 Summary of network adjustments required

The following represent the major network adjustments required for White Bay and Depot worksites:

- New left in and left out access way from the Depot to the City West Link Road eastbound;
- New right turn traffic signal movement (and other movements) from the Depot to the City West Link Road westbound;
- Use of James Craig Road shoulder and Sommerville Road for truck storage;
- Use of existing driveway access/egress to Lilyfield Road; and
- Possible additional green time to allow truck movements to exit James Craig Road.

6.0 TMP Compliance and Approvals

The TMP has been prepared having regard to the requirements of the Director General and Department of Planning for information to support the Environmental Assessment for the project.

The TMP considers the management of traffic at worksites as well as the effects on pedestrians and traffic movements resulting from construction or changed conditions at worksites. Further, the TMP considers in depth the legislated requirements for the provision of a safe and effective local road network management throughout all stages of construction.

6.1 Compliance with Director General Requirements

Details of the specific construction related tasks from the Directors General's requirements to support the environmental assessment are further outlined in **Table 6.1**.

Table 6.1: Director General's Environmental Assess Requirements

| Requirement | Condition Requirements | Reference |
|-------------------|---|--|
| Key issues | <p>General Construction Impacts – Consider the potential impacts associated with the construction of the project, and present a management framework for construction works to ensure that impacts are mitigated, monitored and managed. The EA must include consideration of, and a management framework for:</p> <ul style="list-style-type: none"> • construction noise and vibration, including a considered approach to scheduling construction activities including transport, blasting and tonal or impulse noise generating works). • construction traffic including a considered approach to route identification and scheduling of transport movements, having regard to <ul style="list-style-type: none"> - Alternatives to road transport; - The number, frequency and size of construction related vehicles (both passenger, commercial and heavy vehicles); - The nature of existing traffic on construction access routes (with consideration of peak traffic times and sensitive road users, including emergency vehicles and buses) - The need to close, divert or otherwise reconfigure elements of the road network associated with construction of the project; and - How construction traffic impacts will be managed to minimise the potential for cumulative traffic impacts with other major construction activities in the region (whether this is to be managed as part of the subject project, or through a separate overarching mechanism beyond the direct scope of the project) | <p>Individual Station Traffic Management Plans.</p> <p>Noise Assessment (by others)</p> <p>Individual Station TMP's and Environmental Assessment</p> <p>Site Specific TMPs and Environmental Assessment</p> <p>Construction Plan (by others)</p> |

| Requirement | Condition Requirements | Reference |
|---------------------|--|--|
| Key issues | <p>The EA must also present a strategy for monitoring and mitigating traffic impacts, with a particular focus placed on those activities identified as having the greatest potential for adverse traffic flow, capacity or safety implications, and a broader, more generic approach developed for day-to-day traffic management.</p> <ul style="list-style-type: none"> • Spoil management • Water Impacts | <p>Station specific TMP's This Framework Traffic Management Plan.</p> |
| Consultation | <p>The EA must reflect an appropriate and justified level of consultation with relevant parties during the preparation of the EA, including:</p> <ul style="list-style-type: none"> • local, State or Commonwealth government authorities and service providers such as the Roads and Traffic Authority, Railcorp, State Transit Authority, the Ministry of Transport, the Department of Environment and Climate Change, the Department of Water and Energy, NSW Maritime, Sydney Ports, Barangaroo Delivery Authority, Sydney Harbour Foreshore Authority, Leichhardt Council, and City of Sydney Council; • the public, including specialist interest groups and affected landowners. • The EA must describe the consultation process, document all community consultation undertaken to date and identify the issues raised (including where these have been addressed in the EA). | <p>This Framework Traffic Management Plan. Site specific TMPs. The EA Report</p> |

