

# Project Approval

## Section 75J of the *Environmental Planning and Assessment Act 1979*

I, the Minister for Planning, approve the project referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.



The Hon Tony Kelly MLC  
**Minister for Planning**

Sydney

2009

File No: S09/00013

### SCHEDULE 1

<b>Application No:</b>	09_0036
<b>Proponent:</b>	SydneyMetro
<b>Approval Authority:</b>	Minister for Planning
<b>Land:</b>	Land generally located along an approximately seven kilometre alignment from Central Station to Rozelle, via Town Hall, Martin Place, Barangaroo-Wynyard, Pyrmont, and White Bay, including land at Lilyfield/ Rozelle for stabling and maintenance depot.
<b>Project:</b>	An approximately seven-kilometre metro railway, primarily within underground twin tunnels, from Central Station to Rozelle. New stations proposed at Central, Town Hall Square, Martin Place, Barangaroo-Wynyard, Pyrmont and Rozelle, with potential for a future station at White Bay. A stabling facility and maintenance depot at Lilyfield/Rozelle.
<b>Part 3A Project:</b>	The proposal is a project to which Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> applies by virtue of an Order made by the Minister for Planning and Gazetted on 6 February 2009.
<b>Critical Infrastructure:</b>	On 2 May 2008, the then Minister for Planning declared that development for the purpose of a metro rail line within the Greater Metropolitan Region to be critical infrastructure by virtue of an Order made under section 75C of the <i>Environmental Planning and Assessment Act 1979</i> .

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## SCHEDULE 2

<b>Act, the</b>	<i>Environmental Planning and Assessment Act 1979</i>
<b>Construction</b>	Includes all work in respect of the project <b>other than</b> survey, acquisitions, fencing, investigative drilling or excavation, archaeological excavation subject to a Research Design and Management Strategy, building/road dilapidation surveys, installation of environmental impact mitigation measures (such as acoustic treatments), minor utility adjustments/relocations, public access and vehicle parking adjustments at Central Station forecourt, minor clearing, and establishing site compounds at Barangaroo and White Bay.
<b>DECCW</b>	NSW Department of Environment, Climate Change and Water
<b>Department, the</b>	NSW Department of Planning
<b>Director-General, the</b>	Director-General of the NSW Department of Planning (or delegate)
<b>Director-General's Approval</b>	A written approval from the Director-General (or delegate). Where the Director-General's Approval is required under a condition, the Director-General will endeavour to provide a response within one month of receiving an approval request. The Director-General may require additional information if the approval request is considered incomplete. When further information is required the time taken for the Proponent to respond in writing will be added to the one month period.
<b>NSWTI</b>	NSW Transport and Infrastructure
<b>Heritage Items</b>	Include Heritage items listed on the Commonwealth Heritage List, State Heritage Register, within an Environmental Planning Instrument under section 170 of the Heritage Act.
<b>Heritage Assessment Study Area</b>	The heritage assessment study area as defined in the report titled <i>Non-Archaeological Heritage Assessment</i> , dated August 2009, and prepared by Orwell and Peter Phillips.
<b>Minister, the</b>	Minister for Planning
<b>Operation</b>	Means the operation of the project, but <b>does not</b> include commissioning trials of equipment or temporary use of parts of the project during construction.
<b>Project</b>	The project the subject of Major Projects Application 09_0036.
<b>Proponent</b>	SydneyMetro
<b>Publicly Available</b>	Available for inspection in hard copy and/or electronic format by a member of the general public (for example available on the project website).
<b>Reasonable and feasible</b>	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. <b>Feasible</b> relates to engineering considerations and what is practical to build. <b>Reasonable</b> relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided.
<b>Redevelopment Sites</b>	Sites required for the construction of the project and which are not required for the operation of the project and includes the development of all stratum levels of those sites not associated with the operation of the project.
<b>Relevant Council(s)</b>	City of Sydney Council and/or Leichhardt Municipal Council as applicable.
<b>Sensitive Receiver</b>	Residence, education institution (e.g. school, TAFE college), health care facility (e.g. nursing home, hospital) and religious facility (e.g. church).

## **1. ADMINISTRATIVE CONDITIONS**

### **Terms of Approval**

- 1.1 The Proponent shall carry out the project generally in accordance with the:
  - a) Major Project Application 09\_0036;
  - b) *Sydney Metro Network Stage 1 (CBD Metro) – Environmental Assessment* (three volumes and Appendix E), prepared by Sydney Metro and dated September 2009;
  - c) *Sydney Metro Network Stage 1 (Central to Rozelle) – Submissions Report*, prepared by Sydney Metro and dated 13 November 2009;
  - d) *Barangaroo Pedestrian Link – Supplement to Submissions Report*, prepared by Sydney Metro and dated 4 December 2009;
  - e) *Pymont Station (Eastern Entrance) – Supplement to Submissions Report*, prepared by Sydney Metro and dated 4 December 2009; and
  - f) the conditions of this approval.
- 1.2 In the event of an inconsistency between:
  - a) the conditions of this approval and any document listed from condition 1.1a) to 1.1e) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and
  - b) any of the documents listed from condition 1.1a) to 1.1e) inclusive, the most recent document shall prevail to the extent of the inconsistency.
- 1.3 The Proponent shall comply with the reasonable requirements of the Director-General arising from the Department's assessment of:
  - a) any reports, plans or correspondence that are submitted in accordance with this approval or received in relation to the project; and
  - b) the implementation of any actions or measures contained in these reports, plans or correspondence.

### **Limits of Approval**

- 1.4 This approval shall lapse ten years after the date on which it is granted, unless the works the subject of any related project approval are physically commenced on or before that date.
- 1.5 This approval does not prescribe the design or permit the construction of any buildings or the undertaking of uses that do not form part of the operation of or are not ancillary to the project. This includes retail and commercial uses beyond stations and buildings and uses at residual and redevelopment sites, unless required by the conditions of this approval. Interim and permanent approval for these buildings and uses shall be sought separately in accordance with the requirements of the *Environmental Planning and Assessment Act 1979*.
- 1.6 This approval does not apply to the operation of spoil receiving locations and facilities. The receipt of spoil at these locations and facilities shall be undertaken in accordance with approvals or licences applying to those locations or facilities.

## **2. TRANSPORT INTEGRATION AND ACCESS DESIGN**

### **Transport and Access Arrangements**

- 2.1 The Proponent shall undertake detailed design of the project with the design objectives of minimising negative changes to existing access arrangements and services for other transport modes and, where reasonable and feasible, facilitating an improved level of access and service to those other transport modes comparable to the existing situation.
- 2.2 Concurrently with, and as an integral part of the detailed design process for the project, the Proponent shall develop a Transport Integration Plan to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration between current and proposed public domain and transport initiatives. The Plan shall consider, but not necessarily be limited to the area within defined and justified station walking catchments, and shall take into account:
  - a) current levels of access and service for all modes and services;

- b) the consideration of state and local transport initiatives and plans;
- c) the identification of opportunities and constraints presented by existing and proposed transport and access infrastructure and services;
- d) emergency vehicle, pedestrian, cycle, vehicle, taxi, rail, bus and coach, and ferry operational, access and parking and infrastructure requirements;
- e) patronage changes resulting from land use, population, employment, transport infrastructure and service changes;
- f) integration with existing, known and committed transport infrastructure and services;
- g) legislative requirements and applicable guidelines;
- h) safety audits , including but not limited to a review of traffic facility and cycle changes to ensure compliance with Austroads design criteria;
- i) final design, infrastructure, management and service measures, and the level of access and service to be achieved for all users; and
- j) operational management provisions for future operational requirements, including maintenance, security and management responsibilities prior to opening the project.

The Plan shall be prepared in consultation with the Traffic and Transport Liaison Group required under condition 4.15 and shall be supported by documented and justified modelling (as applicable) for all modes.

Note: nothing in this approval precludes the use of Station Plans developed for the project fulfilling the role of the Transport Integration Plan required under condition 2.2, provided that the detailed requirements of that condition are addressed by the Plans.

2.3 In developing the Transport Integration Plan required under condition 2.1, the Proponent shall consider:

- a) the feasibility of relocating the Central Station, Quay Street entrance into the adjacent site (803-813 George Street) or providing a design that does not preclude this relocation in any future redevelopment of that site;
- b) parking and access changes at the Western forecourt, Central, including the operation of rail replacement buses;
- c) reconfiguration of the Martin Place Metro Station and entrance to reduce passenger interchange times between the CityRail pedestrian walk length to Martin Place Station;
- d) the maintenance of 24-hour access for the Barangaroo Pedestrian Link;
- e) alternatives to the closure of Shelley Street west of Sussex Street, Barangaroo, and Margaret Street between Kent and Clarence Streets; and
- f) the refinement of the outbound Rozelle bus bay to provide a safe and accessible bus stop for passengers and drivers, and to ensure the safe access to and from the Balmain Leagues Club Redevelopment site.

2.4 The Transport Integration Plan required under condition 2.1 shall be reviewed by a qualified traffic and transport professional(s), independent of the detailed design process for the project, having regard to the requirements of this approval. The independent, qualified professional(s) shall be approved by the Director-General prior to commencement of the review process.

Note: nothing in this approval precludes the use of staff employed by the Proponent or other agencies, including NSWTI, to review the Transport Integration Plan, provided that those staff are suitably qualified, independent of the design process and have been approved by the Director-General to act in that role.

## Suburban Rail

2.5 The Proponent shall enter into an Interface Agreement(s) with RailCorp to ensure the successful operational integration of the project and the heavy railway network and the protection of physical and operational RailCorp assets and services, during construction and operation.

The Agreement(s) shall incorporate measures that ensure the safety and structural integrity of rail infrastructure facilities and assets, including auxiliary infrastructure; the safe and

effective operation of these assets; facilitate efficient and safe modal integration; and shall ensure that the project does not unreasonably impact on the practicability of RailCorp carrying out future rail expansion projects. The Agreement(s) shall incorporate proactive monitoring, and remediation and redress actions, including emergency procedures, should there be a design, mitigation or management failure.

These Agreements shall be in place prior to the commencement of relevant construction works that may affect the heavy rail network or other RailCorp assets and services, unless otherwise agreed by the Director-General.

### **Water-based Activities**

2.6 The Proponent shall undertake all water-based activities or works within Rozelle Bay, Johnstons Bay, Darling Harbour or other adjoining waterways in consultation with NSW Maritime and Sydney Ports, as relevant, and shall obtain separate approvals for those activities and works under the relevant legislation, if required.

### **Other Infrastructure**

2.7 The Proponent shall consult with the Roads and Traffic Authority, NSW Transport and Infrastructure, Sydney Ports, Sydney Harbour Foreshore Authority and Metro Transport Sydney Pty Ltd, as relevant, to identify and address where reasonable and feasible any potential conflicts between the design of the project and the design of an expanded light rail stabling facility or an M4 Motorway extension or a road connection (including pedestrian and cycle access) between the City West Link / The Crescent intersection through to White Bay under Victoria Road.

## **3. DESIGN AND PUBLIC DOMAIN REQUIREMENTS**

### **Design Principles and Standards**

- 3.1 Detailed design of the project shall be based on the following design objectives:
- a) integration with and accessibility to the current and future built environment and public domain, including consideration of approved projects, Barangaroo and Relevant Council's approved public domain policies and initiatives;
  - b) the provision of public and private spaces that respond to and enhance the existing urban form, including natural, cultural and built heritage;
  - c) contextual relationship with heritage items, conservation areas, and consideration of conservation plans and policies (including consideration of the heritage management principles defined in the Submissions Report);
  - d) the provision of secure, safe and legible environments for commuters and the wider public, with high levels of passive and active surveillance and the provision of active frontages;
  - e) the location, orientation and design of station retail and commercial uses to integrate with the station design, that do not impede commuter access and movement, and that activate the space through passive surveillance;
  - f) the location of entrance and ancillary infrastructure to maximise integration with the public domain;
  - g) the provision of accessible connections and integration between modes and the built environment (including compliance with the *Disability Discrimination Act, 1992*);
  - h) public domain enhancement through endemic and cohesive landscaping and legibility through design simplification;
  - i) the retention and enhancement of existing transport, utility and retail services and facilities and the integration of these services with project facilities;
  - j) the utilisation of high quality and durable structures, fixtures and finishes to reflect the immediate environment and which are equivalent to council policy and standards;
  - k) design integration with other public transport services; and
  - l) maintenance of crowd and event management and emergency evacuation procedures.
- 3.2 The Proponent shall undertake detailed design of the project, including the design of stations, ancillary infrastructure, station precincts and the Rozelle stabling and maintenance

facility (including pedestrian and cycle links), consistent with the requirements of condition 2.1 and condition 3.1, and having regard to:

- a) *Guidelines for the Development of Public Transport Interchange Facilities* (2008);
- b) *Disability Access Standards for Accessing Public Transport* (2002);
- c) Relevant Heritage Council of NSW publications and guidelines, the Heritage Interpretation Strategy outlined in the Proponent's Statement of Commitments, and relevant policies of Conservation Management Plans for sites affected by the project;
- d) applicable RailCorp standards where RailCorp property or infrastructure is affected; and
- e) Crime Prevention through Environmental Design Principles.

### **Location- and Component-Specific Design Requirements**

#### ***Town Hall Square***

- 3.3 The encroachment of the Town Hall Square Station entrance and associated structures into the proposed Town Hall Square shall be minimised to the greatest extent practicable. The width of the pedestrian and view corridor to the Uniting Church from the proposed Town Hall Square shall be sufficient to facilitate, as far as practicable, the City of Sydney's Town Hall civic precinct designs.

#### ***Martin Place***

- 3.4 Structures within Martin Place shall be designed as far as practicable to minimise impacts on the visual axis of Martin Place.

#### ***Lighting***

- 3.5 External lighting shall be designed and installed consistent with the provisions of AS 4282-1997 *Control of the Obtrusive Effects of Outdoor Lighting*.

### **Design Review Process**

- 3.6 The Proponent shall prepare an Urban Design and Landscape Report(s) for project components to be located aboveground or otherwise in locations visible from the public domain surrounding the project. The Urban Design and Landscape Report(s) shall be developed in consultation with the Relevant Councils and shall be to a standard consistent with the City of Sydney 'Public Domain Manual' Presentation of plans.

Note: nothing in this approval precludes the use of Station Plans developed for the project fulfilling the role of the Urban Design and Landscape Report(s) required under condition 3.6, provided that the detailed requirements of that condition are addressed by the Reports.
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- 3.7 The Urban Design and Landscape Report(s) required under condition 3.6 shall be reviewed by the Proponent's Design Review Panel.
- 3.8 The Proponent shall update and finalise the Urban Design and Landscape Report(s), having regard to and addressing any comments made by the Design Review Panel. A copy of the final Report(s) shall be submitted to the Director-General as soon as practicable following finalisation of the Report(s), accompanied by justification if any of the comments made by the Design Review Panel have not been incorporated into the final design, or otherwise addressed.

## **4. CONSTRUCTION- AND DEMOLITION-RELATED IMPACTS**

### **Noise and Vibration Impacts**

#### ***Limits on Construction and Demolition Hours***

- 4.1 The Proponent shall only undertake blasting activities (including penetrating cone fracturing) during the following hours:
  - a) 9:00 am to 5:00 pm, Mondays to Fridays, inclusive;
  - b) 9:00 am to 1:00 pm on Saturdays; and
  - c) at no time on Sundays or public holidays.

This condition does not apply in the event of a direction from police or other relevant authority for safety reasons.

- 4.2 Tunnelling activities, including cavern excavations, may be undertaken 24-hours, seven days per week, subject to compliance with the requirements of condition 4.8.
- 4.3 Construction and demolition activities, other than those works referred to under condition 4.1 and condition 4.2, shall only be undertaken during the following hours:
- 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;
  - 8:00 am to 1:00 pm on Saturdays; and
  - at no time on Sundays or public holidays.

This condition does not apply in the event of a direction from police or other relevant authority for safety reasons.

- 4.4 Notwithstanding conditions 4.1 and 4.3 of this approval, the Proponent may undertake construction and demolition activities outside the hours specified under that condition, if:
- in the case of activities covered by an Environment Protection Licence under the *Protection of the Environment Operations Act 1997*, the Environment Protection Licence has been amended to permit those activities; or
  - in the case of activities that do not require an Environment Protection Licence, the activities are subject to a Construction Method Statement approved by the Director-General (refer to condition 9.6).

#### **Construction Noise and Vibration Goals and Standards**

- 4.5 The Proponent shall establish Construction Noise Management Levels (CNML) for the project in accordance with *Interim Construction Noise Guideline* (DECCW, 2009) and shall apply those levels as construction noise objectives.
- 4.6 The Proponent shall establish and apply construction vibration criteria to the project in accordance with *Assessing Vibration: a technical guideline* (DEC, 2006) for human exposure and German Standard DIN 4150 for structural vibration.
- 4.7 Construction Noise Management Levels and vibration criteria referred to under conditions 4.5 and 4.6 shall be established based on a review and assessment of the existing noise and receiver environment, including consideration of a land use and building survey to identify land uses, including potentially critical working areas (e.g. hospital operating theatres, precision laboratories etc), entertainment spaces, heritage items, railway stations, infrastructure and the like, which are sensitive to vibration and noise impacts. Consideration shall also be given to the assessment undertaken during building inspection reports required under condition 4.46.
- 4.8 The Proponent shall undertake all relevant construction activities with the objective of not exceeding the following ground-borne noise criteria:
- an internal  $L_{Aeq(15min)}$  of 40dB(A) between 6:00pm and 10:00pm; and
  - an internal  $L_{Aeq(15min)}$  of 35dB(A) between 10:00pm and 7:00am

Where these objectives may be exceeded, the Proponent shall develop and implement all reasonable and feasible noise mitigation measures with the aim of minimising ground-borne noise impacts.

#### **Blasting Limits**

- 4.9 The Proponent shall endeavour to minimise the need for blasting to the greatest extent practicable. Any blasting shall be limited to two single detonations in any one area potentially affecting residents on any one day.
- 4.10 For any section of the tunnel construction where blasting is proposed, or individual work site, a series of initial trials at reduced scale shall be conducted prior to production blasting to

determine site-specific blast response characteristics and to define allowable blast sizes to meet the airblast overpressure and ground vibration limits in this approval.

- 4.11 The Proponent shall ensure that airblast overpressure generated by blasting associated with the project does not exceed the criteria specified in Table 1 when measured at the most affected residence or other sensitive receiver.

**Table 1 - Airblast Overpressure Criteria**

Airblast Overpressure (dB(Lin Peak))	Allowable Exceedance
115	5% of total number of blasts over a 12 month period
120	Never

- 4.12 The Proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at the most affected residence or other sensitive receiver.

**Table 2 – Peak Particle Velocity Criteria**

Peak Particle Velocity (mms <sup>-1</sup> )	Allowable Exceedance
5	5% of total number of blasts over a 12 month period
10	Never

### **Consultation and Monitoring**

- 4.13 The Proponent shall consult with potentially-affected community, religious, educational institutions and vibration-sensitive critical working areas (such as laboratories and operating theatres) to ensure that noise generating construction works in the vicinity of the institutions are not timetabled during sensitive periods, unless appropriate other arrangements are made.
- 4.14 Noise and vibration monitoring will be undertaken by a qualified acoustic consultant at the commencement of each new stage of the construction works and monthly thereafter. Notwithstanding, the Proponent shall undertake real time vibration monitoring at sensitive properties, as defined in condition 4.47 and adjoining construction sites. Should monitoring indicate exceedances of the vibration criteria, relevant works shall cease until suitable management and mitigation measures can be applied.

### **Traffic, Transport and Access Impacts**

#### **Coordination and Oversight**

- 4.15 A **Traffic and Transport Liaison Group** shall be established to oversee and coordinate project-specific and cumulative traffic and transport issues and impacts during construction and demolition works. The Group shall be chaired by the Department of Planning and comprise representatives from the Proponent, NSWTI, RailCorp, RTA, STA, Relevant Councils, Barangaroo Delivery Authority, and relevant transport associations including, but not necessarily limited to the Taxi Council, the Bus and Coach Association, Bicycle NSW, Pedestrian Council of Australia and the NSW Bike Plan team. In addition, representatives of the Sydney Harbour Foreshore Authority, Sydney Ports, Metro Light Rail and Metro Monorail shall be invited to attend Liaison Group meetings on an 'as-needs' basis.

The Liaison Group shall be consulted on and shall inform the preparation of Traffic and Transport Management Plans and Traffic Control Plans for the project, or relevant parts of the project during construction and demolition works.

- 4.16 The Proponent shall undertake supplementary analyses as required by the Traffic and Transport Liaison Group and, where required, detailed modelling of traffic changes and impacts that have the potential to have a significant impact on traffic signal operation and traffic and pedestrian flow efficiency with the objective of informing and improving traffic and

pedestrian management measures. The requirement for and details of the modelling shall be undertaken in consultation with the Traffic and Transport Liaison Group. The revised traffic management measures, including changes to the pedestrian, bicycle and public transport networks, shall be incorporated into Traffic and Transport Management Plans and Traffic Control Plans, as relevant.

### ***Transport Standard Objectives***

- 4.17 The project shall be constructed, to the greatest extent practicable, with the aim of ensuring that no existing intersection operates at a level of service worse than its existing performance.
- 4.18 Without limiting the outcomes of the Traffic and Transport Management Plans and Traffic Control Plans for the project, construction traffic shall be scheduled, to the greatest extent practicable, to outside of AM and PM peak traffic periods, and also during special events. Methods used to limit construction traffic outside of peak traffic periods shall be incorporated into Traffic Management Plans and Traffic Control Plans.
- 4.19 Changes to traffic signals or their operation shall be subject to the approval of the RTA.
- 4.20 The Proponent shall identify and implement reasonable and feasible measures, in consultation with NSWTI, State Transit Authority, Hillsbus and other transport operators to enable on-going provision of bus services throughout the CBD during construction. In particular with regard to disruption or relocation of the following services:
- a) UNSW shuttle services out of Eddy Ave;
  - b) bus services using the Park Street Interchange (mid-city interchange);
  - c) Hillsbus using Bathurst Street as a starting point for services;
  - d) bus operations at Martin Place, and in particular bus zones on Castlereagh Street;
  - e) bus services entering the city via York Street and the York Street bus set down area and the partial closure of Margaret Street, west of Kent Street;
  - f) Clarence Street bus zone area between Erskine and Jamison Streets;
  - g) Victoria Road services; and
  - h) rail replacement services.

### ***Parking and Access Arrangements***

- 4.21 Construction worker parking shall be provided on remote worksites, where necessary, and where alternative public transport arrangements or dedicated transport provisions for access to the worksites are not available.
- 4.22 Construction trucks shall not queue on-street, except as provided by a Road Occupancy Licence issued by the relevant roads authority.
- 4.23 The Proponent shall develop and implement measures, in consultation with NSWTI, to encourage the use of public transport by construction workers associated with the project.
- 4.24 The displacement of on-street parking and servicing facilities shall be minimised to the greatest extent practicable. Any reallocation of displaced parking during construction shall minimise negative impacts on public transport, service vehicles and taxi facilities, to the greatest extent practicable.
- 4.25 Emergency access to all properties and access to emergency facilities shall be maintained, unless otherwise agreed by the respective emergency service.
- 4.26 The Proponent shall maintain safe pedestrian and cyclist access around and adjacent to worksites during construction and ensure all work sites are secure and not accessible by the public. In circumstances where pedestrian and cyclist access and facilities (including bus stops and taxi stands) are restricted or altered due to construction activities, the Proponent

shall enable a reasonable and feasible alternative route(s) and/ or facilities as applicable, in consultation with NSWTI.

Restricted and alternative routes and facilities shall have an adequate capacity, shall consider the cumulative effects of multiple changes, shall be accessible, safe (including the application of active and passive security measures) and shall be signposted.

- 4.27 Access to properties and services, bus passenger waiting areas and rail stations shall be maintained during construction unless agreed with the property owner in advance. Any legal access physically affected by the project shall be reinstated to a comparable standard.

### ***Site-Specific Transport Management Requirements***

#### ***Central***

- 4.28 Prior to the commencement of construction works at Central, the Proponent shall consult with RailCorp on access, servicing, rail replacement buses and parking changes associated with construction works to identify alternative locations and management measures. Construction shall not commence in areas with significant impacts on RailCorp access, servicing, rail replacement bus provisions or parking until alternative measures have been implemented, unless otherwise agreed by the Director-General. These measures shall be identified in the relevant Traffic Management Plan.
- 4.29 Prior to the commencement of relevant construction works at Central, the Proponent shall consult with the University of NSW, RailCorp, NSWTI and State Transit Authority on the relocation of the University shuttle bus stop located at Eddy Avenue, to identify alternative locations, facilities and management measures. These measures shall provide a comparable level of standard and capacity to the existing facility. Relevant construction works impacting this bus stop shall not commence until alternative measures have been implemented, unless otherwise agreed by the Director-General. Where practicable, the Proponent shall undertake construction at this location within University holidays to limit the impact on bus patrons. These measures shall be identified in the relevant Traffic Management Plan.

#### ***White Bay***

- 4.30 The detailed design of construction traffic access onto and off City West Link Road and the Crescent shall be undertaken in consultation with the Roads and Traffic Authority.
- 4.31 The use of heavy vehicles on Lilyfield Road and Gordon Street, shall be limited to the greatest extent practicable and shall only occur during normal construction hours, unless otherwise approved by the Director-General.
- 4.32 The Proponent shall liaise with Sydney Ports with the objective of minimising impacts on Port operations and Sydney Port roads particularly in relation to parking, pick-up and drop-off points and vehicle queuing.

#### ***Pymont***

- 4.33 The Proponent shall ensure that pedestrian and cycle access is maintained through Union Square, unless otherwise agreed by the Director-General.
- 4.34 Heavy vehicle access to and from Pymont construction sites is not permitted between 10:00pm and 7:00am, except in an emergency or for the delivery of materials required by the police or other authorities for safety reasons.

#### ***Rozelle***

- 4.35 Heavy vehicle access to and from Waterloo Street is not permitted between 6.00pm and 7.00am, except in an emergency or for the delivery of materials required by the police or other authorities for safety reasons.
- 4.36 The Proponent shall prepare a Local Area Parking Scheme to manage displaced public parking lost during construction works associated with the Rozelle station and associated

facilities. This Scheme shall be prepared in consultation with Leichhardt Municipal Council and implemented to the greatest extent practicable prior to the loss of parking.

### Potential Property, Infrastructure and Settlement Impacts

4.37 The Proponent shall design, construct and operate the project so that it minimises impacts to and interference with third party property and infrastructure, and that such infrastructure and property is protected during construction and operation.

4.38 Any damage to buildings, structures, lawns, trees, sheds, gardens, bus stops etc, caused by the construction or operation of the project shall be fully rectified by the Proponent at no cost to the owner(s).

#### Security

4.39 The Proponent shall consult with third party property and infrastructure owners where the security arrangements for such property and infrastructure may be affected during construction and demolition works, and if necessary, shall develop and implement reasonable and feasible alternative security arrangements in consultation with the affected property or infrastructure owner.

4.40 The Proponent shall liaise with NSW Police on the relocation of access to the police station and associated infrastructure at Eddy Avenue. An alternative access shall be agreed to by NSW Police prior to the commencement of works that may affect the existing access arrangements.

#### Settlement Analysis

4.41 A geotechnical model of representative geological and groundwater conditions shall be prepared prior to excavation and tunnelling in the subject area to identify significant geological structures and groundwater features. This model shall include full details of proposed excavations and tunnels, construction staging, and identify surface and sub-surface structures and infrastructure which may be impacted by the project, including the specific attributes of those structures. The Proponent shall use this model to assess the predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling on adjacent property and infrastructure.

4.42 The Proponent shall undertake an assessment of property and infrastructure at risk from damage to determine appropriate settlement criteria to prevent damage.

4.43 Should the geotechnical model in condition 4.41 indicate that exceedances of the criteria established in condition 4.42 or in Table 3 (which ever is the lower), the Proponent shall identify and implement mitigation measures such as appropriate support and stabilisation structures in consultation with the relevant land and/or infrastructure owners prior to the commencement of construction to ensure where possible that underground services, infrastructure and adjacent buildings will not experience settlements exceeding the criteria.

**Table 3 - Settlement Criteria**

Beneath Structure/Facility	Maximum Settlement	Maximum Angular Distortion
Buildings - Low or non sensitive properties (i.e. $\leq 2$ levels and carparks)	30 mm	1 in 350
Buildings - High or sensitive properties (i.e. $\geq 3$ levels and heritage items)	20 mm	1 in 500
Roads and Parking areas	40 mm	1 in 250
Parks	50 mm	1 in 250

The above criteria shall not remove any responsibility from the Proponent for the protection of existing structures or for rectifying any damage resulting from the project.

- 4.44 Settlement criteria for individual utility structures and infrastructure shall be determined in consultation with the relevant authorities prior to the commencement of construction.
- 4.45 The Proponent shall install and monitor inclinometers and settlement monitors at construction sites and along the tunnel route during construction and for a period of not less than six months after settlement has stabilised with particular reference to risk areas identified in the building and infrastructure condition surveys required by conditions 4.51 and 4.46 and/or the geotechnical analysis required by condition 4.41. If monitoring during construction indicates exceedance of the criteria then all work affecting settlement shall cease immediately and shall not resume until fully rectified or a revised method of work has been established that will ensure protection of affected structures.

***Impacts to Third Party Property and Structures***

- 4.46 The Proponent shall, prior to the commencement of construction (including demolition and excavation works), or each part of the project that may impact on surrounding properties at risk from damage:
- a) where agreed with the property owner, undertake independent inspections of these properties prior to construction in accordance with AS 4349.1 'Inspection of Buildings'. This inspection shall be undertaken by appropriately qualified and experienced, geotechnical and construction engineering experts, and where relevant heritage experts, and report on property features that may be affected by construction, including any heritage features;
  - b) contact the owners of all buildings on which property inspections are to be conducted before the inspection, or as otherwise agreed by the affected property owner, and advise of the scope and methodology for the inspection, and of the process for making a property damage claim;
  - c) provide a copy of the property inspection report to the owner of each property inspected prior to construction that could affect the property;
  - d) determine an appropriate property vibration criteria and management and protection measures to ensure that property damage (including cosmetic damage) will be avoided; and
  - e) maintain a register of all properties inspected by the Proponent, indicating whether the owner accepted or refused the property inspection offer, and provide a copy of the register to the Director-General upon request.

Reports from the geotechnical engineer advising on the risk of damage to properties shall be made available upon request to the Director-General and the Independent Property Impact Assessment Panel, required under condition 4.48.

- 4.47 For the purpose of condition 4.46, properties at risk from damage include, but are not necessarily limited to:
- a) buildings and structures within a plan distance equal to twice the invert depth from the edge of works, unless otherwise determined following geotechnical and vibration analysis as certified by a qualified geotechnical engineer as not likely to be adversely affected;
  - b) heritage items within the Heritage Assessment Study Area, unless otherwise determined following geotechnical and vibration analysis as certified by a qualified geotechnical engineer as not likely to be adversely affected;
  - c) other sensitive structures within 60 metres from the edge of the works unless otherwise determined following geotechnical and vibration analysis as certified by a qualified geotechnical engineer as not likely to be adversely affected.
- 4.48 The Proponent shall, prior to construction, establish an Independent Property Impact Assessment Panel. The Panel shall comprise heritage, geotechnical and engineering experts independent of the design and construction team, and shall be approved by the Director-General prior to relevant construction or demolition works commencing. The Panel shall be responsible for independently verifying assessments undertaken under condition 4.46 and

4.41, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements.

Either the affected property owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the Panel for resolution. All costs incurred in establishing and implementing the Panel shall be borne by the Proponent.

4.49 The Proponent shall monitor settlement for any period as may be specified through the Independent Property Impact Assessment Panel referred to in condition 4.48. The results of this monitoring shall be made available to the Director-General upon request.

#### ***Infrastructure and Utilities***

4.50 The Proponent shall, prior to construction that risks affecting infrastructure or utilities, identify infrastructure and utilities potentially affected by construction activities to determine requirements for diversion, protection and/or support. This shall be undertaken in consultation with the relevant infrastructure and utility provider(s). Any alterations to infrastructure and utilities shall be carried out to the satisfaction of the relevant infrastructure and utility provider(s), and unless otherwise agreed to, at no cost to the infrastructure and utility provider(s). The Proponent shall ensure that disruption to any services are minimised and shall be responsible for advising local residents and businesses affected prior to any planned disruption of service.

4.51 The Proponent shall prepare dilapidation surveys and reports (including movement prediction studies) on the condition of roads, footpaths, rail infrastructure facilities, adjacent tunnels, port facilities and utilities affected by construction and to the satisfaction of the infrastructure and utility owner(s). The Proponent shall carry out rectification work at the Proponent's expense and to the satisfaction of the owners.

#### **Business Impacts**

4.52 The Proponent shall prepare and implement a Business Management Strategy to minimise impacts on business adjacent to major construction sites during construction of the project. The Strategy shall include measures to maintain vehicular and pedestrian access during business hours and to maintain the visibility of the business appropriate to its reliance on such. The Strategy shall include, but not necessarily be limited to:

- a) Business Management Plans for each construction site, identifying affected businesses and associated management strategies;
- b) a Small Business Owners Support Program to provide assistance to small retail business owners adversely impacted by construction of the project. The Program shall be administered by a Retail Advisory/ Support Panel established by the Proponent. The Program shall have appropriate specialist representatives and shall report to the Proponent.

#### **Impacts on Heritage Items and Areas**

##### ***Non-Archaeological Impacts***

4.53 The Proponent shall, based on detail design, refine its heritage assessment on heritage items affected by the project (including those not directly affected but within the Heritage Assessment Study Area) to inform mitigation and management measures to be incorporated into the final design of the project and the Construction Environmental Management Plan. The assessment shall be undertaken by a suitably qualified heritage specialist in consultation with the Heritage Council of NSW and agencies with heritage items listed in their section 170 registers and be generally consistent with Heritage Council of NSW Guidelines, and be made available to the Design Review Panel.

4.54 The Proponent shall ensure that heritage items not directly affected by the project, but within the Heritage Assessment Study Area, are protected and monitored during construction. The measures used to protect and monitor these items shall be considered as part of the heritage assessment refinement required under condition 4.53, and shall be defined in consultation

with the relevant property owners. A suitably qualified heritage specialist shall be involved in the supervision of all works within the vicinity of these items.

- 4.55 The design of the new entrance of the former Railway House from York Lane and the adjacent retail area shall preserve the existing symmetrical entrance and rendered decoration, and be detailed as separate new openings of sympathetic modern appearance within the original structural bays.
- 4.56 The project shall be constructed so as to avoid permanent direct impacts to heritage items within the vicinity of the White Bay station and construction zone and the Rozelle Stabling and Maintenance Depot, unless otherwise agreed by the Director General. This includes, but is not limited to direct impacts to the:
- White Bay Power Station,
  - Glebe Island Wheat Silos,
  - Great Sydney Dyke (Glebe Island Dyke Exposure),
  - White Bay Power Station Canal, and
  - Glebe Island Bridge Approach.

Should any impacts to these items be required, a heritage assessment shall be undertaken in consultation with the Heritage Council of NSW and be generally consistent with Heritage Council of NSW Guidelines and any conservation management plans applying to the item(s).

- 4.57 The Proponent shall limit construction activities at the White Bay Power Station, to the greatest extent practicable, to those areas little or neutral heritage significance as defined by the *White Bay Power Station Conservation Management Plan*, unless otherwise agreed by the Director-General.
- 4.58 The Proponent shall ensure that the physical fabric of any heritage item in the vicinity of construction works, but not directly affected by construction works, is not permanently impacted in constructing the project.
- 4.59 Photographic and archival recording of all directly-impact heritage items is to be undertaken prior to the commencement of any relevant construction or demolition activity that may affect those items. Recording is to be completed in accordance with Heritage Council of NSW Guidelines.

#### ***Archaeological Impacts***

- 4.60 Intrusive development works (localised excavations) shall, if reasonable and feasible, avoid areas of potential archaeological remains.
- 4.61 Where reasonable and feasible, potential archaeological heritage within the study area shall be retained and preserved *in situ*.
- 4.62 Affected historical archaeological sites of State significance shall be subject to professional archaeological excavation, investigation and reporting. Construction shall not commence at a site until the archaeological investigation program is concluded at that site.
- 4.63 Archaeological monitoring shall be undertaken at all construction sites. If any unidentified archaeological items are identified during construction, works affecting that item shall cease and consultation shall be undertaken with the Department to determine appropriate mitigation and management measures.
- 4.64 The Proponent shall, prior to archaeological excavation at that site, prepare and implement a Research Design and Management Strategy. This shall include an Archaeological Excavation Methodology, and Post Excavation and Reporting Program, for each construction site where archaeological excavations are required, unless otherwise agreed by the Director-General. This shall be prepared in consultation with Councils, the Department and generally in accordance with Heritage Council of NSW Guidelines. Final excavation reports shall be

prepared and lodged with the Heritage Council of NSW as soon as practicable after completion of excavation works.

### **Spoil, Waste and Contamination Management**

4.65 The Proponent shall, where reasonable and feasible, utilise non road transport for the transport of spoil from construction sites, and in particular from White Bay, Rozelle Stabling and Maintenance Depot, and Barangaroo-Wynyard construction sites.

4.66 An Excavation Works Method Statement shall be prepared for extracting, storing and reusing any Yellow Block Sandstone in a usable size and form. Management and storage shall be coordinated with the NSW Department of Industry and Investment. Consultation with the Relevant Councils shall be undertaken for the reuse of any excavated Yellow Block Sandstone.

4.67 All waste materials shall be assessed, classified, managed and disposed of in accordance with the *Waste Classification Guidelines* (DECC, 2008). All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.

### **Contaminated Soils**

4.68 Prior to the commencement of site preparation or construction works in known contaminated areas, the Proponent shall submit to the Director-General, a Soil Contamination Report detailing the outcomes of the Phase 2 contamination site investigations.

The report shall be endorsed by an accredited Site Auditor and detail, where relevant, whether or not the soil is suitable (for the intended land use) or can be made suitable for reuse through the application of a Remediation Action Plan (if applicable). The Remediation Action Plan shall be endorsed by an accredited Site Auditor.

The recommendations of the Soil Contamination Report and Remediation Action Plan shall be suitably incorporated into the Construction Environmental Management Plan prepared in accordance with this approval.

4.69 In the event of discovery of previously unidentified area(s) of potentially contaminated material, the Proponent shall cease work in the vicinity of the discovery and not commence work until the extent of contamination has been assessed and if necessary a Remedial Action Plan has been prepared and endorsed by an accredited Site Auditor.

4.70 A Site Audit Statement(s), prepared by an accredited Site Auditor, certifying that the contaminated areas have been remediated to a standard consistent with the intended land use is to be submitted to the Director-General prior to operation of the remediated site(s).

### **Water, Groundwater and Hydrological Impacts**

4.71 The Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters, unless otherwise provided in an Environment Protection Licence for the project.

4.72 The Proponent shall manage all actual and potential acid sulfate soils that may be disturbed during construction of the project in accordance with *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998)

4.73 Where available and of appropriate chemical and biological quality for its proposed purpose, the Proponent shall use stormwater, recycled water or other water sources in preference to potable water for construction, including concrete mixing and dust control.

- 4.74 The Proponent shall install and maintain for the duration of construction works associated with the project, erosion and sedimentation control measures consistent with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).
- 4.75 The Proponent shall design and construct the project in a manner that minimises impacts to groundwater hydrology including capture, drawdown and quality.
- 4.76 The Proponent shall undertake further assessment of the potential for the migration of contaminated groundwater as a result of construction and dewatering, particularly in the vicinity of Barangaroo-Wynyard and Area 6 of the Rozelle Stabling and Maintenance Depot. These investigations shall inform the management and monitoring requirements identified in the Construction Environmental Management Plan.

### Air Quality Impacts

- 4.77 Construction and demolition activities, including haulage of materials, shall be carried out in a manner that minimises or prevents the emission of dust.

## 5. OPERATION-RELATED IMPACTS

### Noise and Vibration Impacts

#### *Ground-borne Noise and Vibration (Project Tunnels)*

- 5.1 The project shall be operated to ensure that ground-borne noise and vibration from the project tunnels does not exceed the limits specified in Table 4, at the locations and during the time periods identified in the Table.

**Table 4 - Ground-borne Noise and Vibration Limits**

Receiver	Time of day	Ground-borne noise Limit (LA <sub>max</sub> (slow))	Vibration Limit (RMS)
Residential and accommodation	Day (7am to 10pm)	40 dB(A)	0.2 mm/s
	Night (10pm to 7am)	35 dB(A)	0.14 mm/s
Schools, educational institutions, places of worship	When in use	40dB(A)	0.4 mm/s
Retail areas	When in use	50 dB(A)	0.4 mm/s
General office area	When in use	45 dB(A)	0.4 mm/s
Private offices and conference rooms	When in use	40 dB(A)	0.4 mm/s
Theatres	When in use	35 dB(A)	0.2 mm/s
Critical working areas	Any time	-	0.1 mm/s

#### *Noise Breakout*

- 5.2 Ventilation shafts, service facilities and metro stations, where breakout noise from in-tunnel operations may occur, shall be designed and operated to satisfy a level of LA<sub>max</sub>(fast) level of 55dB(A) during train pass-bys, when assessed at one metre from the façade of residential receivers, and a LA<sub>max</sub>(fast) level of 65dB(A) when assessed at commercial receivers.

#### *Stationary Facilities*

- 5.3 The following facilities shall be designed and operated so as not to exceed project specific noise levels derived in accordance with *NSW Industrial Noise Policy* (DECCW, 2000) and acceptable vibration levels specified in *Assessing Vibration: a Technical Guideline* (DECCW, 2006):
- Rozelle Stabling and Maintenance Depot
  - stations at Rozelle, White Bay, Pyrmont, Barangaroo–Wynyard, Martin Place, Town Hall Square and Central Station (excluding rail operations); and
  - associated ventilation shafts and ancillary infrastructure.

- 5.4 For the purpose of condition 5.3, the Proponent shall identify project specific noise levels and vibration levels for each project component referred to under that condition, prior to the

commencement of construction of that component, and shall notify the Director-General and the DECCW of those levels.

#### **Surface Rail Operations**

- 5.5 Surface rail operations outside of the Rozelle Stabling and Maintenance Depot shall be undertaken so as not to exceed the noise trigger levels in the *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* (DECCW / DoP, 2007).

#### **Noise Performance Review**

- 5.6 The final detailed design of the project, including noise mitigation measures, shall be subject to independent review by a qualified acoustic expert to confirm that the project has been designed to achieve the noise limits specified under conditions 5.1 to 5.5.

### **Traffic and Transport Impacts**

#### **Rozelle Stabling and Maintenance Facility**

- 5.7 Heavy vehicle access to and from the Rozelle stabling and maintenance depot shall be restricted, to the greatest extent practicable, to the City West Link Road and the Crescent.
- 5.8 The relevant components of the final design of access to the Rozelle stabling and maintenance facility from the City West Link Road and the Crescent shall be endorsed by the NSW Roads and Traffic Authority.
- 5.9 Parking provision and access requirements to and within the Rozelle stabling and maintenance depot shall be consistent with *Guide to Traffic Generating Developments* (RTA, 2002).
- 5.10 Cycle and pedestrian facilities along Lilyfield Road and over the Rozelle stabling and maintenance depot shall be designed in consultation with Leichhardt Municipal Council and shall be consistent with *Austrroads Guide To Traffic Engineering Practice - Part 14 Bicycles*.

#### **Rozelle Station**

- 5.11 The final design of access to and from the Balmain Leagues Club at Victoria Road and Wellington Street shall be endorsed by the NSW Roads and Traffic Authority and NSWTI.

### **Water, Groundwater and Hydrological Impacts**

- 5.12 The operational management of groundwater and surface water ingress into the stations and tunnels, including the design of capture, treatment and discharge methods shall be undertaken in consultation with DECCW. All intercepted groundwater and surface water shall be treated to ensure that relevant ANZECC water quality guidelines are met, prior to discharge.
- 5.13 The Proponent shall take all practicable measures to limit operational groundwater inflows into the stations and tunnels to no greater than 1 litre per second per kilometre.
- 5.14 All operational stormwater and wastewater systems shall be designed, constructed, operated and maintained to meet the requirements of relevant authorities including Sydney Water and Relevant Councils, as applicable.
- 5.15 The Proponent shall ensure that the detailed design of the Rozelle stabling and maintenance depot does not significantly increase flooding characteristics both within and outside the site. This includes limiting increases in inundation levels to a maximum of 50 millimetres, and for 1 hour, in a 1 in 100 year ARI rainfall event. Works shall be designed with consideration of the *NSW Floodplain Development Manual, 2005*.

## **6. STAKEHOLDER INFORMATION, CONSULTATION AND INVOLVEMENT**

### **Community and Stakeholder Communication**

- 6.1 The Proponent shall prepare and implement a **Construction Stakeholder and Community Involvement Plan** to provide mechanisms to facilitate communication between the Proponent (and its contractors), the Environmental Representative and stakeholders on detailed design, construction progress and management. The Plan shall include procedures as outlined in the Proponent's Statement of Commitments, and include the following additional requirements:
- a) identification of stakeholders, including government, commuters, community and business stakeholders along the route and for each construction site;
  - b) outline of consultative mechanisms to facilitate communication between the Proponent and stakeholders, including surrounding receivers at each construction site.
  - c) a process for the formation of community-based forums that focus on key environmental management issues for the project. The Strategy shall provide detail on the structure, scope, objectives and frequency of the community-based forums;
  - d) procedures and mechanisms through which the community stakeholders can discuss or provide feedback to the Proponent, Independent Community Liaison Representative and/or Environmental Representative in relation to the environmental management and delivery of the project;
  - e) procedures and mechanisms through which the Proponent can respond to any enquires or feedback from the community stakeholders in relation to the environmental management and delivery of the projects;
  - f) procedures and mechanisms to be implemented to resolve any issues/disputes that arise between parties on the matters relating to environmental management and the project delivery.

Issues that shall be addressed through the Plan include (but are not necessarily limited to): construction (works, scheduling and methodology), property access, transport and traffic management (including access and construction vehicle management), property acquisition, landscaping and station design matters, and noise, vibration mitigation and management, including construction hours.

The Proponent shall maintain and implement the Plan throughout construction. The Plan shall be approved by the Director-General prior to the commencement of demolition or construction works and shall be publicly available.

### **Complaints and Enquiries**

- 6.2 Prior to the commencement of construction or demolition works associated with the project, the Proponent shall ensure that the following are available for community enquiries and complaints for the duration of construction and demolition works:
- a) a 24 hour telephone number on which complaints and enquiries about the project may be registered;
  - b) a postal address to which written complaints and enquires may be sent; and
  - c) an email address to which electronic complaints and enquiries may be transmitted.

The telephone number, the postal address and the email address shall be published in a newspaper circulating in the local area prior to the commencement of construction. This information shall also be provided on the Proponent's website.

### **Provision of Electronic Information**

- 6.3 Prior to the commencement of construction, the Proponent shall dedicate pages within its project website, for the provision of electronic information associated with the project, for the duration of construction and for up to 12 months following completion of the project. The Proponent shall publish and maintain up-to-date information on these dedicated pages, including:
- a) a copy of the documents referred to under condition 1.1 of this approval, and any documentation supporting modifications to this approval that may be granted;
  - b) a copy of this approval and each relevant environmental approval, licence or permit required and obtained in relation to the project;

- c) subject to confidentiality requirements, a copy of each strategy, plan and program required under this approval; and
- d) the outcomes of compliance tracking in accordance with condition 7.1 of this approval.

## 7. COMPLIANCE MONITORING AND TRACKING

### Compliance Tracking Program

7.1 The Proponent shall develop and implement a **Compliance Tracking Program** to track compliance with the requirements of this approval. A copy of the Program shall be submitted to the Director-General prior to the commencement of construction. The Program shall include:

- a) provisions for periodic review of the compliance status of the project against the requirements of this approval, including at the commencement of construction and operation of the project, and at least at six monthly intervals;
- b) provisions for the notification of the Director-General prior to the commencement of construction and prior to the commencement of operation of the project, including a staging report as relevant;
- c) provisions for periodic reporting of compliance status to the Director-General during construction and operation;
- d) a program for independent environmental auditing in accordance with *ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing*;
- e) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;
- f) provisions for timely reporting of environmental incidents to the Director-General during construction; and
- g) mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance.

## 8. ENVIRONMENTAL MONITORING AND AUDITING

### Operational Performance Audit

8.1 Within twelve months of the opening of the project to the public, and then again at five years, or as otherwise agreed or required by the Director-General, the Proponent shall commission an independent, qualified person or team to undertake an Operational Performance Audit of the project. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. An **Operational Performance Audit Report** shall be submitted to the Director-General within one month of the completion of the Audit, unless otherwise agreed by the Director-General. The Audit shall:

- a) assess compliance with the operational requirements of this approval, and other licences and approvals that apply to the project;
- b) assess the operational performance of the project against the aims and objectives for the project specified in the documents referred to under condition 1.1 of this approval
- c) assess the environmental performance of the project against the operational predictions made and conclusions drawn in the documents referred to under condition 1.1 of this approval; and
- d) review the effectiveness of the environmental management of the project, including the Operational Environmental Management Plan and any operational environmental impact mitigation works.

## 9. ENVIRONMENTAL MANAGEMENT

### Environmental Representative

9.1 Prior to the commencement of construction of the project, or as otherwise agreed by the Director-General, the Proponent shall nominate for the approval of the Director-General, a suitably qualified and experienced Environmental Representative(s) independent of the project design and construction personnel. The Proponent shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Director-General. The Environmental Representative(s) shall:

- a) be the principal point of advice in relation to all questions and complaints concerning the environmental performance of the project;

- b) endorse the preparation of and monitor the implementation of all environmental management plans and monitoring programs required by the conditions of this approval;
- c) monitor the outcome of all environmental management plans and advise the Proponent upon the achievement of all project environmental outcomes;
- d) ensure that environmental auditing is undertaken in accordance with all relevant project Environmental Management Systems;
- e) have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval, and all other licences and approvals related to the environmental performance and impacts of the project; and
- f) be given the authority and independence to require reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts.

### **Construction Environmental Management Framework**

9.2 The Proponent shall develop and implement a **Construction Environmental Management System** to outline the general environmental management practices and procedures to be followed during construction and demolition works. The System shall be prepared in accordance with *ISO14001:2004 – Environmental Management Systems* and shall provide a single, consistent environmental management framework to be applied to the project.

9.3 The Proponent shall develop and implement Construction Environmental Management Sub-Plans under the Construction Environmental Management System required under condition 9.2 and consistent with *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004). The Construction Environmental Management Sub-Plans shall comprise:

- a) a **Construction Noise and Vibration Management Sub-Plan** to detail how construction or demolition noise, vibration and blasting impacts would be minimised and managed. The Plan shall be prepared by a recognised acoustic consultant and be consistent with the guidelines contained in the *Interim Construction Noise Guidelines* and developed in consultation with the DECCW and shall include, but not necessarily be limited to:
  - i) identification of receivers likely to be impacted by construction/ demolition noise and vibration, including a description of acoustic parameters specific to receivers;
  - ii) identification of applicable Construction Noise Management Levels (CNML), blasting, vibration criteria and ground-borne noise levels, including consideration of specific property attributes;
  - iii) details of construction/ demolition activities and a schedule (overall and indicative daily) for construction/ demolition works for each work site;
  - iv) identification of construction/ demolition activities that have the potential to generate noise and/or vibration levels exceeding the relevant criteria, including traffic noise;
  - v) a Blast Management Strategy, if relevant;
  - vi) a detailed description of what feasible and reasonable actions and measures would be implemented to ensure, to the greatest extent practicable, that these works would comply with the relevant noise and vibration criteria/ guidelines or impacts mitigated by other means;
  - vii) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, corrective preventative actions if any non-compliance is detected; and
  - viii) monitoring and reporting of noise, vibration and blasting levels and activities; and
  - ix) maintenance, auditing and reporting processes;
- b) a **Construction Heritage and Archaeology Management Sub-Plan** to detail how heritage items and archaeological resources within the vicinity of the project are to be managed in accordance with Heritage Council of NSW Guidelines. The Plan shall be prepared in consultation with the Heritage Council and Relevant Councils and shall include, but not necessarily be limited to:
  - i) identification of all heritage items within the Heritage Assessment Study Area and

- any other items that may be directly or indirectly impacted by the project;
- ii) an Archaeological Research Design and Management Strategy;
- iii) mitigation, management and protection measures informed by the detailed design heritage assessment and the requirements of this approval, including archival recording, conservation works and heritage interpretation strategies;
- iv) a monitoring plan including contingency actions should construction works unearth items of historical archaeological potential; and
- v) maintenance, auditing and reporting processes.
- c) a **Construction Spoil Management Sub-Plan** and a **Construction Waste Management Sub-Plan** to detail how spoil would be handled, stockpiled, reused and disposed. The Plan shall be consistent with relevant transport and air quality management plans and shall be prepared in consultation with Relevant Councils and shall include, but not necessarily be limited to:
  - i) identification of spoil and waste sources, key waste streams and a waste hierarchy;
  - ii) mitigation and management measures, including spoil and waste reuse, classification of spoil and waste, and spoil and waste storage and handling procedures;
  - iii) the recommendations of the Soil Contamination Report and Remediation Action Plan(s), and contingency plans in the event of the discovery of previously unidentified area(s) of potentially contaminated material;
  - iv) an Excavation Works Method Statement for the extracting, storing and reuse of Yellow Block Sandstone;
  - v) details of the locations where spoil and waste will be disposed; and
  - vi) maintenance, auditing and reporting processes, including a waste management register of all significant waste collected from construction sites and site compounds for disposal.
- d) a **Construction Air Quality Management Sub-Plan** to detail how air quality within the vicinity of the project is to be managed. The Plan shall be prepared in consultation with Relevant Councils and shall include, but not necessarily be limited to:
  - i) identification of potential sources of dust deposition and receivers,
  - ii) mitigation and management measures, including a reactive management program detailing how and when operations are to be modified to minimise the potential for dust emissions, should emission levels exceed air quality goals;
  - iii) air quality monitoring, including monitoring locations, standards, procedures and frequency and analysis requirements; and
  - iv) maintenance, auditing and reporting processes.
- e) a **Construction Water and Groundwater Management Sub-Plan** to detail how the impacts of the project on the quality and quantity of surface and groundwater, including stormwater in storage, sedimentation dams, contamination and flooding impacts are to be managed. The Plan shall be prepared in consultation with NOW, Sydney Water, and Relevant Councils and shall include, but not necessarily be limited to:
  - i) identification of potential sources of water pollution and contaminants and the identification of structures that may be impacted from groundwater changes including from settlement,
  - ii) identification of base line water and ground water quality at construction sites and receiving areas,
  - iii) management and mitigation measures to minimise pollutants from construction sites, including an identification of the adequacy of the measures,
  - iv) measures to handle, treat and dispose of stormwater; effluent and contaminated water; including an assessment of the adequacy of the measures and the suitability of receiving systems,
  - v) management of actual and potential acid sulphate soils,
  - vi) management of groundwater inflow volume, control, handling, treatment and the disposal of contaminated groundwater,
  - vii) measures to reduce any flooding impacts,
  - viii) measures for the use of water reclaimed or recycled on-site,
  - ix) water quality monitoring, including monitoring locations, standards, procedures

- and frequency and analysis requirements,
- x) groundwater monitoring, including the identification of piezometers locations, standards, procedures and frequency and analysis requirements,
- xi) contingency plans to be implemented in the event of exceedances or accidents,
- xii) maintenance, auditing and reporting processes, and
- xiii) roles, responsibilities, training and resourcing actions.

### **Construction Method Statements and Environmental Risk Screening**

- 9.4 The Proponent shall develop Construction Method Statements for sites, activities and/ or groups of activities consistent with the Construction Environmental Management System (condition 9.2) and Construction Environmental Management Sub-Plans (condition 9.3) for the project.
- 9.5 Prior to the commencement of construction or demolition works associated with the project, the Proponent shall develop an Environmental Risk Screening Matrix to be applied to each Construction Method Statement referred to under condition 9.4. The Matrix shall be developed in consultation with the Department and shall be submitted for the approval of the Director-General prior to its application. The Matrix shall be developed for the purpose of ranking and screening environmental risks associated with construction and demolition works, having regard to issues including, but not necessarily limited to: noise and vibration impacts; dust generation; spoil and waste management; heritage impacts; and water/ groundwater impacts. In developing the Matrix, the Proponent shall have regard to the limits, objectives and other standards required under this approval. The Environmental Risk Screening Matrix shall have no fewer than three environmental risk tiers (high, medium and low).
- 9.6 The Proponent shall apply the approved Environmental Risk Screening Matrix (refer to condition 9.5) to each Construction Method Statement for the project. Where a Construction Method Statement, or part of a Statement, is identified as involving works of 'high environmental risk', the Statement or relevant part of the Statement shall be submitted for the approval of the Director-General prior to commencing the works.
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