

Infrastructure Approval

Section 115ZB of the *Environmental Planning & Assessment Act 1979*

I grant approval to the State significant infrastructure application referred to in schedule A, subject to the conditions in schedule B.

These conditions are required to:

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

The Hon. Pru Goward MP
Minister for Planning

Sydney

2014

SCHEDULE A

Application No.:

SSI-6042

Proponent:

Transport for NSW

Approval Authority:

Minister for Planning

Land:

Land required for the construction and operation of the SSI, generally between Circular Quay and Randwick and Kingsford via Surry Hills and Moore Park. Land in the north west corner of the Royal Randwick Racecourse for a stabling facility and land within the Rozelle Goods line corridor immediately east of Catherine Street and adjacent to the Lilyfield light rail stop for a maintenance facility. Land required for construction compounds and substations, as detailed in the documents outlined in schedule B.

State significant infrastructure:

CBD and South East Light Rail project, being the construction and operation of a light rail service generally from Circular Quay to Kingsford and Randwick via Surry Hills and Moore Park including approximately 19 light rail stops, interchanges at ferry, rail and bus stations along the route and the transformation of a section of George Street between Hunter Street and Bathurst Street, Sydney into a pedestrian zone. The proposal also includes:

- facilities in Randwick and at Rozelle for light rail stabling and/or maintenance;
- interchanges with heavy rail, bus and ferry services at Circular Quay, Wynyard, Town Hall and Central stations;
- integration with the existing light rail system;
- bus interchanges at Rawson Place, Central Station, Queen Victoria Building, Town Hall, Kingsford and Randwick stops; and
- public domain improvements including concepts for paving, street trees, lighting and furniture.

Critical infrastructure:

The proposal is critical State significant infrastructure by virtue of schedule 5, clause 2 of the State and Regional Development SEPP.

Modifications

NSW Government

Department of Planning and Environment

SSI-6042 MOD 1 approved 17 February 2015

SSI-6042 MOD 2 approved 17 March 2015

SSI-6042 MOD 3 approved 29 September 2015

SSI-6042 MOD 4 approved 18 April 2016

SSI-6042 MOD 5 approved 6 June 2016

SSI-6042 MOD 6 approved 21 February 2017

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DEFINITIONS

Act, the	<i>Environmental Planning and Assessment Act 1979.</i>
Ancillary Facility	Temporary facility for construction, not identified in the documents listed in condition A1 of this approval, including for example an office and amenities compound, construction compound, batch plant (concrete or bitumen), materials storage compound, maintenance workshop, concrete washout, or material stockpile areas.
Construction	Includes all work in respect of the SSI other than : <ul style="list-style-type: none"> a) survey, acquisitions, fencing, building/road dilapidation surveys; b) investigative drilling/excavation; c) minor clearing; d) establishing site compounds and ancillary facilities; e) installation of environmental impact mitigation measures; f) utility adjustments/relocations; g) other activities determined by the Secretary to have minimal environmental impact.
Department. the	NSW Planning & Environment.
DCP	Development Control Plan.
EIS	Environmental Impact Statement.
EPA	Environment Protection Authority.
Ground Level (existing)	Existing ground level of a site at any point, before any earthworks (excavation or fill) has taken place.
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement such as a shared associations in pastoral landscapes as well as associations linked with the mission period.
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i> .
INP	NSW Industrial Noise Policy (NSW Government 2000).
ICNG	Interim Construction Noise Guidelines (EPA, 2013).
Minister, the	Minister for Planning.
NOW	NSW Office of Water.
Operation	Means the operation of the SSI, but does not include commissioning trials of equipment or temporary use of parts of the SSI during construction.
PAD	Potential Archaeological Deposit.
Precinct	The CBD and South East Light Rail Precincts including the City Centre, Surry Hills, Moore Park, Randwick, Kensington/Kingsford and Lilyfield Maintenance Facility Precincts outlined in Appendix 1.
Project	The project the subject of State significant infrastructure application SSI 6042.
Proponent	Transport for NSW (TfNSW).
Publicly Available	Available for inspection in hard copy and/or electronic format by a member of the general public (for example available on the Proponent's website).
Public authority	Generally defined as including a government agency, administrative office or teaching service, a statutory body representing the Crown, a local government authority or a body required to keep certain accounts under the <i>Public Finance and Audit Act 1983</i> , or over which the Auditor-General has powers of audit. Refer to clause 3 of the <i>Independent Commission Against Corruption Act, 1988</i> for the full definition.
Reasonable and feasible	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. Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided. Feasible relates to engineering considerations and what is practical to build. Where requested by the Secretary, the Proponent shall provide evidence as to how reasonable and feasible measures were considered and taken into account.
Relevant Council(s)	Leichhardt Municipal Council, Randwick City Council, City of Sydney Council, as applicable.
RING	Rail Infrastructure Noise Guideline (Environment Protection Authority, 2013)
RMS	Roads and Maritime Services.
RNP	Road Noise Policy (Department of Environment, Climate Change and Water, 2011).

NSW Government

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SCCAS	Sydney City Centre Access Strategy.
Secretary, the	Secretary of NSW Planning & Environment (or delegate).
Secretary's Approval	A written approval from the Secretary (or delegate). Where the Secretary's approval is required under a condition, the Secretary will endeavour to provide a response within one month of receiving an approval request. The Secretary 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.
Sensitive Receiver	Residence, education institution (e.g. university, school, TAFE college), health care facility (e.g. nursing home, hospital) and religious facility (e.g. church), children's day care facility, community centres and recreation areas.
Stages	Stages refer to the division of the SSI into multiple contract packages for construction purposes, and/or the construction or operation of the overall SSI in discrete sections.
SSI	Means the infrastructure approved under this approval and as generally described in Schedule A.
STA	State Transit Authority (Sydney Buses).
UNSW	University of New South Wales.

SCHEDULE B

Part A - ADMINISTRATIVE CONDITIONS

Terms of Approval

- A1. The **Proponent** shall carry out the SSI generally in accordance with the:
- (a) SSI Application SSI 6042;
 - (b) *CBD and South East Light Rail Project Environmental Impact Statement* (eight volumes), prepared by Parsons Brinckerhoff for TfNSW and dated November 2013;
 - (c) *CBD and South East Light Rail Project Submissions Report (incorporating Preferred Infrastructure Report)*, prepared by Parsons Brinckerhoff for TfNSW and dated March 2014;
 - (d) Supplementary information provided by TfNSW;
 - (e) Modification application and supporting Modification Report prepared by Parsons Brinckerhoff for TfNSW and dated December 2014 (**Modification 1**);
 - (f) Submissions Report to Project Modification prepared by Parsons Brinckerhoff for TfNSW and dated January 2015 (**Modification 1**);
 - (g) **Modification 2** and supporting documentation dated 20 February 2015;
 - (h) **Modification 3** and supporting documentation dated 19 August 2015;
 - (i) Modification application and supporting Modification Report prepared by Parsons Brinckerhoff for TfNSW and dated November 2015 (**Modification 4**);
 - (j) Submissions Report to Project Modification prepared by Parsons Brinckerhoff for TfNSW and dated February 2016 (**Modification 4**);
 - (k) Modification application and supporting Modification Report prepared by TfNSW and dated April 2016 (**Modification 5**);
 - (l) Modification application and supporting Modification Report prepared by TfNSW and dated November 2016 (**Modification 6**);
 - (m) **conditions of this approval.**
- A2. In the event of an inconsistency between:
- (a) the conditions of this approval and any document listed from condition **A1(a) to A1(l)** inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and
 - (b) any of the documents listed from condition **A1(a) to A1(l)** inclusive, the most recent document shall prevail to the extent of the inconsistency.
- A3. The **Proponent** shall comply with the reasonable requirements of the Secretary arising from the Department's assessment of:
- (a) any reports, plans or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans or correspondence.
- A4. Subject to confidentiality, the **Proponent** shall make all documents required under this approval available for public inspection on request.

Limits of Approval

- A5. This approval shall lapse ten years after the date on which it is granted, unless the works the subject of this approval are physically commenced on or before that date.

Statutory Requirements

- A6. The **Proponent** shall ensure that all licences, permits and approvals are obtained as required by law and maintained as required with respect to the SSI. No condition of this approval removes the obligation for the **Proponent** to obtain, renew or comply with such licences, permits or approvals.

Staging

- A7. The **Proponent** may elect to construct and/ or operate the SSI in stages. Where staging is proposed, the **Proponent** shall submit a Staging Report to the Secretary prior to the commencement of the first proposed stage. The Staging Report shall provide details of:
- (a) How the SSI would be staged, including general details of work activities associated with each stage and the general timing of when each stage would commence;
 - (b) Details of the relevant conditions of approval, which would apply to each stage and how these shall be complied with across and between the stages of the SSI; and
 - (c) Evidence of consultation with the Reference Groups listed in this Part.

Where staging of the SSI is proposed, these conditions of approval are only required to be complied with at the relevant time and to the extent that they are relevant to the specific stage(s).

The **Proponent** shall ensure that an updated Staging Report (or advice that no changes to staging are proposed) is submitted to the Secretary prior to the commencement of each stage, identifying any changes to the proposed staging or applicable conditions.

- A8. The **Proponent** shall ensure that all plans, sub-plans and other management documents required by the conditions of this approval and relevant to each stage (as identified in the Staging Report) are submitted to the Secretary no later than one month prior to the commencement of the relevant stages, unless otherwise specified in a condition or agreed to by the Secretary.

Note: These conditions do not relate to staged infrastructure within the meaning of section 115ZD of the EP&A Act.

- A9. With the approval of the Secretary, the **Proponent** may:
- Submit any strategy, plan, program (or the like) required by this approval on a progressive basis;
 - Combine any strategy, plan, program (or the like) required by this approval; and
 - Update corresponding strategies, plans and programs prepared to meet the requirements of the approval for the purposes of meeting the requirements of the SSI.

Notes:

- While any strategy, plan or program may be submitted on a progressive basis, the **Proponent** will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and
- If the submission of any strategy, plan or program is to be stages, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

Compliance

- A10. The **Proponent** shall ensure that any strategy, plan, program (or the like) incorporates mitigation measures identified in the documents listed in condition A1, as relevant, and as modified by this approval.
- A11. The **Proponent** shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.
- A12. The **Proponent** shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.

Dispute Resolution

- A13. In the event of a dispute between the **Proponent** and a public authority or the Australian Turf Club, in relation to an applicable requirement in this approval or relevant matter relating to the SSI, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

Development Agreements

- A14. Upon execution of any Development Agreement with key stakeholders, the **Proponent** shall inform the Secretary and furnish a copy of the agreement.

Community Reference Group

- A15. Within three months of the date of this approval, or prior to the commencement of construction (whichever is earlier), the **Proponent** shall establish a Community Reference Group (CRG) to provide input prior to and during the construction of the SSI. The CRG shall:

- Be comprised of:
 - representatives from the **Proponent**, including the person responsible for environmental management;
 - representatives from the relevant Councils; and
 - at least three representatives from the local community, whose appointment has been approved by the **Proponent** in consultation with the Secretary and relevant Councils.
- Be chaired by an independent party approved by the **Proponent** in consultation with the Secretary;
- Meet at least four times a year, or as otherwise agreed by the CRG; and
- Review and provide advice on the construction of the SSI, including any construction or environmental management plans, monitoring results, audit reports, or complaints.

The make-up of the reference group may be amended, in consultation with the Secretary, to suit the precinct specific issues being considered.

*Note: The **Proponent** may, in consultation with the Secretary, combine the function of this CRG with the function of other community consultative mechanisms in the area, however, if it does this it must ensure that the above obligations are fully met in the combined process.*

Business Reference Group

A16. Within three months of the date of this approval, or prior to the commencement of construction (whichever is earlier), the **Proponent** shall establish a Business Reference Group (BRG) to provide input prior to and during the construction of the SSI. The BRG shall:

- (a) Be comprised of:
 - i) representatives from the **Proponent**;
 - ii) representatives from the relevant Councils and NSW Small Business Commissioner; and
 - iii) representatives from the local business community, including NSW Property Council, Sydney Business Chamber, Committee for Sydney, Australian National Retail Association, Australian Retailers Association, Transport and Tourism Forum, Youth Hostel Association, NRMA, Restaurant and Catering Australia, Australian Hotels Association, Tourism Accommodation Australia, Australian Turf Club, UNSW, Chamber of Commerce for Haymarket, The Rocks, Kensington, Kingsford, and Randwick, plus two representatives from each precinct business forums.
- (b) Be chaired by an independent party approved by the **Proponent** in consultation with the Secretary;
- (c) Meet at least four times a year, or as otherwise agreed by the BRG; and
- (d) Review and provide advice on the business/commercial impacts of the construction of the SSI, complaints received and advise on mitigation measures to avoid or minimise these impacts where reasonable and feasible.

The make-up of the reference group may be amended, in consultation with the Secretary, to suit the precinct specific issues being considered.

*Note: The **Proponent** may, in consultation with the Secretary, combine the function of the BRG with the function of other business consultative mechanisms in the area, however, if it does this it must ensure that the above obligations are fully met in the combined process.*

Urban Domain Reference Group

A17. Within three months of the date of this approval, or prior to the commencement of construction (whichever is earlier), the **Proponent** shall establish an Urban Domain Reference Group (UDRG) to provide input to the detailed design and construction of the SSI. The UDRG shall:

- (a) Be comprised of:
 - i) representatives from the **Proponent**, including the person responsible for detailed design;
 - ii) representatives from the relevant Councils and the NSW Property Council;
 - iii) depending on the works being considered, one representative from Department of Planning and Environment, Roads and Maritime Services, Health Infrastructure, Sydney Harbour Foreshore Authority, the Australian Turf Club, UNSW and Centennial and Moore Park Trust; and
 - iv) independent experts as selected by the **Proponent** where relevant;
- (b) Be chaired by the NSW Government Architect;
- (c) Meet at least four times a year, or as otherwise agreed by the UDRG; and
- (d) Review and provide advice on the detailed design of the SSI including architectural, landscape and urban design elements.

The make-up of the reference group may be amended, in consultation with the Secretary, to suit the precinct specific issues being considered.

*Note: The **Proponent** may, in consultation with the Secretary, combine the function of the UDRG with the function of other urban design consultative mechanisms in the area, however, if it does this it must ensure that the above obligations are fully met in the combined process.*

Utilities Reference Group

A18. Within three months of the date of this approval, or prior to the commencement of construction (whichever is earlier), the **Proponent** shall establish a Utilities Reference Group (URG) to provide input to the detailed design and construction of the SSI. The URG shall:

- (a) Be comprised of:
 - i) representatives from the **Proponent**, including the person responsible for detailed design;
 - ii) representatives from the relevant Councils;
 - iii) representatives from each utility or service organisation owning assets that will be directly or indirectly impacted by the construction or operation of the SSI; and
 - iv) independent experts as selected by the **Proponent** where relevant.
- (b) Meet at least four times a year, or as otherwise agreed by the URG; and
- (c) Review and provide advice on the detailed design of the SSI in relation to these assets.

*Note: The **Proponent** may, in consultation with the Secretary, combine the function of the URG with the function of other utility/service consultative mechanisms in the area, however, if it does this it must ensure that the above obligations are fully met in the combined process.*

A19. The **Proponent** shall, at its own expense:

- (a) Ensure that its representatives attend the CRG, BRG, UDRG and URG meetings;
 - (b) Provide the CRG, BRG, UDRG and URG with regular information on the environmental performance and management of the SSI during construction, as relevant;
 - (c) Provide meeting facilities for the CRG, BRG, UDRG and URG;
 - (d) Arrange site inspections for the CRG, BRG, UDRG, and URG, if necessary;
 - (e) Take minutes of the CRG, BRG, UDRG and URG meetings;
 - (f) Make these minutes available on the **Proponent's** website, or as agreed to by the relevant Group;
 - (g) Respond to any advice or recommendations the CRG, BRG, UDRG and URG may have in relation to the detailed design and construction of the SSI; and
 - (h) Forward a copy of the minutes of each Group meeting, and any responses to the CRG, BRG, UDRG and URG recommendations to the Secretary.
-

SCHEDULE B

Part B - CONSTRUCTION

NOISE AND VIBRATION

Land Use Survey

- B1. Prior to construction, the **Proponent** shall undertake a detailed land use survey to identify potentially critical areas and receivers that are sensitive to construction, vibration and construction air-borne and ground-borne noise impacts from the SSI. The results of the survey shall be incorporated into the Construction Noise and Vibration Management Plan as required by condition B89.

Note: Specific additional conditions B17 and B18 have already been developed for Health Infrastructure and UNSW.

Construction Hours

- B2. With the exception of the CBD precinct, the **Proponent** shall only undertake construction works associated with the SSI during the following hours:
- (a) 6.00am to 6.00pm, Mondays to Fridays inclusive;
 - (b) 8.00am to 5.00pm on Saturdays; and
 - (c) at no time on Sundays or public holidays.
- B3. Within the CBD precinct, the **Proponent** shall only undertake construction works associated with the SSI during the following hours:
- (a) 6.00am to 10.00pm, Mondays to Fridays inclusive;
 - (b) 8.00am to 5.00pm on Saturdays; and
 - (c) at no time on Sundays or public holidays.
- B4. Notwithstanding conditions B2 and B3, construction works associated with the SSI may be undertaken outside the hours specified under that condition in the following circumstances:
- (a) Construction that causes $L_{Aeq(15\text{minute})}$ noise levels that are:
 - (i) no more than 5 dB above rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009); and
 - (ii) no more than the noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses.
 - (b) For the delivery of materials required by the police or other authorities for safety reasons; or
 - (c) When directed by the Transport Management Centre. In these circumstances, mitigation and management measures detailed in the OOHW protocol shall apply; or
 - (d) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
 - (e) Works approved through an out-of-hours work protocol prepared as part of the Construction Noise Management Plan required by condition B89, provided the relevant Council, local residents and other affected stakeholders and sensitive receivers are informed of the timing and duration at least 48 hours prior to the commencement of the work; or
 - (f) Works approved through an Environment Protection Licence, including for works identified in an out of hours works protocol.

Construction Noise and Vibration Impact Statements

- B5. The **Proponent** shall prepare specific Construction Noise and Vibration Impact Statements in consultation with relevant government agencies, and the Community and Business Reference Groups for specific stages of construction consistent with the Construction Noise and Vibration Management Plan required by condition B89. Each Construction Noise and Vibration Impact Statement shall specifically address each of the major construction sites and shall include but not be limited to:
- (a) A description of the proposed activities;
 - (b) Predicted noise and vibration levels;
 - (c) Examination of alternative methods of construction that would potentially reduce noise and vibration if it the potential noise and vibration exceeds the relevant criteria;
 - (d) Description and commitment to work practices which limit noise and vibration;
 - (e) Description of specific noise and vibration mitigation treatments and time restrictions, including respite periods, duration, and frequency (where possible, programming of night works over consecutive nights that impact sensitive receivers in the same locality shall be avoided);
 - (f) Justification for any activities to be undertaken outside the specified construction hours specified in condition B2, B3, and B7;
 - (g) Internal noise audit systems including recording of daily hours of construction, progressive impact assessments as work proceeds, conducting informal checks by the Environmental Representative, providing active and communication links to relevant Councils and surrounding residents and sensitive receivers;

- (h) Assessment of potential noise from the proposed construction methods including noise from construction vehicles and noise impacts from required traffic diversions;
- (i) Community consultation and notification;
- (j) All reasonable and feasible measures including adopting the least noisy available construction methods, systems and equipment;
- (k) Assessment and examination of reasonable and feasible offsite mitigation; and
- (l) Additional noise and vibration mitigation measures as negotiated with affected residents and other sensitive receivers.

Construction Noise Mitigation

- B6. Construction noise management levels (NML) shall be established using the *Interim Construction Noise Guideline* (DECC, 2009). The **Proponent** shall implement all reasonable and feasible noise mitigation measures with the aim of achieving the construction NMLs. Any construction activities identified as exceeding the construction NMLs shall be managed in accordance with the Construction Noise and Vibration Management Plan required under condition B89 and the specific Construction Noise Impact Statements prepared in accordance with condition B5.

Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5dB(A) to the predicted level before comparing to the construction NML.

- B7. The **Proponent** shall ensure that rock breaking, rock hammering, sheet piling, pile driving and any other activities which result in impulsive or tonal noise generation and affect sensitive receivers are only scheduled between the following hours unless approved by the Secretary or by the application of condition B4:
- (a) 8.00 am and 12.00 pm Monday to Friday;
 - (b) 2.00 pm and 5.00 pm Monday to Friday; and
 - (c) 8.00 am and 12.00 pm Saturdays.

Where these activities are undertaken for a continuous three hour period and exceed the construction noise management levels at noise sensitive receivers, a minimum respite period of at least one hour shall be scheduled before activities recommence.

Note: For the purposes of this condition, 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.

- B8. Wherever practical, piling activities that affect sensitive receivers shall be undertaken using quieter alternative methods than impact or percussion piling, such as bored piles or vibrated piles.
- B9. No blasting shall occur.
- B10. Where practicable, operational noise mitigation measures shall be implemented to the satisfaction of the Secretary prior to the commencement of construction (or at other times during construction) to minimise construction noise impacts.

Specific Precinct-related Conditions

Surry Hills

- B11. Prior to the commencement of construction, the **Proponent** shall provide any "at-receiver" mitigation in the form of architectural treatments applied to the most exposed residential building facades in the Surry Hills precinct required to address operational noise impacts from the SSI. Where adequate noise attenuation measures (i.e. upgrade to glazing standards, doors and wall vents) are already present, no further architectural treatment is required to be provided at these properties. The **Proponent** shall implement "at-receiver" mitigation in consultation with the property owner. This condition does not preclude the implementation of other reasonable and feasible mitigation measures during construction in accordance with TfNSW's *Construction Noise Strategy* or for operation in accordance with condition C12.

B12. deleted.

Randwick

- B13. The noise wall proposed for the Randwick Stabling Facility at or adjacent to residential receivers to address operational noise impacts (inclusive of noise generated from traffic movements to and from the facility) shall be completed by the Proponent prior to the commencement of construction of the facility so that construction noise impacts to adjacent residential receivers are also minimised

The noise levels from construction activities undertaken prior to completion of property treatments adjacent to the stabling yard in Doncaster Avenue, shall be consistent with the predictions within Appendix A of the CBD and South East Light Rail Project State Significant Infrastructure Approval (SS1-6042) Administrative modification – Timing of Randwick stabling facility noise mitigation (dated April 2016) unless otherwise agreed with the Secretary

The Proponent shall provide progress reports to the Secretary advising the number of completed, upcoming scheduled architectural treatments and anticipated completion date before the commencement of each construction activity or at any time upon request.

Vibration

- B14. The **Proponent** shall ensure that vibration from construction of the SSI is limited to:
- (a) for structural damage, the vibration limits set out in the German Standard DIN 4150-3: *Structural Vibration - effects of vibration on structures*; and
 - (b) for human exposure, the acceptable vibration values set out in the *Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006).

Where there is an inconsistency between these standards, the more stringent criteria shall apply.

- B15. Prior to the commencement of construction, the **Proponent** shall identify potential facilities that are sensitive to vibration, including scientific equipment, measuring equipment and the like, where the vibration criteria outlined in condition B14 may not be adequate to avoid potential impacts. Should such cases arise, the **Proponent** shall consult with the potentially affected owners and develop appropriate mitigation measures to ensure impacts are acceptable.

Note: Specific additional conditions B17 and B18 have already been developed for Health Infrastructure and UNSW.

Monitoring

- B16. Construction noise and vibration levels shall be monitored to verify compliance with the Construction Noise and Vibration Management Plan and site specific Construction Noise Impact Statements. Should monitoring indicate exceedances of the noise management levels stated in these documents, the **Proponent** shall implement all reasonable and feasible mitigation measures to the satisfaction of the Environmental Representative and the Secretary.

Electromagnetic Fields and Vibration

- B17. Prior to construction the **Proponent** shall undertake pre-operational vibration and electromagnetic field monitoring, in consultation with Health Infrastructure and UNSW, to establish existing vibration and electro-magnetic field levels at the relevant UNSW and Health Administration Corporation assets established at condition B18(a). Results from these studies shall be documented in a Vibration Management and Electro Magnetic Management Plan at condition B18.

- B18. During detailed design of the SSI and prior to construction, the **Proponent** shall prepare a detailed **Vibration and Electro-Magnetic Management Plan** in consultation with Health Infrastructure and UNSW. The plan shall be provided to and approved by the Secretary prior to the construction of the SSI. The plan shall identify how construction and operational vibration levels and magnetic fields attributed to the light rail may impact on the operation of the relevant UNSW and Health Administration Corporation assets established at condition B18(a) below. The Plan is to be implemented to the satisfaction of the Secretary for both construction and operational phases. This Plan shall include but not be limited to:

- a) identification of affected receivers;
- b) establish pre-construction vibration and electro-magnetic field levels at affected receivers;
- c) predict construction and operational vibration and electro-magnetic field levels at the monitored sites resulting from the SSI;
- d) identification of reasonable and feasible vibration and electro-magnetic field reduction strategies, technologies and design and operational measures that will be implemented to reduce and manage impacts;
- e) identify appropriate limits/criteria to minimise construction and operational interference to affected receivers that are to be maintained;
- f) internal audits of compliance of electro-magnetic field and vibration levels; and
- g) details of an electro-magnetic field and vibration monitoring program and timeframes for monitoring.

TRAFFIC, TRANSPORT, ACCESS

Design

B19. The **Proponent** shall ensure that the SSI, in relation to new or modified road, parking, pedestrian and cycle infrastructure is designed:

- a) in consultation with the relevant road authority;
- b) in consideration of existing and future demand, road safety and traffic network impacts;
- c) to meet relevant design, engineering and safety guidelines, including Austroads *Guide to Traffic Engineering Practice*; and
- d) is certified by an appropriately qualified person that the above matters have been appropriately considered.

B19A The Proponent shall, in design (and operation as appropriate) consider the reinstatement of the right turn from Alison Road (westbound into Darley Road) to be permitted during weekends and other off-peak traffic periods. This movement shall only be reinstated where it can be demonstrated, to the satisfaction of the Secretary, to have no discernible impact on the operation of the road network or light rail services. Management of this movement, should it be reinstated, must be included in the Operational Environmental Management Plan and Special Events Management Plan required by condition C11.

Construction Traffic and Access

B20. The **Proponent** shall maintain safe pedestrian and cyclist access through or around worksites during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, the **Proponent** shall ensure that a satisfactory alternate route is provided and signposted in consultation with the relevant Council and/or road authority.

B21. The **Proponent** shall ensure that construction vehicles (including staff vehicles) associated with the project:

- a) minimise parking or queuing on public roads, including the utilisation of the light rail corridor for construction vehicle and staff movements to the greatest extent practicable;
- b) minimise idling and queuing in local residential streets where reasonably practicable;
- c) minimise the use of local roads (including residential streets) to gain access to construction sites and compounds, including accessing the site from arterial roads and utilising the rail corridor for transportation of construction materials and the like to work sites to the greatest extent practicable; and
- d) adhere to the nominated haulage routes identified in the Construction Traffic, Transport and Access Management Plan required under condition B89.

B22. Where construction vehicle routes directly pass schools or childcare centres, the **Proponent** shall restrict heavy vehicle movements where reasonable and feasible between 8:00am and 9:30am, and between 2:30pm and 4:00pm Monday to Friday, during the school term.

Dilapidation Reports

B23. Condition reports shall be prepared prior to commencement of construction for all local roads, footpaths, parks and other open space areas, heritage items and existing boundary infrastructure (including but not limited to gates, retaining walls and fences) likely to be used or affected by construction. The report shall assess the current condition of the asset and describe mechanisms to restore any damage that may result due to the construction of the SSI. A copy of the relevant report shall be provided to the relevant road authority and/or asset owner. Any damage resulting from the construction of the SSI, aside from that resulting from normal wear and tear, shall be repaired at the cost of the **Proponent**. Any repairs must be completed prior to the commencement of SSI operations.

Property Access

B24. The Proponent shall prepare local access plans for individual properties and accesses that will be impacted by construction and operation of the SSI. The access plans shall be developed in consultation with affected parties. The Proponent shall apply reasonable endeavours to obtain agreement from the relevant affected parties, and will provide evidence of consultation demonstrating this upon Department request. The access plans shall establish:

- a) road and access closures and provision of alternative routes;
- b) provision for pedestrian and cyclist access;
- c) special event strategies;
- d) provision of servicing and delivery requirements for loading zones and waste disposal;
- e) access periods or alternative access arrangements for businesses and landowners affected by the proposal;
- f) strategies to maintain emergency and incident response access at all times;
- g) potential future access strategies considering the SCCAS;
- h) access to taxi ranks; and
- i) heavy vehicle access to the Royal Randwick Racecourse, UNSW and the Prince of Wales Hospital campuses, considering existing and approved accesses at the date of this approval.

B24A The Proponent shall prepare local access plans for Creston and Kenvale colleges in consultation with the affected parties. The access plans shall include:

- a) details in advance of road and access closures;
- b) the alternative access route and parking including provision for swept paths and vehicle manoeuvrability;
- c) provision of:
 - measures to restrict parking spaces lost by construction and operation of the lane and pedestrian thoroughfare between Arthur Street and High Street;
 - access for servicing, deliveries and waste disposal (including servicing of grease traps);
 - service relocation;
 - wayfinding and other signage;
 - security, lighting and access gates; and
- d) strategies to maintain emergency and incident response access at all times.

Further investigations to inform the design and assist consultation with the colleges for local access plans, including works identified by the plans, shall be at the Proponent's expense. In the event of any dispute between the Proponent and the colleges in relation to the above, either party may refer the matter to the Secretary for mediation. The Secretary's determination of any such dispute shall be final and binding on the parties.

B24B To reinstate the garden amenity lost by provision of the laneway, the Proponent must, to the greatest extent practical, provide alternative vegetation (including consideration of 200 litre trees, where space allows) and relocate the existing shed, playhouse structure and vegetable garden adjacent to the Tiggers Honeypot Childcare Centre. The final use and layout for this area of land would be determined through consultation with the UNSW as the land owner of the childcare centre site. There shall be no loss of space in the existing licenced area of the Tiggers Honeypot Childcare Centre.

B25. The Proponent shall maintain access to all properties during construction and operation, unless otherwise agreed by the relevant property owner or occupier, and reinstate any access physically affected by the SSI to at least an equivalent standard at no cost to the property owner, unless otherwise agreed with the property owner. The Proponent shall provide copies of plans to the Secretary at applicable stages of development.

Network Management Plan

B26. Prior to works impacting on key intersections, unless otherwise agreed by the Secretary, the Proponent shall prepare a **Network Management Plan (NMP)**, for the SSI, in consultation with the Traffic and Transport Liaison Group identified in section 2.8.2 of the Construction Traffic and Transport Management Strategy (prepared by Booz and Co and dated 7 November 2013). The NMP shall determine appropriate measures and mitigations to manage the impacts of changed traffic patterns and operations as a result of the SSI, both locally and regionally, to the satisfaction of RMS. The Network Management Plan shall include:

- a) Details of construction and operational impacts to the network, from closures, night works, diversions and traffic operations required to accommodate the SSI;
- b) Details of further appropriate network/intersection modelling and analysis;
- c) Consideration of cumulative impacts, both from internal and external sources;

- d) Details regarding intersection upgrades, traffic management and mitigation measures by precinct including but not limited to the following road and intersection locations:
 - George Street/Ultimo Road
 - Alison Road / Anzac Parade / Dacey Avenue junction.
 - Alison Road at John Street
 - Alison Road/Doncaster Avenue
 - Alison Road/Darley Road
 - Anzac Parade/Moore Park Road
 - Anzac Parade/Roberston Road
 - Anzac Parade/Day Street
 - King Street/John Street intersection
 - Arthur Street/Botany Street
 - Arthur Street/Belmore Road
 - Cleveland Street/South Dowling Street
 - Alison Road junction at Botany Street
 - Arthur Street/Botany Street
 - Arthur Street/Belmore Road
 - Botany Street/Barker Street
 - High Cross Park - Belmore Road / Avoca Street junction
 - Nine-Ways at Kingsford
- e) Traffic signal control plans;
- f) Access changes and mitigations (businesses, private property, pedestrians, cycleways, emergency vehicles, buses (infrastructure);
- g) Design elements (including platforms, footpaths, kerbside treatments, pedestrian facilities);
- h) Traffic and transport network management for special events;
- i) Consideration of the SCCAS in relation to the SSI;
- j) Monitoring of the performance and function of the pedestrian zones and an outline of mitigation measures to ameliorate any impacts; and
- k) Timeframes for implementation.

The Plan shall detail the construction and operation phases of the SSI. A copy of the NMP shall be provided to the Secretary for information prior to commencement of each phase.

Stop Access and Design Plans

B27. The Proponent shall prepare and implement **Stop Access and Design Plans** for all the SSI stops (including associated stop infrastructure). Key objectives of the Plans are to ensure all stops are designed to ensure safety, connectivity, efficiency and convenience is maximised. The Plan(s) shall include transport and access facilities and services, connecting footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration between current and proposed public domain and transport initiatives for each stop. The Plan(s) shall consider, but not necessarily be limited to:

- a) identification of design principles and standards based on:
 - i) local environmental values,
 - ii) urban design context,
 - iii) sustainable design and maintenance (including consideration of anti-graffiti materials),
 - iv) transport and land use integration and system functionality,
 - v) passenger and community safety and security, and
 - vi) community amenity and privacy.
 - vii) consideration of relevant design standards such as *Guidelines for the Development of Public Transport Interchange Facilities* (Ministry of Transport, 2008), *Crime Prevention through Environmental Design Principles*, *Water Sensitive Urban Design*, *NSW Sustainable Design Guidelines Version 3* (TfNSW, 2013), *AS4282-1997 Control of the obtrusive effects of outdoor lighting*, and relevant agency and Council design standards relevant to the LGA where the Stop is located (such as Randwick City Council's *Light Rail Urban Design Guidelines*).
- b) independent safety audits for all stops, including appropriate platform sizes to accommodate the maximum number of passengers;
- c) final design, infrastructure, management and service measures, and the level of access and service to be achieved for all users;
- d) location and identification of existing and proposed landscaping and the Revegetation Compensation Package required by condition B52, with specific consideration to limiting impacts to vegetation listed on the relevant Council's significant tree register;
- e) identification of stop names;
- f) design details including sections, graphics, sketches and perspective views from different viewpoints of the built elements of the SSI, including:

- i) hard and soft landscaping, catenary, lighting, station canopies, platforms, public art and street furniture;
- ii) retaining walls, substations and the like, with detailed consideration given to undergrounding substations where reasonable and feasible,
- iii) fencing/pedestrian barriers, noise mitigation, lighting, privacy screening,
- iv) signage (including wayfinding signage),
- v) stop infrastructure and passenger facilities (such as bus, taxi, vehicle and emergency vehicle access and parking, driver facilities, paths, bicycle parking and lockers, ticketing facilities, kiosks/cafes, amenities);
- vi) measures to minimise the impact of these elements, particularly with respect to the impacts on adjoining residences, educational facilities, open space areas and heritage items and landscapes, and
- vii) the level of access and service to be achieved for all users.
- g) consideration of relevant legislation such as the *Disability Discrimination Act 1992*;
- h) in relation to the High Cross Park Interchange, information to satisfy the requirements of condition B32 relating to parking and the retention of the War Memorial;
- i) in relation to the Kingsford Transport Interchange, information to satisfy the requirements of condition C8 and the following:
 - i) measures to ensure pedestrian safety, and analysis of traffic light phasing and effects this may have on the behaviour on the safety of pedestrians (incorporating safety by design principles, customer experience and acceptable delays modelling;
 - ii) modelling of pedestrian and vehicular traffic flows around the interchange and the multi-road intersection known as the Nine Ways intersection and the surrounding precinct;
 - iii) investigations for replacement of the proposed slip lane from Anzac Parade southbound into Rainbow Street with a deceleration lane to increase the size of the adjacent landscaped area.
- j) operational management provisions for future operational requirements, including maintenance, security and management responsibilities, and measures to maintain stops and landscaping works, including weed control, to the design standards established in the Plan, where necessary.

The Plan(s) shall be prepared in consultation with the Reference Groups in Schedule B Part A of this approval, City of Sydney, Randwick City Council and RMS and shall be supported by traffic and transport analysis. Where necessary, consultation shall also be undertaken with major landholders adjoining stop locations. The Plans shall detail a delivery and implementation program and shall be provided to the Secretary and made publicly available prior to construction, unless otherwise agreed by the Secretary. Evidence of consultation shall be provided as part of the Plan(s).

Note: Any consultation with Councils or other organisations required in this approval shall be undertaken in addition to any representation associated with participation through a Reference Group.

B27A Reinstatement of the dedicated left turn lane from George Street northbound to Grosvenor Street is not permitted unless the Proponent, following further analysis of the intersection operation, can demonstrate to the satisfaction of the Secretary that demand or geometry of the intersection requires this movement.

B28. In developing the Stop Access and Design Plans(s) required under condition B27, the **Proponent** shall consider:

- (a) Traffic and accessibility design requirements (condition B26);
- (b) Parking Management Strategy requirements (condition B29);
- (c) Pedestrian and Cyclist Network and Facilities Strategy requirements and infrastructure (condition B33);
- (d) Bus layover requirements (condition B35);
- (e) Consideration of condition B43; and
- (f) Urban Design and Landscape Plan (condition B51).

Parking Offsets and Management Strategy

B29. The **Proponent** shall prepare a Parking Offsets and Management Strategy in consultation with RMS, the **BRG**, the **CRG** and relevant Councils to manage car parking impacts and kerbside parking access, on a per precinct basis, as a result of the SSI. The **Parking Offsets and Management Strategy** shall include, but not be limited to:

- (a) the provision of parking spaces consistent with hierarchy identified in Table 6.1 and Figure 6.1 of the Transport Operations Report, prepared by Booz and Co and dated 6 November 2013;
- (b) appropriate replacement parking for impacted special kerbside uses (e.g. disabled parking and loading zones) within the local vicinity with consideration of the *Disability Discrimination Act 1992* (DDA) Public Transport Standards and the DDA Access Code 2010;
- (c) the identification of strategies to identify and address parking impacts, including but not limited to replacement parking, parallel parking, resident parking schemes and provision of clearways; and
- (d) monitoring on the efficacy of these measures, including potential unintended traffic impacts, and contingencies in the event that these measures are inadequate.

The **Proponent** shall be responsible for the coordination of these measures in consultation with the relevant Councils and Reference Groups. The Strategy shall be submitted to the Secretary and the reporting of monitoring incorporated into the Operational Traffic, Transport and Access Performance Review required by condition C15.

- B30. The **Proponent** shall maintain emergency vehicle access to Health Administration Corporation facilities on High Street, Randwick and the Langton Clinic at South Dowling Street, Surry Hills, 24 hours a day, 7 days a week, throughout the life of the SSI.
- B31. Prior to any impact to existing parking, the **Proponent** shall, in cooperation with the relevant road authority, provide replacement parking dedicated to the Langton Centre in close proximity to the Health Administration Corporation facility with consideration of the *Disability Discrimination Act 1992* (DDA) Public Transport Standards and the DDA Access Code 2010.
- B32. The **Proponent** shall, in cooperation with the relevant road authority, ensure that the SSI retains parking alongside existing medical facilities located on the eastern side of Belmore Road, Randwick.

Pedestrian and Cyclist Network and Facilities Strategy

- B33. A **Pedestrian and Cyclist Network and Facilities Strategy** shall be prepared in consultation with Councils, RMS, Bicycle NSW, Centennial Park and Moore Park Trust and relevant Reference Groups. The Strategy shall identify alternative pedestrian and cycle paths, during construction and operation, including facilitation of future cycle paths and dedicated cycleways as identified in state and local government plans, with the objective of providing seamless, coherent, visible, and safe pedestrian and cycle access throughout and adjacent to the corridor. The Strategy shall consider:
- (a) existing and proposed local and regional pedestrian and cycle facilities and strategies;
 - (b) safety for pedestrians in pedestrianised zones;
 - (c) alternative cycle routes during construction, based on safety and efficiency, and contingencies in the event that relocated routes are found to be inadequate;
 - (d) pedestrian and cycle access, including local and regional pedestrian and bicycle connections;
 - (e) demand for pedestrian and cycle facilities with consideration of encouraging an increased pedestrian and cycle mode share;
 - (f) signage and way finding along the routes;
 - (g) cycle storage facilities on light rail vehicles; and
 - (h) the requirements of relevant design standards, including Austroads and NSW bicycle guidelines.

The Proponent shall implement the Strategy and incorporate it into the **Stop Access and Design Plan(s)** (condition B27).

- B34. The Proponent shall prepare a conceptual design for a future dedicated cycleway connecting the northern end of Prince Alfred Park with the southern end of Castlereagh Street in a location that would be desirable for cyclist use and that is supported by TfNSW. Construction of the cycleway is not included as part of the SSI.

Bus Layovers

- B35. The Proponent shall, during the detailed design, consult with bus operators in relation to the provisions of both short and long term bus layover, drop-off or pick-up facilities where these are directly impacted by the SSI, including but not restricted to Eddy Avenue, Rawson Place, Randwick Racecourse, Darley Road, High Street, Anzac Parade and Todman Avenue during construction and operation. The Proponent shall ensure that the reasonable requests of bus operators are met.

URBAN DESIGN

Randwick Stabling Facility

- B36. Prior to construction of the Randwick Stabling Facility, the Proponent shall prepare a detailed design for the facility. The design of the facility must be prepared in consultation with the UDRG, CRG and Randwick City Council. If the design criteria, as outlined below, are not achieved, the design of the facility shall be submitted to the Secretary for approval accompanied by justification for any changes and evidence of consultation. The final design shall be implemented as part of the SSI. The design must ensure:
- (a) Identification of urban design principles and standards based on:
 - i) local environmental and heritage values;
 - ii) urban design context;
 - iii) sustainable design and maintenance;
 - iv) community amenity and privacy; and

- v) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and agency and Council design standards including Council's *Light Rail Urban Design Guidelines* and *Randwick City Council's DCP 2013*.
- (b) Retention, to the maximum extent possible, of the row of trees along the western boundary of the site, screening the residential properties fronting Doncaster Avenue,
- (c) To minimise visual impact to surrounding residential properties as well as views from Randwick Racecourse, provision of appropriate landscaping, including details on the location of existing and retained vegetation, the proposed removal of vegetation and proposed landscaping;
- (d) Where the finished floor level of any building or structure is greater than 2 metres above ground level (existing) and faces a residential building, facades shall be designed to ensure visual impact is minimised to the greatest extent practicable and include the use of privacy screening and façade relief treatments (including, but not limited to the introduction of articulated facades and variation in finished materials etc).
- (e) The maximum height of any buildings or structures required as part of the stabling facility is 10.5 metres above ground level (existing) with the exception of the sand silo where it can be demonstrated to the satisfaction of the Secretary that it cannot be designed, constructed and operated to meet this requirement;
- (f) The minimum setback of any building from any residential property boundary is 5 metres;
- (g) Structures (such as noise walls) where the top of the structure is greater than 3 metres above the existing ground level shall be setback 1 metre from the residential boundary for every half a metre above 3 metres in height;
- (h) Compliance with the overshadowing/solar access provisions of Randwick DCP 2013;
- (i) Consideration of the location for a future cycleway connecting Alison Road to High Street via the Randwick Racecourse within the stabling facility land;
- (j) Compliance with the noise levels within the Industrial Noise Policy (inclusive of traffic movements generated by the facility), including details of noise mitigation measures;
- (k) No worsening of flooding impacts to adjoining residential areas and/or the Royal Randwick Racecourse as defined in condition B65;
- (l) Impacts on heritage items within the Royal Randwick Racecourse and Doncaster Avenue are minimised;
- (m) New external lighting:
 - i) Complies with *AS 4282-1997 Control of Obtrusive effects of outdoor lighting*; and
 - ii) Is directed in a way that it does not create a nuisance or light spill to adjoining buildings or properties;
- (n) In meeting the criteria listed above, the following is to be provided to the Department to document compliance:
 - i) Graphics such as sections, perspective views and sketches on key elements of the stabling facility (such as administration, parking, wash plant, track configuration, acoustic shed if relevant and noise walls) from various view points;
 - ii) Plans outlining design details of materials and colours of all exterior and landscape elements;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the facility.

Lilyfield Maintenance Facility

B37. Prior to construction of the Lilyfield Maintenance Facility the Proponent shall prepare a detailed design for the facility. The design of the facility must be prepared in consultation with the UDRG, CRG and Leichhardt Municipal Council. If the design criteria, as outlined below, are not achieved, the design of the facility shall be submitted to the Secretary for approval accompanied by justification for any changes and evidence of consultation. The final design shall be implemented as part of the SSI. The design must ensure:

- (a) Identification of urban design principles and standards based on:
 - i) urban design context and surrounding land use and built form;
 - ii) sustainable design and maintenance; and
 - iii) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and relevant agency and Council design standards.
- (b) Retention, to the maximum extent possible, of the existing mature trees that line Lilyfield Road that provide visual screening to adjacent residences;
- (c) Provision of appropriate landscaping, including details on the location of existing and retained vegetation, the proposed removal of vegetation and proposed landscaping;
- (d) The maximum height of any buildings or structures required as part of the maintenance facility is 10.5 metres above ground level (existing);
- (e) New external lighting:
 - i) Complies with *AS 4282-1997 Control of Obtrusive effects of outdoor lighting*; and
 - ii) Is directed in a way that it does not create a nuisance or light spill to adjoining buildings or properties;

- (f) The internal road layout and access to the facility minimises vehicle headlights shining into residential properties along Lilyfield Road;
- (g) Alternative access arrangements for existing tenants on the site impacted by the facility are provided where required;
- (h) Compliance with the noise limits in condition C2, including details of noise mitigation measures;
- (i) In meeting the criteria listed above, the following is to be provided to the Department to document compliance:
 - i) Graphics and design details including as sections, perspective views and sketches on key elements of the maintenance facility (such as the maintenance building, parking areas, substations(s) and internal access arrangements) from various view points;
 - ii) Plans outlining design details of materials and colours of all exterior and landscape elements;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the facility.

Anzac Parade Pedestrian Bridge

B38. Prior to construction of the Anzac Parade Pedestrian Bridge, the Proponent shall prepare a detailed design for the bridge. The design of the bridge must be prepared in consultation with OEH (Heritage), RMS, the UDRG, CRG and City of Sydney and the Centennial Park and Moore Park Trust. If the design criteria, as outlined below, are not achieved, the design of the facility shall be submitted to the Secretary for approval accompanied by justification for any changes and evidence of consultation with the abovementioned organisations. The final design shall be implemented as part of the SSI. The design of the bridge must be sympathetic to the design of the adjacent Albert (Tibby) Cotter Walkway with the aim of minimising its visual impact and ensure:

- (a) Identification of urban design principles and standards based on:
 - i) local environmental and heritage values;
 - ii) urban design context;
 - iii) sustainable design and maintenance;
 - iv) lighting;
 - v) community amenity; and
 - vi) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and *Bridge Aesthetics: Design Guidelines to Improve the Appearance of Bridges in NSW* (RTA, 2003).
- (b) Provision of appropriate landscaping, including details on the location of existing and retained vegetation, the proposed removal of vegetation and proposed landscaping;
- (c) Specific measures to limit visual impacts of the bridge on surrounding landuses and adjacent lands managed by the Centennial Park and Moore Park Trust;
- (d) Consideration of direct access from the bridge to the Moore Park stop platform;
- (e) Cumulative impacts are mitigated from the construction of the concurrent RMS pedestrian bridge over Anzac Parade at Moore Park;
- (f) Graphics and design details of built elements to meet the following criteria;
 - i) minimum height clearance over Anzac Parade roadway of 5.5 metres;
 - ii) no support structures within the Anzac Parade median;
 - iii) a total width across the Anzac Parade roadway of no more than 5 metres including deck, truss and safety screens;
 - iv) no advertising structures or material to be affixed to the bridge;
- (g) Specific measures to avoid or minimise heritage impacts to the bear pit in the vicinity of Sydney Girls High School and the heritage value of Anzac Parade;
- (h) In meeting the criteria listed above, the following is provided to the Department to document compliance:
 - i) graphics such as sections, perspective views and sketches of the bridge and its accesses from various view points;
 - ii) plans outlining design details of materials and colours, screens and support structures;
 - iii) how relevant design standards have been considered in the design; and
 - iv) evidence of consultation in relation to the design of the facility.

B38A Where direct access from the Anzac Parade Pedestrian Bridge to the Moore Park stop platform cannot be provided, the Proponent shall prepare a safety case demonstrating, to the satisfaction of the Office of the National Rail Safety Regulator, that schoolchildren can safely access the Moore Park stop during peak school start and finish times.

Moore Park Portals and Bridge over the Eastern Distributor

B39. Prior to construction of the Moore Park Portals, bridge over the Eastern Distributor and the relocated Surry Hills substation, the Proponent shall prepare a detailed design for the structure(s). The design of the structure(s) must be prepared in consultation with the UDRG, CRG, City of Sydney and the Centennial Park and Moore Park Trust. If the design criteria, as outlined below, are not achieved, the design of the facility shall be submitted to the Secretary for approval accompanied by justification for any changes and evidence of consultation. The final design shall be implemented as part of the SSI. The design must ensure:

- (a) Identification of urban design principles and standards based on:
 - i) urban design context;
 - ii) sustainable design and maintenance;
 - iii) lighting;
 - iv) community amenity; and
 - v) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and *Bridge Aesthetics: Design Guidelines to Improve the Appearance of Bridges in NSW* (RTA, 2003).
- (b) Provision of appropriate landscaping, including details on the location of existing and retained vegetation, the proposed removal of vegetation and proposed landscaping;
- (c) Specific measures to limit visual and 'land-take' impacts of the bridge, portals and substation on surrounding playing fields and adjacent heritage items. In relation to the substation, it must be located entirely underground with access and ventilation integrated with the tunnel structure. No component of the substation shall intrude into or impact on the use of the surface of Moore Park;
- (d) Safety measures to address:
 - i) Public access into the portals;
 - ii) Private vehicle or bike movements into the portals;
 - iii) Stray balls (anti-throw screening); and
 - iv) Sight distance/speed of light rail vehicles interacting with South Dowling Street footpath and road users.
- (e) In meeting the criteria listed above, the following is provided to the Department to document compliance:
 - i) Graphics such as sections, perspective views and sketches of the bridge and portals from various view points;
 - ii) Plans outlining design details of materials and colours, screens and support structures;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the facility.

Randwick Racecourse Stop and Associated Works

B39A Prior to construction within the boundary of Centennial Park from the intersection of Alison Road and Anzac Parade to the intersection of Alison Road and Darley Road, including the route alignment, works to increase the height of the flood levee or associated retaining wall, shared pathway or the Randwick Racecourse stop, the Proponent shall prepare a detailed design for works in this area. The design must be prepared in consultation with the Centennial Park and Moore Park Trust, UDRG, CRG and Randwick City Council. If the design criteria, as outlined below, are not achieved, the design of the works shall be submitted to the Secretary for approval accompanied by justification of any changes and evidence of consultation. The final design shall be implemented as part of the SSI. The design must ensure:

- (a) Identification of urban design principles and standards based on:
 - i) urban design context;
 - ii) sustainable design and maintenance;
 - iii) lighting;
 - iv) community amenity; and
 - v) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles*, agency and Randwick City Council's design standards including *Light Rail Urban Design Guidelines* and DCP 2013;
- (b) Minimising the amount of land owned by the Centennial Park and Moore Park Trust to be used by the SSI;
- (c) Details of how transplanting of any trees requiring removal has been considered, as required by condition B48;
- (d) Provision of appropriate landscaping, including details on the location of existing and retained vegetation (i.e. avoidance of the trees associated with "Maiden's Row"), the proposed removal of vegetation and proposed landscaping;
- (e) Specific measures to limit visual and 'land-take' impacts, including measures to soften the appearance of the retaining wall;
- (f) No worsening of flooding impacts to Centennial Park as defined in condition B65;
- (g) Safety measures to address:
 - i) Event crowds accessing the platform; and
 - ii) Conflicts between pedestrian and cyclist movements on the shared path.

- (h) In meeting the criteria listed above, the following is provided to the Department to document compliance:
 - i) Graphics such as sections, perspective views and sketches of the works from various view points;
 - ii) Plans outlining design details of materials and colours;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the works.

Moore Park Event Staff Amenities and Back-up Control and Communications Building

B39B Prior to the construction of the Moore Park Amenities building, the Proponent shall prepare a detailed design for the building in consultation with the UDRG, CRG, Centennial Park and Moore Park Trust and City of Sydney. If the design criteria, as outlined below, are not achieved, the design of the building shall be submitted to the Secretary for approval accompanied by justification of the changes and evidence of consultation. The final design shall be implemented as part of the SSI. The design must ensure:

- (a) Identification of urban design principles and standards based on:
 - i) urban design context;
 - ii) sustainable design and maintenance;
 - iii) lighting;
 - iv) community amenity; and
 - v) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and relevant agency and Council design standards;
- (b) Consideration of locating the building underground within the stop envelope and if not, reasons to justify why it is required aboveground.
- (c) Specific measures to limit visual and 'land-take' impacts;
- (d) In meeting the criteria listed above, the following is to be provided to the Department to document compliance:
 - i) Graphics such as sections, perspective views and sketches on key elements of the building from various viewpoints clearly indicating its scale and appearance;
 - ii) Plans outlining design details of materials and colours of all exterior and landscape elements;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the facility.

Replacement of Australian Turf Club Buildings and Structures

B40. Any buildings, structures or parking facilities within the Royal Randwick Racecourse site that will be demolished as part of the SSI, or as a result of compliance with condition B36, shall be replaced, in consultation with the Australian Turf Club and in accordance with condition B41 with all costs borne by the Proponent. Replacement buildings, structures or parking facilities must be replaced prior to the existing facilities being demolished, unless otherwise agreed by the Secretary.

B41. Prior to the construction of the replacement building(s), structure(s) or replacement car parking facilities, the Proponent shall prepare a detailed design for the facility. The design of the building, structure and/or replacement car parking facility must be prepared in consultation with the UDRG and CRG. If the design criteria, as outlined below, are not achieved, the design of the facility shall be submitted to the Secretary for approval accompanied by justification for any changes and evidence of consultation with the UDRG and CRG. The final design shall be implemented as part of the SSI. The design must ensure/include:

- (a) Identification of urban design principles and standards based on:
 - i) local environmental and heritage values;
 - ii) urban design context;
 - iii) sustainable design and maintenance;
 - iv) community amenity and privacy; and
 - v) consideration of relevant design standards such as *Crime Prevention through Environmental Design Principles* and agency and Council design standards including Council's *Light Rail Urban Design Guidelines*, *Randwick City Council's comprehensive DCP 2013 including the Royal Randwick Racecourse provisions and provisions for Industrial Areas*.
- (b) The floor area is equal to or less than the floor area of existing buildings to be demolished (determined by survey);
- (c) Retention, to the maximum extent possible, of the row of trees along the western boundary of the site, screening the residential properties fronting Doncaster Avenue;
- (d) Provision of appropriate landscaping, including details on the location of existing and retained vegetation, the proposed removal of vegetation and proposed landscaping;
- (e) where the finished floor level of any building or structure is greater than 2 metres above ground level (existing) and faces a residential building, facades shall be designed to ensure visual impact is minimised to the greatest extent practicable and include the use of privacy screening and façade

- relief treatments (including, but not limited to the introduction of articulated facades and variation in finished materials etc).
- (f) The maximum height of any buildings is 10.5 metres, and any replacement parking facility 15 metres above ground level (existing);
 - (g) The minimum building setback from any residential property boundary is 5 metres;
 - (h) Compliance with the overshadowing/solar access provisions of Randwick DCP 2013;
 - (i) Impacts on heritage items within the Royal Randwick Racecourse and Doncaster Avenue are minimised;
 - (j) Specific noise measures to minimise noise impact on surrounding properties;
 - (k) No worsening of flooding impacts to adjoining residential areas and/or the Royal Randwick Racecourse as defined in condition B65;
 - (l) New external lighting:
 - i) Complies with *AS 4282-1997 Control of Obtrusive effects of outdoor lighting*; and
 - ii) Is directed in a way that it does not create a nuisance or light spill to adjoining buildings or properties;
 - (m) In meeting the criteria listed above, the following is to be provided to the Department to document compliance:
 - i) Graphics such as sections, perspective views and sketches on key elements of the building(s) and/or facility (such as facilities management building, parking, access, manoeuvring and hardstand areas, material storage and handling workshop and open space) from various viewpoints (including from the spectator precinct within the racecourse);
 - ii) Plans outlining design details of materials and colours of all exterior and landscape elements;
 - iii) How relevant design standards have been considered in the design; and
 - iv) Evidence of consultation in relation to the design of the facility.

In the event that the above design criteria have not been achieved, the design of the facility shall be to the satisfaction of the Secretary.

Sydney Children's Hospital, High Street Randwick

- B42. The **Proponent** shall design and implement a revised taxi rank/passenger drop off area at the entry to the Children's Hospital at High Street, Randwick in consultation with Health Infrastructure.

Pedestrianisation of High Street

- B43. The SSI shall be designed to not preclude a future potential pedestrianisation of High Street, Randwick between Wansey Road and Botany Street.

Catenary from Circular Quay to Pedestrian Zone

- B44. The SSI shall be designed, constructed and operated wire-free from its commencement at Circular Quay to Wynyard, and the full extent of the pedestrian zone along George Street (except where transitioning between power supply sources at the Town Hall stop), unless it can be demonstrated to the satisfaction of the Secretary that catenary is required to maintain the reliability of the service between Circular Quay and Wynyard.

VISUAL QUALITY AND LANDSCAPE CHARACTER

- B45. The **Proponent** shall design and construct the SSI in a manner that minimises visual and heritage setting impacts from specific components of the SSI and hard landscaping elements, including stops, catenary, lighting, station canopies, substations, signage and the like.
- B46. Third party advertising shall not be permitted on light rail structures, urban elements, stops or the pedestrian bridge over Anzac Parade.
- B47. The Proponent shall, to the greatest extent possible, minimise the removal of vegetation including at Circular Quay, Moore Park and surrounds, Anzac Parade, Centennial Park and surrounds, Royal Randwick Racecourse (along Alison and Wansey Roads), High Cross Park, Arthur Street, High Street and within the UNSW lands. Where vegetation has been removed, reinstatement and supplement landscaping shall be undertaken in accordance with the Revegetation Compensation Package required by condition B52.

- B47A In the first instance, the Proponent shall avoid the removal of trees that provide visual screening for Martin Road/Robertson Road residents. However, should trees be required to be removed for operational reasons, the Proponent is required to demonstrate, to the satisfaction of the Secretary, why sharing the bus lane further north (between Robertson Road and Alison Road) is not feasible. This does not include the requirement to remove the two mature trees located adjacent to the corner of Alison Road and Anzac Parade as these require removal to accommodate the left turn slip lanes from Anzac Parade to Alison Road.
- B47B The Proponent shall limit the removal of significant trees (mature and semi-mature fig trees) along Anzac Parade as part of the construction of the cut and cover tunnel. Prior to the removal of any trees for the construction of the tunnel, the Proponent shall demonstrate, to the satisfaction of the Secretary, that it has investigated the following options, and any other option that may be identified by the contractor, to further reduce the impacts to trees in the construction footprint as a result of the Anzac Parade lane diversions:
- (a) Temporarily relocating the footpaths on either side of the road (or temporarily limiting the provision of footpaths to one side of the road) to provide more space for traffic lanes; and
 - (b) Providing five traffic lanes for Anzac Parade instead of six.
- Where these options do not result in traffic flow arrangements acceptable to the RMS, information must be submitted to the Secretary to justify why this is the case, including supporting information from the RMS.
- Notwithstanding whether one of the above options is implemented as part of construction, the Proponent shall also employ construction techniques that minimise impacts to tree root zones at all times along Anzac Parade (to its intersection with Alison Road), Alison Road and Wansey Road, including but not limited to those identified in environmental management measure T4 within Table 4.2 of the Modification Report referred to in condition A1e).
- B47C The Proponent must retain the two mature fig trees (TN1701 and 1702) on Centennial Park and Moore Park Trust land at the end of the heritage listed perimeter fence and the corner of Alison Road and Darley Road Randwick. Pruning of the trees for the purpose of construction and maintaining a maximum three metre operational clearance around the overhead wires of the light rail line must:
- (a) Satisfy the requirements of AS4373 (2007) Pruning of Amenity Trees;
 - (b) Be restricted to the minimum amount necessary and no more than 10 per cent of the pre-construction extent of the overhead canopy of each tree;
 - (c) Not include root pruning of the structural root zone of each tree;
 - (d) Be supervised by the Independent Arborist during construction and an arborist during operation;
 - (e) Be undertaken in conjunction with management and mitigation measures before, during and after pruning as recommended by the Independent Arborist and included in the Tree Report required by Condition B48.
- B48. The Proponent shall commission an independent arborist, approved by the Secretary, to prepare a comprehensive Tree Report for the SSI. The report shall be prepared in consultation with the UDRG and identify the impacts of the SSI on trees and vegetation within and adjacent to the construction zone. The report shall recommend measures to avoid the removal of trees or minimise damage to existing trees and is to ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, excavation works, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities. Where it is found that tree removal is necessary, the arborist shall identify whether trees to be removed can be transplanted within the vicinity of their current locations. The locations shall be determined in consultation with the relevant Council and/or the Centennial Park and Moore Park Trust. A copy of the report shall be submitted to the Secretary prior to the commencement of construction. All recommendations of the report shall be implemented by the Proponent, unless otherwise agreed by the Secretary.
- B49. The SSI shall be constructed in a manner that minimises visual impacts resulting from compound sites, including retaining, where reasonable and feasible, existing vegetation around the perimeter of compound sites, providing temporary landscaping where appropriate to soften views of compound sites, minimising light spillage, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the compound sites are located.
- B50. The Proponent shall design and construct the SSI in a manner that minimises opportunities for graffiti. The Proponent shall be responsible for the removal of all graffiti from any light rail vehicle or light rail infrastructure within one week of being identified.

- B51. Prior to the commencement of construction of permanent built works, the **Proponent** shall prepare an **Urban Design and Landscape Plan** for the SSI in consultation with the UDRG, City of Sydney, Randwick City Council and Centennial Park and Moore Park Trust and submit it to the Secretary for approval. The Plan may be submitted in stages to suit the staged construction of the SSI, however shall include, but not necessarily be limited to:
- (a) identification of design objectives and standards based on local environmental and heritage values, urban design context, sustainable design and maintenance, transport and land use integration, passenger and community safety and security, community amenity and privacy, and consideration of relevant design standards and guidelines and Council guidelines including *Randwick City Council Light Rail Urban Design Guidelines*;
 - (b) details on the plans to provide, mitigate and/or augment landscaped areas and elements, with landscaping works to offset the removal of vegetation along the route;
 - (c) landscape screening of the SSI where receivers have been identified as likely to experience high residual visual impacts, in consultation with affected receivers and opportunities for providing at-receiver landscaping to further screen views;
 - (d) design details of the built elements of the SSI and the measures to minimise the impact of these elements, particularly with respect to the impacts on adjoining residences, educational facilities, open space areas, heritage items and landscapes;
 - (e) specific plans proposed to enhance the public domain and integrate the proposal within its environment;
 - (f) details on pedestrian and cycle access elements and fixtures, including crossings, secure cycle facilities, and other fixtures such as seating, lighting, fencing, signage etc, to enhance connectivity and the provision of a safe and secure environment;
 - (g) details on public art and heritage (indigenous and non-indigenous) interpretation installations;
 - (h) graphics such as sections, perspective views and sketches for key elements, but not limited to built elements;
 - (i) implementation, management and monitoring strategies to ensure the establishment and ongoing maintenance of built elements and landscaped areas (including weed control), including performance standards and contingency measures; and
 - (j) evidence of consultation with the abovementioned organisations on proposed materials palette, landscaping treatments and other urban design elements prior to its finalisation.

Revegetation Compensation Package

- B52. The **Proponent** shall develop and implement a **Revegetation Compensation Package** for the SSI to outline how vegetation impacts will be compensated for within and adjacent to the corridor. The Package shall be prepared and submitted to the Secretary for approval prior to removal of vegetation, unless otherwise agreed by the Secretary, and in consultation with relevant Councils, the UDRG and the Centennial Park and Moore Park Trust in accordance with TfNSW's *Vegetation Offset Guide* (2013). The Package should ensure that all vegetation loss, is appropriately offset through regeneration or replanting and include:
- (a) the identification of the extent and types of vegetation impacts as a result of the final design of the SSI;
 - (b) details of impact mitigation measures to compensate for vegetation removal;
 - (c) measures for the management, protection and monitoring of the compensatory vegetation, for a minimum period of two years;
 - (d) timing and responsibilities for the implementation of the provisions of the Package.

To mitigate visual impacts, direct replacement of vegetation lost should be undertaken in the vicinity of where the vegetation was impacted (where space permits). For all other vegetation to be replanted as part of the Revegetation Compensation Package, vegetation shall be replaced within the same Local Government Area as the impact occurs, unless otherwise agreed by the Secretary.

Where monitoring shows inadequate compensation has been achieved, remedial actions must be undertaken to ensure that the objectives of the Package are achieved.

HERITAGE

- B53. This approval does not allow the **Proponent** to destroy, modify or otherwise physically affect human remains as part of the SSI.
- B54. All human remains discovered during construction must be managed in accordance with the Heritage Council of NSW *Skeletal Remains: Guidelines for Management of Human Remains* and exhumed and reinterred at an appropriate location. Where remains are identified, consultation with the Department (Heritage Branch) must be undertaken.

- B55. With the exception of condition B53, identified impacts to heritage (both Aboriginal and non-Aboriginal), shall be minimised to the greatest extent practicable through both detailed design and construction. Where impacts are unavoidable, works shall be undertaken in accordance with the actions to manage heritage construction impacts required by condition B89 and under the guidance of an appropriately qualified heritage specialist.
- B56. Prior to the commencement of construction activities within the Moore Park Precinct, in areas within the vicinity of registered PADs and for other areas of the SSI that have the potential to yield Aboriginal objects, the **Proponent** shall:
- (a) undertake archaeological investigation of this site using a methodology prepared in consultation with the OEH (Aboriginal heritage) and the Aboriginal stakeholders; and
 - (b) report on the results of the archaeological investigation, including recommendations (such as for further archaeological work) in consultation with the OEH and to the satisfaction of the Secretary, and shall include, but not necessarily be limited to:
 - (i) consideration of measures to avoid or minimise disturbance to Aboriginal objects where objects of moderate to high significance are found to be present;
 - (ii) where impacts cannot be avoided, recommendations for any further investigations or salvage under B57; and
 - (iii) management and mitigation measures to ensure there are no additional impacts due to pre-construction and construction activities.
- B57. Prior to the commencement of construction activities affecting the Moore Park precinct where Aboriginal objects of moderate to high significance are found to be present and cannot be avoided (B56(ii)), the **Proponent** shall:
- (a) develop a detailed salvage strategy, prepared in consultation with the OEH (Aboriginal heritage) and the Aboriginal stakeholders. The investigation program shall be prepared to the satisfaction of the Secretary; and
 - (b) undertake any further archaeological excavation works recommended by the results of the Aboriginal archaeological investigation program.
- Within twelve months of completing the above work, unless otherwise agreed by the Secretary, the **Proponent** shall submit a report containing the findings of the excavations, including artefact analysis and Aboriginal Site Impacts Recording Forms (ASIR), and the identification of final storage location for all Aboriginal objects recovered (testing and salvage), prepared in consultation with the Aboriginal stakeholders, the OEH (Aboriginal heritage) and to the satisfaction of the Secretary. A copy of this report shall be provided to the relevant Council.
- B58. The **Proponent** shall not destroy or permanently modify the heritage listed First Fleet Park, Tank Stream, or Belmore Park.
- B59. The **Proponent** shall design and construct the SSI to avoid any direct impact to the 'Bear Pit' adjacent to Anzac Parade and Sydney Girls High School or the Tramway Turnstile Building complex within the Racecourse Conservation Area.
- B59C During demolition of Wansey Cottage, the Proponent shall salvage and recycle building elements of heritage significance suitable for the repair of other heritage items, including roof tiles, joinery (windows, doors, architraves, skirting) and any other fabric. Information on the former cottage would be incorporated into the Wansey Road stop during detailed design. These measures shall be undertaken as per the recommendations in the Wansey Cottage Heritage Report (GML Heritage, October 2015) in addition to the mitigation measures required under B61.
- B60. Prior to construction of works on the Royal Randwick Racecourse site affecting ~~the Swab building~~, the wall associated with Royal Randwick Racecourse, adjacent to Alison Road and east of Darley Road, or the former entrance gatehouse building, the **Proponent** shall prepare a report to the satisfaction of the Secretary investigating options for the retention of these buildings/structures, including relocation within the racecourse grounds. The report shall clearly describe the impacts of each option considered and likely future heritage value of these buildings in the context of the Randwick Racecourse Conservation Area.

- B61. The **Proponent** shall complete all archival recordings for all heritage items directly and physically impacted by the SSI; including photographic recording of the intact heritage item, unless otherwise agreed by the Secretary.

The archival recording shall be undertaken by an experienced heritage consultant, in accordance with the Guidelines issued by the Heritage Council of NSW. The area containing the heritage item shall be clearly identified and/or fenced until the completion of the archival recordings. Within six months of completing the archival recording, the **Proponent** shall submit a report containing the archival and photographic recordings and the historic research, where required, to the Department (Heritage Branch), the relevant Council and the local library and the Randwick & District Historical Society.

- B62. The **Proponent** shall not destroy, modify or otherwise physically affect any heritage items outside the approved SSI alignment (as defined in the documents referred to in condition A1), unless otherwise agreed by the Secretary.

- B63. The measures to protect Aboriginal or historic heritage sites near or adjacent to the SSI during construction shall be detailed in the Heritage Management Sub-plan required under condition B89.

SOIL, WATER AND HYDROLOGY

- B64. Except as may be expressly provided by an Environment Protection Licence for the SSI, the **Proponent** shall comply with section 120 of the *Protection of the Environment Operations Act 1997*, which prohibits the pollution of waters.

Flooding

- B65. The **Proponent** shall design and construct the SSI, to the extent that is reasonable and feasible and as agreed by the Secretary, to not worsen existing flood characteristics in the vicinity of the SSI. Not worsen is defined as:

- (a) A maximum increase flood levels of 10 mm in a 100 year average recurrence interval (ARI) flood event; and
- (b) A maximum increase in time of inundation of one hour in a 100 year ARI flood event; and
- (c) any increase in high hazard flooding as defined in Appendix L of the NSW Government's *Floodplain Development Manual (2005)*.

Soil, Stormwater and Flood Management Plan

- B66. A **Soil, Stormwater and Flooding Management Plan(s)** shall be prepared in consultation with the EPA, NOW and relevant Councils during detailed design of the SSI and prior to construction. The Plan shall identify actions to ensure that the SSI addresses the management of soil and existing flooding characteristics within the vicinity of the SSI for a full range of flood sizes up to and including the probable maximum flood. The Plan(s) shall be prepared by appropriately qualified person(s) and facilitate a holistic approach to detailed hydrologic assessment and stormwater management, which gives consideration to the cumulative impacts of the SSI associated with its construction and operation, and shall include but not be limited to:

- (a) Soil and water management measures that are consistent with the guideline *Managing urban stormwater: soils and construction* (including *Volume 1 – Blue Book* and *Volume 2 – Installation of Services*);
- (b) the design of temporary works, compensatory and management measures that would be implemented during construction to not worsen (as defined in condition B65) existing and known future flooding characteristics;
- (c) the identification of flood risks to the SSI and adjoining areas, including the consideration of local and regional drainage catchment assessments, strategies and guidelines; and climate change implications on rainfall and drainage characteristics;
- (d) the design and layout of each stop precinct and light rail infrastructure to not worsen (as defined in condition B65), existing and known future flooding characteristics;
- (e) identification of design and mitigation measures that would be implemented to protect proposed construction and operational activities and not worsen existing flooding characteristics, including soil erosion and scouring. Design of mitigation measures should consider more frequent floods besides flood of design; and
- (f) identification of flood risk, potential for inflows, potential consequences and required mitigation measures for each tunnel entrance.

For surface components of the SSI located on floodplains, flood impacts shall be confirmed in accordance with the *Floodplain Development Manual (2005)*, and other relevant NSW Government Guidelines.

Groundwater

- B67. The **Proponent** shall design and construct the SSI in a manner that ensures no more than minimal harm to overall groundwater hydrology including capture, drawdown, flow and quality.
- B68. Prior to construction of the Moore Park tunnel or any works with the potential to intersect the groundwater table, the **Proponent** shall submit a report to the Secretary detailing further investigations into surface water, groundwater and geotechnical issues, including:
- details of proposed excavations, tunnels and construction methodology;
 - identification of surface and sub-surface structures and infrastructure which may be impacted by the SSI, including the specific attributes of those structures;
 - identification of potential impacts on the quality and quantity of surface water and groundwater resources, including consideration against the NSW Aquifer Interference Policy;
 - details of measures to be implemented to ensure that post construction groundwater inflows to the tunnel are eliminated or minimised;
 - details of proposed water discharge quantity and quality against receiving water quality and flow objectives;
 - Identification of any licencing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*;
 - predicted groundwater take volumes, flow rates and drawdown along with predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling on adjacent property and infrastructure;
 - demonstration that the construction and operation of the SSI can operate in accordance with the operating rules of any relevant Water Sharing Plan; and
 - detailed description of the proposed water management system, water monitoring program and other measures designed to mitigate groundwater related impacts associated with the SSI.

The investigations report shall be prepared in consultation with the EPA and NOW, and be to the satisfaction of the Secretary.

- B69. Prior to the construction of the Moore Park tunnel the **Proponent** shall undertake an assessment of property and infrastructure at risk from damage (including but not limited to the Eastern Distributor and South Dowling Street) in consultation with the asset owner and determine appropriate settlement criteria to prevent damage.
- B70. Should the investigations report in condition B68 indicate exceedances of the criteria established at condition B69 or in Table B1 (whichever 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 of the Moore Park tunnel to ensure that underground services, infrastructure and adjacent buildings will not experience settlements exceeding the criteria.

Table B1 – Settlement Criteria

<i>Beneath Structure/Facility</i>	<i>Maximum Settlement (mm)</i>	<i>Maximum Angular Distortion</i>
Buildings – Low or non sensitive properties (i.e. ≤ 2 levels and car parks)	30	1 in 350
Buildings – High or sensitive properties (i.e. ≥ 3 levels and heritage items)	20	1 in 500
Roads and Parking areas	40	1 in 250
Parks	75	1 in 250

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

- B71. Notwithstanding criteria established as part of conditions B69 and B70, settlement criteria for individual utility structures and infrastructure shall be determined in consultation with the relevant authorities prior to the commencement of construction.

CONTAMINATION

- B72. The following documents shall be submitted to the Secretary and relevant Council, within the identified timeframes, unless otherwise agreed by the Secretary:
- (a) reports detailing Stage 2 Contamination Site Investigations in areas identified as having a risk of contamination (soil, water and building materials), and a Site Auditor endorsed Remediation Action Plan (or similar), where required, prior to site preparation or construction; and
 - (b) Certification by a Site Auditor that any contaminated land and/or groundwater, identified in B72(a) has been remediated to a standard consistent with the approved land use, prior to the use of the land.

Note: Terms used in this condition have the same meaning as in the Contaminated Land Management Act 1997.

- B73. Where the investigations identify that the site is suitable for the intended operations and that there is no need for a specific remediation strategy, measures to identify, handle and manage potential contaminated soils, materials and groundwater shall be incorporated into the Construction Environmental Management Plan (condition B88).

WASTE MANAGEMENT

- B74. All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials, or recovered in accordance with Waste Recovery Exemptions.
- B75. The **Proponent** shall ensure that all liquid and/ or non-liquid waste generated and/ or stored on the site is assessed and classified in accordance with the Waste Classification Guidelines (DECC, 2009).
- B76. The **Proponent** shall manage any asbestos or asbestos-contaminated materials that may be uncovered during demolition and construction activities of the SSI strictly in accordance with the requirements under the *Protection of the Environment Operations (Waste) Regulation 2005* and any guidelines or requirements issued by the EPA in relation to those materials.

SUSTAINABILITY

- B77. The **Proponent** shall achieve a minimum "Infrastructure Sustainability Rating Tool" overall score of 65 for both 'design' and 'as-built' components of the SSI.
- B78. The **Proponent** shall comply with Transport for NSW's Sustainable Design Guide Version 3 and achieve a minimum 'gold' rating for the SSI.
- B79. The **Proponent** shall where reasonable and feasible offset carbon emissions generated by the operation of the SSI.

HAZARDS AND RISKS

- B80. The **Proponent** shall ensure that the transport, handling and management of hazardous substances during construction does not result in a potentially hazardous storage environment or present a significant risk to human health, life or property, or the biophysical environment, consistent with *State Environmental Planning Policy No.33 – Hazardous and Offensive Development* and associated guidelines.

INFRASTRUCTURE PROPERTY AND UTILITIES

- B81. The **Proponent** shall identify utilities, services and other infrastructure and property potentially affected by construction to determine requirements for access to, diversion, protection, and/or support. Consultation with the URG and the relevant owner and/or provider of services that are likely to be affected by the SSI shall be undertaken to make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required. The **Proponent** shall ensure that any disruption to any service is minimised and shall be responsible for advising impact service recipients prior to any planned disruption of service. The cost of any such arrangements shall be borne by the **Proponent**, unless otherwise agreed with the utility/service provider.
- B82. The design and construction of the SSI shall not preclude the future undergrounding of electrical infrastructure by Randwick City Council.

PROPERTY AND BUSINESS IMPACTS

- B83. The **Proponent** shall design and construct the SSI with the objective of minimising impacts to, and interference with third party property and infrastructure, and that such infrastructure and property is protected during construction. This includes adequate provision for wayfinding signage for potential patrons in consultation with the Business Reference Group to minimise economic impacts of construction works.
- B84. Any physical damage caused to a property as a result of the SSI shall be rectified or the property owner compensated, within a reasonable timeframes, with the costs borne by the **Proponent**. This condition is not intended to limit any claims that the property owner may have against the **Proponent**. This condition does not apply if conditions B23 or B70 apply.
- B85. During construction, **Proponents** of other construction works in the vicinity of the SSI shall be consulted and reasonable and feasible steps taken to coordinate works to minimise impacts on affected sensitive receivers.

LANDUSE AND COMMUNITY FACILITIES

- B86. Where community and council facilities (including parks) are impacted during construction works through temporary or permanent land acquisition, reduced amenity, reduced access, reduced functionality or other impact, the **Proponent** shall, in consultation with the relevant council, community groups and key stakeholders, address construction impacts and agree on and implement reasonable and feasible mitigation and management measures. Where appropriate, the **Proponent** shall determine viable alternative options for community facilities during the construction phase. Mitigation and management measures shall be implemented by the **Proponent**, prior to impacts occurring.
- B86A The design of the SSI along Alison Road must ensure the new infrastructure provided by the SSI appropriately connect and integrate with elements within the Centennial Park Master Plan 2040 (dated November 2013). Any required revisions to the Master Plan design, required as a result of the SSI, shall be coordinated and funded by the Proponent in consultation with Centennial Park and Moore Park Trust. Any costs associated with rectification works within the area of disturbance of the SSI or as a consequence of the SSI, shall be borne by the Proponent, or as otherwise agreed by the Secretary.

Note: The removal of the Darley Road left turn slip lane from Alison Road was identified as a future work with a value of \$150,000 in the Centennial Park Master Plan 2040. As the Proponent will undertake this work as part of the SSI, the value shall be subtracted from any additional costs incurred by the Proponent in meeting the requirement of this condition.

ENVIRONMENTAL MANAGEMENT

Environmental Representative

- B87. Prior to the commencement of construction, or as otherwise agreed by the Secretary, the **Proponent** shall nominate for the approval of the Secretary a suitably qualified and experienced **Environmental Representative(s)** that is independent of the design and construction personnel. The **Proponent** shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Secretary. The Environmental Representative(s) shall:
- be the principal point of advice in relation to the environmental performance of the SSI;
 - oversee the implementation of all environmental management plans and monitoring programs required under this approval, and advise the **Proponent** upon the achievement of these plans / programs;
 - consider and advise the **Proponent** on its compliance obligations against all matters specified in the conditions of this approval and the Statement of Commitments as referred to under condition A1 of this approval and all other licences and approvals related to the environmental performance and impacts of the SSI;
 - ensure that environmental auditing is undertaken in accordance with all relevant Environmental Management Systems; and
 - be given the authority and independence to recommend to the **Proponent** reasonable and feasible steps to be taken to avoid or minimise unintended or adverse environmental impacts.

Construction Environmental Management Plan

B88. The **Proponent** shall, prior to the commencement of construction, prepare and implement a **Construction Environmental Management Plan**. The Plan shall be prepared in consultation with the Reference Groups listed in Schedule B, Part A of this approval and outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in accordance with the Guideline for the *Preparation of Environmental Management Plans* (DIPNR, 2004). The Plan shall include, but not necessarily be limited to:

- (a) a description of all relevant activities to be undertaken on the site during construction;
- (b) statutory and other obligations that the **Proponent** is required to fulfil during construction including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
- (c) a description of the roles and responsibilities for all relevant employees involved in the construction of the project;
- (d) demonstration that the existing City of Sydney Closed Circuit Television (CCTV) equipment is maintained at all times;
- (e) details of the measures to be installed to separate construction areas from publicly accessible areas; and
- (f) details of how the environmental performance of the construction works will be managed and monitored, and what actions will be taken to address identified potential adverse environmental impacts. In particular, the following environmental issues shall be addressed in the Plan:
 - i) construction compounds and ancillary facilities management;
 - ii) construction noise and vibration;
 - iii) construction traffic;
 - iv) earthworks, soil erosion and water quality management;
 - v) heritage management;
 - vi) air quality and dust management;
 - vii) property and business impacts; and
 - viii) waste management, demonstrating the maximisation of resource recovery and the recycling of construction waste materials.
- (g) evidence of consultation undertaken.

The Plan shall be submitted for the approval of the Secretary no later than one month prior to the commencement of construction, or within such period otherwise agreed by the Secretary. The Plan may be prepared in stages, however, construction works for each stage shall not commence until written approval has been received from the Secretary.

B89. As part of the Construction Environmental Management Plan for the SSI, the **Proponent** must prepare and implement:

- (a) a **Construction Compound and Ancillary Facilities Management Plan** to detail the management of site compounds associated with the SSI. The Plan shall build on the information provided in the EIS, and shall include but not be limited to:
 - i) a description of construction facilities, components and the surrounding environment;
 - ii) details of activities to be carried out at each facility, including the hours of use and the storage of dangerous and hazardous goods;
 - iii) details of the mitigation and management procedures specific to the facility that would be implemented to minimise environmental and amenity impacts and an assessment of the adequacy of the mitigation or offsetting measures;
 - iv) identification of the timing for the completion of activities at the facility and how the site will be decommissioned (including any necessary rehabilitation); and
 - v) appropriate monitoring, review and amendment mechanisms.
- (b) a **Construction Noise and Vibration Management Plan** to detail how construction noise and vibration impacts will be managed for the SSI. The Plan shall be consistent with the *Interim Construction Noise Guidelines* (DECC, 2009) and shall be prepared in consultation with the EPA and Council(s). The Plan shall include, but not be limited to:
 - i) details of construction activities (including site compounds), machinery and an indicative schedule for works that have the potential to generate noise and/ or vibration impacts on surrounding land uses,
 - ii) details of sensitive receivers (including maps showing the location of all potentially affected sensitive receivers, sensitive times (such as during exam periods) and sensitive equipment;
 - iii) the construction noise and vibration criteria according to the *Interim Construction Noise Guidelines*;
 - iv) details of the reasonable and feasible mitigation and management measures and procedures that will be implemented to control construction noise and vibration impacts, where the criteria are predicted and/or are measured to be exceeded;

- v) scheduling the noisiest activities associated with night-time works to be completed before midnight and limiting night-time construction works to two consecutive nights followed by two consecutive nights of respite (i.e. no works) unless outlined in the OOHW protocol;
 - vi) impacts from site compounds/construction depots;
 - vii) specific physical and managerial measures for controlling noise and vibration, demonstrating how activities would be managed;
 - viii) identification of noise and vibration generating tasks, duration, and predicted air-borne noise levels and vibration levels;
 - ix) internal compliance audit of all plant and equipment;
 - x) construction timetabling, in particular works outside standard hours, to minimise noise impacts;
 - xi) an out-of-hours work (OOHW) protocol for the assessment, management and approval of works outside of standard construction hours as defined in condition B4 of this approval, including a risk assessment process under which an Environmental Representative may approve out-of-hour construction activities deemed to be of low environmental risk and refer high risk works for the Secretary's approval **unless otherwise approved through an Environment Protection Licence**. The OOHW protocol must detail standard assessment, mitigation and notification requirements for high and low risk out-of-hour works, and detail a standard protocol for referring applications to the Secretary;
 - xii) details of community consultation processes to be implemented during construction;
 - xiii) procedures for notifying residents and sensitive receivers of construction activities likely to cause exceedances of the noise management levels;
 - xiv) vibration amenity;
 - xv) contingency plans to be implemented in the event of non-compliance and/or noise complaints; and
 - xvi) monitoring measures to assess compliance against the construction noise and vibration objectives, clearly indicating how often this monitoring would be conducted, the locations where monitoring would take place, how the results of this monitoring would be recorded and reported, and if any exceedances are detected how any non-compliance would be rectified.
- (c) **A Construction Traffic, Transport and Access Management Plan** to manage construction traffic, transport and access impacts of the SSI. The Plan shall be developed in consultation with the relevant road authority, transport operator and the RMS. The plan shall include but not be necessarily limited to:
- (i) Identification of construction traffic routes and construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes;
 - (ii) Volumes of fill and spoil to be reused, imported or exported from site(s);
 - (iii) Details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points;
 - (iv) Notification strategy to inform Councils, Reference Groups and RMS in advance of any temporary road closures;
 - (v) Waste collection points and access arrangements are provided and maintained to an acceptable level;
 - (vi) Vehicle Movement Plans and Traffic Control Plans for each precinct;
 - (vii) Intersection Construction Management Plans for each intersection to be upgraded by the SSI, including timing and measures to mitigate broader network impacts;
 - (viii) Prevention of any loss of load, whether dust, liquid or soils;
 - (ix) A protocol for minimising the cumulative construction traffic impacts of the SSI and other projects under construction/to be constructed, including from the cumulative impacts between construction zones;
 - (x) Identification of potential traffic noise impacts, sensitive receivers and sensitive times of the day;
 - (xi) Details of management measures for special events, including measures for provision of parking facilities, taxis, pedestrians and cyclists and emergency vehicles
 - (xii) Details of management measures to minimise traffic impacts, including driver training, temporary road work traffic control measures, onsite vehicle queuing and management measures to minimise peak time congestion and measures to ensure safe pedestrian and cycle access;
 - (xiii) Construction staff parking requirements, locations and the location(s) of proposed parking facilities, and the method for transporting staff to construction;
 - (xiv) Minimise tracking mud, dirt or other material onto a public road or footpath. In the event of any spillage, the **Proponent** shall remove the spilled material as soon as practicable within the working day of the spillage;
 - (xv) OOHW procedures and protocol;
 - (xvi) Details of all temporary road closures and detours and measures to minimise impacts on local traffic and to inform relevant stakeholders;

- (xvii) Precinct specific incident response measures to detail how incident response resources can respond to and mitigate impacts from incidents and accidents that may occur along the construction alignment;
 - (xviii) Events management for current and future events;
 - (xix) A driver code of conduct; and
 - (xx) Mechanisms for the monitoring, review and amendment of this Plan.
- (d) a **Construction Soil and Water Management Plan for the Moore Park Tunnel** developed in consultation with the EPA and NOW to include, but not necessarily limited to:
- i) details of construction activities and their locations, which have the potential to impact on water courses, storage facilities, stormwater flows, and groundwater;
 - ii) a Surface Water Management Plan that includes a detailed description of the water management system on site including clean water diversion systems, erosion and sediment controls, water storages and discharge points, performance criteria, including trigger points for investigating any potential adverse impacts to surface water quality and a program to monitor the effectiveness of the water management system including site discharge water quality;
 - iii) a Groundwater Management Plan that includes; detailed data on groundwater inflow, rainfall inflow and evaporation; detailed information on groundwater yield and quality in groundwater bores on surrounding land that could be affected by the Moore Park tunnel; groundwater assessment criteria including trigger levels for investigating any adverse groundwater impacts; a program to monitor the impacts of the SSI on any groundwater bores on surrounding land that would be affected by the Moore Park tunnel;
 - iv) details of how spoil and fill material required by the SSI will be sourced, handled, stockpiled, reused and managed; erosion and sediment control measures; salinity control measures and the consideration of flood events;
 - v) a contingency plan, consistent with the Acid Sulfate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage;
 - vi) management measures for contaminated material and a contingency plan to be implemented in the case of an unanticipated discovery of contaminated material during construction;
 - 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 undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedances of the criteria is detected how and non-compliance can be rectified; and
 - viii) mechanisms for the monitoring, review and amendment of this plan.
- (e) a **Construction Heritage Management Plan** to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be avoided, minimised and managed. The sub-plan shall be prepared by an appropriately qualified heritage consultant(s) and be developed in consultation with the Heritage Council of NSW, the OEH (Aboriginal heritage), and registered Aboriginal stakeholders (for Aboriginal heritage), and include, but not necessarily be limited to:
- (i) In relation to Aboriginal Heritage:
 - i. details of management measures and strategies for protection, salvage, and/or conservation of sites and items that will be directly or indirectly impacted during construction (including further archaeological investigations, salvage measures and/or measures to protect unaffected sites during construction works in the vicinity);
 - ii. procedures for dealing with previously unidentified Aboriginal objects (excluding human remains) including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified archaeologist in consultation with the department, OEH and registered Aboriginal stakeholders and assessment of the consistency of any new Aboriginal heritage impacts against the approved impacts of the SSI, and notification to the OEH, in accordance with section 89A of the *National Parks and Wildlife Act 1974*, and the department;
 - iii. procedures for dealing with human remains, including cessation of works in the vicinity and notification of the department, NSW Police Force, OEH and registered Aboriginal stakeholders and not recommencing any works in the area unless authorised by the department and/ or the NSW Police Force; and
 - iv. induction processes (identification, protection) for construction personnel (including procedures for keeping records of inductions) and procedures for ongoing Aboriginal consultation and involvement; and

- (ii) In relation to non-Aboriginal Heritage:
 - i. details of management measures and strategies for protection, excavation, archival recording and/or conservation of heritage items that will be directly or indirectly impacted during construction (including measures to protect unaffected items during construction works in the vicinity);
 - ii. procedures for dealing with previously unidentified items of heritage significance, including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the department and the Heritage Council of NSW and assessment of the consistency of any new non-Aboriginal heritage impacts against the approved impacts of the SSI and notification of the Heritage Council of NSW, in accordance with Section 146 of the *NSW Heritage Act 1977*, and the department;
 - iii. procedures for dealing with human remains, including cessation of works in the vicinity and notification of the department, NSW Police Force, the Heritage Council of NSW and not recommending any works in the area unless authorised by the department, and/ or the NSW Police Force); and
- (iii) heritage induction processes (identification, protection) for construction personnel (including procedures for keeping records of inductions); and
- (f) a **Construction Business Management Plan** to detail how construction works will be managed to minimise impacts to existing businesses located in the vicinity of construction sites and activities during construction of the SSI. The plan shall include measures to minimise business related impacts, maintain vehicular and pedestrian access during business hours and maintenance of the visibility of the business appropriate to its reliance on such. The Plan shall be prepared in consultation with the Business Reference Group required under condition A16 and shall include, but not necessarily be limited to:
 - i) business management strategies for each construction site (and/or activity) identifying affected businesses and associated management strategies including the employment of place managers and specific measures to assist small business owners adversely affected by the construction of the SSI;
 - ii) a monitoring program to assess the effectiveness of the measures including the nomination of performance parameters against which the effectiveness of the measure will be measured; and
 - iii) provision for reporting the monitoring results to the Secretary as part of the Compliance Tracking Program required by condition B94.
- (g) an **Equine Management Plan** detailing the management of horses during construction at the Royal Randwick Racecourse site. The Plan shall be prepared by a suitably qualified professional in consultation with the Australian Turf Club and Racing NSW and shall include but not be limited to:
 - i) clear guidelines of construction and associated exclusion zones and personnel education and induction processes to mitigate the risk of an event occurring that could result in damage or injury to a horse at the racecourse;
 - ii) identification of a relocation strategy for the horses and trainers, if relevant;
 - iii) measures to ensure all intersections and access points impacted by the SSI are relocated and designed to cater for the existing capacity requirements and sensitive to the specific requirements of equine transport vehicles;
 - iv) addressing impacts relating to acoustics, light impacts, overshadowing and vibration and any other potential impact to horses and mitigation measures as appropriate to minimise impacts to equine activities on the site.

COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

B90. The **Proponent** shall prepare and implement a **Community Communication Strategy** to provide mechanisms to facilitate communication between the **Proponent** (and its contractors), the Environmental Representative and the community stakeholders (particularly adjoining landowners) on construction progress and management. The Strategy shall be prepared in consultation with the CRG and include, but not be limited to:

- (a) identification of stakeholders to be targeted as part of the Strategy, including community and business stakeholders, environmental and transport groups and adjoining property owners;
- (b) procedures and mechanisms for the regular dissemination of information to the community and stakeholders on construction progress and matters associated with environmental management;
- (c) procedures and mechanisms through which the community and stakeholders can discuss or provide feedback to the **Proponent** and/or Environmental Representative in relation to the environmental management and delivery of the SSI;
- (d) procedures and mechanisms through which the **Proponent** can respond to any enquires or feedback from the community and stakeholders in relation to the environmental management and delivery of the SSI; and

- (e) procedures and mechanisms to be implemented to respond to any issues/disputes that arise between parties on the matters relating to environmental management, design and the SSI delivery.

The **Proponent** shall maintain and implement the Strategy throughout construction. The Strategy shall be submitted to the Secretary prior to the commencement of construction of the SSI.

Community Enquiries

B91. Prior to the commencement of construction of the SSI, the **Proponent** shall ensure that the following are available for community enquiries and complaints for the duration of construction:

- (a) a 24 hour telephone number on which complaints and enquiries about the SSI may be registered;
- (b) a postal address to which written complaints and enquires may be sent;
- (c) an email address to which electronic complaints and enquiries may be transmitted; and
- (d) a mediation system for complaints unable to be resolved.

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.

B92. Prior to the commencement of construction, the **Proponent** shall prepare and implement a **Construction Complaints Management System** consistent with *Customer Satisfaction – Guidelines for complaints handling in organisations – ISO 10002:2004, MOD (formerly AS 4269: Complaints Handling)* and maintain the System for the duration of construction and up to 12 months following completion of the SSI.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached, with or without mediation, shall be maintained in a complaints register and included in the construction compliance report required by this approval. The information contained within the System shall be made available to the Secretary on request.

Provision of Electronic Information

B93. Prior to the commencement of construction, the **Proponent** shall dedicate pages within its website, for the provision of electronic information associated with the SSI, for the duration of construction and for up to 12 months following its completion. 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 A1 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 SSI;
- (c) subject to confidentiality requirements, a copy of each strategy, plan, program and Reference Group documentation required under this approval;
- (d) the outcomes of compliance tracking in accordance with condition B94 of this approval;
- (e) information on the current implementation state of the SSI; and
- (f) details of contact point(s) to which community complaints and enquiries may be directed, including a telephone number, a postal address and an email address.

COMPLIANCE MONITORING AND TRACKING

B94. The **Proponent** shall develop and implement a **Compliance Tracking Program** to track compliance with the requirements of this approval. The Program must be submitted to the Secretary for approval prior to the commencement of construction and operate for a minimum of one year following commencement of operation, subject to the Secretary's review of the outcomes of the Operational Performance Audit Report referred to in condition C16. The Program must include:

- (a) provisions for periodic review of the compliance status of the SSI against the requirements of this approval and the mitigation measures detailed in the document referred to in condition A1(c) of this approval;
- (b) provisions for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the SSI;
- (c) provisions for periodic reporting of compliance status to the Secretary during construction;
- (d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing;
- (e) procedures for rectifying any non-compliance identified during environmental auditing or review of compliance;
- (f) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;
- (g) provisions for reporting environmental incidents to the Secretary during construction; and

- (h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.

INCIDENT REPORTING

- B95. The **Proponent** shall notify the Secretary of a construction incident with significant off-site impacts on people or the bio-physical environment as identified by the Environmental Representative within 48 hours of becoming aware of the incident. The **Proponent** shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred. This is in addition to the requirements of section 148 of the *Protection of the Environment Operations Act, 1997*.
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SCHEDULE B

Part C – OPERATIONS

NOISE AND VIBRATION

Operational Noise and Vibration from Light Rail

C1. The SSI shall be designed and operated with the objective of not exceeding the air-borne and ground-borne noise trigger levels as defined in the *Rail Infrastructure Noise Guideline* (EPA, 2012) and the vibration levels defined in the *Assessing Vibration: A Technical Guideline* (DEC, 2006).

C1A The Proponent shall undertake a reassessment of operational noise impacts from the SSI in accordance with the *Rail Infrastructure Noise Guideline* (EPA, 2012) if frequencies increase as part of normal operations such that more frequent services occur, within the first 10 years of operation. More frequent services are defined as:

- (a) a light rail service more frequent than one every 3.25 minutes between 7.00 am and 7.00 pm within the CBD; or
- (b) a light rail service more frequent than one every 6.5 minutes on either the Kensington or Randwick branch lines.

If the reassessment shows that there are additional exceedances of the trigger levels, reasonable and feasible mitigation measures shall be identified in consultation with the affected property owner. Any required mitigation measures shall be implemented prior to the change to service frequency, or as otherwise agreed by the Secretary.

Operational Noise from Stationary Sources

C2. The Proponent shall ensure that noise emanating from stationary sources complies with the noise limits at the nearest sensitive receivers in accordance with the NSW Industrial Noise Policy or as specified in **Table C1** and **Table C2**. Noise generated from these facilities shall also include associated traffic movements.

However, these limits do not apply if the Proponent has an agreement with the owner/s of the relevant residence to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Table C1 – Operational Noise Limits for Stabling and Maintenance Facilities at Sensitive Receivers (dBA)

Location	Day <i>L_{Aeq} (15 min)</i>	Evening <i>L_{Aeq} (15 min)</i>	Night <i>L_{Aeq} (15 min)</i>	Night <i>L_{A1}, (1 min)</i>
Randwick Stabling Facility	49	49	43	53
Lilyfield Maintenance Facility	61	60	52	62

Table C2 – Operational Noise Limits for Substations at Sensitive Receivers (dBA)

Location	<i>L_{Aeq} (15 min) at all Times</i>	Receiver Description
Circular Quay	55	Residential
Martin Place	65	Commercial
Haymarket (Parker Street)	65	Library
Chalmers Street	60	Residential
	65	Commercial
Moore Park	50	Passive Recreation
Kensington/Moore Park	55	Active Recreation
Royal Randwick Racecourse/Stabling Facility	44	Residential
High Cross Park	48	Residential
High Street (adjacent to Anzac Parade)	51	Residential
Kingsford	51	Residential

Operational Noise from Rail Traffic

C3. Ground-borne noise from rail traffic shall not exceed the following criteria as measured at the nearest residential receiver:

- (a) L_{ASmax} 40 dBA between the hours of 6.00 pm and 10.00 pm; and
- (b) L_{ASmax} 35 dBA between the hours of 10.00 pm and 7.00 am.

Note: Ground-borne noise level values are relevant only where they are higher than the airborne noise from railways and where the ground-borne noise levels are expected to be, or are, audible within habitable rooms (RING, EPA 2012).

C4. Prior to the procurement of light rail vehicles for the SSI, the **Proponent** shall confirm to the satisfaction of the Secretary that the source noise level specification assumed for the purposes of the assessment (in the documents referred to in condition A1) have been achieved (the $L_{pAeq,Tp}$ noise level during a passby measured of the Light Rail Vehicle at a point 7.5 metres from the centreline of the track and 1.2 metres above rail level at a running speed of 60km/hr under all operating conditions with all systems operating and doors closed must be no greater than 78 dBA).

Operational Noise from Ancillary Systems

C5. The **Proponent** shall ensure that unless they are required for safety reasons, no public address system is to be used as part of the normal operations of the SSI. Any emergency public address system shall be designed to minimise noise spillage from the site. Speakers shall be installed with their pointing axis directed away from residential buildings and sensitive receivers unless otherwise specified in the Operational Noise and Vibration Management Plan.

C6. The **Proponent** shall ensure that warning bells associated with the movements of Light Rail Vehicles occur only in emergency traffic or pedestrian safety situations but not as part of normal operations of the SSI. Testing of warning bells in the maintenance facility shall be undertaken with all doors of the facility closed. No testing of warning bells is permitted to take place at the stabling facility unless it meets the noise goals in the Industrial Noise Policy.

TRAFFIC, TRANSPORT AND ACCESS

C7. The SSI shall not preclude the operation of Hospital Road, Randwick, as a two way road. The **Proponent** shall maintain two vehicle entry/exit points at the entrance of the Prince of Wales Hospital at High Street, Randwick.

C8. Prior to operations, the **Proponent** shall provide 'kiss'n'ride' drop-off and parking facilities near the Kingsford (Nine-Ways) terminus, in consultation with Randwick City Council.

LIGHTING AND CCTV

C9. The **Proponent** shall, to the extent possible, ensure that all external lighting associated with the operation of the SSI (excluding light rail vehicles) is mounted, screened and directed in such a manner so as not to create nuisance to residences. The lighting shall be the minimum level of illumination necessary and shall comply with AS 4282:1997 – *Control of the Obtrusive Effects of Outdoor Lighting* and relevant Australian Standards in the series AS/NZ 1158 – *Lighting for Roads and Public Spaces*.

C10. The placement of CCTV cameras associated with the SSI shall be undertaken in consultation with the relevant public authority.

OPERATIONAL ENVIRONMENTAL MANAGEMENT

C11. Prior to the commencement of operation, or as otherwise agreed by the Secretary, the **Proponent** shall prepare and implement (following approval) an **Operation Environmental Management Plan** for the SSI. The Plan shall outline the environmental management practices and procedures that are to be followed during operation, and shall be prepared in consultation with relevant agencies and in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:

- (a) a description of activities to be undertaken during operation of the SSI (including staging and scheduling);
- (b) statutory and other obligations that the **Proponent** is required to fulfil during operation, including approvals, consultations and agreements required from authorities and other stakeholders under key legislation and policies;
- (c) overall environmental policies, guidelines and principles to be applied to the operation of the SSI;
- (d) a description of the roles and responsibilities for relevant employees involved in the operation of the SSI, including relevant training and induction provisions for ensuring that employees are aware of their environmental and compliance obligations under these conditions of approval;
- (e) an environmental risk analysis to identify the key environmental performance issues associated with the operation phase;
- (f) details of how environmental performance would be managed and monitored to meet acceptable outcomes, including what actions will be taken to address identified potential adverse environmental impacts, including those safeguards and mitigation measures detailed in the documents listed under condition A1 (and any impacts arising from the staging of the construction of the SSI). In particular, the following environmental performance issues shall be addressed in the Plan:
 - (i) traffic and transport;
 - (ii) noise and vibration;
 - (iii) visual amenity and landscaping (including in relation to heritage);
 - (iv) climate change and energy use;
 - (v) surface water (including quality) and flooding (including emergency response planning);
 - (vi) soils and groundwater management and discharge;
 - (vii) waste and resource management; and
 - (viii) air quality.
- (g) a **Special Events Plan** for the operation of the SSI, prepared in consultation with the relevant Council, Police, RMS, and relevant stakeholders including but not limited to the Returned Servicemen League, Entertainment Quarter, Sydney Cricket Ground, Sydney Football Stadium, Australian Turf Club, and the Centennial and Moore Park Trust, detailing the following:
 - (i) how light rail patrons would be managed to and from Moore Park and the Royal Randwick Racecourse site during special events;
 - (ii) a definition of what constitutes a special event, the need for crowd marshals on platforms and dedicated/additional services or extended vehicle configurations; and
 - (iii) hours of operations and a protocol for the extension of these hours to cater for events that may finish outside normal hours.
- (h) an **Operational Noise and Vibration Management Plan** in consultation with relevant Councils, Health Infrastructure and UNSW to provide details of noise and vibration control measures to be implemented during operation that are sufficient to address the requirements of the *Rail Infrastructure Noise Guideline*, the *Industrial Noise Policy* and the *Road Noise Policy*. The Plan shall include, but not be limited to:
 - (i) identification of the appropriate operational noise criteria;
 - (ii) predicted noise levels at all affected residential, recreational, commercial, industrial and sensitive land uses;
 - (iii) location, type and timing of erection of permanent noise barriers and/or other noise mitigation measures demonstrating all reasonable and feasible noise mitigation;
 - (iv) specific physical and managerial measures for controlling noise, including potential wheel squeal;
 - (v) noise and vibration monitoring;
 - (vi) reporting and response procedures including the monitoring on surrounding roads which experience significantly increased traffic volumes as a result of the SSI and the assessment, examination and implementation of mitigation measures to reduce traffic noise impacts, as appropriate;
 - (vii) additional noise mitigation measures as negotiated with affected residents and other sensitive receivers; and
 - (viii) how post-operational vibration levels shall be maintained throughout the life of the SSI.

The Plan shall be provided to the Secretary and made publicly available prior to operation.

OPERATIONAL PERFORMANCE

Operational Noise and Vibration Review

- C12. The **Proponent** shall, prior to construction for the Surry Hills precinct and the Randwick stabling facility and within six months of commencing construction for the remainder of the SSI, or as otherwise agreed by the Secretary, prepare and submit an **Operational Noise and Vibration Review** based on detailed design. The Review shall be prepared in consultation with the EPA and relevant Councils and shall:
- (a) identify specific noise and vibration criteria applicable to each component of the SSI;
 - (b) predict the operational noise and vibration levels at affected receivers;
 - (c) identify the proposed mitigation measures to be used to meet the applicable noise and vibration criteria;
 - (d) ensure uncertainties in the design process (e.g. engineering performance tolerances, modelling assumptions, transmission path assumptions etc) are identified and conservatively quantified; and
 - (e) include a consultation strategy with directly affected receivers on mitigation measures.

Where the noise and vibration criteria cannot be achieved, the assessment shall present an analysis of reasonable and feasible noise and vibration mitigation measures, and the 'best practice' achievable noise and vibration outcome for each component of the SSI.

The Review is to be independently verified by a noise and vibration expert, approved by the Secretary. The scope of the verification exercise undertaken by the noise and vibration expert is to be developed by the **Proponent** in consultation with the EPA and relevant Councils. The **Proponent** shall implement the Review prior to operation and make it publicly available.

Operational Noise and Vibration Compliance Monitoring

- C13. The **Proponent** shall undertake noise and vibration monitoring to assess the adequacy of the rail, traffic and stationary sources and the adequacy of noise mitigation measures to demonstrate compliance with the predictions of the noise assessment referred to in the Operational Noise and Vibration Review required by condition C12. This shall be developed in consultation with the EPA and relevant Councils and be undertaken within three months of the commencement of operation of the SSI, or as otherwise agreed by the Secretary.

A **Noise and Vibration Compliance Assessment Report** providing the results of the monitoring shall be submitted to the Secretary and relevant Councils within 28 days of its completion. The report shall provide an assessment of compliance with conditions C1 to C4 of this approval and details of any complaints received relating to operational noise and vibration impacts. If the report indicates an exceedance of the noise and vibration criteria identified in the Operational Noise and Vibration Review, the **Proponent** shall implement further reasonable and feasible measures to mitigate these exceedances in consultation with affected property owners and/or occupiers.

- C13A In the event of the change to the future frequency of services outlined in condition C1A, the **Proponent** shall undertake noise and vibration monitoring to assess the adequacy of mitigation measures to demonstrate compliance with the predictions of the noise assessment referred to in the Operational Noise and Vibration Review required by condition C12. If the report indicates an exceedance of the noise and vibration criteria identified in the Operational Noise and Vibration Review, the **Proponent** shall implement further reasonable and feasible measures to mitigate these exceedances in consultation with affected property owners and/or occupiers. A copy of the report shall be submitted to the Secretary within 28 days of its completion.

Maintenance

- C14. The ongoing maintenance and operation costs of urban design and landscaping items and works implemented as part of this approval shall remain the **Proponent's** responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Prior to the transfer of assets, the **Proponent** will maintain items and works to the design standards established in the Stop Access and Design Plan, including the engagement of a landscape specialist and the removal of graffiti within performance standards specified in the Stop Access and Design Plan and condition B50.

Operational Traffic, Transport and Access Performance Review

- C15. The **Proponent** shall prepare an **Operational Traffic, Transport and Access Performance Review** in consultation with RMS. The monitoring and review shall be undertaken at twelve months and 5 years after the commencement of operation of the SSI, or as otherwise agreed by the Secretary. The assessment shall include, but not necessarily be limited to:
- (a) A traffic, transport and access assessment, to assess compliance with the conditions of approval;

- (b) Consideration of the outcomes of the SCCAS, including changes to bus network and infrastructure associated with the SSI;
- (c) Results of monitoring and performance of the pedestrian zones;
- (d) Details of any complaints received relating to traffic, transport and access impacts;
- (e) An assessment of the performance and effectiveness of the traffic, transport and access management and mitigation measures;
- (f) Reporting against the framework for improving traffic performance;
- (g) Identification, if required, of further traffic, transport and access mitigation measures to meet the objectives identified in the NMP; and
- (h) An assessment of the adequacy of the parking provision and management strategies.

A Traffic, Transport and Access report providing the results of the assessment shall be submitted to the Secretary and the RMS within 60 days of its completion and made publicly available. If the assessment indicates ongoing traffic, transport and access issues attributable to the SSI, via level of service, queue lengths, road safety, and other relevant parameters of performance, the **Proponent** shall implement further reasonable and feasible measures to mitigate these impacts in consultation with the RMS.

Operational Performance Audit

- C16. Within twelve months of the completion of construction of the SSI, unless the Secretary directs otherwise, the **Proponent** shall commission and pay the full cost of an Independent Environmental Audit of the SSI. The audit report shall be submitted to the Secretary within one month of its completion, unless otherwise agreed by the Secretary and must:
- (a) Be conducted by a suitably qualified, experienced and independent person or team of experts whose appointment has been endorsed by the Secretary;
 - (b) assess the operational performance of the SSI against the aims and objectives for the project specified in the documents referred to under condition A1 of this approval;
 - (c) assess the environmental performance of the SSI against the predictions made and conclusions drawn in the documents referred to under condition A1 of this approval;
 - (d) assess compliance with the requirements of this approval, and other licences and approvals that apply to the SSI;
 - (e) review the effectiveness of the environmental management of the SSI, including any environmental impact mitigation works; and
 - (f) review the adequacy of any strategy/plan/program required under this approval; and if necessary recommend measures or actions to improve the environmental performance of the SSI, and/or any strategy/plan/program required under this approval.

INCIDENT REPORTING

- C17. The **Proponent** shall notify the Secretary of an operational incident with significant impacts on people or the bio-physical environment within 48 hours of becoming aware of the incident. The **Proponent** shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred. This is in addition to the requirements of section 148 of the *Protection of the Environment Operations Act, 1997*.
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Appendix 1 CBD and South East Light Rail Precincts

