SCHEDULE E3. --PLANNING APPROVAL

(Clauses 1.1 and 6.2)

1. APPROVALS TO BE OBTAINED BY THE PRINCIPAL

1.1 Existing Approvals

The Project Planning Approval (Chatswood to Sydenham) and the Project Planning Approval (Rapid Transit Rail Facility).

1.2 Future Approvals to be obtained by the Principal

The Project Planning Approval (Sydenham to Bankstown).

The Draft Conditions for the Project Planning Approval (Sydenham to Bankstown) are included as Attachment 5 to Schedule E3.

The Revised Mitigation Measures for the Project Planning Approval (Sydenham to Bankstown) are included as Attachment 6 and are part of the Draft Conditions for the Project Planning Approval (Sydenham to Bankstown).

2. OBLIGATIONS IN RESPECT OF THE PLANNING APPROVAL

(a) The LW Contractor must, in performing the LW Contractor's Activities, comply with all of the obligations, conditions and requirements of the Planning Approvals, as if it were the Principal, to the extent that they relate to the LW Contractor's Activities except to the extent that this Schedule E3 provides that the Principal will comply with the obligation, condition or requirement or this Schedule E3 limits the LW Contractor's obligation in respect of that obligation, condition or requirement.

(b) Nothing in this Schedule E3 in any way limits, affects or relieves the LW Contractor from complying with any obligation set out elsewhere in this deed.

3. THE PRINCIPAL'S OBLIGATIONS IN RESPECT OF PROJECT PLANNING APPROVAL (CHATSWOOD TO SYDENHAM)

(a) Terms that have a defined meaning in the Project Planning Approval (Chatswood to Sydenham) have the same meaning where used in this section 3.

(b) In relation to the conditions in schedule 2 of the Project Planning Approval (Chatswood to Sydenham) the Principal will:

(i) be responsible for A4;

(ii) in relation to A7, submit the information provided by the LW Contractor, to the Secretary. The LW Contractor must undertake all activities necessary to comply with this condition (except submission to the Secretary) and provide the information to the Principal;

(iii) in relation to A9, submit the information provided by the LW Contractor, to the Secretary. The LW Contractor must undertake all activities necessary to comply with this condition (except submission to the Secretary) and provide the information to the Principal;

(iv) be responsible for A10;

(v) be responsible for A12 to A15, except that:
(A) the LW Contractor must inform the Principal if staging of deliverables is required in addition to that identified in the Staging Report; and

(B) the LW Contractor must carry out the LW Contractor's Activities in accordance with the Staging Report;

(vi) be responsible for A21;

(vii) in relation to A22, engage, nominate, and seek approval from the Secretary of a suitably qualified and experienced Environmental Representative (ER). The Principal will be the single point of contact with the Secretary and will provide the LW Contractor with the date the submission for approval is made, or notify the LW Contractor of any other timeframe relevant to this condition;

(viii) in relation to A23, the Principal will notify the LW Contractor when the approval of the Secretary is given;

(ix) be responsible for A24, except that the LW Contractor must:

(A) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that could relate to the approved ER's functions and obligations under condition A24; and

(B) facilitate any actions necessary for the ER to carry out its functions and obligations under condition A24;

(x) in relation to A25, engage, nominate, and seek approval from the Secretary of a suitably qualified and experienced Acoustics Adviser (AA) and additional suitably qualified and experienced persons to assist the lead AA. The Principal will be the single point of contact with the Secretary and will provide the LW Contractor with the date the submission for approval is made, or notify the LW Contractor of any other timeframe relevant to this condition;

(xi) in relation to A26, notify the LW Contractor when the approval of the Secretary is given;

(xii) be responsible for A27, except that the LW Contractor must:

(A) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that could relate to the approved AA's functions and obligations under condition A27; and

(B) facilitate any actions necessary for the AA to carry out its functions and obligations under condition A27;

(xiii) be responsible for A28;

(xiv) be responsible for A29. The Principal will notify the LW Contractor of the date of submission to the Secretary and if there is any other timeframe agreed with the Secretary relevant to the LW Contractor's Activities;

(xv) be responsible for A30, except that the LW Contractor must:

(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities to enable the Principal to comply with this condition; and
(B) participate in any activities necessary under the Compliance Tracking Program;

(xvi) be responsible for A31 to A34, except that the LW Contractor must provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities to enable the Principal to comply with conditions A31 to A34. The Principal will be the single point of contact with the Secretary and notify the LW Contractor any other timeframe relevant to these conditions;

(xvii) be responsible for A35 and A36, except that the LW Contractor must provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities necessary to support the Principal’s preparation of the Pre-Operation Compliance Reports;

(xviii) be responsible for A37, A39 and A40, except that the LW Contractor must:

(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities to enable the Principal to comply with conditions A37 to A40; and

(B) participate in any activities necessary under the Environmental Audit Program; and

(C) provide reasonable assistance required to enable the independent environmental audits to be carried out.

The Principal will submit the Environmental Audit Program to the Secretary and advise the LW Contractor of the date of submission or any other timeframe relevant to conditions A37, A39 and A40;

(xix) be responsible for A41 to A44, except that the LW Contractor must immediately advise the Principal of any incident and promptly provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities to enable the Principal to comply with conditions A41 to A44;

(xx) be responsible for B1 to B4 to the extent that the Principal will prepare and submit for approval only an overarching Community Communication Strategy. The LW Contractor must prepare its own Community Communication Strategy in accordance with conditions B1 to B4 in relation to the LW Contractor’s Activities consistent with the Principal’s overarching Community Communication Strategy. The LW Contractor’s Community Communication Strategy must be prepared within a sufficient timeframe for the Principal to review and submit the LW Contractor’s Community Communication Strategy to the Secretary for approval at least one month before the commencement of Construction (as defined in the Project Planning Approval (Chatswood to Sydenham)). The Principal will notify the LW Contractor when the Secretary approves the LW Contractor’s Community Communication Strategy;

(xxii) be responsible for B6 and B7, except that the LW Contractor must:

(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities that are required to prepare the Complaints Management System and maintain a Complaints Register; and

(B) implement the Complaints Management System;
(xxii) be responsible for B8 to B12; except that the LW Contractor must ensure that the telephone number, postal address and email address required under condition B9(a), (b) and (c) is placed on site hoarding at each construction site before commencement of Construction (as defined in the Project Planning Approval (Chatswood to Sydenham)) in accordance with condition B10;

(xxiii) be responsible for B13, except that the LW Contractor must:

(A) provide the Principal and the Community Complaints Commissioner with all information, documents, details and data relating to the LW Contractor’s Activities in order for the Community Complaints Commissioner to perform its functions; and

(B) co-operate with, and respond to the reasonable requirements of, the Community Complaints Commissioner;

(xxiv) be responsible for B14, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to comply with this condition;

(xxv) be responsible for B15, except that the LW Contractor must:

(A) establish and maintain a new website, or dedicated pages within an existing website, and comply with condition B15 in relation to the LW Contractor’s Activities;

(B) agree with the Principal on the extent of documentation to be posted on the LW Contractor’s website considering privacy and confidentiality in relation to information, documents, details and data provided by the LW Contractor;

(C) comply with level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0); and

(D) provide TfNSW with all information, documents, details and data relating to the LW Contractor’s Activities that are required for the Principal to comply with condition B15;

(xxvi) in relation to C5, where an agency(ies) request(s) is not included in the relevant CEMP sub-plan the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to provide the Secretary with justification as to why;

(xxvii) be responsible for C6, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to comply with this condition;

(xxviii) in relation to C7, submit the endorsed CEMP to Secretary. The LW Contractor must provide a copy of the CEMP, including the ER’s endorsement, to the Principal in a timely manner to enable the Principal to comply with this condition;

(xxix) in relation to C8, notify the LW Contractor when the approval of the Secretary is given;
(xxx) in relation to C13, notify the LW Contractor of the date the Construction Monitoring Programs have been submitted to the Secretary. The LW Contractor must provide a copy of the Construction Monitoring Programs, including the ER’s endorsement, to the Principal in a timely manner to enable the Principal to comply with this condition;

(xxxi) in relation to C14, notify the LW Contractor when the approval of the Secretary is given for the LW Contractor’s Construction Monitoring Programs;

(xxxii) in relation to C16, submit the Construction Monitoring Reports to the Secretary. The LW Contractor must provide the Construction Monitoring Reports to the Principal in a timely manner to enable the Principal to comply with its retained obligation;

(xxxiii) be responsible for D1 to D8;

(xxxiv) be responsible for D9, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that could relate to the approved ground-borne noise specialist’s functions and obligations under condition D9;

(xxxv) be responsible for D10 to D14;

(xxxvi) be responsible for E1, except that the Principal will establish a 3rd Party Interface Agreement and the LW Contractor must, in carrying out the LW Contractor’s Activities, comply with the requirements under that Agreement in accordance with this deed;

(xxxvii) be responsible for E6, except that the LW Contractor must produce a Tree Report for trees impacted or removed by the LW Contractor’s Activities and make provision for their replacement in accordance with Condition E6. The LW Contractor must provide the Tree Report to the Principal in a timely manner to enable the Principal to submit it to the Secretary in compliance with this condition;

(xxxviii) be responsible for E7 to E9;

(xxxix) be responsible for E11 to E16;

(xl) be responsible for E19, except that the LW Contractor must implement and comply with the Unexpected Heritage Finds Procedure in relation to the LW Contractor’s Activities;

(xli) in relation to E20 make all notifications to the Secretary. The LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to comply with its retained obligation;

(xlii) be responsible for E22;

(xliii) be responsible for E22.1;

(xliv) be responsible for E27, except that the LW Contractor must implement and comply with the Exhumation Management Plan;

(xlv) be responsible for E32 in relation to review of the Construction Noise & Vibration Strategy (CNVS). The LW Contractor must implement and comply
with the approved CNVS. The CNVS is contained in Attachment 1 to this Schedule E3;

(xlvi) be responsible for E35;

(xlvii) be responsible for E47 in relation to preparation and submission of the Out of Hours Work Protocol. The LW Contractor must comply with the approved Out of Hours Work Protocol. The Out of Hours Work Protocol is contained in Attachment 2 to this Schedule E3;

(xlviii) in relation to E53, if the LW Contractor prepares a Blast Management Strategy, the LW Contractor must submit it to the Principal. The Principal will submit it to the Secretary and notify the LW Contractor when it has been submitted;

(xlix) be responsible for E57 and E57.1;

(I) be responsible for E62, except that the LW Contractor:

(A) must provide the Principal and the Independent Property Impact Assessment Panel with all information, documents, details and data relating to the LW Contractor's Activities in order for the Panel to perform its functions;

(B) must comply with the reasonable requests and requirements of the Independent Property Impact Assessment Panel; and

(C) may refer unresolved disputes in relation to property impacts caused by the LW Contractor's Activities to the Independent Property Impact Assessment Panel.

The terms of reference for the Independent Property Impact Assessment Panel are contained in Attachment 3 to this Schedule E3;

(Ii) in relation to E63, submit the results of monitoring to the Secretary on request. The LW Contractor must submit the results of monitoring to the Principal;

(Iii) be responsible for E64, except in relation to items referred to in E64(a), (b), (c) and (e). The LW Contractor must provide the Principal with all information, documents, details and data relating to Contractor's Activities for items referred to in E64(d) and (f);

(Iv) in relation to E68, if the LW Contractor prepares a Site Audit Statement and Site Audit Report, the LW Contractor must submit them to the Principal. The Principal will submit them to the Secretary;

(Iv) be responsible for E72, except that the LW Contractor must:

(A) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities in order for the Principal to prepare and implement the Sustainability Strategy; and

(B) implement the Sustainability Strategy referred to in condition E72 to the extent it relates to the LW Contractor's Activities. The Sustainability Strategy is contained in Appendix 3 to this Schedule E3;

(iv) be responsible for E74;
(Ivi) be responsible for E77, except that the LW Contractor must:

(A) provide a representative to attend relevant meetings of the Traffic and Transport Liaison Group(s);

(B) provide all relevant information, documents, details and data relating to the LW Contractor’s Activities to the Traffic and Transport Liaison Group(s);

(C) consult with the Traffic and Transport Liaison Group(s) in preparing the Construction Traffic Management Plans; and

(D) implement and comply with any traffic and transport management measures;

(Ivii) in relation to E78, the Principal must incorporate revised traffic management measures into the Interchange Access Plan(s). The LW Contractor must provide the Principal with all relevant information, documents, details and data in order for the Principal to incorporate revised traffic management measures into the Interchange Access Plan(s);

(Iviii) be responsible for E81, except that the LW Contractor must implement and comply with the Construction Traffic Management Framework (CTMF). The CTMF is contained in Attachment 4 to this Schedule E3;

(Ix) be responsible for E84 only to the extent that it relates to investigating opportunities to maximise spoil removal by non-road methods;

(Ix) be responsible for E92 to E95;

(Bx) in relation to E95.1, the Principal will provide any information relevant to E95.1 for inclusion in the LW Contractor’s Station Design & Precinct Plan for the Sydney Metro Trains Facility South;

(Ixii) be responsible for E96 to E98;

(Ixiii) be responsible for E100;

(Ixiv) in relation to E101, develop a template SDPP. The LW Contractor is responsible for preparing SDPPs in accordance with condition E101 and the Principal’s template SDPP;

(Ixv) be responsible for E103; and

(Ixvi) be responsible for E109.

(c) In relation to the Revised Environmental Mitigation Measures (Chatswood to Sydenham) the Principal will:

(i) in relation to T7, be responsible for community education events that allow pedestrians, cyclists or motorists to sit in trucks and understand the visibility restrictions of truck drivers, and for truck drivers to understand the visibility from a bicycle; and a campaign to engage with local schools to educate children about road safety and to encourage visual contact with drivers to ensure they are aware of the presence of children;

(ii) be responsible for T10;

(iii) be responsible for T15 to T18;
(iv) be responsible for T20;
(v) be responsible for T23 and T24;
(vi) be responsible for T27 and T28;
(vii) be responsible for OpT1 to OpT7;
(viii) be responsible for NV5;
(ix) in relation to NV6, engage, nominate, and seek approval from the Secretary of a suitably qualified and experienced AA. The Principal will be the single point of contact with the Secretary and notify the LW Contractor of any other timeframe relevant to this condition agreed with the Secretary;
(x) be responsible for NV10 and NV11;
(xi) be responsible for OpNV1;
(xii) be responsible for OpNV4 and OpNV5;
(xiii) be responsible for LP1;
(xiv) be responsible for NAH1 to NAH7;
(xv) be responsible for NAH9 and NAH10;
(xvi) be responsible for NAH12 to NAH14;
(xvii) be responsible for NAH16 to NAH19;
(xviii) be responsible for NAH21;
(xix) be responsible for AH5 to AH7;
(xx) be responsible for LV8 to LV9;
(xxi) be responsible for LV13 to LV16;
(xxii) be responsible for LV18 to LV20;
(xxxii) be responsible for GWG1 and GWG2;
(xxiv) be responsible for SCW1 and SCW2;
(xxv) be responsible for SCW5 to SCW7;
(xxvi) be responsible for S01;
(xxvii) be responsible for B1 and B2;
(xxviii) be responsible for B4;
(xxix) be responsible for FH1;
(xxxx) be responsible for HR3 to HR5;
(xxxi) be responsible for WM5;
(xxxii) be responsible for SUS7 to SUS10; and
(xxxiii) be responsible for CU1, except that the LW Contractor must:

(A) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that are required to enable the Principal to comply with this condition; and

(B) assist the Principal with and contribute to coordination and consultation where reasonably required by the Principal.

4. THE PRINCIPAL'S OBLIGATIONS IN RESPECT OF PROJECT PLANNING APPROVAL (RAPID TRANSIT RAIL FACILITY)

(a) Terms which have a defined meaning in the Project Planning Approval (Rapid Transit Rail Facility) have the same meaning where used in this section 4.

(b) In relation to the conditions of the Project Planning Approval (Rapid Transit Rail Facility) the Principal will:

(i) be responsible for B6;

(ii) be responsible for B9 and B10;

(iii) be responsible for C1 to C4;

(iv) be responsible for C8 and C9;

(v) be responsible for C13 to C15;

(vi) be responsible for C24;

(vii) be responsible for C27 and C28;

(viii) in relation to D1, submit the Stakeholder and Community Involvement Plan (SCIP) to the Director General. The LW Contractor must prepare a SCIP in accordance with condition D1 and provide the SCIP to the Principal in a timely manner to enable the Principal to submit the SCIP to the Director General;

(ix) be responsible for D2;

(x) be responsible for D3, except that the LW Contractor must:

(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities that are required to prepare the Complaints Management System and maintain a complaints register; and

(B) implement the Complaints Management System;

(xi) be responsible for D4, except that the LW Contractor must:

(A) establish and maintain a new website, or dedicated pages within an existing website, and comply with condition D4 in relation to the LW Contractor's Activities;

(B) comply with D4(d) and D4(e);

(C) comply with level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0); and
(D) provide TfNSW with all information, documents, details and data relating to the LW Contractor's Activities that are required for the Principal to comply with condition D4;

(xii) be responsible for D5, except that the LW Contractor must:
(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities to enable the Principal to comply with this condition; and
(B) participate in any activities necessary under the Compliance Tracking Program;

(xiii) be responsible for D6, except that the LW Contractor must immediately advise the Principal of any incident requiring notification, and promptly provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities to enable the Principal to comply with these conditions;

(xiv) be responsible for E21, except that:
(A) the LW Contractor must provide a representative to attend relevant meetings of the Traffic and Transport Liaison Group(s);
(B) the LW Contractor must provide all relevant information, documents, details and data relating to the LW Contractor's Activities to the Traffic and Transport Liaison Group(s);
(C) the LW Contractor must consult with the Traffic and Transport Liaison Group(s) in preparing the Construction Traffic Management Plans; and
(D) the LW Contractor must implement and comply with any traffic and transport management measures;

(xv) be responsible for E27, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor Activities that could relate to the approved Environmental Representative's functions and obligations under condition E27;

(xvi) in relation to E28, submit the endorsed CEMP to the Director General only. The LW Contractor must provide the CEMP, including the ER's endorsement, to the Principal in a timely manner to enable the Principal to comply with this condition;

(xvi) be responsible for E29, only to the extent of (a), (d), (e), (f) and (g); and

(xviii) be responsible for F5 to F7.

(c) In relation to the Mitigation Measures (Rapid Transit Facility) the Principal will:
(i) be responsible for SG15;
(ii) be responsible for SG17, SG19 and SG26;
(iii) be responsible for OpSG2;
(iv) be responsible for T12, except that:
(A) the LW Contractor must provide all relevant information, documents, details and data relating to the LW Contractor's Activities to the Traffic and Transport Liaison Group(s);

(B) the LW Contractor must implement and comply with any "short term adjustment to the construction phase activities and/or updates to the Traffic Management Plan(s) made by the Traffic and Transport Liaison Group(s) under T12;

(v) be responsible for T36;

(vi) be responsible for OpT6 and OpT7;

(vii) be responsible for OpNV10 and OpNV14;

(viii) be responsible for SW45;

(ix) be responsible for OpSW4;

(x) be responsible for OpSW11;

(xi) be responsible for OpSW16;

(xii) be responsible for OpEH2;

(xiii) be responsible for E15;

(xiv) be responsible for OpE2 and OpE6;

(xv) be responsible for IH4 and IH7;

(xvi) be responsible for LC1;

(xvii) be responsible for OpGHG1 and OpGHG5;

(xviii) be responsible for A7 to A19;

(xix) be responsible for A21;

(xx) be responsible for OpA1;

(xx) be responsible for OpA3b;

(xxii) be responsible for OpW1; and

(xxiii) be responsible for OpDG1.

5. THE PRINCIPAL'S OBLIGATIONS IN RESPECT OF PROJECT PLANNING APPROVAL (SYDENHAM TO BANKSTOWN)

(a) Terms that have a defined meaning in the Project Planning Approval (Sydenham to Bankstown) have the same meaning where used in this section 5.

(b) In relation to the conditions in schedule 2 of the Project Planning Approval (Sydenham to Bankstown) the Principal will:

(i) be responsible for A7;

(ii) in relation to A9, submit the information or document provided by the LW Contractor, to the Planning Secretary. The LW Contractor must undertake all
activities necessary to comply with this condition (except submission to the Planning Secretary) and provide the information or document to the Principal;

(iii) be responsible for A10 and A11;

(iv) be responsible for A12 to A15, except that:
(A) the LW Contractor must inform the Principal if staging of deliverables is required in addition to that identified in the Staging Report; and
(B) the LW Contractor must carry out the LW Contractor's Activities in accordance with the Staging Report;

(v) in relation to A17, submit the information and documents provided by the LW Contractor, to the Planning Secretary. The LW Contractor must undertake all activities necessary to comply with this condition (except submission to the Planning Secretary) and provide the information and documents to the Principal;

(vi) in relation to A22 to A25, engage, nominate, and seek approval from the Planning Secretary of a suitably qualified and experienced Environmental Representative (ER). The Principal will be the single point of contact with the Planning Secretary and will provide the LW Contractor with the date the submission for approval is made, and will notify the LW Contractor when the approval of the Planning Secretary is given or notify the LW Contractor of any other timeframe relevant to these conditions;

(vii) be responsible for A26, except that the LW Contractor must:
(A) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that could relate to the approved ER's functions and obligations under condition A26; and
(B) facilitate any actions necessary for the ER to carry out its functions and obligations under condition A26;

(viii) be responsible for A28, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that are relevant to the Planning Secretary's audit under condition A28;

(ix) be responsible for A29 to A32, except that the LW Contractor must:
(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities to enable the Principal to comply with this condition; and
(B) participate in any activities necessary under the Compliance Monitoring and Reporting Program;

(x) be responsible for A33;

(xi) be responsible for A34 and A35, except that the LW Contractor must:
(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor's Activities to enable the Principal to comply with conditions A34 and A35;
(B) participate in any activities necessary under the Independent Audit Program; and

(C) provide reasonable assistance required to enable the independent audits to be carried out.

The Principal will submit the Independent Audit Program to the Secretary and advise the LW Contractor of the date of submission or any other timeframe relevant to conditions A33, A34 and A35;

(xii) be responsible for A36 and A37, except that the LW Contractor must immediately advise the Principal of any incident and promptly provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities to enable the Principal to comply with conditions A36 and A37;

(xiii) be responsible for B1 to B4, to the extent that the Principal will prepare and submit for approval only an overarching Community Communication Strategy. The LW Contractor must prepare its own Community Communication Strategy in relation to the LW Contractor’s Activities in accordance with condition B3 and consistent with the Principal’s overarching Community Communication Strategy. The LW Contractor’s Community Communication Strategy must be prepared and provided to the Principal within a sufficient timeframe for the Principal to review and submit the LW Contractor’s Community Communication Strategy to the Planning Secretary for approval at least one month before the commencement of any Work (as defined in the Project Planning Approval (Sydenham to Bankstown)). The Principal will submit the LW Contractor’s Community Communication Strategy to the Planning Secretary for approval and advise the Contractor when the approval of the Planning Secretary is given;

(xiv) be responsible for B5 and B6, except that the LW Contractor must:

(A) provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities that are required to prepare the Complaints Management System;

(B) implement the Complaints Management System; and

(C) provide reasonable assistance required to enable the mediation system to be implemented.

(xv) be responsible for B7, except that the LW Contractor must ensure that the telephone number, postal address, website URL and email address required under condition B6 is placed on site hoarding at each Construction site before commencement of Construction (as defined in the Project Planning Approval (Sydenham to Bankstown)) in accordance with this condition B7;

(xvi) be responsible for B8 and B9, except that the LW Contractor must provide the Principal with all the information, documents, details and data relating to the LW Contractor’s Activities that are required to maintain a Complaints Register;

(xvii) be responsible for B10 to B13, except that the LW Contractor must:

(A) provide the Principal and the Community Complaints Mediator with all information, documents, details and data relating to the LW Contractor’s Activities in order for the Community Complaints Mediator to perform its functions; and
be responsible for B14, except that the LW Contractor must:

(A) establish and maintain a new website, or dedicated pages within an existing website, and comply with condition B14 in relation to the LW Contractor's Activities;

(B) agree with the Principal on the extent of documentation to be posted on the LW Contractor's website considering privacy and confidentiality in relation to information, documents, details and data provided by the LW Contractor;

(C) comply with level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0); and

(D) provide the Principal with all information, documents, details and data relating to the LW Contractor's Activities that are required for the Principal to comply with condition B14;

(xix) in relation to C2, submit the endorsed CEMP to the Planning Secretary. The LW Contractor must prepare and provide a copy of the CEMP, including the ER's endorsement, to the Principal in a timely manner to enable the Principal to submit the CEMP to the Planning Secretary within the timeframe required in condition C2;

(xx) in relation to C7, notify the LW Contractor when the approval of the Planning Secretary is given;

(xx) in relation to C11, notify the LW Contractor of the date the Construction Monitoring Programs have been submitted to the Secretary. The LW Contractor must prepare and provide a copy of the Construction Monitoring Programs, including the ER's endorsement, to the Principal in a timely manner to enable the Principal to submit the Construction Monitoring Programs to the Planning Secretary within the timeframe required by condition C11;

(xxii) in relation to C14, submit the Construction Monitoring Reports to the Planning Secretary. The LW Contractor must provide the Construction Monitoring Reports to the Principal in a timely manner to enable the Principal to comply with its retained obligation;

(xxiii) be responsible for D1 to D5;

(xxiv) be responsible for E1, except that the LW Contractor must, provide protection of physical and operational Sydney Trains assets and services during construction;

(xxv) be responsible for E5, except that the LW Contractor must produce a Tree Report for trees impacted or removed by the LW Contractor's Activities and make provision for their replacement in accordance with Condition E6. The LW Contractor must provide the Tree Report to the Principal in a timely manner to enable the Principal to submit it to the Planning Secretary in accordance with condition E5;

(xxvi) in relation to E7, submit the report, which details the type, size, number and location of replacement trees, to the Planning Secretary. The LW Contractor must prepare and provide such report in relation to replacement trees for
those trees impacted or removed by the LW Contractor's Activities, to the
Principal in a timely manner to enable the Principal to submit the report to
the Planning Secretary before Operation;

(xxxvii) be responsible for E12 and E13, except that the LW Contractor will provide
all reasonable assistance to the relevant Interface Contractor required to
prepare and submit (or, if the Principal is responsible for submission,
provide such assistance to the Principal) the Heritage Report, the Excavation
Director's report and the Heritage Interpretation Strategy to the Planning
Secretary. The LW Contractor must comply with any such report or strategy
approved by the Planning Secretary;

(xxxviii) be responsible for E16, only to the extent of submitting the Unexpected
Heritage Finds and Human Remains Procedure to the Planning Secretary.
The LW Contractor must prepare and provide the Unexpected Heritage Finds
and Human Remains Procedure to the Principal in a timely manner to enable
the Principal to comply with its retained obligation;

(xxxix) be responsible for E25 only to the extent of preparing and submitting the
Out-of-Hours Work Protocol to the Planning Secretary for approval. The LW
Contractor must implement and comply with the approved Out—of-Hours
Work Protocol and provide the Principal with all information, documents,
details and data relating to the LW Contractor's Activities that are required
for the Principal to prepare the Out-of-Hours Work Protocol;

(xx) be responsible for E31 and E32;

(xxi) be responsible for E33, except that the LW Contractor must provide the
Principal with all information, documents, details and data relating to the LW
Contractor's Activities that are required for the Principal to comply with this
condition;

(xxii) be responsible for E34;

(xxiii) be responsible for E35 to the extent of establishing an Independent
Property Assessment Panel. The LW Contractor must:

(A) provide the Principal and the Independent Property Assessment Panel
with all information, documents, details and data relating to the LW
Contractor's Activities in order for the Independent Property
Assessment Panel to perform its functions; and

(B) co-operate with, comply with and respond to the reasonable requests
and requirements of the Independent Property Assessment Panel;

(xxiv) be responsible for E37, except in relation to items referred to in E37(a),
(b), (c) and (e). The LW Contractor must provide the Principal with all
information, documents, details and data relating to Contractor's Activities
for items referred to in E37(d) and (f);

(xxxv) be responsible for E43, except that the LW Contractor must:

(A) provide the Principal with all information, documents, details and data
relating to the LW Contractor's Activities in order for the Principal to
prepare and implement the Sustainability Strategy; and

(B) implement the Sustainability Strategy referred to in condition E43 to
the extent it relates to the LW Contractor's Activities. The
Sustainability Strategy is contained in Attachment 7 to this Schedule E3;

(xxxvi) be responsible for E44, only to the extent of reviewing, updating and implementing the sustainability initiatives identified under condition E44 annually during Operation;

(xxxvii) be responsible for E45;

(xxxviii) be responsible for E46, except that the LW Contractor must:

(A) provide a representative to attend relevant meetings of the Traffic and Transport Liaison Group(s);

(B) provide all relevant information, documents, details and data relating to the LW Contractor's Activities to the Traffic and Transport Liaison Group(s);

(C) consult with the Traffic and Transport Liaison Group(s) in preparing the Construction Traffic Management Plans; and

(D) implement and comply with any traffic and transport management measures;

(xxxix) be responsible for E47, only to the extent of submitting the Construction Traffic Management Plans to the Planning Secretary. The LW Contractor must prepare and provide the Construction Traffic Management Plans to the Principal in a timely manner to enable the Principal to comply with its retained obligation;

(xl) be responsible for E53;

(xli) be responsible for E55;

(xlii) be responsible for E66 and E67, only to the extent of submitting the Station Design and Precinct Plans to the Planning Secretary for approval. The LW Contractor must prepare the Station Design and Precinct Plans, carry out consultation, seek review by the Design Review Panel where required, respond to the outcomes of the Design Review Panel review where required and provide the Station Design and Precinct Plans to the Principal in a timely manner to enable the Principal to comply with its retained obligation; and

(xliii) be responsible for E71, only to the extent of submitting the Utilities Management Strategy to the Planning Secretary for approval. The LW Contractor must prepare and provide the Utilities Management Strategy to the Principal in a timely manner to enable the Principal to comply with its retained obligation. The LW Contractor must also implement the Utilities Management Strategy; and

(xlivi) be responsible for E72, only to the extent of appointing a Utility Coordination Manager. The LW Contractor must:

(A) provide all relevant information, documents, details and data relating to the LW Contractor's Activities to the Utility Coordination Manager to enable the Utility Coordination Manager to carry out its functions; and

(B) co-operate with, and respond to the reasonable requests and requirements of, the Community Complaints Mediator.
(c) In relation to the Revised Environmental Mitigation Measures the Principal will:

(i) Be responsible for TC1 and TC2;

(ii) be responsible for TC6, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to comply with this measure;

(iii) be responsible for TO1 and TO2;

(iv) be responsible for TC9;

(v) be responsible for TO3 to TO5;

(vi) be responsible for NVC15 except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to comply with this measure;

(vii) be responsible for NVC16, except that the LW Contractor must provide the Principal with all information, documents, details and data relating to the LW Contractor’s Activities that are required to enable the Principal to prepare an Out of hours Work Strategy, and the LW Contractor must implement and comply with the Out of Hours Work Strategy;

(viii) be responsible for LU1 to LU3;

(ix) be responsible for BI2;

(x) be responsible for LV2;

(xi) be responsible for FHW11;

(xii) be responsible for SCC9 to SCC12; and

(xiii) be responsible for CI1, but only to the extent of being the single point of contact with the Department of Planning and Environment if consultation is required with the Department of Planning and Environment in order to coordinate the interface with projects under construction.
Chatswood to Sydenham
CONSTRUCTION NOISE AND VIBRATION STRATEGY
Sydney Metro City & Southwest
Construction Noise and Vibration Strategy

Report No 610.14213 R3

Sydney Metro Integrated Management System (IMS)

<table>
<thead>
<tr>
<th>Applicable to:</th>
<th>Sydney Metro City &amp; Southwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author:</td>
<td>Mark Russell Associate Consultant SLR Consulting Australia Pty Ltd</td>
</tr>
<tr>
<td>System owner:</td>
<td>Transport for NSW</td>
</tr>
<tr>
<td>Status:</td>
<td>Final</td>
</tr>
<tr>
<td>Version:</td>
<td>0.4</td>
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</tbody>
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1. FOREWORD

The Department of Environment, Climate Change and Water NSW (now the Environmental Protection Authority EPA) issued the Interim Construction Noise Guideline (ICNG) in July 2009.

The main objectives of the ICNG are stated in Section 1.3, a portion of which is presented below:

“The main objectives of the Guideline are to:

• promote a clear understanding of ways to identify and minimise noise from construction works
• focus on applying all ‘feasible’ and ‘reasonable’ work practices to minimise construction noise impacts
• encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours
• streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage
• provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.”

The ICNG guideline (in Section 7.3) also encourages organisations involved with construction, maintenance or upgrading works (such as Sydney Metro) to develop their own best-practice techniques for managing construction noise.

In line with this recommendation the purpose of this ‘Construction Noise and Vibration Strategy’ is to document how Sydney Metro proposes to manage construction noise and vibration for the Sydney Metro and SouthWest project including any potential extensions.

2. PURPOSE AND SCOPE

2.1. Background

People are usually more tolerant to noise and vibration during the construction phase of proposals than during normal operation. This response results from recognition that the construction emissions are of a temporary nature – especially if the most noise-intensive construction impacts occur during the less sensitive daytime period. For these reasons, acceptable noise and vibration levels are normally higher during construction than during operations.

Construction often requires the use of heavy machinery which can generate high noise and vibration levels at nearby buildings and receivers. For some equipment, there is limited opportunity to mitigate the noise and vibration levels in a cost-effective manner and hence the potential impacts would be minimised by using feasible and reasonable management techniques.

At any particular location, the potential impacts can vary greatly depending on factors such as the relative proximity of sensitive receivers, the overall duration of the construction works, the intensity of the noise and vibration levels, the time at which the construction works are undertaken and the character of the noise or vibration emissions.
The construction noise and vibration emissions associated with a large infrastructure project such as Sydney Metro will cause disturbance to adjacent communities. This is of particular relevance in urban areas, such as in the Sydney CBD, where many sensitive receivers (not just residential) are present.

Due to the nature of this large infrastructure project a significant number of activities will be required outside normal construction hours as work during daytime periods would be highly disruptive to road traffic for commuters. In addition, noise and vibration impacts for this project are generally expected to have a duration of several years. It is therefore important that reasonable and feasible mitigation measures (as defined in the ICNG) are identified and implemented to ensure that construction noise and vibration impacts are reduced to a minimum.

2.2. **Strategy Objectives**

Generally the strategy is intended to provide a single interface for the large number of policies, guidelines, standards and regulations that apply to a large infrastructure project such as Sydney Metro. Where possible the strategy consolidates these information sources e.g. vibration criteria from numerous sources are collated into one section of this strategy for ease of reference. Further, the strategy aims to provide interpretation of the reference documents which are specific to the Metro project. Where the reference documents are found to have insufficient detail the strategy provides additional assessment criteria and methodologies.

The specific objectives of this Construction Noise and Vibration Strategy are as follows:

- Applying the strategy during the different construction phases of the project
- Environmental Protection Licence (EPL) conditions
- Construction noise and vibration guidelines to apply to the project (additional guidance to complement the ICNG)
- Construction noise and vibration assessment methodology
- Standard noise and vibration mitigation measures for the project
- Additional noise and vibration mitigation measures for the project
- Out of hours (OOH) Work
- Monitoring, auditing and reporting
- Construction noise and vibration documentation requirements

2.3. **Distribution and Use**

This document may be used in the development of, or referred to in:

- Environmental impact assessment documents
- Design and construction environmental management documents
- Contract documents
- Approvals and licences (subject to the agreement of the relevant regulatory authority)
2.4. Strategy Review

The strategy will be reviewed, as a minimum, annually to ensure that it meets the needs of the community, Sydney Metro and the contractors engaged on Sydney Metro projects. This document does not take precedence over approval or licence conditions and will be reviewed as required in response to the release of relevant approvals, licences, guidelines, standards and policies dealing with construction noise and vibration.

3. APPLYING THE STRATEGY

The planning procedure for all infrastructure projects requires that a detailed Environmental Assessment of the construction phases of the proposal be completed. As construction contractors are not typically appointed until much later in a project's timeline, the exact construction methodology they will use for a particular project may not be known during the environmental assessment stage.

It is expected that conservative assumptions would be incorporated at early stages of the project approval process and these must not unduly restrict innovation (e.g. construction methods or mitigation) at later design stages. This reflects the refinement of construction methodologies with subsequent stages of the project.

This document therefore defines the strategies by which construction noise and vibration impacts are to be minimised on Sydney Metro projects throughout the construction of a project by recognising the changing assessment requirements for each construction phase.

Table 1 outlines the level of detail expected from the assessment process (refer to Section 7) at the following stages of the project:

- Environmental Impact Statement / Environmental Assessment
- In delivery / pre-construction impact statements

Table 1: Summary of Assessment Detail Required During the Various Stages of the Project

<table>
<thead>
<tr>
<th>Assessment Input</th>
<th>Environmental Impact Statement / Environmental Assessment</th>
<th>In Delivery / Pre construction Impact Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Scenarios / Equipment List</td>
<td>Construction scenarios defined by project team, based on potential construction methodologies known at the time</td>
<td>Construction scenarios defined by construction team. These are expected to include finalised equipment lists, itemising the realistic worst-case plant proposed to be used at any one time, and in any one location</td>
</tr>
<tr>
<td>Modelled works location</td>
<td>Works location by scenario (or group of scenarios) i.e. different locations for different works</td>
<td>Works location by works scenario i.e. specific locations for each works</td>
</tr>
<tr>
<td>Background noise monitoring</td>
<td>Background noise monitoring required to determine RBL at locations representative of worst-affected receiver areas adjacent to the works areas</td>
<td>Supplementary noise monitoring required to determine RBL at locations representative of worst-affected receiver areas adjacent to the works areas where noise survey data is not current (i.e. more than 5 years old)</td>
</tr>
<tr>
<td>Study Area</td>
<td>The study area must, as a minimum, include receivers subjected to predicted $L_{Aeq}(15\text{minute}) \geq RBL +5\text{dB}$ for the applicable time period. Vibration level predictions up to 100 m</td>
<td>Predict noise and vibration levels to the sensitive receivers within the area surrounding the works, to include all receivers where the $L_{Aeq}(15\text{minute}) \geq RBL +5\text{dB}$ and the vibration screening criteria are exceeded during the applicable time periods.</td>
</tr>
<tr>
<td>Assessment Input</td>
<td>Environmental Impact Statement / Environmental Assessment</td>
<td>In Delivery / Pre construction Impact Statements</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Reporting</td>
<td>n/a</td>
<td>Predictions would be undertaken for the proposed time period of the works</td>
</tr>
<tr>
<td>Assessment of mitigation</td>
<td>Demonstration that assessment of this stage includes reasonable and feasible mitigation measures</td>
<td>Based on these predictions the Construction Noise Management Plan (CNMP) shall identify all reasonable and feasible mitigation measures to minimise noise and vibration from construction. Sections 7 and 8 identify the standard and additional mitigation measures to be included where applicable in the CNMP. Eg. Detailed vibration assessments to include dilapidation surveys, continuous vibration monitoring and accurate vibration transfer measurements (site law measurements) for all buildings with the potential to exceed the screening criteria for vibration.</td>
</tr>
<tr>
<td>Documentation</td>
<td>n/a</td>
<td>Implementation of the EPL conditions, or as modified by subsequent CNVIS (e.g. for OOHW)</td>
</tr>
</tbody>
</table>
4. ENVIRONMENTAL PROTECTION LICENCES (EPL)

Environmental Protection Licences are a fundamental noise control requirement for large infrastructure projects. These licences often provide detailed construction noise and vibration criteria and management measures that are tailored to the specifics of individual projects. To use this strategy effectively the time-line of assessments, approvals and licences would be understood and the necessary interaction of this strategy, the CNIS reports it generates and the EPL issued for the project.

4.1. Time-line of Assessments, Approvals and the EPL

The general time-line for this process with respect to noise and vibration from construction activities is outlined below:

1. Project concept. Preliminary high-level CNIS and CNMP reports.
2. Department of Planning Issues the Conditions of Approval for the project.
3. Environmental Impact Statement (EIS). Preliminary but more detailed CNIS and CNMP reports based on a complete concept design.
4. Project Approval from the Department of Planning.
5. Contactor Tender and Award.
7. Contactor application for Environmental Protection License for the project.
8. Licence award by the Environmental Protection Agency EPL.
10. Ongoing of review of construction methodology and project noise and vibration issues.
11. Re-assess CNIS and CNMP based on new inputs (if necessary).
12. Consistency Assessment
13. Contactor application for amendments to the EPL.
14. Approval of the amendments to the EPL.

As can been seen from the above time-line this Strategy is used through the planning, approval and construction stages. Steps 10 through to 14 can be repeated to review and add to the EPL conditions, if necessary, during the construction stage.

5. NOISE AND VIBRATION GUIDELINES

5.1. Construction Noise Metrics

The three primary noise metrics used to describe construction noise emissions in the modelling and assessments are:

- $L_{A1(1\text{minute})}$: The typical 'maximum noise level for an event', used in the assessment of potential sleep disturbance during night-time periods. Alternatively, assessment may be conducted using the $L_{A\text{max}}$ or maximum noise level.

- $L_{A\text{eq}(15\text{minute})}$: The 'energy average noise level' evaluated over a 15-minute period. This parameter is used to assess the potential construction noise impacts.
The 'background noise level' in the absence of construction activities. This parameter represents the average minimum noise level during the daytime, evening and night-time periods respectively. The \( \text{LAeq}(15\text{minute}) \) construction noise management levels are based on the \( \text{LA}_{90} \) background noise levels.

The subscript 'A' indicates that the noise levels are filtered to match normal hearing characteristics (A weighted).

5.2. Construction Hours

Where possible, works will be completed during the standard day time construction hours of Monday to Friday 7.00 am to 6.00 pm and Saturdays 8.00 am to 1.00 pm. However, the nature of the project means evening and night work are required throughout the construction program. Many of the construction scenarios for this project will require 24/7 operation. These scenarios include:

- Excavation of station shafts
- Excavation of the station caverns
- Operation of the tunnel boring machines
- Spoil removal and transport from site

Out of Hours Works (OOHWs) are to be included in the assessment for all proposed works at all locations in order to inform the scheduling of construction activity and management of noise during the detailed design phase. It is anticipated that the finalised requirements for OOHWs would be determined at a later design stage. It is understood that any OOHWs would be subject to a separate approval on a case-by-case basis and would likely require approval under the project's Environmental Protection Licence (EPL).

5.3. Construction Noise Management Levels (NML)

Construction Noise Management Levels (NML) for all Sydney Metro projects will be determined in accordance with the procedures nominated in the DECCW's "Interim Construction Noise Guideline" dated July 2009 (ICNG, 2009). The following information is intended to supplement the ICNG with respect to the unique requirements of the Metro project.

5.3.1. Residences and Other Sensitive Land Uses

Table 2 sets out the noise management levels and how they are to be applied. This approach intends to provide respite for residents exposed to excessive construction noise outside the recommended standard hours whilst allowing construction during the recommended standard hours without undue constraints.

Table 2 the rating background level (RBL) is used when determining the management level. The RBL is the overall single-figure background noise level measured in each relevant assessment period (as defined in the EPA "Industrial Noise Policy" dated January 2000).
Table 2: Noise at Residences Using Quantitative

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Management Level</th>
<th>How to Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended standard hours:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monday to Friday 7.00 am to 6.00 pm</td>
<td>Noise affected RBL + 10 dB</td>
<td>The noise affected level represents the point above which there may be some community reaction to noise.</td>
</tr>
<tr>
<td>Saturday 8.00 am to 1.00 pm</td>
<td>Highly noise affected 75 dB</td>
<td>The highly noise affected level represents the point above which there may be strong community reaction to noise.</td>
</tr>
<tr>
<td>No work on Sundays or public holidays</td>
<td></td>
<td>If no quieter work method is feasible and reasonable, and the works proceed, the proponent would communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.</td>
</tr>
<tr>
<td>Outside recommended standard hours</td>
<td>Noise affected RBL + 5 dB</td>
<td>A strong justification would typically be required for works outside the recommended standard hours.</td>
</tr>
</tbody>
</table>

Note 1: Adopted from the ICNG.

Note 2: Noise levels apply at the property boundary that is most exposed to construction noise. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence.

Table 3 presents management levels for noise at other sensitive land uses based on the principle that the characteristic activities for each of these land uses would not be unduly disturbed. The noise management levels apply only to when the property is being used, for example classrooms during school hours. Internal noise levels are to be assessed at the centre of the occupied room. External noise levels are to be assessed at the most-affected point within 50 m of the area boundary.
Table 3: Noise at Other Sensitive Land Uses Using Quantitative Assessment

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Management Level, LAeq(15minute) (Applies When Land Use is being Utilised)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms at schools and other educational institutions</td>
<td>Internal noise level 45 dB</td>
</tr>
<tr>
<td>Hospital wards and operating theatres</td>
<td>Internal noise level 45 dB</td>
</tr>
<tr>
<td>Places of worship</td>
<td>Internal noise level 45 dB</td>
</tr>
<tr>
<td>Active recreation areas (such as parks and sports grounds or playgrounds)</td>
<td>External noise level 65 dB</td>
</tr>
<tr>
<td>Passive recreation areas (such as outdoor grounds used for teaching, outdoor cafes or restaurants)</td>
<td>External noise level 60 dB</td>
</tr>
</tbody>
</table>

Note 1: Adopted from the ICNG.

Other noise-sensitive businesses require separate specific noise goals and it is suggested in the ICNG that the internal construction noise levels at these premises are to be referenced to the 'maximum' internal levels presented in AS 2107. Recommended 'maximum' internal noise levels from AS 2107 are reproduced in Table 4 for other sensitive receiver types.

However, the ICNG and AS 2107 do not provide specific criteria for childcare centres. Childcare centres generally have internal play areas and sleep areas. The Association of Australian Acoustical Consultants (AAAC) Technical Guideline on Child Care Centre Noise Assessments provides criteria for these land uses. Based on this guideline an LAeq (1hour) of 55 dBA for external play areas and LAeq (1hour) of 40 dBA for indoor play areas and sleeping areas would be adopted.

Table 4 AS 2107 Recommended Maximum Internal Noise Levels

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Time Period</th>
<th>AS 2107 Classification</th>
<th>Recommended Maximum Internal LAeq (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>Daytime &amp; Evening</td>
<td>Bars and Lounges</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Night-time</td>
<td>Sleeping Areas: Hotels near major roads</td>
<td>40</td>
</tr>
<tr>
<td>Café</td>
<td>When in use</td>
<td>Coffee bar</td>
<td>50</td>
</tr>
<tr>
<td>Bar/Restaurant</td>
<td>When in use</td>
<td>Bars and Lounges / Restaurant</td>
<td>50</td>
</tr>
<tr>
<td>Library</td>
<td>When in use</td>
<td>Reading Areas</td>
<td>45</td>
</tr>
<tr>
<td>Recording Studio</td>
<td>When in use</td>
<td>Music Recording Studios</td>
<td>25</td>
</tr>
<tr>
<td>Theatre / Auditorium</td>
<td>When in use</td>
<td>Drama Theatres</td>
<td>30</td>
</tr>
</tbody>
</table>
5.3.2. Commercial and Industrial Premises

Due to the broad range of sensitivities that commercial or industrial land can have to noise from construction, the process of defining management levels is separated into three categories. The external noise levels would be assessed at the most-affected occupied point of the premises:

- **Industrial premises (external):** 75 dB $\text{LA}_{eq}(15\text{minute})$
- **Offices, retail outlets (external):** 70 dB $\text{LA}_{eq}(15\text{minute})$
- **Other businesses that may be very sensitive to noise, where the noise level is project specific as discussed below**

Examples of other noise-sensitive businesses are theatres, studios and child care centres. The proponent would undertake a special investigation to determine suitable noise levels on a project-by-project basis; the recommended internal noise levels presented in Table 1 of AS 2107 “Acoustics - Recommended design sound levels and reverberation times for building interiors” (Standards Australia 2000) may assist in determining relevant noise levels; however, an acoustical consultant would be engaged in order to determine corresponding external noise levels based on the published internal noise levels. The proponent would assess construction noise levels for the project, and consult with occupants of commercial and industrial premises prior to lodging an application where required. During construction, the proponent would regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

5.4. Ground-Borne Vibration

The effects of vibration in buildings can be divided into three main categories; those in which the occupants or users of the building are inconvenienced or possibly disturbed, those where the building contents may be affected and those in which the integrity of the building or the structure itself may be prejudiced.

5.4.1. Human Comfort Vibration


British Standard 6472-1992 “Guide to evaluation of human exposure to vibration in building” nominates guideline values for various categories of disturbance, the most stringent of which are the levels of building vibration associated with a “low probability of adverse comment” from occupants.

BS 6472-1992 provides guideline values for continuous, transient and intermittent events that are based on a Vibration Dose Value (VDV), rather than a continuous vibration level. The vibration dose value is dependent upon the level and duration of the short term vibration event, as well as the number of events occurring during the daytime or night-time period.

The vibration dose values recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in Table 5.
Table 5: Vibration Dose Value Ranges which Might Result in Various Probabilities of Adverse Comment within Residential Buildings

<table>
<thead>
<tr>
<th>Place and Time</th>
<th>Low Probability of Adverse Comment (m/s(^{2/3}))</th>
<th>Adverse Comment Possible (m/s(^{2/3}))</th>
<th>Adverse Comment Probable (m/s(^{2/3}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential buildings 16 hr day</td>
<td>0.2 to 0.4</td>
<td>0.4 to 0.8</td>
<td>0.8 to 1.6</td>
</tr>
<tr>
<td>Residential buildings 8 hr night</td>
<td>0.1 to 0.2</td>
<td>0.2 to 0.4</td>
<td>0.4 to 0.8</td>
</tr>
</tbody>
</table>

Note: For offices and workshops, multiplying factors of 2 and 4 respectively would be applied to the above vibration dose value ranges for a 16 hr day.

5.4.2. Structural Damage Vibration

Most commonly specified 'safe' structural vibration limits are designed to minimise the risk of threshold or cosmetic surface cracks, and are set well below the levels that have potential to cause damage to the main structure.

In terms of the most recent relevant vibration damage goals, Australian Standard AS 2187: Part 2-2006 ‘Explosives - Storage and Use - Part 2: Use of Explosives’ recommends the frequency dependent guideline values and assessment methods given in BS 7385 Part 2-1993 ‘Evaluation and measurement for vibration in buildings Part 2’ as they “are applicable to Australian conditions”.

The Standard sets guide values for building vibration based on the lowest vibration levels above which damage has been credibly demonstrated. These levels are judged to give a minimum risk of vibration induced damage, where minimal risk for a named effect is usually taken as a 95% probability of no effect.

Sources of vibration that are considered in the standard include demolition, blasting (carried out during mineral extraction or construction excavation), piling, ground treatments (e.g. compaction), construction equipment, tunnelling, road and rail traffic and industrial machinery.

5.4.3. Cosmetic Damage Vibration

The recommended limits (guide values) for transient vibration to ensure minimal risk of cosmetic damage to residential and industrial buildings are presented numerically in Table 6 and graphically in Figure 1.

Table 6: Transient Vibration Guide Values - Minimal Risk of Cosmetic Damage

<table>
<thead>
<tr>
<th>Line</th>
<th>Type of Building</th>
<th>Peak Component Particle Velocity in Frequency Range of Predominant Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reinforced or framed structures</td>
<td>50 mm/s at 4 Hz and above</td>
</tr>
<tr>
<td></td>
<td>Industrial and heavy commercial buildings</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Unreinforced or light framed structures</td>
<td>15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz</td>
</tr>
<tr>
<td></td>
<td>Residential or light commercial type buildings</td>
<td>20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above</td>
</tr>
</tbody>
</table>
The Standard goes on to state that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 6, and major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the Standard and it is concluded that unless calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the guide values in Table 6 would not be reduced for fatigue considerations.

In order to assess the likelihood of cosmetic damage due to vibration, AS2187 specifies that vibration measured would be undertaken at the base of the building and the highest of the orthogonal vibration components (transverse, longitudinal and vertical directions) would be compared with the guidance curves presented in Figure 1.

It is noteworthy that extra to the guide values nominated in Table 6, the standard states that:

"Some data suggests that the probability of damage tends towards zero at 12.5 mm/s peak component particle velocity. This is not inconsistent with an extensive review of the case history information available in the UK."

Also that:

"A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive."

### 5.5. General Vibration Screening Criterion

The Standard states that the guide values in Table 6 relate predominantly to transient vibration which does not give rise to resonant responses in structures and low-rise buildings.
Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values in Table 6 may need to be reduced by up to 50%.

Note: rock breaking/hammering and sheet piling activities are considered to have the potential to cause dynamic loading in some structures (e.g. residences) and it may therefore be appropriate to reduce the transient values by 50%.

Therefore for most construction activities involving intermittent vibration sources such as rock breakers, piling rigs, vibratory rollers, excavators and the like, the predominant vibration energy occurs at frequencies greater than 4 Hz (and usually in the 10 Hz to 100 Hz range). On this basis, a conservative vibration damage screening level per receiver type is given below:

- Reinforced or framed structures: 25.0 mm/s
- Unreinforced or light framed structures: 7.5 mm/s

At locations where the predicted and/or measured vibration levels are greater than shown above (peak component particle velocity), a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure would be required to determine the applicable safe vibration level.

5.6. Guidelines for Vibration Sensitive and Special Structures

5.6.1. Heritage

Heritage buildings and structures would be assessed as per the screening criteria in Section 5.5 as they should not be assumed to be more sensitive to vibration unless they are found to be structurally unsound. If a heritage building or structure is found to be structurally unsound (following inspection) a more conservative cosmetic damage criteria of 2.5 mm/s peak component particle velocity (from DIN 4150) would be considered.

5.6.2. Sensitive Scientific and Medical Equipment

Some scientific equipment (e.g. electron microscopes and microelectronics manufacturing equipment) can require more stringent objectives than those applicable to human comfort.

Where it has been identified that vibration sensitive scientific and/or medical instruments are likely to be in use inside the premises of an identified vibration sensitive receiver, objectives for the satisfactory operation of the instrument would be sourced from manufacturer's data. Where manufacturer's data is not available, generic vibration criterion (VC) curves as published by the Society of Photo-Optical Instrumentation Engineers (Colin G. Gordon - 28 September 1999) may be adopted as vibration goals. These generic VC curves are presented below in Table 7 and Figure 2.
Table 7: Application and Interpretation of the Generic Vibration Criterion (VC) Curves (as shown in Figure 2)

<table>
<thead>
<tr>
<th>Criterion Curve</th>
<th>Max Level (µm/sec, rms)</th>
<th>Detail Size (microns)</th>
<th>Description of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC-A</td>
<td>50</td>
<td>8</td>
<td>Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.</td>
</tr>
<tr>
<td>VC-B</td>
<td>25</td>
<td>3</td>
<td>An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to 3 micron line widths.</td>
</tr>
<tr>
<td>VC-C</td>
<td>12.5</td>
<td>1</td>
<td>A good standard for most lithography and inspection equipment to 1 micron detail size.</td>
</tr>
<tr>
<td>VC-D</td>
<td>6</td>
<td>0.3</td>
<td>Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability.</td>
</tr>
<tr>
<td>VC-E</td>
<td>3</td>
<td>0.1</td>
<td>A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser-based, small target systems and other systems requiring extraordinary dynamic stability.</td>
</tr>
</tbody>
</table>

Note 1: As measured in one-third octave bands of frequency over the frequency range 8 to 100 Hz.

Note 2: The detail size refers to the line widths for microelectronics fabrication, the particle (cell) size for medical and pharmaceutical research, etc. The values given take into account the observation requirements of many items depend upon the detail size of the process.

Figure 2: Vibration Criterion (VC) Curves
5.6.3. Other Vibration Sensitive Structures and Utilities

Where structures and utilities are encountered which may be considered to be particularly sensitive to vibration, a vibration goal which is more stringent than structural damage goals presented in Section 5.4 may need to be adopted. Examples of such structures and utilities include:

- Tunnels
- Gas pipelines
- Fibre optic cables

Specific vibration goals would be determined on a case-by-case basis. An acoustic consultant would be engaged by the construction contractor and would liaise with the structure or utility’s owner in order to determine acceptable vibration levels.

5.7. Vibration and Overpressure from Blasting

The DECCW’s ICNG recommends that vibration and overpressure from blasting be assessed against the levels presented in the Australian and New Zealand Environment Council’s (ANZECC) Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (ANZECC, 1990).

The criteria set by this standard are targeted at operations that occur for long periods of time such as those at mining sites and hence are targeted at protecting human comfort vibration levels. As a result the vibration levels are conservative and can introduce unnecessary constraints when applied to construction projects which typically occur for much shorter time periods. Recent NSW infrastructure project approvals have recognised the restrictive nature of these blasting criteria when applied to construction projects and have therefore allowed the following vibration and overpressure limits:

- Vibration (PPV): 25 mm/s
- Overpressure: 125 dBL

These upper limits are deemed acceptable where the proponent has a written agreement with the relevant landowner to exceed the criteria and the Secretary has approved the terms of the written agreement. These upper limits to vibration and overpressure are intended to target the protection of building structures from cosmetic damage rather than human comfort criteria as construction works are considered short-term.

5.8. Ground-Borne (Regenerated) Noise

Ground-borne (regenerated) noise is noise generated by vibration transmitted through the ground into a structure. Ground-borne noise caused, for example by underground works such as tunnelling, can be more noticeable than airborne noise. The following ground-borne noise levels for residences are nominated in the ICNG and indicate when management actions would be implemented. These levels recognise the temporary nature of construction and are only applicable when ground-borne noise levels are higher than airborne noise levels.

The ground-borne noise management levels are given below:

- **Day (7.00 am to 6.00pm)**
  - Internal Residential: 45 dB $L_{A_{eq}(15\text{minute})}$
  - Internal Commercial: 50 dB $L_{A_{eq}(15\text{minute})}$
• **Evening (6.00 pm to 10.00 pm)**  
  Internal Residential: 40 dB $L_{Aeq(15\text{minute})}$

• **Night-time (10.00 pm to 7.00 am)**  
  Internal Residential: 35 dB $L_{Aeq(15\text{minute})}$

The daytime criteria are applicable to both residential and commercial receivers, whereas the evening and night-time criteria are only applicable to residential receivers.

The internal noise levels are to be assessed at the centre of the most-affected habitable room. For a limited number of discrete, ongoing ground-borne noise events, such as drilling or rock-hammering, the $L_{Amax}$ noise descriptor using a slow response on the sound level meter may be better than the $L_{Aeq}$ noise descriptor (15 min) in describing the noise impacts. The level of mitigation of ground-borne noise would depend on the extent of impacts and also on the scale and duration of works. Any restriction on the days when construction work is allowed would take into account whether the community:

- Has identified times of day when they are more sensitive to noise (for example Sundays or public holidays).
- Is prepared to accept a longer construction duration in exchange for days of respite.

### 5.9. Traffic Noise Assessment Goals

When trucks and other vehicles are operating within the boundaries of the various construction sites, road vehicle noise contributions are included in the overall predicted $L_{Aeq(15\text{minute})}$ construction site noise emissions. When construction related traffic moves onto the public road network a different noise assessment methodology is appropriate, as vehicle movements would be regarded as ‘additional road traffic’ rather than as part of the construction site.

The ICNG does not provide specific guidance in relation to acceptable noise levels associated with construction traffic. For assessment purposes, guidance is taken from the RNP.

One of the objectives of the RNP is to apply relevant permissible noise increase criteria to protect sensitive receivers against excessive decreases in amenity as the result of a proposal. In assessing feasible and reasonable mitigation measures, an increase of up to 2 dB represents a minor impact that is considered barely perceptible to the average person.

On this basis, construction traffic NMLs set at 2 dB above the existing road traffic noise levels during the daytime and night-time periods are considered appropriate to identify the onset of potential noise impacts. Where the road traffic noise levels are predicted to increase by more than 2 dB as a result of construction traffic, consideration would be given to applying feasible and reasonable noise mitigation measures to reduce the potential noise impacts and preserve acoustic amenity.

In considering feasible and reasonable mitigation measures where the relevant noise increase is greater than 2 dB, consideration would also be given to the actual noise levels associated with construction traffic and whether or not these levels comply with the following road traffic noise criteria in the RNP:

- 60 dB $L_{Aeq(15\text{hour})}$ day and 55 dB $L_{Aeq(1\text{hour})}$ night for existing freeway/ arterial/ sub-arterial roads.
- 55 dB $L_{Aeq(1\text{hour})}$ day and 50 dB $L_{Aeq(1\text{hour})}$ night for existing local roads.
5.9.1. Sleep Disturbance and Maximum Noise Events

In addition to the current legislative guidance on potential sleep disturbance outlined in Section 5.10 the RNP refers to Practice Note 3 of the ENMM for specific impacts from road traffic. The ENMM recommends an evaluation of the number and distribution of night-time pass by events where the $L_{A_{\text{max}}}$ - $L_{A_{eq}(1\text{hour})}$ difference is greater than 15 dB, and the maximum noise level of that event is greater than 65 dB $L_{A_{\text{max}}}$.

On the basis of the current guidance:

- External sleep disturbance screening criterion of RBL + 15 dB
- External sleep disturbance criterion of 65 dB $L_{A_{\text{max}}}$ (assuming open windows).

5.10. Sleep Disturbance and Maximum Noise Level Events

The DECCW’s ECRTN and the Road and Traffic Authority’s (RTA’s) ‘Environmental Noise Management Manual’ (ENMM) provide guidance as to the likelihood of sleep disturbance resulting from maximum noise level events (mainly associated with heavy vehicle movements). The ECRTN points out the following:

“There are no universally accepted criteria governing the likelihood of sleep disturbance. In other words, at the current level of understanding, it is not possible to establish absolute noise levels that correlate to levels of sleep disturbance (for all or even a majority of people).”

Notwithstanding the ECRTN/ENMM suggests that:

- Maximum internal noise levels below 50 dB to 55 dB $L_{A_{\text{max}}}$ are unlikely to cause awakening reactions.
- One or two events per night, with maximum internal noise levels of 65 dB to 70 dB $L_{A_{\text{max}}}$, are not likely to affect health and wellbeing significantly.
- At locations where road traffic is continuous rather than intermittent, the $L_{A_{eq}(9\text{hour})}$ target noise level should sufficiently account for sleep disturbance impacts.
- Where the emergence of $L_{A_{\text{max}}}$ noise levels over the ambient $L_{A_{eq}}$ noise level is greater than 15 dB, the $L_{A_{eq}}$ criterion may not sufficiently account for sleep disturbance impacts.

A maximum noise event can be defined as any pass by for which the difference in the $L_{A_{\text{max}}}$ and $L_{A_{eq}(1\text{hour})}$ noise levels is greater than 15 dB. Furthermore, the ECRTN recommends that the assessment of sleep disturbance should include a consideration of the maximum noise level exceedances occurring during the night-time period and the emergence of these exceedances above the ambient noise level.

6. CONSTRUCTION NOISE & VIBRATION ASSESSMENT METHODOLOGY

6.1. Overview

Program and site constraints require that 24 hour working would most likely be required at all metro construction sites for a significant proportion of the total construction period. In particular, noisy activities such as:

- Excavation of tunnel and station caverns by Tunnel Boring Machines (TBMs) and road headers would be required over a 24 hour day, 6 days a week. Note that TBMs typically require routine maintenance of equipment on the 7th day.
• Bulk excavation of station entry and ventilation shafts by rock breaker / blasting (or equivalent methodology), raise boring, line drilling and milling head would be required 24 hours a day for 7 days a week.

• Truck movements would be required 24 hours a day for 7 days a week.

6.2. Expected Construction Activities

Table 8 presents the construction activities which are likely to be undertaken during the construction of all Sydney Metro projects, together with typical plant and equipment required to execute each activity.

Table 8: Construction Activities and Typical Plant and Equipment

<table>
<thead>
<tr>
<th>Activity</th>
<th>Significant Noise and Vibration Generating Plant and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition</td>
<td>Excavator, Dump Trucks, Rock breaker, Jackhammer</td>
</tr>
<tr>
<td>General Earthworks and site establishment</td>
<td>Excavator, Dumps Trucks, Delivery Trucks</td>
</tr>
<tr>
<td>Spoil Removal</td>
<td>Excavator, Dump Trucks</td>
</tr>
<tr>
<td>Shaft Excavation</td>
<td>Rock breakers, Penetrating Cone Fracture (PCF), Blasting, Jackhammer</td>
</tr>
<tr>
<td>Station Cavern Excavation</td>
<td>Road headers</td>
</tr>
<tr>
<td>Tunnelling</td>
<td>Tunnel Boring Machine (TBM), Road headers</td>
</tr>
<tr>
<td>Cross passages</td>
<td>Rock breakers, Road headers</td>
</tr>
<tr>
<td>Demolition</td>
<td>Excavator, Dump Trucks, Rock breaker, Jackhammer</td>
</tr>
<tr>
<td>General Earthworks and site establishment</td>
<td>Excavator, Dumps Trucks, Delivery Trucks</td>
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</tr>
<tr>
<td>Shaft Excavation</td>
<td>Rock breakers, Penetrating Cone Fracture (PCF), Blasting, Jackhammer</td>
</tr>
</tbody>
</table>
6.3. Noise and Vibration Sensitive Receivers

The sensitivity of occupants to noise and vibration varies according to the nature of the occupancy and the activities performed within the affected premises. For example, recording studios are more sensitive to vibration and ground borne noise than residential premises, which in turn are more sensitive than typical commercial premises.

Specific noise and vibration sensitive receivers (NSRs) relevant to individual construction sites would be identified and addressed in the Environmental Assessment of each Sydney Metro project. Each receiver would be identified as falling into one of the following categories:

- Commercial
- Educational
- Industrial
- Mixed residential/commercial
- Residential
- Residential occupied by shift workers
- Place of Worship
- Medical facilities
- Other sensitive receivers

6.4. General Assessment Procedure

All assessments must be quantitative as per the procedure given in the ICNG. If the assessment is being carried out for the environmental impact assessment documentation (e.g. EIS) it will be based on a concept design and construction scenarios for the project (usually prepared by a technical advisor and/or planning consultant). If the assessment is being undertaken prior to construction (e.g. CNIS) it will be based on a more detailed design and actual construction scenario (usually prepared by the design and/or construction contractors).

Constructions Noise Impact Statements (CNIS) are to be developed to assess the potential impact of noise at NSRs as a result of a Sydney Metro project’s construction activities prior to the commencement of construction components.

In order to develop accurate and comprehensive CNIS reports for work components associated with the project, specific detail of the construction methodology, including the size and type of equipment is required. Detailed design, construction and engineering solutions are progressively developed and applied throughout the life-span of the project. Consequently, CNIS reports that cover the key construction activities/components are to be developed to reflect the progressive nature of design and construction of the project. There are to be two (2) different types of CNIS report to be developed throughout the project:

- General Construction Activity CNIS for construction scenarios that are consistently the same and progressively move along the project alignment e.g. tunnelling, retaining walls.
- Location Specific CNIS for construction scenarios that are specific to a location. Where works are required to be undertaken outside of standard construction hours, Out of Hours Work (OOHW) assessments will be included in CNIS or a new CNIS
developed in support of all applicable variations to the project Environment Protection Licence (EPL).

For all CNIS reports the noise impacts are to be assessed based on construction scenarios. A construction scenario relating to noise impact is essentially a construction activity with is made up of the required plant and equipment. A number of construction scenarios will make up any one CNIS report. In undertaking an assessment of the noise impact from a construction scenario(s) including the development of CNIS report, the following steps are to be taken:

- Identify all noise and/or vibration sensitive receivers (NSRs) which may be affected by the project.
- Conduct background noise monitoring at representative NSRs to determine the rating background noise levels (RBLs) in accordance with the procedures presented in the NSW Industrial Noise Policy, where RBLs have not been established in previous project stages.
- Determine the appropriate noise and vibration management levels of each NSR.
- Determine the source noise levels (Sound Power Levels) of each noise generating plant and equipment item required to undertake the construction scenario. Note: Sound Power Levels for each plant and equipment would be less than the maximum allowable levels found in Table 11 and Table 12.
- Clearly indicate which mitigation measures identified in Section 7 have been/are to be incorporated into the noise assessment. Noise mitigation measures to be implemented will vary for reasons such as safety and space constraints, these are to be identified and the calculations adjusted accordingly.
- For Location Specific construction scenarios and where applicable for Generic scenarios, include the effects of noise shielding provided by site offices, residential fences, noise barriers or natural topographic features.
- Where applicable include the effects of noise reflections and ground attenuation.
- On the basis of the duration of each activity (over a typical “worst case” 15-minute period), determine whether any correction between the LAmax and the LAeq is required.
- Calculate the LAeq noise or range of levels from construction scenarios at sensitive receiver groups, with the use of noise contour maps where appropriate and/or at 10 m, 25 m, 50 m, 75 m, 100 m and 200 m for more general construction activities.
- Compare these against the goals identified for each NSR and identify predicted exceedances.
- For night-time activities, calculate the LA1(60second) noise levels and compare with the DECCW’s RBL + 15 dB sleep disturbance screening criterion. On the basis of the ambient noise environment during the night-time period, the predicted LA1 noise levels and the number of expected LA1 noise events would be assessed. From this assessment determine the likelihood of potential sleep disturbance. Note: the LAmax noise level can be used to estimate the LA1 noise level.
- On completion of all CNIS reports for the subjective classification of the noise impact is to be evaluated and documented as:
  - Lower Impact
  - Moderate Impact
The classifications are to be determined on a case-by-case basis with consideration of the following points. These are guidelines for classifications only and subjective due to the number of variances within any construction scenario. An objective evaluation is to be applied to all construction scenarios.

• The location of the works in relation to NSRs with consideration of noise attenuation features such as noise barriers including topographical features (earth-mounds), buildings, dividing fences etc (distance of works from sensitive receiver(s)).

• The type and sensitivity of the NSRs:
  o Lower Impact: e.g. Commercial buildings/Scattered Residential (low density)
  o Moderate Impact: e.g. Standard residential (typical density)
  o High Impact: e.g. Residential home for the elderly/high density unit blocks/persistent complainers/residents deemed to have “construction noise fatigue”.

• The extent of noise exceedance above Noise Management Level.

• The likelihood for potential sleep disturbance RBL + 15 dB.

• The type of and intensity of noise emitted from works (i.e. tonal or impulsive):
  o Lower Impact: No high noise and/or vibration intensive activities
  o Moderate Impact: Short/intermittent high noise and/or vibration intensive activities
  o High Impact: Prolonged high noise and/or vibration intensive activities.

• The duration of any OOHW required.

• The time frames for any OOHW:
  o Lower Impact: 6.00 pm till 10.00 pm weekdays 1.00 pm till 10.00 pm Saturdays
  8.00 am till 6.00 pm Sundays or Public Holidays
  o Moderate Impact: 10.00 pm to 7.00 am Weekday Nights 10.00 pm to 8.00 am Saturdays
  o High Impact: 6.00 pm to 7.00 am Sundays and Public Holidays.

• As a result of noise classification and/or the noise level exceedances at sensitive receivers provided by the CNIS reports, appropriate reasonable and feasible noise mitigation is to be adopted and implemented. For sites where works are predicted to significantly exceed noise goals and impact on receivers for a significant period of time, additional reasonable and feasible noise mitigation measures such as those outlined in Section 7 would be considered if practical to reduce the noise levels and impact on sensitive receivers.

6.5. Ground-Borne (Regenerated) Noise

Ground-borne noise as a result of construction activities is usually associated with tunnelling projects where equipment such as tunnel boring machines, road headers, rock hammers and drilling rigs are operated underground. It is therefore anticipated that ground-borne noise may be an issue during the construction of Sydney Metro projects.
If ground-borne noise is anticipated as a result of construction activities, a CNIS report, specifically in relation to the assessment of ground-borne construction noise would be undertaken.

In undertaking a CNIS report for ground-borne construction noise the following steps are to be taken:

- Determine the location of each plant and equipment item in relation to each receiver.
- On the basis of ground-borne noise versus distance prediction algorithms for each plant item, determine the level of ground-borne noise at each building location. For highly sensitive building occupancies, such as recording studios, the assessment may need to incorporate the acoustic properties of the building space and the structural response of the building. This is to be determined by a qualified acoustic consultant, should ground-borne noise be a potential issue.
- Include the effect of all relevant standard mitigation measures as part of the construction scenario.
- Calculate the $L_{Aeq(15\text{minute})}$ noise levels from the proposed construction activities at each receiver and compare these to the ground-borne noise management levels.

### 6.6. Ground-Borne Vibration

Vibration as a result of construction activities is usually associated with tunnelling projects where equipment such as tunnel boring machines, road headers, rock hammers and drilling rigs are operated underground. It is therefore anticipated that ground-borne vibration may be an issue during the construction of Sydney Metro projects.

If vibration impacts are anticipated as a result of construction activities, a CNIS report, specifically in relation to the assessment of construction vibration would be undertaken.

In undertaking a CNIS report for ground-borne construction vibration the following steps are to be taken:

- Determine the location of each plant and equipment item in relation to each receiver.
- On the basis of ground-borne vibration versus distance prediction algorithms for each plant item, determine the level of ground-borne vibration at each building location. For highly sensitive building occupancies, such as recording studios, the assessment may need to incorporate the vibration properties of the building space and the structural response of the building. This is to be determined by a qualified acoustic consultant, should ground-borne vibration be a potential issue.
- Include the effect of all relevant standard mitigation measures as part of the construction scenario.

Calculate the vibration levels from the proposed construction activities at each receiver and compare these to the ground-borne vibration criteria.

### 6.7. Vibration and Overpressure from Blasting

Vibration and overpressure as a result of construction activities is usually associated with tunnelling projects where blasting is required. If this construction is implemented then vibration and overpressure may be an issue during the construction of Sydney Metro projects.
If vibration and overpressure impacts are anticipated as a result of construction blasting, a CNIS report, specifically in relation to the assessment of construction blasting would be undertaken.

In undertaking a CNIS report for blasting vibration and overpressure the following steps are to be taken:

- Determine the location of blast charge in relation to each receiver.
- On the basis of vibration / overpressure versus distance prediction algorithms for blasting determine the level of vibration / overpressure at each receiver (building) location.
- Include the effect of all relevant standard mitigation measures as part of the construction scenario.

Calculate the vibration and overpressure levels from the proposed blasting actives at each receiver and compare these to the blasting criteria.

7. STANDARD NOISE AND VIBRATION MITIGATION MEASURES

7.1. Minimum Requirements

This section sets out the standard construction noise and vibration mitigation measures to be implemented on all Sydney Metro projects and delivered via relevant procedures, systems, environmental assessment, construction environmental management and all relevant contract documentation.

For all Sydney Metro construction projects, the standard mitigation measures in Table 9 shall be applied by default in order to minimise the potential noise and vibration impacts at the surrounding Noise Sensitive Receivers. Additional information in relation to specific mitigation measures, the assessment process and relevant objectives are provided in Section 8.

During the preparation of the environmental assessment documentation, a construction noise and vibration assessment would be undertaken. This includes monitoring requirements in order to validate the modelling assumptions and confirm that noise levels from individual plant and equipment items are not excessive. This section provides guidance in relation to standard monitoring and survey requirements that are expected for Sydney Metro construction projects.

7.1.1. Management Strategies during Construction

- Construction hours would be in accordance with the ICNG, project approvals and the EPL, except where otherwise specified in an approved noise management plan.
- When working adjacent to schools, medical facilities and childcare centres, particularly noisy activities would be scheduled outside normal working hours, where feasible and reasonable.
- When working adjacent to churches and places of worship particularly noisy activities would be scheduled outside services, where feasible and reasonable.
- Avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers will result in reduced noise emissions.
• Where feasible and reasonable, the offset distance between noisy plant items and nearby noise sensitive receivers would be as great as possible.

• Regular compliance checks on the noise emissions of all plant and machinery used for the project would indicate whether noise emissions from plant items were higher than predicted. This also identifies defective silencing equipment on the items of plant.

• Ongoing noise monitoring during construction at sensitive receivers during critical periods (i.e. times when noise emissions are expected to be at their highest - e.g. piling and hammering) to identify and assist in managing high risk noise events.

• Where feasible and reasonable heavy vehicle movements would be limited to daytime hours.

• The implementation of procedures to maximise the night-time onsite spoil storage capacity where spoil is produced between the hours of 10.00 pm and 7.00 am.

7.1.2. Site Induction for all Employees, Contractors and Subcontractors

The site induction would include the following as a minimum:

• All relevant project specific and standard noise and vibration mitigation measures

• Relevant licence and approval conditions

• Permissible hours of work

• Any limitations on high noise generating activities

• Location of nearest sensitive receivers

• Construction employee parking areas

• Designated loading/unloading areas and procedures

• Site opening/closing times (including deliveries)

• Environmental incident reporting and management procedures

7.1.3. Source Noise Control Strategies

• Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, heavy vehicles, etc. In order to minimise noise emissions, residential grade mufflers would be fitted on all mobile plant utilised on Sydney Metro construction projects.

• The use of damped hammers is recommended such as the 'City' model Rammer hammers. These reduce the 'ringing' of the rock pick, cylinder and excavator arm that is commonly associated with rock breaking works. Approximately 10 dB attenuation can be achieved compared to undamped hammers of the same size.

• Regular maintenance of all plant and machinery used for the project will assist in minimising noise emissions, including the reporting of the results.

• Acoustic enclosure of plant items, if required, as identified during compliance monitoring.

• Air brake silencers would be correctly installed and fully operational for any heavy vehicle that approaches and uses any Sydney Metro construction site.

• Non-tonal reversing alarms would be used for all permanent mobile plant operating on Sydney Metro construction projects. Whilst the use of non-tonal reversing
alarms is suggested to ensure noise impacts are minimised, it is noted that OH&S requirements must also be fully satisfied.

7.1.4. Noise Barrier Control Strategies

Temporary noise barriers are recommended between the noise sources and nearby potentially affected noise sensitive receivers, wherever feasible. Typically, 5 dB to 15 dB attenuation can be achieved with a well-constructed barrier.

7.1.5. Acoustic Enclosures

Where significant noise impacts are predicted and/or long periods of construction works are planned, acoustic enclosures can be used as an effective mitigation method. Acoustic enclosures act to contain the sources of noise, whilst also providing the benefit of screening the construction site from view. An enclosure with no openings would be expected to provide attenuation the order of 20 dB.

7.1.6. Vibration Control Strategies

Attended vibration measurements are required at the commencement of vibration generating activities to confirm that vibration levels satisfy the criteria for that vibration generating activity. Where there is potential for exceedances of the criteria further vibration site law investigations would be undertaken to determine the site-specific safe working distances for that vibration generating activity. Continuous vibration monitoring with audible and visible alarms would be conducted at the nearest sensitive receivers whenever vibration generating activities need to take place inside the calculated safe-working distances.

7.1.7. Community Consultation

Active community consultation and the maintenance of positive, cooperative relationships with schools, local residents and building owners and occupiers assists in managing impacts from noisier operations and in alleviating concerns and thereby minimising disturbance and complaint. This includes, for example:

- Periodic notification or work activities and progress (e.g. regular letterbox drops, e-consult)
- Specific notification (letter-box drop) prior to especially noisy activities
- Comprehensive website information
- Project information and construction response telephone line
- Email distribution list

7.2. Summary of the Standard Mitigation Measures

The actions set out in Table 9 must be implemented on all Sydney Metro construction projects.
### Table 9: Standard Mitigation Measures to Reduce Construction Noise and Vibration

<table>
<thead>
<tr>
<th>Action required</th>
<th>Applies to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management Measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation of any project specific mitigation measures required</td>
<td>Airborne noise Ground-borne noise and vibration</td>
<td>In addition to the measures set out in this table, any project specific mitigation measures identified in the environmental assessment documentation (e.g. EA, REF, submissions or representations report) or approval or licence conditions must be implemented.</td>
</tr>
</tbody>
</table>
| Implement community consultation measures            | Airborne noise Ground-borne noise and vibration | Periodic Notification (monthly letterbox drop)
Website
Project information and construction response
telephone line
Email distribution list
Place Managers                                                                                                                                                                                                                                           |
| Register of Noise Sensitive Receivers                | Airborne noise Ground-borne noise and vibration | A register of all noise and vibration sensitive receivers (NSRs) would be kept on site. The register would include the following details for each NSR:
• Address of receiver
• Category of receiver (e.g. Residential, Commercial etc.)
• Contact name and phone number                                                                ................................................................................................................................................ |
| Site inductions                                      | Airborne noise Ground-borne noise and vibration | All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include:
• All relevant project specific and standard noise and vibration mitigation measures
• Relevant licence and approval conditions
• Permissible hours of work
• Any limitations on high noise generating activities
• Location of nearest sensitive receivers
• Construction employee parking areas
• Designated loading/unloading areas and procedures
• Site opening/closing times (including deliveries)
• Environmental incident procedures                                                                ................................................................................................................................................ |
| Behavioural practices                                | Airborne noise                                  | No swearing or unnecessary shouting or loud stereos/radios; on site.
No dropping of materials from height; throwing of metal items; and slamming of doors.
No excessive revving of plant and vehicle engines
Controlled release of compressed air.                                                                                                                                                                                                                     |
| Monitoring                                            | Airborne noise Ground-borne noise and vibration | A noise monitoring program is to be carried out for the duration of the works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions.                                                                                                                                 |

---

1 Detailing all upcoming construction activities at least 14 days prior to commencement of relevant works
Attended vibration measurements | Ground-borne vibration | Attended vibration measurements are required at the commencement of vibration generating activities to confirm that vibration levels satisfy the criteria for that vibration generating activity. Where there is potential for exceedances of the criteria further vibration site law investigations would be undertaken to determine the site-specific safe working distances for that vibration generating activity. Continuous vibration monitoring with audible and visible alarms would be conducted at the nearest sensitive receivers whenever vibration generating activities need to take place inside the applicable safe-working distances.

**Source Controls**

<table>
<thead>
<tr>
<th>Construction hours and scheduling</th>
<th>Airborne noise</th>
<th>Where feasible and reasonable, construction would be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels would be scheduled during less sensitive time periods.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction respite period</td>
<td>Ground-borne noise and vibration</td>
<td>High noise and vibration generating activities may only be carried out in continuous blocks, not exceeding 3 hours each, with a minimum respite period of one hour between each block.</td>
</tr>
<tr>
<td>Equipment selection</td>
<td>Airborne noise</td>
<td>Use quieter and less vibration emitting construction methods where feasible and reasonable. For example, when piling is required, bored piles rather than impact-driven piles will minimise noise and vibration impacts. Similarly, diaphragm wall construction techniques, in lieu of sheet piling, will have significant noise and vibration benefits.</td>
</tr>
<tr>
<td>Maximum noise levels</td>
<td>Airborne-noise</td>
<td>The noise levels of plant and equipment must have operating Sound Power Levels compliant with the criteria in Table 11.</td>
</tr>
<tr>
<td>Rental plant and equipment</td>
<td>Airborne-noise</td>
<td>The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used on site unless compliant with the criteria in Table 11.</td>
</tr>
<tr>
<td>Plan worksites and activities to minimise noise and vibration</td>
<td>Airborne noise</td>
<td>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.</td>
</tr>
<tr>
<td>Non-tonal reversing alarms</td>
<td>Airborne noise</td>
<td>Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.</td>
</tr>
</tbody>
</table>

---

2 Includes jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling.

3 "Continuous" includes any period during which there is less than a 60 minutes respite between ceasing and recommencing any of the work.
Action required | Applies to | Details
---|---|---
Minimise disturbance arising from delivery of goods to construction sites | Airborne noise | Loading and unloading of materials/deliveries is to occur as far as possible from NSRs. Select site access points and roads as far as possible away from NSRs. Dedicated loading/unloading areas to be shielded if close to NSRs. Delivery vehicles to be fitted with straps rather than chains for unloading, wherever feasible and reasonable.

Path Controls

Shield stationary noise sources such as pumps, compressors, fans etc | Airborne noise | Stationary noise sources would be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained. Appendix F of AS 2436: 1981 lists materials suitable for shielding.

Shield sensitive receivers from noisy activities | Airborne noise | Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.

Table 10: Minimum Requirements for Construction Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Minimum Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavator</td>
<td>Ensure that the Sound Power Levels given in Table 11 have been met.</td>
</tr>
<tr>
<td>Truck</td>
<td>Ensure that the Sound Power Levels given in Table 11 have been met.</td>
</tr>
<tr>
<td>Rock breakers and jackhammers</td>
<td>Ensure that the Sound Power Levels given in Error! Reference source not found. have been met. Noise and vibration monitoring would be conducted at the nearest identified NSR where exceedances of the criteria have been predicted.</td>
</tr>
<tr>
<td>PCF</td>
<td>Where it has been predicted that vibration / regenerated noise is likely to be in excess of the nominated goals, specific notification would be given to all NSRs a minimum of 2 weeks prior to a shot being fired. Vibration and overpressure monitoring would be conducted at the nearest identified NSR.</td>
</tr>
<tr>
<td>Blasting</td>
<td>Where it has been predicted that vibration / overpressure is likely to be in excess of the nominated goals, specific notification would be given to all NSRs a minimum of 2 weeks prior to a shot being fired. Vibration and overpressure monitoring would be conducted at the nearest identified NSR.</td>
</tr>
<tr>
<td>TBM</td>
<td>Noise and vibration monitoring would be conducted at the nearest identified NSR where levels are expected to exceed the relevant noise and vibration goals.</td>
</tr>
<tr>
<td>Road headers</td>
<td>Noise and vibration monitoring would be conducted at the nearest identified NSR where levels are expected to exceed the relevant noise and vibration goals.</td>
</tr>
</tbody>
</table>
7.3. Maximum Allowable Plant Sound Power Levels

Plant or equipment operating on Sydney Metro project construction sites shall have an operating sound power level (SWL) which is no higher than the corresponding SWL presented in Table 11. The SWLs presented in Table 11 have been compiled from a selection of field measurements conducted between 2004 and 2008 of plant and equipment operating on large construction projects throughout NSW and are therefore considered to representative of plant and equipment SWLs which are readily achieved by current plant and equipment normally used in the construction industry.

Plant and equipment with SWLs higher than those presented in Table 11 would be deemed to be emitting an excessive level of noise and would not be permitted to operate Sydney Metro project construction sites.

Table 11: Maximum Allowable Sound Power Levels for Construction Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Maximum Allowable Sound Power Level (dB) L_{A,max}</th>
<th>Maximum Allowable Sound Pressure Level (dB) L_{A,max} at 7 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavator Hammer</td>
<td>118</td>
<td>93</td>
</tr>
<tr>
<td>Excavator (approx. 3 tonne)</td>
<td>90</td>
<td>65</td>
</tr>
<tr>
<td>Excavator (approx. 6 tonne)</td>
<td>95</td>
<td>70</td>
</tr>
<tr>
<td>Excavator (approx. 10 tonne)</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>Excavator (approx. 20 tonne)</td>
<td>105</td>
<td>80</td>
</tr>
<tr>
<td>Excavator (approx. 30 tonne)</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Excavator (approx. 40 tonne)</td>
<td>115</td>
<td>90</td>
</tr>
<tr>
<td>Skidsteer Loaders (approx. 1/2 tonne)</td>
<td>107</td>
<td>82</td>
</tr>
<tr>
<td>Skidsteer Loaders (approx. 1 tonne)</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Dozer (tracking) - equiv. CAT D8</td>
<td>118</td>
<td>93</td>
</tr>
<tr>
<td>Dozer (tracking) - equiv. CAT D9</td>
<td>120</td>
<td>95</td>
</tr>
<tr>
<td>Dozer (tracking) - equiv. CAT D10</td>
<td>121</td>
<td>96</td>
</tr>
<tr>
<td>Backhoe/FE Loader</td>
<td>111</td>
<td>86</td>
</tr>
<tr>
<td>Dump Truck (approx. 15 tonne)</td>
<td>108</td>
<td>83</td>
</tr>
<tr>
<td>Concrete Truck</td>
<td>112</td>
<td>87</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>109</td>
<td>84</td>
</tr>
<tr>
<td>Concrete Vibrator</td>
<td>105</td>
<td>80</td>
</tr>
<tr>
<td>Bored Piling Rig</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Scraper</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Grader</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Vibratory Roller (approx. 10 tonne)</td>
<td>114</td>
<td>89</td>
</tr>
<tr>
<td>Vibratory Pile Driver</td>
<td>121</td>
<td>96</td>
</tr>
<tr>
<td>Impact Piling Rig</td>
<td>134</td>
<td>109</td>
</tr>
<tr>
<td>Compressor (approx. 600 CFM)</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>Compressor (approx. 1500 CFM)</td>
<td>105</td>
<td>80</td>
</tr>
<tr>
<td>Concrete Saw</td>
<td>118</td>
<td>93</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>113</td>
<td>88</td>
</tr>
</tbody>
</table>
Where an item of construction equipment is not listed in Table 11, generic sound power levels presented in Table 12 may be adopted.

### Table 12: Generic Equipment or System Sound Power Level Limit

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Maximum Allowable Sound Power Level (dB) LA_{max}</th>
<th>Maximum Allowable Sound Pressure Level (dB) LA_{max} at 7 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorised (&lt;25kW)</td>
<td>90</td>
<td>65</td>
</tr>
<tr>
<td>Motorised (&lt;50kW)</td>
<td>95</td>
<td>70</td>
</tr>
<tr>
<td>Motorised (&lt;100kW)</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>Motorised (&lt;200kW)</td>
<td>105</td>
<td>80</td>
</tr>
<tr>
<td>Motorised (&gt;200kW)</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>All other Auxiliary Equipment or Systems</td>
<td>90</td>
<td>65</td>
</tr>
</tbody>
</table>

Note 1: Sound Power Levels in dBA relative to 10 pW.

### 7.4. Auditing and Monitoring

All items of plant would have noise audits conducted in accordance with the procedures outlined in Section 9 of this strategy upon arrival at a Sydney Metro construction site and at 6 month intervals thereafter.

Where it has been identified within this strategy that noise and/or vibration monitoring is required at the nearest sensitive receiver; however, the nearest sensitive receiver has refused monitoring at their property, monitoring would be undertaken at the near point to that receiver within the site boundary or at another suitable location determined by an acoustic consultant.

### 8. ADDITIONAL NOISE AND VIBRATION MITIGATION MEASURES

#### 8.1. Overview

The implementation of the standard management measures, compliance with maximum sound power levels for plant and equipment, construction hour management and standard community consultation measures in this Strategy should significantly reduce the noise and vibration impacts on nearby sensitive receivers.

Nevertheless, due to the highly variable nature of construction activities and the likelihood of work outside the standard construction hours on Sydney Metro projects, exceedances of the construction noise and vibration management levels are likely to occur.
Where there is a potential exceedance of the construction noise and vibration management levels a number of additional measures to mitigate such exceedances – primarily aimed at pro-active engagement with affected sensitive receivers – would be explored and have been included in this Strategy. The additional mitigation measures to be applied are outlined in Table 13.

Table 13: Additional Management Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative accommodation</td>
<td>Alternative accommodation options may be provided for residents living in close proximity to construction works that are likely to incur unreasonably high impacts over an extended period of time. Alternative accommodation will be determined on a case-by-case basis.</td>
<td>AA</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Where it has been identified that specific construction activities are likely to exceed the relevant noise or vibration goals, noise or vibration monitoring may be conducted at the affected receiver(s) or a nominated representative location (typically the nearest receiver where more than one receiver have been identified). Monitoring can be in the form of either unattended logging or operator attended surveys. The purpose of monitoring is to inform the relevant personnel when the noise or vibration goal has been exceeded so that additional management measures may be implemented.</td>
<td>M</td>
</tr>
<tr>
<td>Individual briefings</td>
<td>Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Communications representatives from the contractor would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project.</td>
<td>IB</td>
</tr>
<tr>
<td>Letter box drops</td>
<td>For each Sydney Metro project, a newsletter is produced and distributed to the local community via letterbox drop and the project mailing list. These newsletters provide an overview of current and upcoming works across the project and other topics of interest. The objective is to engage and inform and provide project-specific messages. Advanced warning of potential disruptions (e.g. traffic changes or noisy works) can assist in reducing the impact on the community. Content and newsletter length is determined on a project-by-project basis. Most projects distribute notifications on a monthly basis. Each newsletter is graphically designed within a branded template.</td>
<td>LB</td>
</tr>
<tr>
<td>Project specific respite offer</td>
<td>The purpose of a project specific respite offer is to provide residents subjected to lengthy periods of noise or vibration respite from an ongoing impact.</td>
<td>RO</td>
</tr>
<tr>
<td>Phone calls and emails</td>
<td>Phone calls and/or emails detailing relevant information would be made to identified/affected stakeholders within 7 days of proposed work. Phone calls and/or emails provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs etc.</td>
<td>PC</td>
</tr>
<tr>
<td>Specific notifications</td>
<td>Specific notifications would be letterboxed dropped or hand distributed to identified stakeholders no later than 7 days ahead of construction activities that are likely to exceed the noise objectives. This form of communication is used to support periodic notifications, or to advertise unscheduled works.</td>
<td>SN</td>
</tr>
</tbody>
</table>
8.2. Applying Additional Mitigation Measures

In circumstances where - after application of the standard mitigation measures - the $\text{LA}_{eq}(15\text{ minute})$ construction noise and vibration levels are still predicted to exceed the noise or vibration objectives, the relevant Additional Mitigation Measures Matrix (AMMM) (see Table 14 to Table 16) is to be used to determine the additional measures to be implemented. This requirement is supplemental to the basic requirements in the ICNG.

Using the relevant AMMM, the following steps need to be carried out to determine the additional mitigation measures to be implemented:

- Determine the duration (time period) when the work is to be undertaken.
- Determine the level of exceedance.
- From the relevant AMMM table, identify the additional mitigation measures to be implemented (using the abbreviation codes - expanded in Table 13).

### Table 14: Additional Mitigation Measures Matrix (AMMM) - Airborne Construction Noise

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Mitigation Measures</th>
<th>Predicted $\text{LA}_{eq}(15\text{ minute})$ Noise Level Above Background (RBL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Mon-Fri (7.00 am - 6.00 pm)</td>
<td>0 to 10 dB</td>
</tr>
<tr>
<td></td>
<td>Sat (8.00 am - 1.00 pm)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (Nil)</td>
<td>-</td>
</tr>
<tr>
<td>OOHW</td>
<td>Mon-Fri (6.00 pm - 10.00 pm)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sat (1.00 pm - 10.00 pm)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (8.00 am - 6.00 pm)</td>
<td>-</td>
</tr>
<tr>
<td>OOHW</td>
<td>Mon-Fri (10.00 pm - 7.00 am)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sat (10.00 pm - 8.00 am)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (6.00 pm - 7.00 am)</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 15: AMMM - Ground-borne Construction Noise

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Mitigation Measures</th>
<th>Predicted $\text{LA}_{eq}(15\text{ minute})$ Noise Level Exceedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Mon-Fri (7.00 am - 6.00 pm)</td>
<td>0 to 10 dB</td>
</tr>
<tr>
<td></td>
<td>Sat (8.00 am - 1.00 pm)</td>
<td>LB</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (Nil)</td>
<td>LB</td>
</tr>
<tr>
<td>OOHW</td>
<td>Mon-Fri (6.00 pm - 10.00 pm)</td>
<td>LB</td>
</tr>
<tr>
<td></td>
<td>Sat (1.00 pm - 10.00 pm)</td>
<td>LB</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (8.00 am - 6.00 pm)</td>
<td>LB</td>
</tr>
<tr>
<td>OOHW</td>
<td>Mon-Fri (10.00 pm - 7.00 am)</td>
<td>M, LB, SN,</td>
</tr>
<tr>
<td></td>
<td>Sat (10.00 pm - 8.00 am)</td>
<td>M, LB, SN,</td>
</tr>
<tr>
<td></td>
<td>Sun/Pub Hol (6.00 pm - 7.00 am)</td>
<td>M, LB, SN,</td>
</tr>
</tbody>
</table>
Table 16: AMMM - Ground-borne Vibration

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Mitigation Measures</th>
<th>Predicted Vibration Levels Exceed Maximum Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mon-Fri (7.00 am - 6.00 pm)</td>
<td>M, LB, RP</td>
<td></td>
</tr>
<tr>
<td>Sat (8.00 am - 1.00 pm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun/Pub Hol (Nil)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OOHW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mon-Fri (6.00 pm - 10.00 pm)</td>
<td>M, IB, LB, PC, RO, SN</td>
<td></td>
</tr>
<tr>
<td>Sat (1.00 pm - 10.00 pm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun/Pub Hol (8.00 am - 6.00 pm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OOHW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mon-Fri (10.00 pm - 7.00 am)</td>
<td>AA, M, IB, LB, PC, RO, SN</td>
<td></td>
</tr>
<tr>
<td>Sat (10.00 pm - 8.00 am)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun/Pub Hol (6.00 pm - 7.00 am)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. MONITORING, AUDITING AND REPORTING

A construction noise and vibration monitoring guideline is included in Appendix A and outlines the minimum requirements for contractors undertaking monitoring on the Sydney Metro Project.

9.1. Plant Noise Auditing, Compliance Evaluation and Reporting

In order to compare the noise levels of plant and equipment with the values in Section 7, the following guidelines are recommended:

- Measurements of Sound Pressure Level (SPL) at 7 m (with plant or equipment stationary) shall be undertaken using procedures that are consistent with the requirements of Australian Standard AS2012–1990 Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery and Agricultural Tractors – Stationary Test Condition Part 1: Determination of Compliance with Limits for Exterior Noise.

- Measurements of Sound Power Level (SWL) shall be determined using procedures that are consistent with the requirements of International Standard ISO9614-2 1996 Acoustics – Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning.

- If measuring the SPL at 7 m of moving plant, compliance measurements would be guided by the requirements of Australian Standard AS2012–1977 Method for Measurement of Airborne Noise From Agricultural Tractors and Earthmoving Machinery.

For all measurements, the plant or equipment under test would be measured while operating under typical operating conditions. If this is not practical, it may be appropriate to conduct a stationary test at high idle.

In the case of an exceedance in sound power levels the item of plant would either be replaced, or the advice of an acoustic consultant would be sought to provide suitable mitigation measures, which may include:
• ensuring all bolts are tightened and no parts are loose
• cleaning and/or lubricating moving parts
• replacing old or worn parts
• implementing additional or upgrading existing muffling devices
• building enclosures around items of stationary plant (e.g. pumps or generators).

A register of measured sound power levels for each item of plant would be kept for reference where future noise audits are conducted. The register would be reviewed annually in conjunction with this strategy and corresponding revisions made to the Sound Power Levels presented in Section 7 to represent contemporary plant noise emission levels.

9.2. Noise Monitoring

Where a CNIS report has been prepared for a Sydney Metro construction site and it has been predicted that noise levels may be in excess of the nominated construction noise goals at a noise sensitive receiver, noise monitoring would be conducted at:

• the affected receiver; or
• if more than one affected receiver has been identified, at the nearest affected receiver; or
• where the nearest affected receiver refuses noise monitoring on their property, at the near point to that receiver within the site boundary.
• If it can be demonstrated that direct measurement of noise from the construction site is impractical, alternative means of determining construction noise levels may be adopted in accordance with Chapter 11 of the NSW Industrial Noise Policy.

All noise monitoring results would be assessed against the nominated noise goals and compiled into a report to be forwarded to the construction contractor and project manager. Reporting would be submitted to the construction contractor and project manager within one week of being undertaken or at weekly intervals for continuous monitoring. All noise monitoring reports would also be made available to the public through a publically accessible website.

9.3. Vibration Monitoring

Where it is anticipated that an item of plant will exceed the cosmetic damage criteria given in Section 5.4.3, vibration monitoring would be required at the nearest affected receiver. Where it is anticipated that an item of plant will exceed the human response / ground borne noise criteria and concerns have been raised regarding vibration, vibration monitoring would also be required at the receiver(s) under question.

All vibration monitoring results would be assessed against the nominated vibration goals and compiled into a report to be forwarded to the construction contractor and project manager. Reporting would be submitted to the construction contractor and project manager within one week of being undertaken or at weekly intervals for continuous monitoring. All vibration monitoring reports would also be made available to the public through the publically accessible website.
9.4. Blast Monitoring

- As specified in the minimum requirements presented in Section 5.7, vibration and overpressure monitoring would be conducted for all PCF and blasting activities which take place on Sydney Metro construction sites.
- Monitoring would be conducted as a minimum at the sensitive receiver(s) likely to receive the maximum vibration and/or overpressure emissions from the blast as identified by an acoustic consultant.

All blast monitoring results would be assessed against the nominated goals and compiled into a report to be forwarded to the construction contractor and project manager. All blast monitoring reports would also be made available to the public through the Sydney Metro website.

As the effect of vibration and overpressure from blasting have the potential to cause structural damage to buildings and services, accurate records of all blasts are required to be maintained. Such records would describe the location of the blast and all the blast holes, the design of the blast in terms of type of explosives, mass of explosives, initiating system used, ground vibration and overpressure measurement data.

Records of every blast would be kept for a minimum of seven years. A longer period of retention of the records may be warranted if a construction project is blasted over an extended or disrupted period.

For any section of tunnel construction where blasting is proposed, a series of initial trials at reduced scale shall be conducted prior to production blasting to determine site-specific blast response characteristics and to define allowable blast sizes to meet the airblast overpressure and ground vibration limits.

9.5. Dilapidation Surveys

If construction activities have the potential to cause damage through vibration to nearby public utilities, structures, buildings and their contents, an Existing Condition Inspection of these items is required to be undertaken in accordance with AS 4349.1 “Inspection of Buildings”.

Prior to conducting the Existing Condition Inspections, the property owners will be advised of the inspection scope and methodology and the process for making a property damage claim. At the same time, maintain a register of all properties inspected and of any properties where owners refused the inspection offer.

The findings of all dilapidation surveys conducted for each Sydney Metro construction site would be compiled into a report to be forwarded to the construction contractor and project manager. Follow-up Condition Inspections would be required at the completion of certain major works (e.g. completion of shaft bulk excavation works).

10. COMPLAINT HANDLING

All complaints handling would be in accordance with the Sydney Metro Construction Complaints Management System.

11. COMMUNITY CONSULTATION AND LIAISON

All community consultation would be in accordance with Sydney Metro Overarching Stakeholder and Community Involvement Plan.
12. DOCUMENTATION REQUIREMENTS

Any acoustic assessment, CNIS or CNVMP undertaken for the Sydney Metro project must document the following as a minimum (where applicable):

- Acoustic Terminology / Glossary
- Overview of the Project / Works
- Secretary’s Environmental Assessment Requirements
- EPL conditions (if applicable)
- Site Plan and Sensitive Receivers
- Ambient Noise Monitoring: methodology, locations, analysis and results
- Construction Noise and Vibration Criteria
  - Construction Airborne Noise Criteria
  - Construction Tunnelling Ground-borne Noise Criteria (if applicable)
  - Construction Ground-borne Noise Criteria
  - Construction Vibration Criteria
- Construction Noise and Vibration Assessment
  - Construction Airborne Noise Methodology / Predictions
  - Construction Tunnelling Ground-borne Noise Methodology / Predictions (if applicable)
  - Construction Ground-borne Noise Methodology / Predictions
  - Construction Vibration Methodology / Predictions
- Summary of Noise and Vibration Impacts
- Summary of all Standard and Additional Mitigation Measures
- References

All noise and vibration predictions are to be presented (as a minimum) as facade noise maps for a distance of at least 300 m in all directions from each work site / project area under assessment.
# 13. REFERENCES

<table>
<thead>
<tr>
<th>Related Documents and References</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ANZECC, 1990, Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration. Australian and New Zealand Environment Council.</td>
</tr>
<tr>
<td>• AS 2107, 2000, Acoustics - Recommended design sound levels and reverberation times for building interiors. Standards Australia.</td>
</tr>
<tr>
<td>• AS 4349, 2007, Inspection of buildings - General requirements. Standards Australia.</td>
</tr>
<tr>
<td>• The Association of Australian Acoustical Consultants (AAAC) Technical Guideline on Child Care Centre Noise Assessments</td>
</tr>
<tr>
<td>• DECC, 1999, Environmental Criteria for Road Traffic Noise. NSW Department of Environment and Climate Change.</td>
</tr>
<tr>
<td>• DECC, 2009, Interim Construction Noise Guideline. NSW Department of Environment and Climate Change NSW.</td>
</tr>
<tr>
<td>• EPA, 2000, NSW industrial noise policy. NSW Environment Protection Authority.</td>
</tr>
<tr>
<td>• TIDC, 2007, Construction noise strategy. Transport Infrastructure Development Corporation (NSW).</td>
</tr>
</tbody>
</table>
APPENDIX A - Construction Noise and Vibration Monitoring Guideline

This document is intended to provide guidance and outline the minimum requirements for contractors undertaking construction noise and vibration monitoring on the Sydney Metro Project. It should be read in conjunction with the requirements of the Construction Noise and Vibration Strategy (CNIS), the EPA’s Interim Construction Noise Guideline (ICNG) and the conditions of approval.

Construction Noise and Vibration Impact Statements (CNIS) are to be developed prior to the commencement of demolition and construction to assess the potential impact of noise and vibration at surrounding noise sensitive receivers and, where necessary, to develop detailed noise and vibration mitigation and management plans. The plans shall identify suitable monitoring locations; the types of instruments to be used; the timing duration and frequency of monitoring; and whether the monitoring is to be operator-attended or unattended.

The objectives of monitoring are as follows:

**Attended**

- confirm source noise and vibration levels used for predictions
- confirm noise and vibration levels at receivers are consistent with predictions
- confirm suitability of mitigation measures and provide evidence to support corrective action
- investigate alerts and alarms from unattended monitoring (see below)
- verify measured unattended noise and vibration levels
- provide a record of construction noise and vibration levels for complaints management

**Unattended**

- confirm noise and vibration levels near receivers are consistent with predictions,
- confirm suitability of mitigation measures and provide evidence to support corrective action
- providing a continuous record of noise and vibration levels, for use in incident or complaint investigations
- providing notification (alerts and alarms) to project staff if levels exceed pre-determined thresholds
- providing a record of construction noise and vibration levels

Monitoring for the Project will be required at the commencement of works and at regular intervals throughout the project (i.e. when new construction activities commence) to quantify the airborne noise, ground-borne noise and vibration levels associated with construction activities.
Monitoring would also be required in the event of a complaint being received and would be conducted at:

- the affected receiver; or
- if more than one affected receiver has been identified, at the nearest affected receiver; or
- where the nearest affected receiver refuses monitoring on their property, at the near point to that receiver within the site boundary.

If it can be demonstrated that direct measurement of the construction site is impractical, alternative means of determining construction noise levels may be adopted in accordance with Chapter 11 of the NSW Industrial Noise Policy.

The contractor would need to determine the suitability of either attended or unattended monitoring for each monitoring event.

1. **Construction Noise Monitoring**

The noise measurement procedures employed throughout the monitoring program will be in accordance with the requirements of Australian Standard (AS) 1055:1997 Acoustics - Description and Measurement of Environmental Noise and the NSW Department of predicted levels.

Measurements are expected to consist of operator-attended and unattended measurements. All noise measurements will be performed and analysed by a suitably qualified acoustical consultant.

**1.1. Noise Monitoring**

Noise monitoring for the Project will be required at the commencement of works and at regular intervals throughout the project to quantify the airborne and ground-borne noise levels associated with the construction activities for comparison against the noise management levels and to confirm that noise levels at the nearest receivers are consistent with the predictions in the CNISs.

All noise monitoring results will be assessed against the nominated noise criteria, compared to the conditions on the consent / licence, or the relevant noise management objectives and summarised in a report. Reporting would be submitted to the construction contractor and project manager within one week of being undertaken or at weekly intervals for continuous monitoring. Where monitoring has been conducted in response to complaints, these reports will be submitted within 3 days to TfNSW and should be suitable for public distribution.

**1.2. Airborne Noise**

**1.2.1. Operator-Attended Monitoring**

The objective of operator attended monitoring is to accurately quantify the airborne noise levels associated with the construction activities for comparison against the noise management levels and to confirm that noise levels at the nearest receivers are consistent with the predictions in the CNVSs.

Operator-attended noise measurements are to be undertaken at the commencement of any new construction activities or location.
The operator-attended noise measurements must be undertaken at a location representative of the potentially most exposed receivers, or alternatively at other specifically identified sensitive receivers (i.e. in complaint locations).

1.2.2. Continuous Noise Monitoring

Continuous noise monitors may be installed (as determined appropriate by the Project team in areas identified as high risk level or repeated complaints) and positioned at the closest sensitive receiver, where practicable (dependent upon the location of construction works).

These units will enable review of the noise levels at the nearest sensitive receivers and, if necessary, provide triggers to modify construction activities where noise levels are higher than predicted.

Consideration should be given to the implementation of real-time or near real-time remote monitoring systems. Such systems may be beneficial in identifying the source of the noise management level exceedance, identifying the occurrence of false-positive trigger events, and provide real-time feedback to the project team on the potential impact of works in relation to the management levels. Real-time remote monitoring systems may be acceptable for the monitoring of airborne noise, ground-borne noise, and vibration.

1.3. Methodology

Monitoring will be conducted in accordance with Australian Standard (AS) 1055:1997 Acoustics — Description and Measurement of Environmental Noise and the INP (DECC, 2000).

Operator-attended noise measurements are to be conducted during normal Project operations to quantify the noise emissions and potential impacts from the Project.

Timing

Operator-attended noise monitoring will be conducted for a minimum of 15 minutes at each location during the subject construction activities. Where a longer monitoring duration is required, measurements must be made in consecutive 15 minute periods.

Measurement

All acoustic instrumentation used in the monitoring programme will be designed to comply with the requirements of AS IEC 61672.1:2004 Electroacoustics — Sound level meters — Specifications and carry current National Association of Testing Authorities (NATA) or manufacturer calibration certificates.

The operator will quantify and characterise the maximum (L\text{A}\text{max}) noise level and the energy average (L\text{A}\text{eq}(15\text{minute})) noise level from construction activities over a 15 minute measurement period.

In addition, the operator will quantify and characterise the ambient level of noise (i.e. L\text{A}\text{max}, LA1, LA10 and LA90) over the measurement period, where possible.

Instrument calibration will be checked before and after each measurement survey, with the variation in calibrated levels to not exceed ±0.5 dBA.
Assessment of Results

The assessment of the results will be undertaken in comparison to the predicted noise levels in the appropriate CNVIS. In the event of the measured noise levels being higher than predicted, an assessment will be conducted to determine:

- Timing, location and the equipment in use during the exceedance.
- Exclusion of non-Project related noise (e.g. can the exceedance be attributed entirely to the Project). This will include consideration of:
  - the methods and type of equipment being used by the project at the time of the exceedance and proximity to the locations at which the exceedance was recorded
  - the location of non-project related activities and proximity to the locations at which the exceedance was recorded.

If the above assessment determines that the noise levels are due to Project noise then noise mitigation measures detailed in Section 7 of the CNIS will be required to be considered.

Measurement Reporting

The following should be included in as a minimum in noise monitoring report:

- The type of monitoring conducted (for example, at a particular project stage or following complaints) and a brief statement of the measurement method.
- The noise/vibration/blasting conditions on the consent / licence, or the relevant noise management objectives.
- Descriptions of the nearest affected residences and other sensitive land uses or, in the case of complaints, description of the complainant location and complaint.
- Description of the instrumentation used (the instrumentation specifications required for compliance noise monitoring are the same as those required for background noise monitoring set out in Appendix B of the NSW Industrial Noise Policy (EPA 2000))
- The results of monitoring at each monitoring location, including a comparison with the consent conditions or relevant noise management objectives
- The location of the construction works in relation to the monitoring position. (sketch plan & sections, photos)
- Details of the various construction equipment in use during the measurement period.
- Indicative noise levels at the measurement location from the operation of the various plant items, together with the observed duration of individual items.
- Details as to the likely dominant noise sources.
- Meteorological conditions (i.e. temperature, humidity, cloud cover, and wind speed and direction)
- A clear statement outlining the project’s compliance or non-compliance with the conditions or objectives where the monitored level is higher than the conditions or objectives,
- The reasons for non-compliance should be stated, strategies for minimising noise identified and stated, and the appropriate actions to implement the mitigation and or management strategies.
2. Cosmetic Damage Vibration Monitoring

2.1. General

Where it is anticipated that an item of plant will exceed the cosmetic damage criteria, vibration monitoring is required at the nearest affected receiver. Where concerns have been raised regarding vibration, vibration monitoring would be required at the receiver(s) in question.

All vibration monitoring results will be assessed against the nominated vibration goals and compiled into a report to be forwarded to the construction contractor and project manager and TfNSW. Reporting would be submitted within one week of being undertaken or at weekly intervals for continuous monitoring. Where monitoring has been conducted in response to complaints, these reports will be submitted within 3 days to TfNSW and should be suitable for public distribution if deemed necessary by TfNSW.

2.2. Vibration Compliance

All monitoring results will be assessed against the nominated criteria, compared to the conditions on the consent / licence, or the relevant management objectives.

Table 17 Nominated Site Control Vibration Criteria (i.e. Operator Warning and Halt Levels) - To be Measured at the Base

<table>
<thead>
<tr>
<th>Structure</th>
<th>Site Control Criteria (PPV in any Orthogonal Direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operator Warning Level</td>
</tr>
<tr>
<td>Reinforced of framed structures</td>
<td>20 mm/s</td>
</tr>
<tr>
<td>Unreinforced or light framed structures</td>
<td>5 mm/s</td>
</tr>
<tr>
<td>Heritage</td>
<td>1.5 mm/s</td>
</tr>
</tbody>
</table>

Exceedance of the "Operator Warning Level" would not require excavation activity to cease, but rather alerts the Construction Manager to proceed with caution at reduced force or load.

An exceedance of the "Operator Halt Level" would require the Construction Manager to implement an alternative excavation technique pending further analysis of the vibration frequency content in order to determine any potential exceedance of the criteria presented in the CNVS or the site specific CNVIS.

Vibration monitoring equipment must be set so that as a minimum visual and audible alarms are triggered when the levels of vibration exceed the control criteria presented in Table 17.

If the "Operator Warning Level" is reached, the contractor will immediately, either:

- Reduce the number of vibration-generating plant/equipment items; or
- Cease operation, pending further analysis of the potential for building damage. A suitably qualified specialist acceptable to the construction contractor must endorse the conclusions of such an investigation.
2.3. Other Vibration Sensitive Structures and Utilities

Where structures and utilities are encountered which may be considered to be particularly sensitive to vibration, a vibration goal which is more stringent than structural damage goals presented in Section 5.4 of the CNVS may need to be adopted. Examples of such structures and utilities include:

- Tunnels
- Gas pipelines
- Fibre optic cables
- Medical or vibration sensitive equipment.

Specific vibration goals would be determined on a case-by-case basis. An acoustic consultant would be engaged by the construction contractor and would liaise with the structure or utility's owner in order to determine acceptable vibration levels.

2.4. Vibration Monitor Specification

Construction vibration monitoring instrumentation used for the identification of structural and cosmetic damage will be employed that meets the following primary specifications presented in Table 18. The instrumentation must be installed, operated and maintained by suitably qualified or trained personnel. The instruments must be externally calibrated at regular intervals.

Table 18 vibration Monitor Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Seismic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.016 mm/s</td>
</tr>
<tr>
<td>Range</td>
<td>0.1 mm/s to 254 mm/s</td>
</tr>
<tr>
<td>Accuracy</td>
<td>3% at 15 Hz</td>
</tr>
<tr>
<td>Sample Rate</td>
<td>Minimum 1024 samples per second per channel</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>2 Hz to 250 Hz (3 dB points)</td>
</tr>
<tr>
<td>Communications Link</td>
<td>Keyboard and Modem</td>
</tr>
<tr>
<td>Recording Mode</td>
<td>Waveform Recording and archiving</td>
</tr>
</tbody>
</table>

It should be noted that equipment specifications detailed in Table 18 may not be suitable for the measurement of all vibration impacts such as human comfort and or the measurement of vibration impacts to sensitive equipment. Prior to any measurement being conducted the contractor must ensure that the monitoring equipment being proposed is suitable for the type of measurement being conducted.

2.5. Vibration Monitoring

Structural vibration monitoring must be carried out as required during the construction period.

Transducer mounting plates would be installed at the base of the building or structure, at the location closest to the construction works. The monitoring locations would be on a stiff part of the building or structure (at the foundations) on the side of the structure adjacent to the subject construction works.
The vibration monitoring system must be configured to record the peak vibration levels and to trigger an audible/visual alarm when the predetermined vibration thresholds nominated in Table 17 are exceeded. The thresholds correspond to an “Operator Warning Level” and an “Operator Halt Level”, where the Warning Level is between 66% and 80% of the Halt Level. The vibration threshold must be set to the respective “Operator Warning Level” (ppv) and the “Operator Halt Level” (ppv) depending on the type of building or structure, the exceedance of which will be indicated by the audible/visual alarm in the construction site.

Should the alarm signalling “Operator Halt Level” be activated then all nearby construction works must stop immediately. Construction personnel engaged on the site must have been briefed on the procedures including the location and nature of audio and visual alarms. The audio and visual alarms must be arranged to directly alert the equipment operations to any alarm event.

Exceedances of the “Operator Halt Level” are only permissible when the recommended vibration limits in the Standard are achieved (based on the frequency content of the vibration signal) and the vibration criteria are approved by a suitably qualified specialist.

An exceedance of the “Operator Warning Level” will not require the excavation activities to cease, but rather alert the Construction Manager to proceed with caution at a reduced force or load.

Attended vibration monitoring will, if considered necessary, be carried out by a suitably qualified specialist. Attended structural damage vibration monitoring must be carried out in response to structural damage criterion exceedances. This monitoring would provide direct feedback to the operators and appropriate modification of construction techniques.

**Supplementary Vibration Monitoring**

Supplementary structural damage vibration monitoring must also be carried out in response to exceedances of the criteria or for the purpose of refining construction techniques in order to minimise vibration emissions. Monitoring would be attended under these circumstances, in order to provide immediate feedback to the operators.

**Reporting**

If vibration monitoring has been conducted, reports must be submitted to the Project Manager at weekly intervals. These reports will cover the preceding weeks’ activities and will include the following:

- The type of monitoring conducted (for example, at a particular project stage or following complaints) and a brief statement of the measurement method.

- The vibration/blasting conditions on the consent / licence, or the relevant management objectives.

- Descriptions of the nearest affected residences and other sensitive land uses or, in the case of complaints, description of the complainant location and complaint.

- Vibration monitoring results summary together with notes describing any vibration-intensive activities (if applicable).

- Summary of measurements exceeding the vibration criteria levels and descriptions of the plant or operations causing these exceedances (if available).

- Details of corrective action applicable to vibration criteria exceedances and confirmation of its successful implementation. Where corrective action has not yet been implemented, it may be shown as pending and the status of its implementation will be carried forward to following reports.
2.6. Ground-borne Noise and Vibration

Operator-attended and unattended noise and vibration monitoring will be conducted where the ground-borne noise and vibration levels are higher than predicted, or in response to complaints. People tend to hear vibration before they feel vibration; that means that if the ground-borne noise criteria are exceeded then the human comfort criteria for vibration could also be exceeded.

Where attended ground-borne noise monitoring is not possible, indirect unattended remote monitoring of ground-borne noise from measured vibration velocity should be considered to obtain an indication of ground-borne noise impacts and assist in management of impacts.

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ADDENDUM A:
CHATSWOOD TO SYDENHAM PLANNING APPROVAL

This addendum to the approved Sydney Metro Construction Noise & Vibration Strategy (CNVS) provides a specific response to the SSI 15_7400, Sydney Metro Chatswood to Sydenham, planning approval (the Approval).

This addendum is only to be applied for works performed under the SSI 15_7400 Approval.

Relevant Conditions of Approval

There are a number of Approval conditions that relate to construction noise and vibration. This addendum specifically responds to Condition E32 which states:

The Proponent must review the Sydney Metro City and Southwest Construction Noise and Vibration Strategy in the PIR [SSI 15_7400, Preferred Infrastructure Report] during detailed construction planning to consider scale and duration of impacts, the requirements of this approval and all measures to limit construction noise impacts to sensitive receivers including:

(a) at property or architectural treatment;
(b) relocation; and
(c) other forms of mitigation where impacts are predicted to be long term and significant.

The revised Sydney Metro City and Southwest Construction Noise and Vibration Strategy must be submitted to the Secretary for approval at least one (1) month before construction commences.

In undertaking this review it is also necessary to consider additional obligations (to the approved CNVS) within the Approval. These obligations relate to:

A1: The development of activity specific Construction Noise and Vibration Impact Statements (CNVIS) to include:

- Internal noise criteria; and
- A respite regime specifically for mixed use zones.

A2: The identification of mitigation measures over and above those mandated by the approved CNVS.

Community Engagement

Stakeholder and community engagement will play an integral role in ensuring the successful delivery of the project. The role of the engagement team is to inform stakeholders and members of the community by providing clear, factual and timely information about the timing and impacts associated with all works, including proposed mitigation measures.

All construction activities will be undertaken in line with the approved Chatswood to Sydenham Community Consultation Strategy, and respective Contractors’ strategies and plans. Specific engagement activities will include, but are not limited to:

- Providing key stakeholders and the community with information about construction progress;
- Ensuring people understand the scope of the works and mitigation measures;
• Ensuring key stakeholders and the community understand the proposed timing of the works; and
• Taking steps to minimise potential impacts.

In addition to this, dedicated Place Managers will sit within the project team and play an important role in both the planning and delivery of project activities. Their role is to be the single point of contact for affected stakeholders and the community, and the project team.

In relation to noise and vibration the role of the Place Manager will include:

• Facilitating discussion between the project team and affected surrounding receivers on determining appropriate hours of respite (including consideration of sensitive periods);
• Identifying periods and locations where exams will be undertaken at educational institutions (e.g. schools, universities, TAFE colleges); and
• Identifying periods and locations of other sensitive receivers (e.g. recording studios, medical facilities) where sensitive activities will be undertaken.
A1: Development of Construction Noise and Vibration Impact Statements (CNVIS)

Introduction

In addition to the requirements outlined in the approved CNVS, this addendum provides guidance on additional steps required when preparing Construction Noise and Vibration Impact Statements (CNVIS), specifically in relation to:

- Addressing additional criteria based on location and type of sensitive receivers, and
- Predicting airborne internal noise levels, including façade transmission loss.

The table below provides a summary of the noise criteria applicable under the Conditions of Approval for the C2S project.

<table>
<thead>
<tr>
<th>Area</th>
<th>Receiver Type</th>
<th>Approval Condition</th>
<th>Time Period</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identified Precincts¹</td>
<td>All</td>
<td>E38</td>
<td>7am to 8pm</td>
<td>$L_{Aeq(15\text{minute})} &lt; 60 \text{ dB(A)}$ internal, more than 50% of time (6.5 hours total)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$L_{Aeq(15\text{minute})} &lt; 55 \text{ dB(A)}$ internal, more than 25% of time (3.25 hours total)</td>
</tr>
<tr>
<td>Non-residential Zones²</td>
<td>Residential</td>
<td>E41</td>
<td>8pm to 9pm</td>
<td>$L_{Aeq(15\text{minute})} &lt; 60 \text{ dB(A)}$ internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E41</td>
<td>9pm to 7am</td>
<td>$L_{Aeq(15\text{minute})} &lt; 45 \text{ dB(A)}$ internal</td>
</tr>
<tr>
<td>Residential Zones²</td>
<td>Residential</td>
<td>E42</td>
<td>8pm to 7am</td>
<td>$L_{Aeq(15\text{minute})} &lt; 45 \text{ dB(A)}$ internal</td>
</tr>
<tr>
<td>All</td>
<td>All</td>
<td>E43</td>
<td>All</td>
<td>$L_{Aeq(8\text{hour})} &lt; 85 \text{ dB(A)}$ near the CSSI</td>
</tr>
</tbody>
</table>

Note 1: Identified precincts are provided in Condition E37 and include Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, and Central.

Note 2: These are identified by the applicable Local Environmental Plan land zoning of the receiver.

Additional CNVIS Assessment Process

A CNVIS shall be prepared for all works and locations, in accordance with the CNVS. The additional assessment process required by the Approval is as follows:

1) Address condition E43 (noise exposure at occupational environments);
2) If the worksite is within an identified precinct and/or work is proposed to be carried out between 8pm and 7am:
   a) Address applicable internal noise and vibration criteria by:
      i) predicting internal airborne noise levels based on an assessment of the façade transmission loss of all affected receivers; and
      ii) predicting internal vibration levels;
b) Assessing the results against the applicable criteria in the Approval (summarised in the table above);
c) Applying appropriate levels of consultation and mitigation to comply with the criteria, including those identified in the CNVS; and
d) Where respite forms part of the mitigation, coordinating the arrangements in accordance with conditions E39 and E40.

Verification of Predictions

Noise and vibration monitoring will be undertaken in accordance with the approved CNVS Monitoring Guidelines. The output of the monitoring will be used to verify the predictions made within the CNVIS.
A2: Construction Noise and Vibration Mitigation

The following process outlines how noise and vibration matters will be considered during detailed planning and construction stages.

Note 3 – Additional mitigation measures are to be considered (e.g. at property treatment, temporary relocation, other forms of mitigation where impacts are predicted to be long term and significant)
Guidance Note on Process Model

Given the multiple sensitive uses which adjoin and or surround each construction site, the contractor will be required to tailor noise management strategies on a site specific level, taking into account the various usages of the individual surrounding receivers and their opinions on items such as appropriate respite periods. It is recognised that a blanket management plan across the C&SW project as a whole is unlikely to be appropriate, especially as some of these sites are within business districts and have mixed uses including residential. The following information has been developed to provide the reader further guidance on what each flowchart element represents. It is envisaged that each process element will be undertaken by the project team and require input from a number of members including the Place Manager, Environment Manager, Site Engineer and Project Manager. While timeframes are reliant on the complexity of the activities being undertaken and the nature of the issue, it is expected in most cases the process will be relatively short (i.e. a few days only).

Identification of N&V Problem

The following drivers maybe relevant to the N&V problem being faced by the contractor:

- N&V Predictions/monitoring/measurements – will help inform the appropriate mitigation measures which may be different for each or combination of sensitive receivers being applied to.
- Location – of the source of noise and/or vibration in relation to sensitive receivers will affect the level of impact caused.
- Community Complaints Commissioner – the CCC is to follow up on any complaint where a member of the public is not satisfied by the Proponent’s response.
- Environment Protection Authority – the regulator may undertake compliance site - inspections or follow up on any complaint received.
- Duration – of works will help to develop appropriate mitigation measures if required.
- Particular Sensitive Receiver – sensitive receivers will have different levels of tolerance to noise & vibration impacts and this will need to be managed appropriately.
- Other Impacts (e.g. access, visual) – every N&V problem will have different drivers
- Constraint on Source Control – source control is the best approach to mitigating noise and vibration impacts but potential technical constraints may make it unfeasible to implement.

The contractor is to actively and continuously engage with stakeholders and sensitive receivers, keeping them informed of work activities and expected impacts. This will be through the Place Manager and will be an on-going process.
Review

The review process will help to ascertain the current level of information and assessment already undertaken and will help to inform what the review areas will cover. As a minimum the review of the CNVMP and CNVIS should be undertaken to understand if the receiver/s have been identified in the first instance.

Check that any mitigation measures proposed as per the approval and CNVS have been installed appropriately if relevant.

Reassess

Based on the review process, a re-assessment of the work activities by the project team may be required and would look at the following, but not limited to:

- Type, number and location of machinery used,
- Staging changes with higher impact activities moved to earlier periods if possible
- Alternative work methods (i.e. alternatives to hammering)
- Respite periods
- Working extended hours during evening and weekend day works

Liaise with the stakeholder/s to explain likely impacts in more detail and determine locations & times of greatest sensitivity. Implementing noise & vibration monitoring at this location should also be considered.

Address

Based on the investigation undertaken and discussions with relevant stakeholders, agreed mitigation measures will be implemented. This may include changing or adding to existing measures or installing new measures in combination with existing.

Once mitigation measures have been implemented and works continue, on-going communication with relevant stakeholders should be undertaken and potentially real time noise & vibration monitoring to be undertaken to help understand any continual impacts.

Tweaking current mitigation measures and implementation of further measures such as at property noise & vibration treatment and/or temporary relocation may also be considered.

Resolve

Once mitigation measures have been implemented and works continue, on-going communication with relevant stakeholders should be undertaken with potential (if not already installed) for real time noise & vibration monitoring to be undertaken to help understand any continual impacts.

Document process outcome as appropriate for future reference and inclusion in any further OOH work required in this location.
Example

Work site A will require demolition of a multi-storey building with excavation and the construction phase over a three year period. Surrounding the work site is a mix of commercial and residential receivers.

During enabling works by the demolition contractor, concern was raised by a neighbouring educational facility (the facility) regarding the future demolition works and potential negative impacts. Concern was raised on a number of potential issues, in particular noise and vibration and generation of dust from the works.

Upon review of the complaint by the Project Team it was determined that the facility:

- was not adequately defined in the EIS or SPIR
- has both internal and external areas being used throughout the day -
  operational from 7am – till 6pm Monday to Friday -
- Required a respite period from 11.30am – 2pm
- Was approximately 4m from the façade of the building being demolished

During the review process by the project team the standard mitigation measures being used on-site included –

- Acoustic barriers installed on scaffolding parallel to the facility
- 1 hour of respite after 3 hours continuous of high impact activities
- Wetting down access roads/unsealed areas/area of activity
- Visual inspection of work site and activities for dust emissions
- Real time dust monitoring

Based on the review process, the project team reassessed the current business as usual site activities and addressed the concerns raised by the facility through the implementation of additional mitigation measures, including –

- The development of a Health Risk Assessment report to help inform any additional mitigation measures -
- Use of concrete crushing for approximately 80% of demolition with only an hour of rock hammering required per day
- Specific exclusion zone around the facility during operational hours to help meet internal noise levels
- All high noise activities within this zone carried out during the weekend period
- Respite from high noise generating activities between 11.30am – 2pm through the use of exclusion zones to meet an internal 40dBA criteria
- Use of atomised water suppression system to help manage any dust generation
- Weekly cleaning of the facilities outdoor areas

Once the additional mitigation measures were implemented to help resolve the initial concerns raised by the facility, weekly updates of the programme of works and any OOHW was undertaken.
As approved (interim) Acoustic Advisor for the Sydney Metro City & Southwest project, I have reviewed and provided comment on Addendum A to the Construction Noise and Vibration Strategy (CNVS).

In reviewing the development of this addendum, I have attended several meetings with Sydney Metro and their noise and vibration consultant, SLR consulting. I have also reviewed best practice from other large infrastructure projects.

I consider that the current revision of the addendum is appropriate for submission to the Secretary for review.

Dave Anderson, interim City & Southwest Acoustic Advisor
Dear Stuart

RE: Endorsement of Sydney Metro City and Southwest Construction Noise and Vibration Strategy (CNVS) – Addendum A

Thank you for providing the following document for Environmental Representative (ER) review and endorsement as required by the Condition of Approval E32 of the Sydney Metro City & Southwest project (SSI – 15_7400 January 9 2017).

- Sydney Metro City and Southwest Construction Noise and Vibration Strategy (CNVS) Addendum A (Draft dated 20-4-17).

It is noted that Sydney Metro presented the approach defined in the CNVS Addendum A to the Department of Planning and Environment (DPE) on 21 April 2017. The document outlines a proposed approach for the generation of CNVIS’s and defines a review process for how noise and vibration matters will be considered during detailed planning and construction stages.

The CNVS Addendum A was endorsed by the Acoustic Advisor on 24 April 2017. As an approved ER for the Sydney Metro City & Southwest project, I have reviewed the CNVS Addendum A and consider the document to provide a strategic approach for consideration and comment by the DPE.

Yours sincerely

Michael Woolley
Environmental Representative – Sydney Metro – City and South West

Leaders in Environmental Consulting
Dear Mr Hodgson

Sydney Metro City & Southwest Chatswood to Sydenham (SSI 15_7400): Approval of the Revised Construction Noise and Vibration Strategy under condition E32.

I refer to your correspondence dated 24 April 2017, submitting the Revised Construction Noise and Vibration Strategy (CNVS) under condition E32 for the Secretary's approval. I also note further revisions to these documents, responding to the Department's detailed comments and requirements.

The Department has reviewed the CNVS Addendum A (Rev 2, submitted on 19 June 2017) and considers that it satisfactorily addresses the requirements of condition E32.

If you have any further queries or require clarification on this matter, please contact me on 9274 6454 or by email jacqui.mcleod@planning.nsw.gov.au.

Yours sincerely

Jacqui McLeod
Acting Director Infrastructure Management
as delegate of the Secretary
Attachment 2 - Out of Hours Work Protocol
# City and Southwest Chatswood to Sydenham Out of Hours Work Protocol

**SM ES-PW-317**

Sydney Metro Integrated Management System (IMS)

<table>
<thead>
<tr>
<th>Applicable to:</th>
<th>Sydney Metro City &amp; Southwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Owner:</td>
<td>Adam Koutsamanis</td>
</tr>
<tr>
<td>System Owner:</td>
<td>Fil Cerone</td>
</tr>
<tr>
<td>Status:</td>
<td>Final</td>
</tr>
<tr>
<td>Version:</td>
<td>2.0</td>
</tr>
<tr>
<td>Date of issue:</td>
<td>14 July 2017</td>
</tr>
<tr>
<td>Review date:</td>
<td>14 July 2018</td>
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</tbody>
</table>

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1. Introduction

This protocol outlines the process for preparing, assessing, managing and approving work on the Chatswood to Sydenham portion of the City & Southwest project that is undertaken outside of standard construction hours (i.e. Out of Hours).

1.1. Purpose

This protocol has been developed to comply with Condition E47 Out of Hours Work Protocol of the City & Southwest Chatswood to Sydenham planning approval. This condition (and other conditions that relate to Out of Hours work) is addressed in accordance with Table 1.

Table 1: Chatswood to Sydenham Out of Hours Work Planning Approval Conditions

<table>
<thead>
<tr>
<th>Condition Number</th>
<th>Condition</th>
<th>Where this condition is addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A27(g)i.</td>
<td>The approved AA must in conjunction with the ER... consider requests for out of hours construction activities and determine whether to endorse the proposed activities in accordance with Condition E47.</td>
<td>Section 3.1.2.4 and Figure 1.</td>
</tr>
</tbody>
</table>
| E36              | Construction, except as allowed by Condition E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours:  
- 7:00am to 6:00pm Mondays to Fridays, inclusive;  
- 8:00am to 1:00pm Saturdays; and  
- at no time on Sundays or public holidays. | Section 2. |
| E37              | The Proponent must identify all receivers at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Central likely to experience internal noise levels greater than \( L_{eq(15 \text{ min})} \geq 60 \text{ dB(A)} \) inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in regenerated (ground-borne) noise or a perceptible level of vibration is planned (including works associated with utility adjustments), between 7am — 8pm. | Construction Noise and Vibration Impact Statements. |
| E38              | The Proponent must consult with all receivers identified in accordance with Condition E37 with the objective of determining appropriate hours of respite so that construction noise (including ground-borne noise), does not exceed internal noise levels of:  
- \( L_{eq(15 \text{ min})} \geq 60 \text{ dB(A)} \) inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise or a perceptible level of vibration is planned between 7am — 8pm for more than 50 percent of the time; and  
- \( L_{eq(15 \text{ min})} \geq 55 \text{ dB(A)} \) inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise or a perceptible level of vibration is planned between 7am — 8pm for more than 25 percent of the time,  
unless an agreement is reached with those receivers. This condition does not apply to noise associated with the cutting surface of a TBM [Tunnel Boring Machine] as it passes under receivers. \( \text{Note this condition requires that noise levels be less than } \ L_{eq(15 \text{ min})} \geq 60 \text{ dB(A)} \text{ for at least 6.5 hours between 7am and 8pm, of which at least 3.25 hours must be below } \ L_{eq(15 \text{ min})} \geq 55 \text{ dB(A)}. \text{ Noise equal to or above } \ L_{eq(15 \text{ min})} \geq 60 \text{ dB(A)} \text{ is allowed for the remaining 6.5 hours between 7am and 8pm.} \) | Construction Noise and Vibration Management Plans and each OOH application as relevant (supported by a Construction Noise and Vibration Impact Statement or other type of quantitative impact assessment). |
The Proponent must ensure that residential receivers, located in non-residential zones, likely to experience an internal noise level exceeding $L_{eq(15\text{ minute})} 60\,\text{dB}$ between 8pm and 9pm or $L_{eq(15\text{ minute})} 45\,\text{dB}$ between 9pm and 7am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in regenerated noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional mitigation in accordance with the Sydney Metro City and South West Noise and Vibration Strategy referenced in Condition E32.

Construction Noise and Vibration Management Plans and each OOH application as relevant (supported by a Construction Noise and Vibration Impact Statement or other type of quantitative impact assessment).

---

The Proponent must ensure that residential receivers in residential zones likely to experience an internal noise level of $L_{eq(15\text{ minute})} 45\,\text{dB}$ or greater between 8pm and 7am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional mitigation in accordance with the Sydney Metro City and South West Noise and Vibration Strategy referenced in Condition E32.

Construction Noise and Vibration Management Plans and each OOH application as relevant (supported by a Construction Noise and Vibration Impact Statement or other type of quantitative impact assessment).
<table>
<thead>
<tr>
<th>Condition Number</th>
<th>Condition</th>
<th>Where this condition is addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notwithstanding Condition E36 construction associated with the CSSI [Critical State Significant Infrastructure] may be undertaken outside the hours specified under those conditions in the following circumstances:</td>
<td>Sections 1.5.3, 2, 3.1, 3.2.1 and 3.3.</td>
</tr>
<tr>
<td></td>
<td>(a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or</td>
<td></td>
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<td></td>
<td>(b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or</td>
<td></td>
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<tr>
<td></td>
<td>(c) where different construction hours are permitted or required under an EPL in force in respect of the construction; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d) construction that causes $I_{Aeq(15 \text{ minute})}$ noise levels:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. no more than 5 dB(A) above the rating background level at any residence in accordance with the <em>Interim Construction Noise Guideline</em> (DECC, 2009), and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. no more than the noise management levels specified in Table 3 of the <em>Interim Construction Noise Guideline</em> (DECC, 2009) et other sensitive land uses, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. continuous or impulsive vibration values, measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.2 of <em>Assessing Vibration: a technical guideline</em> (DEC, 2006), and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv. intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of <em>Assessing Vibration: a technical guideline</em> (DEC, 2006); or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e) where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular construction, and the noise management levels and/or limits for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Secretary at least: one (1) week before the works commencing; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(f) construction approved through an <em>Out of Hours Work Protocol</em> referred to in Condition E47, provided the relevant council, local residents and other affected stakeholders and sensitive receivers are informed of the timing and duration at least five (5) days and no more than 14 days before the commencement of the works.</td>
<td></td>
</tr>
<tr>
<td>E44</td>
<td>On becoming aware of the need for emergency construction in accordance with Condition E44(b), the Proponent must notify the AA, the ER and the EPA (if an EPL applies) of the need for those activities or work. The Proponent must also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.</td>
<td>Section 3.3 and Figure 2.</td>
</tr>
<tr>
<td>E45</td>
<td>Notwithstanding Conditions E44 and E48, rock breaking and other particularly annoying activities are not permitted outside of standard construction hours, except at Central, unless the noise management level derived from the <em>Interim Construction Noise Guideline</em> can be achieved at sensitive receivers.</td>
<td>Section 2 and each OOH application as relevant (supported by a Construction Noise and Vibration Impact Statement or other type of quantitative impact assessment).</td>
</tr>
</tbody>
</table>
An Out of Hours Work Protocol for the assessment, management and approval of work outside of standard construction hours, as defined in Condition E36 of this approval, must be prepared in consultation with the EPA [NSW Environment Protection Authority] and submitted to the Secretary [of the NSW Department of Planning and Environment] for approval before construction commences for works not subject to an EPL [Environment Protection Licence]. The protocol must include:

(a) the identification of low and high risk construction activities;
(b) a risk assessment process in which the AA [Acoustic Advisor] reviews all proposed out of hours activities and identifies their risk levels;
(c) a process for the endorsement of out of hours activities by the AA and approval by the ER [Environmental Representative] for construction activities deemed to be of:
   i. low environmental risk; or
   ii. high risk where all construction works cease by 9pm.

All other high risk out of hours construction must be submitted to the Secretary for approval unless otherwise approved through an EPL.

The protocol must detail standard assessment, mitigation and notification requirements for high and low risk out of hours works, and detail a standard protocol for referring applications to the Secretary.

---

**E47**

Notwithstanding Condition E36 of this approval and subject to Condition E47, the following activities may be undertaken 24 hours per day, seven (7) days per week:

(a) tunnelling and associated support activities (excluding cut and cover tunnelling);
(b) excavation within an acoustic enclosure;
(c) excavation at Central without an acoustic enclosure;
(d) station and tunnel fit out; and
(e) haulage and delivery of spoil and materials.

This document; particularly Sections 1.2, 3.1.2.3 and 3.1.2.4, Figure 1 and the Out of Hours Work Application Forms.

---

**E48**

Section 2 and each OOH application as relevant (supported by a Construction Noise and Vibration Impact Statement or other type of quantitative impact assessment).
1.2. Protocol Consultation, Endorsement and Approval

In accordance with Condition E47 of the Chatswood to Sydenham planning approval, this protocol must be prepared in consultation with the NSW Environment Protection Authority (EPA) and approved by the Secretary of the NSW Department of Planning and Environment (the Secretary).

The protocol is also required to receive endorsement from the Environmental Representative and the Acoustic Advisor in accordance with Conditions A24(d) and A27(d) respectively, prior to submission to the Secretary.

1.2.1. Consultation

A draft version of this protocol was provided to the EPA for consultation and comment on 7 March 2017. Given that the protocol (and Condition E47) is aimed at addressing work that is 'not subject to an EPL', the EPA responded on 21 March 2017 to state that "the EPA does not have comments on this protocol".

In the event that the protocol is revised to address work that is subject to an Environment Protection Licence (EPL), TfNSW will re-consult with the EPA.

1.2.2. Endorsement

Both the Environmental Representative and the Acoustic Advisor have reviewed and left comments on drafts of this protocol. All comments have been satisfactorily addressed in this final OOH Work Protocol.

Appendix A provides endorsements of this OOH Work Protocol from the Environmental Representative and the Acoustic Advisor.

1.2.3. Approval

Appendix B provides approval of this OOH Work Protocol by the Secretary.

Construction activities on the Chatswood to Sydenham portion of the City & Southwest project will not be undertaken outside of standard construction hours for works that are not subject to an EPL until this protocol has been approved by the Secretary. Following approval from the Secretary, all works on the Chatswood to Sydenham portion of the City & Southwest project that are not subject to an EPL (irrespective of whether the works are defined as 'construction' in accordance with the Chatswood to Sydenham planning approval) will be subject to this protocol.

1.3. Accountabilities

The Principal Manager, Sustainability, Environment & Planning, City & Southwest is accountable for this protocol. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.

Roles reporting to the Principal Manager are accountable for ensuring the requirements of this document are implemented within their area of responsibility. The roles that are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this document.
1.4. Definitions and Acronyms

All terminology in this Protocol is taken to mean the generally accepted or dictionary definition, unless stated otherwise in accordance with the Definitions section of the Chatswood to Sydenham planning approval or the Sydney Metro Integrated Management System Glossary.

Acronyms and terminology specifically used throughout this Protocol are listed below.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AA</td>
<td>Acoustics Advisor</td>
</tr>
<tr>
<td>BMP</td>
<td>Business Management Plan</td>
</tr>
<tr>
<td>CEMF</td>
<td>Construction Environmental Management Framework (for the City &amp; Southwest project)</td>
</tr>
<tr>
<td>CNVIS</td>
<td>Construction Noise and Vibration Impact Statement</td>
</tr>
<tr>
<td>CNVS</td>
<td>Construction Noise and Vibration Strategy (for the City &amp; Southwest project)</td>
</tr>
<tr>
<td>CSSI</td>
<td>Critical State Significant Infrastructure</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority (of New South Wales)</td>
</tr>
<tr>
<td>EPL</td>
<td>Environment Protection Licence</td>
</tr>
<tr>
<td>ER</td>
<td>Environmental Representative</td>
</tr>
<tr>
<td>ICNG</td>
<td>Interim Construction Noise Guideline (DECC, 2009)</td>
</tr>
<tr>
<td>OOH</td>
<td>Out of Hours (i.e. outside of the standard construction hours stipulated in planning approval conditions)</td>
</tr>
<tr>
<td>POEO Act</td>
<td>Protection of the Environment Operations Act 1997 (NSW)</td>
</tr>
<tr>
<td>Secretary</td>
<td>The Secretary of the New South Wales Department of Planning and Environment</td>
</tr>
<tr>
<td>SPIR</td>
<td>Submissions and Preferred Infrastructure Report</td>
</tr>
</tbody>
</table>

1.5. Governance

This OOH Work Protocol should be used in conjunction with the Sydney Metro Construction Environment Management Framework, the City & Southwest Construction Noise and Vibration Strategy and any applicable Environment Protection Licences. These documents establish minimum requirements for managing noise and vibration impacts on the City & Southwest project.

1.5.1. Construction Environment Management Framework

The Chatswood to Sydenham Submissions and Preferred Infrastructure Report (SPIR) contains the Sydney Metro Construction Environmental Management Framework (CEMF) as Appendix B. The CEMF represents Sydney Metro’s minimum requirements for environmental management and specifies a standard framework that each contractor must establish and document in their Construction Environmental Management Plan and sub-plans. These requirements include those relating to construction noise and vibration management as specified in Chapter 9.

1.5.2. Construction Noise and Vibration Strategy

Sydney Metro has developed a Construction Noise and Vibration Strategy (CNVS) for the City & Southwest project. The strategy:
Establishes a framework for managing construction noise and vibration impacts and adopting appropriate mitigation measures (including minimum requirements),

- Forms Appendix C of the Chatswood to Sydenham SPIR,
- Forms part of the contract requirements that contractors must comply with, and
- Sets minimum requirements for all OOH work, including the need for and development of Construction Noise and Vibration Impact Statements.

### 1.5.2.1. Construction Noise and Vibration Impact Statements

A Construction Noise and Vibration Impact Statement (CNVIS) is a report that assesses and documents the anticipated noise and vibration impacts at sensitive receivers of proposed construction activities. In accordance with Condition E33 of the Chatswood to Sydenham planning approval, a CNVIS is to be prepared for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers.

### 1.5.3. Environment Protection Licence

An Environment Protection Licence (EPL) is a regulatory approval issued to strategically control the localised, cumulative and acute impacts of pollution. The NSW Environment Protection Authority (EPA) is responsible for issuing EPLs for ‘scheduled activities’ under the Protection of the Environment Operations (POEO) Act 1997 (NSW).

Some aspects of the City & Southwest construction and operation works will constitute ‘scheduled activities’ under the POEO Act and therefore need to be subject to an EPL. City & Southwest contractors are required to obtain and comply with any EPLs as applicable to their scope of works.

The process for approving OOH work outside of those already permitted in accordance with an EPL, is governed by the conditions of the EPL. In order for these types of OOH work to be approved, an application to vary the EPL is to be prepared and submitted to the EPA for approval. The application is to be in accordance with the CNVIS and EPL requirements.

OOH work that is subject to an EPL do not require approval in accordance with Condition E47 of the Chatswood to Sydenham planning approval (i.e. this protocol).
1.6. Roles and Responsibilities

1.6.1. TfNSW Place Manager

A TfNSW Place Manager will be allocated to each site on the Chatswood to Sydenham portion of the City & Southwest project. The Place Manager is responsible for ensuring that all project communication requirements with the surrounding community are being complied with.

1.6.2. TfNSW Environment Manager

A TfNSW Environment Manager will be allocated to each contract package on the Chatswood to Sydenham portion of the City & Southwest project. The Environment Manager is responsible for ensuring that all environmental management requirements associated with their contract package are being complied with.

1.6.3. Independent Environmental Representative

Condition A22 of the Chatswood to Sydenham planning approval requires an Environmental Representative (ER) to be appointed to the project to represent the NSW Department of Planning and Environment. The ER is to act as the Secretary’s independent point of contact for all environmental and planning approval compliance matters. Refer to Condition A24 of the Chatswood to Sydenham planning approval for a comprehensive list of the ER’s responsibilities.

Sections 3.1.2.3 and 3.1.2.4 include descriptions of the ER’s responsibilities with respect to reviewing and approving OOH work.

1.6.4. Acoustic Advisor

Condition A25 of the Chatswood to Sydenham planning approval requires an Acoustic Advisor (AA) to be appointed to the project. The AA is to act as the Secretary’s independent point of contact for all noise and vibration matters on the project. Refer to Conditions A25 and A27 for a comprehensive description of the AA’s responsibilities.

Sections 3.1.2.3 and 3.1.2.4 include descriptions of the AA’s responsibilities with respect to reviewing, identifying risk level, endorsing and deferring OOH work.
2. Standard Hours

Condition E36 of the Chatswood to Sydenham planning approval defines standard construction hours as:

(a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
(b) 8:00am to 1:00pm Saturdays; and
(c) at no time on Sundays or public holidays.

These hours are consistent with:

- The EPA's *Interim Construction Noise Guideline* (ICNG) 2009 'recommended standard hours' for construction in NSW, and
- The *City & Southwest Construction Noise and Vibration Strategy* (CNVS) 'standard daytime construction hours' (which were adopted by TfNSW as recommended by the ICNG).

Unless undertaken in accordance with Conditions E44, E46 or E48 of the Chatswood to Sydenham planning approval, construction is only permitted to be undertaken during standard construction hours.

If OOH work is to be undertaken in accordance with one or more of these conditions at the Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street or Central sites, the work must also comply with the specific requirements of Conditions E37 and E38 of the Chatswood to Sydenham planning approval. It should be noted however that the intent of Conditions E37 and E38 is to support certain types of work at these sites between 7am and 8pm. This should be considered when identifying risk levels for OOH work applications (refer to Section 3.1.2.3).
3. OOH Work

Out of hours (OOH) work is defined as any work that is undertaken outside of standard construction hours.

Some OOH work is permitted to be undertaken on the City & Southwest project in accordance with Conditions E44, E46 and E48 of the Chatswood to Sydenham planning approval. These works include:

- Delivery of materials as required by an authority for safety reasons,
- Emergency works,
- Works that are subject to different construction hours as permitted (or required) under an EPL,
- Low noise impact works,
- Works that are subject to a negotiated agreement with the substantial majority of affected sensitive receivers,
- Works undertaken in accordance with an Out of Hours Work Protocol approval and are the subject of a notification to the relevant council, local residents and other affected stakeholders and receivers at least five days prior to the works commencing and no more than 14 days prior to the works commencing.
- Rock breaking and other particularly annoying activities at the Central Station Site or, provided that the noise management level can be achieved at sensitive receivers, at any other site,
- 24 hour construction works in accordance with Condition E48, comprising:
  - Tunnelling and associated support activities (excluding cut and cover tunnelling),
  - Excavation within an acoustic enclosure,
  - Excavation at the Central Station Site without an acoustic enclosure,
  - Station and tunnel fit out, and
  - Haulage and delivery of spoil and materials,

In accordance with Condition E47 of the Chatswood to Sydenham planning approval and with the exception of OOH work that is subject to an EPL, all OOH work requires endorsement by the AA and approval by either the ER, or in the case of 'high risk' works undertaken after 9pm, the Secretary. This includes all work subject to Conditions E37, E38 and E48 of the Chatswood to Sydenham planning approval. The requirements of these conditions are to be specifically addressed in each OOH application (refer to Section 3.1.2) as relevant.
3.1. OOH Work Approval Process

Figure 1 provides the OOH work approval process for the Chatswood to Sydenham portion of the City & Southwest project. This includes a requirement to prepare an application that covers the assessment of noise and vibration impacts, mitigation measures (including community notification requirements), review and approval for all proposed OOH work.

All OOH work applications that are not subject to an EPL will be submitted to the TfNSW Place Manager, TfNSW Environment Manager, AA and ER for review and comment. These reviews will take into consideration a range of aspects, including reviewer experience and expert understanding, local knowledge of the area, current understanding of sensitive receiver requirements and other relevant documents (for example, the applicable Business Management Plan detailing predicted impacts to affected businesses, key issues and appropriate mitigation measures for implementation). This review process is further explained in section 3.1.2.3.

3.1.1. OOH Work subject to an EPL

For OOH work that is subject to an EPL, the EPL conditions will dictate the approval process. As a minimum however, for proposed OOH work that is not approved in the EPL and a variation is required, the contractor is expected to:

- Prepare an application to the EPA in accordance with the CNVS and EPL requirements,
- Submit the revised application to the EPA for approval and submit the application to the TfNSW Place Manager, TfNSW Environment Manager, AA and ER for information,
- Notify TfNSW, the AA and ER upon receiving EPA approval, and
- Ensure any required community notifications have been issued (by either TfNSW or the contractor directly) at least seven days prior to the works commencing.

3.1.2. OOH Work not subject to an EPL

For OOH work that is not subject to an EPL, the approval process is dictated by the requirements of Condition E47 of the Chatswood to Sydenham planning approval. Contractors are required to prepare an OOH application using:

- A form consistent with the Sydney Metro City & Southwest OOH Work Application Form for proposed OOH work that is within the scope of a CNVIS, or
- A form consistent with the Sydney Metro OOH Work Application Form for proposed OOH work that is not within the scope of a CNVIS (or is within the scope of a CNVIS that is yet to be prepared).

Both of these forms require a noise and vibration impact assessment to be undertaken and contain a consolidated and conservative version of Table 14 from the CNVS. This facilitates simpler consideration of applicable additional noise and vibration mitigation measures to implement. The forms also require demonstration of how additional noise and vibration mitigation measures have been considered for implementation (including community notifications) in accordance with the CNVS.
3.1.2.1. OOH Work within the Scope of a CNVIS

The majority of OOH applications subject to this protocol are anticipated to be undertaken within the scope of a CNVIS.

For proposed OOH work that is within the scope of a CNVIS, the OOH application will outline the associated noise and vibration impacts of the proposed OOH work, based on the outcomes of the CNVIS. The applicable sections of the CNVIS are required to be appended to the OOH application.

The associated noise and vibration impacts will guide the consideration of standard and additional mitigation measures to implement, in accordance with the CNVS.

3.1.2.2. OOH Work not within the scope of a CNVIS

In some circumstances, OOH work may be required that is not within the scope of a CNVIS. Examples of these situations include OOH works that:

- Are not defined as ‘construction’ under the Chatswood to Sydenham planning approval,
- Are not confined to a ‘construction site’ (e.g. power supply works, in-tunnel works, etc.), and
- Were not anticipated in a CNVIS at the time it was prepared.

For proposed OOH work that is not within the scope of a CNVIS (or is within the scope of a CNVIS that is yet to be prepared), the noise and vibration impacts of the proposed OOH work will generally have less certainty than those that are within the scope of a CNVIS. Therefore, greater due diligence is required in completing the OOH application form.

To ensure an adequate level of due diligence is applied to reviewing proposed OOH work that is not within the scope of a CNVIS, a form consistent with the generic Sydney Metro OOH Work Application Form is to be used. This form has been developed by TfNSW to ensure consistency with the Interim Construction Noise Guideline (DECC, 2009) and requires applicants to:

- Provide justification for the works to be undertaken OOH,
- Adequately assess the noise and vibration impacts at nearest sensitive receivers,
- Consider standard and additional noise and vibration mitigation measures to implement in accordance with the CNVS, and
- Request formal review, endorsement and approval for the proposed OOH work prior to their commencement.

Furthermore, the Sydney Metro OOH Work Application Form requires a preliminary quantitative noise assessment to be undertaken in accordance with the Interim Construction Noise Guideline (ICNG) as a minimum. For assessments indicating that noise exceedance levels are greater than 10 dBA for more than 10 occasions at the same sensitive receiver, the need to undertake a detailed quantitative noise assessment will be considered by TfNSW, the contractor, the AA and the ER collectively. The term ‘occasion’ is defined in the OOH Work Application Form.
3.1.2.3. Review, TfNSW Endorsement and Identification of Risk Level

Review

Once the contractor has prepared an OOH work application, the application is submitted to the TfNSW Place Manager, TfNSW Environment Manager, AA and ER for review. Following their reviews, TfNSW, the AA and the ER may provide comments on the application, which need to be adequately addressed by the contractor in a resubmitted application to the satisfaction of the comment provider(s).

Prior to the TfNSW Principal Manager (Stakeholder & Community Liaison) indicating their endorsement (or otherwise) on the application, reference will be made to the applicable Business Management Plan (BMP) in accordance with Condition E64 of the Chatswood to Sydenham planning approval. The BMP will:

- Identify business stakeholders that may be affected by the project works and the issues specific to each business,
- Detail the strategies and activities to be used to facilitate open communication and engagement with businesses,
- Explain mitigation measures for identified business-related impacts, and
- Define roles and tools to enable TfNSW Place Managers to implement the BMP.

TfNSW Endorsement and Identification of Default Risk Level

Following endorsement from the TfNSW Principal Manager (Stakeholder & Community Liaison), the AA is required to identify a risk level for the proposed OOH work in accordance with Condition E47 of the Chatswood to Sydenham planning approval. This risk level will be categorised as either 'Low risk' or 'High risk'.

As a default risk level, the AA will identify OOH work as 'high risk' if all of the following three criteria apply:

- The type and sensitivity of the affected noise sensitive receivers is categorised as either Moderate Impact receivers (e.g. standard residential / typical density) or High Impact receivers (e.g. elderly / high density / persistent complainers / residents experiencing construction noise fatigue), and
- The predicted noise level of the OOH work has a likelihood for potential sleep disturbance (i.e. Rating Background Level + 15 dB or more), and
- The type of and intensity of noise emitted from the OOH work is categorised as High Impact (e.g. prolonged high noise and/or vibration intensive activities).

These criteria are based on Section 6.4 General Assessment Procedure of the CNVS.

For non-residential receivers the AA may consider OOH work as 'high risk' if undertaken during trading hours and in close proximity to their place of business (for example, during Saturday afternoon trading hours). Since each non-residential receiver has different business needs, it is imperative that the AA discusses each OOH work application with the TfNSW Place Manager to better understand how the proposed OOH works would impact the business.
Modification of Default Risk Level

Using the default risk level as a 'starting point', the AA will consider all other relevant factors in order to identify a final risk level. These relevant factors include:

- Those identified on Pages 24 and 25 in Section 6.4 of the CNVS (noting that the reference to 'impact levels' is independent of the 'risk rating' identified by the AA for the purposes of complying with Condition E47(c) of the Chatswood to Sydenham planning approval),
- Those listed in Table 2, and
- Any other factors the AA considers relevant in its professional opinion.

These factors may be cause for the AA to modify the default risk rating from either 'high risk' to 'low risk', or 'low risk' to 'high risk', as the AA deems appropriate in its professional opinion.

Table 2: Risk Level Considerations

<table>
<thead>
<tr>
<th>Risk Level Considerations</th>
<th>Description</th>
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<tr>
<td>Predicted Noise Exceedance</td>
<td>Degree of predicted noise level exceedance above the Rating Background Level or Noise Management Level as appropriate</td>
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<td>Specific Scope of Work</td>
<td>Works that are not subject to Conditions E37 and E38</td>
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<tr>
<td>5 dBA Penalty</td>
<td>If 5 dBA penalty is required in accordance with Conditions E37, E38, E41 and E42</td>
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<tr>
<td>Certainty</td>
<td>Rating background levels, noise management levels or predicted noise impacts are not well understood</td>
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<tr>
<td>Past Experience</td>
<td>Nature of works are new, in a new location or have not been undertaken by the contractor on the project already</td>
</tr>
<tr>
<td>Negotiated Agreement with Sensitive Receivers</td>
<td>No negotiated agreement with sensitive receivers has been obtained in accordance with Condition E44(e)</td>
</tr>
<tr>
<td>Potential Sleep Disturbance</td>
<td>Likely to generate potential sleep disturbance (RBL + 15dB or greater)</td>
</tr>
<tr>
<td>Non-Residential Receivers</td>
<td>Impacted non-residential receivers operate during same period of proposed OOH works</td>
</tr>
<tr>
<td>Special Events</td>
<td>The timing and location of special events in the area of the proposed OOH works may be scheduled at the same time or immediately before or after the special event (e.g. festivals, public gatherings, etc.)</td>
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<tr>
<td>TfNSW Place Manager Feedback</td>
<td>Feedback from the Place Manager for the area will provide the AA an understanding of the types and requirements of surrounding sensitive receivers.</td>
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<tr>
<td>Sensitive Receivers</td>
<td>Moderate impact sensitive receivers (e.g. standard residential, medium density receivers) or high impact sensitive receivers (e.g. residential home for the elderly, high density unit blocks, persistent complainers, residents deemed to have ‘construction noise fatigue’)</td>
</tr>
<tr>
<td>High Impact Works</td>
<td>Prolonged high noise or vibration intensive activities</td>
</tr>
<tr>
<td>Other Impacts</td>
<td>Impacts other than noise and vibration impacts are likely to be generated (e.g. lighting, traffic, etc.)</td>
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Once the AA has identified a final risk level for the OOH work application, the AA indicates the risk level on the application (including any risk identification commentary), as well as whether the application includes works after 9pm, and signs and dates the application.

3.1.2.4. Endorsement and Approval

Figure 1 includes a process for the endorsement and approval of OOH work.

Following the identification of risk level by the AA, the AA endorses the OOH work application and provides any conditions or comments. If the AA identifies that the OOH work application is high risk and includes works after 9pm, the application is forwarded to the ER for endorsement only. Following the ER’s endorsement, the application is then formally submitted by TfNSW via email to the Secretary for approval in accordance with Condition E47 of the Chatswood to Sydenham planning approval. For all other applications, the ER indicates their approval (or otherwise) on the application, including any conditions or comments, and forwards directly to TfNSW, the contractor and AA.
Contractor identifies the need to perform OOH works

Are the OOH works subject to an EPL?

No

Are the OOH works within the scope of a CNVIS?

No

Contractor prepares application using a form consistent with the Sydney Metro OOH Work Application Form

Yes

Contractor prepares application using a form consistent with the Sydney Metro City & Southwest OOH Work Application Form

Provide comment

TfNSW, AA and ER review and provide comment back to contractor

TfNSW Principal Manager (Public Communications) or Contractor’s Communications Manager endorses application

AA identifies risk level and endorses application

Has the AA identified high risk work after 9pm?

No

ER reviews application for approval

Yes

ER endorses application

TfNSW formally submits application to Secretary for approval

Approval

(including notification to TfNSW, contractor, AA and ER)

If community notification is required, TfNSW or contractor issues community notification at least 7 days prior to commencement of works

ACRONYMS

AA: Acoustic Advisor
CNVIS: Construction Noise and Vibration Impact Statement
CNVS: Construction Noise and Vibration Strategy
EPA: Environment Protection Authority
EPL: Environment Protection Licence
ER: Environmental Representative
OOH: Out of Hours
Secretary: NSW Secretary of Department of Planning and Environment
TfNSW: Transport for NSW

Figure 1: OOH Work Approval Process
3.2. Community Notifications

Community notifications can be used as a mitigation measure for receivers of noise and vibration impacts from OOH work.

Community notifications usually comprise of letterbox-dropped or hand-distributed notification letters to identified stakeholders prior to the commencement of works. Communities are more likely to understand and accept the impacts from noise and vibration if they are provided with honest detailed information and commitments on mitigation measures to be implemented that are adhered to by the project prior to the works commencing.

Community notification requirements are included in the CNVS and outlined in the Community Communications Strategy for the City & Southwest project in accordance with Condition B1 of the Chatswood to Sydenham planning approval.

Community notification is an example of an additional mitigation measure that may be considered for implementation in accordance with the CNVS and the additional mitigation measure tables contained in the OOH Work Application Forms. In the event that community notification is required as a mitigation measure prior to OOH work commencing, community notification is to be undertaken at least seven days prior to the works commencing.

3.2.1. Negotiated Agreements with Sensitive Receivers

Occasionally, a negotiated agreement for particular OOH work will be formed with the potentially affected sensitive receivers in accordance with Condition E44(e) of the Chatswood to Sydenham planning approval. These negotiated agreements would be undertaken and documented by either the contractor or TfNSW as part of an OOH application.

The negotiated agreement needs to reach a minimum 65% acceptance rate of those sensitive receivers that are contactable. ‘Contactable’ is defined as having received correspondence (either verbal or written) from receivers within a two week timeframe. The CNVIS process and the TfNSW Place Manager will advise of potentially affected sensitive receivers to be contacted.

Upon ER approval of any OOH applications containing negotiated agreements, TfNSW will forward the negotiated agreement documentation to the Secretary for information at least one week prior to the OOH work commencing. In the event that community notification is required as a mitigation measure prior to the OOH work commencing, this would be undertaken at the same time (i.e. at least seven days prior to the works commencing).

3.3. Emergency Works

Occasionally there may be a need to undertake emergency works outside of standard work hours. In this situation, the works are permitted to proceed without prior approval, provided that the works were:

- Unforeseen, and
- Required to avoid the loss of life, damage to property or prevent environmental harm.

Figure 2 outlines the emergency work process.
On becoming aware of the need to undertake emergency works in accordance with Condition E44(b) of the Chatswood to Sydenham planning approval, contractors must notify TfNSW, the AA, the ER and the EPA (if it is required under an EPL if relevant) of the need to undertake the works. This notification should be in the form of a written email or text message to TfNSW, the AA and the ER. The requirements for notifying the EPA will be dictated in the conditions of the EPL if relevant.

As a form of mitigation, community notification is to be undertaken within two hours of the commencement of emergency works. These notifications will generally be prepared by the contractor using a small hand-completed Sydney Metro card template for distribution to the immediate surrounding community. These cards will include the following details as a minimum:

- Scope,
- Location,
- Hours,
- Duration,
- Types of equipment to be used, and
- Likely impacts.

The day after any emergency works, the applicant is to provide a written emergency works report to TfNSW. The emergency works report is to include as a minimum:

- Date, time, duration and cause of the emergency,
- Description of emergency works undertaken,
- Mitigation measures implemented to address the impacts of the emergency works, and
- Actions/Measures taken or to be taken to prevent or mitigate recurrence of the emergency. If there are no appropriate actions/measures to be taken, explanation is to be provided as to why.
Contractor identifies imminent need to perform works outside approved construction hours

Are works subject to an EPL?

Yes

Contractor notifies TfNSW and EPA and complies with EPL requirements

No

Contractor provides written notification to TfNSW, the AA and ER of the need to perform the works

Contractor commences emergency works

Contractor prepares community notifications for TfNSW approval

Contractor addresses comments

Approved

No

Contractor or TfNSW issues community notification within 2 hours of emergency works commencing

Contractor submits emergency works report to TfNSW the next working day

ACRONYMS

AA: Acoustic Advisor
EPA: Environment Protection Authority (NSW)
EPL: Environment Protection Licence
ER: Environmental Representative
OOH: Out of Hours
TfNSW: Transport for NSW

Figure 2: Emergency Work Process
4. Related Documents and References

<table>
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<tr>
<td>• SM ES-ST-204 Construction Environment Management Framework</td>
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<td>• SM ES-ST-210 City &amp; Southwest Construction Noise and Vibration Strategy</td>
</tr>
<tr>
<td>• SM ES-FT-443 City &amp; Southwest Out of Hours Work Application Form</td>
</tr>
<tr>
<td>• SM ES-FT-419 Out of Hours Work Application Form</td>
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<tr>
<td>• SM SC-ST-202 Overarching Community Communications Strategy</td>
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<tr>
<td>• SM QM-FT-435 Integrated Management System (IMS) Glossary</td>
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<td>• EPA Interim Construction Noise Guideline</td>
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5. Superseded Documents

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6. Document History

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Appendix A: OOH Work Protocol Endorsements
Mr Stuart Hodgson
Principal Manager,
Program Sustainability Environment & Planning
Sydney Metro
Transport for NSW
PO Box 588
NORTH RYDE BC NSW 1670

Dear Stuart

RE: Endorsement of Sydney Metro City & Southwest Out of Hours Work Protocol

Thank you for providing the following document for Environmental Representative (ER) review and endorsement as required by the Condition of Approval A24 (d) of the Sydney Metro City & Southwest project (SSI — 15_7400 January 9 2017).

- Sydney Metro City & Southwest City & Southwest Out of Hours Work Protocol (SM ES-PW-317/1.0)

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed and provided comment on these documents. As required under A27 (d), the Acoustic Advisor has also been involved in this process and has provided separate endorsement.

I now consider this Protocol appropriate for submission to the Secretary notwithstanding that the required Specific Out of hours Works Application Forms will continue to be developed, reviewed by Acoustic Advisor, endorsed by the ER, and submitted to the Secretary for approval as required.

Yours sincerely

Jo Robertson
Environmental Representative — Sydney Metro — City and South West

Leaders in Environmental Consulting
### ENDORSEMENT

**CITY & SOUTHWEST ACOUSTIC ADVISOR (Interim)**

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<td>Prepared by:</td>
<td>Dave Anderson</td>
<td>Sydney Metro City &amp; Southwest City &amp; Southwest Out of Hours Work Protocol Document number SM ES-PW-317, version 1.0, 28 March 2017</td>
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As approved (interim) Acoustic Advisor for the Sydney Metro City & Southwest project, I have reviewed and provided comment on the Out of Hours Work Protocol, as required under A27 (d) of the project approval conditions.

I consider that this Protocol is appropriate for submission to the Secretary, noting that the required Specific Out of hours Works Application Forms will continue to be developed, including review by the Acoustic Advisor and endorsement by the ER.

Dave Anderson, interim City & Southwest Acoustic Advisor
Appendix B: OOH Work Protocol Approval from the Secretary
Dear Mr Jones

Sydney Metro City & Southwest Chatswood to Sydenham (SSI 15_7400): Approval of the Out of Hours Work Protocol under condition E47.

Thank you for your correspondence dated 30 March 2017, submitting the Out of Hours Work Protocol in accordance with Condition E47 for the Secretary's approval. I also note further revisions to this document, responding to the Department’s detailed comments and requirements. The Department has reviewed the updated Out of Hours Work Protocol (Rev 1.3 dated 4 July 2017) and considers that it satisfactorily addresses the requirements of Condition E47. Therefore, in accordance with Condition E47, I approve the Out of Hours Work Protocol (Rev 1.3 dated 4 July 2017).

Please note that under condition E47, all out of hours construction that is not subject to an EPL, that the Acoustic Advisor deems to be “High Risk”, and that occurs after 9pm must be submitted to the Secretary for approval.

If you have any further queries or require clarification on this matter, please contact me on 9274 6454 or by email jacqui.mcleod@planning.nsw.gov.au.

Yours sincerely

Jacqui McLeod
Acting Director Infrastructure Management
as delegate of the Secretary

14/7/17
Attachment 3 - Terms of Reference for the Independent Property Impact Assessment Panel
Terms of Reference
Sydney Metro City and Southwest Independent Property Impact Assessment Panel (the Panel or “IPIAP”)

Sydney Metro Integrated Management System (IMS)

Applicable to: Sydney Metro Program Office
Document Owner: Strategic Environmental Advisor
Status: Final
Version: 3.1
Date of issue: 16 November 2018
Review date:
Security classification: Open Access

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1. **Purpose**

Role of the Independent Property Impact Assessment Panel

1. To independently review and provide comment on the scope of works and template report for the property condition surveys being undertaken for the Project.

2. To resolve property damage disputes referred to it by Sydney Metro, or the Foundation Contractor and the affected property owner.

3. To independently review assessments undertaken pursuant to the Minister's Conditions of Approval (MCoA) if a property damage claim is referred to the Panel.

4. Review Sydney Metro, or the Foundation Contractor monitoring settlement data for certain periods as specified in accordance with the MCoA.

5. Review Sydney Metro, or the Foundation Contractor ongoing settlement monitoring requirements as required under the MCoA.

2. **Scope**

All Project Works performed on the Project until Contract Completion or as required by the Planning Approval.

3. **Charter**

The Panel has the following roles:

1. The Panel is required to review the geotechnical model and vibration and settlement monitoring program prepared by Sydney Metro, or the Foundation Contractor.

2. Either the affected property owner or the Foundation Contractor may refer unresolved disputes arising from potential and/or actual property impacts to the Panel for resolution. The Panel shall independently review any property damage claims referred to the Chair, seek to resolve the dispute and establish any ongoing settlement monitoring requirements as applicable. In so doing the Panel should determine if the damage is wholly or partly attributable to the works undertaken by those works defined under 'Scope' above (and not some other cause or occurrence).

3. The Panel will also detail its recommendations regarding responsibilities for the subject damage and whether Sydney Metro, or the Foundation Contractor are responsible for any specific rectification work.

4. At any time, any party may withdraw its complaint from this process if agreement is reached. The DRP is advisory and its recommendations are not binding.

5. The Panel shall issue an interim report to both parties for consideration. After receipt of all comments from the parties on the interim report, the Panel is to provide a copy of its final determination to Sydney Metro and the affected Property Owner.

6. The Meetings of the Panel with Sydney Metro’s Contractors and the Property Owner to consider potential or actual impacts are to be non-adversarial and conducted without being bound to observe the rules of evidence.

7. The Panel may inspect the alleged building damage by arrangement with the Property Owner.
8. In addition to the Pre-Construction Condition Reports applicable to the property in dispute, the Panel may request records relating to the vibration monitoring and associated activity records relevant to the subject property.

9. Any determination by the Panel would not be legally binding on the affected Property Owners. Any determination will be binding on Sydney Metro and the Foundation Contractor.

10. In addition, Sydney Metro or its Contractors has determined that the Panel will review and, where relevant, provide comment on the scope of works for the Property condition surveys and the associated template report.

4. **Membership**

Composition of the Independent Property Impact Assessment Panel (the panel):

The panel below is proposed to DP&E:

Details of the Panel Chair and Members are contained in their CVs.

5. **Limits of Role of Panel**

The Panel will not get involved in issues of property valuation, compulsory acquisition, or any other similar matters dealt with under the *Land Acquisition (Just Terms) Compensation Act 1991*. The Panel can review any property condition surveys relevant to the unresolved property damage dispute referred to the Panel by Sydney Metro, or the Foundation Contractor or a Property Owner.

6. **Invitees**

Representatives from other agencies and organisation may be invited by the Chair to attend on an as needs basis depending on specific issues requiring discussion.

From time to time various technical and management officers of Sydney Metro may be invited by the Chair to attend as necessary.

Where a property damage claim is being discussed, the Chair may invite Sydney Metro, or the Foundation Contractor the affected property owner.

7. **Convenor & Secretary**

The Chair with administrative support from Sydney Metro.

8. **Confidentiality**

All information presented to the Panel members, both written and oral, is to remain confidential. Material and/or information provided to the Panel or Panel correspondence or reports must not be released to third parties without the written consent of the Chair.
10. DP&E Referral

If the Panel is dissatisfied with the response from Sydney Metro, or the Foundation Contractor in obtaining requested information, the Panel can refer the matter to the Secretary for DP&E for resolution.

11. Frequency

The Panel shall meet:

1. Mid 2018 to brief the panel on the works and monitoring program.
2. When required to discuss management and monitoring plans
3. Quarterly after Project Works commence to review monitoring data.
4. Where a matter related to settlement monitoring requires urgent action.
5. At the Chair's discretion.

When required at strategic stakeholder meetings.

12. Meeting Venue

To be organised by Sydney Metro.

13. Inputs to Meeting

Three business days prior to meeting the following is to be disseminated to the Members:

- Agenda approved by Chair
- Meeting Notes of previous meeting including an updated Decisions/Actions Register
- Assessment performed by the Panel as required under the conditions (where applicable at the time of the meeting)
- Briefing Papers relevant to the Agenda
- The Project 6-month look-ahead program.

14. Outcomes of Meeting

Meeting Notes and updated Decisions/Actions Register shall be provided to the Panel Members within three business days. The Meeting Notes and Decisions/Actions Register will be maintained by the Chair, with administrative support from Sydney Metro.
Attachment 4 – Construction Traffic Management Framework (CTMF)
Construction Traffic Management Framework – City & Southwest Chatswood to Sydenham Contracts

SM ES-ST-217

Sydney Metro Integrated Management System (IMS)

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1. Introduction

1.1. Purpose

This Construction Traffic Management Framework (CTMF) sets out the approach to managing traffic impacts during the construction of the Chatswood to Sydenham component of Sydney Metro City & Southwest (the Project). The CTMF also outlines contractor requirements, including those detailed in project-specific agreements such as Work Authorisation Deed (WAD) with RMS agreements with local councils and third party interface agreements.

This CTMF has been prepared to address the general requirements for the following contracts:

- Tunnel and Station Excavation (TSE)
- Integrated Station Development (ISD) for Crows Nest, Victoria Cross, Martin Place, Pitt Street.
- Barangaroo Station
- Waterloo Station
- Line-wide works (LW)
- Trains, Systems, Operations and Maintenance (TSOM)
- Sydenham Station Junction (SSJ)
- Central Station Main (CSM)
- Any other contract commissioned for construction of the Chatswood to Sydenham component of Sydney Metro City & Southwest.

The above contracts form part of the Project that was approved to proceed as State Significant Infrastructure (SSI) by the Department of Planning and Environment on 9 January 2017 (SSI 15_7400). The CTMF is a requirement under the conditions of the SSI Approval for the Chatswood to Sydenham component of Sydney Metro City & Southwest. See Table 1-1 below. At the time of preparation of this document, the SSJ and CSM works are modifications to the Project and are subject to approval of the modifications by the Department of Planning and Environment.

1.2. Scope

The CTMF provides the overall strategy and approach for construction traffic management for the Project, and an outline of the traffic management requirements and processes that will be common to each of the proposed work sites. It establishes the traffic management processes and acceptable criteria to be considered and followed in managing roads and footpaths adjacent to Project worksites.

A contract-wide Construction Traffic Management Plan (CTMP), along with site specific CTMPs, and Traffic Control Plans (TCPs) as required, will also be documented based on this framework. These documents will be prepared by the Project’s contractors responsible for each works package as outlined in Section 1.1 to align with the contents, principles and objectives of this CTMF, as well as contractual requirements, Revised Environmental Mitigation Measures (REMM) and all other obligations of the SSI Approval.
The worksites along the Sydney Metro City & Southwest corridor will be located within high-activity, densely developed, and in some cases congested sections of the road network, and any traffic management measures will need to consider all the potential impacts that might occur because of the construction activities.

1.3. Project Description

Sydney Metro is a key component of Sydney’s Rail Future (Transport for NSW, 2012), a plan to transform and modernise Sydney’s rail network so that it can grow with the city’s population and meet the needs of customers in the future. The Sydney Metro network will consist of Sydney Metro Northwest and Sydney Metro City & Southwest.

Sydney Metro City & Southwest has two components:

- Chatswood to Sydenham – 16.5 kilometres of new metro line between Chatswood and Sydenham, including 15.5 kilometres of new twin rail tunnels (the Project referred to in this document).
- Sydenham to Bankstown upgrade – 13.5-kilometre upgrade and conversion of the T3 Bankstown Line to metro standards (subject to a separate environmental assessment process).

The key components of the Project (from north to south) include:

(a) Realignment of T1 North Shore Line surface track within the existing rail corridor between Chatswood Station and Brand Street, Artarmon, including a new bridge for a section of the ‘down’ (northbound) track to pass over the proposed Northern Dive Structure.
(b) About 250 metres of new above-ground metro tracks between Chatswood Station and the Northern Dive Structure.
(c) A Northern Dive Structure (about 400 metres in length) and tunnel portal just north of Mowbray Road, Chatswood.
(d) About 15.5 kilometres of twin (side-by-side) rail tunnels between the Northern Dive Structure and Bedwin Road, Marrickville (the Southern Dive Structure).
(e) A substation (for traction power supply) at Artarmon.
(f) New metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, as well as new underground platforms at Central Station.
(g) A southern dive structure (about 400 metres in length) and tunnel portal north of Sydenham Station and south of Bedwin Road, Marrickville.
(h) A services facility (for traction power supply and an operational water treatment plant) adjacent to the Southern Dive Structure.
(i) Station works and track works at Sydenham Station to convert platforms 1 and 2 to metro operation, and to provide the southern turnback for the Chatswood to Sydenham section of the Project.
(j) Construction of a stabling facility to the north of Sydenham Station, adjacent to the Southern Dive Structure.

The Project will also include ancillary components, including new or upgraded overhead wiring, signalling, access tracks/paths, rail corridor fencing, noise walls, fresh air ventilation equipment, temporary and permanent alterations to the road network, facilities for pedestrians, and other construction related works.
1.4. Construction Staging

Construction works for the Sydney Metro City & Southwest commenced in early 2017, and the Project aims to be operational by 2024. The delivery packages are:

- Enabling Works (EW).
- Demolition (consisting of over 50 buildings and separated into Demo 1 and Demo 2 contracts for delivery purposes).
- Sydney Yard Access Bridge (SYAB).
- Central Station Main (CSM), to include the recently announced Central Walk.
- Tunnel and Station Excavation (TSE).
- Trains Systems Operations and Maintenance (TSOM).
- Integrated Station Development (ISD) for Crows Nest, Victoria Cross, Martin Place, Pitt Street.
- Barangaroo Station.
- Waterloo Station.
- Line-wide works (LW)
- Sydenham Station and Junction (SSJ).

The indicative construction program is outlined in Figure 1.1.

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Figure 1-1: Draft construction program
(Note: TSOM timeframes not available at this time)
1.5. Governance

The approved version of the CTMF will be available on the Sydney Metro website.

The Sydney Metro Delivery Office will be the document owner of the approved CTMF. This CTMF requires approval by the Secretary, Department of Planning and Environment in accordance with Condition E81.

1.6. Compliance

This document has been prepared to address the requirements of the SSI Approval received on 9 January 2017 for the Chatswood to Sydenham component of Sydney Metro City & Southwest, and the Revised Environmental Mitigation Measures (REMM) identified in the Sydenham to Chatswood Submissions and Preferred Infrastructure Report.

The following table indicates the correlation between the requirements of those two documents and this CTMF. The requirements of these documents are summarised in the table below and the full requirements list is provided in Appendix B.

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### Sydney Metro – Integrated Management System (IMS)

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<tr>
<td>T11 – Special events</td>
<td>6.6</td>
</tr>
<tr>
<td>T12 – Staff parking</td>
<td>7.4.1</td>
</tr>
<tr>
<td>T13 – Minimise truck movements in peaks</td>
<td>7.1, 11</td>
</tr>
<tr>
<td>T14 – Minimise movements through School Zones</td>
<td>7.1</td>
</tr>
<tr>
<td>T15 – Pedestrian and cyclist access – Crows Nest</td>
<td>2.1, 2.2</td>
</tr>
<tr>
<td>T16 – Devonshire Street tunnel closure timing</td>
<td>11.1. To be considered in detail in Central Station construction planning.</td>
</tr>
<tr>
<td>T17 – Consultation with harbour authorities and ferry operators re shipping channels</td>
<td>4</td>
</tr>
<tr>
<td>T18 – Martin Place access closures pedestrian management</td>
<td>11.1. To be considered in detail in Martin Place construction planning.</td>
</tr>
<tr>
<td>T19 – Removal of parking</td>
<td>3.3.3, 4, 5</td>
</tr>
<tr>
<td>T20 – Alternate pedestrian access</td>
<td>2.1</td>
</tr>
<tr>
<td>T21 – Cumulative construction vehicle management</td>
<td>3.3.2, 11.1</td>
</tr>
<tr>
<td>T22 – Pedestrian paths condition surveys</td>
<td>9.4</td>
</tr>
</tbody>
</table>

**CEMF Spoil Management reference**

| 6.1 a – minimise adverse traffic and transport related issues | 2.1, 2.2, 7.1 |
| 6.2 a – description of spoil traffic movements | 7.1   |
| 6.3 a – minimise traffic impacts associated with spoil removal | 2.2   |

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Unclassified
2. **Traffic Management Objectives**

This section outlines the approach, strategy and hierarchy of access required when managing traffic for the Project.

Sydney Metro City & Southwest requires demolition and construction work to be undertaken within the City of Sydney, North Sydney, Willoughby and Inner West council areas, and in the area of the Barangaroo Delivery Authority. At all locations, it is important that adequate consideration and emphasis is given to the operation of public transport, private vehicles and service vehicles, and pedestrian and cyclist management measures, to minimise impacts. It is also important that access for residents and businesses is maintained, consistent with the SSI Approval.

The design and operation of any proposed temporary traffic management measures will require careful planning, coordination and implementation.

Pedestrians, cyclists and vehicle drivers expect a high level of safety and service in using the existing road and pedestrian network. This requires efficient, effective and reliable traffic management strategies to be in place that:

- Achieve uniform traffic throughput.
- Minimise changes to pedestrian and cycle routes and movement.
- Ensure reliable and consistent travel times.
- Provide clear information to allow drivers and other road users to make appropriate decisions in relation to their journey.
- Support operation and use of sustainable transport modes to reduce on-road single occupant motor vehicle demand.

These traffic management goals will be achieved by:

- Understanding the impacts of the works and identifying appropriate methods to mitigate these impacts.
- Strategic advance planning of the traffic management.
- Taking an approach to traffic management that minimises traffic disruption.
- Ongoing stakeholder engagement and communication.
2.1. General Traffic Management Approach

The Sydney Metro Delivery Office is committed to achieving desired performance goals in relation to the health and safety of workers employed to construct Sydney Metro City & Southwest, and to minimising the impacts of the works on road users and the community. The construction objectives that relate to the CTMF are outlined in the table below.

Table 2-1: CTMF-related construction objectives

<table>
<thead>
<tr>
<th>Key Result Area</th>
<th>Construction Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport network</td>
<td>• Minimise disruption to pedestrians, cyclists and motorists.</td>
</tr>
<tr>
<td></td>
<td>• Ensure Sydney Metro City &amp; Southwest construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site.</td>
</tr>
<tr>
<td></td>
<td>• Keep Sydney moving.</td>
</tr>
<tr>
<td></td>
<td>• Ensure buses run on time with no disruption to routes and stops, where possible.</td>
</tr>
<tr>
<td></td>
<td>• Minimise changes to traffic operation and kerbside access.</td>
</tr>
<tr>
<td></td>
<td>• Minimise construction traffic generation during network peak periods (maximum peak period construction vehicle volumes should not exceed those outlined in the EIS).</td>
</tr>
<tr>
<td></td>
<td>• Maintain access to properties and businesses.</td>
</tr>
<tr>
<td>Safety</td>
<td>• No worker injury accidents during construction.</td>
</tr>
<tr>
<td></td>
<td>• No injury accidents to members of the public because of construction.</td>
</tr>
<tr>
<td>Cumulative impacts</td>
<td>• Work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts.</td>
</tr>
<tr>
<td>Amenity</td>
<td>• Minimise noise and other environmental impacts on the residents and businesses in the vicinity of the worksite, in line with the Construction Noise and Vibration Strategy (CNVS) Section 5.3 and 5.9.</td>
</tr>
</tbody>
</table>

All Sydney Metro City & Southwest construction activity must comply with the following principles:

(a) A safe road and pathway network for construction personnel and the public (vehicular, cyclist and pedestrian) must be made at all work sites including alternative movement paths as a result of site works.

(b) Minimise delays to traffic and pedestrians in the immediate vicinity of work sites as much as practicable.

(c) Minimise construction traffic generation during network peak periods to the maximum numbers outlined in the EIS, unless otherwise agreed by the relevant authorities (such as Sydney Coordination Office (SCO), RMS or local council). It is an RMS operational imperative that the capacity and efficiency of the network is not reduced, particularly during the peak periods of 6:00am to 10:00am and 3:00pm to 7:00pm, Monday to Friday (excluding public holidays).

(d) Coordinate works so that road users do not encounter a series of delays in quick succession and so that the cumulative impact of multiple closures does not lead to unexpected congestion.

(e) Implement appropriate operational and other measures to ensure the safety of vulnerable road users (refer to Section 9.5).

(f) Maintain access for residents and businesses.
(g) Keep road users (vehicular, cyclists and pedestrians) informed about:
   i. The location, date, time and duration of works, to enable informed decisions by the road user regarding times and routes of travel.
   ii. Likely travel delays.
   iii. Alternative routes, if applicable.
(h) Present a professional and helpful interface with road users during all parts of the construction process.
(i) Consider potential impacts on pedestrians and cyclists.
(j) Keep public transport users informed of changes, due to construction.
(k) Meet other RMS and SCO operational imperatives listed in Appendix C.

2.2. Traffic management strategy

There is the potential for activities associated with the construction of the Sydney Metro City & Southwest to have an impact on the surrounding road network. Where possible, these impacts will be minimised through the provision of effective traffic management measures, in accordance with Sydney Metro Delivery Office's objectives and relevant guidelines and standards, to achieve the objectives of the Project. Development of the traffic management measures will be carried out in consultation with the Traffic Control Group (TCG) Traffic and Transport Liaison Group (TTLG), RMS, SCO and other stakeholders in accordance with the SSI Approval.

Priority will be given to providing adequate guidance to pedestrians, cyclists, drivers and the community prior to the commencement of any works. Priority will also be given to responding appropriately to issues and events that may arise during the works. As part of this strategy, some key traffic management measures include:

(a) The provision of directional signage and line marking to direct and guide drivers, cyclists and pedestrians past work sites and to suitable alternative routes (if required) on the surrounding road network.
(b) Notification of proposed changes and duration using newspapers (local or majors), radio, project website, social media and direct community engagement (as required).
(c) On-going or direct co-ordination with the Transport Management Centre (TMC) and the SCO, to mitigate congestion and provide rapid response should incidents or increased congestion occur as a direct result of the works. Notification of incidents or congestion should also be relayed to the Sydney Metro Delivery Office immediately (refer to Section 8.3). The direct contact numbers of the contract-wide and site-specific lead contractors should be provided to the TMC and SCO. The contract-wide lead contractor is responsible for ensuring the direct contact numbers are current during any stage of construction.
(d) Management and coordination of construction vehicle access to and from the work sites across pedestrian paths. The type of traffic management to be employed will be dependent on, and adjusted according to, the volume of pedestrians, passing traffic and the volume of construction vehicle activities for the site. The types of management could include manual supervision, physical barriers,
temporary/portable traffic signals (where approved by RMS, BDA or council) or modification to existing traffic signals (where approved by RMS).

(e) Ensuring that access to existing properties and businesses is maintained during the period of the works, or suitable alternative.

(f) Retain existing on-street parking and restrictions, as far as is practicable.

2.3. Hierarchy of access

In identifying the most appropriate form of traffic management for each site, consideration should be given to the priorities of the potential different users. The site specific CTMPs should be developed in line with the following hierarchy of access, listed from the highest to the lowest priority:

1. Incidents and emergency Services access
2. Events (special and unplanned)
3. Pedestrians
4. Cyclists
5. Other public transport users – buses, coaches and light rail
6. Service vehicles
7. Coaches
8. Taxis
9. Kiss and ride and rideshare
10. Private cars

The strategic importance (functional hierarchy) of traffic routes and the existing administrative road classification is listed below, in order of highest to the lowest priority:

1. Arterial/State road
2. Sub-arterial or Regional road
3. Collector road
4. Local road

It should be noted that while most streets within the Sydney CBD are 'local roads', their role and function are as important traffic routes for circulation around the CBD serving public transport, active transport and service vehicles.
3. Implementation framework

3.1. Construction Environmental Management Framework (CEMF)

The Construction Environmental Management Framework (CEMF) sets out the environmental, stakeholder and community management requirements for construction. It provides a linking document between the planning approval documentation and the construction environmental management documentation to be developed by the Principal Contractors relevant to their scope of works. Chapter 8 of the CEMF outlines construction traffic management requirements.

3.2. Construction traffic management task

The Project requires construction work to be undertaken for the tunnels, stations, ancillary facilities and connections to the stations at various locations within the City of Sydney, North Sydney, Willoughby and Inner West (formerly Marrickville, Leichhardt, Ashfield) council areas.

Managing the impacts of construction traffic on the road and pedestrian networks near the surface construction works is vital to the success of the Project.

3.3. Implementation process

The Construction Traffic Management Framework (CTMF) is one of several management plans required for each of the construction sites. The hierarchy of the traffic management plans for the Project, their purpose, and the responsible entity for each are outlined in the table below.

<table>
<thead>
<tr>
<th>Document</th>
<th>Purpose</th>
<th>Produced by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Traffic Management Framework (CTMF)</td>
<td>Provides the approach within which subsequent contract specific and site specific CTMPs will be prepared.</td>
<td>Sydney Metro Delivery Office</td>
</tr>
<tr>
<td>Contract-wide Construction Traffic Management Plan (CTMP)</td>
<td>Contract-specific CTMPs are to be prepared for each Sydney Metro City &amp; Southwest contract.</td>
<td>Contractor</td>
</tr>
<tr>
<td>Site-specific Construction Traffic Management Plan (CTMP)</td>
<td>Site-specific CTMPs are to be prepared for each Sydney Metro City &amp; Southwest construction site for each contract.</td>
<td>Contractor</td>
</tr>
<tr>
<td>Traffic Control Plans (TCP)</td>
<td>Prepared as part of the site specific CTMP or as a standalone drawing for submission with Road Occupancy License applications and/or Council permits.</td>
<td>Contractor</td>
</tr>
</tbody>
</table>
| Pedestrian Movement Plans (PMP) 
Vehicle Movements Plans (VMP) | Prepared as part of the site specific CTMP, combined with a TCP or as a standalone drawing for submission with Road Occupancy License applications and/or Council permits. | Contractor |
Purpose

Produced by

<table>
<thead>
<tr>
<th>Document</th>
<th>Purpose</th>
<th>Produced by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Management Plan (PmMP)</td>
<td>Prepared as part of the site specific CTMP or as a standalone document</td>
<td>Contractor</td>
</tr>
<tr>
<td></td>
<td>for submission with Road Occupancy License applications and/or Council</td>
<td></td>
</tr>
<tr>
<td></td>
<td>permits</td>
<td></td>
</tr>
<tr>
<td>Other plans</td>
<td>Refer to Principal's General Specifications G10 — Traffic and Transport Management</td>
<td>Sydney Metro Delivery Office</td>
</tr>
</tbody>
</table>

3.3.1. Construction Traffic Management Framework (this document)

This CTMF provides the framework within which subsequent contract-specific and site-specific CTMPs will be prepared. The CTMF describes the traffic management objectives, principles and strategies to be implemented during Sydney Metro City & Southwest construction, having regard to contractual requirements, the Revised Environmental Mitigation Measures (REMM) and other obligations of the SSI Approval.

This CTMF identifies and outlines the major sections of the Project that will be potentially impacted by the construction works and will require traffic, cycling and pedestrian management. The development of suitable traffic management plans to minimise, as much as possible, the potential impacts of the works is a key component to managing any disruptions to vehicle and people movement and the efficient construction of the Project.

3.3.2. Construction Traffic Management Plans

A contract-wide Construction Traffic Management Plan (CTMP) will be prepared by contractors, covering the full spatial extent of their works and multiple sites.

The contract-wide CTMP will comply with the Traffic Control at Worksites Manual (RMS), relevant Australian Standards, relevant Austroads guides, RMS supplements to Australian Standards and Austroads, and Principal’s General Specifications G10 – Traffic and Transport Management and, where relevant, the RMS Work Authorisation Deed (WAD) documentation. This will allow fulfilment of the WAD requirement for a Traffic Management and Safety Plan (TMSP) subject to RMS review and approval.

In addition, site specific CTMPs will be prepared and implemented having regard to the REMMs documented in Chapter 11 of the Chatswood to Sydenham Submissions and Preferred Infrastructure Report, October 2016. Some of the twenty-two construction traffic and transport REMMs include:

(a) T1 – Ongoing consultation would be carried out with (as relevant to the location) with the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators to minimise traffic and transport impacts during construction.

(b) T2 – Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.

(c) T6 – Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.
Sydney Metro – Integrated Management System (IMS)

3.3.3. Site-specific CTMP

Contractors will also prepare more detailed site-specific Construction Traffic Management Plans (CTMPs). These will be developed by the contractor for each work site and identify proposed heavy vehicle routes, traffic and parking management measures. These plans will be developed in consultation with the TTLG and TCG meetings.

Details of station and construction work sites are to be provided in the contract-wide CTMP and each of the site-specific CTMPs for:

(a) Northern Dive Site.
(b) Artarmon substation.
(c) Crows Nest.
(d) Victoria Cross.
(e) Blues Point Temporary Retrieval Site.
(f) Barangaroo.
(g) Martin Place (north and south).
(h) Pitt Street (north and south).
(i) Central & Central Walk.
(j) Waterloo.
(k) Southern Dive Site.
(l) Sydenham Station.
(m) Sydney Metro Trains Facility South.

Figure 3.1 indicates the locations of the proposed stations and work sites.

Site specific CTMPs will detail construction work sites, access points, relevant signage, parking changes (if required), bus stop relocations (if required), proposed heavy vehicle routes, traffic and parking management measures, relevant correspondence with stakeholders (e.g. bus operators, Australia Post, business owners) and all traffic management and mitigation measures required to implement any proposed works.
It must also include Traffic Control Plans (TCP), Vehicle Movement Plans (VMP), Pedestrian Movement Plans (PMP), Parking Management Plans and Traffic Staging Plans for the specific works, unless otherwise agreed in writing with the Principal's Representative and relevant Authorities. The Parking Management Plan will also provide details regarding on-site and off-site staff parking arrangements, including any proposed busing to and from worksites.

Figure 3-1: Proposed work sites

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3.3.4. Traffic Control Plans and other plans

The site-specific CTMPs provide the basis for preparation of the Traffic Control Plans (TCP) and Road Occupancy Licence (ROL) applications.

3.3.4.1. Traffic Control Plans

All Traffic Control Plans (TCPs) prepared for construction activities will be developed in accordance with Australian Standard AS1742.3 and the RMS Traffic Control at Worksites Manual.

TCPs must be prepared by a person who has completed and passed the Prepare a Work Zone Traffic Management Plan training course and has current certification to the required level.

All work sites and related TCPs will be implemented in compliance with the ROL issued by the TMC for the approved times and appropriate standards.

Documents to be referenced in the preparation of TCPs include:

- Roads and Maritime Services NSW — Traffic Control at Worksites Manual
- Principal’s General Specifications G10 — Traffic and Transport Management.
- Relevant Austroads Guides.
- RMS Supplements to Austroads and Australian Standards.
- Sydney Metro Principal Contractor Health and Safety Standard

Initial consultation and feedback from RMS and SCO has highlighted several site-specific requirements associated with the forecast heavy vehicle and light vehicle movements at some of the proposed work sites along the Project corridor. These will be addressed by contractors during construction planning and CTMP preparation for each of the sites. These RMS and SCO operational requirements are provided in Appendix C. On local roads, Councils may also have operational requirements and these should be determined in consultation with the Councils.

3.3.4.2. Vehicle Movement Plans

The Traffic Control at Work Sites manual outlines a vehicle movement plan as “a diagram showing the preferred travel paths for vehicles associated with a worksite entering, leaving or crossing the through traffic stream. A Vehicle Movement Plan (VMP) should also show travel paths for trucks at key points on routes remote from the worksite such as places to turn around, accesses, ramps and side roads. A VMP may be combined with or superimposed on a TCP.” The requirements for the provision of a VMP are detailed in chapter 7 of the Traffic Control at Worksites Manual.

Vehicle movement plans should be included in site-specific CTMPs prepared by a suitably qualified person for the contractor. The VMP should also include the proposed site access points and how these are to be managed.
3.3.4.3. Pedestrian Movement Plans

The Traffic Control at Worksites Manual outlines a Pedestrian Movement Plan (PMP) as "a diagram showing the allocated travel paths for workers or pedestrians around or through a worksite. The plan shall show all associated signs and devices used to guide the workers or pedestrians. A Pedestrian Movement Plan (PMP) may be combined with or superimposed on a TCP."

Wherever it is necessary to divert or warn pedestrians of works the PMP should be included in the CTMP prepared by the contractor. This may be a stand-alone document.

The needs of cyclists should also be considered and management measures documented in the pedestrian and cycle movement plan. This is particularly important where the work site is bounded by major roads such as State and Regional Roads.

PMPs are to be prepared for Barangaroo, Martin Place, Pitt Street and Central work sites. Other worksites may also require PMPs subject to site-specific assessments.

3.3.4.4. Parking management plans

Parking Management Plans identify parking requirements and also on-site and off-site parking arrangements and associated impacts; remote parking arrangements and associated access between sites and public transport nodes; alternate parking arrangements for displaced parking; and communication and parking management measures. For any proposed kerbside use impacts in the CBD a proposal for relocation of impacted users is required.

Changes to on-street parking restrictions will require the approval of the relevant road authority; either RMS or local council.
4. Consultation groups

The size of the Project requires effective and ongoing interaction between several different organisations, key stakeholders and the general public. This chapter outlines the consultation groups that will be convened to manage these interactions. Requirements for consultation with local businesses and the community are outlined in Chapter 5 Communication.

As the Project needs regular and ongoing discussions and distribution of information, the following groups will be convened to assist in traffic management planning, document review and stakeholder consultation:

(a) Traffic and Transport Liaison Group (TTLG).
(b) Traffic Control Group(s) (TCG).

4.1. Traffic and Transport Liaison Group

A Traffic and Transport Liaison Group (TTLG) operates, in accordance with the SSI approval (Condition E77), to ensure the stakeholders most affected are aware of the proposed construction activities, upcoming works and related traffic and transport implications. The participants in this group are specified in Condition E77 and will reflect the location of the work site however, representation is anticipated to include:

- Sydney Metro Delivery Office.
- Transport for NSW including:
  - Centre for Road and Maritime Safety.
  - Sydney Light Rail.
  - Metro Bus and Ferry Planning and Development.
  - Freight Strategy and Planning.
- Roads and Maritime Services (RMS).
- Transport Management Centre (TMC).
- Sydney Coordination Office (SCO).
- Sydney Trains.
- Port Authority of NSW.
- Barangaroo Delivery Authority (BDA).
- Department of Planning and Environment.
- Sydney Motorway Corporation (WestConnex).
- NSW Police.
- NSW Fire and Rescue.
- NSW Ambulance Service.
- Local councils (depending on work site locations).
  - Lane Cove Council.
The TTLG provides a forum for key stakeholders, contractors and the Sydney Metro Delivery Office to discuss matters that could impact on the road network operations around the sites. The TTLG also provides a forum through which information on proposed traffic changes is made available to key stakeholders. It will allow key transport agencies, local councils and BDA to inform the development of traffic management plans and construction staging by providing local and specialist knowledge and insights. The TTLG:

(a) Maintains good communication between Sydney Metro Delivery Office project team, contractors and other stakeholders.
(b) Discusses the construction traffic management arrangements for the Sydney Metro City & Southwest works and approvals.
(c) Assists in identification and refinement of potential measures to mitigate the impacts of the Sydney Metro City & Southwest works in an area.
(d) Assists coordination of works for Sydney Metro City & Southwest and other projects.
(e) Can request the provision of supplementary analysis and modelling for proposed traffic management measures to ensure any disruption to the traffic and pedestrian network is minimised
(f) Ensures that submitted plans are actioned and agreed in a timely manner in accordance with the overall Sydney Metro City & Southwest project program.
(g) Is consulted in the preparation of road safety audits before the completion and use of infrastructure.

The Sydney Metro City & Southwest TTLG has been established and is separate to the Sydney Metro Northwest TTLG, which has been meeting since late 2012.

4.1.1. Other organisations

Other organisations may be asked to attend the TTLG and/or receive relevant information depending on the matters under discussion or consideration. This may include:

- NSW Taxi Council.
- NSW Taxi Drivers Association.
- BusNSW.
- Bicycle NSW.
- BIKESydney.
- BIKEast.
4.2. Traffic Control Group

For each (or multiple) Sydney Metro City & Southwest contract, a Traffic Control Group (TCG) will be convened to provide a technical forum for the discussion of proposed works that will impact on the surrounding road network and feedback on proposed TCPs prior to formal submission. This group would meet on regular occasions (weekly, fortnightly or as agreed by TCG members) to provide an assessment of the forthcoming traffic management measures and to ensure that any identified or potential issues are raised and addressed to ensure that works proceed in accordance with the agreed program. The participants in this group will vary depending on the contracts. Representation would be expected to include:

- Relevant Sydney Metro contractor’s Traffic Manager and other construction staff as required.
- Sydney Metro Delivery Office.
- Transport for NSW.
- RMS.
- TMC.
- SCO.
- Local councils.
- Barangaroo Delivery Authority.

The TCG will provide a forum for discussion on proposed traffic management measures during the various stages of each of the contracts, discussion of potential impacts on the road network operations around the sites, and how to address or minimise those impacts.
4.3. Government stakeholders

Consultation with the SCO, RMS and TfNSW for the preparation of this CTMF document has been carried out through a series of meetings and discussions in June and July 2017, the outcomes of which have been incorporated into this document. A comments register is provided at Appendix D.

Consultation has also been undertaken with officers from the following councils:

- Willoughby Council.
- Inner West Council.
- North Sydney Council.
- The City of Sydney Council.

Councils were asked to review the document and provided comments back to the Sydney Metro Delivery Office.

The Barangaroo Delivery Authority was also consulted in the development of this CTMF.

This CTMF was presented to the meeting of the City & South West Traffic and Transport Liaison Group held on 03/08/2017.

A summary of the comments and responses from the consultations has been provided to the Department of Planning and Environment.
5. Communication

All external communication with the community, including businesses, must follow the guidelines set out in the Sydney Metro City & Southwest Community Communication Strategy.

The community must be notified of any current and upcoming works, temporary works or contractor activities that have the potential to impact on stakeholders and the community before they happen.

An overview of stakeholder and community involvement during construction of the Project is provided in the Construction Environmental Management Framework. A Community Communication Strategy will be developed by each principal contractor. A key element of this strategy will relate to notifications to stakeholders, local Councils and the community that may be affected by changes to transport, access and local traffic arrangements.

5.1. Existing businesses and residents

Owners and operators of potentially affected properties and businesses will be consulted throughout the delivery of the Project and notified well in advance of any works that may potentially disrupt access to their property.

Every endeavour is to be made to maintain access at all times to properties for both pedestrians and vehicles. If works will temporarily affect access to a property, consideration should be given to the staging of the works, to maintain access and limit the disruption. Any access restrictions for residents, tenants or property owners and alternative arrangements are to be undertaken and agreed with the occupiers.

Residents, property owners and businesses in the surrounding area will also be notified prior to the start of works.

The proposed works and changes should also be advertised in the public notices section of newspapers (as required).

5.2. Notification of traffic changes or disruptive works

Activity specific communications strategies are required to be developed prior to any traffic event. These strategies should include details of the work, impacts and proposed mitigation measures. In addition to the strategy, activity-specific notifications will need to be developed and issued to directly impacted properties prior to works commencing. Notification of proposed changes should also be included on the Project website. Other communication methods that may be implemented could include, but are not limited to:

- Doorknocks.
- Letterbox drops.
- Advertising (newspapers).
- Social media updates.
- Radio.
5.3. Responsibilities

The contractor's Stakeholder and Community Manager will be responsible for ensuring a system is in place to advise the Sydney Metro City & Southwest Project Communications Team, the TTLG and other key stakeholders each time proposed changes are to be made to traffic arrangements. Advice will include information about the changes to the traffic operation, anticipated delays to traffic, any changes to the times and duration of the work, and any other potential major disruptions. This advice should be provided at the earliest opportunity and provide sufficient time for key agencies to provide comments or information as necessary. The principal contractor is to develop a Community Communications Strategy in accordance with the guidelines provided in the Sydney Metro City & Southwest Community Communications Strategy.

5.4. Roadside Messaging

Appropriate signposting, whether static or Variable Message Signs (VMS), should be located and installed to provide for the easy and safe passage of vehicles, pedestrians and cyclists. This also includes public transport users accessing facilities such as bus stops. The installation of signs will be detailed within the relevant CTMP.

Any signposting should be placed in accordance with relevant guidelines and standards. Messages should be clear and easily interpreted by drivers, pedestrians and cyclists, and should not create a safety hazard. The proposed location of any VMS would require the approval of the road authority.
6. Approvals

6.1. Policy Context and Legislative Backing

Notwithstanding the Project SSI Approval being secured under Part 5.1 of the EP&A Act, Sydney Metro contractors will be required to secure all required statutory approvals prior to the commencement of works.

Any changes to traffic control devices (e.g. traffic signals or traffic signs) and traffic control facilities will require the approval from the road authority and arrangements with the road authority for the changes to occur. Regulatory sign and line-marking changes on local or Regional roads will require approval from the local council through a submission to the local traffic committee. Sign and line marking changes on State roads will require the approval of RMS.

6.2. Stakeholders

The agencies that may have a potential interest in the traffic management measures proposed for each Project construction site are outlined in the table below.

Table 6-1: Principal agencies

<table>
<thead>
<tr>
<th>Station/Site</th>
<th>Sydney Coordinating Office</th>
<th>Barangaroo Delivery Authority</th>
<th>Sydney Trains</th>
<th>Roads and Maritime Services</th>
<th>Willoughby Council</th>
<th>North Sydney Council</th>
<th>City of Sydney Council</th>
<th>Inner West Council</th>
<th>Transport Management Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Dive Site</td>
<td>·</td>
<td>·</td>
<td>·</td>
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<tr>
<td>Artarmon</td>
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<tr>
<td>Crows Nest</td>
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6.3. Construction Traffic Management Plans Approvals Process

Construction Traffic Management Plans will require approval and consideration by several key stakeholders. Contractors should assess the overall required approval times at the beginning of the Project to provide adequate scheduling of the preparation and submission of the CTMPs.

Condition E82 requires “Construction Traffic Management Plans (CTMPs), consistent with the CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site.”

In addition, Condition E83 requires that “Where construction results in a worsening of the matters identified in Condition E81 (a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to RMS for approval following Sydney Coordination Office endorsement and implemented.”

An overview of the approvals process for Sydney Metro City & Southwest is as follows:

• Sydney Metro Delivery Office prepared Construction Traffic Management Framework:
  o Prepared in consultation with the TTLG (Condition E81).
  o Submitted to SCO and RMS and relevant road authority for review.
  o After SCO and RMS acceptance, RMS approves the CTMF.
  o Reviewed by environmental representative.
  o Submitted to the Secretary DP&E for approval no later than one (1) month before the commencement of construction (or within any other timeframe agreed with the Secretary) in accordance with SSI Approval (Condition E81).
  o Published on the Sydney Metro website (Condition B15).

• Contract-wide CTMP to be prepared consistent with this CTMF by the contractor (for example, there will be one CTMP covering all TSE works):
  o Initially tabled at TCG meeting for council and other stakeholder feedback.
  o Prepared in consultation with the TTLG
  o Submitted to SCO, RMS and relevant road authority for review and comment.
  o Reviewed by environmental representative.
  o After review and agreed edits, submitted to RMS for approval following the Sydney Coordination Office endorsement for approval, before construction commences at the relevant construction site.
  o Sent to DP&E for information only.
  o Published on the Contractors website prior to works commencing at the relevant site (Condition B15).
Site-specific CTMPs will be prepared consistent with this CTMF as required under Condition E82 by the contractor for all sites listed in Section 3.3 (for example, there will be a minimum of one TSE CTMP for the Northern Dive Structure, one TSE CTMP for the Crows Nest worksite, etc.) for each site covered under the contract. These CTMPs must comprise other plans or drawings such as Traffic Staging Plans, Traffic Control Plans, Vehicle Movement Plans, Pedestrian Movement Plans, a Parking Management Plan, unless otherwise agreed with the Principal's representative and the relevant Authorities, and address any changes from the EIS indicative haulage routes:

- Initially tabled at TCG meeting for council and other stakeholder review and feedback.
- Prepared in consultation with the TTLG (Condition E81).
- Submitted to SCO, RMS and relevant road authority (local council and/or BDA) for review and comment.
- After review and resolution of issues, submitted to RMS for approval following the SCO endorsement for approval, before construction commences at the relevant construction site.
- Sent to DP&E for information only.
- Published on the Contractors website prior to works commencing at the relevant site (Condition B15).

The contractor will be responsible for documenting all stakeholder feedback and comments in a document specific issues register. These comments will be addressed and closed out by the contractor in consultation with the relevant stakeholders. RMS and SCO will not be responsible for processing or referring comments on behalf of the contractor.

- Changes to traffic management requirements at a site which requires material changes to the existing CTMP will require re-submission of the revised CTMP to RMS, SCO and local road authority for approval as applicable.

ROL and related applications are submitted by the contractor to TMC for occupation of roadway (other than approved work zones) on State and Regional roads and all works within 100m of traffic signals. These applications are approved by TMC for the times shown on the licence. A CTMP will be required to be approved prior to approval of the ROL.

Application made to TMC.

TMC assesses for potential conflicts, any identified conflicts to be resolved to satisfaction of TMC.

TMC will consult with SCO prior to submission to RMS for approval.

Contractor may be requested by TMC to consult with other stakeholders including TNSW (Infrastructure and Services).

Contractors will require council approval of road occupancies/lane closures/permits to stand plant/road openings impacting Regional and local roads.

The contractor is to prepare and maintain a register of ROL applications and approvals providing stakeholders with status information throughout construction.
Upcoming ROL and related applications to be discussed at TCG meetings for council and other stakeholder feedback prior to submission.

6.4. Road Occupancy Licence Process

Whenever it is proposed to occupy or close a lane or road during the construction program for each of the sites, the closure will require the contractor to apply for a Road Occupancy Licence (ROL) from the Transport Management Centre (TMC) and/or the local council. ROLs are issued by the TMC for approved times, following endorsement by the SCO, for RMS State roads or locations on Regional or local roads within 100 metres of traffic signals. It should be noted that due to the critical nature of the potential traffic impacts for local roads within the Sydney and North Sydney CBDs that applications for ROLs on streets within these areas will be required to be submitted to TMC. The issuing of ROL’s on local or Regional roads for lane or road closures in the CBD’s above will also be subject to the approval of the local council.

The contractor will need to consult with stakeholders prior to submission of the ROL application and provide information as required.

For local roads, outside of the areas highlighted above, the approval of the local council will be required. This will require an application in the appropriate method to council.

For roads within the Barangaroo Delivery Authority’s (BDA) area of responsibility (Hickson Road, Napoleon Street), the following process is required in obtaining a permit to occupy the roadway:

(a) The contractor provides the information to BDA on the proposed works, location and times for the proposed road occupancy.
(b) BDA provides a written agreement for the proposed road occupancy via email.
(c) The BDA agreement is included in with the ROL application to the TMC.
(d) Once TMC approval provided, BDA will issue a permit for the road occupancy.

For Cross City Motorway (Cross City Tunnel) requests for road occupancies within or on ramps to/from the tunnel, ROL applications would be processed by TMC after receipt of tunnel operator agreement.

The ROL requirements are outlined in the RMS Road Occupancy Manual (and in Principal’s General Specifications G10 – Traffic and Transport Management).

The Contractor must allow a minimum of 10 working days for a response to an application from the TMC. A minimum of 10 working days should also be assumed for responses to applications from other roads authorities.

ROLs will generally be issued for relatively short periods of time and the TMC will require that an approved TCP or site CTMP for the work be in place.

Information on proposed and approved ROLs should also be provided to the Sydney Metro City & Southwest Project Communications Team for notification, prior to works commencement.
6.5. Speed Zone Authorisation

An application must be made to RMS for any proposed adjustment of the speed limit on the road network, whether they are proposed as temporary measures for work zones and road occupancies or for longer periods such as the duration of the construction works at a site. A Speed Zone Authorisation application usually accompanies a ROL application where a change in speed limit is proposed as part of the road occupancy.

The RMS speed zone change process involves the submission of the appropriate form, available online from the RMS website, which is to be submitted to the TMC’s Planned Incident Unit. Depending on the extent of the works and project familiarity the application will be supported by the site specific CTMP or a TCP. Short-term speed zone changes can be dealt with via the CTMP process. Longer term (over six months) or permanent changes are included in the site specific CTMP and are to be referred to RMS for assessment, consideration and approval. Permanent speed zone changes can only be approved by RMS.

6.6. Special Event Coordination

There are many special events that occur in and around the Sydney CBD and North Sydney. These special events have an impact through increased visitor numbers, road closures and diversion of bus services. The major events such as New Year’s Eve, Australia Day, Vivid Festival and ANZAC Day all have significant impacts on the CBD with increased visitor numbers and the need to provide additional rail and bus services, and impacts on the road network. At the Martin Place site this may include pedestrian marshals if increased pedestrian activity is identified in the preparation of the CTMP.

Class 1 and 2 events, outlined below, are to be facilitated in the planning of work programs as works may not be permitted during these classes of events. For example, works are not permitted to happen between 3pm and midnight during the Vivid Festival in and around the CBD, Pyrmont and parts of Chatswood. Other areas and times may be incorporated in these restrictions in the future.

In addition, pedestrian activity in the CBD and shopping centres increases significantly during December and early January, in the lead up to Christmas and the post-Christmas sales. Increased tourist numbers and frequent cruise ship arrivals and departures also occur during this period. The City of Sydney has a policy of not permitting works that will cause disruption to the retail core of the city during December. Works that would have a significant impact on pedestrian paths and station access should be minimised during these periods and/or additional and increased interface supervision should be provided between the site and the adjoining pedestrian network.

The RMS special event management guidelines identify four classes of special events. These classes provide direction on the approvals required, timeframes and methods of advertising measures such as road closures and other aspects of the event. The classes of events can be summarised as follows:

- Class 1 – Events that impact major traffic and transport systems and result in significant disruption to the non-event community. For example, an event that affects a principal transport route in Sydney, or one that reduces the capacity of the main highway through a country town.
• Class 2 — Events that impact local traffic and transport systems and result in low-scale disruption to the non-event community. For example, an event that blocks off the main street of a town or shopping centre but does not impact a principal transport route or highway.

• Class 3 — Events with minimal impact on local roads and negligible impact on the non-event community. For example, an on-street neighbourhood Christmas party.

• Class 4 — Events that are conducted entirely under Police control (but is not a protest or demonstration). For example, a small march conducted with a Police escort.

During the Project, special consideration and traffic planning will need to be undertaken for each of the sites to address the road user needs during programmed special events. It should also include the response to ad hoc events that may occur with minimal notice, including marches, protests and other public events.

The traffic management requirements of Special Events may require adjustments to times of operation and routes used for haulage or delivery operations as well as varying Road Occupancy Licence (ROL) conditions for Sydney Metro City & Southwest construction. The ROL approval and CTMP approvals will identify any time and day restrictions, taking in to account any known potential conflicts at the time of submission and approval.

Sydney Metro City & Southwest contractors will be responsible for identifying special events that occur in the area of the work site, incorporating known special events into the construction program and detailing responses and contingencies in the CTMP for each site. This coordination will occur through the Sydney Coordination Office, approved event registers of councils, the Barangaroo Delivery Authority, the TCG and the TTLG.

During development of the site specific CTMPs the proposed traffic management measures must take account of major and regular events, such as ANZAC Day or the Vivid Festival for example, to ensure that proposals do not impede or impact on these events.

6.7. Adjustments to Traffic Signals

Any temporary or permanent works that impact on the operation of, or require the reconstruction or adjustments to, traffic signals require close consultation with RMS and approval of the traffic signal design plans, prior to the commencement of any work. This will require entering in to a Works Authorisation Deed (WAD) with RMS.

The contractor will need to take account of potentially lengthy approval lead times in any works involving traffic signal construction or modifications. Additional time may also be required to facilitate the modification of the electronic hardware, in addition to undertaking any physical changes onsite.

The contractor will be responsible for the preparation of any traffic signal designs and obtaining the necessary approvals, allowing sufficient time to maintain the works program. Designs will be required to be carried out by an RMS accredited signal designer and comply with the RMS Traffic Signal Design Manual (RTA/Pub 08.092). Any works at a traffic signal site shall be carried out by an RMS accredited traffic signal contractor. A list of contractors for design and civil works can be found at http://www.rms.nsw.gov.au/business-industry/partners-suppliers/tenders-contracts/prequalified-contractors.html.
6.8. Over-size or Over-mass Vehicle Permits

Prior approval for the passage of any proposed over-size or over-mass vehicles is required from the National Heavy Vehicle Regulator, RMS for State roads, or councils for Regional or local roads, and an authorisation permit issued prior to the operation of the vehicle. A TMP is likely to be required that describes how an OSOM movement will be safely undertaken in NSW. Details can be found on the RMS website, which provides all requirements for applications.

6.9. Adjustments to Bus Routes and Stops

Any proposed adjustments or relocation of bus routes and stops to facilitate construction works require the prior approval of TfNSW, SCO, RMS, the local council and affected bus operators.

Any proposed adjustments or relocation of bus shelters associated with bus stop changes or construction works require the approval of the local council and affected bus operators.

Customer information and wayfinding information for any relocated bus stops is to be provided before, and after, the relocation works have been carried out.

6.10. Adjustments to Australia Post Boxes or Other Roadside Furniture

Consultation regarding the relocation and/or adjustments to post boxes and the associated kerbside ‘mail zone’ will be required to be undertaken with Australia Post and the relevant road authority prior to any relocations occurring. In some instances, post boxes may be able to be relocated, however there will be instances where the post box, for heritage requirements, will not be able to be relocated. These post boxes will need to be protected to ensure that they are not damaged during construction works.

Adjustments or relocation of other roadside furniture or modifications to signposting such as advisory signs or regulatory signs will require consultation and approval of the owner. In most cases this will be the local council. Changes to regulatory signposting and linemarking on local and Regional roads will require a submission to the Local Traffic Committee for agreement.

6.11. Council Traffic Committees

Each council is delegated authority by RMS on certain aspects for the control of traffic on Regional and local roads, including regulatory signposting. The delegation requires council to seek the advice of the NSW Police and RMS prior to exercising these delegated functions. This is usually done through the establishment and consultation with the Local Traffic Committee.

Councils can sub-delegate the approval of certain traffic control measures, such as Works Zones, to an appropriate staff member. These further delegations are determined by each individual council. Contractors will need to consult with council on the extent of the delegations.
Where possible, the contractor should endeavour to secure all necessary council approvals under delegation to avoid the need for approvals to be secured through the Local Traffic Committee and council meetings.

The Local Traffic Committee is a technical committee that considers matters related to prescribed traffic control devices and traffic control facilities for which the council has delegated authority. It is made up of four formal, or voting, members:

- One representative of council (may be a councillor or council officer).
- One representative of the NSW Police.
- One representative of RMS.
- The local state Member of Parliament or their nominee.

Matters that may need to be considered by the Local Traffic Committee include:

- Establishment of a kerbside work zone on a local or Regional road.
- CTMPs.
- Changes to parking restrictions.
- Road closures.

Meetings of the Local Traffic Committee can be conducted as face to face meetings on a monthly basis, as electronic meetings or a combination of the two formats.

Traffic management changes or proposed amendments to the public domain will require submission to the relevant Council, including possible referral to the Local Traffic Committee.

Changes to regulatory signposting on local roads will require a submission to the Local Traffic Committee for council approval.

6.12. Requirements under the approval

6.12.1. Dilapidation surveys

Condition E90 of the conditions of approval states “Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.”

Dilapidation surveys of local and Regional roads, where used by work site traffic, will be required to be undertaken prior to the commencement of contracted works. A dilapidation report submitted to the local government authority is to be in a format acceptable to that local government authority. Monitoring will also be carried out to the satisfaction of the relevant local government authority. The proponent will be responsible for any necessary repair of deterioration attributable to the impacts of construction activity as provided in condition E91 as follows:

“If damage to roads occurs as a result of construction of CSSI, the proponent must either (at the landowner’s discretion):

(a) Compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or
(b) Rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the road Dilapidation Report(s)."

If the selected route is already subject to some heavy vehicle use, this should be surveyed and the information provided as part of the initial assessment of the route.

They are also to consider any Interface Agreements that may be in place between Sydney Metro and local councils or road authorities.
7. Management of Construction Traffic

7.1. Haulage routes

Designated access routes for heavy vehicle movements during demolition, construction and spoil removal will be along the arterial (state) road network as much as practically possible. Condition E85 requires that heavy vehicles must not use local roads unless no feasible alternatives are available. Primary routes should be used as the first priority, as far as is practicable.

Details of any proposed routes for heavy vehicle access will be developed in consultation with the relevant state or local government authority and detailed in the appropriate section of the site-specific CTMP. Condition E88 then requires the CTMP to be approved by RMS following endorsement by Sydney Coordination Office and the relevant roads authority.

Where haulage routes differ from the primary and secondary routes shown in the EIS/Submissions Report/PIR, the contractor will undertake a review and where necessary document these in the contract wide and site-specific CTMPs and provide a justification for these changes in accordance with E88.

Figure 7-1: Chatswood worksite indicative haulage routes
The above diagram (Figure 7-2) has been prepared as the proposed location of the Artarmon works has changed from that outlined in the EIS. These routes are subject to confirmation and approval of a modification to the Project approval.
The above diagram (Figure 7.4) was prepared for the original proposed location of the Miller Street (North) services facility. Feedback during the EIS exhibition raised concerns regarding the impacts of noise and vibration on the adjoining school. The SSI Conditions of Approval (Condition A21) required the undertaking of further detailed analysis of alternative locations for the construction of a services building to support Victoria Cross Station. An alternative site, located at the corner of Miller Street and McLaren Street, was identified for the services...
Changes to the indicative haulage routes for this alternative site have been considered and are included in Figure 7.5. These routes are subject to confirmation and approval of a modification to the Project approval.

Figure 7-5: Victoria Cross Services Facility worksite alternative indicative haulage routes

Figure 7-6: Blues Point worksite indicative haulage routes
Investigations are being carried out for spoil removal from the Blues Point site by barge. The dock for the barge would be located at a specially constructed loading point. The destinations of any spoil barging would be identified as part of the investigations.

![Barangaroo worksite indicative haulage routes](image)

**Figure 7-7: Barangaroo worksite indicative haulage routes**

Investigations are being carried out for spoil removal from the Barangaroo site by barge. The dock for the barge would be located at a specially constructed loading point. The destinations of any spoil barging would be identified as part of the investigations.

City of Sydney Council has requested that spoil haulage and material delivery proposed outside the Standard Construction Hours be undertaken by barge only and that 'truck and dog' combinations be limited to the primary routes only.
Figure 7-8: Martin Place worksite indicative haulage routes

Figure 7-9: Pitt Street worksite indicative haulage routes

Note: SCO has highlighted that due to the proximity of the site access to the traffic signals at Park Street the right turn movement from Castlereagh Street into Park Street is unable to be accommodated. Vehicles should continue on Castlereagh Street.
Figure 7-10: Central worksite indicative haulage routes

Figure 7-11: Waterloo worksite indicative haulage routes
Figure 7-12: Sydenham worksite indicative haulage routes

Figure 7-13: Proposed CBD worksite indicative haulage routes combined
In addition, measures should be in place to avoid heavy vehicles queuing on the road network near the worksite. In general, the sites for this project have a very constrained road network surrounding the site and the parking of vehicles on the surrounding road network will not be possible. A suitable off-street truck marshalling area and logistics facility may be required to ensure that heavy vehicle queuing on the road network does not occur within the Sydney and North Sydney CBDs or other locations where the road network is constrained (Condition E89).

It will be necessary for the contractor to manage arrivals and departures for each site to ensure a consistent and timely arrival and departure of vehicles for the site for example, the use of timetables. This should be communicated to all sub-contractors and operators prior to commencement of works.

It should also be noted that there will be a need to minimise the volume of truck movements in the CBD areas during the peak periods of 6:00am to 10:00am and 3:00pm to 7:00pm, Monday to Friday (excluding public holidays). The contractor will be required to schedule minimal arrivals and departures of trucks during these peak periods. Heavy vehicle movements through designated school zones should be minimised when these zones are in operation (8:00am to 9:30am, 2:30pm to 4:00pm, school days).

7.2. Management of Heavy Vehicle Movements

Heavy vehicle movements must be managed in accordance with construction and traffic management principles of the CTMP and in accordance with the relevant standards. Each site-specific CTMP will need to demonstrate, where applicable, how marshalling facilities will be used to manage truck movements and reduce congestion.

Vehicle and pedestrian access to each work site, including the locations of entries, exits, turning restrictions, slip lanes, traffic signals, signage and other site management requirements will be established in line with the requirements of the Project approvals and in consultation with RMS, SCO, BDA and councils.

All vehicles are to enter and exit the worksites in a forward direction. If this cannot be achieved then traffic control is to be provided. Refer to Section 7.3 of the Guide to Traffic Control at Worksites (RMS).

7.3. Work Zones and Heavy Vehicle Marshalling

During some stages of the works at each of the sites there may be a requirement for using kerb space on adjacent streets for short-term parking or unloading for deliveries to the site. Applications for a Works Zone will be undertaken by the contractor to the relevant authority (council for local and Regional roads and RMS for State roads). The use of a Works Zone should be minimised as much as practicable. Where approved, Works Zone locations are to be included in site specific CTMPs. In general, Works Zones will not be permitted within existing bus zones and their operating times, unless arrangements have been approved for the relocation of the bus zone.

During times of continuous construction traffic activity, such as during excavation works, one or more remote truck marshalling and logistics facility may be required to assist with construction traffic management and to minimise disruptions to other road users. These
facilities will need to be identified and an effective method of heavy vehicle arrivals established and approved in accordance with Condition E89.

This CTMF will be updated to include the identified facility and further detail will be included in the Ancillary Facilities Management Plan.

7.4. Construction/Demolition Vehicle Types

To minimise the number of heavy vehicle movements on the road network, the selection of vehicle size will consider the number of movements required, the impact of the quantity of vehicles on road and pedestrian movements, road geometry and safety. It is recognised that the Sydney and North Sydney CBD sites will have constraints on access routes, safety considerations and site constraints.

The types of truck to be used for the transporting of materials will be assessed in consultation with the relevant authorities in the preparation of the contract wide and site specific CTMPs.

Heavy vehicles used on the project must comply with the relevant standards including the safety requirements outlined in the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard.

Higher mass and longer heavy vehicles will be required to transport certain materials to and from the sites (some under permit) and these would be subject to separate approvals. Daytime (7am-7pm) weekday use of ‘truck and dog’ combinations within the Sydney CBD is not supported.

It is anticipated that contractors will need to make greater use of truck and dog heavy vehicle combinations than envisaged in the EIS. Details of proposed truck and dog use is to be provided in the CTMPs.

7.4.1. Worker Access and Parking

The constrained nature of the sites means car parking for construction personnel will not be possible at most sites. Except for the Northern and Southern Dive Structure sites there may be the opportunity to provide minimal light vehicle parking spaces for engineers and other site management staff use.

The Northern and Southern Dive Structure sites could provide car parking spaces within the site. These parking facilities may provide the opportunity to be used as park and ride locations for workers from other sites with shuttle buses operating from the dive sites to other work sites. The contractor may also be required to identify remote parking areas for workers, to minimise any impacts of workers parking on-street.

Willoughby Council considers that the capacity and management arrangement for the provision of some level of on-site car parking spaces in the Northern Dive Site needs to be developed in consultation with Council as part of the CTMP.

The assumption for all site specific CTMPs is that there will be no provision, either on the road or within the work site, for worker parking. Workers should be encouraged to use public transport in travelling to and from the work sites.
7.4.2. Construction Consolidation Centre/Depot

To mitigate the potential impact of construction traffic the provision of a centralised Project centre should be considered. This centre could receive deliveries and arrange for combining of loads and materials for distribution to the various worksites. This may be incorporated into the truck marshalling and logistics facility and should address the intent of planning condition E89. This would have the potential to reduce construction traffic movements to the sites, particularly for small loads. Contractors may make use of their existing depots.

7.4.3. Driver training

Heavy vehicle drivers should be made fully aware by the contractor of the worksite traffic management arrangements and site-access requirements, including approach and departure routes, and any heavy vehicle noise management measures required. Driver training should consider current best practice and information, including cycle awareness training.

The contractor is to ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks.

Contractors must ensure mandatory completion of the Sydney Metro City & Southwest project-specific heavy vehicle driver introduction training.

Contractors are required to have systems in place to monitor vehicle locations (e.g. telematics) at all times and address any identified non-conformances.

7.4.4. Chain of Responsibility and Heavy Vehicle National Law

Contractors must have systems in place to ensure compliance with ‘chain of responsibility’ legislation, including the Heavy Vehicle National Law and regulations, at all times. All necessary heavy vehicle approvals and permits (for example, over-size, over-mass, etc.) must be obtained from the relevant road manager. Specific ‘chain of responsibility’ requirements are further outlined in Sydney Metro Principal Contractor Health and Safety Standard.
8. Operational requirements

8.1. Traffic Control at Work Sites

The contractor must develop and implement Construction Traffic Management Plans (CTMPs) to minimise and mitigate traffic impacts, including road safety impacts, caused by the contractor’s activities (Condition E82). In consultation with the TTLG, RMS, SCO, BDA and the relevant local council, the contractor must develop, formalise and implement traffic management, control and operational protocols, procedures, processes, systems and communication between the contractor and the TMC and SCO. Works within the road reservation will be identified in the CTMP.

This consultation will be initiated through the TTLG and TCG.

8.1.1. Policy and Responsibilities

Work zones provide for the safe operation of road workers and the safe passage of vehicular and pedestrian traffic. Traffic control devices are provided to warn, instruct and guide road users safely through, around or past worksites on roads and footpaths.

An important aspect is for the planning and staging of the works to ensure that any workers required to work on or near the road are separated from traffic as much as possible. Traffic control at worksites is to be provided in accordance with the latest edition of the Traffic Control at Work Sites Manual (RMS) and Sydney Metro Principal Contractor Health and Safety Standard. Australian Standard AS 1742.3 Manual of uniform traffic control devices — Traffic control for works on roads, is also to be referenced when determining traffic controls and signposting.

It is the responsibility of all personnel engaged on the Project and at worksites to ensure that any works carried out on the road are done so in a safe and efficient manner. The contractor will prepare specific Traffic Control Plans (TCP) for all work that will impact on the road and traffic.

TCPs are required to be prepared by a suitably qualified person who holds a current RMS certificate – Prepare Work Zone Traffic Management Plan.

When temporary speed limits are required, the contractor will be required to make the necessary application to RMS. This application will need to be submitted with sufficient time prior to the proposed implementation, to allow for processing and authorisation, via the TMC OpLinc system.

8.1.2. Traffic Control Techniques

There are several traffic control methods that can be used at worksites, which must be selected in accordance with the hierarchy of controls to ensure safety risks to workers (including traffic controllers) and the public are minimised 'so far as is reasonably practicable' (SFAIRP). These include:

(a) Temporary road deviations.
(b) Line-marking with raised pavement markers to delineate proposed diversion.
8.1.3. Approved Clothing for Work Personnel

Any worker working near traffic will be required to wear clothing in accordance with the requirements of Australian Standard AS1742.3 and Sydney Metro Principal Contractor Health and Safety Standard.

8.1.4. Plant and Equipment

Any plant used and working near traffic or pedestrians is to be suitably highlighted with physical protection and appropriate warning signs provided to ensure public safety. Refer also to the plant section of Sydney Metro Principal Contractor Health and Safety Standard.

8.2. Frequency of Inspections

For long-term works, that is, longer than one shift, traffic management road inspections will be carried out regularly to ensure the safe movement of traffic and the protection of persons and property through and/or around the worksite. The required inspections of all temporary traffic control devices are detailed in the following section.

Inspections will ensure that all signs and devices are properly located, oriented and maintained in an effective condition, and that the layout is satisfactory and not confusing to motorists or pedestrians. Records will be maintained by the contractor of all traffic guidance facilities and any adjustments or changes made to such facilities, together with dates and times the facilities were installed, varied and removed. Inspection reports recording dates and times of inspections of the traffic management facilities are to be recorded on a suitable pro-forma and made available for inspection.

Incidents are to be reported, investigated and actioned in accordance with Sydney Metro Principal Contractor Health and Safety Standard.
8.2.1. Inspections of Roadwork Traffic Management Schemes

The requirement to undertake inspections of traffic control measures is outlined in Section 6.1 of the Traffic Control at Worksites Manual (RMS) and Appendix A of Australian Standard AS 1742.3 – Manual of uniform traffic control devices – Traffic control for works on roads. There are three main types of inspections to be carried out:

(a) Pre-start and pre-close-down inspections of short-term traffic control.
(b) Weekly inspections of long-term traffic control.
(c) Night inspections of long-term traffic control.

Appendix E of the Traffic Control at Worksites Manual provides inspection checklists and forms that can be used for all inspections, whether short term, long term or night. The responsibility and frequency of the inspections required is provided in Section 6.1 of the Traffic Control at Worksites Manual.

8.3. Emergency Incident Planning

Incident management planning must be carried out in accordance with Sydney Metro Principal Contractor Health and Safety Standard, and must include incidents that could occur on roads. An Incident Management Plan for on-road incidents, or incidents that impact on the public transport network should be submitted to the TMC Emergency Transport Operation section for review and comment.

Examples of incidents could include the following:

- Traffic crashes.
- Hazardous material spillage.
- Power failure.
- Terrorist attack.
- Flooding.
- Fire.
- Structural damage to a rail line, building, road tunnel or bridge.

The Incident Management Plan should include procedures such as:

- Duties of workers attending the site.
- Procedures for contacting Police, emergency services, or back-up assistance from the relevant road authority.
- Equipment that is to be ready always on potential call-out vehicles.

All details of incidents that occur within the area of an approved ROL are to be recorded by the contractor, and reported and investigated in accordance with the requirements of the Sydney Metro Principal Contractor Health and Safety Standard.
8.3.1. Accidents/Incidents and Complaints

The contractor’s ROL register will maintain records of traffic crashes and incidents reported at worksites. Any complaints received regarding traffic delays at worksites should be referred to the Principal. The contractor will be required to table the register, upon request, at TCG meetings.

The person in charge of the worksite will continue to be responsible for dealing with complaints regarding safety issues. Where action is considered necessary to address the matters of complaint, an appropriate recommendation will be forwarded to the Principal.

8.3.2. Chemical Spills and Leaks

Information on procedures to be followed and properties of hazardous chemicals are detailed in:

- Safe Work NSW codes of practice
- RMS policy procedure – Procedure for Managing Hazardous Chemicals
- Contractors’ Construction Environmental Management Plans.

NSW Fire and Rescue is primarily responsible for rendering safe, and cleaning up after, incidents involving flammable or hazardous substances, vapours, gases or liquid spillage, as well as an actual fire or explosion.

NSW Fire and Rescue holds detailed information on dangerous goods and hazardous chemicals. Sydney Metro City & Southwest staff and contractors are to be instructed not to approach such spills until NSW Fire and Rescue have declared the site safe. In such cases the contractor will close the roadway at a safe distance until NSW Fire and Rescue arrives and issues appropriate instructions.

8.4. Traffic Controllers and Temporary Traffic Signals

The use of traffic controllers and/or temporary traffic signals to control traffic at worksites is to be in accordance with the Traffic Control at Work Sites Manual (RMS) and Sydney Metro Principal Contractor Health and Safety Standard.

Variable Message Signs (VMS) will be used to inform drivers, where necessary, to avoid particular roads or areas where activities associated with Sydney Metro City & Southwest construction would cause disruption. Where these are used, it is to be in accordance with documented Austroads Guidelines, RMS supplements, procedures, guidance and approval of the road authority.

The placement of temporary VMS must consider pedestrian safety and disabled access needs when placed on footpaths. A ROL may be required when a portable VMS is proposed to be in a parking or loading bay. VMS placement should conform to Austroads Guidelines, RMS supplementary material and approval processes of the road authority.
9. Management of Worksites

9.1. Worksite Boundaries

Details of the proposed erection and maintenance of hoardings, scaffolds and associated structures will be documented in the site-specific Construction Traffic Management Plans in accordance with the SSI approval (Condition E81). Where reasonable and feasible, all worksite boundaries will be clearly defined with the use of hoardings. The CTMPs will identify the boundaries and detail accesses for the site, the footpath and road controls. Activities within the worksite are excluded from the CTMPs, except in relation to ensuring the movement of construction traffic in and out of the worksite is physically possible and can be done safely. Worksites include any gantries (e.g. Type B hoardings) or other structures associated with the site layouts. The site specific CTMPs will consider these interactions and the impacts of gantries, etc., on the road and footpaths.

9.2. Hoardings

Hoardings will be required to be erected around the construction sites to protect the site and any passing pedestrians and vehicles. These may also need to provide site facilities for the workers on the site due to the constrained nature of the sites. The erection of hoardings around the sites will require the consideration and approval of the local council and BDA for sites at Barangaroo. Applications for scaffolds and hoardings would be to the relevant council with concurrent notifications to SMDO, RMS, SCO and TMC.

In providing any hoarding and gantry structures, consideration will be given to ensuring sight-lines for side roads, vehicle accesses, signposting, and traffic signals are maintained. The City of Sydney has published policies on hoardings on its website. While the policy document provides guidelines for the presentation of the hoarding, the branding and visual aspects of the hoarding are to be in line with TfNSW/Sydney Metro requirements.

Each council or BDA may specify requirements for the type of hoarding proposed and may require the submission and approval of an application prior to the commencement of the site establishment works. Detailed information should be obtained from the respective council websites. In some locations there may also be a requirement for the hoarding to comply with design guidelines.

All hoardings around Sydney Metro construction sites should comply with the TfNSW/Sydney Metro branding requirements. Council is likely to require the submission of an application for the erection of any hoarding. Information that would be required to be submitted with the application can include, but is not limited to, the following:

- Plans of the proposed hoarding drawn to scale, elevations of hoardings and identifying any council or other asset that may be impacted.
- An engineer’s statement on the proposed hoarding and any facilities to be provided.
- Approval from NSW Police.
- Approval from RMS (for sites located on a state road or on any road within 100 metres of traffic signals).
- Structural certificate (for Class B hoarding).
Hoarding application forms for specific councils can be found at:


In addition, councils or BDA may have specific requirements for the type of hoarding and operational requirements. A sample of some of the hoarding requirements of the City of Sydney are provided below. The contractor must check with the relevant council and BDA over any specific requirements.

**Sample of the City of Sydney hoarding requirements**

“The design of hoardings will have an important impact on the success of pedestrian and vehicle management measures. The following considerations will be taken into account in designing hoardings:

- **Surfaces are bright.**
- **Smooth surfaces are used which allow pedestrians to brush past without snagging (this reduces shying from the edge).**
- **Surfaces are regularly cleaned and inspected.**
- **Removal of graffiti and advertisements.**
- **Adequate lighting provided.**
- **Where adjacent to road edge a minimum hoarding offset of 500mm from the road edge with design feature to prevent pedestrians walking alongside the kerb.**
- **A City of Sydney preference for concertina style driveway gates rather than fixed rigid gates.**”

The application for permits to erect hoardings may differ between councils or BDA, and this will need to be considered for each worksite.

### 9.3. Site Security, Site Access and Signage

The issues to be considered in determining the location of site accesses are:

- Safety of travelling public.
- Safety of construction workers and equipment.
- Efficient and safe entry and exit to the site including turning paths, consistent with the requirements of the relevant Australian Standard, Austroads or RMS guidelines.
- Impact on local communities in terms of safety, noise and road damage.
• Ease of access for emergency vehicles.
• Site security.

The worksites will have appropriate arrangements to discourage entry without approval and minimise vandalism. All access points to worksites will have lockable gates.

Appropriate information signs will be provided at worksites to identify the Project and contact persons.

Contractors will be required to develop and prepare Security Management Plans based on the site-specific security threats (hazards) identified. Requirements for Security Management Plans are outlined in Sydney Metro Principal Contractor Health and Safety Standard.

9.4. Pedestrian Security/Safety/Lighting

The consideration of safety and security issues for pedestrians will be considered at all worksites. In those footpath or specific cycle facility areas which will be impacted by construction works the contractor is to undertake a condition assessment to ensure that they remain suitable for use. This would include an assessment of the paving and lighting of the footpath/cycleway to maintain a safe and suitable passage.

Any hoardings or other structures on the site boundaries will have lighting in accordance with current standards, particularly where existing street lighting is removed or obscured because of the site works. In those locations where this occurs, supplementary lighting is to be provided to meet the current standards.

Discussions will be carried out with the relevant authority or operator of CCTV cameras if the coverage or operation of CCTV cameras is impacted by the works. The relevant authority may be RMS, council, other authority or building owner.

9.5. Management of Risks to Vulnerable Road Users

The contractor is to adopt applicable vulnerable road user safety measures, as per Sydney Metro Principal Contractor Health and Safety Standard, to minimise the road safety risks to pedestrians, cyclists and motorcyclists on route to, and near, construction sites. Such measures include, but are not limited to:

(a) The deployment of speed awareness signs in conjunction with variable message signs.
(b) Heavy vehicles equipped with safety technology and equipment to improve vehicle safety, visibility and the detection of vulnerable road users.
(c) Provision of driver training, instruction and information of the haulage routes, potential changes, common road users and hazards/risks along the routes.
(d) Mandatory completion of Sydney Metro City & Southwest project-specific heavy vehicle driver introduction training.
(e) Contractor engagement in shared experience educational events and involvement in promoting road safety awareness in collaboration with TfNSW.

Where worksites have an impact on footpaths, consideration must be given to the requirements of all pedestrians and especially where there is the potential for vulnerable
road users, such as school children, elderly people and mobility impaired people. This is to include condition surveys of affected footpath areas to ensure that they are suitable and appropriate for use.

DDA requirements will be adopted with kerb ramps or other measures provided at road crossings. Footpath widths are required to provide for two-way pedestrian traffic allowing for prams or strollers and wheelchairs to pass each other without requiring temporary widening from their existing width prior to construction commencement. Narrowing of the footpath width, if required, is to be approved by the relevant authorities.

Where high numbers of vulnerable road users are using a footpath, special provision and design consideration may be required to mitigate any impacts.
10. Road Safety Audits

10.1. Purpose and Benefits

A Road Safety Audit (RSA) “assesses a road’s safety performance and crash potential at various stages of a road/project’s life cycle” (Road Safety Audits Fact sheet – RTA 2010).

It is a formal procedure for checking the design, implementation and operation of road works and other traffic measures from a safety perspective. The establishment of quality systems provides the philosophy underpinning the RSA process. The overriding objective of the process is to ensure that all existing road schemes and future routes operate at an acceptable level of safety, with safety being an integral part of the road network development process (Condition E87).

The benefits of a RSA are that:

(a) The likelihood of crashes on the road and the adjacent network can be reduced.
(b) The severity of crashes can be reduced.
(c) Road safety is given prominence in the minds of road designers.
(d) The need for costly remedial work is reduced.
(e) The total cost of a project to the community, including crashes, disruption and trauma, is reduced.

10.2. Stages When Road Safety Audits Are Undertaken

Road Safety Audits will be undertaken by the contractor during the three stages outlined below.

10.2.1. Detailed Design Stage

At this stage, the geometric design, traffic signage scheme, line-marking plans, lighting plans and landscaping plans are available and will be reviewed in relation to the operation of the road.

10.2.2. Pre-opening Stage

Prior to the opening of a site, an inspection will be made for all relevant conditions during both the night and day for all likely road users, to ensure that the construction has addressed earlier audit concerns and to check for any hazardous conditions that were not apparent at the feasibility or design stages.
10.2.3. Road Safety Audits of temporary work/Construction Traffic Management Plans

Sydney Metro City & Southwest and/or its contractors will undertake Road Safety Audits for site-specific CTMPs, to be submitted with the CTMP to stakeholders, including BDA.

Regular safety audits of work zones are also to be undertaken to ensure all worksite safety arrangements are in place. These audits will be additional to the daily inspections by the site staff. Attention will be given to WHS guidelines, work areas adjacent to the road, movement of construction traffic, vehicle speeds and all warning devices or systems.

10.2.4. Road Safety Audit Procedure

All Road Safety Audits will be undertaken in accordance with the Guidelines for Road Safety Audit Practices (RMS, 2011), with reference to current practices outlined in Guide to Road Safety Part 6 Road Safety Audit (Austroads, 2009) and Sydney Metro Principal Contractor Health and Safety Standard.
11. Key Project Traffic Management Considerations

The stations along the proposed Sydney Metro City & Southwest route will be a mixture of mined caverns or cut-and-cover excavations. A single-span mined cavern is proposed for Victoria Cross Station, with binocular mined caverns proposed for Martin Place and Pitt Street Stations. Crows Nest, Barangaroo, Central and Waterloo Stations are proposed to be constructed as cut-and-cover.

Tunnel Boring Machines (TBMs) will be used to excavate the twin tunnels. Two machines are proposed to commence at Chatswood and tunnel to Blues Point with a further two TBMs commencing at Sydenham and tunnelling to Barangaroo. A fifth, specialist TBM for operations in soft soils will be used to tunnel the section from Barangaroo to Blues Point and under the harbour.

A primary worksite will be established at the surface to support the station construction. Secondary work sites will be required to support tunnelling, power supply and station excavations. While site constraints at the surface level for the stations are significant, and will impact on pedestrian and vehicular traffic for the period of construction, it is an RMS operational imperative that the capacity and efficiency of the network is not reduced, particularly during peak periods (6:00 to 10:00am, 3:00pm to 7:00pm, Monday-Friday, excluding public holidays). Heavy vehicle movements are to be minimised during these periods.

Currently, it is proposed that station shafts will be excavated using conventional excavation methods and the station caverns will be excavated using roadheaders and rock breakers. Cavern excavation would be completed prior to the arrival of the TBM, which will be excavating the main tunnels. The TBMs will be pulled through the station cavern and prepared for the tunnelling excavation to the next station. A range of activities will be required at the primary worksite to support this process.

The main heavy-vehicle-generating activity will be associated with spoil removal from the tunnelling excavation and the excavation of the stations, entrances/surface connections, emergency egress and ventilation shafts. Other activities that would be supported by heavy vehicle activities include:

(a) Enabling works, including building demolition works, power, water and other utilities, and site establishment of the station worksites.

(b) Ground support and lining works for stations, with plant and materials delivered to the station sites from the surface.

(c) Delivery of tunnel linings from the pre-cast yard at the Southern Dive Structure to other TBM launch sites at the Northern Dive Structure and Barangaroo.

(d) Delivery of rail and other large or long track materials.

(e) Delivery of structural materials for the stabling facility.

(f) Structural concrete works for station entrances, emergency egress and ventilation shafts, with internal building works and station architectural fit-out.

(g) Specialised installation works associated with station platforms, concourses, accommodation and circulation areas, services and other amenities, station entry/exit gates, platform screens and doors and barrier installation.

(h) Mechanical and electrical fitout of station services and communication systems.

(i) Testing and commissioning station and train systems.
11.1. Site-specific issues

The site specific CTMPs for each of the sites will provide details on the various construction and traffic related issues, and measures to mitigate those issues (where possible). The table below summarises some of the issues identified for each of the work sites. The site specific CTMPs will also need to consider, assess and identify potential traffic management measures with regard to construction traffic from other developments as information becomes available. This will be facilitated through the TCG and TTLG meetings.

Table 11-1: Site issues

<table>
<thead>
<tr>
<th>Station/worksites</th>
<th>Key issues</th>
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</thead>
<tbody>
<tr>
<td>Northern Dive Site</td>
<td>• Closure of Nelson Street. (Refer Section 11.1.1)</td>
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<tr>
<td></td>
<td>• Introduction of traffic signals at the Mowbray Road/Hampden Road intersection to accommodate construction traffic.</td>
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<td></td>
<td>• Pedestrian and cyclist safety.</td>
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<td></td>
<td>• Retention of bus stop on Pacific Highway.</td>
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<td></td>
<td>• Access to Mowbray Road.</td>
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<td></td>
<td>• Residential access (Nelson Street).</td>
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<td></td>
<td>• Gordon Avenue site access.</td>
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<td></td>
<td>• Cumulative construction traffic from other developments.</td>
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<tr>
<td>Artarmon Services Facility</td>
<td>• Business access.</td>
</tr>
<tr>
<td>Crows Nest Station</td>
<td>• Pedestrian and cyclist safety and access.</td>
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<tr>
<td></td>
<td>• Closure of Hume Street including wayfinding signposting for alternate access for pedestrians and cyclists.</td>
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<td></td>
<td>• Pedestrian activity on Pacific Highway.</td>
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<tr>
<td></td>
<td>• Relocation of bus stops.</td>
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<td></td>
<td>• Business and residential access.</td>
</tr>
<tr>
<td></td>
<td>• Cumulative construction traffic from other developments.</td>
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<tr>
<td>Victoria Cross Station</td>
<td>• Pedestrian and cyclist safety.</td>
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<tr>
<td></td>
<td>• Pedestrian activity on Miller Street, Berry Street, McLaren Street, Denison Street.</td>
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<tr>
<td></td>
<td>• Impact on bus stops and bus operations.</td>
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<tr>
<td></td>
<td>• Impact of heavy vehicle movements on sensitive receivers (residents, schools).</td>
</tr>
<tr>
<td></td>
<td>• Business and residential access.</td>
</tr>
<tr>
<td></td>
<td>• Cumulative construction traffic from other developments.</td>
</tr>
<tr>
<td>Blues Point</td>
<td>• Community/resident amenity.</td>
</tr>
<tr>
<td></td>
<td>• Adjacent residential buildings.</td>
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<tr>
<td></td>
<td>• Steep grade along Blues Point Road on approach and departure to site.</td>
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<tr>
<td></td>
<td>• Impact on parking and public reserve.</td>
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<tr>
<td></td>
<td>• Impact of heavy vehicle movements on sensitive receivers (residents, businesses, schools).</td>
</tr>
<tr>
<td></td>
<td>• Impact on bus stop and bus and coach services.</td>
</tr>
<tr>
<td>Station/worksite</td>
<td>Key issues</td>
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</tbody>
</table>
| Barangaroo Station     | • Impact on Hickson Road carriageway and footpaths.  
                        • Pedestrian and cyclist safety.  
                        • Impact on vehicle access to Overseas Passenger Terminal (OPT).  
                        • Special events.  
                        • Surrounding multiple concurrent construction activity.  
                        • Sensitive community, including community/resident amenity, particularly for Millers Point and Kent Street.  
                        • Cumulative construction traffic from other developments.  
                        • Impact on parking.  
                        • Bus and coach operations.  
                        • Business and residential access. |
| Martin Place Station   | • Pedestrian and cyclist safety, and access through Martin Place, particularly during weekday AM, weekday lunch, weekday PM and special events.  
                        • Heavy pedestrian activity in Martin Place, Castlereagh Street, Elizabeth Street, Hunter Street.  
                        • Access to Martin Place station including marshals to direct commuters during peak periods.  
                        • Impact on bus stops and bus operations.  
                        • Special events.  
                        • Impact on service vehicle parking and car parking.  
                        • Cumulative construction traffic from other developments. |
| Pitt Street Station    | • Heavy pedestrian activity in Pitt Street, Castlereagh Street, Bathurst Street and Park Street, particularly during weekday AM, weekday lunch, weekday PM and special events.  
                        • Pedestrian and cyclist safety  
                        • Community/resident amenity  
                        • Impact on bus stops and bus operations in Park Street.  
                        • Special events.  
                        • Impact on service vehicle parking.  
                        • Cumulative construction traffic from other developments. |
| Central Station        | • Heavy pedestrian activity in the Central Station precinct and Eddy Avenue, particularly during weekday AM, weekday lunch, weekday PM and special events.  
                        • Pedestrian and cyclist safety.  
                        • Bus and coach operations.  
                        • Light rail construction and operation in Eddy Avenue and Chalmers Street.  
                        • General precinct traffic congestion.  
                        • Impact of heavy vehicle movements on sensitive receivers (residents, schools).  
                        • Residential and business access.  
                        • Cumulative construction traffic from other developments.  
                        • Timing of any Devonshire Street Tunnel temporary closure to avoid peak pedestrian demand and provision of adequate wayfinding and customer information to alternatives. |
### Key issues

<table>
<thead>
<tr>
<th>Station/worksite</th>
<th>Key issues</th>
</tr>
</thead>
</table>
| **Waterloo Station** | • Nearby residential development.  
• Pedestrian and cyclist safety.  
• Community/resident amenity.  
• Impact on parking and traffic movements on Botany Road.  
• Cumulative construction traffic from other developments.  
• Access from Botany Road only, as far as is practicable |
| **Southern Dive Site** | • Managing access to Bedwin Road and Edgeware Road from Edinburgh Road including introduction of traffic signals at Bedwin Road/Edinburgh Road intersection.  
• Pedestrian and cyclist safety.  
• Traffic activity for Marrickville Metro shopping centre and surrounding commercial uses.  
• Construction traffic activity for the Marrickville Metro shopping centre expansion and the surrounding streets.  
• Construction traffic activity for the WestConnex site in St Peters, particularly construction traffic on May Street, Campbell Street, Bedwin Road and Edgeware Road.  
• WestConnex works involving the reconstruction of Campbell Street and the intersection with Unwins Bridge Road. |
| **Sydenham Station and Junction works** | • Impact on parking and traffic movements on Sydenham Road, Railway Parade, Gleeson Avenue, Burrows Avenue.  
• Pedestrian and cyclist safety.  
• Pedestrian movements associated with operation of Sydenham station.  
• General precinct traffic congestion.  
• Impact on bus stops and bus operations.  
• Residential and business access. |

### 11.1.1. Nelson Street Bridge closure

In 2017, planning approval was obtained for the Sydney Metro City & Southwest project between Chatswood and Sydenham. Approval was given subject to a number of conditions including Condition E95 which requires that "the Proponent must in consultation with the TTLG review the need and opportunities for a pedestrian and cycling bridge across the rail corridor to replace the Nelson Street bridge. The review must be presented in the interchange Access Plan(s) and the findings implemented by the Proponent."

SMDO will continue to work with Willoughby Council and other stakeholders in the development of a concept plan for the provision of a shared path along the northern side of Mowbray Road. The strategic response for the removal of the bridge and concept plan of the shared path will be documented in a Chatswood Interchange Access Plan (IAP).

As indicated in table 11.1, the closure of the Nelson Street Bridge is a key issue for the northern dive site and will be documented in the Construction Traffic Management Plan that will be developed by the Principal Contractor. This plan will also document relevant mitigation measures in response to the potential impacts this may cause to surrounding sensitive receivers and existing users.
12. Definitions and Terminology

All terminology in this CTMF Document is taken to mean the generally accepted or dictionary definition. Other terms and jargon specific to this CTMF Document are defined within SM QM-FT-435 Integrated Management System (IMS) Glossary. Terms and acronyms specific to this document are listed below.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td>Any licence, permit, consent or approval required to be obtained from any authority to perform the construction activities or required in relation to the construction site by the contractor.</td>
</tr>
<tr>
<td>Authority/authorities</td>
<td>Any authority or person that has a right to impose requirements on any part of the contractor's activities or over the construction site.</td>
</tr>
<tr>
<td>Construction site</td>
<td>The land where the contractor undertakes the contractor's activities.</td>
</tr>
<tr>
<td>Sydney Coordination Office</td>
<td>The delivery office established to lead the proactive planning and coordination of the operations and management of the transport network for major infrastructure projects on behalf of Transport for NSW.</td>
</tr>
<tr>
<td>Construction Traffic Management Plan (CTMP)</td>
<td>The Construction Traffic Management Plan required by the SSI Approval. The CTMP is a plan showing how traffic will be managed when construction works are being carried out. It describes the work activities being proposed, their impact on the roadway and on road users, and how these impacts are being addressed. A CTMP may incorporate Traffic Staging Plans, Traffic Control Plans and Vehicle Movement Plans. Pedestrian Movement Plans may also be required to be incorporated. Sydney Metro City &amp; Southwest contract-wide CTMPs will need to be prepared in addition to site-specific CTMPs. These plans will be developed in consultation with the TTLG and TCG meetings.</td>
</tr>
<tr>
<td>Contractor</td>
<td>The organisation engaged by the Principal for the delivery of the Project Works and the Temporary Works.</td>
</tr>
<tr>
<td>Contractor's Activities</td>
<td>All things and tasks that the contractor is required to do under the contract, whether or not such things and tasks are performed by subcontractors.</td>
</tr>
<tr>
<td>Emergency</td>
<td>An unforeseen event which requires urgent action to protect life or property, or an occasion when emergency services (Police, Fire and Rescue, Ambulance or State Emergency Services) take control of a portion of the road network.</td>
</tr>
<tr>
<td>Hold Point</td>
<td>A point beyond which a work process must not proceed without the authorisation or release of a designated authority.</td>
</tr>
<tr>
<td>Local Traffic Committee (LTC)</td>
<td>A technical committee chaired by the local council under delegated authority from RMS, which considers matters related to prescribed traffic control devices and traffic control facilities for which the council has delegated authority. It is made up of four formal, or voting, members: Council, NSW Police, RMS, and the local state Member of Parliament.</td>
</tr>
<tr>
<td>Long-term works</td>
<td>Works that impact on the road network for more than one shift. Traffic management measures will be installed on one day/night and remain in place for weeks or months but are removed on completion of the project or that work; for example, concrete barriers and signage.</td>
</tr>
<tr>
<td>Pedestrian Movement Plan</td>
<td>A diagram showing the allocated travel paths for workers or pedestrians around or through a worksite. A PMP may be combined with or superimposed on a Traffic Control Plan.</td>
</tr>
<tr>
<td>Planning Approval</td>
<td>The approval being sought under the EP&amp;A Act by TfNSW and which is required to be complied with by the contractor, as directed in respective Project Deeds.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Preferred Infrastructure Report (PIR)</td>
<td>The report prepared to address issues raised in submissions on the Environmental Impact Statement and any proposed changes to the project to minimise its environmental impact.</td>
</tr>
<tr>
<td>Principal</td>
<td>Transport for NSW</td>
</tr>
<tr>
<td>Project Works</td>
<td>Any permanent works that the contractor is required to design, construct, complete and hand over.</td>
</tr>
<tr>
<td>Reference documents</td>
<td>The codes, standards, specification and guidelines specified in this document.</td>
</tr>
<tr>
<td>Revised Environmental Mitigation Measures</td>
<td>Mitigation measures, additional to the project design, which are identified through the Environment Impact Assessment.</td>
</tr>
<tr>
<td>Road occupancy</td>
<td>An activity that is likely to impact on the traffic flow of the road network, and may involve the closure of traffic lane(s) or parking lane(s).</td>
</tr>
<tr>
<td>Road Occupancy Licence</td>
<td>A licence for Road Occupancy issued by TMC that allows the holder to use or occupy a specified road space at approved times, providing that certain conditions are met.</td>
</tr>
<tr>
<td>Road Safety Audit (RSA)</td>
<td>An assessment and report of a road’s safety performance and crash potential at various stages of a road/project’s life cycle.</td>
</tr>
<tr>
<td>Road user</td>
<td>All users of roads and public spaces including, but not limited to, pedestrians, pedal cyclists, public transport passengers, public transport operators and motorists.</td>
</tr>
<tr>
<td>Short-term works</td>
<td>Works that are undertaken for one shift only. They may return the next day/night but it is set up and packed entirely in one shift; for example, cones and signs for a lane closure.</td>
</tr>
<tr>
<td>Subcontractor</td>
<td>A subcontractor of the contractor and includes a supplier of goods or services (including professional services and construction plant hire) or both.</td>
</tr>
<tr>
<td>Sydney Metro City &amp; Southwest</td>
<td>In this CTMF means that section of the proposed Sydney Metro City &amp; Southwest between the Northern Dive Structure and the Sydenham Station &amp; Junction works, including the proposed construction sites along its length.</td>
</tr>
<tr>
<td>Temporary works</td>
<td>Any temporary works required to carry out the contractor’s activities but which do not form part of the Project works.</td>
</tr>
<tr>
<td>TBM</td>
<td>Tunnel boring machine.</td>
</tr>
<tr>
<td>Traffic Control Plan</td>
<td>A diagram showing signs and devices arranged to warn traffic and to guide it around, past or if necessary through a work site or temporary hazard.</td>
</tr>
<tr>
<td>Traffic Control Group (TCG)</td>
<td>A group chaired by the Sydney Coordination Office and including the Principal, relevant contractor’s traffic and transport representative and other stakeholders.</td>
</tr>
<tr>
<td>Traffic Staging Plan</td>
<td>Road design drawings showing traffic lane configurations to be provided for traffic passing through the site during the various construction stages, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, work areas and pedestrian areas, drainage, signs and pavement markings, etc.</td>
</tr>
<tr>
<td>Traffic and Transport Liaison Group (TTLG)</td>
<td>The group formed by the Principal in accordance with the requirements in the Project Planning Approval. Meetings are chaired by the Sydney Coordination Office.</td>
</tr>
<tr>
<td>Transport Management Centre</td>
<td>The Transport for NSW Transport Management Centre located at Eveleigh.</td>
</tr>
<tr>
<td>Traffic and transport representative</td>
<td>The person appointed to the position of traffic and transport representative by the contractor.</td>
</tr>
<tr>
<td>Vehicle Movement Plan</td>
<td>A diagram showing the preferred travel paths for vehicles associated with a worksite entering, leaving or crossing the through traffic stream. A VMP may be combined with or superimposed on a Traffic Control Plan.</td>
</tr>
<tr>
<td>Verifier</td>
<td>A person appointed to the position of verifier by the contractor.</td>
</tr>
</tbody>
</table>
13. Related Documents and References

Related Documents and References

- SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard
- SM QM-FT-435 Integrated Management System (IMS) Glossary

14. Superseded Documents

Superseded Documents

There are no documents superseded as a result of this document.

15. Document History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date of approval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Pending</td>
<td>New IMS document.</td>
</tr>
</tbody>
</table>
Appendix A: Road Occupancy Licence Process

Road Occupancy Manual - Flow Chart

WHO | WHAT | NOTES
---|---|---
Start
Proponent | ROLA impacts a State road? | 
No | Proponent to apply to relevant council |
Yes | End |

Ensure all fields are complete and documents signed, TMP must be attached to all applications

Proponent | Complete application in OPLINC |
Application is assessed by ROU staff

Application is assessed on: Road space availability, Information supplied, and TMP Application may require additional assessment by other transport management staff prior to approval

ROU / Regional Staff | ROLA Approved? |
Yes | Road Occupancy Status changed to licensed |
No | Proponent notified of refusal and to submit new application |

Proponent advised of reason for refusal

Proponent | Licence emailed to Proponent |

Must notify the TMC at commencement and conclusion of closures Reference should also be made to "Licence Conditions" in the Road Occupancy Manual

End
Appendix B: Extract of SSI Approval and REMMS

The revised Sydney Metro City and Southwest Construction Noise and Vibration Strategy must be submitted to the Secretary for approval at least one (1) month before construction commences.

E33 Construction Noise and Vibration Impact Statements must be prepared for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers.

E34 Noise generating works in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) must not be timetabled within sensitive periods, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution or as otherwise approved by the Secretary.

E35 The Proponent must review alternative methods to rock hammering and blasting for excavation as part of the detailed construction planning with a view to adopting methods that minimise impacts on sensitive receivers. Construction Noise and Vibration Impact Statements must be updated for each location or activity to adopt the least impact alternative in any given location unless it can be demonstrated, to the satisfaction of the AA, why it should not be adopted.

Standard Construction Hours

E36 Construction, except as allowed by Condition E38 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours:

(a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
(b) 9:00am to 1:00pm Saturdays; and
(c) at no time on Sundays or public holidays.

Respite for Receivers

E37 The Proponent must identify all receivers at Crown Nest, Victoria Cross, Baramurra, Martin Place, Pitt Street and Central likely to experience internal noise levels greater than $L_{eq15, minute} 80$ dB(A) inclusive of a 6 dB penalty, if rock breaking or any other annoying activity likely to result in increased (ground-borne) noise or a perceptible level of vibration is planned (including works associated with utility adjustments), between 7am – 8pm.

F38 The Proponent must consult with all receivers identified in accordance with Condition E37 with the objective of determining appropriate hours of respite so that construction noise (including ground-borne noise), does not exceed internal noise levels of:

(a) $L_{eq15, minute} 80$ dB(A) inclusive of a 6 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise or a perceptible level of vibration is planned between 7am – 8pm for more than 30 percent of the time; and
(b) $L_{eq15, minute} 65$ dB(A) inclusive of a 6 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise or a perceptible level of vibration is planned between 7am – 8pm for more than 25 percent of the time,

unless an agreement is reached with those receivers. This condition does not apply to noise associated with the cutting surface of a TBM as it passes under receivers.

Note: This condition requires that noise levels be less than $L_{eq15, minute} 80$ dB(A) for at least 6.5 hours between 7am and 8pm, of which at least 3.25 hours must be below $L_{eq15, minute} 55$ dB(A). Noise equal to or above $L_{eq15, minute} 60$ dB(A) is allowed for the remaining 6.5 hours between 7am and 8pm.
v. Intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or
(a) where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular construction, and the noise management levels and/or limits for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Secretary at least one (1) week before the works commencing; or
(f) construction approved through an Out of Hours Work Protocol referred to in Condition E47, provided the relevant council, local residents and other affected stakeholders and sensitive receivers are informed of the timing and duration at least five (5) days and no more than 14 days before the commencement of the works.

E45 On becoming aware of the need for emergency construction in accordance with Condition E44(b), the Proponent must notify the AA, the ER and the EPA (if an EPL applies) of the need for those activities or work. The Proponent must also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.

E46 Notwithstanding Conditions E44 and E48, rock breaking and other particularly annoying activities are not permitted outside of standard construction hours, except at Central, unless the noise management level derived from the Interim Construction Noise Guideline can be achieved at sensitive receivers.

Out of Hours Work Protocol

E47 An Out of Hours Work Protocol for the assessment, management and approval of work outside of standard construction hours, as defined in Condition E36 of this approval, must be prepared in consultation with the EPA and submitted to the Secretary for approval before construction commences for works not subject to an EPL. The protocol must include:
(a) the identification of low and high risk construction activities;
(b) a risk assessment process in which the AA reviews all proposed out of hours activities and identifies their risk levels;
(c) a process for the endorsement of out of hours activities by the AA and approval by the ER for construction activities deemed to be of:
   i. low environmental risk; or
   ii. high risk where all construction works cease by 9pm.

All other high risk out of hours construction must be submitted to the Secretary for approval unless otherwise approved through an EPL.

The protocol must detail standard assessment, mitigation and notification requirements for high and low risk out of hours works, and detail a standard protocol for referring applications to the Secretary.

24 Hour Construction

E48 Notwithstanding Condition E36 of this approval and subject to Condition E47, the following activities may be undertaken 24 hours per day, seven (7) days per week:
(a) tunnelling and associated support activities (excluding out and cover tunnelling);
(b) excavation within an acoustic enclosure;
(c) excavation at Central without an acoustic enclosure;
(d) station and tunnel fit out; and
(e) haulage and delivery of spoil and materials.
A copy of the Site Audit Statement and Site Audit Report must be submitted to the Secretary and Council for information no later than one (1) month before the commencement of operation.

An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.

The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.

The proponent must seek to achieve a best practice level of performance for the CSSI using market leading sustainability ratings tools (including a minimum ‘Design’ and ‘As built’ rating score of 65 using the Infrastructure Sustainability Council of Australia infrastructure rating tool, or an equivalent level of performance using a demonstrated equivalent rating tool).

The Proponent must prepare a Sustainability Strategy to be submitted to the Secretary within six (6) months of the date of this approval, or within another timeframe agreed with the Secretary, which must be implemented throughout design, construction and operation of the CSSI. The Sustainability Strategy must include:

(a) details of the sustainability objectives and targets for the design, delivery and operation of the CSSI;
(b) details of the sustainability initiatives which will be investigated and/or implemented; and
(c) a description of how the strategy will be implemented for the CSSI.

Opportunities to reduce operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be implemented, reviewed and updated regularly throughout design development and construction, and annually during operation.

The Proponent must fully offset the greenhouse gas emissions associated with consumption of electricity during operation of the CSSI.

The CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimizing adverse changes to the safety, efficiency and accessibility of the networks, and facilitate an improved level of service in relation to permanent and operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:

(a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group(s) established under Condition E77;
(b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements;
(c) to minimise and manage local area traffic impacts;
(d) to ensure access is maintained to property and infrastructure; and
(e) in meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements.
Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Secretary upon request.

Traffic and Transport Liaison Group

The Proponent must establish a Traffic and Transport Liaison Group(s) (TTLG) to inform traffic and transport management measures during construction and operation of the CSSI. Management measures must be coordinated with and approved by the RMS following endorsement by the Sydney Coordination Office and consultation with the Relevant Roads Authority.

The TTLG must comprise representatives from the Relevant Road Authority(ies) (including the RMS, relevant Councils, and the Barangaroo Delivery Authority as appropriate), transport operators (including bus and taxi operators), emergency services and Port Authority of NSW as required. The TTLG must be consulted on to inform the preparation of the Construction Traffic Management Plan(s) and Interchange Access Plan(s).

The Proponent must undertake supplementary analysis and modelling as required by the TTLG to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, public including changes to and the management of pedestrian, bicycle and public transport networks transport services, pedestrian and cyclist movements. Revised traffic management measures, must be incorporated into the Construction Traffic Management Plan(s), Interchange Access Plan(s) and Station Design and Precinct Plan(s).

Construction Transport and Access

The Proponent must consult with the Relevant Road Authority regarding the use of any weight restricted road by heavy vehicles.

The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are 7am to 9am and 4pm to 7pm Monday to Friday.

The Proponent must prepare and implement a Construction Traffic Management Framework (CTMF). The CTMF must be prepared in consultation with TTLG(s) and submitted to the Secretary for approval no later than one (1) month before the commencement of construction (or within any other timeframe agreed with the Secretary). The CTMF will set out the approach to managing issues across the CSSI and include but not be limited to:

(a) construction site access, including the affident and safe access and ingress of vehicles, consistent relevant Austroads, Australian Standards and RMS requirements;
(b) the control of noise, vibration, dust and light; and
(c) operational traffic entry and exit to and from the construction site.

(a) the control of noise, vibration, dust and light; and
(b) operational traffic entry and exit to and from the construction site.

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(b) operational traffic entry and exit to and from the construction site.

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(b) operational traffic entry and exit to and from the construction site.
(i) regulatory, advisory and other signage changes and modifications;
(ii) parking management, including on and off street and remote parking and access;
(iii) heavy vehicle management, the restriction (unless otherwise approved) of heavy vehicles to certain routes and the minimisation of heavy vehicle traffic in peak traffic periods;
(iv) special event management;
(v) the retention and reinstatement of emergency and property access;
(vi) the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities;
(vii) incident response planning around construction worksites; and
(viii) monitoring of transport and access related impacts attributable to the CSM.

E82 Construction Traffic Management Plans (CTMPs), consistent with the CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to the RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site.

E83 Where construction results in a worsening of the matters identified in Condition E81(a)-(e), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to the RMS for approval following Sydney Coordination Office endorsement and implemented.

E84 Notwithstanding the above, the Proponent must investigate opportunities to maximise spill removal by non-road methods and schedule first track laying as soon as practicable following completion of tunnelling with a view to transporting materials and equipment for station fill-out, systems and commissioning by road to minimise truck movements in town centres and the Sydney CBD. The findings of the investigation must be reported to the Secretary before commencement and before completion of tunnel spill generation as relevant. A decision to not accept spill haulage or materials delivery by non-road methods must be demonstrated to the satisfaction of the Secretary.

E85 Heavy vehicle haulage must not use local roads unless no feasible alternative is available.

E86 During construction, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses. Such arrangements must be outlined in the Business Management Plan required in Condition E84 and implemented as required. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.

E87 Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be included within each relevant CTMP and carried out in consultation with the TTLG before the completion and use of the subject infrastructure and must be made available to the Secretary on request.

E88 Details of haulage routes and heavy vehicle sizes to transport material to and from any construction site must be specified in the Construction Traffic Management Plan(s) and be approved by the RMS following endorsement by Sydney Coordination Office and the Relevant Roads Authority.

E89 The Proponent must implement traffic and transport management measures with the aid of a truck marshalling and logistic facility located within close proximity to the Sydney and North Sydney CBDs. The facility must be operational in advance of tunnel spill generation. Details of the facility must be documented in the Ancillary Facilities Management Plan required by Condition A16.
Road Dilapidation

E90 A Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.

E91 If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner’s discretion):

(a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or

(b) rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).

Interchange Access Plans

E92 The Proponent must develop an Interchange Access Plan for each station to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration of public domain and transport initiatives around and at each station. The Interchange Access Plan(s) must consider walking and cycling catchments and take into account:

(a) station access hierarchy consistent with the transport planning principles defined in the EIS;

(b) safe, convenient, efficient and sufficient access to stations and transfer between transport modes (including subterranean connections and the safeguarding of additional entrances in response to land use change and patronage demand);

(c) the maintenance or improvement of pedestrian and cyclist level of service within a justified proximity to stations;

(d) current transport initiatives and plans;

(e) opportunities and constraints presented by existing and proposed transport and access infrastructure and services;

(f) patronage changes resulting from land use, population, employment, transport infrastructure and service changes;

(g) integration with existing and proposed transport infrastructure and services;

(h) pedestrian, cycle, bus, taxi, vehicle and emergency vehicle access and parking infrastructure and service changes;

(i) legislative requirements and applicable guidelines;

(j) safety audits, including but not limited to a review of traffic facility and cycle changes to ensure compliance with Austraia design criteria;

(k) final design, infrastructure, management and service measures and the level of access and service to be achieved for all users; and

(l) the contents of the Interchange Operations and Maintenance Plan (IOMP) and operational management provisions for future operational requirements, including maintenance, security and management responsibilities.

The Interchange Access Plan(s) must be prepared in consultation with the TTLG and the Design Review Panel and must be supported by traffic and transport analysis. Where necessary, consultation must also be undertaken with major landholders adjoining station precincts. The Plan(s) must detail a delivery and implementation program which must be provided to and agreed by the Secretary before commencement of permanent aboveground facilities at any station site.
In developing the Interchange Access Plan(s), the Proponent must consider:
(a) traffic and accessibility design requirements; and
(b) the Station Design and Precinct Plan(s) required by Condition E101.

The Proponent must in consultation with the TTLG review the need and opportunities for lift access between Hickson Road and High Street and which this meets the objective of increasing the patronage at station by increasing mobility and improved community accessibility. The review must be presented in the Interchange Access Plan and the findings implemented by the Proponent.

The Proponent must in consultation with the TTLG review the need and opportunities for a pedestrian and cyclist bridge across the rail corridor to replace the Nelson Street Bridge. The review must be presented in the Interchange Access Plan(s) and the findings implemented by the Proponent.

The Interchange Access Plan(s) must be reviewed by a qualified traffic and transport professional(s), independent of the detailed design process for the CSSI, having regard to the requirements of this approval.

Bicycle Infrastructure

The Proponent must provide adequate bicycle infrastructure at stations that form part of the project, and provide adequate areas for future expansion of that infrastructure.

The Proponent must undertake an audit of bicycle patronage at stations and end-of-trip facility adequacy 12 and 36 months following commencement of operation of the project to ensure the level of bicycle parking and end-of-trip facilities available are adequate in terms of both quantity and quality. The audit must be undertaken with the Relevant Council(s), RMS, Bicycle NSW and relevant local bike user groups.

URBAN DESIGN AND VISUAL AMENITY

Visual Amenity

The CSSI must be constructed in a manner that minimizes visual impacts of construction sites, including, providing temporary landscaping where appropriate to soften views of the construction sites, minimizing light spill, and incorporating aesthetic treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located.

Design Review Panel

The Proponent must establish a Design Review Panel (DRP) to refine design objectives for place making, public realm and urban and heritage integration applicable to the length of the project and provide advice on the application of the objectives to key design elements in relation to place making, architecture, heritage, urban and landscape design and artistic aspects of the CSSI.

The DRP must:
(a) comprise five members who are experts in one of the identified design elements;
(b) include:
   i. the NSW Government Architect as Chair;

Department of Planning and Environment
Conditions of Approval for CSSI

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11.2 Revised environmental mitigation measures

The list of mitigation measures and performance outcomes presented in Chapter 27 of the Environmental Impact Statement has been revised on the basis of submissions received, the additional assessment work carried out and the preferred infrastructure report. In some cases new measures have been added, while in others, the wording of existing measures has been adjusted.

Table 11-1 provides the revised consolidated environmental mitigation measures. This table supersedes the mitigation measures presented in the Environmental Impact Statement. New mitigation measures or additions to existing mitigation measures are shown in bold text, with deletions shown with a strikethrough.

Table 11-1 Revised environmental mitigation measures

<table>
<thead>
<tr>
<th>ID</th>
<th>Mitigation measure</th>
<th>Applicable location(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Ongoing consultation would be carried out with (as relevant to the location) the CBD Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators in order to minimise traffic and transport impacts during construction.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T2</td>
<td>Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T3</td>
<td>Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T4</td>
<td>In the event of a traffic related incident, co-ordination would be carried out with the CBD Coordination Office and / or the Transport Management Centre’s Operations Manager.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T5</td>
<td>The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T6</td>
<td>Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.</td>
<td>All except metro rail tunnels</td>
</tr>
</tbody>
</table>
### Mitigation measure

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
</table>
| T7 | Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the construction sites would be implemented during construction. This would include measures such as:  
- Use of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers  
- Shared experience Community educational events that allow pedestrians, cyclists or motorists to sit in trucks and understand the visibility restrictions of truck drivers, and for truck drivers to understand the visibility from a bicycle; and a campaign to engage with local schools to educate children about road safety and to encourage visual contact with drivers to ensure they are aware of the presence of children  
- Specific construction driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking  
- Use of Vehicle Monitoring Systems (telematics) to monitor vehicle location and driver behaviour  
- Safety devices on construction vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn. |
| T8 | Access to existing properties and buildings would be maintained in consultation with property owners. |
| T9 | All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable. |
| T10 | Any relocation of bus stops would be carried out by Transport for NSW in consultation with Roads and Maritime Services, the CBD Coordination Office (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops. |
| T11 | For special events that require specific traffic measures, those measures would be developed in consultation the CBD Coordination Office (for relevant locations), Roads and Maritime Services, Barangaroo Delivery Authority (for relevant locations) and the organisers of the event. |
| T12 | Construction sites would be managed to minimise construction staff parking on surrounding streets. The following measures would be implemented:  
- Encouraging staff to use public or active transport  
- Encouraging ride sharing  
- Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable.  
Transport for NSW would work with local councils to minimise adverse impacts of construction on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones. |
<p>| T13 | Construction site traffic would be managed to minimise movements in the AM and PM peak periods. |
| T14 | Construction site traffic immediately around construction sites would be managed to minimise movements through school zones during pick up and drop off times. |</p>
<table>
<thead>
<tr>
<th>ID</th>
<th>Mitigation measure</th>
<th>Applicable location(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T15</td>
<td>Pedestrian and cyclist access would be maintained at Crows Nest during the temporary closure of Hume Street, and at Martin Place during the temporary partial closure of Martin Place. Wayfinding and customer information would be provided to guide pedestrians and cyclists to alternative routes.</td>
<td>CN, MP</td>
</tr>
<tr>
<td>T16</td>
<td>Timing for the temporary closure of the Devonshire Street tunnel would avoid periods of peak pedestrian demand. Wayfinding and customer information would be provided to guide pedestrians to alternative routes.</td>
<td>CS</td>
</tr>
<tr>
<td>T17</td>
<td>Consultation would occur with the Harbour Master, Roads and Maritime Services and Sydney Ferries' to ensure shipping channels are maintained during the Sydney Harbour ground improvement works.</td>
<td>Gi</td>
</tr>
<tr>
<td>T18</td>
<td>During the closure of existing entrances to Martin Place Station, marshalls would be provided during the AM and PM peak periods to direct customers to available access and egress points.</td>
<td>MP</td>
</tr>
<tr>
<td>T19</td>
<td>Where existing parking is removed to facilitate construction activities, alternative parking facilities would be provided where feasible and reasonable.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T20</td>
<td>Alternative pedestrian routes and property access would be provided where these are affected during the construction of the power supply routes.</td>
<td>PSR</td>
</tr>
<tr>
<td>T21</td>
<td>The potential combined impact of trucks from multiple construction sites would be further considered during the development of Construction Traffic Management Plans.</td>
<td>All except metro rail tunnels</td>
</tr>
<tr>
<td>T22</td>
<td>Where existing footpath routes used by pedestrians and / or cyclists are affected by construction, a condition survey would be carried out to confirm they are suitable for use (eg suitably paved and IIT), with any necessary modifications to be carried out in consultation with the relevant local council.</td>
<td>All except metro rail tunnels</td>
</tr>
</tbody>
</table>
Appendix C: RMS and SCO operational imperative site specific access and vehicular routing requirements

Northern Dive Structure
- Any left turn from Mowbray eastbound into site must be from a newly constructed deceleration/turning lane.
- Delivery of tunnel segments to occur at night or not at same time as tunnel spoil haulage.
- Light vehicles to be encouraged to exit via Nelson Street.
- Heavy vehicle exit via Nelson Street not endorsed between hours of 5:00am till 10:00pm (subject to Council agreement).
- Heavy vehicle entry via Nelson Street acceptable subject to adequate turning movements that do not impact lane 2 of Pacific Highway.
- Heavy vehicles to be allowed to exit via Bryson Street or equivalent onto Pacific Highway after 10.00pm and prior to 5.00am only.
- All heavy vehicle movements to be supervised by the contractor.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

Crows Nest
- CTMF to clearly demonstrate turning paths for truck and dogs and heavy rigid vehicles in and out of Clarke Lane.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

Victoria Cross
- Vehicular site access via Berry Street will not be supported, unless as otherwise agreed by SCO and RMS.
- Any vehicular site access via Miller Street shall provide sufficient separation from the Berry Street traffic signals.
- Any vehicular accesses via Miller Street shall be located and designed to avoid traffic delays for Miller Street traffic.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

Barangaroo
- RMS and SCO do not support the use of truck and dog heavy vehicle combinations via York Street/Margaret Street or Erskine Street/Napoleon Street/Hickson Road during 7:00 to 10:00am and/or 4:00 to 7:00pm.
- RMS and SCO do not endorse heavy vehicle turnaround via Towns Place, heavy vehicles should turn around within the work site.
- RMS and SCO support the installation of traffic signals along Hickson Road to control site access/egress provided they are SCATS connected and all costs are borne by the contractor.
RMS and SCO have no objection to the night time haulage route of York Street, Erskine Street and Margaret Street. RMS and SCO do not endorse the use of truck and dogs during peak hours via York Street – Erskine Street – Margaret Street, however no objection to the use of single unit trucks (tippers) is raised.

SCO does not support the use of on-street parking zones by trucks, without prior approval.

**Martin Place**

- RMS and SCO do not endorse the use of truck and dogs during the day. RMS and SCO has no objection to the use of truck and dogs as follows: Sunday to Wednesday 8:00pm to 6:00am, Thursday 10:00pm to 6:00am, Saturday 3:00am to 9:00am, Sunday from 3:00am for the whole day. RMS and SCO do not support their use during special events.
- RMS and SCO have no objection to the use of the Bent Street – Bligh Street or O’Connell Street – Castlereagh Street site access entry points.
- RMS and SCO have no objection to the use of the exit driveways onto Elizabeth Street. RMS and SCO do not support exit driveway onto Castlereagh Street.
- RMS and SCO raise no objection to a maximum number of truck movements (4 per hour) within morning and evening peak periods provided single unit trucks (tippers) are used.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

**Pitt Street**

- RMS and SCO do not endorse the use of truck and dogs during the day. RMS and SCO has no objection to the use of truck and dogs as follows: Sunday to Wednesday 8:00pm to 6:00am, Thursday 10:00pm to 6:00am, Saturday 3:00am to 9:00am, Sunday from 3:00am. Single trucks (tippers) for the whole day Saturday and Sunday. RMS and SCO do not support their use during special events.
- RMS and SCO do not support the exit driveway onto Bathurst Street with entry via Pitt Street. RMS and SCO support the EIS proposal with entry via Bathurst Street and exit via Pitt Street.
- RMS and SCO raise no objection to a maximum number of truck movements (4 per hour) within morning and evening peak periods provided single unit trucks (tippers) are used.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

**Central**

- SCO does not support reversing movements from Elizabeth Street or Randle Street into Randle Lane.
- No reversing of vehicles onto State roads.
- Coordination of any works to be carried out in consultation with, and approval of, CSELR in those areas that form CSELR worksites.
- Any closure of Devonshire Street tunnel to be minimised and any closure to be carried out during low demand periods.
Sydney Metro — Integrated Management System (IMS)
(Uncontrolled when printed)

- RMS and SCO raise no objection to a maximum number of truck movements (6 per hour) within morning and evening peak periods.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

Waterloo
- RMS and SCO raise no objection to the use of truck and dogs for both day and night movements provided entry/exit is left in and left out during 7:00am to 10:00am and 4:00pm to 7:00pm.
- RMS and SCO prefer that access to and from the work site be via state roads.
- RMS and SCO raise no objection to a maximum number of truck movements (3 per hour) within morning and evening peak periods.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

Marrickville
- RMS and SCO raise no objection to the use of truck and dogs for both day and night movements provided School Zones are avoided.
- RMS and SCO raise no objection to a new driveway to the site provided it is located away from the roundabout and not immediately adjacent to it. RMS and SCO prefer that access to and from the work site be via state roads.
- RMS and SCO raise no objection to a maximum number of truck movements (18 per hour during morning peak/11 per hour during evening peak).
- SCO does not support the use of on-street parking zones by trucks, without prior approval.
## Appendix D: Comments Register

<table>
<thead>
<tr>
<th>Report Name:</th>
<th>Construction Traffic Management Framework – Chatswood to Sydenham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author:</td>
<td>Ken Hind</td>
</tr>
<tr>
<td>Version:</td>
<td>1.1</td>
</tr>
<tr>
<td>Date:</td>
<td>August 2017</td>
</tr>
<tr>
<td>Section</td>
<td>Issue</td>
</tr>
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<tr>
<td>Road and Maritime Services (RMS)</td>
<td>2.1 p14 3rd dot point on construction activity</td>
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<tr>
<td></td>
<td>4.1 p.23 TTLG 2nd dot point</td>
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<tr>
<td></td>
<td>6.1 p.29 Policy context and legislative backing, 2nd paragraph</td>
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<tr>
<td></td>
<td>6.3 p.30 Dot point regarding Site specific CTMPs</td>
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<td></td>
<td>6.3 p.31 Site specific CTMPs</td>
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<td>Section</td>
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<tr>
<td>6.3 p.31</td>
<td>ROL and related applications. Changes to paragraph.</td>
</tr>
<tr>
<td>6.3 p.31</td>
<td>ROL and related applications, 4th dot point</td>
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<tr>
<td>6.3 p.31</td>
<td>ROL and related applications, 6th dot point</td>
</tr>
<tr>
<td>6.3 p.31</td>
<td>Last paragraph, change wording</td>
</tr>
<tr>
<td>6.3 p.31</td>
<td>Last paragraph – comment</td>
</tr>
<tr>
<td>6.5 p.32</td>
<td>Speed Zone Authorisation, last two sentences</td>
</tr>
<tr>
<td>6.9</td>
<td>Sentence edited and added</td>
</tr>
<tr>
<td>6.10 p.35</td>
<td>Add RMS</td>
</tr>
<tr>
<td>6.11 p.35</td>
<td>Last sentence</td>
</tr>
</tbody>
</table>
### Section 8.1.1 p.51
Policy and responsibilities, last paragraph
Delete 'or construction' from beginning of sentence.
**Response:** Noted and amended.

### Section 8.1.2 p.52
Portable traffic signals
Delete dot point regarding portable traffic signals.
**Response:** Not agreed to. While portable traffic signals would not be permitted on state roads there may be instances on local roads where these would be accommodated, subject to the relevant authority approval.

**15/12/2017 — Section 8.1.2 (e) amended to include 'Portable traffic signals on local roads to control traffic flows if lane closures are required, subject to the relevant authority approval.'**

### Section 8.3.1
Accidents/incidents and complaints
Change 'accidents' to 'crashes'.
**Response:** Noted and amended.

### Section 8.4 p.54
Traffic controllers and temporary traffic signals
Paragraph 2, last sentence: 
'it is to be in accordance with documented Austroads Guidelines, RMS supplements, procedures, and guidance and approval of the roads authority.'
Paragraph 3 — Add: 
'VMS placement should conform to Austroads Guidelines, RMS supplementary material and approval processes of the roads authority.'
**Response:** Noted and amended.

### Sydney Coordination Office (SCO)

#### Section 2.2
Additional information
Third dot-point should include the following text:
'The direct contact numbers of the contract-wide and site-specific lead contractors should be provided to the TMC and SCO. The contract-wide lead contractor is responsible for ensuring the direct contact numbers are current during any stage of construction.'
**Response:** Noted and amended.

#### Fig 7.8
Missing data
Add the access routes to the O'Connell Street site.
**Response:** Noted and added.

#### Fig 7.9
Updated information
Due to the proximity of the site to the signals the right turn movement from Castlereagh Street into Park Street is unable to be accommodated. Vehicles should continue on Castlereagh Street.
**Response:** This would be subject to the contractor's assessment as part of the CTMP for that site.

#### Appendix C
Additional information
For all sites listed, include the below text:
'SCO does not support the use of on-street parking zones by trucks, without prior approval.'
**Response:** Noted and amended.
### Section 3.3.2 — pg.18

**General Comment**

The CTMF excludes any reference to the moving of spoil by barge from the Blues Point and Barangaroo sites even though the Contractor has already indicated this option will be pursued (see [http://www.smh.com.au/nsw/barges-to-shift-thousands-of-tonnes-of-rock-from-sydneys-new-rail-tunnels-20170622-gvw8w1.html](http://www.smh.com.au/nsw/barges-to-shift-thousands-of-tonnes-of-rock-from-sydneys-new-rail-tunnels-20170622-gvw8w1.html)). The City is very supportive of this proposal and would like to see it referenced in the CTMF.

**Response**

Paragraphs included for the Blues Point and Barangaroo sites under Section 7.1 — Haulage routes.

### Sect 3.3.4 — pg.21

**Under the “Traffic Control Plans” heading, the CTMF references the RMS and SCO operational requirements for the work sites across the City’s LGA. Would it also be beneficial to include the operational requirements from each relevant Council to indicate to the Contractor where RMS, SCO and Council are in agreement (e.g. limiting vehicular access to the Waterloo work site to State Roads only) and where there is disagreement (e.g. use of truck and dog combinations at Sydney CBD sites, 24-hour operations, etc.)? This would provide each Contractor with clarity when preparing subsequent CTMPs, TCPs, etc.**

**Response**

Added “On local roads, councils may also have operational requirements and these should be determined in consultation with councils.” As each council may have different requirements.

### Sect 3.3.4 — pg.21

The City requests that ‘Pedestrian Movement Plans’ are made mandatory for the Barangaroo, Martin Place, Pitt Street and Central work sites and provided to the City prior to the commencement of works for review and comment.

**Response**

No amendment proposed as these locations will require the contractor to “warn pedestrians of works” due to the volume of pedestrians at these sites.
<table>
<thead>
<tr>
<th>Section</th>
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<th>Stakeholder Comment</th>
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</thead>
<tbody>
<tr>
<td>Sect 3.3.4 – pg.22</td>
<td>The CTMF should note that any proposed change to on-street parking will require review and approval by the City and may require referral to the Local Pedestrian, Cycling and Traffic Calming Committee (LPCTCC) for consideration and endorsement</td>
<td>This is covered in Section 6.11 – Council Traffic committees, which outlines the matters that might be considered by the traffic committee.</td>
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<tr>
<td>Sect 4.4 – pg.25</td>
<td>Please replace the text “Meetings were arranged with relevant traffic officers in each of these Councils and a summary of key points of the CTMF were provided” to “The Draft CTMF was circulated via email to the relevant traffic officers in each of these Councils”</td>
<td>Noted, section updated to reflect current consultation with councils. 15/12/2017 - Consultation occurred through the TTLG and with electronic copies of the CTMF and outline of the changes from the earlier CTMF provided to those Council and BDA representatives who had been involved in providing comments for the earlier CTMF. Face to face consultation was carried out with Willoughby Council representative due to a staff change at Council.</td>
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<tr>
<td>Sect 6.1 – pg.29</td>
<td>Text should be updated to also note that traffic management changes or proposed amendments to the public domain will require submission to the relevant local Council and may require referral to the Local Traffic Committee for consideration and endorsement</td>
<td>This aspect and suggested wording is covered in Section 6.11 – Council Traffic Committees.</td>
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<tr>
<td>Sect 6.4 – pg.31</td>
<td>For clarity, it would beneficial to note that any proposal to temporarily close traffic lanes or a full road closure will also require relevant approvals from the respective local Council in addition to acquiring a Road Occupancy Licence (ROL). For previous NSW Government projects (like Wynyard Walk), the City has found that some Contractors believed all they needed was an ROL to close a road which isn’t the case when the road is under the jurisdiction of the local Council. It would also be beneficial to include web links to the relevant approvals required for partial or full road closures similar to the text provided on Page 56 for Section 9.2 – Hoardings</td>
<td>Wording amended to clarify requirement for council approval for lane or road closures.</td>
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<tr>
<td>Sect 6.7 – pg.34</td>
<td>replace “Traffic Control at Worksites Manual (RMS) training course” with “Prepare a Work Zone Traffic Management Plan” training course</td>
<td>Noted and amended. Relocated to Section 3.3.4</td>
<td></td>
</tr>
<tr>
<td>Sect. 6.12 – pg.35</td>
<td>Text should be updated to also note that traffic management changes or proposed amendments to the public domain will require submission to the relevant local Council and may require referral to the Local Traffic Committee for consideration and endorsement</td>
<td>Considered to be already included in Section 6.12 under ‘Matters that may need to be considered by the Local Traffic committee’ 15/12/2017 – Section 6.11 (formally 6.12) amended.</td>
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<td>Section</td>
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<td>Stakeholder Comment</td>
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<tr>
<td>Page 42</td>
<td>Barangaroo Work Site Haulage Routes — given the high volumes of pedestrians in the vicinity of Wynyard Station, combined with sensitive land uses fronting both York and Kent Streets (e.g. high-density residential buildings, hotels, child care centre, etc.), the City requests that the secondary routes proposed in Figure 7.7 (inbound via York, Margaret Streets; outbound via Napoleon, Kent Streets) only be used when the primary routes (inbound and outbound via Sussex Street, Hickson Road) are unavailable. Furthermore, for spoil haulage and material delivery proposed outside the Standard Construction Hours noted in Condition E36 of the Department of Planning and Environment SSI Approval, the City requests this be undertaken by barge only and that ‘truck and dog’ combinations be limited to the primary routes only.</td>
<td></td>
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<tr>
<td>Page 43</td>
<td>Martin Place Work Site Haulage Routes — given the high volumes of pedestrians in the vicinity of the Martin Place work site during peak periods in particular, the City requests that heavy vehicle deliveries are also minimised between 12pm and 2pm, Monday to Friday (Weekday Lunch Peak), as well as 7am to 10am and 4pm and 7pm, Monday to Friday. Furthermore, the City strongly objects to the use of ‘truck and dog’ combinations from the Martin Place work site at any time; spoil haulage and material delivery should be limited to the Standard Construction Hours noted in Condition E36; and spoil haulage and material delivery should be limited to primary (via Shakespeare Place) and secondary routes (via Cahill Expressway) to the east and north of the work site to avoid tracking directly through the Sydney CBD (via King and Market Streets) and ‘doubling up’ on heavy vehicle movements generated from the Barangaroo work site.</td>
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</table>

Response:

- Barangaroo barging request and use of truck and dog vehicles to primary routes only.
- Objection noted regarding use of truck and dog for spoil haulage.
- The use of the primary or secondary haulage routes will be dependent on a number of factors including traffic conditions and destinations for spoil. Any change of the route from the approved EIS route will require an assessment to be carried out by the contractor.
- Materials haulage will be carried out in line with the CSSI conditions of consent.
- 15/12/2017 - Paragraph added to Section 7.1 re Barangaroo barging request and use of truck and dog vehicles to primary routes only.

- 15/12/2017 - Section 7.1 - sentence added ‘Primary routes should be used as the first priority, as far as is practicable.’
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<table>
<thead>
<tr>
<th>Section</th>
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<th>Stakeholder Comment</th>
<th>Response</th>
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<tr>
<td>Pitt Street Work Site Haulage Routes – given the high volumes of pedestrians in the vicinity of the Pitt Street work site during peak periods in particular, the City requests that heavy vehicle deliveries are also minimised between 12pm and 2pm, Monday to Friday (Weekly Lunch Peak), as well as 7am to 10am and 4pm and 7pm, Monday to Friday and that the secondary routes proposed in Figure 7.9 (inbound and outbound via William Street, CCT) only be used when the primary routes (inbound via Bathurst Street and outbound via Druitt Street) are unavailable. Furthermore, the City strongly objects to the use of ‘truck and dog’ combinations from the Pitt Street work site at any time and given the sensitive land uses in the vicinity of both sites associated with the Pitt Street Station (e.g. high-density residential buildings, hotels, late night entertainment venues, Town Hall Station portals, St Andrews Cathedral School, etc.), spoil haulage and material delivery should be limited to the Standard Construction Hours noted in Condition E36. The City is also concerned that given major development works are already underway in close proximity to the two Pitt Street Station sites (e.g. demolition works associated with Sydney Metro, CSELR Project, 115-119 Bathurst Street (Greenland), 116 Bathurst Street, etc.), if works associated with the TSE Contract were to continue 24/7 there would be no respite from construction activity for local residents and businesses</td>
<td>Objection noted regarding use of truck and dog for spoil haulage. The use of the primary or secondary haulage routes will be dependent on a number of factors including traffic conditions and destinations for spoil. Materials haulage will be carried out in line with the CSSI conditions of consent. 15/12/2017 – Section 7.1 – sentence added ‘Primary routes should be used as the first priority, as far as is practicable.’</td>
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### Page 45

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<thead>
<tr>
<th>Section</th>
<th>Issue</th>
<th>Stakeholder Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>Central Work Site Haulage Routes – given the high volumes of pedestrians in the vicinity of the Central work site during peak periods in particular, the City requests that heavy vehicle deliveries are also minimised between 12pm and 2pm, Monday to Friday (Weekly Lunch Peak), as well as 7am to 10am and 4pm and 7pm, Monday to Friday. Consideration should also be given to limiting heavy vehicle deliveries when special events (like those at Moore Park, Allianz Stadium, SCG, etc.) increase pedestrian volumes in the vicinity of Central Station. Furthermore, the City strongly objects to the use of ‘truck and dog’ combinations from the Central work site at any time and given the sensitive land uses in the vicinity of Central Station (e.g. residential precincts, hotels, late night entertainment venues, Central Station portals, Sydney TAFE, UTS, etc.), spoil haulage and material delivery should be limited to the Standard Construction Hours noted in Condition E36. The City is also concerned that given major development works are already underway in close proximity to Central Station (e.g. Central Walk, SYAB, CSELR Project, Central Park, etc.), if works associated with the TSE Contract were to continue 24/7 there would be no respite from construction activity for local residents and businesses</td>
<td>Comments noted. Limiting of deliveries during special events would be considered by the contractor under the Section 6.6 requirements. Access to the Central Station site works will mainly be via the Sydney Yard Access Bridge (SYAB). This bridge is to be completed prior to any Central station works commencing. Materials haulage will be carried out in line with the CSSI conditions of consent. Objection noted regarding use of truck and dog for spoil haulage. 15/12/2017 – Section 7.1 – sentence added ‘Primary routes should be used as the first priority, as far as is practicable.’</td>
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<td>Page 45</td>
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<td>Waterloo Site Haulage Routes – to avoid the use of local roads under the City’s control for haulage, the City supports the operational restriction proposed by RMS and SCO for Waterloo which limits vehicular access to and from the work site to the State Road network only</td>
<td>Noted&lt;br&gt;15/12/2017 - Point added in Table 11-1 regarding access to and from the site via Botany Road.</td>
</tr>
<tr>
<td>Page 47</td>
<td></td>
<td>the CTMF references the need for a “suitable off-street truck marshalling area and logistics facility” to limit heavy vehicle queuing on Sydney CBD streets. Has an appropriate site been selected? If so, the City believes the site should be referenced within the CTMF</td>
<td>Investigations for identification and procurement for a suitable site are continuing at the present time.&lt;br&gt;15/12/2017 - Truck marshalling area being dealt with through an Ancillary Facilities Management Plan. CTMF will be updated to include the truck marshalling site once identified.</td>
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<td>Sect 7.3 – pg.47</td>
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<td>might be beneficial to make it clear that the provision of Works Zones is likely to incur fees and charges to the relevant Roads Authority – this will assist to avoid any ambiguity on whether the Contractor pays or not. It would also be beneficial to include web links to the relevant approvals required for a Works Zone similar to the text provided on Page 56 for Section 9.2 – Hoardings</td>
<td>May be subject to separate agreement between SMDO and Council.</td>
</tr>
<tr>
<td>Sect 7.4 – pg.48</td>
<td></td>
<td>the CTMF references that “daytime weekday use of ‘truck and dog’ combinations within the Sydney CBD is not supported” – it would be beneficial to clearly define the time period “daytime weekday use” applies and given the City opposes ‘truck and dog’ combinations in the Sydney CBD at any time, please add that “the use of ‘truck and dog’ combinations within the Sydney CBD outside these times will require negotiation and approval from RMS, SCO and the City of Sydney”</td>
<td>Noted, have included (7am-7pm) after daytime. Paragraph two of this section highlights that “The types of truck to be used for the transporting of materials will be assessed in consultation with the relevant authorities in the preparation of the site CTMPs.”</td>
</tr>
<tr>
<td>Sect 11.1 – pg. 63</td>
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<td>Please add the following key issues for the various work sites&lt;br&gt;Barangaroo Station – community/resident amenity, particularly for Millers Point and Kent Street; accumulative impact of nearby construction activities&lt;br&gt;Martin Place Station – safe management of heavy pedestrian activity during Weekday AM, Weekday Lunch, Weekday PM and special events; accumulative impact of nearby construction activities&lt;br&gt;Pitt Street Station – safe management of heavy pedestrian activity during Weekday AM, Weekday Lunch, Weekday PM and special events; community/resident amenity; accumulative impact of nearby construction activities&lt;br&gt;Central Station – safe management of heavy pedestrian activity during Weekday AM, Weekday Lunch, Weekday PM and special events; community/resident amenity; accumulative impact of nearby construction activities&lt;br&gt;Waterloo Station – community/resident amenity&lt;br&gt;Barangaroo – these issues are already included with “Sensitive community” and “construction traffic from other developments.”&lt;br&gt;Martin Place – “Heavy” added to beginning of second dot point as a consideration for CTMP preparation.&lt;br&gt;Pitt Street – “Heavy” added to beginning of first dot point as a consideration for CTMP preparation.&lt;br&gt;Central – “Heavy” added to beginning of first dot point as a consideration for CTMP preparation.&lt;br&gt;15/12/2017 – Suggested wording added to Table 11.1</td>
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<td><strong>Section</strong></td>
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<td><strong>Stakeholder Comment</strong></td>
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<td><strong>North Sydney Council</strong></td>
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<td>5.3</td>
<td>Responsibility for Community Engagement</td>
<td>Who is responsible for managing community engagement and ensuring the community is updated? The communication strategies talk about getting their message out to stakeholders but neglect to establish a process to receive and respond to stakeholder inputs during the project. Metro should take responsibility for responding to such input.</td>
<td>As highlighted in Section 5.3, the principal contractor is to develop a Community Communications Strategy in accordance with the guidelines provided in the Sydney Metro City &amp; Southwest Community Communications Strategy. Section 5.3 amended to include the above wording to the Strategy.</td>
</tr>
<tr>
<td>6.4</td>
<td>Road Occupancy Licence approval process</td>
<td>In most instances both Council approval and TMC ROL will be required for works that will impact on any footpaths and the carriageway, not just on local roads. Council also manages footpaths and most parking on State roads. Paragraph 3 needs to be amended to avoid potential confusion down the track.</td>
<td>This section relates to the ROL process for the closure of a traffic lane. Impacts on parking are covered in Section 6.1, 6.11 and 7.3. Impacts on footpaths would be considered in the CTMP, which is required to be submitted to Council as part of the approval process. The RMS document ‘A guide to the delegation to councils for the regulation of traffic’ indicates at Section 3.1 that “Council cannot exercise a function on a State Road as defined in the RTA document ‘Schedule of Classified Roads and State and Regional Roads.”</td>
</tr>
</tbody>
</table>

**Barangaroo Delivery Authority**

| 2 | | It is suggested that Barangaroo Delivery Authority (BDA) be listed with the local councils in the first sentence of the second paragraph. | Noted and amended |
| 3.3.3 | BDA assumes there will be some level of coordination across the various Metro contracts. | Noted, it would be included as a requirement for the contractors. |
| 4.2 | BDA should be listed in the organisation expected to have representation on a Traffic Control Group. | Noted and amended |
| 6.5 | BDA should be consulted with regard to speed zones within the Barangaroo area. | It is understood that any speed zone changes should be applied for through RMS. Consultation will occur via the TCG. |
| 9.2 | BDA has specific requirements regarding the erection of hoarding within the Barangaroo area. | BDA added to Section 9.2 |
| 10.2.3 | BDA requests that copies of completed Road Safety Audits are provided. | RSA’s will be submitted as part of the site specific CTMP. BDA is included in this process. (Section 6.3) |
## Sydney Metro — Integrated Management System (IMS)

### Section Issue Stakeholder Comment Response

<table>
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</table>
| 11.1    |       | Under Key Issues for Barangaroo Station:  
Replace ‘Adjacent construction activity’ with ‘Multiple concurrent construction activities’  
Add ‘Bus and coach operations’  
Add ‘General precinct traffic operations’  
Add ‘Residential and business access’ | Noted and amended except ‘general precinct traffic operations’ as this is a project wide consideration and not restricted to this site and is highlighted in Section 2. |
| 12      |       | Is intended for a Network Management Plan to be prepared? | It is not intended that a Network Management Plan be provided. |
| Appendix C |       | BDA also supports RMS and SCO position on the second dot point under the Barangaroo heading.  
BDA requests to be consulted regarding the installation of traffic lights. | Note added to the dot point regarding heavy vehicles turning around in Towns Place.  
Noted regarding traffic signals. BDA added to fourth dot point in Section 2.2 – Traffic Management Strategy. |

### Willoughby Council

<table>
<thead>
<tr>
<th>General</th>
<th>Use ‘State’, ‘Regional’ and ‘Local’ in road classification terminology</th>
<th>Noted and amended.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Include footpaths in managing roads.</td>
<td>Noted and amended.</td>
</tr>
</tbody>
</table>
| 2       | Include the following dot points re traffic management strategies:  
A safe road and pathway network.  
Support operation and use of sustainable transport modes to reduce on-road single occupant motor vehicle demand.  
Include bicycles in dot point two. | Reference to safe road and pathway network included as part of Section 2.1.  
Not a requirement of the project.  
Agreed and amended. |
| 2.1, Table 2.1 | Include under Safety:  
Provide a safe road and pathway network by application of the safe systems approach.  
Ensure traffic management maximises safety for all road users at all times.  
Include new result area — ‘Amenity’ with the following:  
Minimise noise and other environmental impacts on the residents and businesses in the vicinity of the work site. | These dot points covered in the principles points provided following the table.  
This would be covered by the environmental requirements for the project in the CEMF. It is not specifically a traffic management requirement.  
15/12/2017 – Table 2.1 updated to include suggested wording and reference to Sydney Metro City & southwest Construction Noise and Vibration Strategy section 5.3 and 5.9. |
### Section 2.1

Add the following dot points:

- Vehicles generated by the work site with destinations beyond the work site will travel on the road network in a safe manner consistent with safe system principles and practices.
- Noise and other environmental changes generated by construction traffic management do not worsen the local environment for residents and businesses.
- Provide a coordinated incident management approach that is consistent with the level of risk to safety and travel movement.
- Change the seventh main dot point to:
  - Existing travel paths used by pedestrians and cyclists are maintained so far as is practicable with detours provided that are safe and do not lead to unreasonable increases in travel time and distance.

Refer to Section 8.3
Refer to CEMF
Refer to Section 9.5

'pedestrians' added to second dot point regarding minimising delays.

### Section 2.2

Add dot points:

- The provision of regulatory signs and pavement markings on the road network adjacent to the work site to support construction activities.
- The operation of traffic control signals to ensure safe travel and support optimal movement of all road users including construction vehicles.
- Existing adjacent curbside parking and restrictions be retained for residents and businesses.

These facilities would be provided as required and outlined in the RMS Traffic Control at Worksites Manual.

Existing parking and restrictions would be maintained as far as is practicable.

### Section 2.3

Hierarchy of access

The priority of the road users may change depending on the location, in some instances they may have equal priority.

This is based on the TfNSW hierarchy of access to stations. It is not proposed to change.

Noted and partially amended, last phrase not included.

### Section 3.3.3

Site descriptions

The site description e.g. Northern Dive structure is different from that shown in Figure 3.1.

Noted and amended to correspond with Fig. 3.1.

### Section 3.3.4

Traffic control plans

Include "TCP to incorporate local council requirements where provided or work with the local council to provide a satisfactory alternate management arrangement."

Included as part of the CTMP requirements. No change proposed.
### Section Issue Stakeholder Comment Response

<p>| 3.3.4 | Traffic control Plans | Last sentence regarding RMS and SCO operational requirements. Council requirements should also be acknowledged and adopted where necessary. In Willoughby Council’s case motor vehicle ingress and egress to the work site should all be via Mowbray Road. | This refers to the requirements that were provided as the approving authority in the development of the CTMP’s. The use of Nelson Street would be dependent on the contractor’s requirements and would be discussed with Council. |
| 3.3.4 | Pedestrian movement plans | Include: The needs of bicyclists should also be considered and management measures documented in the pedestrian and bicycle movement plan. This is particularly important where the work site is bounded by major roads such as State and Regional Roads. | Noted and included. |
| 3.3.4 | Parking management plans | Include: All changes the kerbside parking and restrictions on the non-State Road network should be reviewed and approved by Councils following review and recommendation by the Local Traffic Committee. Impacted users (residents and businesses) should be consulted and notified. | These matters covered in Section 6.1 (for Local Traffic Committee) and 5.1 (for consultation with residents and business). |
| 5.1 | Existing businesses and residents consultation | Third paragraph – add ‘councils’ to be notified | This section relates to potentially affected businesses and residents. Councils notice will be provided with the submission of the CTMP’s for comment, in addition to the TCG and TTLG meetings. 15/12/2017 – ‘local Councils’ added to third paragraph in Section 5. |
| 5.2 | Notification of traffic changes | Include in second paragraph a reference to council and “A minimum of 7 days’ notice is requested to minimise impacts including disruption to business as usual activities and programmed/planned works.” | As indicated in the previous response, council’s will received information through the provision of CTMP’s for comment, TCG’s and TTLG’s. |
| 5.4 | Roadside messaging, second paragraph | Include “pedestrians and cyclists”. | Noted and amended. |
| 6.1 | Policy context and legislative backing, second paragraph | Alter the paragraph as follows: Any changes to regulatory sign traffic control devices and traffic control facilities will require the approval from the road authority manager and arrangements with the road authority manager for the changes to occur. Regulatory sign traffic control device and traffic control facility changes on local Local or regional Regional roads will require a submission to the local council and approval of the local Local traffic Traffic committee-committee and approval from the Council. Traffic control device and traffic control facility sign changes on state State roads will require the approval of RMS. | Noted and amended, except for road manager and Local Traffic Committee. It is considered that the current wording adequately provides that the approval from council will require the submission to the LTC. |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Issue</th>
<th>Stakeholder Comment</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3</td>
<td>ROL</td>
<td>The road types for submission of an ROL should be State and Regional roads, not classified roads. Remove 'ROL' regarding council approvals and change to 'permits to undertake road occupancy'. Change 'non-classified' to 'Regional and Local'.</td>
<td>Propose removing 'classified' as this refers to roads where RMS is the Road Manager. This could include local roads within 100m of traffic signals. Agreed for removal of the term ROL as this is a specific TMC application. Agreed re removal of 'non-classified'.</td>
</tr>
<tr>
<td>6.4</td>
<td>Road Occupancy Licence approval process, first paragraph</td>
<td>Amend sentences as follows: ROLs are approved by the TMC, following endorsement by the SCO, for RMS classified managed roads (e.g. State roads) or locations on unclassified non-State roads within 100 metres of traffic signals. It should be noted that due to the critical nature of the potential traffic impacts for unclassified non-State streets roads within the Sydney and North Sydney CBDs.</td>
<td>Generally agreed although would use ‘Regional and local’ in place of ‘non-State’</td>
</tr>
<tr>
<td>7.4.1</td>
<td>Worker access and parking, Northern Dive site</td>
<td>Willoughby Council will not support the use of the Northern Dive Site for a park and ride site as this will generate unnecessary additional general traffic on already congested road network. Whilst the provision of some level of on-site car parking spaces in the Northern Dive Site is likely and beneficial, as it will reduce on-street parking demand, the capacity and management arrangement needs to be developed in consultation with the local Council. The draft final management plan should be provided to, and agreed by, the local Council.</td>
<td>Noted, however, due to constraints on the other sites it may be necessary to provide parking on the northern site. Noting that this includes the Southern site and will be dependent on the contractor’s requirements for the site and space being available. Any on-site parking would be considered as part of the site management plan prepared by the contractor. 15/12/2017 – Paragraph provided outlining need for consultation with Council as part of CTMF for on-site parking.</td>
</tr>
<tr>
<td>8.1.1</td>
<td>Policy and responsibilities, fifth paragraph</td>
<td>Construction speed limits on local roads to be applied for through council. The accuracy of this statement should be confirmed. I was not aware that Council could approve changes in speed limits.</td>
<td>Agreed, does not comply with the information provided in Section 6.5. Amended.</td>
</tr>
<tr>
<td>9.5</td>
<td>Management of risks to vulnerable road users</td>
<td>Add the following dot point: Maintain the existing pathway used by pedestrians and bicyclists. Maintain an acceptable width of the pathway if narrow is necessary. Minimise deviations from the existing pathway used by pedestrians and bicyclists should full/temporary/intermittent closure of the existing pathway is required.</td>
<td>Footpath widths are addressed in the second last paragraph of this section.</td>
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<tr>
<td>Section</td>
<td>Issue</td>
<td>Stakeholder Comment</td>
<td>Response</td>
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</tr>
<tr>
<td>11.1</td>
<td>Site-specific issues</td>
<td>For Northern Dive site should include: Retention of the bus stop in Pacific Highway (north of Mowbray Road) so that it is safe and comfortable to access and use to ensure on-going road based public transport is accessible and safe for all residents and others in area surrounding the worksite.</td>
<td>Will include ‘Bus stop on Pacific Highway’</td>
</tr>
</tbody>
</table>

### TSE Contractor

| 2.1, Table 2.1 | Transport network, 4th dot point | Remove ‘buses run on time’ | Not agreed, it is one of the state government’s objectives. |
| 2.1, Table 2.1 | Transport network, 6th dot point | Include ‘where reasonable and feasible’ at the end of the point | Not agreed, this is a condition of consent and does not include these words (Condition E80). |
| 2.1           | Construction activity compliance principles, 1st dot point | Remove ‘must be made’ regarding safe provision for vehicles, cyclists and pedestrians. | Not agreed, this is a condition of consent (condition E86). |
| 2.1           | Construction activity compliance principles, 3rd dot point | Include ‘where reasonable and feasible’ at the end of the point | Not agreed, this is a condition of consent and does not include these words (Condition E80), also REMM T13. |
| 2.2           | Traffic management strategy, 3rd dot point | Remove ‘to mitigate congestion and provide rapid response should incidents or increased congestion occur as a direct result of the works. Notification of incidents or congestion should also be relayed to the Sydney Metro Delivery Office at the earliest opportunity.’ | Not agreed, RMS and SCO requirement. |
| 2.2           | Traffic management strategy, 4th dot point | Remove ‘This may also require a NSW Police presence.’ | Agreed and amended |
| 2.2           | Traffic management strategy, 5th dot point | Add ‘unless agreed with the owner/tenant prior.’ | Not agreed, Condition E86 requires that ‘measures must be implemented to maintain pedestrian and vehicular access to … businesses and affected properties.’ |

| 3.3, Table 3.1 | Traffic Control Plans | Delete ‘Produced for each traffic change, and road occupancy, for all work sites. Requires the preparation of supporting plans.’ And replace with ‘Can form part of the site specific CTMP or be used as a standalone drawing for submission with Road Occupancy License applications and/or Council permits.’ | Suggested sentence agreed. Deletion not agreed. In compliance with SM ES-ST-214 Principal’s General Specifications G10 – Traffic and Transport Management. |
| 3.3.2          | Construction Traffic Management Plans, 2nd paragraph | Add ‘and, where relevant, the RMS Work Authorisation Deed (WAD) documentation. This will allow fulfilment of the WAD requirement for a Traffic Management and Safety Plan (TMSP).’ | Agreed, also add ‘subject to RMS review and approval’ at end of sentence. |

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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>3.3.3</td>
<td>Site specific CTMP, 4th paragraph</td>
<td>Delete ‘would’ and insert ‘may’</td>
<td>Not agreed, does not conform to SM ES-ST-214 Principal’s General Specifications G10 – Traffic and Transport Management.</td>
</tr>
<tr>
<td></td>
<td>Delete ‘CTMPs will also provide details regarding on-site and off-site staff parking arrangements, including any proposed busing to and from worksites.’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3.4</td>
<td>Traffic control Plans and other plans, 1st paragraph</td>
<td>Add ‘However, where works are in accordance with the definition of construction exempted works in the Conditions of approval or are low impact works which do not impact peak hour traffic flows, the TCP or a standalone drawing will be submitted to the relevant road authority for the temporary occupation of the road/path.’</td>
<td>Not agreed, RMS and SCO will provide the determination if suitable.</td>
</tr>
<tr>
<td></td>
<td>Traffic control plans, 2nd paragraph</td>
<td>Add ‘or has accreditation to a similar level.’</td>
<td>Not agreed, TCP’s should only be prepared by a suitably NSW qualified person.</td>
</tr>
<tr>
<td></td>
<td>Vehicle movement plans</td>
<td>Delete “Vehicle movement plans should be included in site-specific CTMPs prepared by a suitably qualified person for the contractor. The requirements for the provision of VMP are detailed in Chapter 7 of the Traffic Control at Worksites Manual.”</td>
<td>Not agreed.</td>
</tr>
<tr>
<td></td>
<td>Pedestrian movement plans</td>
<td>Delete “Wherever it is necessary to divert or warn pedestrians of works the PMP should be included in the CTMP prepared by the contractor.”</td>
<td>Not agreed</td>
</tr>
<tr>
<td></td>
<td>Parking management plans</td>
<td>Insert “outside of the parking losses nominated in the EIS.”</td>
<td>Not agreed, parking management plan will need to identify alternate parking arrangements, whether identified in the EIS or not.</td>
</tr>
<tr>
<td>5.1</td>
<td>Existing businesses and residents, 4th paragraph</td>
<td>Insert “significant” before changes and replace ‘should’ with ‘may’</td>
<td>Not agreed, refer to REMM T5.</td>
</tr>
<tr>
<td>5.4</td>
<td>Roadside messaging, 1st paragraph</td>
<td>Replace ‘should’ with ‘may’</td>
<td>Not agreed, any placement of signposting must be provided to provide for safe passage of vehicles, pedestrians and cyclists.</td>
</tr>
<tr>
<td></td>
<td>Roadside messaging, 1st paragraph</td>
<td>Insert “The installation of signs will be detailed within the relevant traffic plan.”</td>
<td>Agreed, although changed to “relevant construction traffic management plan.”</td>
</tr>
<tr>
<td>Section</td>
<td>Issue</td>
<td>Stakeholder Comment</td>
<td>Response</td>
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<tr>
<td>6.3</td>
<td>Construction Traffic Management Plans Approval Process, Contract wide CTMP dot points.</td>
<td>Delete: Reviewed by environmental representative. After review and agreed edits, submitted to RMS for approval following the Sydney Coordination Office endorsement for approval, before construction commences at the relevant construction site. Published on the Contractors website prior to works commencing at the relevant site (Condition B15)</td>
<td>Not agreed, these requirements are outlined in the Conditions of Approval.</td>
</tr>
<tr>
<td>6.3</td>
<td>Site specific CTMP dot points</td>
<td>Insert after ‘Section 3.3’ ‘for works identified as construction under MCoA definition’</td>
<td>Not agreed, any works that may impact on the road or footways will require a CTMP.</td>
</tr>
<tr>
<td>6.3</td>
<td>Insert after ‘Section 3.3’ ‘for works identified as construction under MCoA definition’</td>
<td>Replace ‘Sent to DP&amp;E for information only’ with ‘Will not be sent to DPE unless specifically requested for information purposes only.’</td>
<td>Not agreed, these requirements are outlined in the Conditions of Approval.</td>
</tr>
<tr>
<td>6.3</td>
<td>Delete: Published on the Contractors website prior to works commencing at the relevant site (Condition B15)</td>
<td>Not agreed, these requirements are outlined in the Conditions of Approval.</td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>ROL and related applications dot points, 1st paragraph</td>
<td>Delete ‘A CTMP will be required to be approved prior to approval of the ROL.’</td>
<td>Not agreed, for ROL’s that are required for project works, a CTMP will be required to be approved.</td>
</tr>
<tr>
<td>6.3</td>
<td>Last paragraph</td>
<td>Delete ‘Applications for scaffolds and hoardings would be applied for with the relevant council with concurrent notifications to SMDO, RMS, SCO and TMC.’</td>
<td>Agreed as not specific to the ROL process.</td>
</tr>
<tr>
<td>6.3</td>
<td>Last paragraph, last sentence.</td>
<td>Delete ‘for council and other stakeholder feedback prior to submission’.</td>
<td>Not agreed, information on future ROL requirements are required to be presented to the TCG.</td>
</tr>
<tr>
<td>6.4</td>
<td>Road Occupancy Licence approval process, last two paragraphs</td>
<td>Delete: ‘ROLs will generally be issued for relatively short periods of time and the TMC will require that an approved TCP or site CTMP for the work be in place. Information on approved ROLs should also be provided to the Sydney Metro City &amp; Southwest Project Communications Team for notification, prior to works commencement.’</td>
<td>Not agreed, a minimum of a TCP is required and information on ROL’s must be provided to the Communications Team to ensure co-ordination of any messages or enquiries from the public.</td>
</tr>
<tr>
<td>6.5</td>
<td>Speed Zone Authorisation, 2nd paragraph.</td>
<td>Change wording as follows: Depending on the extent of the works and project familiarity the application will may be supported by the site specific CTMP or a TCP. Short-term speed zone changes can be dealt with via the CTMP ROL process. Longer term (over six months) or permanent changes must are included in the site specific CTMP and are to be referred to RMS for assessment, consideration and approval.</td>
<td>Agreed and amended except for ‘ROL process’. SM ES: ST-214 Principal’s General Specifications G10 – Traffic and Transport Management requires CTMP.</td>
</tr>
<tr>
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<tr>
<td>6.7</td>
<td>Traffic Control Plans</td>
<td>Comment that the section appears to repeat information provided in Section 3.3.4.</td>
<td>Agreed, section deleted and information combined in Section 3.3.4.</td>
</tr>
<tr>
<td>6.9</td>
<td>Over-size or over-mass vehicle permits</td>
<td>Delete ‘for requirements for permit types required, depending upon loads’</td>
<td>Agreed and amended.</td>
</tr>
<tr>
<td>6.10</td>
<td>Adjustments to bus routes and stops, 1st paragraph</td>
<td>Delete ‘prior to submitting and ROL application to TMC’</td>
<td>Agreed and amended.</td>
</tr>
<tr>
<td>7.1</td>
<td>Haulage routes, 3rd paragraph</td>
<td>Delete ‘contract wide and’ before ‘site specific CTMPs’</td>
<td>Not agreed, would still be required in contract wide CTMP if changes are proposed.</td>
</tr>
<tr>
<td></td>
<td>Haulage diagrams</td>
<td>Suggested changes to routes shown.</td>
<td>Not agreed, routes shown are those exhibited and approved in the EIS. Changes to these approved routes would need to be documented in the CTMPs.</td>
</tr>
<tr>
<td></td>
<td>Haulage routes, last paragraph</td>
<td>Add ‘where reasonable and feasible’ regarding heavy vehicle movements during peak periods and through school zones.</td>
<td>Not agreed, REMM T13 does not include this. RMS and SCO have also rejected this.</td>
</tr>
<tr>
<td>7.2</td>
<td>Management of heavy vehicle movements, 2nd paragraph.</td>
<td>Amend sentence as follows: Each site-specific CTMP will need to demonstrate, where applicable, how marshalling facilities will need to be used to manage truck movements and reduce congestion.</td>
<td>Agreed and amended.</td>
</tr>
<tr>
<td>7.4</td>
<td>Construction/demolition vehicle types, 2nd paragraph</td>
<td>Insert “specific” before CTMPs at the end of the sentence.</td>
<td>Not agreed, vehicle type information should be included in all of the CTMPs. Sentence amended to include contract wide and site specific CTMPs.</td>
</tr>
<tr>
<td>7.4.1</td>
<td>Worker access and parking, 2nd paragraph.</td>
<td>Delete ‘up to 300’ from first sentence</td>
<td>Agreed and amended. Does not reduce the contractor’s requirement to minimise the impacts of staff parking on the surrounding streets.</td>
</tr>
<tr>
<td>7.4.3</td>
<td>Driver training, 4th paragraph.</td>
<td>Amend sentence as follows: “Contractors are required to have systems in place to monitor heavy vehicles regularly used on the Project at locations at all times and address any identified non-conformances.”</td>
<td>Not agreed, REMM T7 does not specify only heavy vehicles.</td>
</tr>
<tr>
<td>8.3</td>
<td>Emergency incident planning, 1st paragraph</td>
<td>Delete: ‘An Incident Management Plan for on-road incidents, or incidents that impact on the public transport network should be submitted to the TMC Emergency Transport Operation section for review and comment.’ Also 3rd dot point under Incident Management Plan procedures: ‘Equipment that is to be ready always on potential call-out vehicles.’</td>
<td>Not agreed, SCO and RMS requirement.</td>
</tr>
<tr>
<td>Section</td>
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<tr>
<td>9.2</td>
<td>Hoardings, 1st paragraph</td>
<td>Delete 'These may also need to provide site facilities for the workers on the site due to the constrained nature of the sites.'</td>
<td>Not agreed, this is a reference to type B hoardings with site sheds included on the hoarding.</td>
</tr>
<tr>
<td></td>
<td>2nd paragraph</td>
<td>Delete 'The City of Sydney has published policies on hoardings on its website. While the policy document provides guidelines for the presentation of the hoarding, the branding and visual aspects of the hoarding are to be in line with TfNSW/Sydney Metro requirements.'</td>
<td>Not agreed.</td>
</tr>
<tr>
<td></td>
<td>3rd paragraph</td>
<td>Delete 'In some locations there may also be a requirement for the hoarding to comply with design guidelines.'</td>
<td>Not agreed, no justification for removal.</td>
</tr>
<tr>
<td></td>
<td>4th paragraph</td>
<td>Delete 'All hoardings around Sydney Metro construction sites should comply with the TfNSW/Sydney Metro branding requirements.'</td>
<td>Not agreed, no justification for removal.</td>
</tr>
<tr>
<td>9.4</td>
<td>Pedestrian security/safety/lighting, 1st paragraph, last sentence.</td>
<td>Delete 'In those locations where this occurs, supplementary lighting is to be provided to meet the current standards.'</td>
<td>Not agreed, lighting will be required to highlight any potential hazards for pedestrians.</td>
</tr>
<tr>
<td>9.5</td>
<td>Management of risks to vulnerable road users, 4th paragraph, last sentence.</td>
<td>Insert 'Where current footpath widths are in accordance with DDA requirements.'</td>
<td>Proposed wording not agreed, sentence amended as follows: Footpath widths are required to provide for two-way pedestrian traffic allowing for prams or strollers and wheelchairs to pass each other without requiring temporary widening from their existing width prior to construction commencement. Narrowing of the footpath width, if required, is to be approved by the relevant authorities.</td>
</tr>
<tr>
<td>Appendix C</td>
<td>RMS and SCO operational imperatives</td>
<td>A number of changes proposed to wording of imperatives.</td>
<td>Not agreed, will require consultation with RMS and SCO for any changes.</td>
</tr>
<tr>
<td>Inner West Council</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Page 39, Table 11-1</td>
<td>Inclusion of further wording within the Marrickville Dive Site.</td>
<td>Marrickville Dive Site contains 3 dot points regarding key issues and we would like you to include a few more. These are: • Construction traffic activity for the Marrickville Metro shopping centre expansion and the surrounding streets. • Construction traffic activity for the WestConnex site in St Peters, particularly with the involvement of May Street, Campbell Street, Bedwin Road &amp; Edgeware Road. • Managing access at the intersection of Bedwin Road, Edgware Road &amp; Edinburgh Road (potential signalised intersection).</td>
<td>Table 11-1 (page 61) updated to include Council's requested issues.</td>
</tr>
</tbody>
</table>
## Appendix E: Meeting Notes

Sydney Metro City & Southwest – Traffic & Transport Liaison Group (TTLG Meeting No.1)

**Date**  
Thursday 16 February 2017

**Time**  
10:30 am – 12:00 noon

**Venue**  
12 Castlereagh St, Sydney, Level 7, Cherrybrook Meeting Room.

**Chairperson**  
Giovanny Ramirez GR

<table>
<thead>
<tr>
<th>Attendees</th>
<th>Agency</th>
<th>Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nick Abraham NA</td>
<td>Taxi C.</td>
<td>Agency liaison</td>
</tr>
<tr>
<td>Mark Black MB</td>
<td>Fire Rescue</td>
<td>Metro East Zone Cmd.</td>
</tr>
<tr>
<td>Stephen Blair SB</td>
<td>Police</td>
<td>Inspector</td>
</tr>
<tr>
<td>Philip Brogan PAB</td>
<td>SMDO</td>
<td>Technical transport</td>
</tr>
<tr>
<td>Adrian Bull AB</td>
<td>S Motorway</td>
<td>SMDO</td>
</tr>
<tr>
<td>Fil Cerone FC</td>
<td>Lg Orcursoke</td>
<td>Sustainability &amp; Env</td>
</tr>
<tr>
<td>Emelye Coleridge EC</td>
<td>SCO</td>
<td>SYAB Contractor</td>
</tr>
<tr>
<td>Jake Coles JC</td>
<td>C of Sydney</td>
<td>Traffic &amp; transport</td>
</tr>
<tr>
<td>Bryony Cooper BC</td>
<td>Police</td>
<td>C of Sydney LAC</td>
</tr>
<tr>
<td>David Donahue DD</td>
<td>SMDO</td>
<td>Stakeholder relationships</td>
</tr>
<tr>
<td>Naomi Fiegel NF</td>
<td>BDA</td>
<td>Dir Transport/Infra.</td>
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<tr>
<td>Melanie Fyfe MF</td>
<td>SMDO</td>
<td>Traffic &amp; transport</td>
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<tr>
<td>Aaron Gale AG</td>
<td>SCO</td>
<td>Mgr SYAB</td>
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<tr>
<td>Michael Garrard MG</td>
<td>SMDO</td>
<td>Zone Mgr</td>
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<tr>
<td>Brad Goodwin BG</td>
<td>SMDO</td>
<td>Mgr Eastern Region</td>
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<tr>
<td>Eric Graham EG</td>
<td>SMDO</td>
<td>SYAB Contractor</td>
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<tr>
<td>Huw Griffiths HG</td>
<td>SMDO</td>
<td>Commander Metro East</td>
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<tr>
<td>Rick Griffiths RG</td>
<td>SMDO</td>
<td>Traffic Ops Manager</td>
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<td>Mark Hannan MH</td>
<td>SMDO</td>
<td>Traffic &amp; transport</td>
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<td>Ken Hind KH</td>
<td>SMDO</td>
<td>Mgr Transport Planning</td>
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<tr>
<td>Gordon Hughes GH</td>
<td>SMDO</td>
<td>Stakeholder relationships</td>
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<tr>
<td>Steve Illek SI</td>
<td>Metropolitan</td>
<td>Demo contractor</td>
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<tr>
<td>Wayne Johnson WJ</td>
<td>Ambulance</td>
<td>Director South East</td>
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<td>Sean Keams SK</td>
<td>STA</td>
<td>Traffic &amp; transport</td>
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<td>Michaela Kemp MK</td>
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<td>Van Le VL</td>
<td>C of Sydney</td>
<td>Transport Advisor</td>
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<td>Terry Lee-Williams TLW</td>
<td>C of Sydney</td>
<td>LRT</td>
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<td>Tim Marsden TM</td>
<td>TNSW</td>
<td>Interface Mgt</td>
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<td>Anthony McMahon AM</td>
<td>RMS</td>
<td>Demo contractor</td>
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<tr>
<td>Bert Musch BM</td>
<td>Metropolitan</td>
<td>Mgr Delivery LRT</td>
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<td>Terry O’Connor TO</td>
<td>TNSW</td>
<td>Mgr Demolition</td>
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<tr>
<td>Peter O’Leary POL</td>
<td>SMDO</td>
<td>Project Director</td>
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<tr>
<td>Tim Parker TP</td>
<td>SMDO</td>
<td>Traffic &amp; transport</td>
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<tr>
<td>Josh Powell JP</td>
<td>SCO</td>
<td>Mgr Marine Operations</td>
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<tr>
<td>Saskia Star SS</td>
<td>Port Authority</td>
<td>Traffic &amp; transport</td>
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<tr>
<td>Daniel Sui DS</td>
<td>Willoughby</td>
<td>Mgr Demolition</td>
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<tr>
<td>Brendan Wiseman BW</td>
<td>Port Authority</td>
<td>Project Director</td>
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<td>Abdullah Uddin AU</td>
<td>L Cove Cl.</td>
<td>Traffic &amp; transport</td>
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<td>Col Warne CW</td>
<td>C of Sydney</td>
<td>Mgr Marine Operations</td>
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<td>Katherine Zistar KZ</td>
<td>SCO</td>
<td>Traffic &amp; transport</td>
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<tr>
<td>Ben Shum BS</td>
<td>Delta Pty Ltd</td>
<td>Traffic &amp; transport</td>
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**Apologies:**  
Ian McCarthy IM  
Trevor Newman TN  
Brad Stafford BS
### Agenda Item No.

<table>
<thead>
<tr>
<th>Action/Decision</th>
<th>Action By</th>
<th>Due Date</th>
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<tbody>
<tr>
<td><strong>1. Welcome and Meeting Purpose</strong></td>
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<tr>
<td>GR welcomed all to the first Sydney Metro City &amp; Southwest TTLG meeting. GR</td>
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<tr>
<td>advised that the purpose of the TTLG meetings is to oversee and coordinate</td>
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<td>Sydney Metro City &amp; Southwest project-specific and cumulative traffic and</td>
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<td>transport issues and impacts during construction. GR welcomes input from TTLG</td>
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<td>representatives so that, working together, we can ensure smooth delivery of the</td>
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<td>City &amp; Southwest Metro project.</td>
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<tr>
<td><strong>2. Sydney Metro City &amp; Southwest – Project Overview</strong></td>
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<tr>
<td>TP spoke to a presentation entitled City &amp; Southwest Overview, February 2017</td>
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<td>(pdf attached) noting by exception as follows:</td>
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<td>Strategic context of the Metro project</td>
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<td>developed via a coherent set of land use and transport plans for NSW and Sydney.</td>
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<td>Staged delivery.</td>
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<td>Delivery strategy through multiple contracts (refer to slide 5).</td>
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<td>First TBM in the ground in 2018.</td>
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<td>Two demolition contracts awarded in January 2017 (Metropolitan: Martin Place</td>
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<td>north and Delta Group: Chatswood, Crows Nest, Victoria Cross, Pitt St north,</td>
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<td>Waterloo and Marrickville)</td>
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<td>Sydney Yard Access Bridge (SYAB) contract awarded and will commence works in Q1</td>
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<td>2017.</td>
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<td>Tunnels &amp; Station Excavation (TSE) contract to be awarded in mid-2017.</td>
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<td>Over Station Development (OSD) investigations underway.</td>
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<td>Sydney Metro ‘Customer Principles’ being used to guide the design, development</td>
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<td>and operation of the services, products, systems and spaces.</td>
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<td><strong>3. TTLG – Draft Terms of Reference</strong></td>
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<tr>
<td>PAB spoke to the TTLG Terms of Reference noting as follows:</td>
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<td>• Purpose as outlined by GR above.</td>
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<td>• Chair will be Sydney Coordination Office (SCO). Secretarial support will be</td>
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<td>provided by the Sydney Metro Delivery Office (SMDO).</td>
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<td>• TTLG attendance will be supplemented by a 'wider team' on an as needs basis.</td>
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<td>• All attendees will be invited to sign a confidentiality agreement as was done</td>
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<td>for the Sydney Metro Northwest Metro TTLG at inception in 2012.</td>
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<td>• The 12 Castlereagh Street building will be demolished in mid 2017 so a new TTLG</td>
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<td>meeting venue will need to be found. Stakeholders will be advised during March.</td>
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<td>Regular Traffic Control Group (TCG) meetings are being held.</td>
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</table>
with roads SCO, RMS, SMDC, Metro contractors and roads authorities.

- The TTLG endorsed the TTLG Terms of Reference.

4. Sydney Metro SSI Approval — TTLG Roles

FC spoke to a presentation entitled Sydney Metro — Chatswood to Sydenham Planning Approval — TTLG Roles, February 2017 (pdf attached) noting as follows:

- Project declared as Critical State Significant Infrastructure.
- SSI approval obtained for Chatswood to Sydenham section with 109 conditions.
- Condition E77 calls for TTLG.
- Condition E78 provides for the TTLG to request supplementary analysis and modelling where required.
- Conditions E75-E98 deal in various ways with traffic and transport matters.

**Action 1A:** TTLG representatives are requested to familiarise themselves with the SSI approval conditions as they relate to their organisations.

5. Construction Traffic Management Framework & Consents

PAB spoke to a draft Construction Traffic Management Framework (CTMF) document dated 15 February 2017 noting as follows:

- SSI approval requires preparation of the CTMF and consultation with TTLG prior to lodgement with DP&E for approval.
- CTMF may be lodged in DP&E in stages, a first draft dealing with the SYAB and the Demolition works and another subsequent draft dealing with TSE and all other City & Southwest contract works.
- Metro contractors will produce contract wide (SYAB and Demolition excepted) and then site specific Construction Traffic Management Plans (CTMPs) within the context of the CTMF. Traffic Control Plans (and supporting plans) will also be prepared as required.
- Site specific CTMP’s will be required to be developed on the basis of a hierarchy of access.
- Metro contractors will need to take account of potentially lengthy approval lead times in any works involving traffic signal construction or modifications.

**Action 1B:** Local Council and BDA TTLG representatives are requested to provide the following advice before the next TTLG meeting:

1. Works which will require referral/consideration via the Local Traffic Committee and/or full council meetings.
2. Processing times for these and other consents/applications.
EC spoke to a Sydney Yard Access Bridge video and slides noting as follows:

- Three interface points: one at STA bus depot, Eddy Avenue existing Sydney Trains access and Regent Street access to SYAB bridge.
- Haulage to and from the site will involve tower crane sections, some spoil and the large beams for the bridge itself under permit.
- A Class B hoarding is proposed for Regent Street. This will require short term lane closures in Regent Street, a classified arterial road.
- Program: Kick off in April 2017, demolition of terraces in June 2017, work under rail possessions (x3) in late September/early October 2017.

SB asked how many heavy vehicle movements would occur via the bus depot and EC advised about 5 per hour.

EG advised that heavy vehicle entries and exits via the bus depot would need to avoid the peak periods.

TO noted that there would be a critical interface with the Light Rail project requiring coordination of the CTMPs. The key interfaces would be at Eddy Avenue and Chalmers Street and works associated with the move of the coaches to the western forecourt.

MG noted that a draft CTMP for SYAB was with PAB and would be reviewed internally within SMDO prior to referral to the TCG and TTLG.

POL spoke to three slides titled Demolition Status noting as follows:

- Two demolition contracts awarded in January 2017 (Metropolitan: Martin Place north and Delta Group: Chatswood, Crows Nest, Victoria Cross, Pitt St north, Waterloo and Marrickville).
- Demolition commencement dates driven by building acquisition and building vacant possession.
- Program provides for works commencement in late March 2017 at multiple locations.
- Ten other buildings to be demolished, 5 as part of the SYAB contract works and 5 under the TSE contract works.

NA asked what the arrangements would be for stakeholder consultation for the demolition works and GR advised that this would occur through the TTLG and also via the weekly TCG meetings.

SB asked if there will be issues associated with the demolition of homes and POL advised that the key issues will be noise, vibration and dust generation all of which will be mitigated during the works.

SI reaffirmed that the SMDO Communications team has place managers...
whose role it is to get to know the stakeholders in the affected areas with a view to ensuring the works do not have adverse impacts and to ensure that stakeholders are aware of upcoming works. CW noted that the City of Sydney has various requirements in regards to demolition works within the LGA.

7. Other Matters

1. PAB noted that SMDO is keen to identify and adopt streamlined approval processes applying to traffic management and other consents with a view to minimising the time taken to secure approvals. This may involve officer delegations, out of session referrals or other initiatives. SMDO will continue to investigate opportunities in consultation with roads authorities.

2. RG requested further details for emergency services representatives in relation to spoil removal haulage routes, vehicle types, pedestrian management and so forth. SI advised that briefings of emergency services have been organised in 2016 but additional briefing can be provided. [Post Meeting note: SMDO meeting with Local Area Command representatives will be held of 23 February 2017].

3. NA asked if background material could be provided by SMDO so that TTLG representatives could communicate this information internally within their agencies. GR advised that the material presented today would be issued with the meeting minutes.

8. Actions & Next Meeting

Actions will be summarised in an actions register.

Next Meeting:
The next TTLG meeting will be (TTLG 2) Thursday 16 March 2017.
# Meeting Notes

**Sydney Metro City & Southwest - Traffic & Transport Liaison Group (TTLG Meeting No.7)**

**Date:** Thursday 3 August 2017  
**Time:** 11:00 am – 12:30pm  
**Venue:** 680 George Street, Level 43, Boardroom.

## Chairperson
Giovanny Ramirez GR

## Attendees
- Mark Black MB
- Stephen Blair SB
- Philip Brogan PAB
- Emelye Coleridge EC
- Anson Sale AG
- Luke Garden LG
- David Garrod DG
- Ben Gordon BG
- Ken Hind KH
- Michael Holmes MH
- Gordon Hughes GH
- Justin Knight JK
- Sue Lewis SLw
- Tony Ly TL
- Anthony McMahon AM
- Alan McNamara AMcN
- Terry O'Connor TO
- Frank Passarelli FP
- Ken Reid KR
- Rob Ronchi RR
- Daniel Sul DS
- Ganesh Vengadasalam

## Agency
- Fire Rescue
- Police
- SMDO
- LG Orouke
- SCO
- SMDO
- SMDO
- SMDO
- SMDO
- BDA
- TSE
- C of Sydney
- RMS
- SMDO
- Light Rail
- STA
- S Motorway
- SMDO
- Willoughby
- C of Sydney
- Taxi Cl.
- Police
- SMDO
- BDA
- STA
- Fire Rescue
- Ambulance
- N Sydney Cl.
- C of Sydney
- RMS south
- Lane Cove
- Port Authority

## Apologies:
- Nick Abrahim NA
- David Donahue DD
- Naomi Fiegel NF
- Melanie Fyfe MF
- Eric Graham EG
- Rick Griffiths RG
- Sean Kearns SK
- Michala Kemp MK
- Van Le VL
- Ian McCarthy IM
- Sashika Perera SP
- Brendan Wiseman BW

## Agenda

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<tr>
<th>Agend Item No.</th>
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<tbody>
<tr>
<td>1.</td>
<td>Welcome and Meeting Purpose</td>
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<td></td>
<td>GR welcomed all to the meeting. The TTLG confirmed that the minutes from TTLG Meeting No.6 were an accurate record of the meeting.</td>
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<td>2.</td>
<td>Actions arising from the Minutes</td>
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<td></td>
<td>There were no actions arising from the previous TTLG meeting.</td>
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<td>3.</td>
<td>Contracts Update</td>
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<td>3.1</td>
<td>Sydney Yard Access Bridge (SYAB):</td>
<td>EC</td>
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<td></td>
<td>EC provided a status update as follows:</td>
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<td></td>
<td>• Site compound established next to Mortuary Station</td>
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<td>• Demolition to start on Monday 7 August 2017. Works over 2 weeks. Then change hoardings.</td>
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<td>• Set up 450t crane August / September 2017.</td>
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<td></td>
<td>• Set up tower crane in Regent St site.</td>
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<td>• Beam and other deliveries being planned.</td>
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<td>• Road safety audit summary by location (refer to slides).</td>
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<td>SB asked about possession of Regent St for beams. EC advised that lifts would be done from the rail corridor.</td>
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<td></td>
<td>SB asked about delivery of beams noting that the Hawkesbury River bridge cannot be used at some times. Concern about heavy vehicles mixing with peak period traffic. EC to check timing.</td>
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<td>GR noted in response to the road safety summary that appropriate signage would be required in Regent Street to advise of the left in/left out access restriction.</td>
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<td>3.2</td>
<td>Tunnels and Station Excavation (TSE):</td>
<td>EC</td>
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<td>SLw provided a status update as follows:</td>
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<td>• CTMFs approved for demolition works at Chatswood dive site, Crows Nest, Victoria Cross, Martin Place, Pitt Street Stage 1, Waterloo station and Marrickville dive site. Stage 2 CTMP for Pitt Street being reviewed.</td>
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<td></td>
<td>• Overarching CTMP has been distributed to agencies for comment. Site specific CTMP will be developed for each site. CTMFs will include: hoarding placement to ensure sight distance is maintained, site access/ egress points including nominating traffic control devices, emergency services access requirements and a review of special and/or cumulative events that may be impacted or impact on TSE works.</td>
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<td></td>
<td>• CTMFs will include Traffic Control Plans (TCP), pedestrian movement plans (maybe included on TCP), vehicle management plans (maybe included on TCP), road safety audits. CTMFs may also include traffic staging plans (applicable at sites where multiple changes to the travel way are proposed over the duration of the project for example Martin Place station and Barangaroo) and parking management plans.</td>
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<td>BG spoke to a series of demolition slides at each of the works sites.</td>
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<td>3.3</td>
<td>City &amp; Southwest (SSC):</td>
<td>RR</td>
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<td>RR provided a status update as follows:</td>
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<td>• Bridge, rail corridor and station works</td>
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<td>• EIS for the SSC works being finalised for exhibition in Q3 2017.</td>
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<td>• Interface with ARTC between Marrickville and Belmore.</td>
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<td>• Works to multiple bridges with partial bridge closures. Illawarra Rd bridge to be replaced.</td>
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<td>3.4</td>
<td>Central Station Main Works:</td>
<td>LG</td>
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<td>LG provided a status update as follows:</td>
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<td>• Metro Station Box – included in C&amp;S W base planning approval.</td>
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<td>• Central Walk – Modification to C&amp;S W base planning approval.</td>
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<td></td>
<td>• In procurement stage.</td>
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<td></td>
<td>• Each platform planned to have 4 escalators and a lift.</td>
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4. Sydney Metro Approval Update
## Sydney Metro — Integrated Management System (IMS)

### Agenda

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<tr>
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<tr>
<td>PAB summarised the approvals status of key SMDO projects (slide attached) noting that the Central Station Main Works, Sydenham Station &amp; Sydney Metro Trains Facility South (SSJ), Victoria Cross/Artarmon Substation and Martin Place Station are all modifications to the approved EIS.</td>
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### 5. Heavy Vehicle Road Safety Assessment - Overview

MH provided an overview of SMDOs approach to heavy vehicle road safety as follows:

- SMDO has estimated the levels of risk associated with heavy vehicle activity during project construction. Equivalent fatalities defined.
- Different risk profile than for Sydney Metro Northwest, a more constrained network with higher concentrations of pedestrian and cyclist activity in the Sydney CBD.
- Learnings from London Crossrail project.
- Ongoing liaison with SCO, Centre for Road Safety and RMS heavy vehicle compliance unit.
- Vulnerable road users important.
- Risk mitigation measures identified and backed down to project contracts.
- Haulage companies must satisfy accreditation including safer vehicles accreditation.
- Safety measures to be installed on vehicles (mirrors, under-run guards etc).
- Ongoing marketing (Be truck aware, etc) and education (TAFE) campaigns.

MH advised that engagement with industry on Heavy Vehicle Safety Standard requirements was ongoing.

### 6. Construction Traffic Management Framework — Update

KH provided an overview of the draft CTMF as follows:

- Prepared in response to Condition E81 of project approval.
- Removes need for contractor prepared CTMPs to be submitted to DP&E for approval.
- Demolition and SYAB specific CTMF approved.
- Separate CTMF covering other Metro contracts nearing completion.
- Includes RMS / SCO operational imperatives.
- Council consultation ongoing through Metro construction.
- Special Events requirements.
- Addresses heavy vehicles types including truck and dogs.

### 7. Other Matters

Nil other matters

**Next Meeting:**

The next TTLG meeting will be (TTLG 8) Thursday 31 August 2017.
Mr Stuart Hodgson 18 September 2017
Principal Manager,
Program Sustainability Environment & Planning
Sydney Metro
Transport for NSW
PO Box 588
NORTH RYDE BC NSW 1670

Dear Stuart

RE: Endorsement of Construction Traffic Management Framework (CTMF) II—Sydney Metro City & Southwest Chatswood To Sydenham Contracts — TSE, STME, TSOM, SSJ, CSM

Thank you for providing the following documents for Environmental Representative (ER) review and endorsement as required by the Condition of Approval E81 of the Sydney Metro City & Southwest project (SSI — 15_7400 January 9 2017).


This CTMF has been prepared to address the general requirements for the following contracts:
- Tunnel and Station Excavation (TSE).
- Stations, Mechanical and Electrical Works (STME).
- Sydenham Station Junction (SSJ).
- Central Station Main (CSM).
- Any other contract commissioned for construction of the Chatswood to Sydenham component of Sydney Metro City & Southwest.

The CTMF has gone through a consultation process with relevant agencies. Comments and Sydney Metro responses to comments dated 28 August 2017 were provided as part of the CTMF documentation.

It is noted that the ERs are not traffic specialists and have not considered technical aspects of the document. In reviewing this document, Environmental Representatives (ERs) have relied on RMS and SCO feedback on the CTMF noting that they have no further comments on the document (emails from RMS and SCO dated 13 September 2017).
As an approved ER for the Sydney Metro City & Southwest project, I and other ERs have reviewed and provided comment on earlier versions of this document and (subject to the above comments) consider the referenced version appropriate for submission to the Department of Planning and Environment for their review.

Yours sincerely

Michael Woolley
Environmental Representative – Sydney Metro – City and South West
Dear Mr Hodgson

Sydney Metro City & Southwest Chatswood to Sydenham (SSI 15_7400)
Construction Traffic Management Framework (Other Contracts) under Condition E81.

I refer to your correspondence dated 20 September 2017, submitting the Construction Traffic Management Framework (CTMF) for Other Contracts, under condition E81 for the Secretary's approval. I also note the further revisions to this document, responding to the Department's detailed comments and requirements.

The Other Contracts are additional to the Sydney Yard Access Bridge and demolition works, for which a CTMF was previously approved and include:

- Tunnel and Station Excavation
- Integrated Station Development for Crows Nest, Victoria Cross, Martin Place, Pitt Street.
- Barangaroo Station
- Waterloo Station
- Line-wide works
- Trains, Systems, Operations and Maintenance
- Sydenham Station Junction
- Central Station Main
- Any other contract commissioned for construction of the Chatswood to Sydenham component of Sydney Metro City & Southwest.

The Department has reviewed the updated CTMF (Rev 2.5 dated 18 December 2017) for the other contracts and is satisfied it addresses the requirements of condition E81 by setting out the approach to managing transport and traffic issues for the works. I'm also satisfied that consultation with relevant stakeholders, including Councils and the Traffic and Transport Liaison Group (TTLG) has been undertaken as required.

I note that the management of the site-specific issues will be addressed within the relevant Construction Traffic Management Plan (CTMP), required under condition E82. I remind you of the need to ensure the CTMPs are consistent with the CTMF and to consult with the TTLG and gain Sydney Co-ordination Office's endorsement and RMS's approval of these documents before construction commences at the relevant construction sites.

If you have any further queries or require clarification on this matter, please contact Jacqui McLeod, Team Leader - Infrastructure Management at jacqui.mcleod@planning.nsw.gov.au.

Yours sincerely

Stacy Warren
Director Infrastructure Management
as delegate of the Secretary

Department of Planning and Environment
320 Pitt Street Sydney 2000 | GPO Box 39 Sydney 2001 | planning.nsw.gov.au
Attachment 5 – Draft Conditions (Project Planning Approval - Sydenham to Bankstown)

The following draft conditions of approval issued by the NSW Department of Planning & Environment are the Draft Conditions for the Project Planning Approval (Sydenham to Bankstown) and are subject to clause 6A of the LW Contract:

DEFINITIONS

The definitions below apply to terms used in this approval, unless otherwise stated or the context indicates otherwise.

Table 1: Definitions relevant to all CSSI projects

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancillary facility</td>
<td>A temporary facility for Construction of the CSSI such as an office and amenities compound, Construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory or material stockpile area</td>
</tr>
<tr>
<td>CALD</td>
<td>Culturally and Linguistically Diverse</td>
</tr>
<tr>
<td>CEMP</td>
<td>Construction Environmental Management Plan</td>
</tr>
<tr>
<td>Completion of Construction</td>
<td>The date upon which Construction is completed and all requirements of the Planning Secretary (if any) have been met. If Construction is staged, completion of Construction is the date upon which Construction is completed and all requirements of the Planning Secretary (if any) have been met, in respect of all stages of Construction.</td>
</tr>
<tr>
<td>Consistency assessment</td>
<td>An assessment of whether a proposed activity for the purpose of the CSSI is consistent with the terms of this approval</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Construction</td>
<td>Includes activities required to construct the CSSI as described in the <strong>Condition A1</strong>, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding the following <strong>Low Impact Activities</strong>: (a) survey including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling and excavation; (c) site establishment in approved locations or in locations meeting the criteria identified in <strong>Condition A16</strong> and or approved in accordance with <strong>Condition A17</strong> of this approval including constructing ancillary facility access roads and providing utilities to the facility; (d) use of ancillary facilities if the ER has determined the activities will have a minor impact on the environment and community; (e) minor clearing and relocation of native vegetation, as identified in the documents listed in <strong>Condition A1</strong>; (f) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and temporary at property acoustic treatments; (g) property acquisition adjustments including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity; (h) relocation and connection of utilities where the relocation or connection has minor environmental impact to the environment as determined by the ER; (i) archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010) or archaeological monitoring undertaken in association with (a)-(h) above to ensure that there is no impact on heritage items; (j) other activities determined by the ER to have minor environmental impact which may include building of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access; and (k) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI.  However, where heritage items on the State heritage register, areas of known or expected archaeological potential, or threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016) are affected by any low impact activity, that activity is construction, unless otherwise determined by the Planning Secretary, following consultation by the Proponent with OEH or Dol Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation).  The Low Impact Activities described in this definition become Construction with the approval of a Construction Environmental Management Plan. Where Low Impact Activities have already commenced, these are considered to remain as Low Impact Activities and are managed in accordance with the framework under which they commenced.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CSSI</td>
<td>The Critical State Significant Infrastructure, as generally described in Schedule 1, the carrying out of which is approved under the terms of this approval</td>
</tr>
<tr>
<td>Department</td>
<td>NSW Department of Planning and Environment</td>
</tr>
<tr>
<td>DECC</td>
<td>Former NSW Department of Environment and Climate Change</td>
</tr>
<tr>
<td>DoI</td>
<td>NSW Department of Industry including DoI Agriculture, DoI Biosecurity and Food Safety, DoI Land and Natural Resources, DoI Water and DoI Fisheries, and Natural Resource Access Regulator</td>
</tr>
<tr>
<td>EIS</td>
<td>The Environmental Impact Statement submitted to the Planning Secretary seeking approval to carry out the project described in it, as revised if required by the Planning Secretary under the EP&amp;A Act, and including any additional information provided by the Proponent in support of the application for approval of the project</td>
</tr>
<tr>
<td>EMS</td>
<td>Environmental Management System</td>
</tr>
<tr>
<td>EP&amp;A Act</td>
<td><em>Environmental Planning and Assessment Act 1979 (NSW)</em></td>
</tr>
<tr>
<td>EPA</td>
<td>NSW Environment Protecton Authority</td>
</tr>
<tr>
<td>EPL</td>
<td>Environment Protection Licence under the POEO Act</td>
</tr>
<tr>
<td>ER</td>
<td>The Environmental Representative for the CSSI</td>
</tr>
<tr>
<td>Heavy Vehicle</td>
<td>Has the same meaning as in the <em>Heavy Vehicle National Law (NSW)</em></td>
</tr>
<tr>
<td>Heritage item</td>
<td>A place, building, work, relic, archaeological site, tree, movable object or precinct of heritage significance, that is listed under one or more of the following registers: the State Heritage Register under the <em>Heritage Act 1977 (NSW)</em>, a state agency heritage and conservation register under section 170 of the <em>Heritage Act 1977 (NSW)</em>, a Local Environmental Plan under the EP&amp;A Act, the World, National or Commonwealth Heritage lists under the <em>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</em>, and an “Aboriginal object” or “Aboriginal place” as defined in section 5 of the <em>National Parks and Wildlife Act 1974 (NSW)</em></td>
</tr>
<tr>
<td>ICNG</td>
<td><em>Interim Construction Noise Guideline</em></td>
</tr>
</tbody>
</table>
| Incident           | An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not cause a non-compliance with this approval.  
                      *Note: “material harm” is defined in this approval.*                                                                                                  |
<p>| Land               | Has the same meaning as the definition of the term in section 1.4 of the EP&amp;A Act                                                                            |
| Landowner          | Has the same meaning as “owner” in the <em>Local Government Act 1993</em> and in relation to a building means the owner of the building                              |
| Low Impact Activity| Any Work that is not Construction                                                                                                                           |
| LOTE               | Language other than English                                                                                                                                |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material harm</td>
<td>is harm that:</td>
</tr>
<tr>
<td></td>
<td>(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or</td>
</tr>
<tr>
<td></td>
<td>(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).</td>
</tr>
<tr>
<td>Minister</td>
<td>NSW Minister for Planning</td>
</tr>
<tr>
<td>Noise Management Level</td>
<td>As derived from the <em>Interim Construction Noise Guideline</em></td>
</tr>
<tr>
<td>NSW Heritage Council</td>
<td>Heritage Council of NSW (or delegate)</td>
</tr>
<tr>
<td>Non-compliance</td>
<td>An occurrence, set of circumstances or development that is a breach of this approval.</td>
</tr>
<tr>
<td>OEH</td>
<td>NSW Office of Environment and Heritage</td>
</tr>
<tr>
<td>OEMP</td>
<td>Operational Environmental Management Plan</td>
</tr>
<tr>
<td>Operation</td>
<td>The commencement of paid services.</td>
</tr>
<tr>
<td></td>
<td><em>Note: There may be overlap between the carrying out of Construction and Operation if the phases are staged. Commissioning trials of equipment and temporary use of any part of the CSSI are within the definition of Construction.</em></td>
</tr>
<tr>
<td>Planning Secretary</td>
<td>Secretary of the NSW Department of Planning and Environment (or nominee, whether nominated before or after the date on which this approval was granted)</td>
</tr>
<tr>
<td>POEO Act</td>
<td><em>Protection of the Environment Operations Act 1997</em> (NSW)</td>
</tr>
<tr>
<td>Proponent</td>
<td>The person identified as such in Schedule 1 of this approval</td>
</tr>
<tr>
<td>Relic</td>
<td>Has the same meaning as the definition of the term in section 4 of the <em>Heritage Act 1977</em> (NSW)</td>
</tr>
<tr>
<td>Relevant council(s)</td>
<td>Any or all as relevant, Canterbury Bankstown City Council or Inner West Council</td>
</tr>
<tr>
<td>Sensitive receiver</td>
<td>Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres and passive recreation areas (including outdoor grounds used for teaching).</td>
</tr>
<tr>
<td></td>
<td>Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, and retail spaces), and others as identified by the Planning Secretary</td>
</tr>
<tr>
<td>SPIR</td>
<td>The Submissions and Preferred Infrastructure Report submitted to the Planning Secretary under section 5.17 of the EP&amp;A Act which describes any amendments to the EIS and the project for which approval is sought.</td>
</tr>
<tr>
<td>Station Precinct</td>
<td>An area in a 200-metre radius around each metro station and extending beyond, where required, to connect stations with existing or planned future pedestrian and/or cycle paths</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Tree</td>
<td>(a) Long lived woody perennial plant greater than (or usually greater than) 3m in height with one of relatively few main stems or trunks.</td>
</tr>
<tr>
<td>Unexpected heritage find</td>
<td>A heritage item discovered unexpectedly (usually during Construction) but not identified in the EIS or SPIR or archaeological method statements prepared in accordance with these documents where assessment is required to determine if the item is a relic, or is an Aboriginal object. An unexpected heritage find does not include human remains.</td>
</tr>
<tr>
<td>Work</td>
<td>Any physical activity (including Low Impact Activity) for the purpose of the CSSI including Construction.</td>
</tr>
</tbody>
</table>
SUMMARY OF REPORTING REQUIREMENTS

Reports and notifications that must be provided to the Planning Secretary under the terms of this approval are listed in Table 2. Note that under Condition A9 of this approval the Proponent may seek the Planning Secretary’s agreement to a later timeframe for submission (other than in relation to the immediate written notification of an incident required under Condition A36.

Table 2: Reports and Notifications that must be submitted to the Planning Secretary

<table>
<thead>
<tr>
<th>Condition</th>
<th>Report / Notification</th>
<th>Timing¹</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part A – Administrative</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A12</td>
<td>Staging Report</td>
<td>One (1) month before commencement of Construction (or Operation if only staged Operation is proposed) of the first of the proposed stages</td>
<td>Information</td>
</tr>
<tr>
<td>A23</td>
<td>Environmental Representative</td>
<td>One (1) month before the commencement of Work</td>
<td>Approval</td>
</tr>
<tr>
<td>A26(j)</td>
<td>Environmental Representative reports</td>
<td>Within seven (7) days following the end of each month for the duration of the ER’s engagement</td>
<td>Information</td>
</tr>
<tr>
<td>A29</td>
<td>Compliance Monitoring and Reporting Program</td>
<td>Before the commencement of Construction</td>
<td>Information</td>
</tr>
<tr>
<td>A33</td>
<td>Independent Audit Program</td>
<td>No later than one (1) month before the commencement of Construction</td>
<td>Information</td>
</tr>
<tr>
<td>A36</td>
<td>Written notification of incident</td>
<td>Immediately upon becoming aware of the incident. Subsequent written notification and an incident report are required seven (7) days after the Proponent became aware of the incident and 30 days after the date on which the incident occurred, respectively</td>
<td>Information</td>
</tr>
<tr>
<td><strong>Part B - Communication Information and Reporting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Community Communication Strategy</td>
<td>One (1) month before the commencement of any Work</td>
<td>Approval</td>
</tr>
<tr>
<td>B9</td>
<td>Complaints Register</td>
<td>upon request from the Planning Secretary</td>
<td>Information</td>
</tr>
<tr>
<td>B10</td>
<td>Community Complaints Mediator</td>
<td>One (1) month of the date of this approval</td>
<td>Approval</td>
</tr>
<tr>
<td><strong>Part C - Construction Environmental Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>CEMP</td>
<td>One (1) month before the commencement of Construction</td>
<td>Approval</td>
</tr>
<tr>
<td>C6</td>
<td>CEMP Sub-plans</td>
<td>One (1) month before the commencement of Construction</td>
<td>Approval</td>
</tr>
<tr>
<td>C11</td>
<td>Construction Monitoring Programs</td>
<td>One (1) month before the commencement of Construction</td>
<td>Approval</td>
</tr>
<tr>
<td>C14</td>
<td>Construction Monitoring Report</td>
<td>As specified in Construction Monitoring Programs</td>
<td>Information</td>
</tr>
</tbody>
</table>

¹ Where a project is staged, all required approvals must be obtained before the commencement of the relevant stage.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Report / Notification</th>
<th>Timing</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part D - Operation Environmental Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>OEMP or EMS</td>
<td>One (1) month before the commencement of Operation</td>
<td>Information</td>
</tr>
<tr>
<td>D5</td>
<td>Independent Audit personnel</td>
<td>Within 15 months of the commencement of Operation</td>
<td>Approval</td>
</tr>
<tr>
<td>Part E – Key Issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree Removal and Replacement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5</td>
<td>Tree removal report</td>
<td>Before the removal or pruning of any trees</td>
<td>Approval</td>
</tr>
<tr>
<td>E7</td>
<td>Tree replacement report</td>
<td>Before Operation</td>
<td>Information</td>
</tr>
<tr>
<td>Heritage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E12</td>
<td>Heritage Report and Excavation Director's Report</td>
<td>24 months after the completion of the Work</td>
<td>Information</td>
</tr>
<tr>
<td>E13</td>
<td>Heritage Interpretation Strategy</td>
<td>Before commencement of Construction</td>
<td>Information</td>
</tr>
<tr>
<td>E16</td>
<td>Unexpected Heritage Finds and Humans Remains Procedure</td>
<td>One (1) month prior to commencement of Construction</td>
<td>Information</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E31</td>
<td>Operational Noise and Vibration Review</td>
<td>Before the implementation of Operational noise mitigation measures</td>
<td>Approval</td>
</tr>
<tr>
<td>E33</td>
<td>Report on non-implementation of Operational noise mitigation measures</td>
<td>Within Six (6) of the commencement of Construction</td>
<td>Information</td>
</tr>
<tr>
<td>E34</td>
<td>Operational Noise Compliance Report</td>
<td>Within 60 days of completing the Operational noise monitoring</td>
<td>Information</td>
</tr>
<tr>
<td>Sustainability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E43</td>
<td>Sustainability Strategy</td>
<td>Six (6) months of the date of the approval</td>
<td>Information</td>
</tr>
<tr>
<td>Traffic and Transport</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E47</td>
<td>Construction Traffic Management Plan(s)</td>
<td>Before construction</td>
<td>Information</td>
</tr>
<tr>
<td>Urban Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E66</td>
<td>Station Design and Precinct Plans for Bankstown Station, Campsie Station and Dulwich Hill Station</td>
<td>One (1) month before the commencement of permanent built work at the relevant site</td>
<td>Approval</td>
</tr>
<tr>
<td>Condition</td>
<td>Report / Notification</td>
<td>Timing</td>
<td>Purpose</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Utilities Management</td>
<td>Utilities Management Strategy</td>
<td>One (1) month before the commencement of utility Work</td>
<td>Approval</td>
</tr>
</tbody>
</table>


SCHEDULE 2

PART A

ADMINISTRATIVE CONDITIONS

GENERAL

A1 The CSSI may only be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the:

(a) *Sydney Metro City & Southwest Sydenham to Bankstown Environmental Impact Statement – Volumes 1A-C and 2-6* (the EIS);
(b) as modified by *the Sydney Metro City & Southwest Sydenham to Bankstown Submissions and Preferred Infrastructure Report – Volumes 1, 2A-F and 3 G-J* (the SPIR); and
(c) *the Sydney Metro City & Southwest Sydenham to Bankstown Submissions Report* (the SR).

A2 The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.

A3 In the event of an inconsistency between the documents listed in Condition A1, or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency.

*Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.*

A4 The Proponent must comply with all written requirements or directions of the Planning Secretary, in relation to:

(a) the environmental performance of the CSSI;
(b) any document or correspondence in relation to the CSSI;
(c) any notification given to the Planning Secretary under the terms of this approval;
(d) any audit of the Construction or Operation of the CSSI;
(e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); and
(f) the carrying out of any additional monitoring or mitigation measures.

A5 Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:

(a) documentation of the engagement with the party(s) identified in the condition of approval that has occurred before submitting the document for approval;
(b) log of the points of engagement or attempted engagement with the identified party(s) and a summary of the issues raised by them;
(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that they have none or have failed to provide feedback after repeated requests;
(d) outline of the issues raised by the identified party(s) and how they have been addressed; and
(e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.

A6 In the event that there are differing interpretations of the terms of this approval, including in relation to a condition of this approval, the Planning Secretary's interpretation is final.
This approval lapses five (5) years after the date on which it is granted, unless Work for the purpose of the CSSI is physically commenced on or before that date.

References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.

Any document that must be submitted within a timeframe specified in or under the conditions of this approval may be submitted within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect to an incident under Condition A36.

The Proponent may update corresponding strategies, plans, procedures, panels, systems, protocols and programs prepared to meet the requirements of CSSI Approval SSI 7400 for the purposes of meeting the requirements of the CSSI consistent with this approval.

Where a strategy, plan, procedure, panel, system protocol or program in SSI 7400 has been updated and remains consistent with that prepared for SSI 7400 and meets the requirements of this approval, the updated version must be submitted to the Planning Secretary for information.

Where the update is inconsistent with the prepared document for SSI 7400, the approval for the document must be sought in accordance with the requirements of this approval, if required.

Notwithstanding Condition A10, where the following have been approved by the Planning Secretary for the purpose of SSI 7400, further approval is not required for the CSSI where the same individual/company/document is nominated:

(a) Environmental Representative;
(b) Community Complaints Mediator;
(c) Community Communication Strategy;
(d) Out-of-Hours Work Protocol;
(e) Construction Environmental Management Framework;
(f) Independent Property Impact Assessment Panel;
(g) Small Business Owners' Support Program; or
(h) Design Review Panel.

The Proponent must notify the Planning Secretary of any such appointment of an individual/company or application of a document consistent with the requirements of the corresponding condition in SSI 7400.

The CSSI may be constructed and operated in stages. Where staged Construction or Operation is proposed, a Staging Report (for either or both Construction and Operation as the case may be) must be prepared and submitted to the Planning Secretary for information. The Staging Report must be submitted to the Planning Secretary no later than one (1) month before the commencement of Construction of the first of the proposed stages of Construction (or if only staged Operation is proposed, one (1) month before the commencement of Operation of the first of the proposed stages of Operation).

The Staging Report must:

(a) if staged Construction is proposed, set out how the Construction of the whole of the CSSI will be staged, including details of Work and other activities to be carried out in each stage and the general timing of when Construction of each stage will commence and finish;
(b) if staged Operation is proposed, set out how the Operation of the whole of the CSSI will be staged, including details of Work and other activities to be carried out in each stage and the general timing of when Operation of each stage will commence;
specify the relevant conditions of approval that apply to each stage and how compliance with conditions will be achieved across and between each of the stages of the CSSI; and

set out mechanisms for managing any cumulative impacts arising from the proposed staging.

A14 The CSSI must be staged in accordance with the Staging Report, as submitted to the Planning Secretary.

A15 Where staging is proposed, the terms of this approval that apply or are relevant to the Work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.

ANCILLARY FACILITIES

Ancillary facilities

A16 Ancillary facilities that are not identified by description and location in the documents listed Condition A1 can only be established and used in each case if:

(a) they are located within the Construction boundary of the CSSI; and

(b) they are not located next to a sensitive receiver (including access roads) (unless landowners and occupiers have accepted in writing the carrying out of the relevant facility in the proposed location); and

(c) they have no impacts on heritage items (including areas of archaeological sensitivity), and threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and

(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.

A17 Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 and do not meet the requirements of Condition A16, can only be established and used with the approval of the Planning Secretary except where they are located within the rail corridor, in which case they may be endorsed by the ER. A review of environmental impacts must be submitted with the request for Planning Secretary’s approval or ER’s endorsement.

Use of Ancillary Facilities

A18 The use of an ancillary facility for Construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C3 and relevant Construction Monitoring Programs required by Condition C8 have been approved by the Planning Secretary.

Minor Ancillary Facilities

A19 Lunch sheds, office sheds, portable toilet facilities, and the like, that are not identified as an ancillary facility in the documents listed Condition A1, can be established where they satisfy the following criteria:

(a) are located within the Construction boundary; and

(b) have been assessed by the ER to have -

(i) minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and

(ii) minor environmental impact with respect to waste management and flooding, and

(iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.

Boundary screening
A20 Boundary screening must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of Construction of the CSSI unless otherwise agreed with relevant council(s), and affected residents, business operators or landowners.

A21 Boundary screening required under Condition A20 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.

ENVIRONMENT REPRESENTATIVE

A22 Work must not commence until an ER has been approved by the Planning Secretary and engaged by the Proponent.

A23 The Planning Secretary’s approval of an ER must be sought no later than one (1) month before the commencement of Work.

A24 The proposed ER must be a suitably qualified and experienced person who was not involved in the preparation of the EIS, SPIR or Submissions Report and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.

A25 The Proponent may engage more than one ER for the CSSI, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of the CSSI.

A26 For the duration of the Work until the commencement of Operation, or as agreed with the Planning Secretary, the approved ER must:

(a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI;
(b) consider and inform the Planning Secretary on matters specified in the terms of this approval;
(c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;
(d) review documents identified in Conditions C1, C3 and C8 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so:
   (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary), or
   (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary for information or are not required to be submitted to the Secretary);
(e) regularly monitor the implementation of the documents listed in Conditions C1, C3 and C8 to ensure implementation is being carried out in accordance with the document and the terms of this approval;
(f) as may be requested by the Planning Secretary, help plan, attend or undertake audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A34 of this approval;
(g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints;
(h) assess the impacts of minor ancillary facilities as required by Condition A19 of this approval;
(i) consider any minor amendments to be made to the documents listed in Conditions C1, C3 and C8 and any document that requires the approval of the Planning Secretary that comprise updating or are of an administrative or minor nature and are consistent with the terms of this approval and the documents listed in Conditions C1, C3 and C8 or other documents approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; and
(j) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report detailing the ER’s actions and decisions on matters for which the ER was responsible in the preceding month. The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER’s engagement for the CSSI.

A27 The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A26 (including preparation of the ER monthly report), as well as:

(a) any complaints received (to be provided on a daily basis); and
(b) a copy of any assessment carried out by the Proponent of whether proposed Work is consistent with the approval (which must be provided to the ER before the commencement of the subject Work).

A28 The Planning Secretary may at any time commission an audit of an ER’s exercise of its functions under Condition A26. The Proponent must:

(a) facilitate and assist the Planning Secretary in any such audit; and
(b) make it a term of their engagement of an ER that the ER facilitate and assist the Planning Secretary in any such audit.

COMPLIANCE MONITORING AND REPORTING PROGRAM

A29 Before the commencement of Construction, a Compliance Monitoring and Reporting Program must be prepared, endorsed by the ER and submitted to the Planning Secretary for information.

A30 Compliance reports of the CSSI must be carried out for the duration of Construction and for a minimum of one (1) year following commencement of Operation. The Department must be notified of the commencement dates of Construction and Operation of the CSSI in the pre-Construction and pre-Operational compliance reports (respectively).

A31 The Construction Compliance Report must provide details of any review of, and minor amendments made to, the CEMP (which must be approved by the ER), resulting from Construction carried out during the reporting period.

A32 The Compliance Monitoring and Reporting Program in the form required under Condition A29 of this approval must be implemented for the duration of Construction and for a minimum of one (1) year following commencement of Operation, or for a longer period as determined by the Planning Secretary based on the outcomes of independent audits, Environmental Representative Reports and regular compliance reviews submitted through Compliance Reports. If staged Operation is proposed, or Operation is commenced of part of the CSSI, the Compliance Monitoring and Reporting Program must be implemented for the relevant period of each stage or part of the CSSI.

AUDITING

A33 No later than one (1) month before the commencement of Construction an Independent Audit Program prepared in accordance with AS/NZS ISO 19011:2014 – Guidelines for Auditing Management Systems must be submitted to the Planning Secretary.

A34 Independent audits of the CSSI must be carried out in accordance with:

(a) the Independent Audit Program submitted to the Planning Secretary under Condition A33 of this approval and independent Audit Reports prepared.

A35 The Proponent must:
(a) review and respond to each Independent Audit Report prepared under Condition A34 of this approval; and
(b) submit the response to the Planning Secretary within six (6) weeks of completing the audit.

INCIDENT NOTIFICATION AND REPORTING

A36 The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident.

A37 Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A.
PART B
COMMUNITY INFORMATION AND REPORTING

COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

Communication Strategy

B1 A Community Communication Strategy must be prepared to provide mechanisms to facilitate communication between the Proponent, the relevant council(s) and the community (including adjoining affected landowners and businesses, and others directly impacted by the CSSI), during the design and Construction of the CSSI and for a minimum of 12 months following the completion of Construction of the CSSI.

B2 The Community Communication Strategy must:

(a) identify people and organisations to be consulted during the design and Work stages;
(b) identify community demographics and approaches to address the needs of LOTE and CALD and vulnerable communities;
(c) set out procedures and mechanisms for the regular distribution of accessible information, including to LOTE and CALD communities, about or relevant to the CSSI. The information to be distributed must include information regarding current site Construction activities, schedules and milestones at each Construction site;
(d) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant communities;
(e) establish place managers for each construction site to engage with the local community; and
(f) set out procedures and mechanisms:
   (i) through which the community can discuss or provide feedback to the Proponent,
   (ii) through which the Proponent will respond to enquiries or feedback from the community; and
   (iii) to resolve any issues and mediate any disputes that may arise in relation to Construction of the CSSI.

B3 The Community Communication Strategy must be submitted to the Planning Secretary for approval no later than one (1) month before commencement of any Work.

B4 Work for the purposes of the CSSI must not commence until the Community Communication Strategy has been approved by the Planning Secretary.

COMPLAINTS MANAGEMENT SYSTEM

B5 A Complaints Management System must be prepared and implemented before the commencement of Work and maintained for the duration of Construction and for a minimum for 12 months following completion of Construction of the CSSI.

B6 The following information must be available to facilitate community enquiries and manage complaints one (1) month before the commencement of Work and for 12 months following the completion of Construction:

(a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI;
(b) a postal address to which written complaints and enquiries 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.

B7 The telephone number, postal address, website URL and email address required under Condition B6 of this approval must be published in a newspaper circulating in the relevant local area and on site hoarding at each Construction site before the commencement of Construction.
Construction and published in the same way again before the commencement of Operation. This information must also be provided on the website required under Condition B14 of this approval.

B8 A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of Work and for a minimum of 12 months following the completion of Construction. The Complaints Register must record the:

(a) number of complaints received;
(b) number of people affected in relation to a complaint; and
(c) means by which the complaint was addressed and whether resolution was reached, with or without mediation.

B9 The Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request.

B10 A Community Complaints Mediator that is independent of the design and construction personnel must be nominated by the Proponent, approved by the Planning Secretary and engaged during Work associated with the CSSI. The request nominating the Community Complaints Mediator must be submitted to the Planning Secretary for approval within one (1) month of the date of this approval.

B11 The role of the Community Complaints Mediator must address any complaint where a member of the public is not satisfied by the Proponent's response. Any member of the public that has lodged a complaint which is registered in and executed through the Complaints Management System identified in Condition B5 may ask the Community Complaints Mediator to review the Proponent's response. The application must be submitted in writing and the Community Complaints Mediator must respond within 28 days of the request being made or other specified timeframe agreed between the Community Complaints Mediator and the member of the public.

B12 The Community Complaints Mediator will:

(a) review disputes between the project and members of the public if the procedures and mechanisms under Condition B5 or Condition B2(f)(iii) do not satisfactorily address the complainant's concerns; and
(b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes.

B13 The Community Complaints Mediator will not act before the Complaints Management System required by Condition B5, including any internal escalation process, has been executed for a complaint and will not consider issues such as property acquisition, where other dispute processes are provided for in this approval or clear government policy and resolution processes are available, or matters which are not within the scope of the CSSI.

PROVISION OF ELECTRONIC INFORMATION

B14 A website or webpage providing information in relation to the CSSI must be established before commencement of Work and maintained for the duration of Construction, and for a minimum of 12 months following the completion of Construction. Up-to-date information (excluding confidential, private and/or commercial information or other documents as agreed to by the Planning Secretary) must be published on the website before the relevant Work commencing and maintained on the website including:

(a) information on the current implementation status of the CSSI;
(b) the telephone number, postal address and email address required under Condition B6;
(c) a copy of the documents listed in Conditions A1 and A2 of this approval;
(d) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval;

(e) a copy of EPL required and obtained in relation to the CSSI;

(f) a current copy of each document required under the terms of this approval, which must be published before the commencement of any relevant activity to which they relate or before their implementation, as the case may be, and

(g) a copy of the compliance reports required under Conditions A29 and A32 of this approval.

Note: Where a document referred to in (f) above is superseded, or the management of activities covered by a document referred to in (f) above have been subsumed into another document, the current applicable and, where required, approved document must be available on the website/webpage. Any superseded document must be available in an archived section or similar of the website/webpage.
PART C

CONSTRUCTION ENVIRONMENTAL MANAGEMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

C1 A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during Construction.

C2 The CEMP must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of Construction.

C3 The CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan and be consistent with the CEMF and CEMP referred to in Condition C1:

<table>
<thead>
<tr>
<th>Consultation required for CEMP Sub-plans</th>
<th>Relevant government agencies to be consulted for CEMP Sub-plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Noise and vibration</td>
<td>Relevant council(s)</td>
</tr>
<tr>
<td>(b) Soil and water</td>
<td>Relevant council(s), Dol, OEH</td>
</tr>
<tr>
<td>(c) Waste and spoil</td>
<td>Relevant council(s)</td>
</tr>
<tr>
<td>(d) Heritage</td>
<td>Heritage Council (or its delegate) and relevant council(s)</td>
</tr>
</tbody>
</table>

C4 The CEMP Sub-plans must be prepared in accordance with the CEMF.

C5 Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant CEMP Sub-Plan.

C6 Any of the CEMP Sub-plans may be submitted along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before Construction.

C7 Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary, including any minor amendments approved by the ER must be implemented for the duration of Construction. Where Construction of the CSSI is staged, Construction of a stage must not commence until the CEMP and CEMP Sub-plans for that stage have been approved by the Planning Secretary.

CONSTRUCTION MONITORING PROGRAMS

C8 The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of Construction of the CSSI against the predicted performance.

<table>
<thead>
<tr>
<th>Consultation required for Construction Monitoring Programs</th>
<th>Relevant government agencies to be consulted for Construction Monitoring Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Noise and Vibration</td>
<td>Relevant council(s)</td>
</tr>
<tr>
<td>(b) Water Quality</td>
<td>Relevant council(s)</td>
</tr>
</tbody>
</table>

C9 Each Construction Monitoring Program must provide:
(a) details of baseline data available;
(b) details of baseline data to be obtained and when;
(c) details of all monitoring of the project to be undertaken;
(d) the parameters of the project to be monitored;
(e) the frequency of monitoring to be undertaken;
(f) the location of monitoring;
(g) the reporting of monitoring results;
(h) procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
(i) any consultation to be undertaken in relation to the monitoring programs.

C10 The Construction Monitoring Programs must be developed in consultation with relevant government agencies as identified in Condition C8 of this approval and must include reasonable information requested by an agency to be included in a Construction Monitoring Program during such consultation. Details of all information requested by an agency including copies of all correspondence from those agencies, must be provided with the relevant Construction Monitoring Program.

C11 The Construction Monitoring Programs must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of Construction.

C12 Construction must not commence until the Planning Secretary has approved all of the required Construction Monitoring Programs.

C13 The Construction Monitoring Programs, as approved by the Planning Secretary including any minor amendments approved by the ER must be implemented for the duration of Construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.

C14 The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.

C15 Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.
PART D
OPERATIONAL ENVIRONMENTAL MANAGEMENT

OPERATIONAL ENVIRONMENTAL MANAGEMENT

D1 An Operational Management Plan (OEMP) must be prepared to detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during Operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.

D2 An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Planning Secretary, and can demonstrate, to the satisfaction of the Planning Secretary, that through the EMS:

(a) the performance outcomes, commitments and mitigation measures, made and identified in the documents listed Condition A1, and specified relevant terms of this approval can be achieved;
(b) issues identified through ongoing risk analysis can be managed; and
(c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during Operation.

D3 The OEMP or EMS or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of Operation.

D4 The OEMP or EMS or equivalent as agreed with the Planning Secretary, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of Operation and the OEMP or EMS must be made publicly available before the commencement of Operation.

D5 Within 15 months of commencement of Operation, or any other timeframe as agreed by the Planning Secretary, the Proponent must commission an independent, qualified person or team to undertake an Operational Performance Audit of the CSSI. The independent person or team must be approved by the Planning Secretary before commencement of the Audit. The Operational Audit Report must be submitted to the Planning Secretary within one month of the completion of the Audit or other timeframe agreed with the Planning Secretary. The Audit must:

(a) assess compliance with the requirements of this approval;
(b) assess the environmental performance of the CSSI against the predictions made and conclusions drawn in the documents listed in Condition A1 as amended by this approval; and
(c) review the effectiveness of the environmental management of the CSSI, including any environmental impact mitigation.
PART E

KEY ISSUE CONDITIONS

SUBURBAN AND INTER-URBAN RAIL

E1 The Proponent must manage operational and asset interface risks to ensure the successful operational integration of the CSSI and the heavy railway network and the protection of physical and operational Sydney Trains assets and services during construction and operation.

AIR QUALITY

E2 In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the Construction and Operation of the CSSI.

BIODIVERSITY

Biodiversity offsetting

E3 Where impacts to threatened ecological communities or endangered species cannot be avoided, they must be offset in accordance with the requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014) in agreement with OEH.

Note: the SPIR proposal does not require offsetting under the Framework for Biodiversity Assessment as it does not have any impacts to threatened ecological communities or threatened species.

TREE REMOVAL AND REPLACEMENT

E4 The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, the Proponent must provide a 2:1 ratio replacement of trees. Replacement trees must be planted within the project boundary or on public land up to 500 metres from the project boundary. Replacement tree plantings can be undertaken beyond 500 metres on public land within the local government areas to which the CSSI approval applies if requested by the relevant council(s) or where no more practicable land for planting can be found within and up to 500 metres from the CSSI boundary. The location of replacement trees must be determined in consultation with the relevant council(s).

E5 The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) before removing any trees as detailed in the documents listed in Condition A1. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the CSSI on trees and vegetation within and adjacent to the Construction footprint. The report(s) must include:

(a) a description of the conditions of the tree(s) and its amenity and visual value;
(b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and
(c) measures to avoid the removal of trees or minimise damage to existing trees and ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities.
A copy of the report(s) must be submitted to the Planning Secretary before the removal or pruning of any trees, including those affected by site establishment Work. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Planning Secretary.

E6 Replacement trees are to have a minimum pot size of 75 litres except where the plantings are consistent with the pot sizes specified in a relevant council’s plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant council. In areas not subject to council plans / programs / strategies, pot sizes should be informed through consultation with the relevant council(s).

Note: For the purposes of Conditions E5 and E6, consultation with relevant council(s) encompasses consultation undertaken with those councils on the Station Design and Precinct Plan required by Condition E56, and any agreements reached on replacement pot sizes during consultation.

E7 The Proponent must submit to the Planning Secretary a report which details the type, size, number and location of replacement trees. The report must demonstrate how any replacement plantings with a pot size less than 75 litres are consistent with the requirements of Condition E6. The report must be submitted to the Planning Secretary before Operation unless otherwise agreed by the Planning Secretary.

FLOODING

E8 The location of Construction compounds must not worsen the existing flooding characteristics of the area.

E9 Where the CSSI will worsen flooding impacts, the Proponent is responsible for implementing measures to address those impacts.

HERITAGE

E10 Following completion of Work described in the documents listed in Conditions A1 and A2 in relation to heritage items, a Heritage Report including the details of any archival recording, further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds), must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and OEH.

E11 An Excavation Director’s Report (EDR) must be prepared for any heritage items of State significance that are discovered during Work. The EDR must be prepared in consultation with OEH.

E12 The Heritage Report and Excavation Directors Report must be submitted to the Planning Secretary, the Heritage Council of NSW and OEH for information no later than 24 months after the completion of Work referred to in Condition E13.

E13 The Proponent must prepare a Heritage Interpretation Strategy which outlines a process to interpret key Aboriginal and non-Aboriginal heritage values and stories of heritage items in the final project design. The Heritage Interpretation Strategy must be prepared in consultation with the Heritage Council of NSW and submitted to the Planning Secretary for information before the commencement of Construction.

E14 A Heritage Interpretation Plan(s) must be prepared, consistent with the Heritage Interpretation Strategy which identifies heritage items to be used in the final design of the project. The plan(s) must identify how items will be interpreted and provide a timeframe for their implementation which must be no later than the commencement of Operation. Heritage interpretation in any station precinct must be identified in the relevant Station Design and Precinct Plan(s) required in Condition E56.
The **Heritage Interpretation Plan** must be prepared in accordance with the *NSW Heritage Manual*, the NSW Heritage Office’s *Interpreting Heritage Places and Items: Guidelines* (August 2005), and the NSW Heritage Council’s *Heritage Interpretation Policy*.

**E15** An **Unexpected Heritage Finds and Human Remains Procedure** must be prepared to manage unexpected heritage finds in accordance with the guidelines and standards prepared by the Heritage Council of NSW or OEH.

**E16** The **Unexpected Heritage Finds and Human Remains Procedure** must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW and submitted to the Planning Secretary for information no later than one (1) month before the commencement of Construction.

**E17** The **Unexpected Heritage Finds and Human Remains Procedure**, as submitted to the Planning Secretary, must be implemented for the curation of Construction and during Operational maintenance Work.

*Note: Human remains that are found unexpectedly during Work are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.*

**NOISE AND VIBRATION**

**Land Use Survey**

**E18** A detailed land use survey must be undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to Construction noise and vibration, Construction ground-borne noise and Operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of Work which generate Construction or Operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the **Construction Noise and Vibration Impact Statement(s)** or **Operational Noise and Vibration Review**, where relevant.

**Work Hours**

**E19** Work must only be undertaken during the following Construction hours:

(a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
(b) 8:00am to 6:00pm Saturdays; and
(c) at no time on Sundays or public holidays.

**Variation to Work Hours**

**E20** Notwithstanding **Conditions E19** and **E24** Work may be undertaken outside the hours specified in the following circumstances:

(a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
(b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or
(c) where different Construction hours are permitted or required under an EPL in force in respect of the CSSI; or
(d) Work approved under an **Out-of-Hours Work Protocol** for Work not subject to an EPL as required by **Condition E25**; or
(e) Construction that causes $L_{A_{eq}(15\,\text{min})}$ noise levels:
   (i) no more than 5 dB(A) above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), and
   (ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses, and
(iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and

(iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or

(f) where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular Construction, and the noise management levels and/or limit for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Planning Secretary at least one (1) week before the commencement of activities.

Note: Section 5.24(1)(e) of the EP&A Act requires that an EPL be substantially consistent with this approval.

E21 On becoming aware of the need for emergency Work in accordance with Condition E20(b), the Proponent must notify the ER and the EPA (if an EPL applies) of the need for that Work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of those Work.

Out-of-Hours Work Scheduling and Respite

E22 Out-of-Hours Work that are regulated by an EPL as per Condition E20(c) or through the Out-of-Hours Work Protocol as per Condition E25 include:

(a) Work which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management – Principles and Guidelines”; or

(b) where the relevant road authority has advised the Proponent in writing that carrying out the activities could result in a high risk to road network operational performance; or

(c) where the relevant utility service operator has advised the Proponent in writing that carrying out the activities could result in a high risk to the operation and integrity of the utility network; or

(d) where the Transport for NSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the activities during the hours specified in Conditions E19 and E20; or

(e) where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.

Note: Other Out-of-Hours Work can be undertaken with the approval of an EPL, or through the project’s Out-of-Hours Work Protocol for Work not subject to an EPL.

E23 In order to undertake Out-of-Hours Work, the Proponent must identify appropriate respite periods for the Out-of-Hours Work in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with:

(a) a schedule of likely Out-of-Hours Work for a period no less than two (2) months;

(b) the potential work, location and duration;

(c) the noise characteristics and likely noise levels of the Work; and

(d) likely mitigation and management measures.

The outcomes of the community consultation, the identified respite periods and the scheduling of the likely Out-of-Hours Work must be provided to the EPA (if an EPL applies) and the Planning Secretary (for high risk activities after 9pm) upon request.

Highly Noise Intensive Work

E24 Except as permitted by an EPL, highly noise intensive Work that result in an exceedance of the applicable Noise Management Level at the same receiver must only be undertaken:
(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;
(b) between the hours of 8:00 am to 1:00 pm Saturday; and
(c) in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities and Works of not less than one (1) hour between each block.

For the purposes of this condition, 'continuous' includes any period during which there is less than a one (1) hour respite between ceasing and recommencing any of the work that are the subject of this condition.

Out-of-Hours Work Protocol – Work not subject to an EPL

E25 An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of Work which are outside the hours defined in Condition E19, and that are not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of the Work. The Protocol must:

(a) provide a process for the consideration of Out-of-Hours Work against the relevant noise and vibration criteria, including the determination of low and high-risk activities;
(b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of Condition E23;
(c) identify procedures to facilitate the coordination of Out-of-Hours Work approved by an EPL to ensure appropriate respite is provided;
(d) identify an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where:
   (i) low risk activities and high risk activities that cease by 9pm can be approved by the ER, and
   (ii) all other high risk activities must be approved by the Planning Secretary; and
(e) identify Planning Secretary, EPA and community notification arrangements for approved Out-of-Hours Work, which may be detailed in the Community Communication Strategy.

Out-of-Hours Work – Utility Coordination and Respite

E26 Work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must:

(a) reschedule Work to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition E23; or
(b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and
(c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation.

Construction Noise and Vibration - General

E27 Construction Noise and Vibration Impact Statements must be prepared for Construction sites before Construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers. The Statements must augment the Construction Noise and Vibration Management Sub-plan and must be implemented for the duration of Work. The Statements must be informed by a suite of potential management/mitigation options provided in the Construction Noise and Vibration Sub-plan.

E28 Noise generating Work in the vicinity of potentially-affected community, religious, or educational institutions resulting in noise levels above the noise management levels must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution or as otherwise approved by the Planning Secretary.

E29 Mitigation measures must be implemented with the aim of achieving the following Construction noise management levels and vibration criteria:

(a) Construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009);
(b) vibration criteria established using the *Assessing vibration: a technical guideline* (DEC, 2006) (for human exposure);

(c) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and

(d) the vibration limits set out in the *German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures* (for structural damage).

Note: The Interim Construction Noise Guideline identifies ‘particularly annoying’ activities that require the addition of 5 dB(A) to the predicted level before comparing to the Construction Noise Management Level.

E30 The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures.

**Noise Mitigation - Operational Noise Mitigation Measures**

E31 The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration control measures that would be implemented for the Operation of the CSSI. The ONVR must be prepared as part of the iterative design development and in consultation with the Planning Secretary, relevant council(s), and other relevant stakeholders and must:

(a) identify appropriate Operational noise and vibration objectives and levels for surrounding development, including existing sensitive receivers;

(b) confirm the Operational noise predictions based on the expected final design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated data obtained from noise monitoring);

(c) examine all noise and vibration mitigation measures, with a focus on source control and design;

(d) identify specific physical and other mitigation measures for controlling noise and vibration at the source and at the receiver (if relevant) including location, type and timing of mitigation measures;

(e) where noise and vibration objectives cannot be achieved, the ONVR must present an analysis of all noise and vibration mitigation measures and the ‘best practice’ achievable noise and vibration outcome for each activity;

(f) fully describe the design, assumptions, calculation process, mitigation strategy, and other relevant factors; and

(g) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures being offered.

The ONVR must be verified by a suitably qualified and experienced noise and vibration expert. The ONVR must be undertaken at the Proponent’s expense and submitted to the Planning Secretary for approval before the implementation of mitigation measures.

The Proponent must implement the identified noise and vibration control measures and make the ONVR publicly available.

E32 Operational noise mitigation measures as identified in Condition E31 that will not be physically affected by Construction, must commence implementation within six (6) months of the commencement of Construction in the vicinity of the impacted receiver(s) to minimise Construction noise impacts, and detailed in an updated *Noise and Vibration CEMP Sub-plan* for the CSSI.

**Note:** For the purpose of Conditions E32 and E33, operational noise mitigation measures refer to at property or other identified non-source controls, the detail of which would broadly be included in the *Noise and Vibration CEMP Sub-plan*. When detail on the specific mitigation measures is known and before the implementation of the mitigation measures, the CEMP sub-plan must be updated.

E33 Where implementation of Operational noise mitigation measures will be physically affected by Construction such that they cannot commence implementation within six (6) months of the
commencement of Construction in accordance with Condition E32, the Proponent must submit to the Secretary a report providing justification as to why, along with details of temporary measures that would be implemented to address construction noise impacts until such time that the Operational noise mitigation measures identified in Condition E31 are implemented. The report must be submitted to the ER for review. When the ER is satisfied that the justification and alternative measures are appropriate to address construction noise impacts, and within six (6) months of the commencement of Construction which would affect the identified sensitive receivers, the report must be submitted to the Planning Secretary for information.

E34 Within 12 months of the commencement of Operation of the CSSI, the Proponent must undertake monitoring of Operational noise to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E31.

The Proponent must prepare an Operational Noise Compliance Report to document this monitoring. The Report must include, but not necessarily be limited to:

(a) noise monitoring to assess compliance with the Operational noise levels predicted in the review of Operational noise mitigation measures required under Condition E31;
(b) a review of the Operational noise levels in terms of criteria and noise goals established in the NSW Rail Infrastructure Noise Guideline 2013;
(c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which CSSI noise levels are ascertained, with specific reference to locations indicative of impacts on receivers;
(d) details of any complaints and enquiries received in relation to Operational noise generated by the CSSI between the date of commencement of Operation and the date the report was prepared;
(e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring;
(f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and
(g) identification of additional measures to those identified in the review of noise mitigation measures required by Condition E31, that would be implemented with the objective of meeting the criteria outlined in the NSW Rail Infrastructure Noise Guideline 2013 and Noise Policy for Industry (EPA, 2017), when these measures would be implemented and how their effectiveness would be measured and reported to the Planning Secretary and the EPA.

The Operational Noise Compliance Report must be submitted to the Planning Secretary and the EPA within 60 days of completing the Operational noise monitoring and made publicly available.

Socio-Economic, Land Use and Property

E35 The Proponent must establish an Independent Property Assessment Panel before Construction commences. The Panel will be responsible for the resolution of property damage disputes. Either the affected property owner of the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the Panel for resolution. All costs incurred in establishing and implementing the Panel must be borne by the Proponent.

E36 The Proponent must determine viable alternative accommodation options for community facilities/groups (including the Canterbury Theatre Guild) where facilities used by the group(s) are not available to them during Construction in consultation with the relevant council(s), community groups and key stakeholders.

Business Management Plan
E37 The Proponent must prepare and implement a Business Management Plan to minimise impact on businesses around stations during Construction. The Plan must be prepared before Construction and must include but not necessarily be limited to:

(a) measures to address amenity, vehicular and pedestrian access during business hours and visibility of the business appropriate to its reliance on such, and other reasonable matters raised in consultation with affected business;
(b) establishing a Business Consultation forum linked to the Community Communication Strategy required by Condition B1;
(c) preparation of Business Management Strategies for each station precinct or Construction site (and/or activity), identifying affected businesses and associated management strategies, including the employment of place managers, cultural liaison specialists and specific measures to be put in place to assist small business owners adversely impacted by the construction of the CSSI;
(d) implementing the established Small Business Owners' Support Program to assist small business owners adversely impacted by construction of the CSSI. The Program must be administered by an Advisory/Support Panel established by the Proponent. The Program must have appropriate specialist representatives, including CALD representatives and must report to the Proponent;
(e) a monitoring program to assess the effectiveness of the measures including the nomination of performance parameters and criteria against which effectiveness of the measures will be measured; and
(f) provision for reporting of monitoring results to the Planning Secretary, in accordance with the Compliance Tracking Program required in Condition A29.

SOILS

E38 All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered.

Contaminated sites

E39 An Unexpected Contaminated Land Procedure and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during Construction.

E40 The Unexpected Contaminated Land Procedure and Asbestos Finds Procedure must be implemented throughout Construction.

MATERIALS STORAGE

E41 Dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled strictly in accordance with:
(a) All relevant Australian Standards;
(b) For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and

In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

SUSTAINABILITY

E42 The Proponent must seek to achieve a best practice level of performance for the CSSI using market leading sustainability ratings tools (including a minimum 'Design' and 'As built' rating score of 65 using the Infrastructure Sustainability Council of Australia infrastructure rating tool version 1.2, or an equivalent level of performance using a demonstrated equivalent rating tool).
E43 The Proponent must prepare a **Sustainability Strategy** to be submitted to the Planning Secretary within six (6) months of the date of this approval and must be implemented throughout Construction and Operation.

E44 Opportunities to reduce Operational greenhouse gas emissions must be investigated during detailed design. The sustainability initiatives identified must be regularly reviewed, updated and implemented throughout the design development and construction, and annually during Operation.

E45 The Proponent must fully offset the greenhouse gas emissions associated with consumption of electricity during Operation of the CSSI.

**TRAFFIC AND TRANSPORT**

**Traffic and Transport Liaison Group**

E46 The Proponent must establish a **Traffic and Transport Liaison Group(s) (TTLGs)** to inform traffic and transport management measures during Construction and Operation of the CSSI. Management measures must be coordinated with the RMS following consultation with the Sydney Coordination Office the Relevant Roads Authority.

The TTLG must comprise representatives from the Relevant Road Authority(ies), transport operators (including bus and taxi operators) and emergency services as required. The TTLG must be consulted to inform preparation of the **Construction Traffic Management Plan(s)**.

E47 **Construction Traffic Management Plans (CTMPs)** must be prepared for each Construction site or stage (or Low Impact Activity where required) in accordance with the CEMF and relevant Austroads, Australian Standards and RMS requirements. The CTMPs must be submitted to the RMS following engagement with the Sydney Coordination Office and before Construction commences at the relevant Construction site or stage. A copy of the **Construction Traffic Management Plans** must be submitted to the Planning Secretary for information.

E48 The Proponent must prepare a **Temporary Transport Management Plan** in accordance with the **Temporary Transport Strategy** included in documents listed in **Condition A1** one (1) month before the implementation of the Plan.

E49 Before any local road is used by a heavy vehicle for the purposes of Construction of the CSSI, a **Road Dilapidation Report** must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the relevant council(s) within four (4) weeks of completion of the survey and at least two (2) weeks before the road is used by heavy vehicles associated with the Construction of the CSSI.

E50 If damage to local roads occurs as a result of Construction of the CSSI, the Proponent must either:

(a) compensate the relevant road authority for the damage so caused. The amount of compensation may be agreed with the relevant road authority; or

(b) rectify the damage to restore the road to at least the condition it was in pre-Construction as identified in the **Road Dilapidation Report(s)**.

E51 During Construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access must be provided, and opportunities for parking arrangements must be investigated in consultation with affected businesses/properties and implemented before the disruption. Adequate signage and directions to businesses/properties must be provided before, and for the duration of, any disruption.
Pedestrian and Cyclist Access

E52 Safe pedestrian and cyclist access must be maintained around Work sites during Construction. In circumstances where pedestrian and cyclist access is restricted or removed due to Construction activities, an alternate route which complies with the relevant standards must be provided and signposted.

E53 The Proponent must prepare a Walking and Cycling Strategy to identify opportunities and works to connect stations with the surrounding communities, by connecting to or enhancing existing pedestrian and cyclist paths.

The Walking and Cycling Strategy must also identify opportunities and works to improve east-west pedestrian and cyclist facilities between Sydenham and Bankstown.

The Walking and Cycling Strategy must be prepared in consultation with relevant council(s), local bike user groups and relevant stakeholder(s). Identified opportunities and works, where relevant, must be integrated with the relevant Station Design and Precinct Plan(s). Works that are identified as being the responsibility of the Proponent, including those associated with east-west pedestrian and cyclist facilities must be delivered within twelve (12) months following commencement of Operation.

URBAN DESIGN AND VISUAL AMENITY

Lighting and Security

E54 The Proponent must construct and operate the CSSI with the objective of minimising light spillage to surrounding properties. All lighting associated with the Construction and Operation of the CSSI must be consistent with the requirements of Australian Standard 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.

Design Review Panel

E55 The Proponent must appoint the Sydney Metro City & Southwest Design Review Panel for the CSSI before Construction commences.

E56 Station Design and Precinct Plans must be prepared to inform the final design of the CSSI and to give effect to the commitments made in the documents listed in Conditions A1 and A2. The Station Design and Precinct Plans do not apply to those elements, which for technical, engineering, or ecological requirements, or requirements as agreed by the Planning Secretary, do not allow for alternate design outcomes.

E57 Station Design and Precinct Plans must be prepared by a suitably qualified and experienced person(s) in consultation with the relevant council(s), the community and affected landowners and businesses or a representative of the businesses. A station precinct is defined as an area within 200 metres radius of a station, or beyond for the purposes of connecting pedestrian and cycle paths from stations to existing or planned future pedestrian and cycle paths. The Station Design and Precinct Plans must include:

(a) Context and form
   (i) an analysis of the built, natural and community context and the urban design objectives, principles and standards for the CSSI,
   (ii) the location of existing heritage items,
   (iii) the location and type of existing vegetation,
   (iv) detailed consideration of integration and continuity with urban design and landscape outcomes for SSI 7400, taking into account the approved station design and precinct plans for that project;

(b) Design
   (i) the design of the CSSI elements including their form, materials and detail,
(ii) the design of the CSSI landform and earthworks,
(iii) visual screening requirements for the CSSI,
(iv) developed visuals, cross sections and plans showing the proposed design outcome of
the CSSI,
(v) consideration of opportunities for provision of public art within each station precinct,
(vi) consideration of the principles of Crime Prevention Through Environmental Design
(CPTED);

(c) Landscaping
(i) areas of vegetation to be retained and proposed planting and seeding details,
including the use of local indigenous species for revegetation activities,
(ii) details of strategies to rehabilitate, regenerate or revegetate disturbed areas and
successfully establish and maintain the resulting new landscape;

(d) Transport and access
(i) design measures to maximise the amenity of public spaces, permeability around
entrances to stations and integration with other transport modes,
(ii) measures to safeguard a new pedestrian crossing of the rail corridor to the west of
Foord Avenue and east of Melford Street in Hurlstone Park,
(iii) integrate with relevant initiatives identified in the Sydney Metro Sydenham to
Bankstown Walking and Cycling Strategy,
(iv) detailed consideration of measures to allow for the removal and/or relocation of
existing ancillary infrastructure (such as fencing, substations and signalling boxes) and
any structures that may be made redundant by the CSSI that may inhibit or
detrimentally impact the provision of open space, pedestrian and cyclist pathways
along the rail corridor or new access points into the stations in the future,
(v) detailed consideration of design measures to ensure the location of infrastructure does
not preclude future enhancements and upgrades to existing parks and public open
spaces adjoining the rail corridor; and

(e) Consultation
(i) evidence of consultation with the community, the relevant council(s) in the preparation
of the Station Design and Precinct Plans and how feedback has been addressed
before seeking review by the Design Review Panel, where required.

E58 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for
Bankstown Station must:

(a) remove the existing at grade car park immediately opposite the intersection of North
Terrace and The Appian Way to improve the public domain;
(b) consider opportunities to improve legibility and access to the existing station entrances
from North Terrace and Bankstown City Plaza, including rationalisation of retail outlets;
(c) investigate opportunities to relocate the bus layover on South Terrace and off-street
parking from the station interface;
(d) consider opportunities to consolidate amenities such as toilets and other infrastructure into
new integrated station facilities that are not isolated or dominant in the public domain;
(e) investigate opportunities for adaptive reuse of the heritage listed parcel office; and
(f) include a master plan for the transport interchange at Bankstown Station and consider the
relationship to and outcomes of any broader master planning of the Bankstown commercial
district.

E59 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for
Punchbowl Station must:

(a) include measures to improve safety and security to the pedestrian access under
Punchbowl Road connecting to Highclere Avenue/Breust Place; and
(b) include a concept design for and identify measures to safeguard a future pedestrian
overpass to the west of Punchbowl Station, connecting South Terrace to Stansfield Avenue
within the rail corridor and as close to Punchbowl Boys High School as practicable.
E60 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for Wiley Park Station must include a concept design for and identify measures to safeguard a future station access to/from Shadforth Street.

E61 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for Campsie Station must:

(a) have regard to the outcomes of any master planning of the Campsie commercial district;
(b) identify opportunities to improve pedestrian and cycle access to the station (such as footpath widening) to better integrate station buildings into the public domain;
(c) include a concept design for and identify measures to safeguard an unpaid pedestrian overpass and station access connecting near the intersection of Assets Street and Wilfred Avenue and the intersection of Lilian Street and Dewar Street to the south of the station; and
(d) provide an improved amenity to and larger public plaza at the station entrance on the western side of Beamish Street, including where required, rationalisation of retail outlets, new pavements, bicycle parking infrastructure, landscaping, lighting and furniture.

E62 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for Canterbury Station must include a concept design for and safeguard a future station entrance in the vicinity of Charles Street to the west of the station.

E63 In addition to the requirements of Condition E57, the Station Design and Precinct Plan for Dulwich Hill Station must include a new concourse connecting the Dulwich Hill Light Rail Stop to the Island rail platform and across to a new access point at Ewart Lane.

E64 Station Design and Precinct Plans for Bankstown Station and Campsie Station must include an Interchange Access Plan to inform the final design of transport and access facilities and services. The Interchange Access Plan(s) must consider mode transfer, from both active transport or road-based transport and take into account:

(a) station access hierarchy consistent with the transport planning principles identified in the EIS;
(b) current transport initiatives and plans; and
(c) patronage changes resulting from land use, population, employment, transport infrastructure and service changes.

E65 The Station Design and Precinct Plans for Bankstown Station, Campsie Station and Dulwich Hill Station, must be reviewed by the Design Review Panel. The Proponent must provide a response to the outcomes of the Design Review Panel’s review indicating how the relevant precinct plans will be amended to accommodate the review outcomes. Where the review outcomes are not addressed, the Proponent must provide the Design Review Panel with reasons.

E66 With respect to the Bankstown Station, Campsie Station and Dulwich Hill Station precincts, the Proponent must submit the relevant Station Design and Precinct Plans to the Planning Secretary for approval no later than one (1) month before commencement of construction of permanent built works that are the subject of these Station Design and Precinct Plans (in the area to which the relevant Station Design and Precinct Plan applies).

E67 With respect to the Bankstown Station, Campsie Station and Dulwich Hill Station precincts, Construction of permanent built works or landscaping that are the subject of the Station Design and Precinct Plans must not be commenced (in the area to which the relevant Station Design and Precinct Plan applies) until the relevant Station Design and Precinct Plans have been approved by the Planning Secretary, after responding to the outcomes of the Design Review Panel review. Evidence of response to the Design Review Panel’s review must be provided to the Planning Secretary. The Station Design and Precinct Plans, as approved by the Planning Secretary, must be implemented as required during Construction and Operation.
Operational Maintenance
E68 The ongoing maintenance and Operation costs of urban design, open space, landscaping and recreational items and works implemented as part of this approval remain the responsibility of the Proponent until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and works to at least the design standards, noting normal wear and tear, established in the Station Design and Precinct Plans, required by Condition E57.

UTILITIES MANAGEMENT
E69 The Proponent must co-ordinate utility providers and relevant council(s) to identify opportunities for maintenance, replacement or augmentation of utilities that cross the rail corridor and facilitate and co-ordinate requests by the utility providers and relevant council(s) to undertake the Work during rail shutdowns, with particular reference to the final three (3) to six (6) month shutdown before metro services commence.

E70 Nothing in this approval allows for the undertaking of any third-party utility Work identified through the implementation of Condition E69 and not required for the purposes of the CSSI.

Note: Third-party utility Work, including but not limited to drainage, water or energy supply etc. identified not required for the project is not the responsibility of the Proponent and is subject to separate approvals process.

E71 A Utilities Management Strategy must be prepared and implemented in line with the Utilities Management Framework, provided as Appendix H of the SPIR for all utility Work. The Strategy must identify how utility Work will be defined and managed.

The Utilities Management Strategy must include:

(a) the functions of the Utility Coordination Manager as required by Condition E72;
(b) a description of all utility Work to be undertaken; and
(c) management measures to be implemented to manage dust, noise, traffic, access and lighting impacts associated with utility Work.

The Utilities Management Strategy must be submitted to the Planning Secretary for approval at least one (1) month before the commencement of utility Work.

Utility Coordination Manager
E72 A Utility Coordination Manager must be appointed for the duration of the CSSI Work. The role of the Utility Coordination Manager must include, but not be limited to:

(a) the management and coordination of all utility Work associated with the delivery of the CSSI, to ensure respite is provided to the community, as required under Condition E22;
(b) investigating complaints received from the Community Complaints Mediator relating to utility Work and providing a response to the Community Complaints Mediator.

WASTE
E73 Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3).

Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.

E74 The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, under the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions made under the regulation.
E75 Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.

E76 All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal docket retained for audit purposes.
Appendix A

WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be emailed to the Department at the following address: compliance@planning.nsw.gov.au within seven (7) days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under Condition A37 or, having given such notification, subsequently forms the view that an incident has not occurred.

2. Written notification of an incident must:
   (a) identify the CSSI and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the Proponent became aware of the incident;
   (e) identify any actual or potential non-compliance with conditions of approval;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.
Attachment 6 – Revised mitigation measures and performance outcomes

Table C.1 provides the consolidated revised environmental mitigation measures. The measures are broadly grouped according to the main stage of implementation. However, it is noted that the implementation of some measures may occur across a number of stages.

The location/s applicable to each mitigation measure are identified by using a unique identifier as follows:

- All – Project as a whole
- BW – Bridge works
- AS – All stations
- MA – Marrickville Station
- DU - Dulwich Hill Station
- HP – Hurlstone Park Station
- CB – Canterbury Station
- CP – Campsie Station
- BE – Belmore Station
- LA – Lakemba Station
- WP – Wiley Park Station
- PB – Punchbowl Station
- BA – Bankstown Station
- SS – Substations.
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<tr>
<th>ID</th>
<th>Impact</th>
<th>Mitigation measures</th>
<th>Relevant location(s)</th>
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<td></td>
<td><strong>Traffic, transport and access</strong></td>
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| TC1 | **Temporary transport arrangements**       | Guided by the Temporary Transport Strategy, detailed temporary transport plan/s would be developed prior to construction to manage the movement of people along the T3 Bankstown Line during possession periods. The plans would be developed in consultation with key stakeholders (including Transport for NSW, Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators), and would address the requirements specified by the Temporary Transport Strategy. The development of each plan would consider, as a minimum:  
   - a review of the road network constraints along any proposed rail replacement bus route  
   - further traffic analysis of key intersections used by rail replacement buses  
   - potential impacts to local road networks affected by rail passengers diverting to cars to reach their destinations  
   - the design of temporary facilities at bus stop locations in consultation with the relevant road authority  
   - expected changes to parking demand at other stations, displacement of existing parking, and any upgrades that may be required. | AS                  |
<p>| TC2 |                                            | Sydney Metro would consult with Transport for NSW, Roads and Maritime Services, the State Transit Authority, the Inner West and Canterbury-Bankstown councils, and bus operators, to identify opportunities to minimise impacts to bus layovers and existing bus stops during operation of rail replacement buses. | AS                  |
| TC3 |                                            | The impacts on the surrounding road network of lane closures resulting from bridge works across the rail corridor would be assessed in detail, to identify the suite of management measures to be implemented for each closure required. This would be undertaken in consultation with Transport for NSW, Roads and Maritime Services, the Sydney Coordination Office, the Inner West and Canterbury-Bankstown councils, emergency services, and relevant bus operators. Planning for partial bridge closures would consider bus rerouting and timetabling, with the intention of minimising impacts to bus customers and bus operators. | BW                  |
| TC4 | <strong>Parking impacts during construction</strong>    | Opportunities to reduce the loss of existing on and off street car parking (including the amount of spaces reduced and the time associated with this reduction) would be reviewed during detailed design and construction planning.                                                                                                                           | AS                  |</p>
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<tr>
<td>TC5</td>
<td>Impact Mitigation measures</td>
<td>Where parking spaces are lost or access is impeded, particularly for extended periods, alternative parking would be provided wherever feasible and reasonable. This would include consideration of other privately owned (or vacant) land within close proximity to affected stations.</td>
<td>AS</td>
</tr>
<tr>
<td>TC6</td>
<td>Impacts of intersection performance</td>
<td>Further consideration of the need for intersection modifications would be undertaken, to improve intersection performance at locations most affected by the addition of construction heavy vehicles and rail replacement buses. This would be undertaken in consultation with Transport for NSW, Roads and Maritime Services, the Sydney Coordination Office, and the relevant road authority. The improvements considered would include:</td>
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<td>• modification to the existing traffic signal phasing</td>
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<td>• lane priority changes</td>
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<td>• changing lane designations (line markings and signage)</td>
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<td>• kerbside changes (such as removing on street parking or implementing no standing zones at peak times to increase lane capacity)</td>
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<td>• physical geometric changes (such as minor kerb cut-backs to enable large vehicles to safely move through intersections)</td>
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<td>• restricting turning movements where traffic demand is low.</td>
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<td>TC7</td>
<td>Changes to cyclist facilities during construction</td>
<td>Where existing cycle facilities (e.g. bike parking) would be temporarily unavailable at a station, suitable replacement facilities would be provided while the facility is unavailable</td>
<td>AS</td>
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<tr>
<td>TO1</td>
<td>Parking impacts during operation</td>
<td>Further consideration of car parking management at stations would be undertaken in consultation with Roads and Maritime Services, the Sydney Coordination Office, and the Inner West and Canterbury-Bankstown councils, to minimise adverse impacts of operation on parking and other kerbside use in local streets.</td>
<td>AS</td>
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<tr>
<td>TO2</td>
<td>Consideration of cross corridor connections</td>
<td>Sydney Metro, in consultation with Canterbury-Bankstown Council, would investigate the feasibility of the provision of a cross-corridor connection between Bankstown and Punchbowl stations. Should a cross-corridor connection be deemed feasible, Sydney Metro would work with Canterbury-Bankstown Council and the Department of Planning and Environment to safeguard its future delivery.</td>
<td>All</td>
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| TC8 | Management of traffic, transport and access                           | A construction traffic management plan would be prepared and implemented prior to construction. The plan would be prepared in accordance with the Construction Environmental Management Framework, and would detail, as a minimum:  
  - how traffic would be managed when construction works are being carried out  
  - the activities proposed and their impact on the road network and on road users  
  - how these impacts would be addressed.  
  The plan would be prepared in consultation with the Traffic and Transport Liaison Group, and would be approved by the relevant authority before construction commences. | All                  |
| TC9 | Changes to public transport services and alternative transport arrangements | Modification of existing bus stops, or implementation of new stops and alterations to service patterns, would be carried out by Sydney Metro in consultation with Transport for NSW, Sydney Coordination Office, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and bus operators. | AS                   |
| TC10| Sydney Metro would undertake an extensive community awareness and information campaign before changes to public transport services are implemented. This would include a range of communication activities such as:  
  - information at stations  
  - wayfinding signage  
  - clearly marked bus stop locations  
  - letter box drops  
  - web based information and transport 'app' where changes to travel are found in a single place  
  - information via 131 500  
  - advertising in local papers  
  - email information bulletins. | Sydney Metro would undertake an extensive community awareness and information campaign before changes to public transport services are implemented. This would include a range of communication activities such as:  
  - information at stations  
  - wayfinding signage  
  - clearly marked bus stop locations  
  - letter box drops  
  - web based information and transport 'app' where changes to travel are found in a single place  
  - information via 131 500  
  - advertising in local papers  
  - email information bulletins. | AS                   |
<p>| TC11| Impacts on special events                                              | Consideration of special events would be undertaken as part of construction work programming. For special events that require specific traffic and pedestrian management, measures would be developed and implemented in consultation with Transport for NSW, Sydney Coordination Office, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and the organisers of the event. | All                  |
| TC12| Impacts of construction compounds and work sites                       | Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist, and motorist safety. Depending on the location, this may require manual supervision, barrier placement, temporary traffic signals, modifications to existing traffic signals, or police assistance. | All                  |</p>
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<tr>
<td>TC13</td>
<td>Construction vehicles</td>
<td>Construction vehicles (including contractor staff vehicles) would be managed to:</td>
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<td>• minimise parking or queuing on public roads</td>
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<td>• minimise use of residential streets to gain access to work sites or compounds</td>
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<td>• minimise vehicle movements near schools, particularly during school start and finish times.</td>
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<td>TC14</td>
<td>Signage</td>
<td>Directional signage and line marking would be used to direct and guide drivers, pedestrians, and other road users past construction compounds and work sites, and on the surrounding road network. This may be supplemented by variable message signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.</td>
<td>All</td>
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<tr>
<td>TC15</td>
<td>Construction parking impacts</td>
<td>Construction sites would be managed to minimise construction worker parking on surrounding streets. A worker car parking strategy would be developed in consultation with the relevant local council to identify measures to reduce the impact on the availability of on street and off street parking. The strategy would identify potential mitigation measures including alternative parking locations. The strategy would encourage contractor staff to:</td>
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<td>• use public transport</td>
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<td>• car share</td>
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<td>• park in a designated off site area and access construction sites via shuttle bus.</td>
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<td>TC16</td>
<td>Traffic incidents</td>
<td>In the event of a traffic related incident, coordination would be carried out with the Sydney Coordination Office and Transport Management Centre’s Operations Manager.</td>
<td>All</td>
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<tr>
<td>TC17</td>
<td>Changes to road, pedestrian and cyclist networks</td>
<td>The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community notification.</td>
<td>All</td>
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<tr>
<td>TC18</td>
<td>Impacts on pedestrian or cyclist paths</td>
<td>A condition survey would be undertaken to confirm changes to routes proposed to be used by pedestrians and/or cyclists are suitable (e.g. suitably paved and lit), with identified modification requirements discussed with the Inner West and/or Canterbury-Bankstown councils and implemented prior to use of the routes.</td>
<td>All</td>
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| TC19| Pedestrian, cyclist and motorist safety| Pedestrian, cyclist, and motorist safety in the vicinity of the construction sites would be addressed during construction planning and development of the construction traffic management plan. Measures that may be implemented to assist in multi-modal traffic management include:  
  • speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers  
  • a community engagement program to provide road safety education and awareness to road users about sharing the road safely with heavy vehicles  
  • heavy vehicle training for drivers to understand route constraints, safety issues, and limiting the use of compression braking  
  • safety technology and equipment installed on heavy vehicles to enhance vehicle visibility, eliminate vehicles' blind spots, and monitor vehicle location, speeding compliance, and driver behaviour. | All                  |
<p>| TC20| Impacts to access                      | Access for residents, businesses, and community infrastructure would be maintained. Where disruption to access cannot be avoided, consultation would be undertaken with the owners and occupants of affected properties, to confirm their access requirements and to discuss alternatives. | All                  |
| TC21|                                      | Access to stations and surrounding properties for emergency vehicles would be provided at all times. Emergency service providers (i.e. police and ambulance) would be consulted throughout construction to ensure they are aware of station closures, changes to access, including bridge lane closures, and changes to station or rail corridor access. | All                  |
| TC22| Co-ordination of cumulative traffic effects | The potential cumulative effects of construction traffic from multiple construction sites within the project would be further considered during development of the construction traffic management plan. Where there is potential for cumulative impacts across the project, these issues would be addressed with the assistance of the Traffic and Transport Liaison Group. | All                  |
| Operation |  |  |  |  |
| TO3 | Walking and Cycling                    | Sydney Metro would develop a Walking and Cycling Strategy in consultation with Inner West Council, Canterbury-Bankstown Council and other relevant stakeholders, which would identify walking and cycling facilities to encourage active transport to the station precincts. | AS                   |
| TO4 | Bus                                    | Sydney Metro would work with Transport for NSW, Sydney Coordination Office, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and bus operators to identify improvements to bus stops and services. | AS                   |</p>
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<tr>
<td>T05</td>
<td>Commuter parking</td>
<td>Sydney Metro would monitor the demand for additional commuter car parking spaces and consider opportunities for, and implications of, meeting this demand between Bankstown and Marrickville stations. Sydney Metro would investigate ways to manage demand, subject to consideration of local station and town centre implications, including local traffic conditions.</td>
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**Noise and vibration**

**Design/pre-construction**

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<tr>
<td>NVC1</td>
<td>Predicted construction noise impacts</td>
<td>In accordance with the <em>Construction Noise and Vibration Strategy</em>, construction noise impact statements would be prepared prior to the commencement of construction components, to consider the scale and duration of construction noise impacts, and identify measures to minimise impacts to sensitive receivers. This would include noise modelling to confirm the results of modelling undertaken as part of the Environmental Impact Statement and Submissions and Preferred Infrastructure Report. Where exceedances of the noise management levels are identified, feasible and reasonable mitigation measures would be identified.</td>
<td>All</td>
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| NVC2|                                            | In accordance with the *Construction Noise and Vibration Strategy*, all employees, contractors and subcontractors would receive an environmental induction. The induction must at least include:  
• relevant project specific and standard noise and vibration mitigation measures  
• relevant licence and approval conditions  
• permissible hours of work  
• any limitations on high noise generating activities  
• location of nearest sensitive receivers  
• designated loading/unloading areas and procedures  
• site opening/closing times (including deliveries). | All                   |
<p>| NVC3| Predicted vibration impacts                | Where vibration levels are predicted to exceed the vibration screening level, a more detailed assessment of the structure would be carried out to determine the appropriate vibration limits for that structure. | All                   |
| NVC4|                                            | For heritage items where vibration screening levels are predicted to be exceeded, the more detailed assessment would include condition assessment and specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed. | Heritage items along the project area |</p>
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<tr>
<td>NVO1</td>
<td><strong>Predicted operational noise and vibration impacts</strong></td>
<td>An operational noise and vibration review would be undertaken to guide the approach to identifying reasonable and feasible mitigation measures to incorporate in the detailed design. This would include noise modelling to confirm the results of modelling previously undertaken. Where exceedances of the operational noise objectives in the <em>Rail Infrastructure Noise Guidelines</em> (EPA, 2013) are identified, reasonable and feasible mitigation measures would be identified.</td>
<td>All</td>
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<tr>
<td>NVO2</td>
<td></td>
<td>The height and extent of noise barriers adjacent to the project would be confirmed during detailed design with the aim of not exceeding trigger levels from the <em>Rail Infrastructure Noise Guidelines</em> (EPA, 2013). Property treatments would be offered either on their own or in combination with a noise barrier where there are residual exceedances of the noise trigger levels. Where practicable, operational stage noise mitigation would be installed early to assist with the management of construction noise.</td>
<td>All</td>
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<tr>
<td>NVO3</td>
<td></td>
<td>Operational noise from substations would be controlled by inclusion of appropriate mitigation such as shielding or enclosures, and specification of equipment selection, to comply with the <em>Industrial Noise Policy</em> (EPA, 2000).</td>
<td>All</td>
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<tr>
<td><strong>Construction</strong></td>
<td></td>
<td>The <em>Construction Noise and Vibration Strategy</em> would be implemented with the aim of achieving the noise management levels where feasible and reasonable. This may include the following example mitigation measures alone or in combination, where feasible and reasonable:</td>
<td>All</td>
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| NVC5 | **Construction noise and vibration management** | • The provision of noise barriers around each construction site.  
• The coincidence of noisy plant working simultaneously close together would be avoided.  
• Residential grade mufflers would be fitted to all mobile plant.  
• Non-tonal reversing alarms would be fitted to all permanent mobile plant.  
• High noise generating activities would be scheduled for less sensitive periods considering the nearby receivers, where reasonable and feasible.  
• The layout of construction sites would consider opportunities to shield receivers from noise.  
• Stationary noise sources would be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained.  
• Loading and unloading of materials/deliveries is to occur as far as possible from noise sensitive receivers.  
• Select site access points and roads as far as possible away from noise sensitive receivers.  
• Dedicated loading/unloading areas to be shielded if close to noise sensitive receivers wherever feasible and reasonable. | All                  |
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|     | NVC6 Noise intensive plant for construction activities, including ballast tampers would not be used during the night-time period (10pm to 7am) unless: | • during a weekend rail possession or shut down  
• a requirement of a road authority, emergency  

<p>|     | Relevant location(s)                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |</p>
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<td>NVC7</td>
<td>When working adjacent to schools, medical</td>
<td>services or Sydney Coordination Office requires works to be undertaken during this</td>
<td>All</td>
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<td>facilities and child care centres,</td>
<td>period.</td>
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<td>particularly noisy activities would be</td>
<td>where reasonable and feasible.</td>
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<td>scheduled outside normal working hours,</td>
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<td>particularly noisy activities would be</td>
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<td>scheduled outside services, where</td>
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<td></td>
<td>reasonable and feasible.</td>
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<td>NVC8</td>
<td>When working adjacent to churches and</td>
<td>Alternative accommodation may be offered to residents living in close proximity to</td>
<td>All</td>
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<td>places of worship, particularly noisy</td>
<td>construction works where detailed construction planning identifies unreasonably high</td>
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<td>activities would be scheduled</td>
<td>noise impacts over a prolonged period. Alternative accommodation arrangements would</td>
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<td>services, where reasonable and feasible.</td>
<td>be offered and discussed with residents on a case-by-case basis.</td>
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<tr>
<td>NVC9</td>
<td>Alternative accommodation may be offered</td>
<td>High noise and vibration generating activities including ballast tamping may only be</td>
<td>All</td>
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<td>to residents living in close proximity to</td>
<td>carried out in continuous blocks, not exceeding 3 hours each, with a minimum</td>
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<td>construction works where detailed</td>
<td>respite period of one hour between each block and these works.</td>
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<td>construction planning identifies unreasonably high noise impacts over a prolonged period.</td>
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<td>Alternative accommodation arrangements</td>
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<td>would be offered and discussed with</td>
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<td>residents on a case-by-case basis.</td>
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<td>NVC10</td>
<td>Ongoing noise monitoring would be undertaken</td>
<td>Ongoing noise monitoring would be undertaken during construction at sensitive</td>
<td>All</td>
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<td>during construction at sensitive receivers</td>
<td>receivers during critical periods (i.e. times when noise emissions are expected to</td>
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<td>during critical periods (i.e. times when</td>
<td>be at their highest to identify and assist in managing high risk noise events.</td>
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<td>noise emissions are expected to be at their</td>
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<td>highest to identify and assist in</td>
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<td>managing high risk noise events.</td>
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<td>NVC11</td>
<td>Vibration monitoring</td>
<td>Where vibration levels are predicted to exceed the vibration screening level, attended</td>
<td>All</td>
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<td>vibration monitoring would be carried out to ensure vibration levels remain below</td>
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<td>appropriate limits for that structure.</td>
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<td>NVC12</td>
<td>Groundborne noise</td>
<td>Reasonable and feasible measures would be implemented in accordance with the</td>
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<td></td>
<td>Construction Noise and Vibration Strategy to minimise groundborne noise where</td>
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<td>exceedances are predicted.</td>
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<td>NVC13</td>
<td>Utility adjustments/ relocation works</td>
<td>Reasonable and feasible mitigation measures would be implemented where power supply</td>
<td>All</td>
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<td>works would result in elevated noise levels at receivers. This could include:</td>
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<td>• carrying out works during the daytime period when in the vicinity of residential</td>
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<td>receivers</td>
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<td>• where out of hours works are required, scheduling the noisiest activities to occur in</td>
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<td>the evening period (up to 10pm)</td>
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<td>• use of portable noise barriers around particularly noisy equipment.</td>
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<tr>
<td>NVC15</td>
<td>Road traffic noise</td>
<td>The routes for construction haulage vehicles and bus services associated with the</td>
<td>All</td>
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<td>Temporary Transport Strategy would be selected on the basis of compliance with the</td>
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<td>relevant road traffic noise criteria, where reasonable and feasible. Where</td>
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<td>compliance with the noise criteria is not possible,</td>
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<td>reasonable and feasible noise mitigation would be implemented.</td>
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<tr>
<td>NVC16</td>
<td>Out of Hours Work Strategy</td>
<td>An Out of Hours Work Strategy would be prepared, in consultation with the Environment Protection Authority, to guide the assessment, management, and approval of works outside recommended standard hours.</td>
<td>All</td>
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<td>Non-Aboriginal heritage</td>
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<td>Design/pre-construction</td>
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<tr>
<td>NAH1</td>
<td>Minimising impacts during design</td>
<td>The project design would minimise adverse impacts to heritage buildings, elements, fabric, spaces and vistas that contribute to the overall heritage significance of the Bankstown Line.</td>
<td>All heritage items</td>
</tr>
<tr>
<td>NAH2</td>
<td></td>
<td>The project design would maximise the retention and legibility of heritage buildings, structures, fabric, spaces and vistas that are individually significant and contribute to the overall heritage significance of the Bankstown Line.</td>
<td>All heritage items</td>
</tr>
<tr>
<td>NAH3</td>
<td></td>
<td>The project design would complement retained heritage buildings, elements, fabric, spaces and vistas to avoid outcomes that compromise the significance of these heritage items.</td>
<td>All heritage items</td>
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<tr>
<td>NAH4</td>
<td></td>
<td>The project design would be developed with guidance from an appropriately qualified and experienced conservation architect.</td>
<td>All heritage items</td>
</tr>
<tr>
<td>NAH5</td>
<td>Reuse of retained items</td>
<td>Where heritage significant items or elements are to be retained within the operational area, an adaptive reuse strategy would be prepared by an appropriately qualified and experienced heritage architect.</td>
<td>All heritage items</td>
</tr>
<tr>
<td>NAH6</td>
<td>Interpretation</td>
<td>A Heritage Interpretation Plan would be prepared to document the development of the Bankstown Line and detail the history of each station and its contribution to both the Bankstown Line and the surrounding suburbs. Appropriate heritage interpretation would be incorporated in the design and would provide legible connection between stations.</td>
<td>AS Bankstown Parcels Office (former)</td>
</tr>
<tr>
<td>NAH7</td>
<td>Management of moveable heritage and heritage fabric</td>
<td>A moveable heritage item strategy would be prepared by an appropriately qualified and experienced heritage specialist in consultation with Sydney Trains, and would include a comprehensive record of significant railway elements to be impacted. This would include items contained within station and platform buildings as well as of any other significant equipment within the curtilage of the heritage railway stations. The moveable heritage item strategy would form part of the broader interpretation strategy.</td>
<td>AS apart from BA and Bankstown Parcels Office (former)</td>
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<td>NAH8</td>
<td>Station Building repurposing and refreshing</td>
<td>Where significant buildings are to be re-purposed or refreshed:&lt;br&gt;• the inherent character of the building should be retained with new additions, including form, palette and materiality, sympathetic to its heritage values&lt;br&gt;• a suitably qualified and experienced heritage architect should advise on appropriate materials and finishes which would be sympathetic to the heritage values of each individual station&lt;br&gt;• the internal layout of the building should be retained where possible, and rooms should not be subdivided unless it can be completed without adverse impact and/or is reversible without any long term adverse impact&lt;br&gt;• a significant element register should be prepared by a suitably qualified and experienced heritage architect. The register should list significant fabric, assess its condition, tolerance for change and recommend retention or salvage&lt;br&gt;• where fabric of high significance is to be removed, adequate assessment should be carried out that outlines impact and justification in accordance with the Statements of Heritage Impact guidelines (NSW Heritage Council 2002)</td>
<td>All</td>
</tr>
<tr>
<td>NAH9</td>
<td>Design of new access stairs, concourses, canopies and lift shafts</td>
<td>The design and materials used for the construction of new access stairs, concourses, canopies and lift shafts should be as sympathetic as possible to the existing character of the stations with the aim of minimising visual impacts. The design should use unobtrusive, modern, lightweight materials such as glass panelling and slim frame elements. The Design Review Panel should be consulted in regard to the design, form and material of these additions.</td>
<td>All</td>
</tr>
<tr>
<td>NAH10</td>
<td>Design of platform re-levelling</td>
<td>Where platforms are re-levelled, door thresholds and steps should be accessible without raising or relocation of entries. Sub-floor ventilation should remain open to avoid long term impacts to the structures.</td>
<td>All</td>
</tr>
<tr>
<td>NAH11</td>
<td>Impacts to the Old Sugarmill</td>
<td>A landscape scheme would be prepared for the Old Sugarmill to re-instates planting within and close to the curtilage of the item. The scheme would consider appropriate period plants and trees. Any boundary wall treatment would be designed in consultation with a heritage architect.</td>
<td>Old Sugarmill</td>
</tr>
<tr>
<td>NAH12</td>
<td>Impacts to archaeology</td>
<td>The archaeological research design, including any mitigation measures identified in the Archaeological Assessment and Research Design report, would be implemented.</td>
<td>All</td>
</tr>
<tr>
<td>NAH13</td>
<td>Archival recording</td>
<td>Photographic archival recording would be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006).</td>
<td>AS Bankstown Parcels Office (former)</td>
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<tr>
<td>NAH14</td>
<td>Unexpected finds</td>
<td>An unexpected finds procedure would be developed and included in the construction heritage management plan.</td>
<td>All</td>
</tr>
<tr>
<td>NAH15</td>
<td>Minimising impacts during construction</td>
<td>Methodologies for the removal of existing structures and construction of new structures would be developed and implemented during construction to minimise direct and indirect impacts to other elements within the curtilages of the heritage items, or to heritage items located in the vicinity of works.</td>
<td>All</td>
</tr>
<tr>
<td>NAH16</td>
<td></td>
<td>All retained heritage buildings, structures, fabric and moveable heritage items would be protected to avoid damage during works in the vicinity of these items, including from vibration. Retained significant buildings or elements susceptible to damage would be protected by hoardings or screens.</td>
<td>All</td>
</tr>
<tr>
<td>NAH17</td>
<td></td>
<td>Prior to construction commencing, a detailed inventory of all buildings, structures, fabric, spaces and vistas of heritage significance that are to be retained or removed would be prepared by appropriately qualified and experienced heritage specialists. The inventory must provide an assessment of the heritage impact based on the significance of each element and sub-element that comprises it and include recommendations for protection and conservation relative to the identified level of heritage significance.</td>
<td>All</td>
</tr>
<tr>
<td>NAH18</td>
<td>Unexpected finds</td>
<td>In the event that unexpected archaeological remains, relics, or potential heritage items are discovered during construction, all works in the immediate area would cease, and the unexpected finds procedure would be implemented.</td>
<td>All</td>
</tr>
<tr>
<td>NAH19</td>
<td>Human skeleton material</td>
<td>In the event that a potential burial site or potential human skeletal material is exposed during construction, the Transport for NSW Exhumation Management Plan would be implemented.</td>
<td>All</td>
</tr>
<tr>
<td>NAH20</td>
<td>Works to heritage fabric</td>
<td>All works to conserve, protect or remove significant heritage fabric would be undertaken by skilled tradespeople with experience working on heritage sites, in consultation with an appropriately qualified conservation heritage architect.</td>
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<td><strong>Bankstown Parcels Office (former)</strong></td>
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<tr>
<td>NAH21</td>
<td>Conservation management</td>
<td>A conservation management plan would be prepared for all State Heritage Register listed stations, in accordance with NSW Heritage Council guidelines. The plan would address any changes to the item, including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide suggested site specific exemptions and management policies.</td>
<td>MA, CA, BE</td>
</tr>
<tr>
<td>NAH22</td>
<td></td>
<td>A conservation management strategy would be prepared for nominated Section 170 register listed stations not listed on the State Heritage Register, in accordance with NSW Heritage Council guidelines.</td>
<td>DU, HP, CP, LA, WP, PB, BA</td>
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<td>Aboriginal heritage</td>
<td><strong>Design/pre-construction</strong></td>
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<td>AH1 Consultation: Aboriginal stakeholder consultation would continue to be undertaken in accordance with <em>Aboriginal Cultural Heritage Consultation Requirements for Proponents</em> (DECC, 2010).</td>
<td>All</td>
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<td>AH2 Avoiding impacts to Aboriginal heritage: The Aboriginal Cultural Heritage Assessment Report would be implemented.</td>
<td>All</td>
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<td>AH3 Managing impacts to identified PADs: Archaeological test excavation (and salvage if required) would be carried out at S2B PAD02 at Punchbowl Station. Excavations would be conducted in accordance with the methodology outlined by the Aboriginal cultural heritage assessment report.</td>
<td>S2B PAD02</td>
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<td>AH4 Interpretation: Appropriate Aboriginal heritage interpretation would be incorporated into the design in consultation with Aboriginal stakeholders.</td>
<td>All</td>
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<td><strong>Construction</strong></td>
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<td>AH5 Unexpected finds: If potential Aboriginal items are uncovered during the works, all works in the immediate area would cease, and the unexpected finds procedure included in the construction heritage management plan would be implemented. During pre-work briefings, employees would be made aware of the unexpected finds procedures and obligations under the <em>National Parks and Wildlife Act 1974</em>.</td>
<td>All</td>
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<td><strong>Land use and property</strong></td>
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<td><strong>Design/pre-construction</strong></td>
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<td>LU1 Future planning: Sydney Metro would continue to work the Department of Planning and Environment, the Greater Sydney Commission, and the Inner West and Canterbury-Bankstown councils in relation to future planning for the Sydenham to Bankstown corridor.</td>
<td>All</td>
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<td></td>
<td>LU2 Future planning: Sydney Metro would work with the Department of Planning and Environment, Greater Sydney Commission, Canterbury-Bankstown Council and other key stakeholders to plan for the strategic transformation of the Bankstown CBD, including an investigation into the long-term development and viability of an underground station configuration.</td>
<td>BA</td>
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<td>LU3 Future planning: Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.</td>
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<td><strong>Construction</strong></td>
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<td>LU4 Temporary use: Temporary use areas, including public open space, would be restored to their pre-existing condition (as a minimum) as soon as practicable following completion of construction. This would be undertaken in consultation with the relevant council and/or the landowner.</td>
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<td></td>
<td>Socio-economic impacts</td>
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<td><strong>Design/pre-construction</strong></td>
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<tr>
<td>SO1</td>
<td>Socio-economic impacts</td>
<td>Sydney Metro would continue to work with stakeholders and the community to ensure they are informed about the project and have opportunities to provide feedback to the project team. The existing community contact and information tools would remain in place throughout the duration of the project. Consultation prior to and during construction would involve the use of appropriate tools, including, but not limited to, tools such as community information sessions, forums, briefings, and displays; distribution of project materials in a variety of languages; door knocks; Place Managers; and site signage.</td>
<td>All</td>
</tr>
<tr>
<td>SO2</td>
<td>Community facilities</td>
<td>Prior to construction, consultation would be undertaken with sensitive community facilities (including aged care, childcare centres, educational institutions, and places of worship). Consultation would aim to identify and develop measures to manage the specific construction impacts for individual sensitive community facilities. These measures would be incorporated into the relevant management plans.</td>
<td>All</td>
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<td><strong>Construction</strong></td>
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<tr>
<td>SO3</td>
<td>Community facilities and infrastructure</td>
<td>Access to community facilities and infrastructure would be maintained during construction, where possible. Where alternative access arrangements need to be made, these would be developed in consultation with relevant service providers, and communicated to users.</td>
<td>All</td>
</tr>
<tr>
<td>SO4</td>
<td>Employment</td>
<td>A workforce development plan would be prepared and implemented during construction, to support local employment and business opportunities, provide skills development, and increase workplace diversity.</td>
<td>All</td>
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<td><strong>Business impacts</strong></td>
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<td></td>
<td><strong>Design/pre-construction</strong></td>
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<tr>
<td>BI1</td>
<td>Managing construction impacts</td>
<td>A business management plan would be prepared and implemented during construction, to define the location specific measures and strategies to minimise impacts on individual businesses during construction. The plan would also include: • a business consultation forum • roles and responsibilities • monitoring, auditing, reporting, and complaints management procedures.</td>
<td>All</td>
</tr>
<tr>
<td>BI2</td>
<td>Supporting businesses during construction</td>
<td>The Sydney Metro City &amp; Southwest Small Business Owners Support Program would be implemented to provide assistance to small business owners adversely impacted by construction. The program</td>
<td>All</td>
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</table>
would be administered by a retail advisory/support panel established by Sydney Metro.

**Landscape and visual impacts**

**Design/pre-construction**

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<tr>
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<th>Relevant location(s)</th>
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<tbody>
<tr>
<td>LV1</td>
<td>General visual impacts</td>
<td>The design would be guided by the Transport for NSW Around the Tracks – urban design for heavy and light rail.</td>
<td>All</td>
</tr>
<tr>
<td>LV2</td>
<td></td>
<td>Sydney Metro would work with the Inner West and Canterbury-Bankstown councils to identify relevant urban design principles, and deliver agreed urban design outcomes on council land, where reasonable and feasible.</td>
<td>All</td>
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<tr>
<td>LV3</td>
<td></td>
<td>Sydney Metro would prepare Station Design and Precinct Plans for each station. The plans would aim to ensure that the stations and facilities are sympathetic and complement local character, and are integrated with future plans for development. The plans would consider the following: urban design context, sustainable design and maintenance, community safety, amenity and privacy, including ‘safer by design’ principles where relevant, opportunities for public art, landscaping and design opportunities to mitigate the visual impacts of rail infrastructure and operation facilities, incorporation of salvaged historic and artistic elements on the project design, details of where and how recommendations from the Design Review Panel have been considered in the plan.</td>
<td>AS</td>
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</table>

Documents to be considered by the plans include, but are not limited to:
- Inner West Council’s Dulwich Hill Station Precinct public domain master plan
- Outcomes of the master plan for Bankstown Station.

The plans would be prepared and implemented in consultation with the Department of Planning and Environment, Inner West and Canterbury-Bankstown councils, Chambers of Commerce, and the local community.
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<tr>
<td>LV4</td>
<td>Impacts to trees and screening vegetation</td>
<td>The management of trees during detailed design and construction planning would be guided by the project’s Tree Management Strategy, which would be developed in consultation with councils and include consideration of relevant local plans and strategies. Where removal cannot be avoided, trees would be replaced in accordance with the Tree Management Strategy, including replacement of removed trees in a two for one ratio. Opportunities to retain and protect existing trees would be defined during detailed design and construction planning, in accordance with the project’s Tree Management Strategy. The design would aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.</td>
<td>All</td>
</tr>
<tr>
<td>LV5</td>
<td>Light spill</td>
<td>Lighting would be designed in accordance with AS 4282 Control of the Obtrusive Effects of Outdoor Lighting. Lighting would be designed to minimise light spill and glare into adjoining areas.</td>
<td>All</td>
</tr>
<tr>
<td>LV6</td>
<td>Noise barriers and fencing</td>
<td>The selection of materials and colours for noise barriers and hoardings would aim to minimise their visual prominence.</td>
<td>Noise barrier locations</td>
</tr>
<tr>
<td>LV7</td>
<td></td>
<td>The use of transparent panels in noise barriers would be considered where views to local landscape features and district views would be obstructed.</td>
<td>Noise barrier locations</td>
</tr>
<tr>
<td>LV8</td>
<td></td>
<td>Fencing would be designed to be of a high quality urban finish near stations.</td>
<td>AS</td>
</tr>
<tr>
<td>LV9</td>
<td>Substations</td>
<td>The detailed design of the substations would ensure that they incorporate appropriate architectural treatments and landscaping to minimise the potential for visual impacts. Surrounding property owners would be consulted during design of the substations.</td>
<td>Substations</td>
</tr>
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<td></td>
<td>Construction</td>
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<tr>
<td>LV10</td>
<td>Visual impacts</td>
<td>A visual amenity management plan would be prepared and implemented during construction, to define the measures to minimise visual impacts during construction. The plan would include requirements in relation to construction site remediation.</td>
<td>All</td>
</tr>
<tr>
<td>LV11</td>
<td></td>
<td>Mitigation measures for landscape and visual impacts would be implemented as soon as feasible and reasonable after the commencement of construction, and remain for the duration of the construction period.</td>
<td>All</td>
</tr>
<tr>
<td>LV12</td>
<td>Impacts to trees</td>
<td>Trees to be retained would be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the project’s Tree Management Strategy. Any tree pruning would be undertaken in accordance with the project’s Tree Management Strategy, guided by a tree report prepared by a qualified arborist.</td>
<td>All</td>
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<tr>
<td>LV13</td>
<td>Impacts from construction, including compounds and work sites</td>
<td>The design and maintenance of construction compound hoardings would aim to minimise visual amenity and landscape character impacts. Graffiti would be removed promptly, and public art opportunities would be considered.</td>
<td>All</td>
</tr>
<tr>
<td>LV14</td>
<td></td>
<td>The selection of materials and colours would aim to minimise their visual prominence.</td>
<td>All</td>
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<tr>
<td>LV15</td>
<td></td>
<td>Lighting of work areas, compounds and work sites would be oriented to minimise glare and light spill impact on adjacent receivers.</td>
<td>All</td>
</tr>
<tr>
<td>LV16</td>
<td></td>
<td>Following completion of construction, site restoration would be undertaken in accordance with the visual amenity management plan. Temporary impacts to public open space would be rehabilitated in consultation with the relevant local council and/or landowner.</td>
<td>All</td>
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**Soils and contamination**

**Design/pre-construction**

<p>|     |                                                                        | Prior to ground disturbance in high probability acid sulfate areas, testing would be carried out to determine the presence of acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the <em>Acid Sulfate Soil Manual</em> (Acid Sulfate Soil Management Advisory Committee, 1998) and the <em>Waste Classification Guidelines - Part 4: Acid Sulfate Soils</em> (EPA, 2014). | MA, CB, CP           |
| SC3 | Saline soils                                                           | Prior to ground disturbance in areas of potential soil salinity, testing would be carried out to confirm the presence of saline soils. If saline soils are encountered, they would be managed in accordance with <em>Site Investigations for Urban Salinity</em> (DLWC, 2002). | PB, BA               |
| SC4 | Contamination                                                          | WorkCover dangerous goods searches would be carried out for properties that have potential contamination near Belmore Station, to provide additional site characterisation and identify the risk of contamination in these areas. | BE                   |
| SC5 |                                                                        | Prior to ground disturbance, a detailed contamination assessment would be undertaken in areas with a medium to high risk of contamination, to confirm the nature and extent of contamination, specific requirements for further investigation and remediation, and/or management requirements of any contamination. | MA, CP, BE, PB, BA   |
| SC6 |                                                                        | Hazardous materials surveys would be undertaken during detailed design for all proposed demolition                                                                                                                  | All                  |</p>
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<td>activities, and for utility adjustments as required.</td>
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<td>SC7</td>
<td></td>
<td>In the event a Remediation Action Plan is required, it would be developed in accordance with <em>Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land</em> (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) and a NSW Environment Protection Authority Accredited site auditor would be engaged to audit the works.</td>
<td>MA, CP, BE, PB, BA</td>
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<tr>
<td></td>
<td>Construction</td>
<td>In the event that indicators of contamination are encountered during construction (such as odours or visually contaminated materials), work in the area would cease, and the finds would be managed in accordance with the unexpected contamination finds procedure.</td>
<td>All</td>
</tr>
<tr>
<td>SC8</td>
<td>Unexpected contamination</td>
<td>During any maintenance work where soils are exposed, sediment and erosion control devices would be installed in accordance with <em>Managing Urban Stormwater: Soils and Construction</em> (Landcom, 2004).</td>
<td>All</td>
</tr>
<tr>
<td>SC9</td>
<td>Soil erosion and sedimentation</td>
<td>The project would be designed in accordance with water quality design criteria based on the <em>Water Sensitive Urban Design Guideline</em> (Roads and Maritime, 2017) to ensure there is minimal potential for water quality impacts, including incorporating water sensitive urban design elements.</td>
<td>All</td>
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<td>A construction water quality monitoring program would be developed and would commence prior to construction, to monitor water quality at identified discharge points. The program would include relevant water quality objectives, parameters, and criteria and specific monitoring locations identified in consultation with DPI (Water) and the EPA.</td>
<td>All</td>
</tr>
<tr>
<td>FHW1</td>
<td>Stormwater runoff</td>
<td>Where feasible and reasonable, detailed design would result in no net increase in stormwater runoff rates in all storm events, unless it can be demonstrated that increased runoff rates as a result of the project would not increase downstream flood risk.</td>
<td>All</td>
</tr>
<tr>
<td>FHW2</td>
<td>Flooding</td>
<td>Detailed design of the project would, as required at Bankstown between Stacey Street and Marion Street, take into account the impact of overland flooding for the full range of floods events up to the Probable Maximum Flood level.</td>
<td>BA</td>
</tr>
<tr>
<td>FHW3</td>
<td>Water quality</td>
<td></td>
<td>All</td>
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<tr>
<td>FHW4</td>
<td>Water quality monitoring</td>
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<td>All</td>
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<tr>
<td>FHW5</td>
<td>Flooding</td>
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<td>All</td>
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<td>Not worsen is defined as:</td>
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<td>• a maximum increase in flood levels of 50 mm in a one per cent AEP event</td>
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<td>• a maximum increase in time of inundation of one hour in a one per cent AEP event</td>
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<td>• no increase in the potential for soil erosion and scouring from any increase in flow velocity in a one per cent AEP flood event.</td>
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<td>FHW6</td>
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<td>The site layout and staging of construction activities would:</td>
<td>All</td>
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<td>• avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required</td>
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<td>• consider how works would affect the existing stormwater network such that alternatives are in place prior to any disconnection or diversion of stormwater infrastructure.</td>
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<tr>
<td>FHW7</td>
<td>Watercourse impacts</td>
<td>Works within or near watercourses (including the Cooks River) would be undertaken with consideration given to the NSW Office of Water’s guidelines for controlled activities.</td>
<td>All</td>
</tr>
<tr>
<td>FHW8</td>
<td>Water quality</td>
<td>Erosion and sediment mitigation measures would be installed and maintained for the duration of the construction period.</td>
<td>All</td>
</tr>
<tr>
<td>FHW9</td>
<td>Water quality monitoring</td>
<td>The water quality monitoring program would continue during construction, to monitor water quality at identified discharge points.</td>
<td>All</td>
</tr>
<tr>
<td>FHW10</td>
<td>Operation</td>
<td>Discharges from construction water treatment devices would be monitored to ensure compliance with the discharge criteria in the environment protection licence.</td>
<td>All</td>
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<td>Operational water discharges would be managed in accordance with the water quality management requirements specified in the environment protection licence.</td>
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<tr>
<td>B1</td>
<td>Direct impacts to biodiversity</td>
<td>Detailed design and construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box.</td>
<td>All</td>
</tr>
<tr>
<td>B2</td>
<td></td>
<td>Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.</td>
<td>All</td>
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<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
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<tr>
<td>B3</td>
<td>Direct impacts to biodiversity</td>
<td>Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.</td>
<td>All</td>
</tr>
<tr>
<td>B4</td>
<td>Impacts to Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.</td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.</td>
<td>All</td>
<td></td>
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<tr>
<td><strong>Operation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8</td>
<td>Management of weeds</td>
<td>Annual inspections would be undertaken for weed infestations and to assess the need for control measures.</td>
<td>All</td>
</tr>
<tr>
<td>B9</td>
<td>Any outbreak of priority weeds and/or weeds of national environmental significance would be managed in accordance with the relevant guidelines.</td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>B10</td>
<td>Threatened species and habitats</td>
<td>Sydney Metro would take necessary steps to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.</td>
<td>All</td>
</tr>
<tr>
<td><strong>Air quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AQ1</td>
<td>Air quality impacts</td>
<td>An air quality management plan would be prepared and implemented during construction, to define the measures to minimise air quality impacts during construction.</td>
<td>All</td>
</tr>
<tr>
<td><strong>Sustainability And Climate Change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCC1</td>
<td>Sustainability</td>
<td>Sustainability initiatives and targets would be reviewed and incorporated into the detailed design to support the achievement of the project's sustainability objectives.</td>
<td>All</td>
</tr>
<tr>
<td>ID</td>
<td>Impact</td>
<td>Mitigation measures</td>
<td>Relevant location(s)</td>
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</tr>
<tr>
<td>SCC2</td>
<td>All SCC2</td>
<td>A best practice level of performance would be targeted using relevant sustainability rating tools e.g. ISCA as built ‘excellent’ level rating.</td>
<td>All</td>
</tr>
<tr>
<td>SCC3</td>
<td>All SCC3</td>
<td>A sustainable procurement strategy would be developed and implemented to apply to Principal Contractors, their subcontractors and their suppliers.</td>
<td>All</td>
</tr>
<tr>
<td>SCC4</td>
<td>Climate change</td>
<td>A workforce development and industry participation strategy would be developed covering both construction and operation.</td>
<td>All</td>
</tr>
<tr>
<td>SCC5</td>
<td>Greenhouse gas emissions</td>
<td>The need for climate change risk treatments would be assessed and incorporated into the detailed design, where required.</td>
<td>All</td>
</tr>
<tr>
<td>SCC6</td>
<td>Sustainability</td>
<td>Sustainability reporting (and corrective action where required) would be undertaken during construction.</td>
<td>All</td>
</tr>
<tr>
<td>SCC7</td>
<td>Sustainability</td>
<td>The construction workforce development plan would be implemented.</td>
<td>All</td>
</tr>
<tr>
<td>SCC8</td>
<td>Greenhouse gas emissions</td>
<td>25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset.</td>
<td>All</td>
</tr>
<tr>
<td>SCC9</td>
<td>Sustainability</td>
<td>Prior to operation commencing, sustainability initiatives would be reviewed and updated, and relevant initiatives would be implemented to support the achievement of the project’s sustainability objectives.</td>
<td>All</td>
</tr>
<tr>
<td>SCC10</td>
<td>Sustainability</td>
<td>The operation workforce development plan would be implemented.</td>
<td>All</td>
</tr>
<tr>
<td>SCC11</td>
<td>Climate change risks</td>
<td>Periodic review of climate change risks would be carried out to ensure ongoing resilience to the impacts of climate change.</td>
<td>All</td>
</tr>
<tr>
<td>SCC12</td>
<td>Greenhouse gas emissions</td>
<td>100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation would be offset.</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>Hazards, risks and safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design/pre-construction</td>
<td></td>
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<tr>
<td>HRS1</td>
<td>Public safety</td>
<td>A hazard analysis would be undertaken during the detailed design stage to identify risks to public safety from the project, and how these can be mitigated through safety in design.</td>
<td>All</td>
</tr>
<tr>
<td>HRS2</td>
<td>Electric and magnetic fields</td>
<td>Substations would be designed to ensure that electric and magnetic fields remain within the limits</td>
<td>SS</td>
</tr>
</tbody>
</table>

Schedule E3. —Planning Approval
<table>
<thead>
<tr>
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<th>Mitigation measures</th>
<th>Relevant location(s)</th>
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<tr>
<td></td>
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<td>set by the following guidelines:</td>
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</table>
|      |                                | • RHS 30  (Radiation Health Series 30), *Interim Guidelines on Limits of Exposure to 50/60Hz Electric & Magnetic Fields* (1989), National Health and Medical Research Council  
• RPS 3  (Radiation Protection Series No.3), *Maximum Exposure Levels to Radiofrequency Fields* – 3 kHz to 300 GHz (2002), Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)  
• AS/NZS 2344:1997 and Amdt 1:2006 *Limits of electromagnetic interference from overhead a.c. powerlines and high voltage equipment installations in the frequency range 0.15 to 1000 MHz.*  
During commissioning of the substations, monitoring would be undertaken to determine the electric and magnetic field levels. Should exceedances of the criteria be found, measures to reduce these exceedances would be implemented.  
All utilities adjustments or relocation would be undertaken in accordance with the Utilities Management Framework.  
All hazardous substances that may be required for construction and operation would be stored and managed in accordance with the *Storage and Handling of Dangerous Goods Code of Practice* (WorkCover NSW, 2005) and the *Hazardous and Offensive Development Application Guidelines: Applying SEPP 33* (Department of Planning, 2011).  
Detailed design would include measures to minimise excess spoil generation. This would include a focus on optimising the design to minimise spoil volumes, and the reuse of material on-site. A recycling target of at least 90 per cent would be adopted. Spill would be managed in accordance with the spoil management hierarchy. Target 700 per cent reuse of reusable spoil. Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging. All waste would be assessed, classified, managed and disposed of in accordance with the *Waste Classification Guidelines* (EPA, 2014).  
Waste segregation bins would be located at various locations within the project area, if space permits, to |                      |
<p>| HRS3 | Utilities                       |                                                                                                                                                                                                                      | All                  |
|      |                                 |                                                                                                                                                                                                                      |                      |
| HRS4 | Hazardous materials and substances |                                                                                                                                                                                                                      | All                  |
| WM1  | Waste generation and recycling |                                                                                                                                                                                                                      | All                  |
| WM2  |                                 |                                                                                                                                                                                                                      | All                  |
| WM3  | Waste and spoil management      |                                                                                                                                                                                                                      | All                  |
| WM4  |                                 |                                                                                                                                                                                                                      | All                  |
| WM5  |                                 |                                                                                                                                                                                                                      | All                  |
| WM6  |                                 |                                                                                                                                                                                                                      | All                  |
| WM7  |                                 |                                                                                                                                                                                                                      | All                  |</p>
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<td>facilitate segregation and prevent cross contamination.</td>
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</tr>
<tr>
<td>Impact</td>
<td>Mitigation measures</td>
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</table>
| Cumulative impacts | Sydney Metro would manage and co-ordinate the interface with projects under construction at the same time. Co-ordination and consultation with the following stakeholders would occur, where required:  
   • Department of Planning and Environment  
   • Roads and Maritime Services  
   • Sydney Trains  
   • NSW Trains  
   • Sydney Buses  
   • Inner West Council  
   • Canterbury-Bankstown Council  
   • Sydney Motorways Corporation  
   • emergency service providers  
   • utility providers  
   • construction contractors.  
   Co-ordination and consultation with these stakeholders would include:  
   • provision of regular updates to the detailed construction program, construction sites and haul routes  
   • identification of key potential conflict points with other construction projects  
   • developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve:  
      - adjustments to the construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of Sydney Metro or other construction projects  
   • co-ordination of traffic management arrangements between projects. | All |
1. **NO LIMITATION ON DEED**

   Nothing in this Schedule E4 limits the Principal's rights or affects the LW Contractor's rights and obligations under any clause of this deed.

2. **GLOBAL SIA**

   (a) The LW Contractor:

   (i) acknowledges that:

   (A) TfNSW has entered into the Global Safety Interface Agreement dated 28 June 2013 with Sydney Trains *(Global SIA)*;

   (B) the Principal and Sydney Trains are seeking to enter into an agreement that complies with Part 3 Division 6 of the Rail Safety National Law *(Sydney Metro Global SIA)*;

   (C) the Principal has agreed with Sydney Trains that until the Sydney Metro Global SIA is executed, the Principal will ensure that the LW Contractor's Activities are carried out in accordance with the requirements of the Global SIA;

   (D) accordingly for the purposes of this clause 2 of this Schedule E4, rights and obligations of TfNSW under the Global SIA should be interpreted as rights and obligations of the Principal; and

   (E) following execution of the Sydney Metro Global SIA, clause 3.6 of the General Conditions will apply in respect of the Sydney Metro Global SIA;

   (ii) must, in performing, the LW Contractor's Activities:

   (A) unless otherwise directed by the Principal, comply with, satisfy, carry out and fulfil all of the obligations, conditions and requirements of the Global SIA as if it were named as the Principal in the Global SIA so as to ensure that the Principal is able to fully meet those obligations under the Global SIA or otherwise at law except to the extent that the table below:

   (aa) provides that the Principal will comply with, satisfy, carry out and fulfil the obligation, condition or requirement; or

   (bb) limits the LW Contractor's obligation in respect of that obligation, condition or requirement; and

   (B) comply with and fulfil any conditions, obligations or requirements allocated to the LW Contractor in this Schedule E4 that are additional to or more stringent or onerous than the conditions and requirements described in clause 2(a)(ii)(A) of this Schedule E4;

   (iii) must assist the Principal, in any way that the Principal reasonably requires to enable the Principal to perform the obligations identified for the Principal to perform in the table below; and
(iv) may not exercise any of the Principal’s discretions or rights under the Global SIA unless it has obtained the Principal’s prior written consent (which must not be unreasonably withheld or delayed).

(b) Where the Global SIA provides that the Principal must ensure that the LW Contractor will do something or comply with an obligation the LW Contractor must, in performing the LW Contractor’s Activities, do that thing or comply with, satisfy, carry out and fulfil that obligation in accordance with clause 2(a)(ii) as if it was stated to be an obligation of the Principal.

(c) Where the Global SIA provides for the Principal to provide a document, notice or information to Sydney Trains, the LW Contractor:

(i) must not provide any such document, notice or information directly to Sydney Trains; and

(ii) must provide such document, notice or information to the Principal within a reasonable time sufficient for the Principal to review and comment on the document, notice or information and provide it to Sydney Trains within the time period required by the Global SIA.

(d) The LW Contractor must, in carrying out the LW Contractor’s Activities:

(i) comply with any reasonable directions of the Principal’s Representative in relation to compliance with the conditions and requirements of the Global SIA or other requirements of Sydney Trains;

(ii) ensure that no act or omission of the LW Contractor constitutes, causes or contributes to any breach by the Principal of its obligations to Sydney Trains under the Global SIA or otherwise at law; and

(iii) otherwise act consistently with the terms of the Global SIA.

(e) Whenever, pursuant to the terms of the Global SIA, the Principal makes an acknowledgement or gives a release or warranty, indemnity, or covenant to Sydney Trains under any clause of the Global SIA then, subject to what is provided in this Schedule E4 and the other terms of this deed, the LW Contractor is deemed to make the same acknowledgement or give the same release or warranty, indemnity, or covenant to the Principal on the same terms and conditions as the acknowledgement, release or warranty, indemnity, or covenant made or given by the Principal under the Global SIA in the same way as if the relevant terms of the acknowledgement, release or warranty, indemnity or covenant were set out in full in this deed.

(f) The LW Contractor acknowledges that to the extent that the Global SIA contains a provision pursuant to which Sydney Trains is stated to make no representation as to a state of affairs, the LW Contractor agrees that the Principal similarly makes no representation to the LW Contractor in respect of that state of affairs in the same way as if the relevant terms of the Global SIA were set out fully in this deed.

(g) Nothing in the Global SIA or this Schedule E4 limits the Principal’s rights or the LW Contractor’s obligations in relation to Construction Completion, Completion or the rectification of Defects under this deed.

(h) The LW Contractor must indemnify the Principal from and against any claim by Sydney Trains or any Liability of the Principal to Sydney Trains arising out of or in any way in connection with the Global SIA to the extent that the Liability or claim is caused by, or arises out of, or in any way in connection with, the LW Contractor’s Activities:

(i) provided that the LW Contractor’s responsibility to indemnify the Principal will be reduced to the extent that a negligent act or omission of the
Principal or an agent of the Principal contributed to the Liability or claim; and

(ii) except to the extent it is limited in this Schedule E4.

(i) The LW Contractor:

(i) bears the full risk of:

(A) it complying with the obligations under this Schedule E4; and

(B) any acts or omissions of Sydney Trains or its employees, agents, contractors or officers; and

(ii) will not be entitled to make, and the Principal will not be liable upon, any Claim arising out of or in any way in connection with:

(A) the risks referred to in clause 2(i)(i) of this Schedule E4; or

(B) any acts or omissions of Sydney Trains or its employees, agents, contractors or officers.
3. SYDNEY TRAINS FIW TRANSITION AGREEMENT

(a) The LW Contractor:

(i) acknowledges that the Principal has entered into, or will enter into, the following agreements with Rail Corporation New South Wales and Sydney Trains:

(A) the "Sydney Metro City & Southwest - Transition Agreement Foundation Infrastructure Works Contract (000-TPA- ST- RC 002)" (Sydney Trains Transition Agreement) dated 7 November 2018; and

(B) the draft "Scope of Works and Access Schedule for LW Works" to be entered into in accordance with clause 23 of the Sydney Trains Transition Agreement (LW Scope of Works and Access Schedule),

and that the terms of the Sydney Trains Transition Agreement must be read together with the LW Scope of Works and Access Schedule to determine the obligations of the Principal under the Sydney Trains Transition Agreement and the obligations of the LW Contractor under this Schedule E4; and

(ii) must, in performing, the LW Contractor’s Activities:

(A) unless otherwise directed by the Principal, comply with, satisfy, carry out and fulfil all of the obligations, conditions and requirements of the Sydney Trains Transition Agreement as if it were named as the Principal in the Sydney Trains Transition Agreement so as to ensure that the Principal is able to fully meet
those obligations under the Sydney Trains Transition Agreement or otherwise at law except to the extent that the table below:

(aa) provides that the Principal will comply with, satisfy, carry out and fulfil the obligation, condition or requirement; or

(bb) limits the LW Contractor's obligation in respect of that obligation, condition or requirement; and

(B) comply with and fulfill any conditions, obligations or requirements allocated to the LW Contractor in this Schedule E4 that are additional to or more stringent or onerous than the conditions and requirements described in clause 3(a)(ii)(A) of this Schedule E4;

(iii) must assist the Principal, in any way that the Principal reasonably requires to enable the Principal to perform the obligations identified for the Principal to perform in the table below; and

(iv) may not exercise any of the Principal's discretions or rights under the Sydney Trains Transition Agreement unless it has obtained the Principal's prior written consent (which must not be unreasonably withheld or delayed).

(b) Where the Sydney Trains Transition Agreement provides that the Principal must ensure that the LW Contractor will, do something or comply with an obligation, the LW Contractor, must in performing the LW Contractor's Activities, do that thing or comply with, satisfy, carry out and fulfill that obligation in accordance with clause 3(a)(ii) of this Schedule E4 as if it was stated to be an obligation of the Principal.

(c) The LW Contractor acknowledges that the Sydney Trains Transition Agreement provides for works to be undertaken for and on behalf of the Principal that do not form part of the LW Contractor's Activities and nothing in this clause 3 of this Schedule E4 imposes obligations on the LW Contractor in relation to any Foundation Infrastructure Works Contract other than the LW Contract (as those terms are defined in the Sydney Trains Transition Agreement).

(d) Where the Sydney Trains Transition Agreement provides for the Principal to provide a document, notice or information to Sydney Trains, the LW Contractor:

(i) subject to clause 3(d)(iii) of this Schedule E4, must not provide any such document, notice or information directly to Sydney Trains;

(ii) must provide such document, notice or information to the Principal within a reasonable time sufficient for the Principal to review and comment on the document, notice or information and provide it to Sydney Trains within the time period required by the Sydney Trains Transition Agreement; and

(iii) for the purposes of:

(A) clause 26.2(a) of the Sydney Trains Transition Agreement; and

(B) clauses 9.4(c) and 9.11(d) of this deed,

must submit the documentation directly to Sydney Trains.

(e) The LW Contractor must, in carrying out the LW Contractor's Activities:

(i) comply with any reasonable directions of the Principal's Representative in relation to compliance with the conditions and requirements of the
Sydney Trains Transition Agreement or other requirements of Sydney Trains;

(ii) ensure that no act or omission of the LW Contractor constitutes, causes or contributes to any breach by the Principal of its obligations to Sydney Trains under the Sydney Trains Transition Agreement or otherwise at law; and

(iii) otherwise act consistently with the terms of the Sydney Trains Transition Agreement.

(f) Whenever, pursuant to the terms of the Sydney Trains Transition Agreement, the Principal makes an acknowledgement or gives a release or warranty, indemnity, or covenant to Sydney Trains under any clause of the Sydney Trains Transition Agreement then, subject to what is provided in this Schedule E4 and the other terms of this deed, the LW Contractor is deemed to make the same acknowledgement or give the same release or warranty, indemnity, or covenant to the Principal on the same terms and conditions as the acknowledgement, release or warranty, indemnity, or covenant made or given by the Principal under the Sydney Trains Transition Agreement in the same way as if the relevant terms of the acknowledgement, release or warranty, indemnity or covenant were set out in full in this deed.

(g) The LW Contractor acknowledges that to the extent that the Sydney Trains Transition Agreement contains a provision pursuant to which Sydney Trains is stated to make no representation as to a state of affairs, the LW Contractor agrees that the Principal similarly makes no representation to the LW Contractor in respect of that state of affairs in the same way as if the relevant terms of the Sydney Trains Transition Agreement were set out fully in this deed.

(h) Nothing in the Sydney Trains Transition Agreement or this Schedule E4 limits the Principal’s rights or the LW Contractor’s obligations in relation to Construction Completion, Completion or the rectification of Defects under this deed.

(i) The LW Contractor must indemnify the Principal from and against any claim by Sydney Trains against the Principal or any Liability of the Principal to Sydney Trains arising out of or in any way in connection with the Sydney Trains Transition Agreement to the extent that the Liability or claim is caused by, or arises out of, or in any way in connection with, the LW Contractor’s Activities:

(i) provided that the LW Contractor’s responsibility to indemnify the Principal will be reduced to the extent that a negligent act or omission of the Principal or an agent of the Principal contributed to the Liability or claim; and

(ii) except to the extent it is limited in this Schedule E4.

(j) The LW Contractor:

(i) bears the full risk of:

(A) it complying with the obligations under this Schedule E4; and

(B) any acts or omissions of Sydney Trains or its employees, agents, contractors or officers; and

(ii) will not be entitled to make, and the Principal will not be liable upon, any Claim arising out of or in any way in connection with:

(A) the risks referred to in clause 3(j)(i) of this Schedule E4; or
(B) any acts or omissions of Sydney Trains or its employees, agents, contractors or officers.

(k) Terms used in the table below that are capitalised but are not defined in this deed have the same meaning as in the Sydney Trains Transition Agreement.

Sydney Trains FIW Transition Agreement
4. **COMMON DISPUTES**

(a) In this clause 4 of Schedule E4:

**Third Party** means a party to a Third Party Agreement other than the Principal.

**Common Dispute** means a dispute described in clause 4(b) of this Schedule E4.

(b) A Dispute under this deed may be concerned with matters that also arise in respect of the respective rights and obligations of the Principal and a Third Party to one of the Third Party Agreements referred to in this Schedule E4 including where the:

(i) Principal is in breach of a provision of this deed to the extent such a breach is caused by a Third Party under its respective Third Party Agreement;

(ii) Principal is entitled to obtain remedies or benefits under that Third Party Agreement which are similar to remedies or benefits claimed by the LW Contractor in a Claim by the LW Contractor under this deed;

(iii) LW Contractor has rights against the Principal under this deed, including under a warranty or indemnity or specific right of reimbursement or recovery in this deed, and the Principal has similar rights against the Third Party under a Third Party Agreement including under a corresponding warranty or indemnity or specific right of reimbursement or recovery in the Third Party Agreement; or

(iv) LW Contractor has a Claim against the Principal and the Principal has a Claim against a Third Party based on the same or similar events or circumstances.

(c) In the event that there is a Common Dispute, the Principal may, in its absolute discretion:
(i) determine that the Common Dispute be resolved in accordance with the provisions of this clause 4 of Schedule E4; and

(ii) notify the LW Contractor in writing of its decision within 20 Business Days of the Common Dispute arising,

in which case clauses 4(d) to 4(k) of this Schedule E4 will then apply in respect of that Common Dispute.

(d) In the event that there is a Common Dispute, then:

(i) clause 20 will not apply to the resolution of the Common Dispute that is the subject of the Principal's notice; and

(ii) the LW Contractor acknowledges and agrees that the purpose of this clause 4 of Schedule E4 is:

(A) to provide the LW Contractor with comparable remedies and entitlements in respect of Common Disputes, and to limit the LW Contractor's rights against the Principal in respect of Common Disputes by reference to the Principal's rights and entitlements under or in connection with Third Party Agreements; and

(B) not to reduce or disentitle or otherwise affect the validity of any Claim by the Principal against a Third Party under, arising out of, or in any way in connection with the relevant Third Party Agreement.

(e) In respect of all Common Disputes:

(i) the LW Contractor's entitlement to receive compensation from the Principal, and the Principal's liability to pay compensation to the LW Contractor, will only arise at the time the relevant Common Dispute is resolved or determined;

(ii) if any compensation is payable by the Principal to the LW Contractor under this deed in respect of a Common Dispute, the LW Contractor will have the same entitlement to recover compensation under this deed as the Principal has to recover that compensation from a Third Party under the relevant Third Party Agreement in respect of the subject matter of the Common Dispute;

(iii) any rights the LW Contractor has against the Principal will not exceed the equivalent rights to which the Principal is entitled under the relevant Third Party Agreement; and

(iv) the Principal will pass through to the LW Contractor the proportion of any compensation (including damages or other form or relief) to which the Principal is entitled under the relevant Third Party Agreement in respect of the subject matter of the Common Dispute:

(A) to the extent that this is referrable to the LW Contractor, including any liability, Claim or loss of the LW Contractor; and

(B) determined by reference to what is actually compensated or allowed by a Third Party under the relevant Third Party Agreement.

(f) The Principal agrees to:
Execution Version

(i) request that the relevant Third Party permit the LW Contractor to
directly make representations in respect of the Common Dispute;

(ii) if it is unable to obtain the Third Party's consent as contemplated under
clause 4(f)(i) of this Schedule E4, make on behalf of the LW Contractor
whatever representations in respect of the Common Dispute that the LW
Contractor reasonably requests; and

(iii) provide:

(A) regular updates to the LW Contractor; and

(B) whatever information and documents the LW Contractor
reasonably requests,
as to the progress of the Common Dispute.

(g) The Principal's Liability to the LW Contractor in respect of the subject matter of
the Common Dispute:

(i) is satisfied by payment to the LW Contractor in accordance with this
clause 4 of Schedule E4; or

(ii) if the Third Party is not liable to the Principal, is deemed to be satisfied
on the determination of that matter (whether by dispute resolution
under the respective Third Party Agreement or otherwise), provided
that:

(A) the Principal has complied with its obligations under this clause
4 of this Schedule E4 with respect to recovery of the Principal's
and the LW Contractor's entitlements from the Third Party; and

(B) all appeals from such determination have been exhausted.

(h) The LW Contractor agrees:

(i) to provide all documents, assistance, and cooperation reasonably
requested by the Principal (and in the time requested by the Principal) in
connection with the Common Dispute;

(ii) that where a Third Party Agreement contemplates:

(A) alternative dispute resolution (including arbitration and expert
determination):

(I) a like process will apply to the Common Dispute
between the parties; and

(II) the LW Contractor consents to the Common Dispute
being heard together with (or consolidated with) that
alternative dispute resolution process; and

(B) litigation, the LW Contractor consents to the Common Dispute
being consolidated with (or heard together with) that litigation; and

(iii) to be bound by the outcome of the Common Dispute resolution process
to the extent it affects the LW Contractor's rights and obligations under
this deed.
(l) The LW Contractor's entitlement to a remedy in respect of a Common Dispute will not be reduced to the extent to which the Principal's entitlements under a Third Party Agreement are reduced or extinguished due to the Principal's breach or failure to comply with the Third Party Agreement or other act or omission (in each case to the extent not caused by the LW Contractor).

(j) To the extent the LW Contractor has recovered compensation in respect of a Common Dispute under another provision of this deed, then the LW Contractor is not entitled to the same compensation under this clause 4 of Schedule E4.

(k) Any payment to which the LW Contractor is entitled under this clause 4 of Schedule E4 in respect of a Common Dispute will be paid by the Principal to the LW Contractor within 20 Business Days from the date of the settlement or final determination (with all rights of appeal having been exhausted) of the Common Dispute under or in connection with the Third Party Agreement.
SCHEDULE E5. — THIRD PARTY AGREEMENTS
(Clauses 1.1, 3.1(b)(vii), 3.6, 7.1(d), 9, 12.15(a) and 21.1(a))

This Schedule E5 contains the following attachments:

- Global Safety Interface Agreement (dated 28 June 2013); and
- Sydney Metro City & Southwest — Transition Agreement Foundation Infrastructure Works Contract (000-TPA-ST_RC-02) (redacted; dated 7 November 2018), including:
SCHEDULE E6. — LW CONTRACTOR'S INITIAL PROGRAM

(Clauses 1.1 and 14.2(a))

The LW Contractor's Initial Program is contained as an electronic file in Schedule G1 to this LW Contract.
SCHEDULE E7. – KEY PROGRAMME TIME PERIODS
SCHEDULE E8. — NOT USED
SCHEDULE E9. – NOT USED