

Out-of-Hours Work Protocol

Parramatta Light Rail – Stage 1

PLR-TFNSW-CBD-PE-FRM-000002

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Glossary / Abbreviations

Abbreviations	Expanded text
AA	The independent Acoustics Advisor for the CSSI
Annoying activities	Referred to as Special Audible Characteristics in the Transport for NSW Construction Noise and Vibration Strategy
CNVIS	Construction Noise and Vibration Impact Statement
CNVS	Transport for NSW Construction Noise and Vibration Strategy (2018)
CoA	Conditions of Approval
CSSI	Critical State Significant Infrastructure
DPE	NSW Department of Planning and Environment
Eat Street	A section of Church Street, between Palmer Street and George Street in Parramatta
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	The independent Environmental Representative for the CSSI
Highly Noise Intensive Works	Rock breaking, rock hammering, sheet piling, pile driving and any similar activity. Referred to as activities with Special Audible Characteristics in the CNVS
OOHW	Out-of-hours work (i.e. outside of standard construction hours stipulated in the planning approval conditions)
PLR	Parramatta Light Rail – Stage 1
POEO Act	<i>Protection of the Environment Operations (POEO) Act 1997</i> (NSW)
Rating background level (RBL)	The overall single-figure background noise level for each assessment period. Determination of the rating background level is by the method described in the <i>NSW Noise Policy for Industry</i> (EPA 2017). This approach aims to result in the noise management level being met for at least 90% of their time periods (15 minute each) over which reactions of annoyance can occur.
REMMM	Revised Environmental Mitigation and Management Measure (as documented in the SPIR).
Secretary	The Secretary of the New South Wales Department of Planning and Environment
Sensitive receiver	Includes residences, temporary accommodation such as caravan parks and camping grounds, and health care facilities (including nursing homes, hospitals). Also includes the following, when in use: educational institutions (including preschools, schools, universities, TAFE colleges), religious facilities (including church), child care centres, passive recreation areas, commercial premises (including film and television studios, research facilities, entertainment spaces, restaurants, office premises and retail spaces), and others as identified by the Secretary [DPE].
SPIR	Submissions and Preferred Infrastructure Report

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1 Introduction

1.1 Context

This Out-of-Hours Work Protocol (the Protocol) outlines the process for consideration, management and approval of work on the Parramatta Light Rail (PLR) that is carried out outside of standard construction hours (e.g. out-of-hours) where an Environmental Protection Licence (EPL) does not apply. The Protocol has been prepared to comply with the Infrastructure Approval for the Parramatta Light Rail – Stage 1 (PLR) (also known as CSSI 8285), and is to be read in conjunction with the TfNSW Construction Noise and Vibration Strategy (CNVS) (TfNSW, 2019).

1.2 Purpose of the Out-of-Hours Work Protocol

This Protocol has been developed to comply with the Infrastructure Approval in particular Condition of Approval (CoA) E28, Out-of-Hours Work Protocol. A description of how this Condition, and other Conditions that relate to Out-of-Hours Work (OOHW), are addressed is provided in **Table 1-1**. Further details on how the relevant Revised Environmental Mitigation and Management Measures (REMMMs) and Environmental Performance Outcomes (EPOs) are addressed is provided in **Appendix B**.

The Protocol applies for work associated with PLR required outside the approved standard working hours (as defined in **Section 2.1**). There are some exemptions to this, as outlined in **Section 4.1**. This Protocol also only applies for works that are not subject to an EPL.

OOHW that may be regulated through the Protocol (or an EPL) as per Condition E29 includes, but are not limited to:

- a) Carrying out works that during standard hours would 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”; or
- b) The relevant road authority has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to road network operational performance and a road occupancy licence will not be issued; or
- c) The relevant utility service operator has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to the operation and integrity of the utility network; or
- d) Where the TfNSW 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 works or activities during the hours specified in Condition E21 and Condition E22; or
- e) Where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.

The exemptions to using the Protocol outside standard working hours are described in Condition E25. This Condition allows for works to be undertaken outside of the hours defined in Conditions E21 to E22, as applicable, but only if one or more of the following applies:

- 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 hours of works are permitted or required under an EPL in force in respect of the CSSI; or
- d) Works approved under an Out-of-Hours Work Protocol (this document – and Appendix A) for works not subject to an EPL; or
- e) Construction that causes $L_{Aeq(15 \text{ minute})}$ 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).
 - 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.
 - iii. No more than 15dB(A) above the night-time rating background level at any residence during the night time period, when measured using the $L_{A1(1 \text{ minute})}$ noise descriptor.
 - iv. 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).
 - v. 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).

Condition E23, also permits OOHW within the Camellia and Rosehill precincts (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) 24 hours a day, seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), between 10.00pm and 7.00am.

Table 1-1 PLR Out of Hours Work Infrastructure Approval Conditions

Condition Number	Condition	How Addressed
CoA A29(e)	The AA must review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary)	This Protocol was prepared in consultation with the AA (Section 1.3). The AA will be consulted when defining the risk factor (Section 3) and in endorsing OOHW applications (Section 1.6).
CoA E21	Works must be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 12:00pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 2.1 identifies the standard hours of work in accordance with CoA E21.
CoA E22	Notwithstanding Condition E21 , and with the exception of 'Eat Street', works may be undertaken during the following hours: (a) 6:00pm to 7:00pm Mondays to Fridays, inclusive; and (b) 12:00pm to 6:00pm Saturdays.	Section 2.1 identifies the extended standard hours of work in accordance with CoA E22.

Condition Number	Condition	How Addressed
CoA E23	Notwithstanding Condition E21 , works may be undertaken in the Camellia and Rosehill precincts (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) 24 hours a day, seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), between 10.00pm and 7.00am.	Section 4.1 addresses these works as exemptions to standard working hours.
CoA E24	Construction outside the hours identified in Condition E21 along 'Eat Street' must be established through consultation with affected businesses as outlined in the Business Activation Plan required by Condition E110 .	Section 4.3.1 identifies these works as an Agreed OOHW.
CoA E25	<p>Works may be undertaken outside of the hours defined in Conditions E21 to E22, as applicable, but only if one or more of the following applies:</p> <ul style="list-style-type: none"> (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 hours of works are permitted or required under an EPL in force in respect of the CSSI; or (d) works approved under an Out-of-Hours Work Protocol for works not subject to an EPL; or (e) construction that causes $L_{Aeq}(15 \text{ minute})$ noise levels: <ul style="list-style-type: none"> i) no more than 5 dB(A) above the rating background level at any residence in accordance with the <i>Interim Construction Noise Guideline</i> (DECC, 2009), and ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the <i>Interim Construction Noise Guideline</i> (DECC, 2009) at other sensitive land uses, and iii) no more than 15dBA above the night-time rating background level at any residence during the night time period, when measured using the LA1(1 minute) noise descriptor, and iv) 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 <i>Assessing Vibration: a technical guideline</i> (DEC, 2006), and v) 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 <i>Assessing Vibration: a technical guideline</i> (DEC, 2006). 	<p>Section 4.1 addresses clauses a, b, and e as exemptions to standard working hours.</p> <p>Section 4.2 addresses clauses c and d as Approved OOHW.</p> <p>This will be incorporated into the PLR Out-Of-Hours Work Application Form (Appendix A).</p>

Condition Number	Condition	How Addressed
CoA E26	On becoming aware of the need for emergency construction works, the Proponent must notify the ER of the need for those activities or works. The Proponent must also use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.	Section 5.4 outlines the notification process for Emergency Work.
CoA E27	<p>Highly Noise Intensive Works</p> <p>Except as permitted by an EPL, or through the Out-of-Hours Work Protocol, Highly Noise Intensive Works that result in an exceedance of the applicable NML at the same sensitive receiver must only be undertaken:</p> <p>(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;</p> <p>(b) between the hours of 8:00 am to 1:00 pm Saturday; and</p> <p>(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.</p> <p>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.</p> <p><i>Note: A trial period of the Highly Noise Intensive Work undertaken with the approval of the Out of Hours Work Protocol may be established.</i></p>	Section 2.3 identifies the approved standard hours for highly noise intensive works.
CoA E28	<p>Out of Hours Works Protocol</p> <p>An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of works which are outside the permitted hours defined in Conditions E21 to E22, where an EPL does not apply.</p>	This Protocol outlines the process for consideration, management and approval of works outside the permitted hours. Section 8 identifies the approval pathway for OOHW.
CoA E28	The Protocol must be approved by the Secretary before commencement of out-of-hours works. The Protocol must be prepared and implemented in consultation with AA.	Refer to Section 1.3.2 . Revision 7 of this Protocol was approved by the Secretary prior to the commencement of OOHW. Updates to the Protocol (Revision 8) was prepared in consultation with the Acoustic Advisor (AA) as outlined in Section 1.3 .
CoA E28(a)	The Protocol must: provide a process for the consideration of out-of-hours works against the relevant noise and vibration criteria;	This Protocol, in conjunction with TfNSW CNVS, sets out the process for the consideration of OOHW against the relevant noise and vibration criteria.
CoA E28(b)	provide a process for the identification and implementation of mitigation and management measures for residual impacts,	This Protocol, in conjunction with TfNSW CNVS, sets out identification of mitigation measures.

Condition Number	Condition	How Addressed
CoA E28(b)	in consultation with the community at each affected location, consistent with the requirements of Condition E39 ;	Section 6.1 outlines how the PLR Community Communication Strategy (CCS) (PLR-TFNSW-CBD-PE-PLN-000001) will be implemented for OOHV. The PLR Out-Of-Hours Work Application Form (Appendix A) requires demonstration that appropriate consultation has been carried out.
CoA E28(c)	identify an approval process that considers the risk level of activities (in accordance with AS/NZS ISO 31000:2009 “Risk Management”), proposed mitigation, management, and coordination, including where: i) low and moderate risk activities can be approved by the ER in consultation with the AA, and ii) high risk activities that are approved by the Secretary; and	Section 3 outlines the process for identifying and evaluating risks in accordance with AS/NZS ISO 31000:2009 “Risk Management”. Section 8.2 provides a flow chart of the OOHV approval process based on risk level.
CoA E28(d)	identify Department and community notification arrangements for approved out of hours works, which will be detailed in the Communication Strategy. <i>Note: this condition does not apply where work is required for an emergency (as defined in condition E25 (b)).</i>	The CCS identifies the requirements for notifications for both Department and the community. Appendix A requires consultation to be attached when seeking OOHV approval. The CNVS identifies additional mitigation measures dependent on predicted exceedances.

Condition Number	Condition	How Addressed
CoA E29	<p>Out-of-hours works that may be regulated through an EPL or the Out of Hours Work Protocol as per Condition E28 include, but are not limited to:</p> <ul style="list-style-type: none"> (a) carrying out works that during standard hours would 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”; or (b) the relevant road authority has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to road network operational performance and a road occupancy licence will not be issued; or (c) the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to the operation and integrity of the utility network; or (d) where the TfNSW 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 works or activities during the hours specified in Condition E21 and Condition E22; or (e) where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required. 	<p>Section 4.2 addresses these works as Approved OOHW. The PLR Out-Of-Hours Work Application Form (Appendix A) includes the requirement to provide justification for why OOHW are required.</p>
CoA E30	<p>Mitigation measures must be applied to construction activities that are predicted to result in the following residential ground-borne noise levels being exceeded as a result of the CSSI:</p> <ul style="list-style-type: none"> (a) Evening (6.00pm to 10.00pm) – internal LAeq (15 minute): 40 dBA; and (b) Night (10.00pm to 7.00am) – internal LAeq(15 minute): 35 dBA. <p>The mitigation measures must be outlined in the Construction Noise and Vibration Management Sub-Plan and the Out of Hours Works Protocol.</p>	<p>Section 7 outlines the standard and additional mitigation measures that must be implemented to manage noise, including ground-borne noise in accordance with Condition E30. Further detail on mitigation and the applicability of mitigation measures can be found in Section 8 of the CNVS.</p>
CoA E31	<p>Noise generating works near places of worship, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories, operating theatres, and mental health services and accommodation) must not be timetabled within sensitive periods, unless otherwise agreed with the affected institutions, and at no cost to the affected institution. This must be determined through ongoing consultation with the community during construction.</p>	<p>This Protocol outlines the assessment of out of hours works and includes noise and vibration risk identification based on sensitive receiver type. Details of the consultation process are also outlined.</p>

Condition Number	Condition	How Addressed
CoA E33	Construction noise mitigation measures must be implemented in accordance with Tables 4, 5, 6 and 7 of TfNSW's <i>Construction Noise and Vibration Strategy</i> (2018), regardless of the number of sensitive receivers impacted.	Section 1.5.1 outlines this requirement which relates to impact assessment procedures and standard mitigation for management of noise and vibration, including from source and source pathway.
CoA E37	Where works are undertaken outside hours specific in Condition E21 and E22 and construction noise levels exceed 65 dB(A) L_{Aeq} (15 mins) at the façade of the building of a residential receiver, the Proponent must only work 4 nights in any 7 day period. The 4 nights worked must be informed by community consultation referenced in Condition E39 .	Section 5.2 outlines the requirements for respite periods.
CoA E37	Outcomes of the community consultation, the identified works and respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, ER and the Secretary for information.	The PLR Out-Of-Hours Work Application Form (Appendix A) include a requirement for these details to be provided (Section N) when submitted for OOHW approval.
CoA E37	Relocation of work following 4 nights of works in any 7 day period must be sufficiently removed so as to provide clear respite of 3 days. Works in areas of respite must be subject to noise levels of no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009).	Section 5.2 outlines the requirements for respite periods.
CoA E37	The requirements of this condition may be varied with the approval of the Secretary following the Secretary's review of community consultation outcomes, construction noise and vibration impacts and the implementation of noise management and mitigation measures.	Section 5.2 outlines the process for seeking modifications to the standard respite requirements of Condition E37.
CoA E38	All work undertaken for the delivery of the CSSI, including those undertaken by utility contractors, must be coordinated to ensure respite, including the respite required by Condition E37 . The Proponent must: <ul style="list-style-type: none"> (a) Schedule any works to provide respite to impacted noise sensitive receivers so that all respite periods are achieved; or (b) Consider the provision of alternative mitigation, including the provision of receiver treatments and alternative accommodation to impacted noise sensitive receivers; and (c) Provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation. 	<p>Section 1.6 discusses the accountabilities of key Project staff involved in the delivery of the Parramatta Light Rail including co-ordination of OOHW.</p> <p>Section 5.3 provides further details on the coordination of OOHW to achieve respite and/or alternative mitigation, including providing evidence of any decisions to the AA.</p>

Condition Number	Condition	How Addressed
CoA E39	<p>In order to undertake out-of-hours work described in Condition E25(c) and (d), the Proponent must identify appropriate work and respite periods for the works in consultation with the community at each affected precinct at three monthly intervals. This consultation must be ongoing and include (but not be limited to) providing the community with:</p> <ul style="list-style-type: none"> (a) a schedule of likely out-of-hours work for a period of no less than two (2) months for medium to high risk work (as defined in the Out-of-Hours Work Protocol (Condition E28)); (b) a schedule of likely out-of-hours work for a period of no less than seven (7) days for low risk work (as defined in the Out-of-Hours Work Protocol (Condition E28)); (c) the potential works, location and duration; (d) the noise characteristics and likely noise levels of the works; and (e) likely mitigation and management measures. 	<p>Section 6.1 identifies where in the CCS that this information is documented as being required by the community. The PLR Out-Of-Hours Work Application Form (Appendix A) include a requirement for these details to be provided when submitted for OOHW approval.</p>
CoA E39	<p>The Proponent shall consider and respond to the affected community's preference for alternative hours and/or durations. The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, ER and the Secretary.</p>	<p>Section 6.1 addresses the requirement to consider and respond to the affected community's preference for alternative hours and/or durations. The PLR Out-Of-Hours Work Application Form (Appendix A) requires consultation evidence provided including outlining community preference and respite periods. Section 1.6 outlines TfNSW role in coordinating OOHW, including respite and alternative mitigation in consideration of any community consultation outcomes.</p>

Note: Refer to **Appendix B** for compliance with relevant REMMMs and EPOs.

1.3 Protocol Consultation, Endorsement and Approval

The Protocol has been prepared to meet the following consultation, endorsement and approval requirements in accordance with the Infrastructure Approval, including:

- Prepared in consultation with the Acoustic Advisor (AA)
- Endorsed by the AA
- Endorsed by the Environmental Representative (ER)
- Approved by the Secretary of the NSW Department of Planning and Environment (the Secretary).

These requirements were complied with as outlined in **Sections 1.3.1** and **1.3.2**.

1.3.1 AA / ER consultation and endorsement

Both the ER and AA have reviewed and left comments the draft versions of this Protocol. Comments have been satisfactorily addressed in this revision of the Protocol. Copies of the AA and ER endorsements are provided in **Appendix D**.

1.3.2 Secretary Approval

In accordance with the Infrastructure Approval, OOHW subject to CSSI-8285 must not be undertaken before approval of the Protocol by the Secretary. Version 7 of the Protocol was approved by the Secretary on 1 February 2019 with OOHW subject to CSSI-8285 commencing in March 2019. The Protocol has since been updated to incorporate the main works packages. The Secretary approval of this Protocol is provided in **Appendix E**.

Following approval from the Secretary, all works of the CSSI-8285 that are not subject to an EPL (irrespective of whether the works are defined as 'construction' in accordance with the Infrastructure Approval) will be subject to this Protocol.

1.3.3 Protocol amendments

Any minor amendments to the Protocol may be approved by the ER and submitted to the Secretary for information. What constitutes a "minor" amendment is subject to the discretion of the ER, but includes changes that:

- Are editorial in nature
- Do not increase the type or magnitude of impact on the environment or community when considered individually or cumulatively
- Do not compromise the ability of the Project to meet approval or legislative requirements.

In accordance with Condition A37(g) details of any review of, and minor amendments made to, the Protocol will be detailed in the following Construction Compliance Report submitted to DPE.

Changes to the Protocol that are not defined as minor must be reviewed by the ER in accordance with Condition A23(d) and submitted to the Planning Secretary for approval.

1.4 Accountabilities

The TfNSW Senior Manager, Environment, is accountable for this Protocol. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.

Roles reporting to the TfNSW Senior Manager, Environment are accountable for ensuring the requirements of this document are implemented within their area of responsibility. The roles that are accountable for specific projects (e.g. TfNSW Project Managers) include ensuring associated contractors comply with the requirements of this document.

1.5 Governance

This Protocol is to be used in conjunction with the CNVS, the relevant package specific Construction Noise and Vibration Management Plans (CNVMPs) and Construction Noise and Vibration Impact Statements (CNVIS), and any applicable EPLs. These documents establish minimum requirements for managing noise and vibration impacts on the PLR. All construction noise and vibration documentation including CNVMP and CNVIS that discuss OOHW must be aligned and consistent with this Protocol.

1.5.1 TfNSW Construction Noise and Vibration Strategy

Parramatta Light Rail will be implemented in accordance with the TfNSW Construction Noise and Vibration Strategy (CNVS) 7TP-ST-157/4.0 (April 2019). Cross-references to the CNVS occur throughout the document to avoid duplication of content. The CNVS is available online at:

<https://www.transport.nsw.gov.au/system/files/media/documents/2019/Planning-Environment-Sustainability-Construction-Noise-and-Vibration-Strategy-ST-157.pdf>

Some discrepancies between the Infrastructure Approval (CSSI 8285) and the CNVS exist. This Protocol, which specifically aligns to the project-specific Conditions of Approval, takes precedence over the CNVS where inconsistencies occur (refer to Sections 2 and 3).

All relevant Standard and Additional Mitigation Measures of the CNVS will apply to OOHW to minimise impacts to the local community and stakeholders, which are identified within Sections 8.1 and 8.2 of the CNVS. Construction noise mitigation measures must be implemented in accordance with Tables 4, 5, 6 and 7 of the CNVS, regardless of the number of sensitive receivers impacted. Additional Mitigation Measures that specifically relate to OOHW and residual impacts are described in Section 7.2 of this Protocol.

1.5.2 Construction Noise and Vibration Management Plan(s)

A Construction Noise and Vibration Management Plan (CNVMP) will be prepared for each key package of work in accordance with Condition C3, as outlined in the PLR Staging Report. The CNVMP will provide package specific controls and management process to minimise potential noise and vibration impacts during construction. The CNVMP may include a Noise and Vibration Monitoring Program, required in accordance with Condition C9, which typically outline how noise and vibration monitoring will be undertaken, how the results of monitoring will be reported and procedures to identify and implement additional mitigation measures as necessary.

1.5.3 Construction Noise and Vibration Impact Statement(s)

A Construction Noise and Vibration Impact Statement (CNVIS) is a location and activity specific document that provides an assessment of the anticipated noise and vibration impacts at sensitive receivers of proposed construction activities. In accordance with Condition E42 of the Infrastructure 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.

All OOHW, including those requiring the approval by DPE or EPA (where relevant), must be supported by a CNVIS or other acoustic assessment prepared in accordance with Condition E42, the guidance in Section 7 of the CNVS and relevant EPL conditions. A standard application form has been developed in consultation with the AA to achieve these requirements. The PLR Out-Of-Hours Work Protocol Form is provided in **Appendix A**.

During development of the CNVIS to support proposed OOHW, the contractor must consider the assessment steps provided in Sections 6, 7 and 8 of the CNVS, including the identification of all applicable mitigation measures such as those required by the Conditions of Approval (including REMMMs) and the Standard and Additional Mitigation Measures outlined in Section 8.1 and 8.2 of the CNVS. The aim of this assessment is to minimise the impact of noise and vibration on sensitive receivers because of OOHW. It is noted that applied Standard and Additional Mitigation Measures may be modified as a result of community consultation outcomes and detailed in the OOHW Application (see **Section 6.1** for more details).

1.5.4 Environment Protection Licence

An 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).

The proposed construction and operational activities of PLR as assessed in the Environmental Impact Statement did not constitute 'scheduled activities' under the POEO Act and therefore not subject to an EPL. Amendments to the way that railway systems activities are regulated under Schedule 1 of the *Protection of the Environment Operations Act 1997* however were passed creating new scheduled activities including Railway activities – railway infrastructure construction (clause 33).

The new railway infrastructure construction scheduled activity applies to the construction of all types of railway infrastructure, including infrastructure for light rail, heavy rail and Metro systems that meet specified limits.

Construction activities include the widening or rerouting of existing railway infrastructure and any related tunnels, earthworks and cuttings. It also includes any on site extraction of materials necessary for the construction as well as any on-site processing such as crushing, grinding or separating of extracted materials or other materials used in that construction.

Railway construction projects that, over the life of the construction, exceed specific material extraction or processing levels or new railway track lengths are required to obtain a railway infrastructure construction Environment Protection Licence. These limits are:

- Extraction or processing of more than:
 - 50,000 tonnes of materials in Bega Valley, Eurabodalla, Goulburn Mulwaree, Queanbeyan-Palerang Regional or Snowy Monaro Regional local government or regulated areas, or
 - 150,000 tonnes of materials in any other area.

or

- Construction of new railway track that is:
 - 3 kilometres or more in length in the metropolitan area, or
 - 5 kilometres or more in length outside the metropolitan area.

The minor works (Package 1, 2 and 3) will not likely require an EPL for construction.

The Infrastructure Works (Package 4) triggers the Railway construction scheduled activity and therefore the Contractor – Parramatta Connect has obtained an EPL No. 21347.

The Supply Operate and Maintain (SOM) Works (Package 5) Contractor – Great River City Light Rail has also obtained an EPL No.21606.

The process for approving OOHW outside of those already permitted in accordance with an EPL, is governed by the conditions of the EPL. For these types of OOHW 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 CNVS and EPL requirements.

OOHW that are subject to an EPL do not require approval in accordance with Condition E28 of the Infrastructure Approval (and therefore this Protocol).

1.6 Roles and Responsibilities

Key roles and responsibilities associated with this Protocol are summarised in **Table 1-2**.

Table 1-2 Roles and Responsibility

Role	Responsibility
TfNSW Senior Manager Community Engagement	The TfNSW Senior Manager Community Engagement is responsible for ensuring that all PLR communication requirements with the community are being complied with. For each precinct traversed by PLR, a TfNSW Place Manager will be allocated who reports to the TfNSW Senior Manager Community Engagement in relation to the outcomes of consultation for their precinct including in relation to OOHW.
Contractor Community Engagement Manager	The Contractor Community Engagement Manager(s) are accountable for the implementation of communication and stakeholder engagement requirements relevant to each of the respective contract delivery packages. The Contractor Community Engagement Manager(s) will be supported by area specific Contractor Place Managers, who will be responsible for coordination and preparation of community consultation and notifications.
TfNSW Senior Manager, Environment	TfNSW Senior Manager, Environment, is accountable for this Protocol. Accountability includes authorising the document, monitoring its effectiveness and performing a formal document review.
TfNSW Environment and Planning Manager	A TfNSW Environment and Planning Manager will be allocated to each contract delivery package for PLR. The TfNSW Environment Manager will be responsible for ensuring that all environmental management requirements associated with their contract delivery package are being complied with.
Contractor Environment Manager	<p>The Contractor Environment Manager(s) is accountable for the preparation and implementation of noise and vibration assessments, plans and protocols including:</p> <ul style="list-style-type: none"> • Construction Noise and Vibration Management Sub-plan (Condition C3) • Land Use Survey (Condition E20) • Out-of-Hours Work Protocol (Condition E28) • Construction Noise and Vibration Impact Statements (Condition E42) • Building Condition Reports (Condition E45). <p>The Contractor Environment Manager(s) is also responsible for implementation of this Protocol, including:</p> <ul style="list-style-type: none"> • Preparation of CNVIS for works proposed outside of the standard hours • Submission of the PLR Out-Of-Hours Work Protocol Form (Appendix A) to ER with AA as applicable.
Independent Environmental Representative	<p>Condition A19 of the Infrastructure Approval requires an ER to be appointed to the project to represent the NSW Department of Planning and Environment (DPE). The ER is to act as the Secretary's independent point of contact for all environmental and planning approval compliance matters. Condition A23 of the Infrastructure Approval provides a comprehensive list of the ER's responsibilities.</p> <p>Section 8 and Appendix A include descriptions of the ER's responsibilities with respect to reviewing, endorsing and approving OOHW.</p>

Role	Responsibility
Independent Acoustics Advisor	<p>Condition A26 of the Infrastructure Approval requires an Acoustics 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. Conditions A29 of the Infrastructure Approval provides a comprehensive list of the AA's responsibilities.</p> <p>Section 8 and Appendix A include descriptions of the AA's responsibilities with respect to reviewing, confirming risk level, endorsing and deferring OOHW.</p>
Secretary of the NSW Department of Planning and Environment	<p>The Secretary is responsible for approval of this Protocol, and for high risk OOHW applications submitted in accordance with this Protocol.</p> <p>Section 8 and Appendix A include descriptions of the ER's responsibilities with respect to reviewing and approving OOHW.</p>

2 Hours of work

2.1 Standard Hours of Works

Conditions E21 and E22 identifies the standard hours of work for PLR as:

- 7:00am to 6:00pm Mondays to Fridays, inclusive
- 8:00am to 12:00pm Saturdays
- at no time on Sundays or public holidays.

With the exception of Eat Street works may also be undertaken during the following extended standard hours:

- 6:00pm to 7:00pm Mondays to Fridays, inclusive
- 12:00pm to 6:00pm Saturdays.

These hours take precedent from the standard construction hours identified in CNVS (Section 1.4). There are a number of exemptions to these standard hours of work as outlined in **Section 4.1**.

2.2 Out of Hours Works Periods

Work outside of standard construction hours is defined as Out-of-Hours Work (OOHW) and can be divided into two periods of sensitivity, namely 'OOHW Period 1' and 'OOHW Period 2'.

OOHW Period 1 is defined as:

- 7:00pm to 10:00pm (evenings) Monday to Friday
- 7:00am to 8:00am (day) and 6:00pm to 10:00pm (evening) on Saturday
- 8:00am to 6:00pm (day) on Sunday and public holidays.

OOHW Period 2 is defined as:

- 12:00am to 7:00am and 10:00pm to 12:00am (nights) Monday to Friday
- 12:00am to 8:00am and 10:00pm to 12:00am (nights) Saturdays
- 12:00am to 8:00am and 6:00pm to 12:00am (nights) Sundays and public holidays.

The standard works hours and OOHW periods are summarised in **Table 2-1**. Note in accordance with Condition E22, the extended standard construction hours for 6:00pm to 7:00pm Mondays to Fridays, inclusive and 12:00pm to 6:00pm Saturdays exclude works in Eat Street. Work activities in Eat Street within these hours are defined as OOHW Period 1.

Table 2-1 Construction Work Periods – Standard Hours of Works

Hours Commencing	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								
Sunday																								
Public Holiday																								

2.3 Highly Noise and Vibration Intensive Works Periods

Condition E27 sets restricted hours of work for Highly Noise Intensive Works as:

- a) 8:00am to 6:00pm Monday to Friday
- b) 8:00am to 1:00pm Saturday
- 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.

Highly Noise Intensive Work is only permitted outside of these hours by an EPL, or through this Protocol. No blasting activities are permitted under the Infrastructure Approval.

The definition of Highly Noise Intensive Work is provided in Table 1 in the Infrastructure Approval, however the following additional considerations also apply:

- Definition of 'Special Audible Characteristics' of the CNVS (Section 2)
- The list of 'particularly annoying activities' in Section 4.5 of the Interim Construction Noise Guidelines (ICNG) (DEC 2009)
- Any other activity of concern nominated by the AA (e.g. as a result of ongoing complaints).

These activities include rock breaking and hammering, sheet piling, pile driving, milling & profiling, jack hammering, vibratory rolling, cutting of pavement, concrete or steel or other work that generates noise with impulsive, intermittent, tonal or low frequency characteristics that result in an exceedance of the applicable NML at the same sensitive receiver.

Highly Noise Intensive Work is to be considered as part of noise assessments used to determine the risk level in accordance with **Section 3**. These activities will not always be considered 'high risk', but if the noise from a particular plant item is considered Highly Noise Intensive Work a 5 dBA penalty is to be added to the noise source sound power level in the noise assessment. The noise assessment will determine the likely impact to sensitive receivers and inform the corresponding risk level.

High vibration impact is defined as any work that will exceed the human comfort vibration criteria (HVML) provided in Table 15 of the CNVS and recreated in **Table 3-2** of this Protocol (**Section 3.1**).

3 Assessment of risk factors

3.1 Noise and Vibration Criteria

The noise and vibration criteria of CNVS, Appendix A applies to PLR and will be used in the assessment of risk for OOHW as defined in **Section 4**. The key criteria is provided in **Table 3-1** and **Table 3-2** for ease of reference.

Table 3-1 Noise Criteria

Receiver Type	OOH Noise Management Level	Relevant Key Precincts
Residential	Air-borne noise RBL + 5dB(A) ⁴ ; (ICNG, Table 2) or Ground-borne noise 35-40dB(A) - internal ⁴ (ICNG, Section 4.2) Sleep disturbance criteria ¹	All precincts and as advised by Landuse Surveys of CNVMPs
Educational institutions	Internal noise 45dB(A) (ICNG, Table 3) Sleep disturbance criteria, where relevant ¹	North Parramatta, CBD & Camellia to Carlingford
Medical (hospital wards and operating theatres)	Internal noise 45dB(A) (ICNG, Table 3) Sleep disturbance criteria ^{1,2}	Westmead and Cumberland Hospital (east and west campuses)
Places of worship	Internal noise 45dB(A) (ICNG, Table 3)	All precincts and as advised by Landuse Surveys of CNVMPs
Active recreation areas	External noise 65dB(A) (ICNG, Table 3)	CBD and Robin Thomas Reserve ³
Passive recreation areas	External noise 60dB(A) (ICNG, Table 3)	North Parramatta to Robin Thomas Reserve ³
Community centres, Child care, Cinema, Hotel	To be determined on a case-by-case basis (ICNG, Table 3, Section 4.1.3)	All precincts and as advised by Landuse Surveys of CNVMPs
Commercial – Office/retail	External noise 70dB(A) (ICNG, Table 3)	All precincts and as advised by Landuse Surveys of CNVMPs
Commercial – Industrial	External noise 75dB(A) (ICNG, Table 3)	North Parramatta and Camellia
Commercial – sensitive to noise (e.g. Acoustic Space, such as sleep lab)	To be advised by consultation and Acoustic Assessment. Sleep disturbance criteria ¹ , where relevant (e.g. temporary accommodation)	All precincts and as advised by Landuse Surveys of CNVMPs

Notes:

1. The potential for sleep disturbance is assessed using the sleep disturbance “screening criterion”, as noted in the Section A.1.2 of the CNVS. The screening criteria is taken as $L_{AF1, 1 \text{ minute}} > \text{RBL} + 15 \text{ dB(A)}$ (the screening criteria) and 65 dB(A) (maximum) during night period. Where sleep disturbance criteria exceedance for more than 2 consecutive nights cannot be avoided due to reasonable and feasible justification, the Delivery Partner must consult with the community and consider further mitigation prescribed under CNVS, Table 8: Additional Management Measures such as Duration Reduction or Alternative Accommodation.
2. These could be applicable 24 hours a day for hospital wards.
3. Robin Thomas Reserve may be considered an active or passive recreation area depending on the time of day or location.
4. Receiver perception for airborne noise levels as per Table 12 of the TfNSW CNVS; receiver perception for ground borne noise levels as per Table 14 of the TfNSW CNVS.

Table 3-2 Vibration Criteria (Human Comfort Criteria)

Location	Period	Preferred Values (m/s ²)		Maximum Values (m/s ²)	
		Z axis	X&Y axes	Z axis	X&Y axes
Continuous vibration	Period				
Critical areas (e.g. medical)	Day or night time	0.005	0.036	0.010	0.072
Residences (including hotels)	Daytime	0.010	0.071	0.020	0.014
Residences (including hotels)	Night-time	0.007	0.005	0.014	0.010
Educational institutions, child care, cinema, places of worship	Day or night time	0.020	0.014	0.040	0.028
Industrial, recreation	Day or night time	0.040	0.029	0.080	0.058
Impulsive vibration	Period				
Critical areas (e.g. medical)	Day or night time	0.005	0.0036	0.010	0.0072
Residences (including hotels)	Daytime	0.300	0.210	0.600	0.420
Residences (including hotels)	Night-time	0.100	0.071	0.200	0.140
Educational institutions, child care, cinema, places of worship	Day or night time	0.640	0.460	1.280	0.920
Industrial, recreation	Day or night time	0.640	0.460	1.280	0.920
Intermittent vibration	Period				
Critical areas (e.g. medical)	Day or night time	0.100	0.100	0.200	0.200
Residences (including hotels)	Daytime	0.200	0.200	0.400	0.400
Residences (including hotels)	Night-time	0.130	0.130	0.260	0.260
Educational institutions, child care, cinema, places of worship	Day or night time	0.400	0.400	0.800	0.800
Industrial, recreation	Day or night time	0.800	0.800	1.600	1.600

Notes: For continuous and impulsive vibration, the preferred and maximum values are weighted acceleration values (Wg for z axis and Wd for x and y axes). For intermittent vibration, the preferred and maximum values are Vibration Dose Values (VDVs), based on the weighed acceleration values.

3.2 Risk assessment factors

Approval of works which are outside the permitted hours defined in Conditions E21 to E22, where an EPL does not apply, requires a process that considers the risk level of activities (in accordance with AS/NZS ISO 31000:2009 “Risk Management”), proposed mitigation, management, and coordination of out of hours works including where:

- i) low and moderate risk activities can be approved by the ER in consultation with the AA, and
- ii) high risk activities that are approved by the Secretary.

Low risk activities are characterised by works that result in noise or vibration impacts that are below the relevant noise and vibration criteria (refer to **Table 3-1** and **Table 3-2**) during sensitive periods (as defined for each receiver type) or exceedances of the criteria outside of sensitive periods. Low risk activities should result in no or minimal negative impact to the sensitive receivers / land use during sensitive periods. Low risk activities may be perceptible, but the degree of impact, and likelihood of annoyance resulting in complaints or other escalation are low.

Moderate risk activities are characterised by works that result in noise or vibration impacts that may exceed the relevant noise and vibration criteria during sensitive periods, however can be managed through consultation, scheduling, respite or additional mitigation measures to prevent significant impacts to affected receivers. Moderate risk activities should not generally result in impacts that affect the receiver from being used for its intended land use (e.g. teaching a school lesson in a classroom).

High risk activities are characterised by works that result in noise or vibration impacts that are likely to exceed the relevant noise and vibration criteria during sensitive periods resulting in impacts that may affect the receiver from being used for its intended land use despite consultation, scheduling, respite or additional mitigation measures. Activities where the sleep disturbance criteria are exceeded for more than two consecutive nights and alternate accommodation is not considered feasible would also be classified as high risk.

The intent of noise and vibration risk categories for each receiver type is summarised in **Table 3-3**. The defined intent is to be utilised as an overarching guide in the application of the prescriptive and quantitative risk assessment matrices provided in **Appendix C** to assist with determining a risk for each receiver type.

In developing a noise assessment (e.g. CNVIS) to determine the predicted impacts on sensitive receivers, if the noise from a particular plant item is considered to meet the definition of Highly Noise Intensive Works (see **Section 2.3**) these items are to be clearly identified in the assessment and a 5 dBA penalty is to be added to the noise source sound power level. Highly Noise Intensive Works are to be considered as part of the cumulative noise impact in determining risk. It is noted that Highly Noise Intensive Works will not always be considered 'high risk' but will form part of the assessment in determining the impact to sensitive receivers.

The conclusion of the risk assessment may not apply in all instances as other additional factors to be considered on a case by case basis may include:

- Duration of proposed activities
- Number and type of sensitive receivers impacted – standard residential, medium density receivers; or residential home for the elderly, high density unit blocks, persistent complainers, residents deemed to have 'construction noise fatigue'
- Past experience undertaking activity – the nature of works are new, in a new location or have not been undertaken by the contractor on the project already
- Special events – 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.)
- TfNSW Place Manager Feedback – feedback from the Place Manager for the area will provide the project, contractor and AA an understanding of the types and requirements of surrounding sensitive receivers
- Potential for structural damage to buildings or equipment through vibration (e.g. heritage)
- Obtaining a Community Agreement or Business Agreement (through **Section 4.3**)
- Other concurrent activities impacting the receiver
- Other specific considerations determined through consultation, baseline studies or acoustic investigation of individual receivers (such as façade treatments).

As such, the risk level must be agreed to by the AA based on information presented or requested in relation to each proposed Out of Hours Work Application. In all cases the onus is on the applicant to demonstrate the relevant objective (adopted as per the criteria presented in **Table 3-1** and **Table 3-2**) is likely to be achieved.

Table 3-3: PLR Out-of-Hours Work risk level^{1,2}

Receiver Type	Low	Moderate	High	Notes
Childcare	Impacts below the noise and vibration objective periods during operating hours or Impacts above the noise and vibration objective outside of operating hours	Impacts above the noise and vibration objective during operating hours that would not prevent the operation of the facility (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during day period that would cause significant disturbance to the facility	Sensitive periods during centre operating hours Periods such as day sleep times should be considered in the assessment
Cinema	Impacts below the noise and vibration objective during session times or Impacts above the noise and vibration objective outside of session times	Impacts above the noise and vibration objective during session times that would not significantly disrupt customers (as demonstrated through monitoring outside of session times and consultation)	Impacts above the noise and vibration objective during session times that would significantly disrupt customers (as demonstrated through monitoring outside of session times and consultation)	Sensitive periods during session times only
Commercial – Office / Retail	Impacts below the noise and vibration objective during trading / business hours or Impacts above the noise and vibration objective outside of trading / business hours	Impacts above the noise and vibration objective during trading / business hours that would not prevent trading / business (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during trading / business hours that would prevent trading / business (such as through agreed scheduling or respite periods)	Sensitive periods during business or trading hours as defined for each premise.
Commercial - Industrial	Impacts below the noise and vibration objective during operating periods or Impacts above the noise and vibration objective outside of operating periods	Impacts above the noise and vibration objective during day period that would not impact operation of surrounding industrial receivers (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during day period with potential to impact operation of surrounding industrial receivers (i.e. exceedance of the industrial noise limits >85dBA)	Sensitivity of surrounding industrial premises to be confirmed through consultation

Receiver Type	Low	Moderate	High	Notes
Commercial – Sensitive (Acoustic Space)	Impacts below the noise and vibration objective or Impacts outside of operating hours	Impacts above the noise and vibration objective during operating hours that would not prevent the operation of facility (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during operating hours that would prevent the operation of facility	Sensitive periods during operational periods as agreed with facility through consultation
Educational institutions	Impacts below the noise and vibration objective during teaching and study hours or Impacts above the noise and vibration objective outside of teaching and study hours	Impacts above the noise and vibration objective during teaching and study hours that would not significantly disrupt teaching or study (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during teaching and study hours that would significantly disrupt teaching or study (such as through agreed scheduling or respite periods)	Sensitive periods during core teaching and study hours
Hotel	Impacts below the noise and vibration objective at any time	Impacts above the noise and vibration objective at any time that would not significantly disrupt Hotel occupants (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective at any time that would significantly disrupt Hotel occupants (such as through agreed scheduling or respite periods)	Alternate criteria may be proposed on case by case basis based on consultation and / or review of prevalent facade performance. Internal criteria to be agreed to by AA ³
Medical	Impacts below the noise and vibration objective during any operational time period	Impacts above the noise and vibration objective at any time that would have minimal to no impact on operation of surrounding medical facilities (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective that would impact the operation of facility	Sensitive periods to be confirmed through the baseline study or consultation

Receiver Type	Low	Moderate	High	Notes
Place of Worship	Impacts below the noise and vibration objective at any time or Impacts above the noise and vibration objective outside or periods of worship, congregation or passive occupation	Impacts above the noise and vibration objective during periods of worship, congregation or passive occupation that would not significantly disrupt occupants (such as through agreed scheduling or respite periods)	Impacts above the noise and vibration objective during periods of worship, congregation or passive occupation likely to significantly disrupt occupants	Sensitive periods (routine and non-routine periods of worship or congregation) to be determined in consultation on a case by case basis
Recreation (Active)	Impacts below the noise and vibration objective during day, day (OOH), evening or night period or Impacts level above the noise and vibration objective during night period	Impacts above the noise and vibration objective during day, day (OOH) or evening period, however not preventing the utilisation of the area intended / zoned use	Impacts significantly above the noise and vibration objective during day, day (OOH) or evening period that prevent the utilisation of the area for intended / zoned use	Sensitive periods during normal periods of use and review of special events calendar
Recreation (Passive)	Impacts below the noise and vibration objective during day, day (OOH), evening or night period or Impacts level above the noise and vibration objective during night period	Impacts above the noise and vibration objective during day, day (OOH) or evening period, however not preventing the utilisation of the area for intended / zoned use	Impacts significantly above the noise and vibration objective during day, day (OOH) or evening period that prevent the utilisation of the area for intended / zoned use	Sensitive periods during normal periods of use and review of special events calendar

Receiver Type	Low	Moderate	High	Notes
Residential⁴	Impacts below the noise and vibration objective for the applicable time period	Impacts that are clearly audible - moderately intrusive during the day (OOH) and evening period or Impacts that are clearly audible night time works (no sleep disturbance) within the agreed respite periods (4 consecutive nights followed by 3 nights respite) or Impacts that exceed the sleep disturbance criteria for more than two consecutive nights where alternate accommodation is offered	Impacts that exceed the sleep disturbance criteria for more than two consecutive nights without feasible alternate accommodation	Risk subject to complaints management. Respite periods to be observed for Highly Noise Intensive Works
Sensitive Equipment	Impacts below the criteria established in Assessment System and Baseline Study (as applicable to Cumberland and Westmead Health Precincts) or Impacts below criteria established in consultation with affected receivers (applicable to other parts of the Project area)	Impacts above the appropriate criteria (e.g. as established in the Assessment System and Baseline Study) that would not prevent the operation of facility (such as through agreed scheduling or respite periods) or risk damage to the equipment or space	Impacts above the appropriate criteria (e.g. as established in the Assessment System and Baseline Study) that would be likely to prevent the operation of facility (such as through agreed scheduling or respite periods) or risk damage to the equipment or space	Risk subject to complaints management.

Notes:

1. Noise and vibration objectives refers to the relevant noise criteria in **Table 3-1** and vibration criteria in **Table 3-2**.
2. The intent of noise and vibration risk categories for each receiver type is summarised in this table (**Table 3-3**). The defined intent is to be utilised as an overarching guide in the application of the prescriptive and quantitative risk assessment matrices provided in **Appendix C** to assist with determining a risk for each receiver type.
3. In accordance with Australian Standard, *AS2107:2016*.
4. The application of risk categorisation should be completed factoring in the hierarchy of potential impacts and management measures of the CNVS.

4 Out of Hours Works

4.1 Exemptions to standard working hours

Condition E25 allows works to be undertaken outside of the standard working hours defined in Conditions E21 to E22 (standard hours of works in **Section 2.1**), if one or more of the following applies:

- a) For the delivery of materials required by the NSW Police Force or other authority for safety reasons;
- 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;
- e) Construction that causes LAeq(15 minute) 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) no more than 15dBA above the night-time rating background level at any residence during the night time period, when measured using the LA1(1 minute) noise descriptor, and
 - iv) 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
 - v) 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).

Condition E23 allows works to be undertaken in the Camellia and Rosehill precincts (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) 24 hours a day, seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence in accordance with the ICNG, between 10.00pm and 7.00am.

4.2 Approved Out-of-hours Work

Condition E29 allows out-of-hours work to be regulated through an EPL or this Protocol to include, but are not limited to:

- a) Carrying out works that during standard hours would 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";
- b) The relevant road authority has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to road network operational performance and a road occupancy licence will not be issued;
- c) The relevant utility service operator has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to the operation and integrity of the utility network;

- d) Where the TfNSW 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 works or activities during the hours specified in Condition E21 and Condition E22;
- e) Where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.

These works may be undertaken outside of standard working hours following approval in accordance with the OOHW application process outlined in **Section 8**.

4.3 Agreed Out-of-hours Work

OOHW that are not subject to an EPL which cannot be carried out through the *Exemptions to standard working hours* outlined in **Section 4.1**, or the *Approved OOHW* in **Section 4.2**, may be undertaken if one or more of the following circumstances are satisfied. Agreements for OOHW may also be considered to modify standard respite periods (**Section 5.2**) or implement duration reduction works (**Section 5.3**). Approval for carrying out *Agreed OOHW* is through the process outlined in **Section 8**, following the assessment of risk factors outlined in **Section 3**.

4.3.1 Business (and other non-residential) Agreements

The following conditions require construction times, including OOHW, to be established through consultation with affected businesses:

- Condition E24 requires construction outside the hours identified in Condition E21 along 'Eat Street' must be established through consultation with affected businesses as outlined in the Business Activation Plan required by Condition E110.
- Condition E31 requires noise generating works near places of worship, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories, operating theatres, and mental health services and accommodation) must not be timetabled within sensitive periods, unless otherwise agreed with the affected institutions, and at no cost to the affected institution. This must be determined through ongoing consultation with the community during construction.

OOHW based on consultation with Business Agreements are to be approved through the process outlined in **Section 8**.

4.3.2 Community Agreements

OOHW may be undertaken where a Community Agreement between a contractor and a substantial majority of noise sensitive receivers has been reached in consideration of the requirements of Conditions E31, E37 and E39, and approval received through process outlined in **Section 8**. Any Community Agreement to permit works to be undertaken outside of standard construction hours (OOHW) must:

- a) Be prepared in writing and implemented in accordance with the relevant sections of the TfNSW CNVS, ICNG, Noise Policy for Industry (EPA, 2017) and AS2346-2010 "Guide to noise and vibration control on construction, demolition and maintenance sites";
- b) Detail the following:
 - i) the actual works proposed;
 - ii) any expected impacts in clear, simple English based on noise modelling;
 - iii) the expected duration of the works;
 - iv) any expected benefits for receivers;

- v) any other concurrent OOHW that will be occurring as a result of PLR activities; and
 - vi) any other OOHW as a result of PLR activities that will be occurring on the nights preceding and following the proposed works or, if the proposed work precedes or follows a weekend period, any other OOHW that will be occurring on the weekend.
- c) Demonstrate that the noise sensitive receivers party to the Community Agreement understand the nature of the works and any predicted impacts;
 - d) Community Agreements will be used to support an OOHW Application where they are intended to be used to provide justification for OOHW with approval for implementation sought through the process outlined in **Section 8**;
 - e) Be kept for the duration of the Community Agreement and made available to AA, ER and DPE on request.

In relation to consulting and engaging with noise sensitive receivers for a Community Agreement, the following applies:

- a) All noise sensitive receivers predicted by modelling to be impacted by noise greater than 5 dB(A) above RBL must be consulted on any proposed Community Agreement. This includes noise sensitive receivers that have declined to participate in previous agreements;
- b) All proposed agreements must include details for interpreting services for languages other than English where required;
- c) If the contractor is unable to contact a noise sensitive receiver after three attempts, including leaving "sorry I missed you" cards explaining the reason for the visit and requesting a return phone call, then the contractor will note that the receiver could not be contacted and the receiver will not be considered to have either agreed or disagreed;
- d) Records of the attempts to contact the receiver will be kept by the contractor.

Agreement Thresholds

The following agreement thresholds will be observed when considering if a substantial majority of the affected community have agreed to OOHW (note both apply):

- a) Noise sensitive receivers predicted by the contractor to be impacted by noise levels exceeding those specified in Condition E25 (e);
- b) Noise sensitive receivers predicted by the contractor to be impacted by noise levels above a highly noise affected level of 75dB(A).

Agreements by Phone

Where a Community Agreement has been reached with noise sensitive receivers over the phone, the following applies:

- a) The phone script used to describe the proposed agreement (including information required under Condition E39) is to be provided to DPE with the Community Agreement for approval;
- b) The script must include a clear question requesting receiver agreement to the proposal;
- c) Detailed records are to be maintained by the contractor of all Community Agreement phone conversations and must be maintained for the duration of the Community Agreement; and
- d) Any noise sensitive receiver who requests a copy of the phone agreement must be supplied with one.

Notification

All noise sensitive receivers must be advised of any Community Agreement that has been attained in writing within seven calendar days of the agreement being finalised and must:

- a) Include a website link to the project website, specifically to a summary of the approved project agreement;
- b) Include details of the PLR 24-hour complaints line.

The notification requirements in Section 7 also apply to Community Agreements and must comply with the PLR CCS.

4.3.3 ER Agreement

The ER may approve other low or moderate risk OOHW activities, in consultation with the AA, that are not specifically subject to Condition E25. This may be required in the following circumstances:

- The outcome of consultation with noise or vibration affected institutions (Condition E24 and E31) preference out of hours works that impact residential receivers
- OOHW are proposed that cannot be completed with the standard respite periods (**Section 7.2**) for engineering justifications (e.g. large concrete pours that cannot be staged)
- Duration reduction works as identified through compliance with Condition E39 where respite periods (outlined in Condition E37) are considered to be counterproductive to reducing noise and vibration impacts as determined on a case-by-case basis.

5 Scheduling Works and Respite

5.1 Hierarchy of Preferred Working Hours

Where OOHW is planned to take place the following hierarchy of preferred working hours must be considered unless otherwise agreed with affected community through consultation (**Section 6.1**).

1. Saturday afternoon periods between 1pm and 6pm (Standard hours, applicable to HNIW)
2. Sunday and public holiday day periods between 8am and 6pm (Period 1 Day)
3. Weekday evening periods between 7pm and 10pm (Period 1 Evening)
4. Weekend evening periods between 6pm and 10pm (Saturdays Period 1 Evening/Sundays Period 2)
5. Weekend night periods between 10pm and 8am (Period 2)
6. Work during the weekday evening and night and scheduling the noisiest or vibration intensive work first (between 6pm and 10pm) to minimise sleep disturbance impacts in the night period between 10pm and 7am) – read in conjunction with E27 (Period 1 Evening & Period 2)
7. All other times outside recommended standard hours.

For Eat Street, the listed OOHW hierarchy of working hours include:

1. Weekday night periods (Monday-Thursday) between 10pm and 7am (Period 2)
2. Sunday and public holiday day periods between 7am and 11am (Period 1 Day)
3. Weekend night periods (Friday, Saturday and Sunday) between 10pm and 7am (Period 2)
4. Sunday and public holiday day periods between 11am and 6pm (Period 1 Day)
5. All other times outside recommended standard hours as advised by consultation.

This hierarchy does not apply to emergency work. This should be undertaken in accordance with Condition E26; on becoming aware of emergency works the ER and TfNSW must be notified. It is the responsibility of the contractor to use best endeavours to contact affected sensitive receivers and advise of the likely impact and duration of such works. See **Section 5.4** for more details.

Road Traffic Noise

When planning OOHW, consideration must be given to minimising road traffic noise caused by construction of PLR, including but not limited to:

- Restricting heavy vehicle movements to standard hours (**Section 4.1**); and/or
- Planning heavy vehicle haulage routes that have fewer sensitive receivers.

As required by the RMS Road Noise Policy (RNP), an initial screening test should first be applied by evaluating whether noise levels would increase by more than 2 dB (an increase in the number vehicles of around 60%) due to construction traffic or a temporary reroute due to a road closure.

Where noise levels increase by more than 2 dB (i.e. 2.1 dB or greater) further assessment is required using the criteria presented in the RNP.

5.2 Standard Respite

Condition E37 outlines the standard respite periods for Approved OOHW (**Section 4.2**).

Where construction noise levels exceed 65 dB(A) LAeq (15 mins) at the façade of the building of a residential receiver, work must only occur for four nights in any seven day period. The four nights worked must be informed by community consultation required by Condition E39 (**Section 6.1**).

Outcomes of the community consultation, the identified works and respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, ER and the Secretary for information.

Relocation of work following four nights of works in any seven day period must be sufficiently removed so as to provide clear respite of three days. Works in areas of respite must be subject to noise levels of no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009).

The requirements of Condition E37 may be varied with the approval of the Secretary following the Secretary's review of community consultation outcomes, construction noise and vibration impacts and the implementation of noise management and mitigation measures.

Where there is a community or business preference for modifying the standard respite requirements of Condition E37 (e.g. duration reduction), a Business Agreement (**Section 4.3.1**) and/or Community Agreement (**Section 4.3.2**) will be obtained and approval sought through the submission of an OOHW Application (**Section 8**), where the AA/ER approves low/moderate risk activities and the Planning Secretary approves high risk activities.

Condition E38 requires all works undertaken for the delivery of the CSSI, including those undertaken by utility contractors, must be coordinated to ensure respite, including the respite required by Condition E37. The coordination of respite must:

- a) Schedule any works to provide respite to impacted noise sensitive receivers so that all respite periods are achieved; or
- b) Consider the provision of alternative mitigation, including the provision of at receiver treatments and alternative accommodation to impacted noise sensitive receivers; and
- c) Provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation.

5.3 Coordination & Respite

Coordination of OOHW will occur to provide respite, minimise the duration and impact on sensitive receivers, and to respond to community consultation at a project-wide level.

TfNSW's Project Manager and Senior Manager Environment will be accountable for coordinating OOHW in a manner that minimises the cumulative noise impacts, considers the outcomes of community and stakeholder consultation, ensures compliance with conditions of approval including mitigation measures and aligns with the best practice management principles of the CNVS. The AA will be consulted on coordination of OOHW.

The principles of coordination of OOHW will be:

- Contractors are responsible for interfacing between delivery packages to work collaboratively to programme OOHW to minimise cumulative noise and vibration impacts;
- Providing respite to impacted sensitive receivers so that standard respite periods of the Conditions of Approval are achieved;

- As nominated by the OOHW application applicant and confirmed in consultation with the AA, alternative mitigation will be provided to reduce impacts to sensitive receivers such as property treatments, alternative accommodation or any other additional mitigation measures of the CNVS (see **Figure 1** for the OOHW Approval Process including AA consultation process);
- Consult and advise the AA of decisions relating to respite and mitigation, including any documentary evidence as necessary; and
- Where reasonable and feasible, works shall be coordinated with other construction projects to manage respite in noise catchments.

Coordination will be achieved through Coordination and Interface Meetings with Contractors, affected Stakeholders (including other construction project parties) and Utility Service Providers as well as maintaining and reviewing a register of OOHW applications and proposals before approving/endorsing any OOHW application.

Other State Significant development and infrastructure works near PLR

In accordance with Condition E32 contractors undertaking OOHW for PLR are responsible for consultation with proponents or applicants of other State Significant development and infrastructure works near PLR and taking reasonable steps to coordinate works to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers. The Contractor Community Engagement Manager and/or Interface Manager will typically be responsible for this consultation which will be provided to those responsible for the scheduling of OOHW.

Utility Contractors

The impacts to respite resulting from works undertaken by utility contractors must be considered in the scheduling of out of hours work to ensure feasible and reasonable efforts are taken to achieve the standard respite periods.

5.4 Emergency Works

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

- An emergency (i.e. an unforeseen occurrence; a sudden and urgent occasion for action); and
- Required to avoid injury, loss of life, damage or loss of property or prevent environmental harm.

On becoming aware of the need for emergency construction works in accordance with Condition E26, contractors must notify TfNSW and 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 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, the contractor will use best endeavours to notify all affected sensitive receivers of the likely impact and duration of the emergency works. These notifications will generally be prepared by the contractor using a small hand-completed information card for distribution to properties immediately adjacent to or impacted by the emergency works. These cards should include the following details as a minimum:

- Scope
- Location
- Hours
- Duration

- Types of equipment to be used
- Likely impacts
- PLR project 24-hour Telephone Contact Number, postal address and email address.

The day after any emergency works, the applicant is to provide a written emergency works report to TfNSW in accordance with *Environmental Incident Classification and Reporting – 9TP-PR-105*.

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
- 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.
- Review of programmed works schedule following an occurrence of emergency works with the aim of achieving the required standard respite requirements (**Section 5.2**).

6 Consultation

6.1 Community Consultation

Notwithstanding the standard respite periods (**Section 5.2**), appropriate work and respite periods must be identified in consultation with the community at each affected precinct at three monthly intervals (at a minimum) for the Approved out-of-hours work (i.e. works through Condition E25(c) and (d)). Condition E39 requires that this consultation must be ongoing and include (but not be limited to) providing the community with:

- a) A schedule of likely out-of-hours work for a period of no less than two (2) months for moderate to high risk work (as defined in the Out-of-Hours Work Protocol (Condition E28));
- b) A schedule of likely out-of-hours work for a period of no less than seven (7) days for low risk work (as defined in the Out-of-Hours Work Protocol (Condition E28));
- c) The potential works, location and duration;
- d) The noise characteristics and likely noise levels of the works; and
- e) Likely mitigation and management measures.

Consultation mechanisms will be consistent with those nominated in the PLR Community Communication Strategy (CCS) and tailored to the affected community as advised by the Contractor Community Engagement Manager and TfNSW Place Managers. Given the scale of the project and the unique characteristics of each precinct along the route, a variety of communication and engagement tools and techniques are required to achieve adequate engagement objectives. These tools include (but are not limited to) a project website, a 24 hour toll-free project information line, information brochures, fact sheets, face-to-face interaction and community information sessions, and will be used to achieve the consultation outcomes required for Condition E39 and to inform respite preferences in accordance with Condition E37.

One form of community consultation outcome is the obtaining of a Business Agreement (**Section 4.3.1**) and/or Community Agreement (**Section 4.3.2**). These can be used as a justification for carrying out OOHW and for seeking modification of the standard respite requirements outlined in Condition E37 where there is a community or business preference (**Section 5.2**).

The CCS identifies additional consultation required for out-of-hours work and noisy work. The contractor, TfNSW Environment Manager, AA and ER shall consider and respond to the affected community's preference for alternative hours and/or duration reductions. Table 8 of the CNVS identifies additional management measures (consultation based) that will be implemented in accordance with REMMM NV-3. The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour works must be provided to TfNSW, AA, ER and the Secretary as part of OOHW Applications.

6.2 Community Notification

Community notifications are used as a mitigation measure for receivers of noise and vibration impacts from OOHW. 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 outlined in the CNVS and PLR CCS. Community notifications are to be implemented in accordance with these documents.

6.3 Transport Management Centre and Roads and Maritime Services

Much of the work associated with Parramatta Light Rail requires access and occupation of the road network. Occupation of the road network is a key constraint which often limits the ability of construction activities to be undertaken during standard working hours to minimise impacts on traffic and transport. To allow occupation of the road network, a Road Occupancy Licence (ROL) must be applied for and granted by the Transport Management Centre (TMC), to occupy a portion of the road network, e.g. one lane of two for a set time over a set number of days. TMC are part of the Sydney Coordination Office within Roads and Maritime Services (RMS).

The road authorities responsible for roads affected by PLR include Local Councils (CoPC, Cumberland Council) and RMS. Contractors are responsible for liaising with these authorities and key stakeholders (if required) during construction. The ROL scheme applies to all roads impacted by PLR, other than private roads within the Cumberland Hospital campus. Within Cumberland Hospital campus, contractors will liaise with NSW Health representatives, and provide notices as required.

Consultation with TMC and RMS is required to manage ROL access schedules with demonstrable evidence to be gathered by contractors (such as area specific traffic data) to assist in supporting ROL applications to allow occupation of the road network earlier in the evening/night to minimise noise and vibration impacts being required out of standard working hours.

Hours when construction deliveries and spoil removal would be undertaken within the Parramatta CBD and Rosehill and Camellia precincts would be determined in consultation with the TMC and RMS, and approved through the process outlined in **Section 8**.

7 Determining mitigation

7.1 Standard Mitigation Measures

The CNVMP prepared for each PLR contract delivery package must include standard mitigation and management measures that apply to works for that package with reference to the CNVS, the ICNG and in accordance with the Infrastructure Approval. These standard mitigation measures apply to PLR works and will be implemented as appropriate.

7.2 Additional Mitigation Measures

Additional mitigation measures specifically relating to OOHW and residual impacts are outlined in **Table 7-1**. Details of how these additional mitigation measures will apply to a specific activity will be outlined in the OOHW Application and associated documents for AA and ER endorsement.

Table 7-1 Additional mitigation measures

Action required	Applies to	Details
Implementation of any project specific mitigation measures required	Airborne noise Ground-borne noise & vibration	In addition to the measures set out in this table, any project specific mitigation measures identified through consultation, AA recommendations and/or approval or licence conditions must be implemented.
Implement stakeholder consultation measures	Airborne noise Ground-borne noise & vibration	Stakeholder consultation to be completed in compliance with the PLR CCS and as noted in Section 6 of this Protocol.
Construction hours and scheduling	Airborne noise Ground-borne noise & vibration	Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Highly noise intensive works and/or vibration intensive activities should be scheduled during less sensitive time periods. Refer to the hierarchy of preferred working hours in Section 5.1 .
Shield sensitive receivers from noisy activities	Airborne noise	Use structures to shield residential receivers from noise such as site shed placement; earth bunds; hoarding; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.
Periodic Notification	OOHW causing: <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by the AA.	Stakeholder consultation to be completed in compliance with the PLR CCS and as noted in Section 6 of this Protocol.

Action required	Applies to	Details
Verification Monitoring	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by the AA.</p>	<p>Verification monitoring of noise and/or vibration during construction may be conducted at the affected receiver(s) or a nominated representative location (typically the nearest receiver where more than one receiver has been identified). Monitoring can be in the form of either unattended logging (i.e. for vibration provided there is an immediate feedback mechanism such as SMS capabilities) or operator attended surveys (i.e. for specific periods of construction noise).</p> <p>The purpose of monitoring is to confirm that:</p> <ul style="list-style-type: none"> Construction noise and vibration from the project are consistent with the predictions in the noise assessment; and/or Identifying actual impacts of activities on sensitive receivers, such as: <ul style="list-style-type: none"> noise levels after implementation of noise reducing mitigation (mufflers, baffles, screens). vibration during construction in close proximity to structures; and/or Mitigation and management of construction noise and vibration is appropriate for receivers affected by the works Where noise monitoring finds that the actual noise levels exceed those predicted in the noise assessment then immediate refinement of mitigation measures may be required and the CNVIS amended. Refer to Section 8.4 of the CNVS for more details.
Specific Notification	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by AA.</p>	<p>Stakeholder consultation to be completed in compliance with the PLR CCS and as noted in Section 6 of this Protocol.</p>
Respite Offer	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by AA.</p>	<p>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. The offer could comprise pre-purchased movie tickets, bowling activities, meal vouchers or similar offer. This measure is determined on a case-by-case basis.</p>

Action required	Applies to	Details
Alternative Accommodation	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by AA.</p>	<p>Alternative accommodation options may be provided where reasonable and feasible for residents impacted by construction works that are likely to exceed sleep disturbance criteria for more than two consecutive nights.</p> <p>Where it is identified that works will likely exceed the sleep disturbance criteria for more than two consecutive nights without feasible alternate accommodation being available, the OOHW Application will be considered high risk and require submission to the DPE for approval with a justification as to why it is not considered reasonable or feasible (e.g. logistics, availability).</p>
Respite Period	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by AA.</p>	<p>Respite is to be completed in compliance with this Protocol (as noted in Sections 1.6.1 and 2 and Table 3-1) and the CNVS.</p>
Duration Reduction	<p>OOHW causing:</p> <ul style="list-style-type: none"> Airborne noise Ground-borne noise & vibration <p>Where triggered by Tables 9, 10 & 11 of the CNVS or recommended by AA.</p>	<p>Where Respite Periods (see management measure above) are considered to be counterproductive to reducing noise and vibration impacts to the community it may be beneficial to increase the number of consecutive evenings and/or nights through Duration Reduction to minimise the duration of the activity. This measure is determined on a case-by case basis and would only be implemented through the community agreement processes outlined in Section 4.3. Evidence of community support for the Duration Reduction must be provided as justification for the Duration Reduction as part of an OOHW Application if it is to be used as a mitigation strategy. A community engagement strategy must be agreed with and implemented in compliance with the PLR CCS.</p>

Note: Further detail on mitigation and the applicability of mitigation measures can be found in Section 8 of the CNVS.

The additional management measures in **Table 7-1** may become less effective over time. At-receiver noise mitigation may be considered where feasible and reasonable, where all options for at-source noise mitigation and management measures have been exhausted. At-receiver mitigation may include temporary window and door screens, temporary localised shielding or permanent forms of mitigation.

Feasible and reasonable considerations for providing at-receiver treatments should include: Time of day where construction noise exceeds the ANML; Time of use of affected receivers; Amount construction noise exceeds the ANML; How long the mitigation will provide benefit to the receiver during the project; Optimal design of acoustic sheds and noise barriers/hoardings.

8 Approval of Out-of-Hours Work

8.1 Applying for OOHW

All applications for OOHW must be made on the approved OOHW Application Form (that has been prepared and implemented in consultation with the AA) and accompanied by the required information (refer to **Appendix A**). The approval pathway will be determined on a risk-based approach on a case-by-case basis to ensure that OOHW are approved by the appropriate delegate. Activities are required to consider the risk levels in accordance with TfNSW's Environmental Risk Assessment Procedure (3TP-PR-206/3.0) which has been developed in accordance with AS/NZS ISO 31000 Risk Management. The requirements of these conditions are to be specifically addressed in each OOHW application (refer to **Appendix A** and **Section 4**) as relevant. It is noted that any recommendations by the AA on proposed OOHW must be implemented as far as it is reasonably practical to do so.

8.2 Exemptions to standard working hours

Exemptions to standard working hours (**Section 2.1**) may be approved by the Contractor Environment Manager. Notification to the relevant TfNSW Project Manager, TfNSW Environment and Planning Manager, TfNSW Senior Manager Community Engagement, AA and ER must be provided prior to these works occurring. Supporting evidence demonstrating compliance with the exemptions to standard working hours criteria must be maintained and available on request. Summary details of approved Exempt OOHW are to be reported to TfNSW by the Contractor Environment Manager at least monthly.

8.3 Out-of-Hours Work Approval Process

The process for the endorsement and approval of OOHW application on Parramatta Light Rail is summarised in **Figure 1**. 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 OOHW.

8.3.1 Out-of-Hours Work not subject to an EPL

For OOHW that are not subject to an EPL, the approval process is dictated by the requirements of Condition E28 of the Infrastructure Approval. Contractors are required to prepare an OOHW application using:

- A form consistent with the *PLR OOHW Application Form* (PLR-TFNSW-CBD-PE-FRM-000001) for proposed OOHW. See **Appendix A**.

This form requires a noise and vibration impact assessment to be undertaken. This facilitates simpler consideration of applicable additional noise and vibration mitigation measures to implement. The form also require demonstration of how additional noise and vibration mitigation measures have been considered for implementation (including community notifications) in accordance with the CNVS and Infrastructure Approval.

All OOHW applications that are not subject to an EPL will be submitted to the TfNSW Project Manager, TfNSW Environment and Planning Manager, TfNSW Communications team, 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 Activation Plan detailing predicted impacts to affected businesses, key issues and appropriate mitigation measures for implementation). The TfNSW Communications team are to

endorse the OOHW application and provide comments specific to the work within the OOHW application, as required, to identify specific issues and/or mitigation measures (such as specific notification) that are to be carried out prior to or when implementing the OOHW.

The Contractor will identify an indicative risk level which will be agreed by the AA (see **Section 3.3** for determination of noise and vibration risk levels). Following agreement of the risk level, which will consider a range of risk factors associated with the proposed activities and other additional risk factors, the AA endorses the OOHW application and provides any conditions or comments.

If the AA identifies that the OOHW application is high risk, 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 E28 of the Infrastructure Approval. The application to the Secretary will include a statement from the AA to support the risk level identification.

If the AA identifies that the OOHW application is low or moderate risk, the application is forwarded to the ER for their approval (or otherwise) on the application, including any conditions or comments, and forwards the endorsed application directly to TfNSW, the contractor and AA.

For applications seeking to vary the standard respite requirements of Condition E37, the AA/ER may approve respite modifications published in a Community and/or Business Agreement for low or moderate risk activities (as determined by the AA). Where these standard respite modifications are proposed for activities determined to be high risk (as determined by the AA), approval is required by the Planning Secretary. Approval of an OOHW application is considered approval of the variation of the requirements of Condition E37, where relevant.

8.3.2 Out-of-Hours Work subject to an EPL

For OOHW that are subject to an EPL, the EPL conditions will dictate the approval process (i.e. works are not approved through this Protocol). As a minimum however, for proposed OOHW 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 Senior Manager Community Engagement, TfNSW Environment and Planning Manager, AA and ER for information
- Notify TfNSW, the AA and ER upon receiving EPA approval
- Ensure any required community notifications have been issued (by either TfNSW or the contractor directly) at least seven days prior to the works commencing (this notification does not constitute consultation under Condition E39).

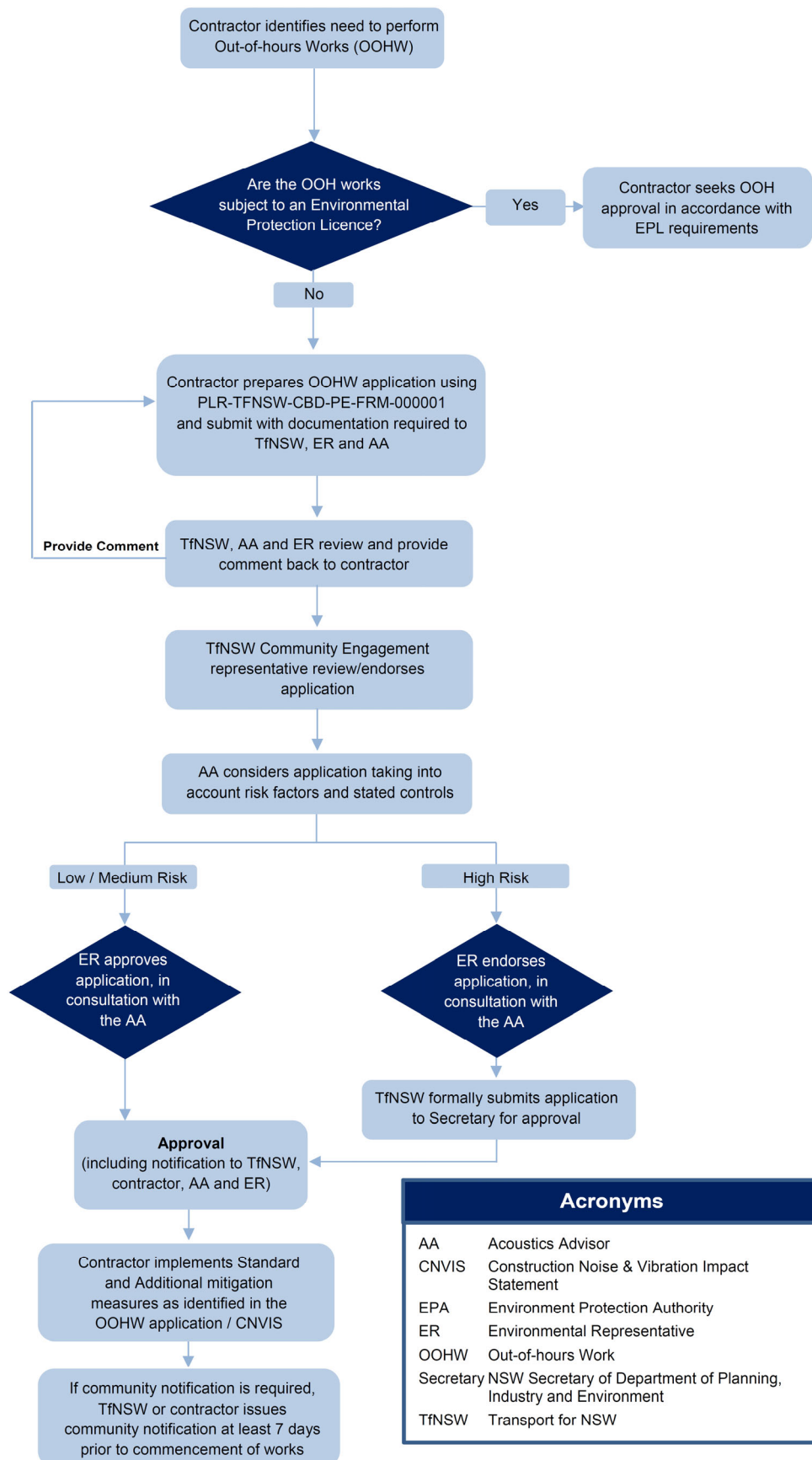


Figure 1: Out-of-hours work (OOHW) Approval Process

Appendix A – Out-Of-Hours Work Protocol Form (Template)

PLR Out-Of-Hours Work Protocol Form

(Environment Protection Licence Variation NOT Required)

This form is to be read / completed in conjunction with the PLR Out-of-Hours Work Protocol (PLR-TFNSW-CBD-PE-FRM-000002)

Works:		No:		Rev:									
ENSURE APPROPRIATE TIMEFRAME FOR APPLICATION AND ALL SUPPORTING INFORMATION THAT IS TO BE SUBMITTED TO THE APPROVING AUTHORITY BEFORE THE PLANNED DATES OF OUT-OF-HOURS WORK (OOHW). TFNSW REQUIRE A 10 DAY REVIEW PRIOR TO THE SUBMISSION TO THE APPROVING AUTHORITY.													
Application Date:		Contractor:		Project:									
A. Contact details		Name		Mobile number	Email								
Contractor's Representative													
Contractor's 24 hour contact person													
TfNSW Project Manager													
TfNSW Environment & Planning Manager													
TfNSW Community and Engagement Representative													
B. Justification for OOHW		<i>Attach additional details if required.</i>											
List any environmental / community benefits of OOHW (if any)		<div style="display: flex;"> <div style="flex: 1;"> <i>Consideration of OOHW in accordance with Condition E29</i> </div> <div style="flex: 2;"> <input type="checkbox"/> (a) Carrying out works that during standard hours would 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" <input type="checkbox"/> (b) The relevant road authority has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to road network operational performance and a road occupancy licence will not be issued <input type="checkbox"/> (c) The relevant utility service operator has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to the operation and integrity of the utility network <input type="checkbox"/> (d) Where the TfNSW 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 works or activities during the hours specified in Condition E21 and Condition E22 <input type="checkbox"/> (e) Where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required. </div> </div>											
C. Details of work		<div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> Map attached (showing location / work extent / nearest sensitive receivers / landscape) </div> <div style="flex: 3;"> <table border="1"> <tr> <td>Location</td> <td></td> </tr> <tr> <td>Description of works</td> <td></td> </tr> <tr> <td>Proposed dates (Start and Finish dates)</td> <td></td> </tr> <tr> <td>Proposed timings</td> <td> <i>e.g. Four nights per week during the proposed dates from 10pm to 5am. Note if there are any HNIW that extend outside the hours identified in E27 and would require approval within this application.</i> </td> </tr> </table> </div> </div>				Location		Description of works		Proposed dates (Start and Finish dates)		Proposed timings	<i>e.g. Four nights per week during the proposed dates from 10pm to 5am. Note if there are any HNIW that extend outside the hours identified in E27 and would require approval within this application.</i>
Location													
Description of works													
Proposed dates (Start and Finish dates)													
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Works:	No:	Rev:																												
D. Plant required & level of risk	e.g. Refer to the relevant section in CNVIS, or detail below.																													
E. Distance to nearest sensitive noise receiver(s)	<p>Distances to the nearest sensitive noise receiver(s)</p> <table border="1"> <thead> <tr> <th>Sensitive Receiver</th> <th>Distance</th> <th>Sensitive Receiver</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Place of Worship</td> <td></td> <td><input type="checkbox"/> Educational institution (including child care centres)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Nearest Residential Receivers</td> <td></td> <td colspan="2"><i>Distances and receivers to be identified in the ECM</i></td> </tr> <tr> <td colspan="4"><input type="checkbox"/> Noise and Vibration sensitive business and critical working area (such as theatres, laboratories, operating theatres, mental health services, animal welfare facilities and accommodation).</td> </tr> <tr> <td colspan="4"><i>Where one of the above has been checked, noise generating works must not be timetabled within sensitive periods, unless otherwise agreed with the affected institutions. This must be determined through ongoing consultation with the community in accordance with the Community Consultation Strategy.</i></td> </tr> <tr> <td colspan="4">Has the sensitive receiver agreed to these works or are there any preference for alternative hours and/or duration (refer to E31). Attach any of the outcomes from this consultation</td> </tr> <tr> <td colspan="4"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> </tbody> </table>		Sensitive Receiver	Distance	Sensitive Receiver	Distance	<input type="checkbox"/> Place of Worship		<input type="checkbox"/> Educational institution (including child care centres)		<input type="checkbox"/> Nearest Residential Receivers		<i>Distances and receivers to be identified in the ECM</i>		<input type="checkbox"/> Noise and Vibration sensitive business and critical working area (such as theatres, laboratories, operating theatres, mental health services, animal welfare facilities and accommodation).				<i>Where one of the above has been checked, noise generating works must not be timetabled within sensitive periods, unless otherwise agreed with the affected institutions. This must be determined through ongoing consultation with the community in accordance with the Community Consultation Strategy.</i>				Has the sensitive receiver agreed to these works or are there any preference for alternative hours and/or duration (refer to E31). Attach any of the outcomes from this consultation				<input type="checkbox"/> Yes <input type="checkbox"/> No			
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F. Details of alternatives & how investigated. Details of any consultation carried out.																														
G. Noise and Vibration Assessment of activities and work covered in this form	<input type="checkbox"/> E25(a),(c) & (e) Activities and works required for one or more of the following: <ul style="list-style-type: none"> For the delivery of materials required by the NSW Police Force or other authority for safety reasons Where different hours of works are permitted or required under an EPL in force in respect of the CSSI Activities and works causes LAeq(15 minute) noise levels: <ol style="list-style-type: none"> No more than 5 dBA above the rating background level at any residence in accordance with the <i>Interim Construction Noise Guideline</i> (DECC, 2009) No more than the 'Noise affected' noise management levels specified in Table 3 of the <i>Interim Construction Noise Guideline</i> (DECC, 2009) at other sensitive land uses No more than 15dBA above the night-time rating background level at any residence during the night time period, when measured using the LA1 (1 minute) noise descriptor 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 <i>Assessing Vibration: a technical guideline</i> (DEC, 2006) 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 <i>Assessing Vibration: a technical guideline</i> (DEC, 2006). <input type="checkbox"/> Approval not required unless activities. Notification required to the relevant TfNSW Project Manager, TfNSW Environment and Planning Manager, TfNSW Senior Manager Community Engagement, AA and ER prior to works occurring. <p><i>Supporting evidence demonstrating compliance with the exemptions to standard working hours criteria must be maintained and be available on request. Summary details of approved Exempt OOHW are to be reported to TfNSW by the Contractor Environment Manager at least monthly.</i></p>																													

Works:	No:	Rev:		
	<input type="checkbox"/> E23 Activities and works cause noise emissions that are <5dBA above background noise level from 10pm to 7am and are located in the Camellia and Rosehill precinct (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) <input type="checkbox"/> Approval not required. Notification required the relevant TfNSW Project Manager, TfNSW Environment and Planning Manager, TfNSW Senior Manager Community Engagement, AA and ER must be provided prior to these works occurring. <input type="checkbox"/> Community notification required <i>Supporting evidence demonstrating compliance with the exemptions to standard working hours criteria must be maintained and be available on request. Summary details of approved Exempt OOHW are to be reported to TfNSW by the Contractor Environment Manager at least monthly.</i>			
	<input type="checkbox"/> E28 Activities and works are outside standard hours and are considered low to medium risk (refer to out-of-hours protocol for identifying risk factor). <input type="checkbox"/> Approval from ER/ AA and community consultation (E39) required.			
	<input type="checkbox"/> E28 Activities and works are outside standard hours and are considered high risk (refer to out-of-hours protocol for identifying risk factor). <input type="checkbox"/> Approval from Secretary and community consultation (E39) required.			
	<input type="checkbox"/> E24 & E28 Activities and works are occurring in Eat Street outside the standard hours. <input type="checkbox"/> Approval required and Business Reference Group (E110) required to be consulted as well as community consultation (E39).			
	Consultants' acoustic assessment attached? <input type="checkbox"/> Yes <input type="checkbox"/> No			
H. Contractor's community notification strategy	Compliant with the PLR Community Consultation Strategy <input type="checkbox"/> Yes <input type="checkbox"/> No			
I. Associated impacts of proposed OOHW	<table border="0"> <tr> <td> <input type="checkbox"/> Dust e.g. heavy trucks; soil clearance <input type="checkbox"/> Traffic e.g. deliveries, lane closures <input type="checkbox"/> Pedestrian access e.g. pavements closed <input type="checkbox"/> Vibration e.g. rollers, damage to heritage properties <input type="checkbox"/> Adjacent construction works <input type="checkbox"/> Property access </td> <td> <input type="checkbox"/> Public transport e.g. schedule changes <input type="checkbox"/> Lighting e.g. floodlit residential areas <input type="checkbox"/> Parking e.g. closure of spaces <input type="checkbox"/> Impulsive vibration or noise <input type="checkbox"/> Continuous vibration or noise <input type="checkbox"/> Tonal vibration or noise <input type="checkbox"/> HHNIW (as defined by OOHW Protocol) <input type="checkbox"/> Others (specify) </td> </tr> </table>		<input type="checkbox"/> Dust e.g. heavy trucks; soil clearance <input type="checkbox"/> Traffic e.g. deliveries, lane closures <input type="checkbox"/> Pedestrian access e.g. pavements closed <input type="checkbox"/> Vibration e.g. rollers, damage to heritage properties <input type="checkbox"/> Adjacent construction works <input type="checkbox"/> Property access	<input type="checkbox"/> Public transport e.g. schedule changes <input type="checkbox"/> Lighting e.g. floodlit residential areas <input type="checkbox"/> Parking e.g. closure of spaces <input type="checkbox"/> Impulsive vibration or noise <input type="checkbox"/> Continuous vibration or noise <input type="checkbox"/> Tonal vibration or noise <input type="checkbox"/> HHNIW (as defined by OOHW Protocol) <input type="checkbox"/> Others (specify)
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J. Mitigation measures <i>E.g. noisy works moved to standard hours or 'low risk' hours; silencing; consultation.</i> <i>Refer to CEMP, CNVMP CoAs E30, E33 and E37.</i>	Mitigation measures have been identified in accordance with the Conditions of Approval and Tables 4, 5, 6 and 7 of the TfNSW Construction Noise and Vibration Strategy <i>(Refer to the relevant section of CNVIS)</i> In accordance with the PLR Communication Consultation Strategy, consultation with the community has informed the following mitigation measures: <i>(Particular days scheduled for work/ no works. Does the CNVIS require additional mitigation measures – refer to map/section of CNVIS that identifies this)</i>			
K. Evidence of Consultation with other PLR package contractors	Consultation with other PLR contract package contractors attached (as appropriate)? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Works:		No:	Rev:
L. Evidence of Consultation with community including Community /Business Agreements (in accordance with Community Consultation Strategy and E24 or E39)	Have these works been included in the consultation schedule circulated every 3 months for work? <input type="checkbox"/> Yes <input type="checkbox"/> No Does the community have any preference for alternative hours and/or duration reduction? Attach any of the outcomes from the community consultation <input type="checkbox"/> Yes <input type="checkbox"/> No Is the proposed work subject to Standard Respite periods under E37? <input type="checkbox"/> Yes <input type="checkbox"/> No (Comment, i.e <65dBA or Community/Business Agreement in place): Has the community notification also been sent to DPIE? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Comment: Attach details to this form		
	Contractor signature		
		Date	

M. TfNSW Communications Team	<p>Comments on application (include comment on community)</p> <p>Signature _____ Date _____</p> <p><input type="checkbox"/> Community notification required by Contractor? <input type="checkbox"/> Application on Register?</p>
N. Acoustics Advisor <i>For OOHW with high risk factors, make recommendation for approval by Secretary</i>	<p>Assessment of Risk Factors: <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High (refer to out-of-hour work protocol for example of risk factors)</p> <p><input type="checkbox"/> OOHW approved / endorsed (<i>delete as appropriate</i>) <input type="checkbox"/> OOHW approved with conditions (<i>see below</i>) <input type="checkbox"/> OOHW rejected</p> <p>Comments on application (include comment from Acoustics perspective)</p> <p>Signature _____ Date _____</p>
O. Environmental Representative <i>For OOHW, make recommendation for approval by ER or Secretary as applicable.</i>	<p><input type="checkbox"/> OOHW approved / endorsed (<i>delete as appropriate</i>) <input type="checkbox"/> OOHW approved with conditions (<i>see below</i>) <input type="checkbox"/> OOHW rejected</p> <p>ER recommendation for conditions of approval for OOHW / comments</p> <p>Attach additional letter/comments if required</p>
P. Approval to conduct OOHW <i>For OOHW with low and medium risk factors, Approval may be granted by the ER/AA; For OOHW with high risk factors approval by the Secretary is required.</i>	<p>Approved by (strike out as applicable): ER (with AA endorsement) / Secretary</p> <p>Signature _____ Date _____</p>

Appendix B – SPIR Compliance Table

Table B-1 PLR Out of Hours Work REMMMs and EPO's

Condition Number	Condition	How Addressed
REMMM RC-1	<p>Coordination and consultation with the Sydney Coordination Office and the following stakeholders would occur at the appropriate project stages as required to coordinate interfacing projects:</p> <ul style="list-style-type: none"> • Department of Planning and Environment. • Other Transport for NSW agencies (including Roads and Maritime Services; Sydney Trains and Sydney Buses). • Sydney Water. • City of Parramatta Council. • UrbanGrowth NSW Development Corporation. • Western Sydney University. • NSW Health (and its construction contractors). • Land and Housing Corporation. • Emergency service providers. • Utility providers. • Construction contractors. • Other stakeholders as required, as advised by Transport for NSW. <p>Coordination and consultation with these stakeholders would include:</p> <ul style="list-style-type: none"> • Current and upcoming development applications and precinct master plans. • 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 cumulative impacts of the Parramatta Light Rail and other interfacing projects. Depending on the nature of the conflict, this could involve: <ul style="list-style-type: none"> ○ Adjustments to the Parramatta Light Rail (Stage 1) construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects. ○ Coordination of traffic management arrangements between projects. ○ Coordination of noise generating activities, such as out of hours works. 	<p>Partially addressed - The PLR CCS commits to consulting with affected stakeholders including those identified in RC-1 in relation to all work including OOHW. Section 6.2 addresses the consultation requirements with the Sydney Coordination Office.</p>

Condition Number	Condition	How Addressed
REMMM NV-1	<p>A Construction Noise and Vibration Management Plan (CNVMP) would be developed in accordance with the requirements of Transport for NSW's Construction Noise Strategy and the Interim Construction Noise Guidelines (DECC 2009). It would to document all necessary measures to manage and mitigation mitigate potential noise and vibration levels during standard daytime working hours and for all and out-of-hours construction activities (refer to section 17.2.3 of the EIS). The CNVMP would also provide the framework and mechanisms for:</p> <ul style="list-style-type: none"> • The mitigation and management of the noise and vibration impacts from the project. • Development of site specific construction noise management plans. • Out-of-hours work associated with the project. 	<p>Partially addressed - The Protocol has been developed as the framework for OOHW associated with PLR and to comply with the CoA, REMMMs and EPO's and align with the CNVS and ICNG. Each CNVMP prepared for PLR will align with the Protocol.</p>
REMMM NV-2	<p>The CVNMP prepared for the project would include standard mitigation and management measures would be applied to for the works with reference to the NSW Interim Construction Noise Guideline (ICNG) and CNVS. Mitigation and management measures which would be considered include:</p> <p>For construction concentrated in a single area, such as at the stops, worksites, substation construction sites, bridge sites and the stabling and maintenance facility location, temporary acoustic fencing/barriers around the site perimeter would be considered where feasible and reasonable to mitigate off-site noise levels.</p> <ul style="list-style-type: none"> • Given the potentially high noise levels at residential receivers, adherence to daytime construction hours is recommended would be used for excavation, demolition or rock breaking activities, and for activities concentrated in a single area (i.e. activities that do not move along the alignment, and do not require out-of-hours activities for safety reasons or to minimise disruption to road networks). • Where possible, noisy works would be scheduled to minimise impacts to adjacent businesses and commercial properties, such as avoiding undertaking noisy activities on Eat Street during lunch and dinner periods. • Out of hours works would be programmed to minimise the number of consecutive out of hour work periods impacting the same receptors. • Consultation would be carried out with local schools and other educational facilities prior to noise intensive works to ensure impacts are minimised during examination periods and/or other critical periods in the school calendar (where works are predicted to exceed the relevant construction noise management level for this receiver). • Consultation with nearby childcare centres would be carried out to potentially avoid noisy works during rest periods at the centres (where possible). • Simultaneous operation of noisy plant in close proximity to sensitive receptors would be avoided (where possible). 	<p>Partially addressed - Section 5.3 discusses the coordination of OOHW by TfNSW to provide respite to sensitive receivers. Section 6.1 discusses key points of the PLR CCS in relation to consulting and notifying the community and affected stakeholders of OOHW, respite provisions and the duration and impact of such works.</p>

Condition Number	Condition	How Addressed
	<ul style="list-style-type: none"> Equipment which is used intermittently would be shut down when not in use. Where possible, the offset distance between noisy plant items and nearby noise sensitive receptors would be as great as possible. Where possible, equipment with directional noise emissions would be oriented away from sensitive receptors. Construction compounds would use 2.4 metre high hoarding of solid construction where required to minimise noise on sensitive receivers, where safe to do so. Structures such as site sheds would be positioned to further shield sensitive and residential receivers from works activities. Regular compliance checks for noise emissions from all plant and machinery used for the project would be carried out to indicate whether noise emissions from plant items are higher than predicted. This would also identify defective silencing equipment on the items of plant. Ongoing noise monitoring would be carried out during construction at sensitive receptors during critical periods to identify and assist in managing high risk noise events. Where possible heavy vehicle movements should be limited to daytime hours. Reversing of equipment should be minimised so as to prevent nuisance caused by reversing alarms, which would be limited to the use of non-tonal reversing alarms. Loading and unloading should be carried out away from sensitive receptors, where practicable. Work should be scheduled to provide respite periods from the noisiest activities, and impacted residents should be communicated with to clearly explain the duration and noise levels for the works. 	
REMMM NV-3	<p>In the event of predicted exceedances of the noise goals, particularly during out-of-hours works, additional noise mitigation and management measures to be considered in the CNVMPs as described in the CNS. Additional mitigation and management measures would be determined on a site specific basis and are dependent upon the level of predicted impact. Additional mitigation and management measures which would be considered include:</p> <ul style="list-style-type: none"> Periodic notifications – These include regular newsletters, letterbox drops or advertisements in local papers to provide an overview of current and upcoming works and other topics of interest. Website updates – The project website would form a resource for members of the community to seek further information, including CNVPs and current and upcoming construction activities. Project info-line and construction response line – Transport for NSW will operate a construction response line and a project info-line (1800 775 465). These numbers will provide 	<p>Section 7.1 commits to implementing the CNVS Additional Management Measures and refers to the applicability of Section 8.2 of the CNVS to OOHW.</p>

Condition Number	Condition	How Addressed
	<p>a dedicated 24-hour contact point for any complaints regarding construction works and for any project enquiries. All complaints require a verbal response within two hours. All enquiries require a verbal response within 24 hours during standard construction hours, or on the next working day during out-of-hours work (unless the enquirer agrees otherwise).</p> <ul style="list-style-type: none"> • Email distribution list – An email distribution list would be used to disseminate project information to interested stakeholders. • Signage – Signage on construction sites would be provided to notify stakeholders of project details and project emergency or enquiry information. • Specific notifications – Specific notifications would be letterbox dropped or hand distributed to the nearby residences and other sensitive receptors no later than seven 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. • Phone calls – Phone calls may be made to identified/affected stakeholders within seven days of proposed work. For these works considering the large numbers of receptors, phone calls are not likely to be considered a reasonable mitigation and management measure in all cases, but could be used to inform specific receptors if requested (after notification of the works as above). • Individual briefings – Individual briefings may be used to inform stakeholders about the impacts of high noise activities and mitigation and management measures that would be implemented. Communications representatives from the contractor(s) would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Considering the large numbers of potentially affected receptors, individual briefings may not be considered a reasonable mitigation and management measure in all cases, but could be used for specific receptors if requested (after notification of the works as above). • Monitoring – Ongoing noise monitoring during construction at sensitive receptors during critical periods would be used to identify and assist in managing high risk noise events. Monitoring of noise would also be carried out in response to complaints. All noise monitoring would be carried out by an appropriately trained person in the measurement and assessment of construction noise and vibration, who is familiar with the requirements • Project specific respite offer – Residents subjected to lengthy periods of noise or vibration may be eligible for a project specific respite offer. The purpose of such an offer is to provide residents with respite from an ongoing impact. 	

Condition Number	Condition	How Addressed
REMMM NV-4	For sensitive receivers that operate outside standard construction hours, for example hospitals which operate on a 24-hour basis, feasible and reasonable noise mitigation options and measures would be developed in consultation with the sensitive receiver.	Partially addressed - The PLR CCS commits to consulting with affected stakeholders in relation to all work including OOHW. Section 4.3.1 addresses agreement of working hours with businesses and other noise and vibration sensitive non-residential receivers.
REMMM NV-5	The use of noise intensive plant items would be scheduled for normal working hours. If the works cannot be carried out during the daytime, it has been recommended to complete them before 11 pm, where practicable. This would be particularly relevant for works impacting the following noise catchment areas (NCAs) where a number of activities have been predicted to result in high impacts on many residential receivers during the night-time: <ul style="list-style-type: none"> NCA04 in the Westmead precinct NCA06 and NCA07 in the Parramatta North precinct NCA11 in the Rosehill and Camellia precinct. 	Section 3.3 discusses Highly Noise Intensive Work and the limitations to hours for this work as per Condition E27. Section 5.1 discusses the planning of OOHW including a hierarchy of preferred working hours, which notes that noise intensive work/plant must be scheduled before 10pm where reasonable and feasible and where approved through this Protocol.
REMMM NV-6	Opportunities to reduce road traffic noise during construction would be investigated during construction planning, including restricting heavy vehicle movements to standard construction hours and/or to routes with fewer sensitive receivers.	Section 5.1 discusses the consideration of road traffic noise caused by construction and the requirement to plan works in consideration of this REMMM. Section 6.2 addresses consultation with the Sydney Coordination Office for truck movements in the Parramatta CBD.

Condition Number	Condition	How Addressed
REMMM NV-7	<p>Where vibration intensive construction activities are proposed within 100 metres of sensitive receivers, these works would be confined to the less sensitive daytime period where possible. The potential impacts from vibration are to be considered in the site-specific Construction Noise and Vibration Impact Statements (to be developed during detailed design). In general, mitigation and management measures that would be considered include:</p> <ul style="list-style-type: none"> • Relocate vibration generating plant and equipment to areas within the site in order to lower the vibration impacts. • Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment. • Use lower vibration generating items of excavation plant and equipment (e.g. smaller capacity rock breaker hammers). • Minimise consecutive works in the same locality (if applicable). • Use dampened rock breakers to minimise the impacts associated with rock breaking works. <p>If vibration intensive works are required within the safe working distances, vibration monitoring or attended vibration trials would be carried out to ensure that levels remain below the cosmetic damage criterion.</p> <p>Building condition surveys would be completed both prior to the commencement of construction works and following the completion of construction works to identify existing damage and any damage due to the works.</p> <p>Measurements of existing ambient vibration levels would be carried out at receivers with vibration sensitive equipment during the detailed design. This information would be used to inform the site-specific Construction Noise and Vibration Impact Statements for works near these locations.</p>	<p>Partially addressed – Section 2.3 discusses Highly Noise Intensive Work, including vibration intensive work and the limitations to hours for this work as per Condition E27.</p> <p>Section 3.2 discusses the planning of OOHW including a hierarchy of preferred working hours, which notes that noise intensive work/plant, including those that will generate vibration (above the HVML) must be scheduled before 10pm where reasonable and feasible and where approved through this Protocol. Mitigation and management will be developed during the preparation of CNVIS and/or relevant CNVMP which must support OOHW Applications.</p>
REMMM NV-8	<p>Mitigation and management measures to address potential noise and vibration impacts to facilities within the Westmead Research Zone would be implemented during construction. Mitigation and management measures would be determined in consultation with the facility operator / owner and informed by the sensitivity of impacted spaces prior to the commencement of construction. The mitigation and management measures (in addition to those provided in NV-1 to NV-7) could include:</p> <ul style="list-style-type: none"> • Consultation with the affected facilities to determine periods when noise and/or vibration intensive works can occur with least impact. • Relocation of vibration sensitive equipment to less impacted locations within the facilities. • Vibration isolation of sensitive equipment predicted to have potential impacts. • Unattended noise and vibration monitoring within the facilities to ensure noise and/or vibration levels are within acceptable levels. 	<p>Partially addressed – Section 5.1 outlines a hierarchy of preferred working hours for OOHW which can be overridden by the outcomes of community consultation. The PLR CCS which is summarised in Section 6.1 commits to consulting with affected sensitive receivers regarding OOHW to comply with Condition E39. Mitigation and management will be developed during the preparation of CNVIS and/or relevant CNVMP which must support OOHW Applications.</p>

Condition Number	Condition	How Addressed
EPO-NV-1 Construction	Noise levels would be minimised with the aim of achieving the noise management levels where feasible and reasonable.	<p>Section 1.5.1 commits to implementing the CNVS Standard and Additional Management Measures to minimise noise and vibration impact and refers to the applicability of Sections 8.1 and 8.2 of the CNVS to PLR and OOHV.</p> <p>Section 4 requires that OOHV be planned and assessed in alignment with the CNVS. The CNVS outlines the process for mitigating noise and vibration impacts with the aim of achieving noise and vibration management levels. Where exceedances occur, Additional Management Measures apply to manage residual noise and vibration impacts (CNVS Section 8.2).</p>

Appendix C – Quantitative Risk Factors

Table C-1 Quantitative Noise Risk Assessment

Receiver Type	Receiver Perception ³	Sensitive Periods	Associated risk level
All receiver types	Low impact (<NML)	Any period	Low Risk
Childcare	< 55 dBA	During centre operating hours	Low Risk
	> 55 dBA	Outside centre operating hours (e.g. Day (OOH), Evening and Night, holiday period). Noting operating hours can occur outside Standard Construction Hours	Low Risk
	> 55 dBA < 75 dBA	During centre operating hours (periods such as day sleep times, duration of works, and upper limits of noise should be also considered in the assessment)	Moderate Risk
	> 75dBA	During centre operating hours	High risk
Cinema	< 55dBA	During session times	Low Risk
	> 55dBA	Outside of session times	Low Risk
	> 55dBA < 75 dBA	During session times	Moderate Risk
	> 75dBA	During session times	High risk
Commercial – Office/retail	< 65dBA	Any period	Low Risk
	> 65dBA	Outside of trading / business hours	Low Risk
	> 65dBA < 70dBA	During trading / business hours	Moderate
	> 70dBA	During trading / business hours	High risk
Commercial – Industrial	< 75dBA	Any period	Low Risk
	> 75dBA	Outside operation periods of surrounding industrial receivers	Low Risk
	> 75dBA < 85dBA	During operation periods of surrounding industrial receivers	Moderate
	> 85dBA	During operation periods of surrounding industrial receivers	High risk

Receiver Type	Receiver Perception ³	Sensitive Periods	Associated risk level
Commercial – Sensitive (e.g. Acoustic Space)	< 50dBA	During and outside facility operating periods	Low Risk
	> 50dBA	Outside facility operating periods	Low Risk
	> 50dBA	During facility operating periods that would not prevent the operation of facility (such as through agreed scheduling or respite periods)	Moderate Risk
	> 50dBA	During facility operating periods that would prevent the operation of facility (such as through agreed scheduling or respite periods)	High Risk
Hotel ⁴	< 65 dBA	Any period	Low Risk
	> 65 dBA	Any period	Moderate Risk
	> Sleep disturbance	Night	High Risk
Educational institutions	< 55 dBA	Any period	Low Risk
	> 55 dBA	Outside core teaching and study hours	Low Risk
	> 55 dBA < 75 dBA	During core teaching and study hours	Moderate Risk
	> 75dBA	During core teaching and study hours	High risk
Medical	< 65 dBA	Any period	Low risk
	> 65 dBA	Day, Day (OOH), evening	Moderate Risk
		Nights	High Risk
	> 75 dBA	Any OOH works period	High Risk
Place of Worship	< 55dBA	Any period	Low Risk
	> 55dBA	Outside periods of worship, congregation or passive occupation	Low Risk
	> 55dBA	During periods of passive occupation	Moderate
	> 55dBA	During any periods of worship or congregation	High Risk

Receiver Type	Receiver Perception ³	Sensitive Periods	Associated risk level
Recreation (Passive)	< 65dBA	During normal periods of use and special events	Low Risk
	> 65dBA	Outside normal periods of use and special events	Low Risk
	> 65 dBA < 85 dBA	During normal periods of use and special events	Moderate Risk
	>85 dBA	During normal periods of use and special events	High Risk
Recreation (Active)	< 65dBA	Day and evening	Low Risk
	> 65 dBA	Night and/or when not in use	Low Risk
	> 65 dBA < 85 dBA	Day, Day (OOH) and evening	Moderate Risk
	> 85 dBA	Day, Day (OOH) and evening	High risk
Residential	Noticeable - Moderately Intrusive ¹	Day	Low Risk
	Noticeable - Clearly audible ¹	Day (OOH), Evening	Low Risk
	Clearly audible - highly intrusive ¹	Day (OOH), Evening	Moderate
	Clearly audible ¹	Night	Moderate
	Moderately intrusive or above (sleep disturbance) ¹	Impacts that exceed the sleep disturbance criteria for more than two consecutive nights where alternate accommodation is feasible	Moderate
	Moderately intrusive or above (sleep disturbance) ¹	Impacts that exceed the sleep disturbance criteria for more than two consecutive nights without feasible alternate accommodation	High Risk
	Highly Intrusive ¹	Day	Moderate
		Day (OOH), Evening	High Risk
Commercial - Sensitive Equipment	< Established criteria ²	Any period	Low Risk
	> Established criteria ²	During agreed periods that would not prevent the operation of facility (such as through agreed scheduling or respite periods)	Moderate

Receiver Type	Receiver Perception ³	Sensitive Periods	Associated risk level
	> Established criteria ²	During periods that would be likely to prevent the operation of facility (such as through agreed scheduling or respite periods) or risk damage to the equipment or space	High Risk

1. Receiver perception levels for residential receivers as per Table 9 of the TfNSW CNVS.
2. Receiver perception level criteria established as part of the Assessment System and Baseline Study (as applicable to Cumberland and Westmead Health Precincts) or criteria established in consultation with affected receivers (applicable to other parts of the Project area).
3. External free field prediction or measure.
4. Alternate criteria may be proposed on case by case basis based on consultation and / or review of prevalent facade performance. Internal criteria to be agreed to by AA In accordance with Australian Standard, AS2107:2016.

Table C-2 Quantitative Vibration Risk Assessment

Receiver Type	Receiver Perception ^{1,2,}	Sensitive Periods	Associated risk level
All receiver types	<Preferred values	Any period	Low Risk
Childcare	<Preferred values	During centre operating hours	Low Risk
	>Maximum values	Outside centre operating hours (e.g. Day (OOH), Evening and Night, holiday period). Noting operating hours can occur outside Standard Construction Hours	Low Risk
	>Preferred values <Maximum values	During centre operating hours (periods such as day sleep times, duration of works, and upper limits of noise should be also considered in the assessment)	Moderate Risk
	>Maximum values	During centre operating hours	High risk
Cinema	<Preferred values	During session times	Low Risk
	>Maximum values	Outside of session times	Low Risk
	>Preferred values <Maximum values	During session times	Moderate Risk
	>Maximum values	During session times	High risk
Commercial – Office/retail	<Preferred values	Any period	Low Risk
	>Maximum values	Outside of trading / business hours	Low Risk
	>Preferred values <Maximum values	During trading / business hours	Moderate
	>Maximum values	During trading / business hours	High risk
Commercial – Industrial	<Preferred values	Any period	Low Risk
	>Maximum values	Outside operation periods of surrounding industrial receivers	Low Risk
	>Preferred values <Maximum values	During operation periods of surrounding industrial receivers	Moderate
	>Maximum values	During operation periods of surrounding industrial receivers	High risk

Receiver Type	Receiver Perception ^{1,2}	Sensitive Periods	Associated risk level
Commercial – Sensitive (e.g. Acoustic Space)	<Preferred values	During and outside facility operating periods	Low Risk
	>Maximum values	Outside facility operating periods	Low Risk
	>Preferred values	During facility operating periods that would not prevent the operation of facility (such as through agreed scheduling or respite periods)	Moderate Risk
	>Preferred values	During facility operating periods that would prevent the operation of facility (such as through agreed scheduling or respite periods)	High Risk
Hotel	<Preferred values	Any period	Low Risk
	>Preferred values <Maximum values	Any period	Moderate Risk
	>Maximum values	Any period	High Risk
Educational institutions	<Preferred values	Any period	Low Risk
	>Maximum values	Outside operation periods of surrounding industrial receivers	Low Risk
	>Preferred values <Maximum values	During operation periods of surrounding industrial receivers	Moderate risk
	>Maximum values	During operation periods of surrounding industrial receivers	High Risk
Medical	<Preferred values	Any period	Low risk
	>Preferred values <Maximum values	Day, Day (OOH), evening	Moderate Risk
		Nights	High Risk
	>Maximum values	Any OOH works period	High Risk
Place of Worship	<Preferred values	Any period	Low Risk
	>Maximum values	Outside periods of worship, congregation or passive occupation	Low Risk
	>Preferred values <Maximum values	During periods of passive occupation	Moderate
	>Maximum values	During any periods of worship or congregation	High Risk

Receiver Type	Receiver Perception ^{1,2}	Sensitive Periods	Associated risk level
Recreation (passive)	<Preferred values	During normal periods of use and special events	Low Risk
	>Maximum values	Outside normal periods of use and special events	Low Risk
	>Preferred values <Maximum values	During normal periods of use and special events	Moderate Risk
	>Maximum values	During normal periods of use and special events	High Risk
Recreation (Active)	<Preferred values	Day and evening	Low Risk
	>Maximum values	Night and/or when not in use	Low Risk
	>Preferred values <Maximum values	Day, Day (OOH) and evening	Moderate Risk
	>Maximum values	Day, Day (OOH) and evening	High risk
Residential	<Preferred values	Any period	Low Risk
	>Preferred values <Maximum values	Day (OOH), Evening	Moderate
	>Preferred values <Maximum values	Night	Moderate
	>Maximum values	Impacts that exceed the criteria for more than two consecutive nights where alternate accommodation is feasible	Moderate
	>Maximum values	Impacts that exceed the criteria for more than two consecutive nights without feasible alternate accommodation	High Risk
Commercial - Sensitive Equipment	< Established criteria ³	Any period	Low Risk
	> Established criteria ³	During agreed periods that would not prevent the operation of facility (such as through agreed scheduling or respite periods)	Moderate
	> Established criteria ³	During periods that would be likely to prevent the operation of facility (such as through agreed scheduling or respite periods) or risk damage to the equipment or space	High Risk

1. Receiver perception levels as per criteria outlined in Table 3-2 of the Protocol.
2. Receiver perception covers human response to vibration only. Structural impacts would be considered separately as part of CNVMP(s) and CNVIS(s).
3. Receiver Perception level criteria established as part of the Assessment System and Baseline Study (as applicable to Cumberland and Westmead Health Precincts) or criteria established in consultation with affected receivers (applicable to other parts of the Project area).

Appendix D – ER and AA Endorsement

Air Noise Environment Pty Ltd

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Attention: Transport for NSW (PLR)

Ref: OOHW_Protocol_AA_Endorsement_10Mar2022

10 March 2022

RE: PLR Out of Hours Work Protocol Revision 9.01 March 2022 - Adequacy for Submission (AA Review)

Beau Weyers, BEng(Mech), MAAS, RPEQ 09343, appointed Acoustic Advisor (AA), reviewed the following documentation with regard to the PLR – Stage 1 project:

Title:	Document Reference:	Version Status
Parramatta Light Rail –Stage 1 Out-of-Hours Work Protocol	PLR-TFNSW-CBD-PE-FRM-000002	Revision 9.01 02 Mar 2022
Parramatta Light Rail – Stage 1 Out-of-hours work protocol	PLR-TFNSW-CBD-PE-FRM-000002	Revision 8.6, 08 Nov 2019
PLR Out-Of-Hours Work Protocol Form	PLR-TFNSW-CBD-PE-FRM-000001	Revision 5.1

Pursuant to Conditions of Approval A29, the review confirms the documents have been reviewed for consistency by the AA, and the document remains in agreement with the acoustic requirements of the Terms of Approval (NSW Government – Infrastructure Approval (Application No.: SSI 8285)), as well as best practice methodologies for acoustics.

Updates to Revision 9.01 are minor and generally administrative.

Yours sincerely
for Air Noise Environment Pty Ltd

Beau Weyers BE(Mech), MAAS, RPEQ
Senior Environmental Engineer

Note: All professional advice provided by Air Noise Environment, including any information contained in this letter, is subject to the terms of the Disclaimer shown on our website at www.ane.com.au/disclaimer.html



9 March 2022

Transport for NSW

Attention to: **Megan Haberley**
Senior Manager Environment
Parramatta Light Rail
130 George St, Parramatta, NSW 2150

**Review of Parramatta Light Rail (Stage 1)
Out of Hours Work Protocol**

Pursuant to SSI8285 Condition of Approval A23 (d) i), as the approved Environmental Representative, I confirm that I have reviewed the updated Parramatta Light Rail (Stage 1) Out of Hours Work Protocol (PLR-TFNSW-CBD-PE-FRM-000002), revision 9.01, dated 2 March 2022, prepared by Transport for New South Wales, for consistency with the requirements of the Conditions of Approval.

In my opinion the updates to the aforementioned document are of an administrative nature and are consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development.

Yours sincerely,

Australian Quality Assurance & Superintendence Pty Ltd (AQUAS)

Gillian Lehn

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Filename : *AQ1148.05 PLR TFNSW OOHW protocol rev 9.1 endorsement 220309*

Appendix E – DPE Approval

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