Out of Hours Work Protocol

Sydney Terminal Building Revitalisation

Revision 5

16 September 2025

NSW GOVERNMENT

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Contents

Document control

Version control

Revision	Date	Description	Approval
1	1/06/2025	Final draft submission	Billy Lai
2	12/06/2025	Update ER Comments	Billy Lai
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4	25/08/2025	Updated to address DPHI comments	Billy Lai
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Glossary / Abbreviations

Abbreviations	Expanded Text
Background noise level	The underlying level of noise present in the ambient noise, when extraneous noise is removed in the absence of noise under investigation. This is described using the L_{A90} descriptor
CNVIS	Construction Noise and Vibration Impact Statement
Monitoring Program	Construction Noise and Vibration Monitoring Program
CNMP	Construction Noise and Vibration Management Plan Program
CNVG	*Construction Noise and Vibration Guideline* (TfNSW, 2019)
CoA	Conditions of Approval
dB(A)	A measure of A-weighted sound levels
DPHI	Department of Planning, Housing and Infrastructure
EPA	Environment Protection Authority (NSW)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
ER	Environmental Representative
ICNG	*Interim Construction Noise Guideline* (DECC, 2009)
L_{A1}	The A-weighted sound pressure level that is exceeded for 1% of a measurement interval (such as 1 minute, shown as $L_{A1(1minute)}$)
L_{Aeq}	The A-weighted equivalent continuous (energy average) sound pressure level of the construction works under consideration over a defined period (such as 15-minutes, shown as $L_{Aeq(15\ minute)}$). Other descriptors may be used providing they can be justified as representing the characteristics of the construction noise. Note that during verification monitoring the L_{Aeq} should exclude other sources such as from industry, road, rail and the community
L_{A90}	The “Background Noise Level” in the absence of construction activities. This parameter represents the average minimum noise level during the daytime, evening and night-time periods respectively. The $L_{Aeq(15\ minute)}$ construction noise objectives are based on an allowance margin above the L_{A90} background noise levels, see Rating background noise level definition
NCA	Noise Catchment Area
NML	Noise Management Level as defined by the NSW EPA and in compliance with the ICNG. NMLs may be referred to as noise objectives in this document

OOHW	Out of Hours Work (work outside the standard hours of construction stipulated in the planning approval conditions)
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
UMM	Updated Mitigation Measures
Secretary	The Secretary of the New South Wales Department of Planning, Industry and Environment
Sensitive receiver	A sensitive receiver may refer to persons, facilities, structures or organisms that can be impacted by noise and/or vibration such as residents, students, specialist medical equipment, heritage structures and marine mammals etc.
SSI	State Significant Infrastructure
TfNSW	Transport for New South Wales
Vibration	The term for the perception of continuous, impulsive or intermittent shaking, pulsing or trembling caused by construction activities. Vibration to be measured and assessed as outlined in Appendix A of this strategy

1 Introduction

1.1 Context

This Out of Hours Protocol (Protocol) sets out the process for preparing, considering, assessing, managing and approving work on the Sydney Terminal Building Revitalisation Project – Stage 1 (the Project) that is undertaken outside of standard construction hours (i.e. Out of Hours). The Project is State Significant Infrastructure (SSI) as approved by the Minister for Planning on 17 November 2023 (SSI-45421960) following preparation of an Environmental Impact Statement and Submissions Report.

The Sydney Terminal Building is situated at the southern end of Sydney's Central Business District, within the Central Station precinct in Haymarket. The site encompasses the Sydney Terminal Building and its associated public domain areas, including Eddy Avenue Colonnade, Eddy Avenue Plaza, and the Western Forecourt. Central Station serves as a major transport interchange, connecting suburban and intercity rail services, light rail, and bus networks.

The majority of the Project work is expected to take place during standard construction hours as below:

(a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive;

(b) 8:00 am to 6:00 pm Saturdays; and

(c) at no time on Sundays or public holidays.

However, this Protocol is intended to address work (and resultant potential noise) that may be required outside of the above standard hours as attributable to a number of contextual factors. In particular, road/vehicular access to Eddy Avenue Plaza is restricted by the regular operation of the light rail service along Eddy Avenue such that required access (e.g. for deliveries and removal work in Eddy Avenue Plaza) is typically only available between the hours of 2:00am to 4:00am. Such access is largely related to haulage of materials to the approved works compound at the Sydney Yard Area (which remains within the broader Central Station precinct). Notably, the Sydney Yard Area will also be subject to this OOHW protocol.

It is also of note that works are not (generally) limited by rail possessions given the construction footprint is outside of the rail corridor.

1.2 Purpose of this report

This Protocol has been developed to comply with relevant requirements of the SSI Conditions of Approval (CoAs). Table 1-1 indicates where these requirements have been addressed.

Table 1-1 Out of Hours Work CoA

CoA / REMM	Requirements	How addressed
CoA D24	**Work Hours** Work must only be undertaken during the following standard construction hours: (d) 7:00 am to 6:00 pm Mondays to Fridays, inclusive; (e) 8:00 am to 6:00 pm Saturdays; and (f) at no time on Sundays or public holidays.	Section 2.1 identifies the standard hours of work in accordance with CoA D24.
CoA D25	**Highly Noise Intensive Work**	Section 2.4 identifies the standard hours for highly

	Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 6:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work.	noise intensive works in accordance with CoA D15.
CoA D27	**Variation to Work Hours** Notwithstanding **Conditions D24** and **D25** work may be undertaken outside the hours specified in the following circumstances (a, b, c or d): (a) **Safety and Emergencies**, including: (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) 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. On becoming aware of the need for emergency work in accordance with **Condition D27(a)**, the **ER** and the Planning Secretary must be notified of the reasons for such work. Best endeavours must be used to notify all noise and/or vibration affected residents and owners/occupiers of properties identified sensitive land use(s) of the likely impact and duration of those work. (b) **Work that meets all of the following criteria**: (i) Work that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land use(s); and (ii) Work that causes LAmax noise levels no more than 15 dBA above the RBL at any residence during the night-time; and (iii) Work that causes: • continuous or impulsive vibration values, measured at the most affected residence no more than the preferred values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), or • intermittent vibration values measured at the most affected residence that are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006). (c) **By Approval**, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the SSI; or (ii) work which is not subject to an EPL that is approved under an **Out-of-Hours Work Protocol** as required by **Condition D28**; or	Section 2.2 addresses clauses a, b, c, d as exemptions to standard working hours . Section 2.6 outlines the notification process for Emergency Work.

	(iii) negotiated agreements with directly affected residents and sensitive land use(s). (d) **By Activity**, including: (i) Deliveries and load out; (ii) Installation of services (Internal only); (iii) Roof construction – Grand Concourse ; (iv) Roof construction – Light Rail skylight; (v) Demolition (Internal only – Eddy Avenue Plaza and Central Electric Building); and (vi) Western forecourt strengthening. The activities identified in **Condition D27(d)** are defined in Table 22, Appendix K in the documents listed in **Condition A1** . ***Note:*** *Although the activities identified in* ***Condition D27(d)*** *permit works to occur outside the Work hours identified in* ***Condition D24****, these activities still need to be managed within the* ***CEMP*** *and* ***CNVIS*** *frameworks and any other relevant conditions.*	
CoA D28	**Out-Of-Hours Work Protocol – Works Not Subject to an EPL** An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of Work which is outside the hours defined in Conditions D24, and that is not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of Out-of-Hours Work and implemented for the duration of the Out-of-Hours Work. The Protocol must be prepared in consultation with the ER and must include: (a) justification as to why these Works need to be undertaken as Out-of-Hours Work; (b) identification of low, medium and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: (i) the ER must review all proposed out-of-hours activities and confirm their risk levels, (ii) low and medium risk activities can be approved by the ER, and (iii) high risk activities that are approved by the Planning Secretary; (c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; (d) a process for selecting, justifying and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods. The measures must take into account the predicted noise levels (based off worst case scenarios and scenarios where mitigation measures will be implemented) and the likely frequency and duration of the out-of-hours works that sensitive land use(s) would be exposed to, including the number of noise awakening events; (e) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and	The processes of the OOHW protocol are provided in Section 3, including the relevant assessment (in relation to NML and vibration criteria), mitigation and approval processes. a) justifications to working out of hours is detailed in Section 2.2. Where an Out-Of-Hours Work approval is required, justifications would be included in the application. The hierarchy of work hours is included in Section 2.5. b) low, medium and high-risk activities is defined in Section 3.2, and Table 3-3 details the mitigation measures. i) Section 3.4 details the review process, TfNSW and the ER would review all out-of-hours work. ii) Section 3.4 details the approval process, low and medium risk would be approved by the ER. iii) Section 3.4 details the approval process, high risk would be approved by the Planning Secretary. c) Table 3-3 details the mitigation measures for airborne noise out-of-hours work. The process for

	(f) notification arrangements for affected receivers for approved out-of-hours work and notification to the Planning Secretary of approved low risk out-of-hours works. The Protocol must be submitted to and approved by the Planning Secretary before the commencement of out-of-hours work. The approved Protocol must be implemented for the duration of Work. This condition does not apply if the requirements of **Condition D27 (a),(b), (c)(ii) or (d)** are met, or if the Work is subject to an EPL or if a negotiated agreement is made with the impacted residents and sensitive land use(s).	managing work against the vibration criteria is detailed in Section 3-3. d) The process for the consideration of out-of-hours work against the relevant NML and vibration criteria is outlined in Section 3.2 and Section 3.3, respectively; e) Section 3.6 details the coordination of out-of-hours work. f) Notification arrangements are detailed in Section 3.5.2, it is noted in Section 3.4 that the Planning Secretary would be notified of low risk out-of-hour works.
CoA D29	**Construction Noise Management Levels and Vibration Criteria** Mitigation measures must be implemented with the aim of achieving the following noise management levels and vibration objectives: (a) construction 'Noise affected' NMLs established using the *Interim Construction Noise Guideline* (DECC, 2009); (b) vibration criteria established using the *Assessing vibration: a technical guideline* (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 - 2006 "*Explosives - Storage and Use - Use of Explosives*"DEI; (d) BS 7385 Part 2-1993 "*Evaluation and measurement for vibration in buildings Part 2*" as they are "applicable to Australian conditions"; and (e) the vibration limits set out in the *German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures* (for structural damage). Work that exceeds the noise management levels and/or vibration criteria must be managed in accordance with the **Noise and Vibration CEMP Sub-plan.**	Section 3.2 and 3.3 outlines relevant NML and vibration criteria, respectively. Including the determination of low, medium and high-risk activities, and the implementation of appropriate mitigation measures.
CoA D30	Mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) — internal $L_{Aeq(15\ minute)}$: 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal $L_{Aeq(15\ minute)}$: 35 dB(A). The mitigation measures must be outlined in the **Noise and Vibration CEMP Sub-plan,** including in any **Out-of-Hours Work Protocol**, required by **Condition D28**.	Section 3.2 outlines appliable noise mitigation measures.

CoA D31	Noise generating work in the vicinity of community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled during sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	Section 3.2 outlines appliable noise mitigation measures.
CoA D33	**Construction Noise and Vibration Impact Statements (CNVIS)** must be prepared for work that may exceed the noise management levels, vibration criteria and/or ground-borne noise levels specified in **Condition D29** and **Condition D30** at any residence outside construction hours identified in **Condition D24**, or where receivers will be highly noise affected. The **CNVIS** must include specific mitigation measures identified for the affected sensitive land use(s) through consultation and the mitigation measures must be implemented for the duration of the work. A copy of the **CNVIS** must be provided to the **ER** prior to the commencement of the associated work. A copy/ies of **CNVIS** must be made available to the Planning Secretary upon request.	Section 3.1 outlines noise assessment approach as per the CNVG.
CoA B2	The **Community Communication Strategy** must: (a) identify people, organisations, councils and agencies to be consulted during the design and work phases of the SSI; (b) identify details of the community and customers moving through the terminal and its demographics; (c) identify timing of consultation; (d) set out procedures and mechanisms for the regular distribution of accessible information including multicultural, vulnerable and Cultural And Linguistically Diverse (CALD) communities about or relevant to the SSI; (e) identify opportunities for education within the community about construction and project benefits (f) detail the measures for advising the community in advance of upcoming construction including upcoming out-of-hours work as required by **Condition D28**; (g) set out procedures and mechanisms: (i) through which the community can discuss or provide feedback to the Proponent; (ii) through which the Proponent will respond to enquiries or feedback from the community; (iii) to resolve any issues and mediate any disputes that may arise in relation to the environmental management and delivery of the SSI, including disputes regarding rectification or compensation; and (h) address who will engage with the community, relevant councils and agencies.	Section 3.5 address the community strategy in relation to OOHW as per CNVG.

Note: Refer to Attachment A for compliance with relevant Mitigation Measures.

1.3 Protocol Consultation, Endorsement and Approval

The consultation and the approval requirements of this Protocol are summarised below.

1.3.1 Endorsement

The Protocol will be updated in consultation with the Independent Environmental Representative (ER).

The ER will provide a letter indicate that this protocol was developed in consultation with the ER.

1.3.2 Approval

This Protocol is to be updated accordingly and incorporate the relevant requirements of the SSI Conditions of Approval.

Approval of this Protocol is to be attached to the document version approved by the Secretary.

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.

1.3.4 Major protocol amendments

Any major amendments to the Protocol must be submitted to the Secretary for approval.

1.4 Accountabilities

The Gartner Rose Environment and Sustainability Manager is accountable for this Protocol. Accountability includes monitoring its effectiveness and performing a formal document review.

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

Roles and responsibilities are outlined in Section 1.6.

1.5 Governance

This Protocol should be read and implemented in conjunction with the following documents:

- TfNSW Construction Noise and Vibration guideline (CNVG), TfNSW 2024
- Construction Noise and Vibration Management Plan (CNVMP)
- Construction Noise and Vibration Impact Statements (CNVIS)

1.5.1 TfNSW Construction Noise and Vibration Guideline

The Project will be implemented in general accordance with the CNVG. Where discrepancies between the SSI Approval and the CNVG exist, this Protocol, which specifically aligns to the project-specific Conditions of Approval, takes precedence over the CNVG where inconsistencies occur.

All relevant Standard and Additional Mitigation Measures of the CNVG will apply to OOHW to minimise impacts to the local community and stakeholders, which are identified within Sections 7.1 and 7.2 of the CNVG. Construction noise mitigation measures must be implemented in accordance with Tables 5, 6, 7, 8 and 9 of the CNVG, regardless of the number of sensitive receivers impacted. Additional Mitigation Measures that specifically relate to OOHW and residual impacts are described in Section 3 of this Protocol.

1.5.2 Construction Noise and Vibration Management Sub-plan

A CNVMP will be prepared in accordance with CoA C6. The CNVMP will provide project specific controls and management process to minimise potential noise and vibration impacts during construction. The CNVMP will include a Noise and Vibration Monitoring Program, required in accordance with CoA 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 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. 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, must be supported by a CNVIS or other acoustic assessment prepared in general accordance with the guidance in Section 6 of the CNVG. During development of the CNVIS to support proposed OOHW, the contractor must consider the assessment steps provided in Sections 5, 6 and 7 of the CNVG, including the identification of all applicable mitigation measures such as those required by the CoA, UMM and the Standard and Additional Mitigation Measures outlined in Section 7.1 and 7.2 of the CNVG. 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 3 for more details).

1.6 Roles and Responsibilities

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

Table 1-2 Roles and responsibilities

Role	Responsibility
TfNSW Senior Manger Community Engagement	The TfNSW Senior Manager Community Engagement is responsible for ensuring that all communication requirements with the community are being complied with, including in relation to OOHW.
Gartner Rose Community Engagement Manager	The Gartner Rose Community Engagement Manager is responsible for the implementation of communication and stakeholder engagement requirements relevant to the Project, including coordination and preparation of community consultation and notifications.

TfNSW Senior Manager Environment & Sustainability TfNSW Senior Environment and Sustainability Officer	TfNSW Senior Manager Environment, is responsible for monitoring effectiveness of the Protocol. The TfNSW Senior Environment & Sustainability Officer reports to the SME&S and is responsible for monitoring the implementation of this Protocol and ensuring Gartner Rose complies with the requirements of this Protocol. Correspondence with DPHI and EPA will be undertaken by TfNSW Senior Manager Environment & Sustainability and TfNSW Senior Environment and Sustainability Officer.
Gartner Rose Environment and Sustainability Manager	Gartner Rose Environment and Sustainability Manager is accountable for this Protocol. Accountability includes monitoring its effectiveness and performing a formal document review. The Gartner Rose Environment and Sustainability Manager is accountable for the preparation and implementation of noise and vibration assessments, plans and protocols including: • Construction Noise and Vibration Management Sub-plan (CoA C6) • Out-of-Hours Work Protocol (Condition D28) • Construction Noise and Vibration Impact Statements Gartner Rose Environment and Sustainability Manager and all onsite personnel conducting OOHW are also responsible for implementation of this Protocol, including: • Preparation of CNVIS for works proposed outside of the standard hours • Submission of an OOHW application via the TfNSW online OOHW Tool
Environmental Representative	Condition A25 of the CoA requires an ER to be appointed to the project to represent DPHI. The ER is to act as the Secretary's independent point of contact for all environmental and planning approval compliance matters. CoA A29 provides a comprehensive list of the ER's responsibilities. This includes consultation in the development of this Protocol, and review and endorsement of OOHW applications submitted in accordance with this Protocol.
Secretary of the NSW Department of Planning, Housing and Infrastructure	The Secretary is responsible for approval of this Protocol.

2 Hours of work

2.1 Standard hours of work

Work must only be undertaken during the following standard construction hours:

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

2.2 Exemptions to standard working hours

CoA D27 allows works to be undertaken outside of the hours defined in CoA D24 and D25 in the following circumstances:

(a) **Safety and Emergencies**, including:

(i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
(ii) 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.

On becoming aware of the need for emergency work in accordance with **Condition D27(a)**, the **ER** and the Planning Secretary must be notified of the reasons for such work. Best endeavours must be used to notify all noise and/or vibration affected residents and owners/occupiers of properties identified sensitive land use(s) of the likely impact and duration of those work.

(b) **Work that meets all of the following criteria**:
(i) Work that causes LAeq(15 minute) noise levels:

- no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and
- no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land use(s); and

(ii) Work that causes LAmax noise levels no more than 15 dBA above the RBL at any residence during the night-time; and
(iii) Work that causes: • continuous or impulsive vibration values, measured at the most affected residence no more than the preferred values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), or

- intermittent vibration values measured at the most affected residence that are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006).

(c) **By Approval**, including:
(i) where different construction hours are permitted or required under an EPL in force in respect of the SSI; or
(ii) work which is not subject to an EPL that is approved under an **Out-of-Hours Work Protocol** as required by **Condition D28**; or
(iii) negotiated agreements with directly affected residents and sensitive land use(s).

(d) **By Activity**, including:
(i) Deliveries and load out;
(ii) Installation of services (Internal only);
(iii) Roof construction – Grand Concourse ;

(iv) Roof construction – Light Rail skylight;
(v) Demolition (Internal only – Eddy Avenue Plaza and Central Electric Building); and
(vi) Western forecourt strengthening.

The activities identified in **Condition D27(d)** are defined in Table 22, Appendix K in the documents listed in **Condition A1**.

> ***Note:*** *Although the activities identified in* ***Condition D27(d)*** *permit works to occur outside the Work hours identified in* ***Condition D24****, these activities still need to be managed within the* ***CEMP*** *and* ***CNVIS*** *frameworks and any other relevant conditions*

2.3 Out of hours work

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:

- 6:00pm to 10:00pm Monday to Friday (evening)
- 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.

2.4 Highly noise intensive work

Highly noise intensive work is any activity which is defined as annoying under the *Interim Construction Noise Guideline* (DECC, 2009) including:

(a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work;
(b) grinding metal, concrete or masonry;
(c) rock drilling;
(d) line drilling;
(e) vibratory rolling;
(f) bitumen milling or profiling;
(g) jackhammering, rock hammering or rock breaking; and impact piling.

CoA D25 restricts highly noise intensive works that result in exceedances of the applicable NMLs at the same sensitive receiver to the following:

(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;

(b) between the hours of 8:00 am to 1:00 pm Saturday; and

(c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour.

For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.

Highly noise intensive work is only permitted outside of these hours by through this Protocol.

2.5 Hierarchy of working hours

Where OOHW is required, the following hierarchy of working hours must be considered to minimise impacts. The hierarchy does not prohibit work where there is reasonable justification to complete OOHW during restricted timeframes such as Sydney Light Rail operation, road occupancies and shutdowns. However, impact of all OOHW activities may be reduced by scheduling work and activities with greater impact during preferred periods when receivers are less sensitive to noise and vibration.

To determine when work activities can be done, Gartner Rose will consider the safety risk of activities within the Sydney Light rail operation and select the appropriate OOHW Period based on the hierarchy outlined in the TfNSW CNVG:

1. Sunday and public holiday day periods between 8am and 6pm (Period 1 day)
2. Weekday evening periods between 6pm and 10pm (Period 1 evening)
3. Weekend evening periods between 6pm and 10pm (Saturdays Period 1 /Sundays Period 2)
4. Weekend night periods between 10pm and 8am (Period 2)
5. Work during the weekday evening and night and scheduling the noisiest work first (between 6pm and 10pm) to minimise sleep disturbance impacts in the night period between 10pm and 7am) (Period 1 and Period 2)
6. All other times outside recommended standard hours.

2.6 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 work in accordance with Condition D27 (a), the Contractor must notify the TfNSW and the ER of the reasons for such work. This notification should be in the form of a written email or text message to TfNSW and the ER, and follow up phone call or email as required to explain the situation. TfNSW will notify the Planning Secretary and EPA in accordance with Condition D27 (a).

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
- The 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 and the ER 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.

3 OOHW Protocol

Figure 3-1 illustrates the OOHW Protocol process, and Sections 3.1 to 3.3 provide further guidance on OOHW assessment, mitigation and approval.

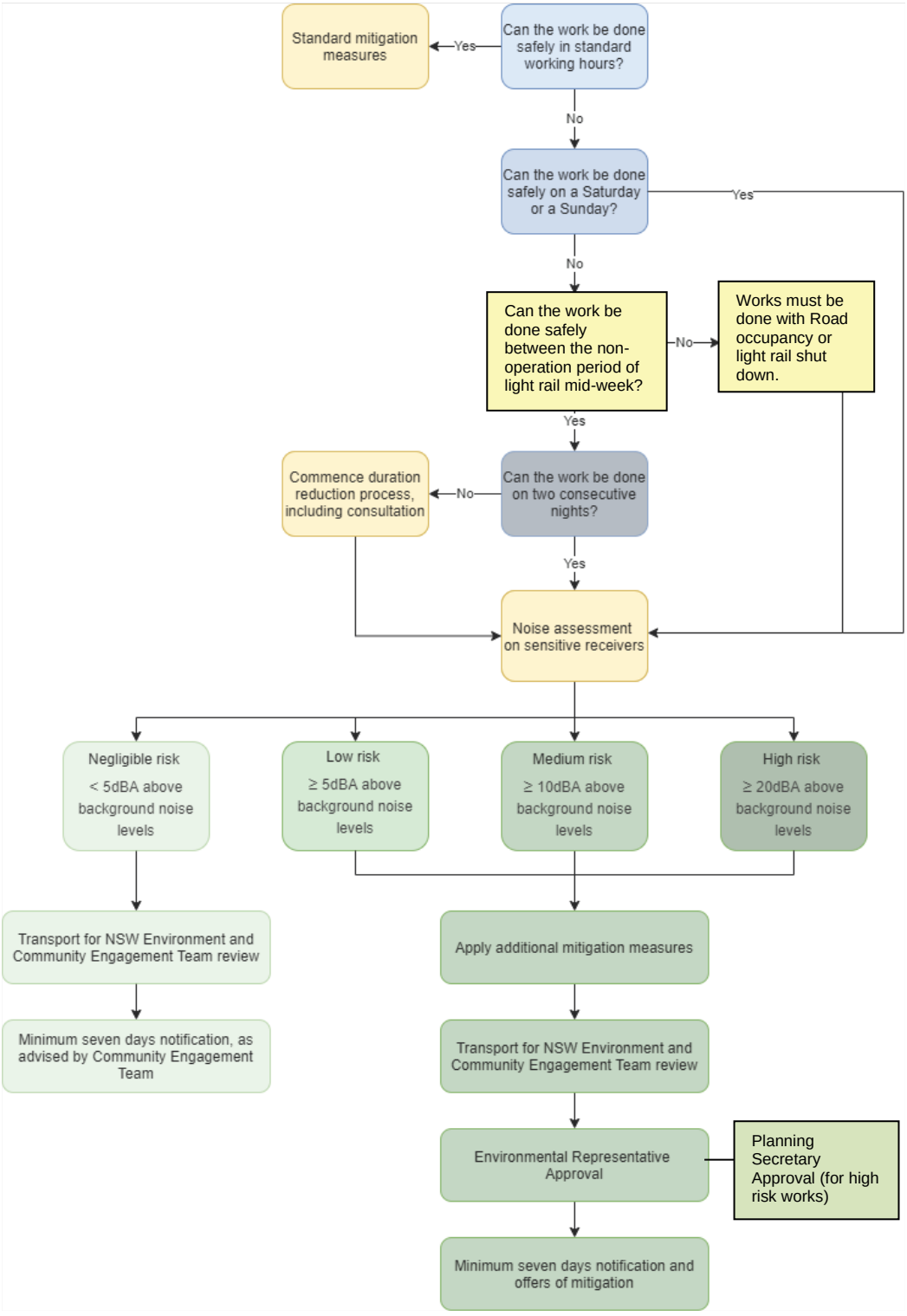

Figure 3-1 OOHW Protocol Flowchart

3.1 Assessment

The air borne noise, ground-borne and vibration assessment methodology is detailed in the CNVG Section 6. Further details are outlined in Section 3.

3.1.1 Noise Assessment

Following consideration of the 'Hierarchy of working hours' in Section 2.5, and OOHW is determined as required with appropriate justification, a noise assessment (using Noise Check software or similar) is to be completed in accordance with Section 6 of the CNVG for the proposed OOHW activities. The assessment will predict the extent of noise impact the construction activities will have on potentially affected sensitive receivers based on inputs of the location and types of construction machinery operating inside a Noise Catchment Area (NCA). Table 4 of the CNVG outlines the impact assessment procedures. Section 3.2 outlines the mitigation measures based on the outcome of the assessment.

Justifications for OOHW may include, but is not limited to:

- where the rail authority has advised that work is required to be undertaken outside standard construction hours for safety reasons;
- where the road authority has advised that work is required to be undertaken outside standard construction hours for safety reasons;
- the activity meets the requirements of Condition D27.

3.1.2 Background Noise Levels

Background noise levels were assessed at four locations surrounding Central Station. The results from the EIS are shown in the table below:

NCA	Location ID	Address	Noise level (dBA)[1,2]					
			Background noise (RBL)			Average noise(LAeq)		
			Day	Evening	Night	Day	Evening	Night
NCA01	L01	107–121 Quay Street, Haymarket	57	57	50	64	63	60
NCA02	L02	303–321 Castlereagh Street, Haymarket	59	58	53	62	61	59
NCA03	L03	38 Chalmers Street, Surry Hills	53	53	48	61	61	59
NCA04	L04	201 Commonwealth Street, Surry Hills	50	49	44	59	57	55

Note 1: The rating background (noise) levels and LAeq have been determined with reference to the procedures in the Noise Policy for Industry
Note 2: Daytime is 7am to 6pm, evening is 6pm to 10pm and night-time is 10pm to 7am.

The preliminary noise monitoring for the Project has demonstrated that the background noise levels may be higher than those detailed in the EIS. . Therefore, further analysis may be undertaken to reassess the background noise level for the Project. .

Based on Stage 1 of the Project, the nearest sensitive receivers are:

- The closest residential receiver to Sydney Yard is south of Chalmers Street light rail station (approximately L03 above)

- The closest residential receiver to Eddy Avenue Plaza is on the northern side of Albion Road where it intersects Elizabeth Street (NCA03)
- The closest non-residential receiver is to the west of the station at Christ Church St Laurence (NCA03)

Table 3-1 Impact Assessment Procedures

Term	Definition
Airborne noise	Determine the location of each plant or equipment item in relation to each receiver. Develop a construction noise model based on the TfNSW noise calculator and include: − all relevant standard mitigation measures (detailed in *TfNSW CNVG, Section 7.1*) − noise shielding provided by site offices, noise barriers or natural topographic features − noise reflections and ground attenuation. Determine whether a 5dBA SWL correction factor is required for activities with special audible characteristics. Calculate the LAeq (15minute) noise levels from the proposed construction activities at each receiver and compare these with the airborne construction noise management levels. For night-time activities, calculate the maximum (LAmax) noise levels and compare with the sleep disturbance screening objectives. Other factors to consider when assessing the extent of impact on sleep include: - how often noisy events occur at night - predicted maximum noise levels at night. **Notes** The number of receivers would be dependent on the size of the construction site, the time at which the construction noise occurs and the level of potential noise impact. Calculations would normally be undertaken at locations considered to be representative of a group of receivers with a similar level of exposure to the construction works. For night-time construction works or large construction sites with many nearby receivers, it may be more appropriate to provide noise contour plots to illustrate the degree to which each receiver or group of receivers are impacted by the construction works.

Ground-borne noise	Determine the location of each plant or equipment item in relation to each receiver. Determine the level of ground-borne noise at each building location. For highly sensitive building occupancies, the assessment may need to incorporate the acoustic properties of the building space and the structural response of the building Include the effect of all relevant standard mitigation measures as part of the construction scenario. Calculate the LAeq(15minute) noise levels from the proposed construction activities at each receiver and compare these with the ground-borne construction noise objectives.
Vibration	Determine the location of each plant or equipment item in relation to each receiver. Determine the likely of ground-borne vibration at each building location. For highly sensitive equipment, the assessment may need to incorporate the structural response of the building and sensitivities of the equipment Incorporate all relevant standard mitigation measures as part of the construction scenario Calculate the continuous, intermittent and impulsive vibration levels from the proposed construction activities at each receiver and compare these with the ground-borne construction vibration objectives
Traffic Noise	On roads immediately adjacent to Transport construction sites, stakeholders may be impacted by heavy vehicle movements associated with the project works Construction traffic movements on public roads shall aim to minimise any sleep disturbance impacts for example by minimising use of any engine brake noise. All feasible and reasonable noise mitigation and management measures shall be implemented

3.1.3 Vibration assessment

An assessment of vibration intensive activities that may impact sensitive receivers or structures will be required for out of hours vibration intensive works. The proposed OOHW activities will be assessed for compliance with safe working distances for:

- cosmetic and/or structural impacts (including safe working distances)
- human comfort impacts due to vibration and ground borne noise.

Assessment will be undertaken in accordance with the safe working distance guide in Table 3-4. The safe working distances presented in Table 3-4 are indicative and will vary depending on the item of plant (particularly its power rating) and local geotechnical conditions. In accordance with CoA D24 measures must be applied when the following residential vibration dosage for assessing human comfort levels are exceeded:

a) Day/evening (7:00 am to 10:00 pm) – VDV_{max}: 0.4 $m/s^{1.75}$; and

b) Night (10:00 pm to 7:00 am) – VDV_{max}: 0.2 $m/s^{1.75}$

Vibration measurements shall be undertaken in accordance with the procedures documented in the *EPA's Assessing Vibration – a technical guideline* (2006) and *BS7385 Part 2-1993 Evaluation and measurement for vibration in buildings*.

3.2 Noise Mitigation

The results of the noise assessment may identify negligible, low, medium or high risk OOHW and trigger the need for additional mitigation measures for nearby sensitive receivers. Depending on the exceedance above typical background noise levels additional mitigation could include, for example, specific notification, verification monitoring, respite periods, respite offers or alternate accommodation in accordance with the TfNSW CNVG. An extract of the TfNSW CNVG detailing the mitigation measures applicable to the various receiver perceptions, being 'Noticeable' (negligible risk), 'Clearly Audible' (low risk), 'Moderately intrusive' (medium risk), and 'Highly intrusive' (high risk) for OOHW is provided in Table 3-3.

Table 3-3 How to implement additional airborne noise management measures

Construction hours	Receiver perception	Risk	dB(A) above RBL*	dB(A) above ANML	Additional management measures
OOHW Period 1 Monday-Friday 6pm-10pm Saturday 7am-8am 1pm-10pm Sunday/PH 8am-6pm	Noticeable	Negligible	5 to 10	≤5	-
	Clearly audible	Low	>10 to 20	> 5 to 15	PN
	Moderately intrusive	Medium	>20 to 30	>15 to 25	PN, V, SN, RO
	Highly intrusive	High	>30	>25	PN, V, SN, RO, RP#, DR#
OOHW Period 2 Monday-Saturday 12am-7am 10pm-12am Sunday/PH 12am-8am 6pm-12am	Noticeable	Negligible	5 to 10	≤5	PN
	Clearly audible	Low	>10 to 20	> 5 to 15	PN, V
	Moderately intrusive	Medium	>20 to 30	>15 to 25	PN, V, SN, RP, DR
	Highly intrusive	High	>30	>25	PN, V, SN, RP, DR, AA

Notes:
Legend: PN = Periodic notification; SN = Specific notification, individual briefings, or phone call; V = Verification of monitoring; AA = Alternative accommodation; DR = Duration reduction; RO = Project-specific respite offer; RP = Respite period.
* SWLs used for the purpose of estimating noise impact shall be increased by 5dBA where works will include: power saws for the cutting of timber, masonry and steel; grinding of metal, concrete or masonry; rock/line drilling; bitumen milling and profiling; jack hammering, rock hammering and rock breaking; or impact piling as a correction factor for noise with special audible characteristics. It is noted that this correction factor is automatically calculated under Step 2 of the Construction Noise Estimator Tool (see Appendix E).
# Respite periods and duration reduction are not applicable when works are carried out during OOHW Period 1 Day only (i.e., Saturday 6am-7am & 1pm-6pm, Sundays / Public Holidays 8am-6pm)

In accordance with the ICNG and CoA D20, the following plant and activities are proven to have annoying characteristics, and therefore the NML will decrease by 5dB(A) for these and similar plant activities:

Concrete Vibrator	Hydraulic Hammer	Grinder
Vibratory Roller	Concrete Saw	Pneumatic Breaker

Additional mitigation measures relating to sleep awakening events during Period 2 night should be applied when the activity has a "high" frequency of potential sleep awakening events, and they are above 70dB LA_{max} (refer to Section 3.1.1). An example of a "high" frequency sleep awakening activity is services searches with saw cutting and a vacuum truck.

- Mitigation includes scheduling the activity to less noise-sensitive time e.g. 10pm to midnight, or 6am to 7am. And limiting works during midnight to 6am, where possible.
- If scheduling constraints cannot be achieved, consider noise curtains or alternative methods to reduce the maximum noise levels.
- If the midnight to 6am sleep awakening levels are still "high" frequency and cannot be mitigated to below 70dB LA_{max}, in consultation with the ER and Transport for NSW Environmental team to consider additional mitigation measures for affected residents.

3.2.1 Ground-borne noise

In accordance with CoA D30, mitigations measures must be applied when the following residential ground-borne noise levels are exceeded:

(a) evening (6:00 pm to 10:00 pm) — internal $L_{Aeq(15\ minute)}$: 40 dB(A); and

(b) night (10:00 pm to 7:00 am) — internal $L_{Aeq(15\ minute)}$: 35 dB(A).

The ground-borne noise is only applicable when ground-borne noise levels are higher than airborne noise levels. It is not anticipated that ground-borne noise will exceed air-borne noise levels for the Project. Table 10 of the *TfNSW Construction Noise and Vibration Guideline* should be referred to for applicable additional mitigation measures in the circumstances when ground borne noise is predicted to exceed the airborne noise level.

3.2.2 Respite Periods and Duration Reduction

OOHW will abide by the TfNSW CNVG restriction of no more than 3 consecutive evenings and no more than 2 consecutive nights in any one week so that receivers within the same noise catchment area to provide adequate respite periods between OOHW. A minimum respite period of 4 evenings shall be implemented between periods of evening works and 5 nights shall be implemented between periods of night works. Coordination should be undertaken for the delivery of the Project, including those undertaken by third parties (such as utility relocations), as outlined in Section 3.6.

However, the above restrictions do not apply to OOHW that are below NMLs or involve certain activities as identified by CoA 27(d), including deliveries and load out, and installation of services. These activities are to be managed in accordance with the CEMP and CNVIS frameworks.

In cases where there is the need and strong justification to work more than 2 consecutive nights or 3 consecutive evenings, outside of the weekend possessions and longer rail possessions, the Construction Contractor may consider Duration Reduction, or consider the provision of alternative respite or mitigation to impacted noise sensitive receivers. Documentary evidence would be supplied to the ER in support of any decision made by the Proponent in relation to respite or mitigation.

Duration Reduction is defined in the CNVG as where it may be beneficial to the community to increase the number of consecutive evenings and/or nights to minimise the duration of an activity.

Under the Duration Reduction process impacted receivers will be consulted with regard to the work, locations, timing and any available options and evidence of community support for the Duration Reduction must be provided as justification. A community engagement strategy must be agreed with and implemented in consultation with TfNSW Community Engagement Representatives and the ER.

3.3 Vibration Mitigation

An assessment of vibration intensive activities that may impact sensitive receivers or structures will be required for out of hours vibration intensive works. The proposed OOHW activities will be assessed for compliance with safe working distances for:

- cosmetic and/or structural impacts (including safe working distances)
- human comfort impacts due to vibration and ground borne noise

Assessment will be undertaken in accordance with the safe working distances for vibration intensive plant as a guide in Table 3-4. The safe working distances are only indicative and will vary depending on the item of plant used and the local geotechnical conditions. Vibration levels will vary when measured on site. In accordance with CoA D24 measures must be applied when the following residential vibration dosage for assessing human comfort levels are exceeded:

c) Day/evening (7:00 am to 10:00 pm) – VDV_{max}: 0.4 $m/s^{1.75}$; and

d) Night (10:00 pm to 7:00 am) – VDV_{max}: 0.2 $m/s^{1.75}$

Vibration measurements shall be undertaken in accordance with the procedures documented in the *EPA's Assessing Vibration – a technical guideline* (2006) and *BS7385 Part 2-1993 Evaluation and measurement for vibration in buildings*.

Table 3-4 Vibration estimated safe working buffer distances (m)

Plant	Description	Cosmetic damage			Human response
		Heritage	residential	commercial	
Jackhammer	Handheld	3 m	2 m	1 m	Avoid contact with structure
Excavator	Up to 34t	13 m	9 m	5 m	5 – 10 m
Piling (bored)	Up to 100t	11 m	8 m	3 m	10 m
Heavy vehicles (trucks)	Up to 50t	5 m	3 m	1 m	25 m

Plate compactor	Handheld	8 m	5 m	3 m	15 – 20 m

3.4 Review and Approval

Gartner Rose will utilise TfNSW's online OOHW Tool to process all OOHW applications. This allows for transparency and accountability and includes TfNSW review and approval prior to the ER approval.

Risk levels are assigned in accordance with Table 3-3 and are related to the predicted exceedance above NML. D27 allows work to take place out of hours if the noise or vibration levels meet the applicable NML at sensitive receiver locations. However, this Protocol requires that in this instance and when works are assessed to be a negligible risk an OOHW Application is submitted for review by TfNSW, and the ER.

All low and medium OOHW are to be approved by the ER as per Condition D28 (b) ii.

High risk activities are to be approved by the Planning Secretary as per Condition D28 (b) iii. In addition, low risk OOHW are to be notified to the Planning Secretary via email and/or lodgement via the DPHI Planning Portal.

A copy of the approved low, medium and high risk OOHW applications will be published on the Project website.

3.5 Consultation

3.5.1 Business (and other non-residential)

The following condition requires construction times (including OOHW) to be established, taking into consideration consultation with affected businesses:

Condition D31: Noise and vibration generating work in the vicinity community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled during sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.

Any sensitive periods for potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses will be identified through door knocking, and ongoing consultation with the community during construction. A record will be maintained to identify specific requirements (including sensitive periods) relating to each organisation that may need to be considered during the Project.

Consultation mechanisms will be consistent with those nominated in the Communication Strategy and tailored to the affected community as advised by the Contractor Community Engagement Manager and TfNSW Community Engagement Managers.

3.5.2 Community Notification

Community notifications are used to inform receivers of noise and vibration impacts from OOHW. The community will be notified at least seven days prior to the works commencing for all low, medium and high risk OOHW. Community notifications usually comprise of letterbox-dropped or hand-distributed notification letters to identified stakeholders prior to the commencement of work.

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. All community notifications will include contact details so members of the community have the opportunity to find out more information, ask questions and provide feedback. Community notification requirements are outlined in the TfNSW CNVG and the Consultation Strategy. Community notifications are to be implemented in accordance with these documents.

3.6 Coordination

In accordance with CoA D28, coordination of OOHW will occur to provide respite, minimise the duration and impact on sensitive receivers, and taking into account community consultation. Gartner Rose are to coordinate 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 CNVG. The ER will be consulted on coordination of OOHW. The principles of coordination of OOHW will be:

- Providing respite to impacted sensitive receivers so that standard respite periods of the Conditions of Approval are achieved;
- Consult and advise the ER 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.

Attachment A

Reference	Details	How addressed
NV02	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared and implemented as part of the CEMP. The plan will: • Identify nearby sensitive receivers • Describe the activities, construction equipment and work hours that will be completed and quantify resulting impacts at sensitive receivers • Include noise and vibration management criteria and relevant licence and approval conditions • Include measures to manage noise and vibration and minimise the potential for impacts during construction, aligned with the results of community consultation, and consistent with the management approach and mitigation measures in the Construction Noise and Vibration Guidelines (CNVG) (Transport for NSW, 2024) • Set out the requirements for noise and vibration monitoring • Set out the procedures for handling complaints • Provide details on how respite will be applied where ongoing high impacts are seen at certain receivers in accordance with the CNVG • Include any requirements contained within the Central SSP study and supporting technical documents where applicable. • The CNVMP will consider cumulative construction impacts and the likelihood for 'construction fatigue' from consecutive projects in the areas that have substantial night-time work.	Partially addressed - The requirement for an Out of Hours Protocol is achieved in this Protocol. A Construction Noise and Vibration Management Sub-Plan (CNVMP) is being prepared for the Project.
NV03	Where noise impacts are predicted, the work will be scheduled within standard construction hours, where possible. If it is not possible then the activities will be completed as early as possible in each work shift. Appropriate respite will be introduced in accordance with the CNVG.	Addressed in TfNSW CNVMP
NV04	Specific consultation will be carried out with nearby sensitive health facilities, educational and place of worship receivers. Noise intensive work that is predicted to impact such receivers will be scheduled outside of particularly sensitive periods, such as exams or religious services, where possible. Hotels and temporary accommodation will be included in the consultation where predicted (night-time) noise impacts may affect the amenity of guests.	Addressed in consultation requirements under CoA and TfNSW CNVG.

NV05	Monitoring will be carried out at the start of new noise and vibration intensive activities to confirm that actual levels are consistent with the predictions and that appropriate mitigation measures from the CNVS have been implemented.	Monitoring requirements are detailed under noise mitigation measures as per CNVG.
NV06	The following measures will be implemented for significant heritage fabric within the Sydney Terminal Building and Central Railway Stations Group heritage area, including the existing rail tunnels and infrastructure, where vibration-generating activities cannot take place without maintaining the safe working distances set out in the CNVG: • Dilapidation/condition surveys will be carried out before and after work. The survey will include details of any structurally elements that are found to be structurally unsounds and/or considered to be particularly sensitive to vibration • Where any structures are considered structurally unsound or particularly sensitive to vibration, the more stringent DIN 4150 (Deutsches Institute fur Normung, 1999) Group 3 guideline values will be applied • Attended vibration monitoring will be carried out at the start of any new vibration intensive work activity that cannot take place at a safe working distance to confirm the vibration levels produced by the equipment are appropriate • Further attended and/or unattended monitoring will be carried out where vibration intensive equipment is being used near structurally unsound infrastructure and/or locations particularly sensitive to vibration • The potential for vibration impacts on heritage structures will be reviewed during detailed design when construction planning is available to verify the assessment	Refer to the CNVMP and mitigation measures under CNVG. Vibration monitoring requirements are outlined in Section 3.3
NV07	The following measures will be implemented to manage noise impacts within the project area: • Schedule noise intensive work for off-peak commuter times when the area is less busy • Use the minimum practical size of equipment, including silenced compressors, generators, and • dust extractors, where noisy work is required while the station is open • Use path controls, such as mobile hoarding, to isolate noise intensive activities from publicly • accessible locations. This includes work within the Sydney Terminal Building and Eddy Avenue • Plaza	Additional Management Measures, including noise monitoring are outlined in Section 3.2.

NV08	Location and activity-specific noise and vibration impact assessments will be carried out where: • There is the potential to result in noise levels above 75dBA at any sensitive receiver • Work is scheduled outside of standard construction hours and likely to result in noise levels greater than the relevant NML • Activities that have the potential to exceed relevant criteria for vibration. • The assessments will confirm the predicted impacts at the relevant receivers to help with the selection of appropriate management measures, consistent with the requirements of the CNVG.	Refer to the CNVMP and mitigation measures under CNVG.

Attachment B- TfNSW CNVG