

# Out of Hours Works and Construction Fatigue Protocol

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## Document approval

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## Glossary/ Abbreviations

Term/ Abbreviations	Expanded Text
AA	Acoustic Advisor
Ambient noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Attenuation	The reduction in the level of sound or vibration.
CEMP	Construction Environmental Management Plan
CNVG	Construction Noise and Vibration Guideline (Roads and Maritime 2016)
CNVIS	Construction Noise and Vibration Impact Statement
CoA	Condition of Approval
CSSI	Critical State Significant Infrastructure
dBA	Decibels using the A-weighted scale measured according to the frequency of the human ear.
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EMS	Environmental management system
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
EMM	Environmental Management Measure
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
ER	Environmental Representative
ERG	Environmental Review Group
EWMS	Environmental Work Method Statements
Feasible and reasonable	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
ICNG	Interim Construction Noise Guideline (DECC, 2009)

Term/ Abbreviations	Expanded Text
INP	NSW Industrial Noise Policy (EPA 2000)
L <sub>Aeq(15min)</sub>	The A-weighted equivalent continuous (energy average) A-weighted sound pressure level of the construction works under consideration over a 15-minute period and excludes other noise sources such as from industry, road, rail and the community.
L <sub>A(max)</sub>	the A-weighted maximum noise level only from the construction works under consideration, measured using the fast time weighting on a sound level meter.
NCA	Noise catchment areas
NML	Noise Management Level
NVMP	Noise and Vibration Management Sub Plan (this document)
OEH	Office of Environment and Heritage
OOHW	Out-of-hours works
RBL	The Rating Background Level for each period is the medium value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period (day, evening and night)
SWP	Sound Power Level
SSI	State Significant Infrastructure
SPL	Sound Pressure Level
TfNSW	Transport for NSW (formerly Roads and Maritime Services, RMS)
VDV	Vibration Dose Value

# 1. Introduction

This Out-of-Hours Work (OOHW) and Construction Fatigue Protocol (herein referred to as the Protocol) for the M6 Stage 1 Project has been prepared in accordance with Minister’s Condition of Approval (CoA) E70 and Environmental Mitigation Measures (EMM) NV1 and SE4. This Protocol identifies a process for the consideration, management and approval of works which are outside the standard construction hours defined in CoA E62 (out-of-hours work) and that are not subject to an Environment Protection Licence (EPL).

While all works occurring under approval SSI 8931 are intended to ultimately be performed subject to an EPL. Some works will be required to be carried out prior to obtaining an EPL or outside of the project boundary. This protocol allows CPB Contractors, Ghella, UGL Engineering (CGU) joint venture to facilitate the approval of those out of hours works. Once an EPL is in place out of hours works undertaken within the EPL premised area will be undertaken in accordance with the licence conditions.

This Protocol was provided to the Department of Planning, Industry and Environment (DPIE) Planning Secretary on **XX/XX/XXXX** and subsequently approved on **XX/XX/XXXX**.

## 1.1. Minister’s Conditions of Approval

The CoA relevant to this Protocol are listed in below. A reference is also included to indicate where the CoA is addressed in this Protocol or other Project documents.

Table 1: Ministers Conditions of Approval

CoA	Condition requirements	Document reference
E62	Works (except for tunnelling (excluding cut and cover tunnelling)) must only be undertaken during the following standard construction hours: (a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive; (b) 8:00 am to 1:00 pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 2
E63	Notwithstanding Condition E62, works may be undertaken between 1:00 pm to 6:00 pm on Saturday.	Section 2
E66	Notwithstanding Conditions E62 to E65, works may be undertaken outside the hours specified in the following circumstances: (a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (c) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (d) Works which are <u>not</u> subject to an EPL that are approved under an Out-of-Hours Work Protocol required by Condition E70; or (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 <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. continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to	Section 2

CoA	Condition requirements	Document reference
	<p>vibration, specified in Table 2.2 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006), and</p> <p>iv. intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006).</p> <p><i>Note: Section 5.24(1)(e) of the EP&amp;A Act requires that an EPL be substantially consistent with this approval. Out-of-Hours works considered under Conditions E66(c) and (d) must be justified and include an assessment of the potential impacts and effectiveness of the proposed mitigation measures.</i></p>	
E68	<p>Out-of-hours works that are regulated by an EPL as per Condition E66(c) or through the Out-of-Hours Work Protocol as per Condition E70 include:</p> <ul style="list-style-type: none"> <li>(a) works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “<i>Risk Management – Principles and Guidelines</i>”; or</li> <li>(b) where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance; or</li> <li>(c) where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network; or</li> <li>(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 E62 and Condition E63.</li> </ul> <p><i>Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s Out-of-Hours Work Protocol for works not subject to an EPL.</i></p>	This Protocol
E70	<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 hours defined in Conditions E62 and E63 and that are <u>not</u> subject to an EPL. The Protocol must be approved by the Planning Secretary prior to commencement of the works. The Protocol must be prepared in consultation with the EPA and AA. The Protocol must identify activities in terms of their risk of adverse impacts on sensitive receivers (low, medium, high) and include:</p> <ul style="list-style-type: none"> <li>(a) a process for the consideration of out-of-hours works against the relevant noise and vibration criteria, including the determination of low, medium and high-risk activities,</li> <li>(b) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirement of Condition E69. The measures must take into account the predicted noise levels and the likely frequency and duration that sensitive receivers would be exposed to residual impacts, including the number of noise awakening events,</li> <li>(c) procedures to facilitate the coordination with other out-of-hours works, including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided,</li> </ul>	<p>This Protocol and Section 1.2</p> <p>Section 3 and 5</p> <p>Section 4</p> <p>Section 3.4, 3.5 and 6</p>

CoA	Condition requirements	Document reference
	<p>(d) an approval process that considers the risk of works, proposed mitigation and management, and coordination, including where:</p> <ol style="list-style-type: none"> <li>i. the ER and AA review all proposed out-of-hours activities and confirm their risk levels,</li> <li>ii. low risk activities can be approved by the ER in consultation with the AA, and</li> <li>iii. medium and high risk activities are approved by the Planning Secretary,</li> </ol>	Section 2.2, 5 and Appendix A
	<p>(e) notification arrangements for affected receivers and the EPA for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works.</p>	Section 4, 5 and 6

## 1.1. Updated Environmental Management Measures

Community feedback and complaints relating to construction noise and vibration will be managed in accordance with the Communication Strategy and Complaints Management System.

Table 2 lists the updated EMMs for the Project that are relevant to this Protocol. This includes relevant references to where the commitment has been addressed in this Protocol and/or other Project documents.

Table 2: Environmental management measures relevant to this Protocol

CoA	Condition requirements	Document reference
NV1	<p>A Construction Noise and Vibration Management Plan (CNVMP) will be prepared. The CNVMP will include processes and responsibilities to assess, monitor, minimise and mitigate noise and vibration impacts during construction.</p> <p>The plan will:</p> <ul style="list-style-type: none"> <li>▪ Identify relevant performance criteria in relation to noise and vibration</li> <li>▪ Identify noise and vibration sensitive receptors and features in the vicinity of the project</li> <li>▪ Include standard and additional mitigation measures from the Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime 2016) and details about when each will be applied</li> <li>▪ Describe the process(es) that will be adopted for carrying out location and activity specific noise and vibration impact assessments to assist with the selection of appropriate mitigation measures</li> <li>▪ Consider cumulative construction noise impacts and construction noise fatigue</li> <li>▪ Include protocols that will be adopted to manage works required outside standard construction hours, in accordance with relevant guidelines including for management of respite periods</li> <li>▪ Include a Blast Management Strategy (where blasting is required)</li> <li>▪ Detail monitoring that will be carried out to confirm project performance in relation to noise and vibration performance criteria.</li> <li>▪ The CNVMP will be implemented for the duration of the construction of the project.</li> </ul>	<p>Section 3 and Section 6</p> <p>This Protocol</p>
SE4	<p>Prepare and implement a Construction Fatigue Protocol as part of the CNVMP to address potential construction fatigue impacts. The Protocol will include consideration of noise attenuation and periods of respite for affected stakeholders, where reasonable and feasible, and restricting out of hours work where practicable.</p>	Section 3 and Section 6



## 1.2. Consultation

This Protocol was developed in consultation with the Project Acoustic Advisor (AA) and the Environmental Protection Authority (EPA) in accordance with E70. A summary of consultation is found in Table 3 below.

Table 3 Consultation of the Protocol

Stakeholder	Query	Action
AA	The Noise and Vibration CEMP Sub-plan (including this Protocol) was issued to the AA on 20/08/2021. The queries received on this Protocol included recommendations on referencing Sections within the Protocol to provide further clarification for the reader and addition of information in Figure 2.	The close out of these queries were addressed in a meeting held between CGU, TfNSW, the AA and ER on the 10/09/2021 and the Protocol updated to reflect the queries.
EPA	The Noise and Vibration CEMP Sub-plan (including this Protocol) was provided to the EPA with the Project EPL Application on 06/09/2021.	A meeting was held between CGU and the EPA on the 9/09/2021. The EPAs expectation that all out of hour works will be performed under the Project EPL. The ER cited the evidence of submission on the 27/09/2021.

## 2. Construction Hours

In accordance with CoA E62 and E63, the standard construction working hours for the Project (except for tunnelling (excluding cut and cover tunnelling)) are defined as being:

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

CoA E64 allows the following activities 24 hours per day, seven days per week:

- tunnelling (excluding cut and cover tunnelling);
- delivery of material to support tunnelling;
- haulage of spoil from the Arncliffe and Rockdale construction ancillary facilities;
- works within an acoustic shed; and
- tunnel fit out works.

In accordance with CoA E66(d), this Protocol defines the process for the assessment and approval of work that is not subject to an EPL and needs to occur outside of the time periods stipulated above i.e. needs to occur during an OOHW period.

This Protocol will apply to the two OOHW periods depicted in Figure 1. The OOHW periods are further defined as OOHW Period 1 and 2, based on the Roads and Maritime Construction Noise and Vibration Guideline (CNVG).

Figure 1 Construction assessment periods

Day/ Time	12am – 1am	1am – 2am	2am – 3am	3am – 4am	4am – 5am	5am – 6am	6am – 7am	7am – 8am	8am – 9am	9am – 10am	10am – 11am	11am – 12pm	12pm – 1pm	1pm – 2pm	2pm – 3pm	3pm – 4pm	4pm – 5pm	5pm – 6pm	6pm – 7pm	7pm – 8pm	8pm – 9pm	9pm – 10pm	10pm – 11pm	11pm – 12am		
Monday to Friday									[Standard construction Hours]												OOHW Period 1					
Saturday	OOHW Period 2																									
Sunday or Public Holiday										OOHW Period 1												OOHW Period 2				

### 2.1. OOHW Justification

Construction work associated with the Project will be undertaken in accordance with the assessment and management approach outlined in the Interim Construction Noise Guidelines (ICNG). The ICNG outlines the standard construction hours for the Project and requires that work proposed outside of these hours must be appropriately justified. These requirements are reflected in CoA E66 and E68 for the Project. In general, OOHW undertaken on public infrastructure projects, such as on road construction projects where the OOHW is necessary to sustain the operational integrity of roads, is considered justified in the ICNG.

OOHW not subject to an EPL that are regulated through this Protocol are summarised in Table 4.

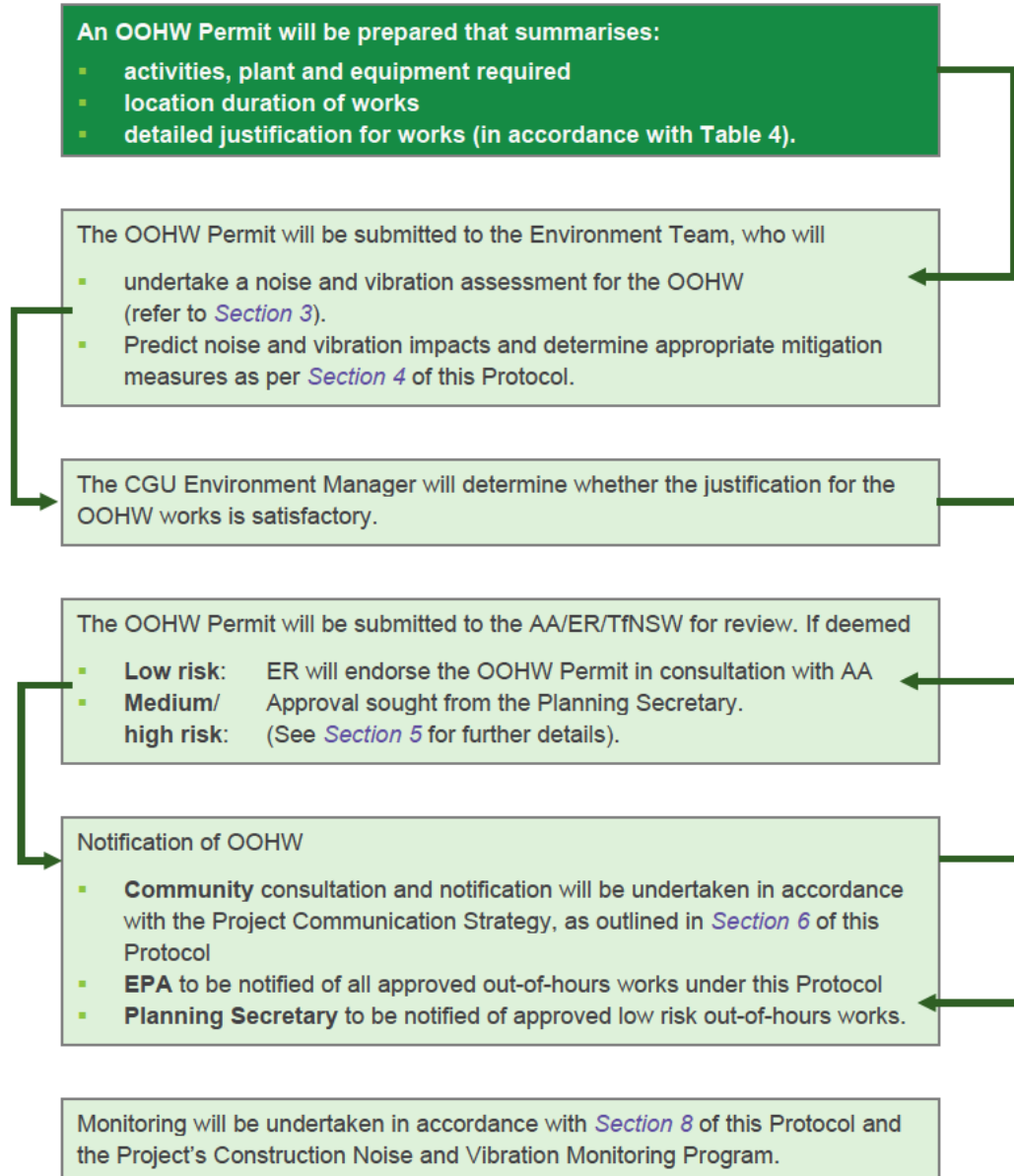
Table 4: Justification for OOHW regulated through this Protocol

Category	OOHW Justification
A. Safety or emergency work (CoA E66)	<ul style="list-style-type: none"> <li>▪ for the delivery of materials required by the NSW Police Force or other authority for safety reasons,</li> <li>▪ 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</li> </ul>
B. Low impact work (CoA E66)	<p>Construction that causes:</p> <ul style="list-style-type: none"> <li>▪ <math>L_{Aeq}(15 \text{ minute})</math> noise levels no more than               <ul style="list-style-type: none"> <li>▶ 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and</li> <li>▶ the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and</li> </ul> </li> <li>▪ continuous or impulsive vibration values no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006) , measured at the most affected residence, and</li> <li>▪ intermittent vibration values measured at the most affected residence no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006)</li> </ul>
C. Other out-of-hours works (CoA E68)	<ul style="list-style-type: none"> <li>▪ works which could result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 "Risk Management – Principles and Guidelines"</li> <li>▪ where the relevant road network operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to road network operational performance</li> <li>▪ where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network</li> <li>▪ 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 standard construction hours</li> </ul>
D. Negotiated agreement (ICNG)	<ul style="list-style-type: none"> <li>▪ where negotiated agreements with directly affected residents and sensitive land uses have been reached</li> </ul>

## 2.2. OOHW Permit

Where CGU undertakes Category C or D OOHW, the following process outlined in Figure 2 will be undertaken.

Figure 2 GCU process for obtaining OOHW Permit



### 3. OOHW Noise & Vibration Assessment

To manage potential impacts from noise and vibration during OOHW, CGU's noise and vibration specialists have developed an online 3D noise and vibration management tool (Gateway, [www.gateway.com.au](http://www.gateway.com.au)) that enables the prediction and assessment of potential noise and vibration impacts resulting from proposed OOHW in specific work areas, including identification of the likely occurrence of noise awakening events as detailed in the CNVMP.

This management tool provides assistance in managing noise and vibration impacts on sensitive receivers, based on works described in an overarching Construction Noise and Vibration Impact Statement (CNVIS) for a worksite (refer to Section 7.2 of the CNVMP). It considered the work area location(s) and the types of construction machinery operating in each specific work area to be used for the proposed OOHW. Gateway produces a Construction Noise and Vibration Assessment (CNVA) report, summarising the results of the OOHW noise and vibration assessment against the noise and vibration objectives described in Section 5 of the CNVMP, including the selection of reasonable and feasible mitigation and management measures from the CNVMP and ICNG considered by the CGU construction team and the Environmental and Sustainability Manager.

#### 3.1. Noise

Gateway will identify the sensitive receivers likely to be construction noise affected by the OOHW, predict the extent of noise impact and identify any additional mitigation measures required. The assessment will include reasonable and feasible mitigation and management measures from the CNVMP and ICNG considered by the CGU construction team and the Environmental and Sustainability Manager. To minimise cumulative noise impacts, Gateway will also consider any other OOHW that is planned during the proposed OOHW.

The results of the OOHW noise assessment, including mitigation and management measures will be presented in the CNVA. This will be used to determine the appropriate approval pathway for the OOHW. Ongoing monitoring and validation of predictive outputs will be undertaken as detailed in the CNVMP and the Noise and Vibration Monitoring Program.

#### 3.2. Vibration

Where vibration intensive activities are proposed as OOHW, Gateway will identify potential impact where sensitive receivers or structures are located within the minimum working distances as defined in relevant CNVISs including:

- Cosmetic structural damage impacts.
- Disturbance to building occupants due to vibration.

Where impacts are found, reasonable and feasible mitigation and management measures will be considered and presented in the CNVA. Ongoing monitoring and validation of predictive outputs will be undertaken as detailed in the CNVMP and the Noise and Vibration Monitoring Program.

#### 3.3. High Noise Intensive Works

In accordance with CoA E65, except as permitted by an EPL or approved under this Protocol, high noise intensive works that result in an exceedance of the applicable NML (i.e. 75dBA at residential receivers) at the same receiver will be undertaken:

- Between the hours of 8:00 am and 6:00 pm Monday to Friday.
- Between the hours of 8:00 am and 1:00 pm Saturday.
- If continuous, then not exceeding 3 hours, with a minimum cessation of work of not less than 1 hour. 'Continuous' includes any period during which there is less than one-hour respite between.

For OOHW subject to this Protocol that involves the use of highly noise intensive equipment, CGU will consider, wherever reasonable and feasible:

- Use of alternative quieter plant and equipment,
- Planning works during less noise sensitive periods (e.g. try and complete highly noise intensive works as early in the night as possible),
- Schedule highly noise intensive equipment prior to 10 pm,
- Where the above cannot be achieved, the equipment will be used prior to midnight.

*Note – there may be instances where high noise intensive works will be required after 10pm and/or midnight as outlined above. Examples where this might occur include specific conditions detailed in the Road Occupancy License (ROL), reinstating trafficable areas using whacker packers and asphaltting plant at the end of applicable shifts.*

In accordance with CoA E70, to identify the appropriate respite periods for work proposed under this Protocol, CGU will consult the community at each affected location. The affected locations will be identified from the Project's noise and vibration management tool (Gatewave) outputs for the proposed OOHW. The outcomes of the consultation and the noise management tool outputs will also be used to identify appropriate mitigation measures to be implemented for the proposed OOHW. The process for stakeholder consultation for OOHW is further detailed in Section 6.

### 3.4. Coordination of OOHW approved by an EPL

As part of the noise and vibration assessment process, CGU will ensure all OOHW permitted by either an EPL or this protocol are co-ordinated to implement appropriate respite and/or mitigation measures for potentially affected sensitive receivers. OOHW Permits for works under an EPL will be reviewed and approved by CGU's Environmental and Sustainability Manager, Stakeholder and Community Engagement Manager and responsible engineer in accordance with any relevant OOHW conditions detailed in the Projects EPL.

### 3.5. Coordination of OOHW undertaken by a third party

As part of the noise and vibration assessment process, CGU will ensure all OOHW undertaken for the delivery of the CSSI, including works undertaken by a third party are co-ordinated to implement appropriate respite and/or mitigation measures for potentially affected sensitive receivers. Consultation will be undertaken with the Environmental and Sustainability Manager, Stakeholder and Community Engagement Manager and responsible engineer associated with works by a third party to ensure works can be coordinated to satisfy CoA E69 and E71.

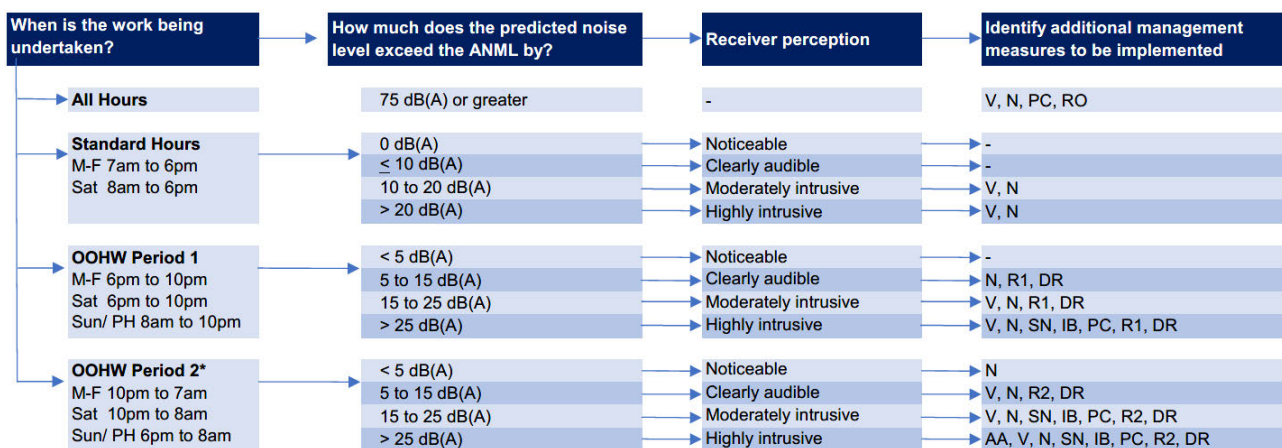
## 4. OOHW Noise & Vibration Mitigation and Management Measures

Following the noise assessment process as described in Section 3, the most appropriate reasonable and feasible management measures will be determined in accordance with the ICNG. Table 5-1 and Table 5-2 detail the relevant additional mitigation measures from the Roads and Maritime’s Construction Noise and Vibration Guideline (RMS CNVG) to be applied during OOHW as required.

As detailed in Section 5, mitigation measures for OOHW will be endorsed by the Environmental Representative (ER) in consultation with the Acoustics Advisor (AA) to ensure that appropriate reasonable and feasible noise and vibration mitigation measures are applied throughout the delivery of the Project.

It should be noted that there may be personal circumstances among the sensitive receivers where the below approach to specific additional mitigation measures is not best suited. The Stakeholder and Community Engagement Manager has the authority to amend the below approach due consideration of the personal circumstances that may apply and ensure no less than equivalent mitigation is provided.

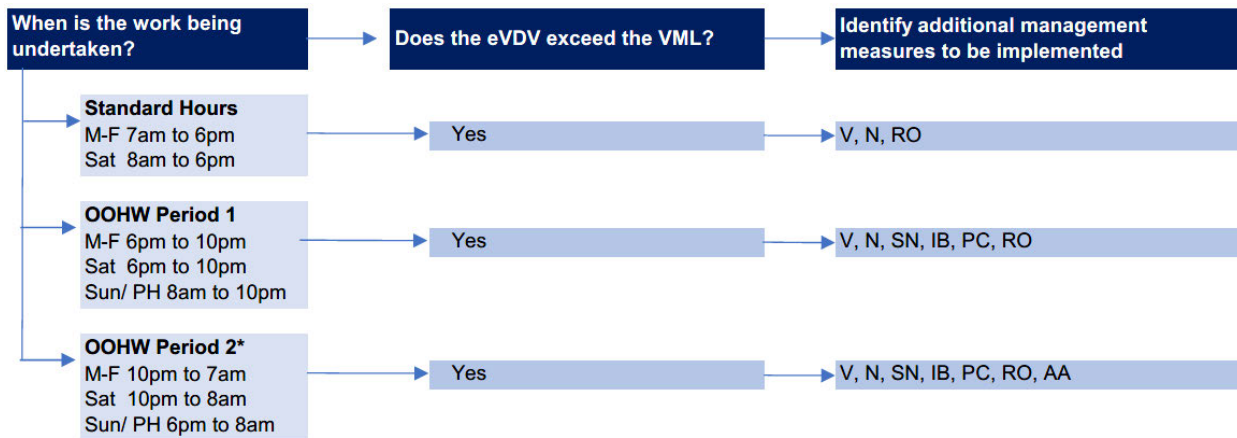
Figure 3 Triggers for Additional Mitigation Measures – Airborne Noise



Notes: Use the abbreviation codes in the table above to confirm management measures required  
 \* Where OOHW occur in the evening/night shoulder period (10pm to 12am) or the night/morning shoulder period (5am to 7am) apply additional airborne mitigation measures from the OOHW Period 2  
 N = Notification (should be issued a minimum of five working days prior to the start of works)  
 SN = Specific notifications (issued no later than seven calendar days ahead of construction activities)  
 IB = Individual briefing  
 PC = Phone Call  
 V = Verification of predicted noise levels  
 AA = Alternative accommodation\*\*  
 RO = Project specific respite offer  
 R1 = Respite period 1  
 DR = Duration respite  
 R2 = Respite period 2  
 \*\* Where construction activity impacts receiver for more than two (2) nights over a seven (7) day rolling period (CoA E82).

As outlined in the CNVMP and consistent with Section 4.3 of the ICNG, an assessment of sleep disturbance impacts would be completed where construction works are planned to extend over more than two consecutive nights. The assessment will identify whether there are noise events above the initial screening level and, where this occurs, whether events are above an 'awakening reaction' level of 55 dB(A) L<sub>Amax</sub> (internal). Noise events above the awakening reaction level would be classified Clearly Audible or above.

Figure 4 Triggers for Additional Mitigation Measures – Vibration



Notes: Use the abbreviation codes in the table above to confirm management measures required

\* Where OOHW occur in the evening/night shoulder period (10pm to 12am) or the night/morning shoulder period (5am to 7am) apply additional airborne mitigation measures from the OOHW Period 2

N = Notification (should be issued a minimum of five working days prior to the start of works)

SN = Specific notifications (issued no later than seven calendar days ahead of construction activities)

IB = Individual briefing                      PC = Phone Call                      V = Verification of predicted noise levels

AA = Alternative accommodation\*\*      RO = Project specific respite offer      R1 = Respite period 1

DR = Duration respite                      R2 = Respite period 2

\*\* Where construction activity impacts receiver for more than two (2) nights over a seven (7) day rolling period (CoA E82).



## 5. Approval of OOHW not subject to an EPL

Refer to Annexure A for a flow chart of the approval process for OOHW not subject to an EPL.

When it is identified that OOHW are required and are not subject to an EPL, the engineer responsible for the work will submit an OOHW Permit to the CGU Environment Team. This OOHW Permit will include details of the proposed activity and justification for the need to carry out the work as OOHW.

Following this, the noise and vibration assessment process as described in Section 3 will be undertaken by a member of the CGU Environment Team for the proposed OOHW. The outcomes of the noise and vibration assessment, including relevant management measures, will be forwarded to the CGU Environment and Sustainability Manager and Stakeholder and Community Engagement Manager, who, will review the level of risk associated with the activity, the predicted impacts and the management measures to be implemented.

Once the OOHW Permit has been developed, it will be provided to the ER, AA and TfNSW for review and to confirm the risk level. The proposed OOHW are classified low risk if the noise assessment (including the assessment of sleep disturbance) as described in Section 3 identifies that the works:

- Meet the perception classification (Figure 3) of Noticeable;
- Meet the perception classification (Figure 3) of Clearly Audible and above at any one residential receiver for a maximum of:
  - ▶ 2 consecutive evenings and/or nights per calendar week; and
  - ▶ 3 evenings and/or nights per calendar week; and
  - ▶ 10 evenings and/or nights per calendar month.

The effect of the above facilitates two evening and/or night periods in a row and at least one period off before the third period that week. In accordance with CoA E70 (d)(ii), the ER has the authority to approve low risk OOHW activities. If the duration limitations outlined above cannot be achieved, the proposed OOHW will be classified medium/high risk. In this instance, the assessment of the proposed OOHW and the OOHW Permit will be issued to the Secretary for review and approval.

Following approval by the ER or the Planning Secretary, the approved OOHW Permit will be provided to the relevant construction team by the CGU Environmental and Sustainability Manager. On receipt of the approved OOHW Permit, any standard and additional mitigation measures that relate to the OOHW will be:

- Implemented prior to OOHW (such as specific conditions that relate to the community).
- Communicated to relevant workforce and site personnel before each shift to introduce/reinforce work restrictions, management measures and expected workforce behaviour.
- Implemented during OOHW and monitored by the CGU Environment Team to confirm/validate the noise predictions where required by the permit.

Following the OOHW, CGU will review any lessons learnt and monitoring data to help inform future OOHW activities and mitigation measures and minimise impacts.

*Note – Works being conducted under the Environmental Planning and Assessment (COVID-19 Development – Infrastructure Construction Work Days No. 2) Order 2020 (the Order), does not require approval from the ER, TfNSW or Planning Secretary.*

## 6. Consultation and fatigue management

The Community and Stakeholder Team will use a range of communication tools to provide clear, effective, and timely information to the predicted affected sensitive receivers and stakeholders. The method of communication will be chosen based on the nature of works and the potential impacts, as noted in Section 8.6 of the CNVMP.

In accordance with Section 3.7.2.2 of the TfNSW G36 specification, relevant sensitive receivers will be notified of upcoming planned OOHW detailing the location, nature, scope, duration, impacts and likely mitigation measures to be implemented for the proposed works. This will be conducted not less than 5 working days and not more than 14 working days, before commencing OOHW.

In addition to the above, where CGU undertakes Category C or D OOHW (see Table 4 in Section 2.1) respite periods for the OOHW will be identified in consultation with the community at each affected location on a regular basis. This consultation would include:

- a progressive schedule for periods no less than three (3) months, of likely out-of-hours work,
- the potential works, location and duration,
- the noise characteristics and likely noise levels of the works, and
- likely mitigation and management measures which aim to achieve the relevant noise management level (including the circumstances of when a respite or relocation offer will be available and details about how the affected community can access these offers).

The outcomes of the 3 monthly community consultation, the identified respite periods and the scheduling of the likely OOHW will be provided to the EPA, AA and Planning Secretary for information within 2 weeks of undertaking the community consultation.

## 7. External Approval Authorities for OOHW

### 7.1. DPIE

In accordance with CoA E70(d)iii), if the proposed OOHW (that is not subject to an EPL) includes medium or high risk activities, approval of the OOHW will be sought from the Secretary.

### 7.2. Environmental Representative and Acoustics Advisor

In accordance with CoA E70 (d)(ii), if the proposed OOHW (that is not subject to an EPL) only includes low risk activities (refer to Section 0), the OOHW can be approved by the ER, in consultation with the AA.

## 8. OOHW Monitoring

Noise and vibration monitoring of OOHW will be conducted as determined by the overarching CNVISs or the CNVA reports generated by Gatewave (see Section 0), which will include verification monitoring for any new works being undertaken (in accordance with the CNVIS or CNVA). Additionally, monitoring will be conducted and documented in accordance with the Project's Construction Noise and Vibration Monitoring Program and serves to validate the predicted levels.

## 9. OOHW Noise and Vibration Exceedances

### 9.1. Management Response

Where monitored noise and vibration levels are found to be above modelling predictions or noise/vibration management levels during OOHWs, the following actions will be undertaken:

- Identify whether the exceedance is caused from CGU construction related sources.
- Confirm if the exceedance is due to an uncharacteristically loud/vibratory piece of equipment.
- Confirm that the modelling reflects the actual activity being undertaken.
- If determined to be caused by CGU construction, cease the noise and/or vibration generating source causing the exceedance.
- Identify if the equipment can be swapped out for another piece of equipment or alternative equipment or plant, or if additional mitigation can be included in the site design.
- Implement other feasible and reasonable measures which may include reducing plant size, modifying time of works, changing operational settings (such as turning off the vibratory function of the machine), and utilising alternative construction methodology or a combination of these.
- Continue work where impacts can be reduced or if the exceedance is deemed minor i.e. does not trigger any additional community mitigation measures to be implemented such as Alternative Accommodation.
- Refine the noise modelling assessment process based on the learnings. For example, if noise or vibration predictions are lower/higher than expected, noise modelling would take this into consideration to predict impacts for future works more correctly.
- Communicate lessons learnt to relevant personnel.

Previously recorded non-conformances will be considered prior to the approval of further OOHW permits.

### 9.2. Reporting

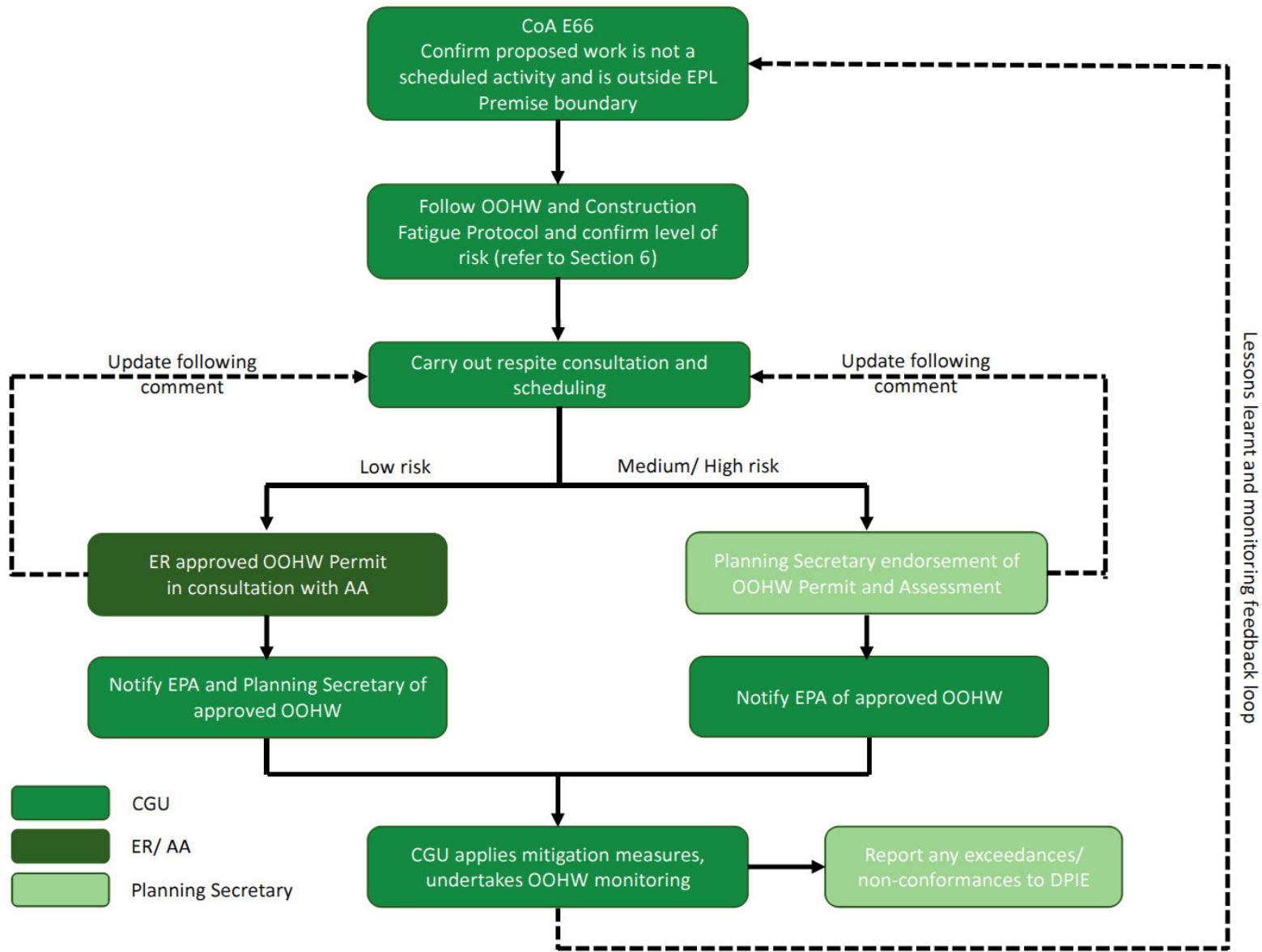
A noise and vibration related non-conformance for OOHW is defined as:

- Where a piece of plant/equipment is being used for OOHW which has not been assessed in noise/vibration modelling and is causing an exceedance of the predicted noise impacts and the Noise Management Levels at relevant sensitive receivers.
- Relevant noise and vibration mitigation measures have not been implemented for OOHW in accordance with the OOHW Permit or CNVMP and monitoring shows exceedance of the noise/vibration goals at relevant sensitive receivers.

All non-conformances will be reported in accordance with Section 3.10 of the CEMP.

Any noise and vibration complaints will be reported in accordance with the Project Communication Strategy.

## Appendix A CGU M6 Stage 1 Project OOHW Protocol Approval Flow Chart



## Appendix B Example Out of Hours Permit Template



## SECTION 1: GENERAL DETAILS

Permit request no:		Application date:	
Permit Requestor:			

## SECTION 2: JUSTIFICATION FOR OUT OF HOURS WORKS

Assign one of the below justifications to the work outlined in Section 4: APPROVED WORKS	
A	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.
	The delivery of oversized plant or structures has been determined by the police or other authorised authorities to require special arrangements to transport along public roads.
B	L <sub>Aeq</sub> (15 minute) noise levels greater than 5dB above the day, evening and/or night RBL as applicable.
	L <sub>A1</sub> (1 minute) or L <sub>Amax</sub> noise levels greater than 15dB above the night RBL for night works.
	Continuous or impulsive vibration values greater than those for human exposure to vibration, set out for residences in Table 2.2 in "Environmental Noise Management - Assessing Vibration: a technical guideline" (DEC, 2006).
C	Intermittent vibration values greater than those for human exposure to vibration, set out for residences in Table 2.4 in "Environmental Noise Management - Assessing Vibration: a technical guideline" (DEC,2006).
	Carrying on the work 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".
	The road network operator has advised CGU in writing that carrying out the work during standard hours would result in a high risk to road network operational performance.
	Where the relevant utility service operator has advised the Proponent in writing that carrying out the works and activities could result in a high risk to the operation and integrity of the utility network.
D	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 standard construction hours.
	Works may be undertaken outside of standard construction hours if agreement between the licensee and a substantial majority of potentially affected sensitive receivers has been reached.
E	EPL Variation: required where no other clause covers the work .

## SECTION 3: COMMUNITY

Community Portal / Notifications	
Contact Number (In the event of contact with the community)	
Contingency Nights	

## SECTION 4: SUPERVISORS

Who from CGU will be supervising the work? (include contact details)	
In the case of any emergency or issue during a night shift. Please contact the specified supervisors to the right for shared use of resources including labour or plant/equipment to deal with the issue.	

## SECTION 5: APPROVED WORKS

Activities	Location	Justification	Dates	Time	CNIA	Plant/Equipment (Red = High Impact)
<b>Arncliffe Compound C1</b>						
<b>Rockdale Depot Compound C2</b>						
<b>Bicentennial Park Compound C3</b>						
<b>President Avenue and Princes Highway</b>						

## SECTION 6: NOISE MITIGATION MEASURES

Assessment	
Proposed mitigation measures:	

**SECTION 7: NOISE MONITORING (for Environment Team)**

NCA								

**SECTION 8: APPROVALS (Permit must be signed by all parties to be issued)**

<b>Environment Manager</b> Confirm Mitigations	Name: _____ Date: ..... Signature: .....
<b>Stakeholder and Community Relations Manager</b> Confirm Notifications	Name: _____ Date: ..... Signature: .....
<b>Project Manager</b> Review	Name: _____ Date: ..... Signature: .....
<b>Superintendent</b> Review	Name: _____ Date: ..... Signature: .....
<b>Director</b> Approve	Name: _____ Date: ..... Signature: .....

### SECTION 8: Permit Acceptance – to be signed by all personnel working out of standard hours

By signing this permit, I understand;

- Plant and equipment used must be as listed in Section 3, including time limitations
- Controls in Section 4 and 7 will be implemented before starting noise generating work
- I will raise potential changes or issues with my Supervisor
- I will only do work detailed in this permit.

Date:	Name:	Company:	Signature: