



Sydney Metro West - CTP - Out of Hours works Protocol

SMWSTCTP-AFJ-1NL-PE-PLN-000005 Revision 02

Sydney Metro West – Central Tunnelling Package



ACOUSTICS ADVISOR ENDORSEMENT SYDNEY METRO WEST (SSI 10038)

Review of	Central Tunnelling Package: Out of Hours works protocol	Reviewed document reference:	SMWSTCTP-AFJ-1NL-PE-PLN-000005
Prepared by:	Dave Anderson, Acoustics Advisor		Revision 01
Date of issue:	18 October 2021		Dated: 15 October 2021

As approved Acoustics Advisor (AA) for the Sydney Metro West project, I reviewed Rev 0 of the Sydney Metro West – CTP - Out of Hours (OOH) works protocol and provided comments. The document has been revised and I'm satisfied that Rev 1 is suitable for submission to the Department of Planning Industry & Environment (DPIE) for approval. I also confirm that it has been developed in consultation with me, as Acoustics Advisor, in accordance with Condition D38.

I note that:

- The protocol does not address ground borne noise and vibration because it is not proposed to cover tunnelling activities.
- The protocol notes the requirement for the AA to review and/or be consulted in relation to OOH permits. In addition, it may be necessary for the AA to endorse permits in accordance with Condition A36 (e).

I endorse Rev 1 of the Out of Hours (OOH) works protocol for submission to DPIE.



Dave Anderson, Metro West Acoustics Advisor

Stuart Hodgson
Director Sustainability, Environment & Planning
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REF: OOHW PROTOCOL REV 01

Dear Stuart

RE: Sydney Metro Power Central Tunnelling Package: Out of Hours Works Protocol (Rev 01)

I refer to Sydney Metro's (SM) submission of the following document required by Condition D38 of the Sydney Metro West Infrastructure Approval (SSI 10038) which was approved by the Department of Planning, Industry and Environment (DPIE) on 11 March 2021:

- Sydney Metro West, CTP Out of Hours Works Protocol (OOHW Protocol) (SMWSTCTP-AFJ-1NL-PE-PLN-000005 Revision 01 dated 15 October 2021).

It is noted that:

- Previous versions of the document have been reviewed and updated following comment from the ER.
- The OOHW Protocol has been provided to the EPA for comment. The EPA has responded that they have no comment on the Protocol.

Under Condition D38, the OOHW Protocol is required to be developed in consultation with the ER. As the approved Environmental Representative for the Sydney Metro West; I confirm that the ER has been consulted on the OOHW Protocol as required of Condition D38.

Yours sincerely



Michael Woolley
Environmental Representative – Sydney Metro West – Power Enabling Works
CC: John Ieroklis, Matthew Marrinan, Ben Armstrong

DOCUMENT APPROVAL

	Prepared By	Reviewed By	Approved By
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Date:	29/09/21	29/10/21	29/10/21

REVISION HISTORY

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00	26 August 2021	All	JH	For submission to Sydney Metro
01	15 October 2021	All	EW	For AA & ER Endorsement
02	29 October 2021	All	EW	For DPIE Approval

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GLOSSARY AND ABBREVIATIONS

Abbreviation	Description / Definition
AFJV	Acciona Ferrovia Joint Venture (the Contractor)
AS/NZS	Australia/New Zealand Standards
Amendment Report	Sydney Metro West Westmead to The Bays and Sydney CBD Amendment Report Concept and Stage 1 (2020)
CEMP	Construction Environmental Management Plan
Construction	Includes all work required to construct Stage 1 of the CSSI as described in the documents listed in Condition A1 of Schedule 3, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding Low Impact Work. <i>Note: As defined in Table 1 of SSI 10038 Infrastructure approval for the Project.</i>
CNVMP	Central Tunnelling Package Construction Noise and Vibration Management Plan
CNVS	Sydney Metro Construction Noise and Vibration Standard Version 4.3 (4/11/2020) (SM-20-00098866)
CoA	Minister's Conditions of Approval (as relevant to Sydney Metro West Concept and Stage 1)
CTP	Central Tunnelling Package
DPIE	NSW Department of Planning, Infrastructure and Environment
EIS	Sydney Metro West Concept and Stage 1 Environmental Impact Statement (April 2020)
EMS	Environmental Management System
EPA	NSW Environment Protection Authority
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPL	NSW Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
NVMP	Central Tunnelling Package Noise and Vibration Monitoring Program
OCCS	Overarching Community Communication Strategy
Planning Secretary	The Planning Secretary of the Department of Planning, Industry and Environment
PoEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
Project	Sydney Metro West Concept and Stage 1
Relevant Councils	Any or all local government councils as relevant, Inner West Council, Strathfield Council, Burwood Council, City of Canada Bay, Parramatta City Council
REMM	Revised Environmental Mitigation Measure
Submissions Report	Sydney Metro West Westmead to The Bays and Sydney CBD Submissions Report Concept and Stage 1 (2020)

1. INTRODUCTION

1.1 BACKGROUND

Sydney Metro is Australia's biggest public transport program. Services on the North West Metro Line between Rouse Hill and Chatswood started in May 2019. The Sydney Metro network also includes Sydney Metro City & Southwest, Sydney Metro West and Sydney Metro Western Sydney Airport.

Sydney Metro West is a new 24kilometre metro line between Westmead and the Sydney CBD. This infrastructure investment will double the rail capacity of the Greater Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes.

The planning approvals and environmental impact assessment for Sydney Metro West has been split into a number of stages recognising the size of the project. This includes:

- Stage 1 – Concept and all major civil construction works including station excavation and tunnelling between Westmead and The Bays. Planning approval for this stage was granted in March 2021.
- Stage 2 – All major civil construction works including station excavation and tunnelling from The Bays to Sydney CBD
- Stage 3 – Tunnel fit-out, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line

An Environmental Impact Statement (EIS) (Jacobs/Arcadis, 2020) for the Concept and Stage 1 (herein referred to as the Project) assessed the noise and vibration impacts in response to the Secretary Environmental Assessment Requirements issued by the Department of Planning, Industry and Environment (DPIE). The Project was approved on 11 March 2021 (SSI 10038).

Sydney Metro is delivering the Project via several different packages, including the Central Tunnelling Package (CTP).

1.2 SCOPE

This Protocol outlines how Acciona Ferrovia Joint Venture (AFJV) propose to consider, approve, and manage works outside the approved construction hours as required under the CoA D38, for works not subject to an Environment Protection Licence (EPL).

This Protocol will be included into the Project Construction Noise & Vibration Management Plan (CNVMP) (document number SMWSTCTP-AFJ-1NL-NV-PLN-000001) once that document has been approved.

In addition, the Protocol has been developed in accordance with the Project EIS, the Revised Environmental Mitigation Measures (REMMs) and all applicable legislation and guidelines for the design and construction of the CTP.

This document applies for works not subject to an EPL, such as Low Impact Works undertaken prior to EPL determination and works outside the EPL premise boundary. OOHW that apply under the EPL will be subject to the requirements defined in the EPL. When the EPL is issued, this OOHW Protocol will be reviewed with consideration to incorporate relevant information to provide a consolidated project information document about OOHW for the community.

1.3 OBJECTIVES

This Protocol outlines how AFJV will comply with and implement the applicable elements of the following documents, collectively referred to herein as the 'Project requirements' for the CTP:

- The CoA (issued on 11 March 2021 and as modified on 29 July 2021)
- The Project EIS, Submissions Report and Amendment Report

- Sydney Metro Construction Environmental Management Framework (CEMF).

2. ENVIRONMENTAL REQUIREMENTS

2.1 RELEVANT LEGISLATION AND GUIDELINES

Legislation relevant to this Protocol includes:

- Protection of the Environment Operations Act 1997 (POEO Act)

The guidelines, specifications and policy documents relevant to this Protocol include:

- Sydney Metro Construction Noise and Vibration Standard (CNVS) 2020 v4.3
- Sydney Metro Construction Environmental Management Framework (CEMF) 2020 v4.1

2.2 PROJECT REQUIREMENTS

The Project requirements relevant to the preparation of this Protocol are identified in Table 2-1. A cross reference is also included to indicate where the requirement is addressed in this Protocol or other documents.

TABLE 2-1: COMPLIANCE TABLE - REQUIREMENTS FOR PREPARATION OF OOHW PROTOCOL

Project Planning Approval		
D38	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work which are outside the hours defined in Conditions D35 and D36 of this schedule. The Protocol must be approved by the Planning Secretary before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER, AA and EPA. The Protocol must provide:	This document Section 3.1
(a)	identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: • the ER and AA review all proposed out-of-hours activities and confirm their risk levels; • low risk activities can be approved by the ER in consultation with the AA; and • high risk activities that are approved by the Planning Secretary;	Section 8
(b)	a process for the consideration of out-of-hours work against the relevant NML and vibration criteria;	Section 8
(c)	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 requirements of Condition D50 of this schedule. The measures must take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events;	Section 6 Section 9
(d)	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	Section 10

Project Planning Approval		
(e)	notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works.	Section 9
	This condition does not apply if the requirements of Condition D37(b) of this schedule are met.	

3. DOCUMENT CONSULTATION AND APPROVAL

3.1 DOCUMENT CONSULTATION

The CoA D38 requires the following consultation for this Protocol:

- Be prepared in consultation with the NSW Environment Protection Authority (EPA)
- Be prepared in consultation with the Acoustic Advisor (AA) and Environmental Representative (ER)

Details of issues raised by a government agency during consultation are included as **Appendix B**, including copies of all correspondence from those agencies, as required under CoA A6.

Ongoing consultation with stakeholders may be undertaken as required during project delivery.

3.2 DOCUMENT APPROVAL

In accordance with CoA D38 this Monitoring Protocol will be submitted to the Planning Secretary for approval, following the consultation with the AA, ER and EPA as described above.

4. ROLES AND RESPONSIBILITIES

4.1 ACOUSTICS ADVISOR

CoA A36 requires an AA to be appointed to the project. The AA is to act as an independent point of contact for all noise and vibration matters under the planning approval. Pertinent to this OOHW Protocol the AA is to:

- review all proposed night-time works (with the exception of low risk activities) to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures; and
- review all noise and vibration documents required to be prepared under the conditions of this approval and, should they be consistent with the conditions of this approval, endorse them before submission to the Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary);
- noise and vibration related responsibilities detailed in CoA A36.

4.2 ENVIRONMENTAL REPRESENTATIVE

CoA A27 requires an ER to be appointed to the project. The ER is to act as an independent point of contact for all environmental and planning approval compliance matters. Refer to CoA A30 for a comprehensive list of the ER's responsibilities.

4.3 PLACE MANAGER (COMMUNITY)

An AFJV Place Manager has been allocated to the Project. The Place Manager is responsible for ensuring that all project communication requirements with the surrounding community are implemented, including community notifications required for this Protocol.

4.4 AFJV ENVIRONMENT MANAGER

The AFJV Environment Manager is responsible for ensuring environmental risks of the Project are identified and appropriate mitigation measures implemented. The Environment Manager is also responsible for ensuring environmental compliance with statutory, approval and proponent requirements.

4.5 SYDNEY METRO ENVIRONMENTAL MANAGER

The Sydney Metro Environmental Manager is responsible for ensuring that all environmental management requirements associated with this Project are being complied.

5. MANAGEMENT DOCUMENTS

5.1 SYDNEY METRO CONSTRUCTION NOISE AND VIBRATION STANDARD

Sydney Metro has developed a Construction Noise and Vibration Standard (CNVS) to:

- Establish a framework for managing construction noise and vibration impacts and adopting appropriate mitigation measures (including minimum requirements);
- Form part of the Project's Environmental Impact Statement;
- Form part of the contract requirements that Sydney Metro's Principal Contractors must comply with; and
- Set minimum requirements around all works undertaken outside approved hours, including the need for and development of the Detailed Noise and Vibration Impact Statements (DNVIS).

This Protocol has been prepared in accordance with the CNVS.

5.2 CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

In accordance with CoA C5 AFJV has prepared a CNVMP, which forms part of the CEMP sub-plans. The CNVMP is currently in draft and is pending approval by the Planning Secretary. This Protocol will become an Appendix to the CNVMP once that document is approved.

The function of the CNVMP is to provide a strategic overview of how the requirements of the CNVS will be applied to activities or locations for the Project, as well as meeting relevant requirements under the CoA and Environmental Impact Statement (EIS).

The CNVMP also contains the Noise & Vibration Monitoring Program (NVMP) which outlines when monitoring of noise and vibration impacts are to be carried out. It also identifies the guidelines to be applied to undertake the monitoring.

5.3 DETAILED NOISE AND VIBRATION IMPACT STATEMENTS

While quantitative noise assessments are documented in the EIS, a more refined assessment is required to be undertaken within DNVIS's prepared under CoA D43. A DNVIS is intended to be a more accurate assessment of potential noise and vibration impacts with more detailed information of the equipment and construction methodology to be used.

CoA D43 requires DNVIS to be prepared prior to any works exceeding:

- must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels specified in Conditions D39 and D40 at any residence outside construction hours, or
- where receivers will be highly noise affected (at any time).

A DNVIS will be prepared for each construction site and for the tunnelling activity along the project alignment. The DNVIS will be written to:

- assess and document the anticipated noise impacts at noise sensitive receivers of proposed construction activities, prior to the commencement of those activities.
- remove assumptions made in the EIS including the Noise and Vibration Technical Paper.
- be written with a focus on specific activities or locations and considers works carried out inside and outside of standard working hours.
- include mitigation measures identified through consultation with affected sensitive land user(s).

The AA is required to review and endorse the DNVIS (as per AA role described at CoA A36(e)) and a copy of the DNVIS must be provided to the AA and ER before the commencement of the associated works and the Planning Secretary and the EPA may request a copy(ies) of the DNVIS.

6. OOHW ASSESSMENT

6.1 OOHW

OOHW are any works that are undertaken outside of the approved hours defined in the Project CoA D35, being:

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

CoA D37 recognises there are times where works outside the construction hours described above may be undertaken under specific circumstances. These include:

- In the case of safety and other emergencies
- Low impact activities for which noise and vibration levels do not exceed a set criteria
- In accordance with an EPL or by negotiated agreements
- By prescribed activity

These activities are not required to be approved as they have inherent permission to be undertaken in accordance with this condition.

CoA D37 also allows works outside the approved construction hours where they are approved under this Protocol.

6.2 COVID-19 PANDEMIC

COVID – 19 Health Orders issued by the Minister for Planning provide for OOHW in certain circumstances without any further approval whilst in force up to 31 March 2022 or a later date if extended. The orders provide for OOHW necessary to protect the health, safety and welfare of the members of the public during the Covid – 19 pandemic as it will facilitate social distancing by spreading infrastructure construction work over more days a week in accordance with the above Order.

The Order permits infrastructure construction to carry out building work or work, or the demolition of a building or work, on a Saturday, Sunday or public holidays.

The project must:

- “a) be the subject of a State Significant Infrastructure approval*
- b) comply with all conditions of the approval other than any condition that restricts the hours of work or operation on a Saturday, Sunday or public holiday, and*
- c) for work or operation on a Saturday, Sunday or public holiday –*
 - (i) comply with the conditions of the approval that restrict the hours of work or operation on any other day as if the conditions applied to work or operation on a Saturday, Sunday or public holiday, and*
 - (ii) not involve the carrying out of rock breaking, rock hammering, sheet piling, pile driving or similar activities during the hours of work or operation that would not be permitted but for this Order, and*
 - (iii) take all feasible and reasonable measures to minimise noise.”*

6.3 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 requires that work proposed outside of approved construction hours must be appropriately justified. In general, OOHW undertaken during public infrastructure projects, necessary to sustain the operational integrity of roads, is considered justified in the ICNG.

6.4 OOHW PERMIT

Due to greater community sensitivity to noise and vibration impacts from works undertaken outside approved hours, an OOHW Permit application process is adopted by the requiring an OOHW Permit to be prepared, noise assessments completed, and reviewed, prior to the commencement of any OOHW. Only after final approval may the OOHW Permit be issued for the works activity to commence.

As per CoA D38(a) approval of OOHW is dependent upon the OOHW Classification. The process of OOHW Classification is outlined in Section 8 of this document.

To facilitate this process, an OOHW Permit will be utilised for all OOHW applications (i.e. for works both within and outside the EPL) to ensure due diligence is undertaken by requiring the applicant to:

- Provide justification for the works to be undertaken outside of approved hours;
- Adequately assess the noise & vibration impacts at nearest receivers;
- Demonstrate mitigation measures being implemented;
- Provide an agreed OOHW Classification; and
- Obtain relevant approval and review confirmation as required.

The OOHW Permit requires a work activity specific noise and vibration assessment to be undertaken and reviewed prior to approval of any planned OOHW works.

6.5 OOHW PERMIT PROCESS

For any planned OOHW, the process as described below will be undertaken:

1. An OOHW Permit will be prepared that summarises the activities, equipment required, location, duration, includes detailed justification for works supported by reasonable and feasible mitigation measures.
2. The OOHW Permit will be submitted to the Environment Team to undertake the noise & vibration assessment to produce the activity specific DNVIS. The AFJV Environment Manager will consider:

- a. the justification for the OOHW works is satisfactory;
 - b. the noise & vibration assessment is adequate and if relevant, addresses cumulative impacts;
 - c. mitigation measures are reasonable and feasible; and
 - d. will allocate the appropriate risk category.
3. Dependent on the circumstances and impact classification the OOHW Permit will be either:
 - a. in accordance with D37 including:
 - i. safety & emergencies (D37(a));
 - ii. low impact circumstances (D37(b));
 - iii. by negotiated agreement (D37(c)(iii));
 - iv. prescribed activity including work within an acoustic shed where noise levels do not exceed low impact circumstances identified in CoA D37(b) (D37(d)(v));
 - or
 - b. provided to the AA for consultation and subsequently to the ER for approval under the category of “Low risk”;
 - or
 - c. provided to the AA for review and the ER for review & endorsement prior to being lodged with DPIE for approval under the category of “High risk”.
4. Community consultation and notification will be undertaken in accordance with the Project Communication Strategy (refer to Section 9).
5. Mitigation measures and monitoring as identified in the OOHW Permit will be undertaken during the works.

6.6 EMERGENCY WORKS

Occasionally there may be a need to undertake emergency works outside of standard working hours, including:

- for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or
- 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 CoA D37(a)(ii) AFJV will notify Sydney Metro, the AA, the ER, and Sydney Metro will notify the Planning Secretary and the EPA (if required) providing the reasons for such work.

Best endeavours will be made to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work, with as much details as possible regarding:

- Scope
- Location
- Hours
- Duration
- Types of equipment to be used

- Likely impacts.

On the following workday of completion of any emergency works being undertaken, a summary will be provided to Sydney Metro, the AA and ER, including:

- 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

7. OOHW NOISE AND VIBRATION ASSESSMENT

7.1 ASSESSMENT CRITERIA

The guidelines for establishing project-specific noise and vibration criteria to guide the application of mitigation measures include the following:

- Airborne and ground-borne noise - the Interim Construction Noise Guideline (DECC, 2009). The Interim Construction Noise Guideline identifies ‘particularly annoying’ activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level (NML).
- Vibration (human comfort) - Assessing vibration: a technical guideline (DEC, 2006)
- Building damage - BS 7385 Part 2-1993 “Evaluation and measurement for vibration in buildings Part 2” as they are “applicable to Australian conditions”
- Heritage items - German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage) (applicable when a heritage-listed structure is identified in poor condition)
- Sleep disturbance - NSW Noise Policy for Industry, Environment Protection Authority 2017

These guidelines will be utilised to identify noise and vibration criteria which will be documented for each specific activity within the Out of Hours Permit, based upon the location, plant and equipment required, and timing of the proposed activity.

7.2 ASSESSMENT METHOD

For each OOHW activity a detailed assessment will be undertaken to determine the noise and vibration impacts of the proposed OOHW. These assessments will use an appropriately detailed noise prediction tool developed by the project acoustic consultant Hutchison Weller. KNOWnoise is a web-based noise prediction tool designed for use by the project team to complete its own assessment. This provides opportunity to proactively plan OOHW works and make adjustments as necessary.

KNOWnoise is based on the same 3D noise modelling done in Soundplan noise prediction software, as that done for the DNVIS, and is therefore considered an extension or replication of the modelling processes used for the DNVIS. KNOWnoise includes all terrain, buildings, noise walls as well as air and ground absorption for accurate results.

Each assessment of proposed OOHW will incorporate quantitative prediction of the noise level and extent of noise impact that activities will have on potentially affected sensitive receivers, based on inputs including location, and the types and number of construction machinery operating at any one time.

Vibration will be automatically assessed within KNOWnoise based initially on standard safe working distances of selected vibration-intensive equipment, and subsequent site laws updated into KNOWnoise following initial vibration monitoring (as described in the Noise and Vibration

Monitoring Program). Advice will be provided on whether the human comfort, cosmetic damage or heritage criteria may be exceeded, with appropriate mitigation measures recommended.

7.3 REPORTING

A report for each assessment is automatically generated and must be attached to the OOHW permit application and includes:

- details of the nature and scope of each activity, including planned times, duration and location(s) of works,
- plant and equipment to be used with estimated equipment sound power levels (including 5 dB penalty where applicable for annoying characteristics)
- justification of the need to work outside approved hours
- relevant noise management levels and vibration criteria
- an evaluation of predicted noise levels with a summary of the number of exceedances and predicted maximum noise levels
- assessment of sleep disturbance and where sleep disturbance criteria at a residential location exceed criteria, provide details of likelihood of occurrence and appropriate additional or alternative mitigation measures
- assessment of vibration (whether works are likely to be within safe working distances for selected plant)
- recommended standard and additional mitigation measures. Additional mitigation measures will be recommended based on the CNVS and predicted levels of exceedance at each identified sensitive receiver.

8. OOHW CLASSIFICATION AND APPROVAL

OOHW Classification is a two-step process, being:

Step 1: Prediction of noise and vibration Impact Rating as shown in Table 8-1

Step 2: Determination of OOHW Classification based on OOHW periods as shown in Table 8-2

Within the OOHW Permit, the proposed works will have an OOHW Classification of one of the following categories:

1. Low impact: as defined under CoA D37(b)
2. Low risk: can be approved by the ER in consultation with the AA, and
3. High risk: activities are approved by the Planning Secretary.

TABLE 8-1: OOHW IMPACT RATING

Impact Rating		Airborne noise		Vibration (intermittent)
		(L _{Aeq} 15 min) Exceedance of NML	(L _{AMax}) Sleep disturbance likelihood	Exceedance of Night VDV Criteria
NML Compliant	A	-	-	-
Noticeable	B	1 - 5	Exceeds RBL + 15 dBA	-
Clearly Audible	C	5 - 15		>Preferred ¹
Moderately Intrusive	D	15 - 25		
Highly Intrusive	E	25+	Exceeds 65 dBA	>Maximum ¹

¹ Refer to Table 2.4 of 'Assessing Vibration – A Technical Guideline'

TABLE 8-2: OOHV CLASSIFICATION

Variation to Work Hours (D37)	Low Risk (D38)	High risk (D38)
Review AA & ER	Consultation AA & Approval ER	DPIE Approval
1. Works assessed to meet Classification A 2. Low impact works as per CoA D37(b), including: Low impact works as per CoA D37, including: (i) construction 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 user(s); and (ii) construction that causes LAFmax(15 minute) noise levels no more than 15 dB(A) above the rating background level at any residence; or (iii) construction that causes: - continuous or impulsive vibration values, measured at the most affected residence are 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 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). 3. Negotiated agreements with directly affected residents and sensitive land users(s) (CoA 37 (c)(iii)). 4. Work within an acoustic shed where there is no exceedance of noise levels under Low Impact circumstances identified in (2) above	OOHV works represent low risk to the community under the following conditions and can be approved by the ER following consultation with the AA - Works assessed to meet impact Classification B - Works assessed to meet impact Classification C with the following restrictions: 3 consecutive evenings or nights in a calendar week - No more than 4 evenings or nights in total per calendar week - Works under this condition would expend the equivalent number of nights allowed under condition 1. - Works assessed to meet noise impact Classification D or Classification E with the following restrictions: 2 consecutive nights in a calendar week - No more than 3 nights in total per calendar week - No more than 12 evenings or nights in total within a period of 4 consecutive weeks - Works under this condition would expend the equivalent number of nights allowed under condition 1 or 2. - No works on a public holiday. <i>Note: Classification D and E requires clear reasonable and feasible justification and appropriate mitigation measures</i>	OOHV with higher levels of impact over prolonged durations represent a high risk of adverse impact on the community and require DPIE approval.

The AA and ER will then review this OOHW Classification for works not being done as 'low impact' activities to consider all other relevant factors, including:

- Those identified in Section 6.4 of the CNVS
- Those listed in Table 8-3 of this document;
- Third Party permits; and
- Any other factors considered relevant in their professional opinion.

TABLE 8-3: CLASSIFICATION CONSIDERATIONS

Type	Consideration
Predicted Noise Exceedance	The degree of predicted noise level exceedance above the RBL or NML as appropriate
Certainty	Whether RBLs, NMLs or predicted noise impacts are not well understood
Past Experience	Nature of works are new, in a new location or have not been undertaken by the contractor on the project already
Negotiated Agreement	Whether negotiated agreements have been obtained in accordance with CoA D38 (c)(iii)
Potential Sleep Disturbance	Whether the activity is likely to exceed the Project's sleep disturbance criteria
Non-Residential Receivers	Whether the impacted non-residential receivers operate within the same time period as scheduled OOHW.
Special Events	The timing and location of special events in the area of the proposed OOHW maybe schedules at the same time or immediately before or after the special event (e.g. festivals, public gatherings etc.)

Following their consideration, the AA & ER will confirm the final Classification level on the OOHW Permit (including any risk identification commentary) and they will sign and date the Permit as per the roles described in Table 8-4.

TABLE 8-4: REVIEW AND APPROVAL ROLES PER OOHW CLASSIFICATION

Classification	AA	ER	DPIE
Low impact	Review	Review	N/A
Low risk	Consultation	Approval	N/A
High risk	Review	Endorse	Approval

Following approval, the OOHW Permit will be provided to the construction team by the AFJV Environment Manager and the Planning Secretary will be informed by Sydney Metro of all upcoming low risk out-of-hours works in an agreed format. This will likely take the format of a weekly submission or presentation of a four week look-ahead of works, however the final process for provision of this information will be determined by Sydney Metro in consultation with DPIE.

9. MITIGATION AND CONSULTATION

9.1 MITIGATION MEASURES

Works outside approved hours are typically undertaken at a time most people are more sensitive to noise and vibration and background levels of noise are quieter. This increases the level of risk for adverse impacts on the community.

The mitigation measures implemented would take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events.

AFJV will implement all reasonable and feasible measures for noise mitigation and management regardless of predicted noise levels. These actions include as a minimum:

- management of behaviour such as avoiding shouting and swearing, turning off idling equipment when not in use, avoiding impulsive noise (metal on metal contact),
- selection of quieter equipment such as smaller, lower powered, newer, or better maintained.
- examining alternative technologies and methods to complete activities more quietly
- programming to avoid noisy activities after midnight as far as practicable (such as hammering, sawing etc)
- use of screens and enclosures to reduce noise emissions from equipment.
- adequate consultation and notification (as described below)
- noise and vibration monitoring identified in the OOHW Permit.

In addition to the above standard mitigation measures, the additional mitigation measures described in the CNVS (Section 5) will be implemented as reasonable and feasible. The Additional Mitigation Measures matrix is shown in Table 9-1, Table 9-2, and Table 9-3.

There may be personal circumstances among the sensitive receivers where the approach to specific additional mitigation measures is not best suited. The Stakeholder and Community Engagement Manager has the authority to amend the below approach taking into account personal circumstances that may apply.

TABLE 9-1: ADDITIONAL MITIGATION MEASURES MATRIX – AIRBORNE NOISE

Construction hours	Receiver perception	dB above RBL	dB above NML	Additional Mitigation Measures (AMM)
OOHW Period 1				
Monday - Friday 6pm-10pm	Clearly audible	> 10 to 20	5 to 15	PN
Saturday 7am-8am and 1pm-10pm)	Moderately intrusive	> 20 to 30	> 15 to 25	PN, V, SN, RO
Sunday / PH 8am to 6pm	Highly intrusive	> 30	> 25	PN, V, SN, RO, RP [#]
OOHW Period 2				
Monday – Saturday 12am to 7am, 10pm to 12am	Clearly audible	> 10 to 20	5 to 15	PN, V
	Moderately intrusive	> 20 to 30	> 15 to 25	PN, V, SN, RP
Sunday / PH 6pm to 12am	Highly intrusive	> 30	> 25	PN, V, SN, AA, RP

Notes:

PN = Project notification

RP = Respite period

SN = Specific notification, individual briefings, or phone calls

[#] Respite periods and duration reduction are not applicable when works are carried out during OOHW Period 1 Day only, (i.e. Saturday 6:00am–7:00am and 1:00pm–6:00pm, Sundays/Public Holidays 8:00am–6:00pm)

V = Verification monitoring

AA = Alternative accommodation

RO = Project specific respite offer

TABLE 9-2: ADDITIONAL MITIGATION MEASURES – GROUND BORNE CONSTRUCTION NOISE
(TABLE 17 CNVS)

Time Period	Mitigation Measures		
	Predicted LAeq (15minute) noise level Above NML		
	0 to 10 dB	>10 to 20 dB	> 20 dB
OOHW (Evening) Monday–Friday (6:00pm–10:00pm) Saturday (7:00am–8:00am, 1pm–10pm) Sunday/PH (8:00am–6:00pm)	LB	LB, M	LB, M, SN, IB, PC, RO
OOHW (Night) Monday–Saturday (12:00am–7:00am, 10:00pm–12:00am) Sunday/PH (12:00am–8:00am, 6:00pm–12:00am)	LB	LB, M, SN, RO	LB, M, SN, IB, PC, RO, AA

KEY:

AA- Alternative Accommodation,
LB- Letter Box Drops
SN- Specific notification.

M- Monitoring
RO- Project specific respite offer

IB- Individual Briefings
PC- Phone Calls and Emails

TABLE 9-3: ADDITIONAL MITIGATION MEASURES – GROUND BORNE VIBRATION

Time Period		Mitigation Measures	
		Predicted Maximum Levels	Vibration Levels Exceed
OOHW (Evening)	Mon-Fri (6.00 pm - 10.00 pm)	LB, M, IB, PC, RO, SN	
	Sat (1.00 pm - 10.00 pm)		
	Sun/Pub Hol (8.00 am - 6.00 pm)		
OOHW (Night)	Mon-Fri (10.00 pm - 7.00 am)	LB, M, IB, PC, RO, SN, AA	
	Sat (10.00 pm - 8.00 am)		
	Sun/Pub Hol (6.00 pm - 7.00 am)		

KEY:

AA- Alternative Accommodation
LB- Letter Box Drops,
SN- Specific notification.

M- Monitoring,
RO- Project specific respite offer

IB- Individual Briefings
PC- Phone Calls and Emails,

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 Environment Team to confirm effectiveness against the predicted noise levels and validate the noise predictions where required by the permit.

9.2 CONSULTATION

Consultation on respite with the affected community will be undertaken to meet the requirements of CoA D51, as described in Section10.

In line with CoA D41, noise generating work in the vicinity of potentially affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution. Sensitive periods and potential alternative arrangements will be determined by the consultation process described on the Overarching Community Consultation Strategy.

9.3 COMMUNITY NOTIFICATION

Community notifications can be used as a mitigation measure for receivers of noise and vibration impacts as a result of OOHW.

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

Community notification requirements are included in the CNVS and outlined in the Community Communications Strategy. Specific notifications of OOHW events will be issued to potentially affected sensitive receivers at least seven days, and not more than 14 working days, prior to the OOHW commencing.

OOHW notifications will be prepared generally in accordance with the CNVS and will:

- Be undertaken by letterbox drop or email
- Clearly outline the reason that the work is required to be undertaken outside standard construction hours specified
- Include a diagram that clearly identifies the location of the proposed works in relation to nearby cross streets and local landmarks
- Include details of relevant time restrictions that apply to the proposed works
- Clearly outline in plain English, the location, nature, type of work, scope and days and dates and hours of the proposed works
- Detail the expected noise impact of the works on potentially affected noise sensitive receivers
- Detail mitigation and management measures and proposed respite periods
- Clearly state how complaints may be made and additional information obtained
- Include the number of the 24-hour telephone complaints line, site contact (where available and the Project website address).

In accordance with CoA D45, landowners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage will also be notified prior to OOHW that generate vibration commencing near those properties.

If the potential exceedance is to occur more than once, or extend over a period of 24 hours, landowners and occupiers would be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the landowner and occupier.

9.4 NEGOTIATED AGREEMENTS

A negotiated agreement for particular OOHW may be formed with directly affected sensitive receivers in accordance CoA D37(c)(iii). These negotiated agreements would be undertaken and documented by the AFJV Place Manager and will be included as evidence for relevant OOHW applications.

In order to be considered 'accepted', the negotiated agreement needs to be confirmed acceptable by the 'substantial majority' (taken as being a minimum of 65%) of all respondents. Responses can be either verbal or written from the potentially affected receivers, and within a two-week timeframe of the provided notification of the negotiated agreement offer. The Land Use Survey, noise and vibration assessment for OOHV (either as part of or in addition to the DNVIS) and the Place Manager will advise of potentially affected sensitive receivers to be contacted with regards to each/any negotiated agreement offer.

Upon approval of any OOHV applications containing negotiated agreements, Sydney Metro will forward the negotiated agreement documentation to the Secretary for information at least one week prior to the OOHV commencing.

10. SCHEDULING AND RESPITE

10.1 RESPITE

Providing respite is an important component of reducing impacts to potentially affected receivers. OOHV, including work undertaken by other projects, must be coordinated to ensure respite periods are not impacted (discussed further in Section 10.2) through effective scheduling.

Consultation will be critical in ensuring the community's expectations are managed, their concerns are heard, appropriate respite and other mitigation is implemented and works outside of approved hours are not unexpected. As per CoA D51, appropriate respite periods for the OOHV will be identified in consultation with the community at each affected location on a regular basis. This consultation will include providing the community with OOHV project updates and project newsletters that are distributed to potentially affected receivers and also be viewed on the project webpage and include:

- a) a progressive schedule for periods no less than three months, of likely out-of-hours work;
- b) a description of the potential work, location and duration of the out-of-hours work;
- c) the noise characteristics and likely noise levels of the work; and
- d) likely mitigation and management measures which aim to achieve the relevant NMLs under CoA D39 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers).

The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work will be provided to Sydney Metro, the AA, and the Planning Secretary.

Respite periods can be any combination of days or hours during which receivers are not impacted by works resulting in noise levels greater than 5 dB(A) above the RBL at any residence. There are three main forms of respite to be considered for the Project, described further below.

10.1.1 HIGH NOISE OR VIBRATION EMITTING WORKS

Equipment that can generate high noise impacts include jackhammering, rock breaking or hammering, pile driving, concrete cutting, vibratory rolling and impact piling occurring on the surface and generating noise with impulsive, intermittent, tonal or low frequency characteristics will generate high noise impacts. Where reasonable and feasible, these pieces of equipment will be used:

- Between 8am-6pm, Monday to Friday;
- Between 8am-1pm Saturdays; and
- In continuance blocks of no more than 3 hours with at least a one hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers;

Where the use of such equipment is proposed as part of OOHW:

- The equipment will be used prior to 10pm where reasonable and feasible;
- Where the above cannot be achieved the equipment will be used prior to midnight where reasonable and feasible; and
- It is not proposed to apply a 3 hour on and a 1 hour off respite approach in an effort to ensure that the use of such equipment is completed as early in the night as possible.

10.1.2 COA PROJECT SPECIFIC RESPITE OFFERS

The CNVS (Section 5) requires project specific respite offers are to be made for all OOHW that are predicted to generate impacts that exceed the criteria (refer to CNVS Section 5.1) for the applicable OOHW period. The purpose of a project specific respite offer is to provide residents subjected to lengthy periods of noise or vibration a respite from an ongoing impact. Respite may be offered in the form of a reduction or absence of noise emissions for a period of time, or by removing the affected receiver from the noise emission point source (e.g. dinner/movie tickets).

If a project specific respite offer is required, a decision on the type of offer will be determined on a case- by-case basis and considering, but not limited to, the following factors:

- the predicted maximum exceedance level
- the predicted exceedance levels and associated duration and timings of those exceedance levels
- the overall duration of the predicted exceedance levels
- surrounding land uses
- community feedback
- any other OOHW (Sydney Metro or otherwise) that have affected or will affect the same receivers concurrently or within three days of either the start or end of the proposed OOHW.

10.1.3 ALTERNATIVE ACCOMMODATION

As described in the CNVS (Section 5), alternative accommodation options may be provided for residents living in close proximity to construction works that are likely to incur unreasonably high impacts over an extended period of time. Specific triggers for alternative accommodation are provided in CNVS (Section 5.1). Generally, AA is triggered as a potential mitigation measure when:

- Noise levels exceed the NML by over 20dB during the OOHW night time period
- Ground borne noise exceeds the NML by 10dB during the OOHW night time period
- Predicted vibration exceeds the maximum levels during the OOHW night time period

As per the project specific respite offers, alternative accommodation will be determined on a case-by-case basis, in consideration of the same contributing factors as listed in Section 10.1.2. Alternative accommodation will be offered by the Place Manager in consultation with each triggered receiver, to understand and align with their respite preferences.

The consideration of alternative accommodation would also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of Stage 1 of the CSSI.

10.2 SCHEDULING

As part of the noise and vibration assessment process under CoA D50, AFJV 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 and ensure respite would be coordinated to ensure agreed respite is provided.

Works undertaken as part of this OOHW Protocol will be scheduled to minimise or avoid any impact to agreed respite due to:

- other works, which may have been approved via other pathways, such as negotiated agreement (CoA D37(c)(iii)).
- works associated with other major projects (e.g. M4-M5 Link Rozelle Interchange) or known third parties works which may also reduce the respite provided to the community.

AFJV currently participate in routine coordination meetings with relevant authorities, DSSI SSI and CSSI projects to coordinate activities.

Scheduling of these activities will consider in each case the reduction in respite due to other approved works. Ideally, works will be scheduled to occur within the same OOHW period to preserve non-work periods. To achieve this, consultation will be undertaken with the AFJV Environment Manager, Place Manager and AFJV engineers and where possible applicable third parties, to ensure works can be coordinated to satisfy CoA D37(d).

Scheduling will be facilitated using KNOWnoise, which captures all works within a calendar view for simple communication of upcoming activities. All relevant team members will have access to KNOWnoise to schedule specific OOHW works.

Cumulative impacts from works being undertaken at the same time are also assessed within KNOWnoise.

11. MONITORING

Noise and vibration monitoring of OOHW will be conducted as determined by the relevant DNVIS or KNOWnoise assessments, or as triggered by the additional mitigation measures described in the CNVS. These monitoring requirements will be identified on the OOHW Permit, including monitoring to confirm predicted noise levels, assess effectiveness of mitigation measures and monitor compliance with the OOHW Permit. Monitoring will either be attended (used for short term monitoring, generally less than one hour) or unattended (used for longer term monitoring, generally greater than one hour) and will be undertaken in accordance with technical guidance provided by an appropriately qualified acoustician.

12. REVIEW AND IMPROVEMENT

Monitoring results will be reviewed on a case by case basis and periodically to identify gaps or issues in the compliance performance under this Protocol..

Where monitored construction levels are found to be above noise or vibration management levels and predicted levels, the following actions will be undertaken:

- Assess the noise/vibration generating sources and activities to identify a potential source of the exceedance,
- Confirm the monitored levels are not being impacted by other noise or vibration sources,
- Confirm if the exceedance is due to an uncharacteristically noisy or vibration-intensive piece of equipment,
- Confirm that the modelling reflects the actual activity being undertaken,
- Implement other feasible and reasonable measures which may include reducing plant type or size, modifying time of works, changing operational settings (such as turning off

the vibratory function of the machine), utilising alternative construction methodology or a combination of these,

- Ensure that the learnings from the above are fed back into the noise modelling assessment process for fine-tuning,
- Continue work where impacts can be reduced,
- Where noise cannot be reduced for this activity, re-assess the extent of impacts based on new information (e.g. revised equipment sound power level) and implement appropriate mitigation and management measures.
- Communicate lessons learnt to relevant personnel.
- AFJV will review the activity and where possible, modify the work or activity to prevent any recurrence. Lessons learnt will be communicated to relevant personnel in toolbox talks.

Monitoring results will be made available to the AA and ER at least six monthly when OOHW are active under this Protocol. This process along with consideration of complaints (number and nature) and other community feedback will inform improvement opportunities and potential updates to this Protocol.

13. DOCUMENT REVISION

The ER may, following consultation with the AA, approve amendments to this Protocol once it is included as an Appendix to the CNVMP within the CEMP sub-plans, if satisfied such amendment is minor and in accordance with CoA A30(j).

Refer to Section 3.11 of the CEMP for further detail on the process of CEMP (including sub plans) revision.

APPENDIX A PROJECT REQUIREMENTS

CoA	Requirement	Document Reference
D35	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 6:00pm Saturdays; and at no time on Sundays or public holidays.	Section 6.1
D36	Except as permitted by an EPL, highly noise intensive work that results 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 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.	Section 10.1.1
D37	Notwithstanding Conditions D35 and D36 of this schedule work may be undertaken outside the hours specified in the following circumstances:	
a)	(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 (a)(ii) above, the AA, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work.	Section 6.1
b)	(b) Low impact, including: (i) construction 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 user(s); and (ii) construction that causes LAFmax(15 minute) noise levels no more than 15 dB(A) above the rating background level at any residence; or (iii) construction that causes: continuous or impulsive vibration values, measured at the most affected residence are 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 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).	Section 6.1
c)	(c) By Approval, including:	Section 6.1

CoA	Requirement	Document Reference
	(i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition D38 of this schedule; or (iii) negotiated agreements with directly affected residents and sensitive land user(s).	
d)	(d) By Prescribed Activity, including: (i) tunnelling (excluding cut and cover tunnelling and surface works) are permitted 24 hours a day, seven days a week; or (ii) concrete batching at the Clyde construction site is permitted 24 hours a day, seven days a week; or (iii) delivery of material that is required to be delivered outside of standard construction hours in Condition D35 of this schedule to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Five Dock and Westmead construction sites and to / from Burwood North construction site using any roads / streets other than directly from Parramatta Road; or (iv) haulage of spoil except between the hours of 10:00 pm and 7:00 am to / from the Five Dock and Westmead construction sites and to / from Burwood North construction site using any roads / streets other than directly from Parramatta Road; or work within an acoustic shed where there is no exceedance of noise levels under Low impact circumstances identified in (b) above.	Section 6.1
D39	All reasonable and feasible mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria: (a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); (b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives" (for human exposure); (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 for structurally unsound heritage items). Any work identified as exceeding the noise management levels and / or vibration criteria must be managed in accordance with the Noise and Vibration CEMP Sub-plan. Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.	Section 9.1
D40	All reasonable and feasible 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 LAeq(15 minute): 40 dB(A); and	Section 9.1

CoA	Requirement	Document Reference
	(b) night (10:00 pm to 7:00 am) — internal LAeq(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 D38 of this schedule.	
D41	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	Section 9.2
D43	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels specified in Conditions D39 and D40 of this schedule at any residence outside construction hours identified in Condition D35 of this schedule, or where receivers will be highly noise affected. The DNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the DNVIS must be provided to the AA and ER before the commencement of the associated works. The Planning Secretary and the EPA may request a copy (ies) of the DNVIS.	The DNVIS
D50	All work undertaken for the delivery of Stage 1 of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition D51 of this schedule; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and (c) provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of Stage 1 of the CSSI.	Section 10.2
D51	In order to undertake out-of-hours work outside the work hours specified under Condition D35 of this schedule, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work; (b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant NMLs under Condition D39 (including the	Section 10.2

CoA	Requirement	Document Reference
	circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour work must be provided to the AA, EPA and the Planning Secretary. Note: Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dB(A) above the RBL at any residence.	

APPENDIX B CONSULTATION

Condition of Approval A6 Evidence – Out of Hours Work Protocol

In accordance with CoA D38 an Out of Hours Work Protocol was prepared in consultation with the following government agencies and stakeholders:

- Environment Protection Authority

The attached supporting evidence has been included to demonstrate compliance with Condition of Approval (CoA) A6 in the development of the Out of Hours Work Protocol.

The Out of Hours Work Protocol was provided to the required agencies and stakeholders for consultation as follows:

CoA D38 Out of Hours Work Protocol Consultation		
Government Agency/Stakeholder	Date consulted	Date of Response
Environment Protection Authority	07/09/2021	21/09/2021 (No Comment)

From: Mark Jansons <Mark.Jansons@epa.nsw.gov.au>
Sent: Tuesday, 21 September 2021 2:51 PM
To: Lorryn Williamson
Cc: Jacqueline Ingham; Afnan Fazli; Joanne Bell (EPA)
Subject: EXT: RE: SMW-Central Tunnelling Package - Out of Hours Works Protocol for works not requiring an EPL - document review

Hi Lorryn,

Thank you for the request for comment from AFJV requesting the review by the NSW Environment Protection Authority (EPA) of the Out of Hours Works Protocol for the Central Tunnelling Package for the Sydney Metro West Project.

The EPA's position on post approval management plans or similar, is to encourage the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives.

However, we do not approve or endorse these documents as our role is to set environmental objectives for environmental management and not to be directly involved in the development of strategies to achieve those objectives. Therefore we will not be providing comments on the plan.

The EPA may however request such documents are submitted with Environment Protection Licence applications or variations to ensure compliance with s.45 of the Protection of the Environment (Operations) Act 1997 and to support those decisions.

Regards,
Mark

Mark Jansons
Senior Operations Officer
NSW Environment Protection Authority
Ph: 02 9995 6829



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The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

From: Lorryn Williamson <lorryn.williamson@acciona.com>
Sent: Tuesday, 7 September 2021 12:52 PM
To: INFOEnvironment <info@environment.nsw.gov.au>; Mark Jansons <Mark.Jansons@epa.nsw.gov.au>
Subject: FW: SMW-Central Tunnelling Package - Out of Hours Works Protocol for works not requiring an EPL - document review
Importance: High

Dear Mark,

The Acciona Ferrovia Joint Venture (AFJV) are engaged with Sydney Metro to construct the tunnel and station boxes of the Sydney Metro West – Central Tunneling Package between The Bays and Sydney Olympic Park. The project was approved with Conditions of Approval (SSI 10038) issued on 28 July 2021.

A copy of the planning consent conditions are attached for your reference.

The EIS and subsequent submissions response are located at <https://www.planningportal.nsw.gov.au/major-projects/project/25631>

AFJV invites EPA to review the attached AFJV Out of Hours Works Protocol for works not requiring an EPL for the project in accordance with these conditions.

AFJV are kindly requesting that comments be provided within 10 business days.

If you would like to discuss any aspect of the OOHW Protocol for works not requiring an EPL please contact the undersigned.

Thank you



Lorryn Williamson
Manager | Environment and Sustainability | Central Region (NSW/ACT)
ACCIONA Construction Australia

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APPENDIX C OUT OF HOURS WORK PERMIT

Out of Hours (OOH) Work Permit (No EPL)

Part A – Completed by Site/Project Engineer (4 Weeks Prior to Works)	
1. Permit details	
Project Site:	OOH Permit No.:
Requested By:	Processed By (Enviro):
Commencement Date:	Completion Date:
Location Description:	
Location map attached? ☐	
2. Time Period (24hour) of Proposed OOH Works per day:	
3. Description of Proposed OOH Works:	
4. Proposed plant and equipment:	Number of items:
Choose an item.	
Choose an item.	
Choose an item.	
Choose an item.	
Choose an item.	
Choose an item.	
5. Justification for Proposed OOH Works:	

6. Proposed Noise Mitigation Measures:**7. Highly Noise Intensive Works****Are Highly Noise Intensive Works required?**

(jackhammering, rock breaking or hammering, pile driving, concrete cutting, vibratory rolling and impact piling occurring on the surface and generating noise with impulsive, intermittent, tonal or low frequency characteristics.)

Please circle: **YES** / **NO**

8. Vibration Intensive Works**Are Vibration Intensive Works proposed?**

(jackhammering, rock breaking or hammering, pile driving, vibratory rolling and impact piling occurring on the surface.)

Please circle: **YES** / **NO**

9. Proposed Light Spill Mitigation Measures**10. Traffic****1. Has the project Traffic Manager been informed?**

Please circle: **YES** / **NO**

2. Is a road occupancy licence required? If yes, attach permit

Please circle: **YES** / **NO**

3. Is an oversized permit required? If yes, attach permit

Please circle: **YES** / **NO**

List the relevant ROL reference codes & issuing authority:

Permit(s) Licence Number	Issuing Authority (TMC, RMS, Council Name, etc.)

11. Construction Line Manager Endorsement

Name:	Position:
Signature:	Date:

Part B – Approval Pathway: Completed by Environmental Coordinator

Tick	Description	Ref
12. EITHER: → Works that comply with definition of Standard Hours <u>exemptions</u>		
☐	Works that comply with NML and vibration criteria: 1. Low impact works as per CoA D37(b), including: (i) construction 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 user(s); and (ii) construction that causes LAFmax(15 minute) noise levels no more than 15 dB(A) above the rating background level at any residence; or (iii) construction that causes: - continuous or impulsive vibration values, measured at the most affected residence are 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 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).	CoA: D37 (b)
☐	Oversized deliveries	EPL CoA: D37 (a)
☐	Emergency works required to avoid loss of life, property or prevent environmental harm	EPL: CoA: D37(a)
13. OR: → Other OOHW as permitted under CoA		
☐	Works pose Safety Risk which can be defined under Aus Standards 31000:2009	EPL: CoA:
☐	Works pose road operation risk as determined by road network operator	EPL: CoA:
☐	Works pose Utility risk as determined by utility service operator	EPL: CoA:
☐	As TMC have refused to issue a Road Occupancy Licence during standard construction hours.	EPL: CoA:

Part C – Noise & Vibration Impact Assessment (modelling results to be attached)**14. Noise and Vibration Impact Assessment Outcomes**

Activity	NCA	RBL	NML	Predicted Noise Level	Predicted NML exceedance

Do works comply with the Safe Working Distance limits?

If NO, review CNVMP for respite and monitoring requirements to be implemented.

Works Restrictions:

15. Additional mitigation required as per Construction Noise & Vibration Standard
Please ensure you are assessing against the relevant period of OOHV.

Tick	Description (refer to reference table at end of Doc.)	Mandatory mitigation
☐	Works assessed to comply with the NML, Sleep disturbance and human comfort vibration criteria. <i>Go to part D</i>	N/A
☐	Noticeable: <i>Go to part D</i>	Notification
☐	Clearly Audible:	Verification, Notification, Respite Period 1 or 2, Duration Respite
☐	Moderately Intrusive (20 to 30 dB(A) above RBL)	Verification, Notification, Specific Notifications, Respite Period 1 or 2, Duration Respite
☐	Highly Intrusive (>30 dB(A) above RBL)	Alternative Accommodation, Verification, Notification, Specific Notifications, Respite Period 1 or 2, Duration Respite

16. Monitoring Required as triggered by EPL Cl 4.7 or in accordance with CNVG.

Receiver address 1:		
Receiver address 2:		
Receiver address 3:		
Do OOHV require Alternative Accommodation? Application must be approved by Environment Manager	Yes: ☐	No: ☐

17. Assessment of Low or High risk (refer to Definitions Page)

CTP-AFJV OOHW Permit

Can the works be completed within the following: a) Two consecutive evenings or nights, in a calendar week b) Three evenings or nights in a calendar week c) A maximum of 12 evenings or nights in a four week period	Yes: ☐ = 'low risk' Reviewed by AA Approved by ER.	No: ☐ = 'High risk' Reviewed by AA & Endorsed by ER Approved by DPIE.
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18. Part D –Respite (refer to Definitions Page)		
Do OOHW require noise or vibration respite?	Yes: ☐	No: ☐
If Yes, provide details below.		
19. Neighbouring Projects and Utility Coordination and Respite (D50)		
Are works being undertaken concurrently or within respite periods that could impact upon noise affected receivers by: - neighbouring WestConnex Projects (M4-M5 Tunnels Link Rozelle) or - utility providers (undertaking works for the Project) If yes, provide description:	Yes: ☐	No: ☐
If Yes, are OOHW required to be rescheduled to ensure appropriate respite is provided to noise affected community? If no, provide justification:	Yes: ☐	No: ☐

CTP-AFJV OOHW Permit



Part E – Documentation and Approval			
Community Relations – Notification			
Notification No.:		Copy Attached? ☐	Date Distributed:
Approved Notification Period:			
Community Manager:			
Name:	Signature:		Date:
Environment Manager			
Name:	Signature:		Date:
External Endorsement / Approval (delete which ever is not required)			
Additional Comments or Mitigation Measures (if applicable)			
ACOUSTIC ADVISOR (AA)			
Name:	Signature:		Date:
External Endorsement / Approval (delete which ever is not required)			
Additional Comments or Mitigation Measures (if applicable)			
ENVIRONMENTAL REPRESENTATIVE (ER)			
Name:	Signature:		Date: