

Belmont Desalination Plant

Out-of-Hours-Work Protocol

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Revisions and Distribution

Revisions

Draft issues of this document are identified as Revision A, B, C, etc. Upon initial issue (generally Contract Award) this will be changed to a sequential number commencing at Revision 0. Revision numbers will continue at Revision 1, 2, etc.

Rev	Date	Prepared By [Name]	[Signature]	Reviewed By [Name]	[Signature]	Approved By [Name]	[Signature]	Remarks
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Terms and Abbreviations

Term/Abbreviation	Definition/Expanded text
ABL	Assessment Background Level – A single-number figure used to characterise the background noise levels from a single day of a noise survey. ABL is derived from the measured noise levels for the day, evening, or night-time period of a single day of background measurements. The ABL is calculated to be the tenth percentile of the background LA90 noise levels, i.e. the measured background noise is above the ABL 90% of the time.
ABN	Airborne noise
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.
AMS	Activity Method Statements
AQMP	Air Quality Management Sub-Plan
Attenuation	The reduction in the level of sound or vibration.
At-property acoustic treatment	Includes courtyard walls and building treatments. Building treatments may include but are not limited to ventilation, acoustic blinds/curtains, glazing, window and door seals, sealing of vents or underfloor areas, shutters and secondary glazing.
AVTG	Assessing Vibration – A Technical Guideline
CS	Communications Strategy
CEMP	Construction Environmental Management Plan
CMP	Construction Monitoring Program
CNVG	Construction Noise and Vibration Guideline (CNVG) (Transport for NSW 2023)
CoA	Conditions of Approval
Construction	All physical work to enable operation including (unless specifically excluded by a condition) but not limited to the carrying out of works for the purposes of the development, including bulk earthworks and erection of buildings and other infrastructure permitted by this approval, but excluding the following: • building and road dilapidation surveys; • investigative drilling or investigative excavation; • Archaeological Salvage; • establishing temporary site offices (in locations identified by the conditions of this approval); • installation of environmental impact mitigation measures, fencing, enabling works; and • minor adjustments to services or utilities However, where heritage items, or threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999) are affected or potentially affected by any physical work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with EES Group or DPIE Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation).
Consultation	To provide information and actively engage with and obtain and consider feedback from stakeholders during development of post approval documents. How the feedback has been considered and whether any changes have been made in response to this feedback is then documented and communicated back to stakeholders. Consultation should not be limited to one-way notification about the project.
Continuously	Includes any period during which there is less than one hour between ceasing and recommencing any of the work.
D&C	Design and Construct
dB(A)	Decibels using the A-weighted scale which is accepted as being representative of the frequency response of the human ear.
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment and Climate Change and Water
DCCEEW	Department of Climate Change, Energy, the Environment and Water

Term/Abbreviation	Definition/Expanded text
DPHI	Former Department of Planning, Industry and Environment, now Department of Planning, Health and Infrastructure
EIS	Environmental Impact Statement
EMS	Environmental Management System
Environmental Assessment Documentation	Hunter Water Corporation Belmont Desalination Plant Environmental Impact Statement, prepared by GHD dated 2019. Hunter Water Corporation Belmont Desalination Plant Amendment Report and Submissions Report prepared by GHD dated 2020. Hunter Water Corporation Belmont Desalination Plant Modification Report Environmental Impact Statement prepared by Jacobs dated 2024. Hunter Water Corporation Belmont Desalination Plant Modification Report – Submissions Report prepared by Jacobs dated 2024
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.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
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.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ER	Environmental Representative
EWMS	Environmental Work Method Statement
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.
GBN	Ground-borne noise
Highly Noise Affected	As defined in the Interim Construction Noise Guideline (DECC, 2009)
Highly noise intensive works/ particularly annoying	Work which is defined as annoying under the ICNG including: use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work (a) grinding metal, concrete or masonry; (b) rock drilling; (c) line drilling; (d) vibratory rolling; (e) bitumen milling or profiling; (f) jackhammering, rock hammering or rock breaking; and (g) impact piling Note: when modelled, these activities/plant and equipment will incur a 5dB(A) penalty.
HWC	Hunter Water Corporation
ICNG	Interim Construction Noise Guideline (DECC, 2009)
INP	Industrial Noise Policy
ISCA	Infrastructure Sustainability Council of Australia

Term/Abbreviation	Definition/Expanded text
JH	John Holland
L _{A(max)}	The A-weighted maximum noise level only from the construction works under consideration, measured using the fast time weighting on a sound level meter.
L _{Aeq(15min)}	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.
LA1	The A-weighted sound pressure level that is exceeded for 1 per cent of the time for which the given sound is measured.
LA90	The A-weighted sound pressure level that is exceeded for 10 per cent of the time for which the given sound is measured.
NCA	Noise Catchment Area
NCG	Noise Criteria Guideline
NMG	Noise Mitigation Guideline
NML	Noise Management Level as defined in the Interim Construction Noise Guideline (DECC, 2009)
NPfI	Noise Policy for Industry
NVA	Noise and Vibration Assessment
NVIS	Noise and Vibration Impact Statement
NVMP	Noise and Vibration Management Sub-Plan
ONR	Operational Noise Review
OOHW	Out of Hours Works
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
PPV	Peak Particle Velocity – the highest velocity of a particle (such as part of a building structure) as it vibrates. Most sound level meters measure root mean squared (RMS) values; it is common to approximate the PPV based on an RMS measurement. PPV is commonly used as a vibration criterion, and is often interpreted as a PPV based on the L _{max} or L _{max,spec} index.
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).
REMM	Revised Environmental Management Measures
RMS	Root Mean Squared
RNP	Road Noise Policy
ROL	Road Occupancy Licence
Sensitive land use(s)	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), childcare centres, passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, and retail spaces), and industrial premises as identified by the Planning Secretary.
Submissions Report	The Proponent's response to issues raised in the submission received in relation to the application for approval of the SSI under the EP&A Act.
SPL	Sound Pressure Level
Transport	Transport for New South Wales, or TfNSW
VMS	Variable Message Signs
Work	Any physical activity for the purposes of the SSI including construction, Low Impact Work, enabling works, utility works and site establishment activities but not including operational maintenance works.
WRA	Work Risk Assessment

Out of Hours Work Protocol

Plan Profile

Management System	The Project will use John Holland's Environmental Management System (EMS) and core Project plans to support Project delivery. Additional functional plans have been developed for the Project.
Name	Out of Hours Work Protocol (OOHWP)
Authorisation	All personnel employed on the Project will perform their duties in accordance with the requirements of this Plan and in compliance with Project system procedures and any specific Project instructions. This Plan is authorised by the Project Director.
Review and update	This Plan will be regularly reviewed, developed, and updated: • For changes in design or construction sequence, staging, methodology or resourcing • To consider progress of the Project Company's Work • For changes in access to the Project Site • To consider changes directed by Hunter Water Corporation's Representative

1. Introduction

1.1. Context

This Out of Hours Work Protocol (OOHWP) forms part of the Construction Noise and Vibration Management Sub-Plan (CNVMP) or the Belmont Desalination Plant (the Project). The OOHWP has been developed to address the requirements of the Conditions of Approval (CoA), the measures listed in the Environmental Assessment Documentation.

The Environmental Assessment Documentation identifies the potential impacts from noise and vibration during construction typically associated with increased traffic during peak hour periods, increased noise impacts for certain construction stages, inclusion of some Out of Hours Work (OOHW), and the addition of helicopter traffic. However, it concluded residual risks from construction activities can be reduced to the extent that potential impacts could be managed. A detailed Project description is provided in the CEMP.

1.2. Purpose and Scope of this Protocol

The Out of Hours Work Protocol is developed to identify a process for the consideration, management and approval of Work, which is outside the hours defined in CoA Condition D3. In accordance with CoA Condition C29, the Protocol does not apply if the requirements of Condition D4(a) or D4(b) or D4(d) are met, or if the Construction activity(ies) is subject to an EPL or if a negotiated agreement is made with the impacted sensitive receivers.

This protocol has been developed to provide a process for the approval of OOHWP in accordance with CoA D4(c)(ii) including:

- Justification of why construction works are required
- Identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination
- A process for the consideration of out-of-hours work against the relevant NML and vibration criteria;
- A process for selecting and implementing mitigation measures for residual impacts in consultation with impacted sensitive receivers at each affected location
- Details of respite periods consistent with the requirements developed in consultation with impacted sensitive receivers
- Procedures to facilitate the coordination of out-of-hours works to ensure appropriate respite is provided
- Notification arrangements for affected receivers for approved out-of-hours work and notification to the Planning Secretary of approved low risk out-of-hours works.

1.3. Protocol Preparation, Endorsement and Approval

The OOHWP has been prepared to satisfy the CoA C29.

The overarching CNVMP, which includes this OOHWP has been prepared by suitably qualified and experienced noise expert (Renzo Tonin & Associates) in accordance with CoA C19(a). These documents will be reviewed by the HWC Environmental representative (or delegate) and the independent Environmental Representative (ER) to confirm they are consistent with, and incorporate, all relevant elements of the CEMP, prior to submission to the Planning Secretary for approval.

Construction of the Project will not commence until the OOHWP is endorsed by the ER and approved by the Planning Secretary.

2. Environmental Requirements

2.1. Relevant Legislation, Guidelines and Standards

Table 2-1 lists the principal legislation, regulation, plans, policies, guidelines, specifications, and Australian Standards that apply to noise and vibration management.

Table 2-1: Principal legislation and regulation relevant to noise and vibration

Legislation	• <i>Environmental Planning and Assessment Act 1979</i> • <i>Protection of the Environment Operations Act 1997 (POEO Act)</i> • <i>Protection of the Environment Operations (Noise Control) Regulation 2008.</i>
Standards	• British Standard BS6472-2008, Evaluation of human exposure to vibration in buildings (1-80Hz) • British Standard BS 7385: Part 2-1993 Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground-borne vibration (BSI 1993) • German Standard DIN 4150-3 (2016) Vibration in buildings – Part 3: Effects on structures (DIN2016) • Australian Standard AS2436:2010 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites • Australian Standard AS/NZS 2107:2016 Acoustics - Recommended design sound levels and reverberation times for building interiors • Australian Standard AS/NZS ISO 3100:2009 Risk Management – Principals and Guidelines
Guidelines and Specifications	• Interim Construction Noise Guideline (ICNG) (DECC 2009a) • NSW EPA Assessing Vibration – a Technical Guideline (AVTG, 2006 – for human exposure) • NSW Road Noise Policy (RNP) (DECCW 2011) • Noise Policy for Industry (NSW EPA 2017). • NSW EPA Approved methods for measurements and analysis of environmental noise (NSW EPA 2022)

Relevant provisions of the above legislation are explained in the Register of Legal and Other Requirements included in Appendix A of the CEMP.

2.2. Conditions of Approval and Mitigation Measures

The CoA and Revised Environmental Mitigation Measures (REMMS) relevant to this Protocol are listed Table 2-2.

Table 2-2: Condition of Approval and Mitigation Measures relevant to the OOHWP

Ref	Condition Requirements	Document Reference
C29	Out-Of-Hours Work Protocol – Works Not Subject to an EPL Prior to the commencement of construction an Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of construction which is outside the hours defined in Condition D3. The Protocol must be prepared in consultation with the ER, and must provide:	This Protocol
	a) justification for why these Construction activities need to be undertaken;	Section 3.2
	b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: i. the ER review all proposed out-of-hours activities and confirm their risk levels, ii. low risk activities can be approved by the ER, and iii. high risk activities that are approved by the Planning Secretary. The risk assessment(s) must be based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2018 "Risk Management";	Section 3.1
	c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria;	Section 4.3
	d) a process for selecting and implementing mitigation measures for residual impacts in consultation with impacted sensitive receivers at each affected location. The measures must take into account the predicted noise levels (based off worst case work scenarios and where mitigation measures will be implemented) and the likely frequency and duration of the out-of-hours works that sensitive receivers would be exposed to, including the number of noise awakening events;	Section 5
	e) details of respite periods consistent with the requirements developed in consultation with impacted sensitive receivers;	Section 6.1
	f) 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 6.1
	g) notification arrangements in accordance with Condition B2(f) and notification to the Planning Secretary of approved low risk out-of-hours works.	Section 6.2

Notes:

- The Protocol must be submitted to and approved by the Planning Secretary before the commencement of out-of-hours work. The approved Protocol must be implemented for the duration of Construction. The Planning Secretary may revoke the Out-of-Hours Work approval subject to ongoing community complaints.
- The Protocol does not apply if the requirements of Condition D4(a) or (b) or (d) are met, or if the Construction activity(ies) is subject to an EPL or if a negotiated agreement is made with the impacted sensitive receivers.
- If Construction is regulated by the EPA via an EPL, the management of the activity or Construction must not be co-regulated under the Protocol. The Protocol process must only be used if the Construction activity is not covered by an EPL, including in circumstances where the activity or Construction did not commence under an EPL.
- If the Construction activity(ies) is subject to an EPL and the EPA does not endorse extended hours as part of the EPL, the extended hours cannot be considered under this Protocol.
- Any Planning Secretary approval for Out-of-Hours Work may be subject to trial requirements.
- The intent of the protocol is to provide an assessment framework for short term intermittent activities undertaken out of hours. These activities should be consistent with those identified in the documents listed in Condition A2. Any long term out-of-hours-work not assessed in the documents listed in Condition A2 may need a future Modification approval. The use of the terms short / long term should be considered on a case-by-case basis and be relative to the duration of construction of the SSI.

3. Out-of-Hours-Work process

3.1. OOHW management procedure

Figure 3-1 illustrates the step-by-step process for the management of out of hours works. In accordance with CoA Condition C29, JH will complete risk assessment(s) associated with OOHW out in accordance with AS/NZS ISO 31000:2018 "Risk Management".

OUT OF HOURS WORKS MANAGEMENT PROCEDURE

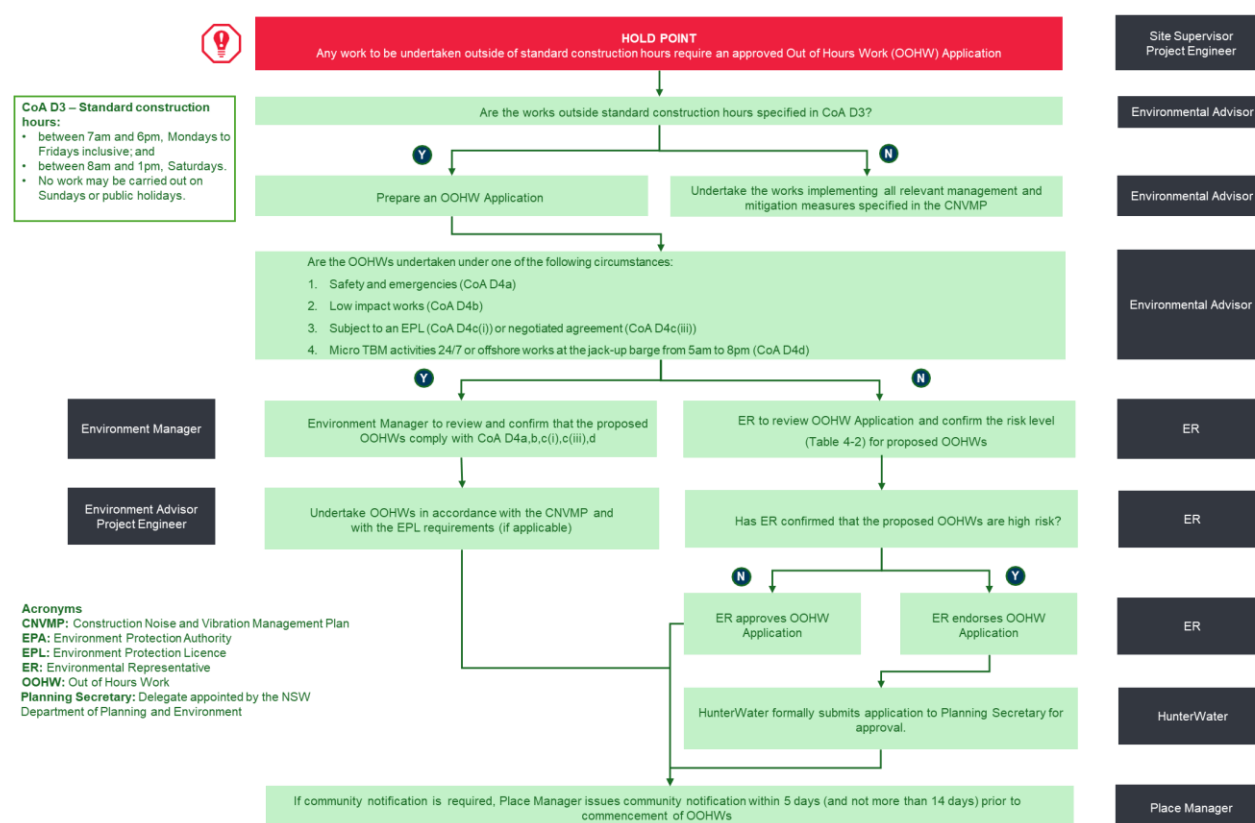


Figure 3-1: Approved construction work hours

3.2. Application of Approval Conditions and Justification of OOHW

3.2.1. Working Hours

Construction working hours for the Project are defined by the CoA are presented below in Table 3-1. Indicative works to be undertaken outside standard construction hours is presented in Table 3-2.

Table 3-1: Approved construction work hours

CoA	Construction Activity	Working hours applicable to Condition		
		Monday to Friday	Saturday	Sunday/ Public holiday
Standard construction hours				
D3	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:	7:00am to 6:00pm	8:00am to 1:00pm	No work
D41	Helicopter operations associated with the project (inclusive of ground engine runs, starting and taxiing and flight) can only occur from 6am to 7pm, seven days per week. ¹	6:00am to 7:00pm	6:00am to 7:00pm	6:00am to 7:00pm
High Noise Intensive Work				
D7	Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the noise affected 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 (any period during which there is less than one hour between ceasing and recommencing any highly noise intensive work), then not exceeding three (3) hours), with a minimum cessation of highly noise intensive work of not less than one hour. ²	8:00am to 6:00pm	8:00am to 1:00pm	No Work
Out of hours Work (OOH)				
D4	Notwithstanding Conditions D3 and D7 Construction may be undertaken outside the hours specified in the following circumstances (a, b, c or d below): (a) Safety and Emergencies, 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	Outside hours in Condition D3 and D7		

CoA	Construction Activity	Working hours applicable to Condition		
		Monday to Friday	Saturday	Sunday/ Public holiday
	Condition D4(a)(ii), the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. Best endeavours must be used to notify all noise and/or vibration affected residents and owners/occupiers of properties identified sensitive receivers of the likely impact and duration of those Construction activity(ies). If an activity is scheduled to take a long period to be completed, this activity should be commenced as early as possible and aim to be started and completed within the Construction hours identified in Condition D3. Poor programming should not form part of the rational to undertake safety and emergencies under Condition D4(a)(ii). It is essential to prioritise timely completion of activities to ensure the safety and well-being of workers and anyone else who may be affected by the construction activities. (b) Construction that meets the following criteria, including: i. Construction that causes LAeq(15 minute) noise levels: - o no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and - o no more than the 'Noise affected' NMLs specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive receivers; and ii. Construction that causes LAFmax noise levels no greater than 15 dB(A) above the night period rating background level at any residence during the night period as defined in the Interim Construction Noise Guideline (DECC, 2009); and iii. Construction that causes:			

CoA	Construction Activity	Working hours applicable to Condition		
		Monday to Friday	Saturday	Sunday/ Public holiday
	○ 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), and ○ 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). (c) By Approval, including³: i. where different hours are permitted or required under an EPL in force in respect of the SSI; or ii. Construction which is not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition C29; or iii. negotiated agreement with the substantial majority of affected residents and sensitive receivers for Construction which is not subject to an EPL. (d) By Activity, including⁴: i. MicroTBM activities at site can occur 24 hours a day, seven days a week. This does not permit material deliveries associated with MicroTBM activities. ii. Helicopter movements in accordance with Condition D41 and D42. iii. (Offshore works at the jack-up barge from 5:00am to 8:00pm seven days per week.			

CoA	Construction Activity	Working hours applicable to Condition		
		Monday to Friday	Saturday	Sunday/ Public holiday
OOHW Period				
	Required OOHW construction activities include, not associated with MicroTBM activities: - Dewatering - Crane Operations - Vehicle Movements - Commissioning	7:00pm to 7:00am	1:00pm to Monday 7:00am	N/A
	Micro TBM and associated activities for the DOI pipeline	24/7	24/7	24/7

Notes:

1 This Condition does not prohibit any flights required for emergency purposes.

2 As a guide, Work should be carried out in continuous blocks that do not exceed three hours each with a minimum respite period of one hour between each block. Noise affected NML is defined as RBL + 10 dB as defined in the ICNG. If continuously (any period during which there is less than one hour between ceasing and recommencing any highly noise intensive work), then not exceeding three (3) hours), with a minimum cessation of highly noise intensive work of not less than one hour.

3 Refer to Appendix 4 of the CoA for guidance regarding negotiated agreements.

4 Although certain activities identified in Condition D4(d) are permitted to occur outside the construction hours defined in Condition D3, these activities still need to be managed in accordance with the environmental management framework established within this approval.

5 Twenty-four hour seven days per week (24/7) construction associated with the micro-TBM activities for the DOI marine intake pipeline.

Table 3-2: Indicative OOHW requirements

Construction Activity	Out of Hours Work
Tunnelling	Twenty-four hour seven days per week (24/7) construction associated with the micro-TBM activities for the DOI marine intake pipeline
Dewatering	Additional OOHW dewatering of deeper excavations associated with the option of an underground brine pipeline and other works
Crane Operations	Some short duration OOHW associated with some crane lifts (in the early morning) to avoid windy weather periods
Vehicle Movements	A small amount of light and heavy vehicle OOHW
Commissioning	Some short term OOHW during cut-over and commissioning activities.

3.2.2. Justification

Works associated with the Project will be undertaken in accordance with the assessment and management approach outlined in the Interim Construction Noise Guidelines (ICNG) DECC, 2009) and within the limitations of the CoA. The ICNG recommends standard construction hours and requires that OOHW has a strong justification. Where it is considered possible for works to be undertaken during standard hours, OOHW proposals will not be considered justified and will not be considered further. Works that have no justification to occur outside standard construction hours would be undertaken during standard construction hours.

Reasonable justification for work to be undertaken out of hours include, but are not limited to the following:

- Carrying out of those works and activities during standard construction hours would result in a high risk to construction personnel or public safety.

- Following directions by Traffic Management Centre and/or relevant roads authority (e.g. where a road occupancy licence will not be provided for standard construction hours, In order to minimise disruption to the existing road network and the network level of service (LoS).
- Minimising disruption to essential services and utilities for surrounding businesses and adjoining residential receivers.
- Where a utility service operator has advised that the works undertaken during standard hours will result in a high risk to the operation or integrity of the network.
- To undertake critical works that have a demonstrated technical or critical justification that the works need to be undertaken outside of standard hours.

Work activities that may be required or proposed to be undertaken outside of standard working hours will be assessed in accordance with the process outlined in this OOWH Protocol, if the requirements of Condition D4(a) or D4(b) or D4(d) are not met, or if the Construction activity(ies) is not subject to an EPL or if a negotiated agreement has not been made with the impacted sensitive receivers.

4. Out-of-Hours-Work Noise and Vibration Assessment

4.1. OOHW Permit

Works which has been appropriately justified can only proceed outside of standard working hours where a comprehensive OOHW application has been prepared and approved in accordance with the approval pathway outlined in Section 3.1. Appendix A of this OOHW Protocol provides the application template to capture all necessary information for this process including:

- Relevant personnel details.
- Detailed work description including location, activity, equipment required, duration etc.
- Reasonable justification.
- Noise and vibration assessment against relevant noise and vibration objectives
- Determination of an activity risk category (Low and High), if applicable
- Standard mitigation measures to be adopted.
- Details of community consultation including relevant feedback and how it has been addressed, and the status of any agreements.

This information will be reviewed by the relevant approval delegate when considering whether proposed OOHW can proceed as documented, proceed on a conditional basis, or not proceed at all.

The subsequent sections provide further detail of the above (where relevant) or cross-reference to where further detail can be found.

4.2. Noise and vibration objectives

Noise and vibration objectives are described in Section 5 of the CNVMP.

4.3. Noise and Vibration Assessment

4.3.1. Noise Assessment

A noise assessment to determine the noise impacts of the proposed OOHW will be undertaken for each activity, including individual work locations and the impacted areas. The assessment will predict the level and extent of noise impact that OOHW activities will have on potentially affected sensitive receivers under a worst-case scenario.

Quantitative noise assessments for all applicable OOHW will predict the potential exceedances of the OOHW scenario against the relevant NMLs and sleep disturbance screening criteria from the on-site activities. The assessment of the proposed on-site activities will include:

- Details of the nature and scope of each activity, including details of times, duration, plant and equipment to be used on site.
- An evaluation of the realistic worst-case scenario including:
 - the addresses of the most affected noise sensitive receivers
 - construction noise: compare the predicted $L_{Aeq,15\text{ min}}$ noise levels, incorporating any 5 dB correction for particularly annoying activities as listed in the ICNG, against the relevant Noise Management Levels (NML)
 - sleep disturbance: compare the predicted L_{Amax} noise levels against the sleep disturbance screening criteria and awakening reaction level
- Reasonable and feasible mitigation measures to be applied.

4.3.2. Vibration Assessment

An assessment of vibration intensive activities that may impact sensitive receivers or structures will be required for out of hours vibration intensive works. The proposed OOHV activities will be assessed for compliance with minimum working distances for cosmetic damage and human comfort.

Assessments will be undertaken in accordance with Section 7.2 of the CNVMP noting that the minimum working distances provided in this section of the CNVMP are indicative and actual vibration levels will vary depending on the item of plant (particularly its power rating) and local geotechnical conditions. These factors will be considered in the assessment of all vibration generating OOHV.

Where a particular piece of plant or equipment is not included in Section 7.2 of the CNVMP, minimum working distances from a noise and vibration consultant may be used upon ER review.

Prior to undertaking an assessment, all other feasible and reasonable options to use less vibration intensive equipment will be investigated and applied as necessary.

4.4. OOHV Risk Determination and Approval for an OOHV protocol

4.4.1. OOHV protocol approval

The approval process for an OOHV protocol will be determined on a risk-based, case-by-case basis to ensure that OOHV is approved by the appropriate delegate. Justified OOHV will be approved as per Table 4-1 in accordance with CoA D9(a).

Table 4-1: OOHV Approval Delegate

Approval Delegate	OOHV Risk Category
Environmental Representative	Justified OOHV where the ER has confirmed the OOHV is low risk.
NSW Planning Secretary	Justified OOHV where the ER has confirmed the OOHV is high risk.

4.4.2. OOHV Risk Determination

The risk factors in determining low and high risk are outlined in Table 4-2.

Table 4-2: OOHV Risk Factors

Type	Low Risk Factors	High Risk Factors
Air-borne Noise L _{Aeq15min}	Noise levels from on-site activities are predicted to be up to 5dBA above the NML, or Noise levels are predicted to be more than 5dBA above the NML for a maximum of: 2 consecutive evenings and/or nights per week; and 3 non-consecutive evenings and/or nights per week; and 10 evenings and/or nights per month	Noise levels from on-site activities are predicted to be more than 5dBA above the NML for more than: 2 consecutive evenings and/or nights per week; and 3 non-consecutive evenings and/or nights per week; and 10 evenings and/or nights per month
Sleep Disturbance L _{Amax}	Predicted maximum noise levels from on-site activities are below awakening levels of 55dB L _{Amax} internal	Predicted maximum noise levels from on-site activities are below awakening levels of 55dB L _{Amax} internal
Vibration criteria	Predicted vibration levels are below the relevant vibration criteria for cosmetic damage.	Predicted vibration levels are above the relevant vibration criteria for cosmetic damage.

5. Application of mitigation measures

5.1. Standard mitigation measures

Reasonable and feasible standard mitigation measures will be proposed and implemented for all OOHW in consultation with directly affected residents and sensitive land use(s) and approved by the relevant approval delegate (refer to Table 4-1). Where impacts on directly affected residents and sensitive land use(s) are predicted, the following measures will include:

- Modifying behavioural practices on site
- Equipment selection / maintaining and monitoring plant
- Use and siting of plant and hoardings
- Site inductions
- Use of non-tonal reversing alarms
- Stakeholder notification
- Planning noisier work to be carried out earlier in the period.

5.2. Additional mitigation measures

Where construction noise and vibration levels are still predicted to exceed the noise or vibration objectives after the application of the standard mitigation measures, additional mitigation measures will be implemented in consultation with directly affected residents and sensitive receivers. Table 5-1 outlines the approach for the application of additional mitigation measures to minimise impacts of OOHW.

Table 5-1: Hierarchy for Application of Additional Mitigation Measures

Perception	Predicted airborne L _{Ae1(15min)} noise level receiver		Additional mitigation measures type	Mitigation levels
	dB(A) above RBL	dB(A) above NML		
OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 5pm – 10pm), Sun/Pub Hol (8am-6pm)				
Noticeable	5 to 10	< 5	-	NML
Clearly audible	10 to 20	5 to 15	N, R1, DR	NML+5
Moderately intrusive	20 to 30	15 to 25	V, N, R1, DR	NML+15
Highly intrusive	> 30	> 25	V, IB, N, R1, DR, PC, SN	NML+25
OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am)				
Noticeable	5 to 10	< 5	N	NML
Clearly audible	10 to 20	5 to 15	V, N, R2, DR	NML+5
Moderately intrusive	20 to 30	15 to 25	V, IB, N, PC, SN, R2, DR	NML+15
Highly intrusive	> 30	> 25	AA, V, IB, N, PC, SN, R2, DR	NML+25
Notes				
N – Notification SN – Specific Notification V – Verification IB – Individual Briefings RO – Respite Offer		R1 – Respite Period 1 R2 – Respite Period 2 DR – Duration respite PC – Phone calls AA – Alternative Accommodation (when noise impact is expected to be for more than two consecutive nights)		

5.3. Mitigation measures for other sensitive periods

Work that results in noise levels above the NMLs at community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas will not be timetabled during sensitive periods as far as reasonably practicable. The mitigation measures will include consultation with directly affected residents and sensitive land use(s) to identify reasonable and feasible options.

6. Consultation

6.1. Respite periods

As required by the Community Communications Strategy (CCS) and CoA C29, in order to undertake out-of-hours work outside the hours specified under CoA D3, the appropriate respite periods must be identified for the out-of-hours work in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with:

- A progressive schedule of likely out-of-hours work;
- A justification and description of the potential work, location and duration of the out-of-hours work;
- The noise characteristics and likely noise levels of the construction / activities being undertaken;
- Mitigation and management measures which aim to achieve the relevant NMLs and vibration criteria under Conditions D12 and D15 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers); and
- Respite periods

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 ER and the Planning Secretary for information prior to undertaking the work scheduled for the subject period.

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 rating background noise level at any residence.

6.2. Notification of OOHW

Community notifications will be used as a mitigation measure for receivers of potential noise and vibration impacts from OOHW. Where OOHW have been scheduled, the Contractor's Community Liaison Representative will notify the directly affected residents and sensitive land use(s) of upcoming OOHW in accordance with the procedures in the approved CCS.

Specific notifications of OOHW events will be issued to directly affected residents and sensitive land use(s) at least five days, and not more than 14 working days, prior to the OOHW commencing.

OOHW notifications will be prepared generally in accordance with the CNVG. The notifications will:

- Be undertaken by letterbox drop or email (or equivalent).
- 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 directly affected residents and sensitive land use(s)
- 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 C29g the ER / HW will notify the Planning Secretary of approved low risk out-of-hours works.

7. Monitoring and Compliance

7.1. Monitoring of OOHW

All OOHW monitoring will be carried out by an appropriately trained person and in accordance with the approved Construction Noise and Vibration Monitoring program.

7.2. Complaints Management

Complaints received as a result of the OOHW will be managed in accordance with the Project CCS and be recorded in the Complaints Register. On receipt of any complaints, the JH Environment Manager (or delegate) will carry out an investigation and where feasible and reasonable, make changes to the works to address the issue of concern. Where relevant to the detail of the complaint, monitoring will be undertaken to confirm compliance with the predicted noise and vibration levels identified in the assessment.

7.3. Exceedances and non-compliances

Where monitoring identifies any exceedances of the levels predicted in the OOHW assessment, a review of OOHW activities will be carried out to determine whether noise or vibration levels can be further reduced via additional feasible and reasonable measures.

Where the processes and systems outlined in this protocol are not followed or where work isn't in accordance with the approved OOHW application form, the event will be considered a noncompliance with this protocol. The noncompliance will be managed in accordance with the CEMP.

7.4. Record Keeping

The JH Environmental Manager (or delegate) will maintain accurate records of all OOHW applications, noise and vibration monitoring undertaken during OOHW for the duration of the works.

8. Review and Improvement

8.1. Continuous Improvement

Continuous improvement will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Identify environmental risks not already included in the risk register
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Respond quickly to nonconformities
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

The Project Environment Manager (or delegate) is responsible for ensuring stage-specific environmental risks are identified and included in the Project risk register and appropriate mitigation measures implemented throughout the construction, as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in the CEMP.

8.2. OOHW Protocol Version Control

The processes described in the CEMP may result in the need to update or revise this Plan. Only the Project Environment Manager (or delegate) has the authority to approve changes to the requirements of this Protocol. Minor amendments to the Protocol may be approved by the ER in accordance with the CEMP and are to be implemented for the duration of construction and for any longer period set out in the monitoring programs or specified by the Planning Secretary, whichever is the greater. Amendments not considered minor by the ER need to be approved by the Planning Secretary.

A copy of the updated Protocol and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure detailed in the CEMP.

Appendix A – OOHW Application Form

Part A: Document Sign-off <i>(to be completed prior to submission)</i>			
	Name:	Signature:	Date:
Document Author:			
Project Manager:			
Environmental Representative			

(Please complete all highlighted example sections where applicable (delete where not applicable) and remove highlighting prior to submission of request)

Part B: Proposal				
Project name:				
Duration:		Duration and proposed hours of work (timing of works):		
Specific Details:				
Justification <i>(state approved working hours the hours that are required and then a justification of why OoHW required?)</i>				
Location: <i>(Street name(s) & suburb)</i>				
Scope of works, outside of approved working hours:				
Equipment in use for out-of-hours works	Equipment Type:	Y/N	Specific Mitigation to be utilised:	
Risk Level	Type	Low Risk Factors	High Risk Factors	Assessed Risk Level (Low / High)
	Air-borne Noise ($L_{Aeq15min}$)	Noise levels are predicted to be up to 5dBA above the NML, or	Noise levels are predicted to be more than 5dBA above the NML for more than:	

		Noise levels are predicted to be more than 5dBA above the NML for a maximum of: • 2 consecutive evenings and/or nights per week; and • 3 non-consecutive evenings and/or nights per week; and • 10 evenings and/or nights per month	• 2 consecutive evenings and/or nights per week; and • 3 non-consecutive evenings and/or nights per week; and • 10 evenings and/or nights per month	
	Sleep Disturbance (L _{Amax})	Predicted maximum noise levels are below awakening levels of 55dB L _{Amax} internal	Predicted maximum noise levels are below awakening levels of 55dB L _{Amax} internal	

Part C: Impacts, Mitigation and Communication Proposed

Noise Impacts

Other Impacts

Additional Mitigation Measures

Community Notification

Part D: Submission, Review and Approval

Document Submission Instructions

OoHW request requires the contractor complete and submit this form to the HWC Project Manager for review. Works cannot proceed until application is signed off by the relevant approval delegate (refer to Section 4.4 of the OoHW Protocol).