OPERATIONAL NOISE MANAGEMENT PLAN

Moorebank Intermodal Precinct – West Precinct Stage 2

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SSD 7709

Operational Noise Management Plan

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REVISIONS

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Acronyms and Definitions

Acronym / Term	Meaning
CCS	Community Communication Strategy
CoC	Conditions of Consent
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
ESR	ESR Australia & New Zealand
FCMM	Final Compilation of Management Measures
GFA	Gross floor area
HSEQ	Health, Safety, Environment and Quality
IMT	Intermodal Terminal
IPC	Independent Planning Commission
MIP	Moorebank Intermodal Precinct
MOD 1	Modification 1 to SSD 7709, granted by the IPC 24 December 2020
MOD 2	Modification 2 to SSD 7709, granted by the IPC 30 September 2021
MPE	Moorebank Precinct East
MPW	Moorebank Precinct West
MPW Concept Approval	MPW Concept Approval (SSD 5066), granted by the Minister of Planning on 29 September 2014 for the development of an intermodal terminal facility including a rail link connecting the site to the Southern Sydney Freight Line, an intermodal terminal, warehousing and distribution facilities and a freight village.
NPfI or NPI	NSW EPA Noise Policy for Industry 2017
OEMP	Operational Environmental Management Plan
OTAMP	Operational Traffic and Access Management Plan
RtS	Response to Submissions
SHEQ	Safety, Health, Environment and Quality

Acronym / Term	Meaning
SIMTA	Sydney Intermodal Terminal Alliance
SSD	State significant development
SSFL	Southern Sydney Freight Line
TEUs	Twenty-foot equivalent units
WHS	Work Health and Safety

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1. Introduction

1.1. Background

The Moorebank Intermodal Precinct (MIP) is an integral component of the freight, ports and transport strategies of both the NSW and Commonwealth governments located approximately 27 kilometres (km) south-west of the Sydney Central Business District and 26km west of Port Botany within the Liverpool Local Government Area (Figure 1-1).

The MIP aims to streamline the freight logistics supply chain from port to store, deliver savings to businesses and consumers, and help service the rapidly growing demand for imported goods in south-west Sydney. On completion, MIP will move 1.55 million shipping containers annually by rail instead of road. It will also feature Australia's largest purpose-built warehouse and distribution precinct serviced by the latest automated technology which will see driverless shuttle carriers collect and transport containers around the precinct to be processed, unpacked and stored on site prior to distribution.

The MIP is divided into the Moorebank Precinct East (MPE) and Moorebank Precinct West (MPW) developments.

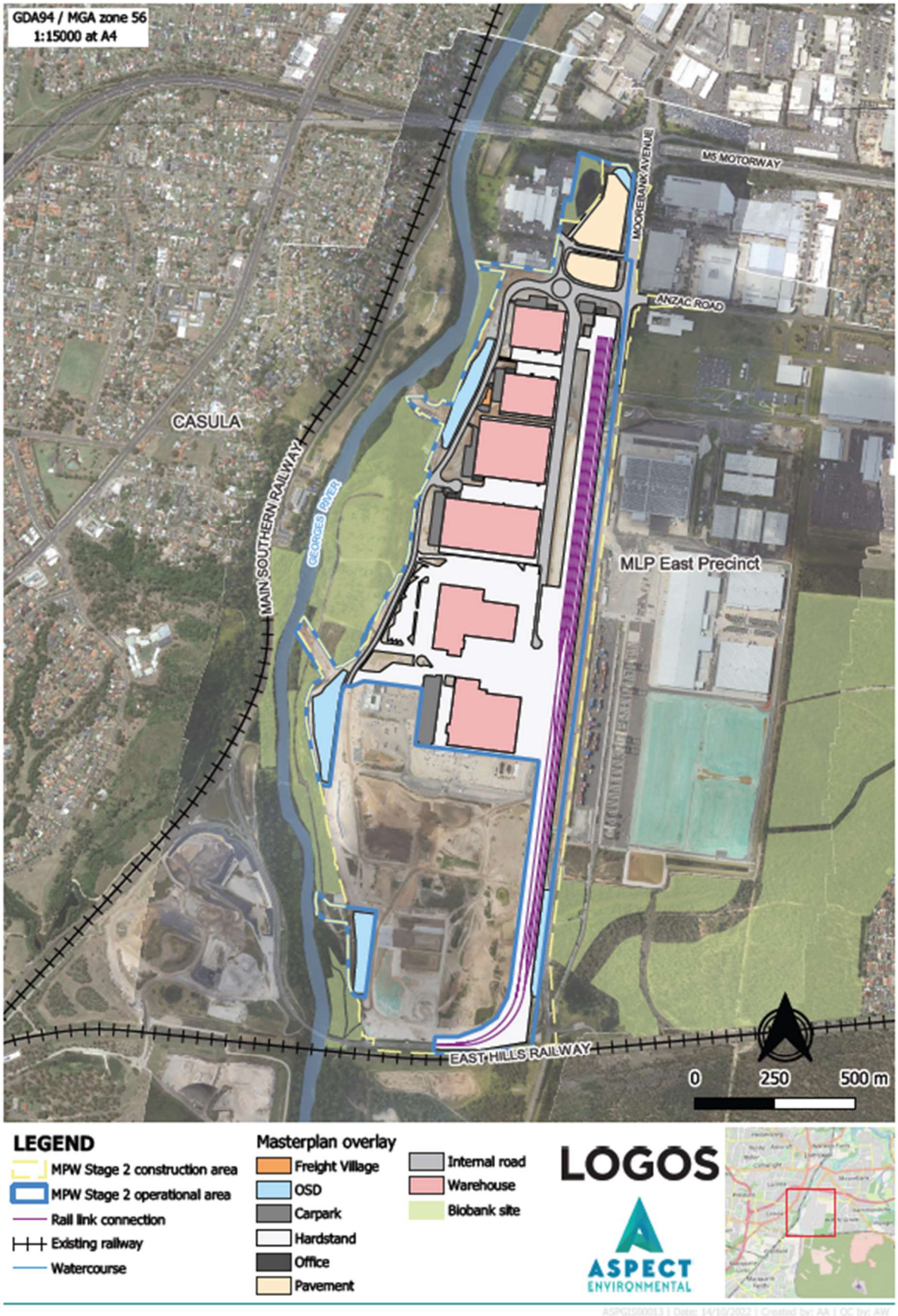
The Sydney Intermodal Terminal Alliance (SIMTA) received approval for the construction and operation of Stage 2 of the MPW development (State Significant Development (SSD) 7709), which comprises the second stage of development under the MPW Concept Approval (SSD 5066).

The MPW Stage 2 development (the Development) involves the construction and operation of a multi-purpose Intermodal (freight) Terminal facility, rail link connection, warehousing, freight village, and upgrades to the Moorebank Avenue and Anzac Road intersection and the subdivision of site including ancillary works. The Development's operational layout is shown in Figure 1-1.

1.2. Development Ownership

In 2022, LOGOS joined the ESR group of companies and since August 2024, the LOGOS and ESR operations have been integrated to now operate under the name ESR Australia & NZ (ESR). The applicant/ approval holder entity remains unchanged at this stage until further notice and references to LOGOS and LOGOS authored documents and/or plans may continue and remains relevant where LOGOS and ESR are used interchangeably.

Figure 1-1 MPW 2 operational layout



This Operational Noise Management Plan (ONMP) has been developed to manage noise impacts during operations of the Development. This ONMP addresses the relevant requirements of the Project consents, including the Environmental Impact Statement (EIS), Response to Submissions (RtS), Conditions of Consent (CoCs), Commonwealth Conditions of Approval and relevant guidelines and standards specific to the management of noise during operations of the Development.

1.3. Purpose

This ONMP has been developed to address the requirements of the SSD 7709 CoCs B136 and B137, which require the preparation of an ONMP, to the satisfaction of the Planning Secretary prior to the commencement of operation. In addition to this, the *Environment Protection and Biodiversity Conservation Act 1991* (EPBC) approval (2011/6086) required the preparation of a noise section within the Operational Environmental Management Plan (OEMP), which has also been addressed in this ONMP.

This ONMP has been prepared in accordance with:

- Consolidated SSD 7709 development consent
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (formerly Department of the Environment and Energy (DotEE) Approval (EPBC 2011/6086)
- Final Compilation of Management Measures (FCMMs) (2 November 2018) included in Appendix 2 of the SSD 7709 Consent.

This ONMP identifies the operational environmental management measures that will be applied to routine operations and activities undertaken across the Development to manage identified noise impacts.

The specific CoCs and FCMMs relevant to the Development are identified in Appendix A Compliance Table

1.4. Objectives and Targets

Table 1-1 outlines the objectives and targets set out for the Development for the management of noise during operation. These objectives and targets were developed based on collective industry experience and best practice. They reflect the requirements of the EIS and CoC and have been endorsed by the project's Environmental Representative (ER).

Table 1-1 Objectives and targets

Objective	Target	Timeframe	Accountability
Minimise operational noise impacts on community and commercial stakeholders.	No exceedances of noise criteria	Operations	Site Health, Safety and Environment (HSE) Manager Warehouse and Terminal Tenants

Objective	Target	Timeframe	Accountability
Provide reasonable and feasible mitigation measures to manage impacts on surrounding residents and commercial stakeholders.	Compliance with CoC Minimise noise to community and commercial stakeholders	Operations	Site HSE Manager Warehouse and Terminal Tenants
Inform residents and other stakeholders of operational changes.	Provide effective community engagement throughout the life of the project	Operations	Site HSE Manager Warehouse and Terminal Tenants

1.5. Document Structure

The structure of this ONMP is as follows:

- **Section 1** provides a brief overview of the Development and summary of activities being undertaken as well as the purpose of the ONMP
- **Section 2** outlines the statutory requirements and obligations to be fulfilled during operations and provides a description of the roles and responsibilities for employees involved in operations.
- **Section 3** details the noise management measures to be implemented during operations. This section also outlines the relevant training and inductions required so that employees are aware of their environmental obligations and key environmental risks associated with noise management during operations.
- **Section 4** provides the details for monitoring of environmental risks associated with operational noise management through environmental reporting and auditing, and how environmental incidents and non-conformances are managed during the operations.

2. Statutory Requirements

The operation of the Development is required to comply with all relevant legislation, permits, licences and development approvals applicable to the Development.

A copy of the approved ONMP is available at the Site Office and shall be readily available for relevant regulatory officers, the Certifying Authority and operational staff as required.

2.1. Development Approvals

The operation of the Development is approved under both the *Environmental Planning and Assessment Act 1979* (EP&A) Act), and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Both these approvals have environmental conditions relevant to operations. Compliance with the relevant conditions of the approvals is outlined in the compliance matrices in Appendix A.

In addition, a list of the relevant FCMMs, as prescribed in CoC A3 of Development Consent (SSD 7709), and how they have been addressed in this ONMP are detailed in Appendix A.

2.2. Legal and Other Obligations

Details about the legislation, planning instruments and guidelines considered during development of this ONMP are listed below, with specific details provided in the Legislation Register in Appendix B of the OEMP.

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2000*
- *Protection of the Environment Operations (POEO) Act 1997*
- *Protection of the Environment Operations (Noise Control) Regulation 2017*

Additional standards and guidelines relating to the management of noise and vibration include:

- NSW EPA Noise Policy for Industry 2017 (NPfI or NPI)
- NSW EPA Rail Infrastructure Noise Guideline 2013 (RING)
- Approved methods for the measurement and analysis of environmental noise in NSW (EPA, 2022)
- International Organisation for Standardization (ISO) 3095:2013 Acoustics – Railway applications – Measurement of noise emitted by railbound vehicles (3095:2013)
- German Standard DIN 4150:2016 – ‘Part 3 Structural vibration in buildings – Effects on structures’
- British Standard BS 6472-1992 and 2008 ‘Guide to evaluation of human exposure to vibration in buildings (1-80Hz)’
- NSW Road Noise Policy (DECCW 2011) (RNP).

2.3. Roles and Responsibilities

Table 2-1 Roles and responsibilities

Role	Responsibilities
Asset Manager	• Accountable for the environmental performance, including noise from the MIP West Precinct. • Provides sufficient resources to implement, develop and maintain the ONMP throughout the operating life of the MIP West Precinct. • Implement stop work procedures where they believe a work activity to be an actual or potential cause of pollution to the environment anywhere within the MIP West Precinct. • Reviews and approves changes to the ONMP.
Warehouse Managers/ Terminal Manager	• Communicates the requirements of the ONMP and environmental obligations to operational team. • Has the authority to stop work processes within the area of responsibility to prevent noise non-conformances from occurring or continuing. • Monitors operations against the requirements of the ONMP and takes action to resolve issues where required. • Where required, implements changes to activities to manage ongoing compliance. • Reports incidents to Asset Manager in accordance with the OEMP.
Site HSE Manager	• Reviews and implements the ONMP. • Monitors operations against this ONMP through regular site inspections. • Has the authority to implement reasonable steps to avoid or minimise unintended or adverse noise impacts, including to direct that relevant actions be ceased immediately should an adverse impact be likely to occur. • Reports noise incidents to relevant Warehouse Manager or Terminal Manager and Asset Manager where required, in accordance with the incident reporting process outlined in the OEMP. • Acts as the 24-hour EPA contact.
Tenants	• Responsible for their own environmental performance for operational activities on leased areas. • Reports noise and vibration incidents to Warehouse Manager and/or the Site HSE Manager. • Tracks their performance with the relevant noise requirements under the CoC, ONMP and noise management requirements from ESR, and provides environmental performance information to the Site HSE Manager for inclusion in periodic compliance reporting and auditing, as required.

Role	Responsibilities
Train operators/Site personnel	• Understand roles and responsibilities and maintain mitigation measures as required in the ONMP and any additional required measure identified during operations. • Participate in or conduct, if authorised, relevant training to implement and maintain the requirements of this ONMP.
Contractors (including noise monitoring personnel)	• Undertake relevant training to implement the requirements of this ONMP. • Undertake all monitoring activities in accordance with this ONMP. • Regular maintenance and calibration of monitoring equipment. • Enable all relevant monitoring quality control / assurance procedures to be effectively implemented.

2.3.1. Training

All staff, contractors and sub-contractors shall undergo site specific induction training which will include noise management content developed with an emphasis on understanding and managing noise impacts from the work activities being undertaken.

This site-specific induction training will include:

- The location of potentially sensitive receptors
- Main sources and nature of noise
- Relevant noise mitigation measures, where feasible and reasonable
- A summary of relevant licence and approval conditions
- Any limitations on high noise generating activities
- Designated loading/unloading areas and procedures
- Details of the noise complaints and vibration handling procedure
- Details of the noise incident procedures
- Limiting the clustering of noisy plant / processes
- Communication, including a notification process to inform residents of respite times
- Non-conformance, preventative and corrective action procedures
- Outline the consequences of not complying with these measures
- Ensuring plant and equipment is well maintained and not making excessive noise
- Operation of vehicles to minimise noise impacts, i.e. use of designated routes, use of non-tonal reversing beepers, turning off plant, equipment and vehicles when not in use.

Training on the noise management requirements and measures will be completed by the Warehouse Managers/Terminal Manager (or nominated delegate).

2.3.2. Freight Operators Training

Freight operators will be provided with training related to mitigation measures associated with the rail link, including the use of best practice locomotives and wagons and good train driving practices in accordance with the Best Practice Reports (Best Practice Wagon Report, Renzo Tonin & Associates, Rev 10, 5 November 2019).

3. Implementation

This section addresses the key operational noise conditions associated with the Development and the environmental controls established to manage the key risks. The risks identified are based on previous noise studies and modelling.

3.1. Existing Environment

3.1.1. Sensitive Receivers

The suburbs of Casula, Glenfield and Wattle Grove are the potentially affected residential receivers in the vicinity of the Development (including the Rail Link, approved as part of MPE Stage 1 (SSD 6766)). They were classified as suburban residential receivers for the Development noise assessment (MPW Stage 2 Noise and Vibration Impact Assessment, Wilkinson Murray, Report No. 15324, Version D, 20 October 2016).

Additionally, non-residential receivers (All Saints Senior College and the Casula Powerhouse) have been identified. The nearest industrial receivers include Moorebank Precinct East (MPE), ABB and Defence Joint Logistics Unit (DJLU).

Figure 3-1 identifies the sensitive receivers and monitoring locations near the Development. Table 3-1 presents a summary of the potentially affected receivers and the approximate distance from the facility.

Table 3-1 Summary of sensitive receivers and approximate distance

Receiver / Suburb	Category	Distance (m) from MIP West Precinct	Distance (m) from Rail Link
Wattle Grove	Residential	640 – 1100	1350
Casula		350	1400
Glenfield		1800	940
All Saints Senior College (S1)	Educational	630	1450
Casula Powerhouse (S2)		360	1650
MPE (I1)	Industrial	50	20
DJLU		50	2130
ABB		Boundary	2550

3.1.2. Existing Noise Environment

Background noise levels were established through long-term background noise monitoring conducted by SLR for the MPW Concept and Stage 1 EIS (*Noise and Vibration Impact Assessment, SLR, Report No. 620.10816 R2, 27 April 2015, Revision 0*), and were adopted for the MPW Stage 2 Noise and Vibration Impact Assessment, Wilkinson Murray (MPW Stage 2 Noise and Vibration Impact Assessment, Wilkinson Murray, Report No. 15324, Version D, 20 October 2016) (MPW Stage 2 N&V assessment).

The Rating Background Levels (RBLs) at sensitive receiver locations considered representative of each of the nearby suburban residential receiver areas are presented in Table 3-2.

Table 3-2 Rating background (noise) levels

Noise catchment area (Suburb)[1]	Rating Background Levels dB(A)		
	Daytime (7am to 6pm)	**Evening (6pm to 10pm)**	**Night (10pm to 7am)**
Casula	39	39	33
Glenfield	35	37	33
Wattle Grove	35	36	32

Note: 1. The MPW Stage 2 EIS only defined Casula, Glenfield and Wattle Grove noise catchment areas. The CoC noise limits divide Wattle Grove into Wattle Grove and Wattle Grove North, consistent with MPE, as shown in Figure 3-1.

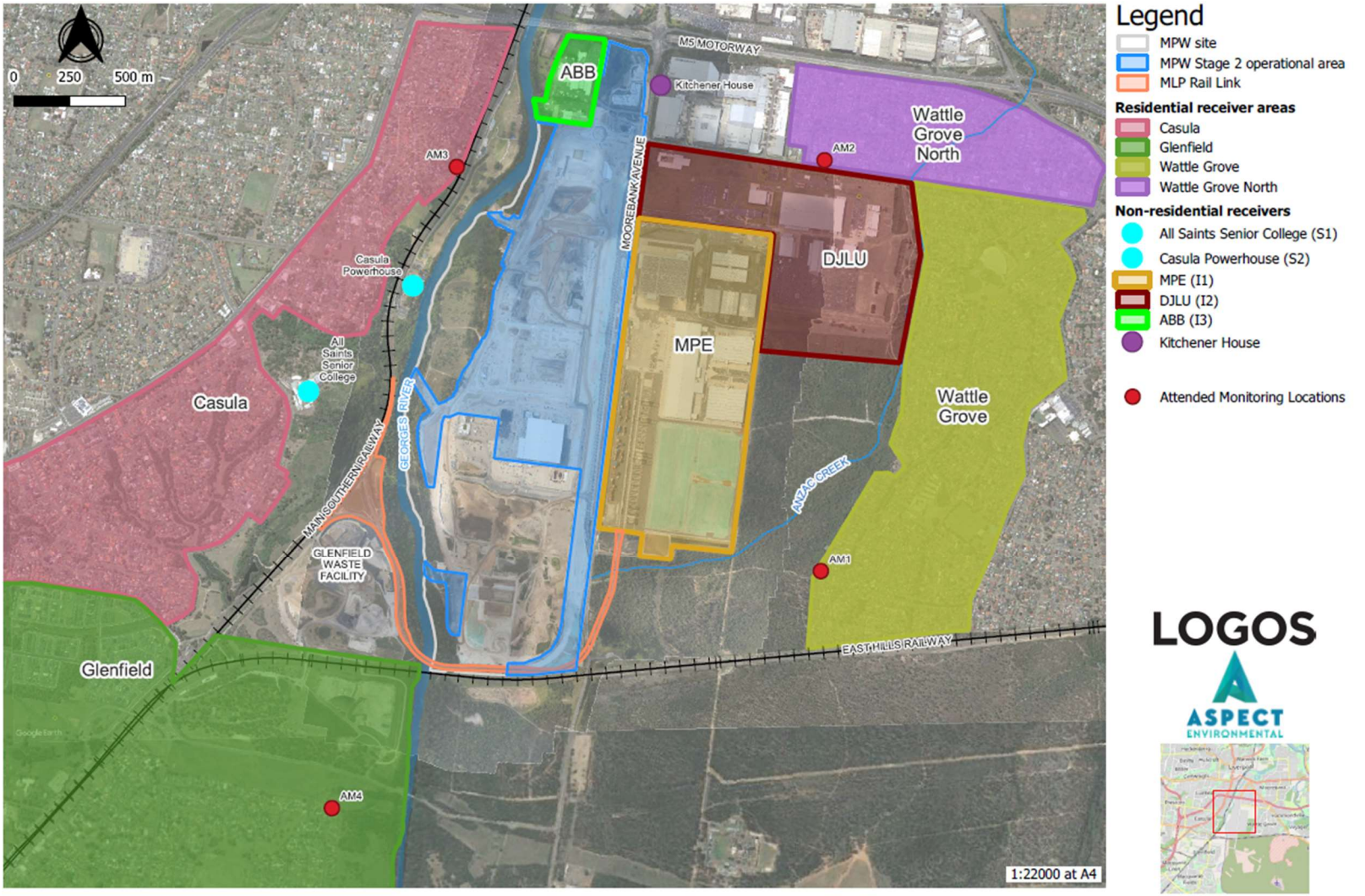
3.1.3. Meteorological Environment

Meteorological conditions at the MPW Site are subject to temperature inversions because of the predominance of stable conditions during the night and prevailing noise-enhancing winds as detailed in the MPW Stage 2 N&V assessment.

As required by MPWS2 CoC B131, with consideration of the prevailing meteorological conditions in accordance with the NPfI, the noise limits are applicable under:

- Wind speeds up to 3m/s at 10m above ground level or
- ‘F’ atmospheric stability class (with no wind).

Figure 3-1 Sensitive receivers and monitoring locations



3.2. Noise Management Criteria

3.2.1. Operational Noise Limits

In accordance with CoC B131 – the noise generated by the development must not exceed the noise limits in Table 4 of the consent, which is reproduced as Table 3-3 below, which are generated by the overall precinct operations (defined as all activities approved for MPW and MPE).

Table 3-3 Operational noise limits dB(A)

Location (Residential Receivers)	Daytime[4] $L_{Aeq, 15minute}$	Evening[4] $L_{Aeq, 15minute}$	Night-time[4] $L_{Aeq, 15minute}$	Night[4] Sleep Arousal Screening Level L_{AFmax}
Casula	46	44	39	52
Glenfield	49	46	42	52
Wattle Grove	44	42	42	52
Wattle Grove North	41	41	41	52

Notes:

1. Noise limits outlined in Table 3-3 apply under the following meteorological conditions:
   - wind speeds up to 3m/s at 10 meters above ground level; or
   - atmospheric stability category F (with no wind).
2. To determine compliance with the LAeq,15-minute noise limits, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30m of a dwelling where the dwelling is more than 30m from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 7 of the NPfI). The modification factors in Fact Sheet C of NPfI must also be applied to the measured noise levels where applicable.
3. To determine compliance with the Night LAFmax Sleep Arousal Screening Level in Table 4 above, noise from the project is to be measured at 1m from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 7 of the NPfI).
4. The time periods are defined as 7:00am to 6:00pm Monday to Saturday, and 8:00am to 6:00pm on Sundays and Public Holidays; Evening 6.00 pm to 10.00 pm; Night-time 10:00pm to 7:00am Monday to Saturday, and 10:00pm to 8:00am on Sundays and Public Holidays.
5. As per CoC B131, the noise limits in Table 3-3 apply for noise arising from use of the approved Precinct (MPW and MPE) (excluding rail operations on the rail link).

3.2.2. Sleep Disturbance Trigger Levels

Table 3-4 presents screening levels for maximum noise levels during the night-time period for potential sleep disturbance impacts, which have been established in accordance with Table 4, CoC B131 of the SSD 7709 development consent.

Table 3-4 Sleep disturbance trigger levels

Location (Residential Receivers)	Night[1] Sleep Arousal Screening Level L_{AFmax}
Casula	52
Glenfield	52
Wattle Grove	52
Wattle Grove North	52

Notes:

1. To determine compliance with the Night LAFmax Sleep Arousal Screening Level in CoC B131 Table 4 above, noise from the project is to be measured at 1m from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 7 of the NPfI).
2. The noise emission limits identified above apply under meteorological conditions of:
   - wind speeds up to 3m/s at 10 meters above ground level or
   - atmospheric stability category F (with no wind).
3. CoC B131 of the SSD 7709:
   - The night period is defined 10:00pm to 7:00am Monday to Saturday, and 10:00pm to 8:00am on Sundays and Public Holidays.

3.3. Environmental Impacts

3.3.1. Hours of Operation

Table 3-5 identifies the permitted hours of operation in accordance with CoC B130 (SSD 7709).

Table 3-5 Hours of operation

Activity	Day	Time
Intermodal terminal facility including rail link connection	Monday – Sunday	24 hours
Warehouses	Monday – Sunday	24 hours
Freight village	Monday – Sunday	7 am to 6 pm

3.4. Predicted Operational Noise Impacts

3.4.1. Intermodal Terminal Operational Noise Emissions

The operational noise predictions for the Development for the various approved elements, are provided in in the following suite of documents:

- MPW Concept Plan Modification Noise and Vibration Impact Assessment, Wilkinson Murray, Report No. 15324-MO, Version B, 8 June 2016
- MPW Stage 2 Noise and Vibration Impact Assessment, Wilkinson Murray, Report No. 15324, Version D, 20 October 2016 (MPW Stage 2 N&V assessment)
- MPW Stage 2 Responses to Submissions – Addendum Impact Assessment - Noise, Wilkinson Murray, Report No. 15324-PA, Version E, May 2017 (MPW Stage 2 RtS N&V assessment) MPW Stage 2 MOD 1 – Assessment of two warehouse and Distribution Facilities, Renzo Tonin & Associates, Report No. TL265-01F04 DA Acoustic Assessment Construction and Operation (r10), dated 17 October 2020 (JR and JN Moorebank N&V assessment)
- MPW Stage 2 MOD 1 – Assessment of two warehouse and Distribution Facilities (Response to DPIE request for further information), Renzo Tonin & Associates, Ref: TL265-05F01 DPIE review response (r1), dated 14 December 2020 (JR and JN Moorebank RtS N&V assessment).

The final tenants across the Development are yet to be finalised, and with the changing tenants and potential operations the likely noise emissions and noise predictions for the Development will need periodic revision.

The noise limits in Table 3-3 are cumulative of all activities approved for MPW and MPE, as such, the future tenant noise emissions are proposed to be managed cumulatively with the aim of achieving these noise limits across the various tenants. This will be facilitated through the noise assessment process in accordance with CoC B138.

3.4.2. Rail Link

The existing numbers of rail movements due to both passenger and freight trains travelling along network rail lines in the vicinity of the sensitive receivers are significantly higher than the additional movements associated with the Development. Therefore, it is expected that the existing $L_{Aeq, period}$ levels of rail noise and L_{Amax} rail noise events at the most affected receivers within Casula and Glenfield are unlikely to noticeably increase due to the Proposal.

Several measures to mitigate noise associated with the operation of the Rail Link are identified in the MPE Stage 1 (SSD 6766) Development Consent. MPE Stage 1 operational rail noise and mitigation measures are covered under the following suite of documents:

- Draft Brake Squeal Report (SSD 6766 CoC F5)
- Functional Spec for Noise Monitoring System and Appendices identifying preferred monitoring locations (SSD 6766 CoC G7 and G7A)
- Best Practice Wagon Report (SSD 6766 CoC G6b)
- Background Rail Noise Monitoring Report (SSD 6766 FCMM Condition 3C), as required, upon completion of the rail noise study.

No additional rail noise mitigation measures are considered necessary for the MPW Precinct.

3.4.3. Road Noise Impact

The most affected residential receivers to potential increases in road noise resulting from operations are those situated immediately adjacent to the M5 Motorway, on Moorebank Avenue north of the M5 Interchange, and on Anzac Road east of Moorebank Avenue.

An assessment of potential road traffic noise impacts was presented in the MPW Stage 2 N&V assessment in accordance with the NSW Road Noise Policy, 2011 (RNP). For the purposes of the noise impact assessment, existing traffic volumes along Moorebank Avenue, Anzac Road and the M5 Motorway were allocated into ‘day’ and ‘night’ periods, along with the ‘mix’ of heavy vehicles expressed as a percentage. The current and predicted daily traffic volumes, are based on throughput of 500,000 TEU per annum.

The predicted increase in road noise levels, due to the operations are shown in Table 3-6.

Table 3-6 Predicted increase in road noise levels due to operation

Location	Predicted Increase (dBA)	
	Day	Night
M5 Motorway – East of Moorebank Avenue	0.0	0.0
M5 Motorway – West of Moorebank Avenue	0.1	0.2
Moorebank Avenue – North of M5 Motorway	0.3	0.3
Anzac Road – East of Moorebank Avenue	0.1	0.1

Table 3-6 shows that increases in road traffic noise levels along the M5 Motorway and along Moorebank Avenue north of the M5 interchange are considerably less than 2 dBA. In accordance with the RNP, no mitigation of traffic noise levels is warranted.

3.5. Management Measures

This section describes the overall approach to managing and mitigating risks to noise impacts during operation of the Development. Management measures are summarised in Table 3-7.

These measures are based on best practice, and the compliance matrices provided in Appendix A, as well as ESR's own requirements and standards, which are detailed in Sections 4.1, 4.2 and 4.3 of the OEMP.

Table 3-7 Noise mitigation measures

ID	Management Measure	Timing	Responsibility	Reference
MIP West Precinct				
N1	The ambient noise monitoring surveys undertaken within Casula, Wattle Grove and Glenfield would be continued throughout the operation of the Precinct (with annual reporting of noise results up to two years beyond the completion of construction of the Project).	Operations (up to two years following commencement of full operations)	Site HSE Manager	FCMM 2B
N2	Noise monitoring of mechanical plant and other noisy equipment for a minimum period of one week where valid data is collected following operation / occupation of the freight terminal, freight village and each warehouse, to verify noise levels predicted under CoC B138.	Following operation / occupation of the IMT, Village and each warehouse.	Site HSE Manager	CoC B139 (SSD 7709)
N3	Operational Noise Monitoring to compare actual noise performance of the project against predicted noise performance and prepare an Operational Noise Report to document this monitoring.	Within 12 months of IMT operation; occupation of the first warehouse, 50% occupation of the site and 100% occupation of the site.	Site HSE Manager	CoC B140 (SSD 7709)
N4	Noise Impact Monitoring and Residual Noise Impact Mitigation Plan. The Applicant is to conduct noise impact monitoring and residual noise impact mitigation in accordance with the requirements of B140A (SSD 7709).	Between 3 and 6 months from commencement of operation. Then at 12-month intervals and 12 months after full site operations.	Site HSE Manager	CoC B140 A (SSD 7709)

ID	Management Measure	Timing	Responsibility	Reference
N5	Residual Noise Impact Mitigation Plan to investigate and assess feasible and reasonable receiver-based treatments for those properties identified by CoC B140A (f) (SSD 7709).	Within 12 months of the Residual Noise Impact Report.	Site HSE Manager	CoC B140 A (SSD 7709)
N6	A task specific induction and relevant training will be provided to all staff, contractors, sub-contractors, and rail operators with an emphasis on understanding and managing noise impacts from their activities. This will include the location of noise sensitive receptors, specific mitigation measures, noise complaints procedure and the consequences of not complying with these mitigation measures.	Operations	Site HSE Manager Warehouse Managers/ Terminal Manager Rail operators All staff	Best Practice
N7	Prior to the commencement of operations, the Applicant must construct a 5m high noise wall along the entire length of the western internal road as shown in Appendix 1 (as detailed in the EIS and RtS Noise and Vibration Impact Assessment modelling).[1]	Prior to operations	ESR	CoC B129 (SSD 7709)
N8	Heavy Vehicles will use designated HV routes, as identified in the OTAMP and Driver's Code of Conduct.	Operations	Site HSE Manager Warehouse Managers/ Terminal Manager All Heavy Vehicle Operators	CoC B119 (SSD 7709) CoC B124 (SSD 7709)
N9	Heavy vehicles will minimise the use of compression braking, except as required in an emergency or by legislation.	Operations	Site HSE Manager Warehouse Managers/ Terminal Manager All Heavy Vehicle Operators	CoC B124 (SSD 7709)

ID	Management Measure	Timing	Responsibility	Reference
N10	Unnecessary idling for vehicles will be avoided with engines turned off during periods of inactivity.	Operations	Site HSE Manager	FCMM 2E (SSD 7709)
N11	A gate appointment system would be implemented to minimise truck loading/unloading wait times and resultant queueing. Trucks would be turned away from facility if arriving too early. Truck marshalling lanes would be included to minimise congestion and queueing.	Operations	Site HSE Manager	FCMM 2E (SSD 7709)
N12	Signage will be installed across the Precinct to remind drivers of the anti-idling policy and their obligations.	Operations	Site HSE Manager Warehouse Managers/ Terminal Manager All Heavy Vehicle Operators	FCMM 2E (SSD 7709)
N13	All vehicles and equipment will be well maintained in accordance with the manufacturer's specifications.	Operations	Site HSE Manager	Best Practice
N14	The use of tonal alarms by heavy vehicles will be minimised except as required in an emergency or by legislation. Where possible, tonal alarms are to be replaced with quieter, less intrusive options, such as reversing cameras, non-tonal alarms etc, except as required in an emergency or by legislation.	Operations	Site HSE Manager	CoC B124 (SSD 7709)

ID	Management Measure	Timing	Responsibility	Reference
N15	A noise survey (both attended and unattended) will be carried out under B140A at R1 No. 9 Casula Road, Casula (or an equivalent location if access is denied). If the survey identifies an exceedance arising from use of the Precinct of the LAeq, 15min and the LAFmax noise limits specified in condition B140A(f), prepare a Preliminary Residual Noise Impact Report (PRNIR). Where required by the PRNIR, prepare a Residual Noise Impact Mitigation Plan and detail a Proposal for a Property Noise Mitigation Plan for each property (B140A(g)).	Operations	Site HSE Manager	FCMM 2D (SSD 7709) CoC B140A (SSD 7709)
N16	For all properties identified in the Residual Noise Impact Mitigation Plan as requiring feasible and reasonable receiver based treatments, liaise with identified owners of properties and provide the owners with a copy of the Proposal for At Property Noise Mitigation Plan. Within 3 months of the Proposal for At Property Noise Mitigation Plan being completed, make an offer to the respective owners to affect the receiver based treatments specified in the Proposal for At Property Noise Mitigation Plan within an agreed time line. If an agreement is reached with the property owner, execute the recommended mitigation treatment at no cost to the property owner, within an agreed time.	Operations	Site HSE Manager	FCMM 2D (SSD 7709) CoC B140A (SSD 7709)
N17	Where ongoing noise surveys determine there has been a substantial change in the noise levels specified in B140A (c), update the Residual Noise Impact Mitigation Plan and At Property Noise Mitigation Plan (s) and implement the requirements of B140A (h)-(i) in respect of any properties which have not been offered noise mitigation treatment to date.	Operations	Site HSE Manager	FCMM 2D (SSD 7709) CoC B140A (SSD 7709)

ID	Management Measure	Timing	Responsibility	Reference
Intermodal Facility and Rail Link				
N18	Best practice plant for the intermodal terminal facility, including electronic automated container handling equipment or equipment with equivalent sound power levels.	Operations	Terminal Manager	CoC B132 a) (SSD 7709)
N19	Locomotives using the development must meet the air emissions standards and noise requirements as specified in the Moorebank Precinct East – Stage 1 Project: Best Practice Review (SSD 14-6766), prepared by Arcadis dated 20 September 2017).	Operations	Site HSE Manager Terminal Manager	CoC B132 b) (SSD 7709)
N20	Wagons using the development must incorporate available best practice noise technologies, such as “one piece” freight bogies or three-piece freight bogies fitted with cross-bracing or steering arms; and permanently coupled ‘multi-pack’ steering wagons using Electronically Controlled Pneumatic (ECP) braking with a wire based distributed power system (or better practice technology).	Operations	Site HSE Manager Terminal Manager	CoC B132 c) (SSD 7709)
N21	Automatic rail lubrication equipment must be used in accordance with ASA Standard T HR TR 00111 ST Rail Lubrication and top of rail friction modifiers, where required.	Operations	Site HSE Manager Terminal Manager	CoC B132 d) (SSD 7709)
N22	The rail cross sectional profile will be maintained in accordance with ETN-01-02 Rail Grinding Manual for Plain Track and TfNSW Requirements to ensure the correct wheel /rail contact position and to encourage proper rolling stock steering.	Operations	Terminal Manager	CoC B132 e) (SSD 7709))
N23	All vehicles, equipment and locomotives will be maintained in accordance with the manufacturer’s specifications.	Operations	Site HSE Manager	Best Practice

ID	Management Measure	Timing	Responsibility	Reference
N24	The use of tonal alarms by container handling equipment will be minimised except as required in an emergency or by legislation. Where possible, tonal alarms are to be replaced with quieter, less intrusive options, such as reversing cameras, non-tonal alarms etc, except as required in an emergency or by legislation.	Operations	Site HSE Manager	CoC B124 (SSD 7709)
N25	Unnecessary idling for locomotives will be avoided with engines turned off during periods of planned inactivity of 30 minutes or greater.	Operations	Site HSE Manager Terminal Manager	FCMM 3C (SSD 7709)
N26	All vehicles, equipment and locomotives will be maintained in accordance with the manufacturer's specifications.	Operations	Site HSE Manager	Best Practice
N27	Port shuttle locomotives that do not meet the noise requirements of Environmental Protection Licences (EPLs) 3142 and 12208 should not enter MPW rail link.[2]	Operations	Site HSE Manager Terminal Manager	FCMM 2G (SSD 7709)
Community Notification				
N28	Facility updates will be posted on the website and newsletters will be distributed as required in accordance with the Community Communication Strategy. Any newsletters distributed will also include Facility contact numbers, details of the Facility website and an email address to refer any complaints and enquiries.	Operations	Site HSE Manager	Community Communication Strategy

ID	Management Measure	Timing	Responsibility	Reference
N29	Prior to commencement of operation of the Facility, potentially affected neighbouring property owners and businesses will receive written notification regarding the commencement of operations at the Facility. The written notification will include the Facility contact numbers, details of the Facility website and an email address to refer any complaints and enquiries.	Operations	Site HSE Manager	CoC B156 (SSD 7628) Community Communication Strategy

Note 1. Appendix 1 of the SSD 7709 Consolidated Consent.

2. The in-force editions of these EPLs do not include locomotive-related noise requirements, with the exception of the operation of horns and idling.

4. Monitoring and Review

4.1. Monitoring

Noise and vibration monitoring will be conducted in accordance with this ONMP. Noise monitoring shall be undertaken consistent with the procedures documented in NSW EPA "*Approved methods for the measurement and analysis of environmental noise in NSW*" (EPA, 2022) and Section 7 '*Monitoring performance*' of the EPA *Noise Policy for Industry* (EPA, 2017).

4.1.1. Summary of Monitoring Requirements

Noise monitoring will be conducted as per the requirement of this ONMP and as prescribed by the CoCs.

Continuous noise monitors have been installed under CoC B64 of the MPE Stage 2 (SSD 7628) development consent for the construction phase and for at least 12 months following occupation of the site. However, in accordance with Table 8-4 Best Practice Review Summary, MPW Stage 2 Proposal – Environmental Impact Statement – continuous real-time monitoring of operational noise levels at sensitive receivers and a reactive management plan to address detected exceedances of noise limits is not feasible or reasonable. Accordingly, continuous monitoring is not required for the Development, except for monitoring required under CoC B141 (SSD 7709) for the rail link noise monitoring.

Monitoring requirements relevant to the ONMP are summarised in Table 4-1. It should be noted that further monitoring outside the schedule below may be required in response to complaints. Such monitoring will be coordinated by the Site Health, Safety, Environment and Quality HSEQ Manager/Advisor, who is also responsible for implementing any remedial actions.

Prior to the commencement of operation, justification supporting the appropriateness of the location for rail noise monitors, including details of any alternative options considered and reasons for these being dismissed will be submitted to the Planning Secretary for approval. The rail noise monitoring location(s) will be west of the MPW Stage 2 connection to the rail link constructed under MPE Stage 1.

Table 4-1 Monitoring requirements

Monitoring Focus	Area/ Location	Frequency / Duration	Exceedance / Trigger	Response / Remedial Measures	Responsibility	Monitors to be used / Validation of impacts	CoC
Rail Noise Monitoring							
Rail Noise Monitoring	Within 10m of Rail Line	Continuous rail noise monitoring will be undertaken from the commencement of rail operations. The monitoring system will capture noise from each train passby and include the following information: • Time and date of freight train pass by • Imagery or video recording to identify rolling stock (day and night) • LAeq (15hour) and LAeq (9hour) from rail operations • $L_{AF\ (max)}$ and Sound Exposure Level (SEL) of individual train pass bys, measured in accordance with ISO 3095:2013 • Other information as required by the Secretary.	Exceedance of NSW Rail Infrastructure Noise Guidelines. (RING) requirements. Noise trigger thresholds (alarm levels) will be established at the measurement location to identify outliers for further detailed investigation once operations commence and typical noise levels are established.	Notification to Site HSE Manager. An investigation will be undertaken to determine sources and/or causes of exceedance in accordance with Section 4.3 and Section 4.3.3 of this ONVMP. If a noise trigger threshold is exceeded the actions detailed in Section 4.3 and Section 4.3.1 will be implemented.	Site HSE Manager	On-track monitors	CoC B141

Monitoring Focus	Area/ Location	Frequency / Duration	Exceedance / Trigger	Response / Remedial Measures	Responsibility	Monitors to be used / Validation of impacts	CoC
MIP West Precinct							
Noise Assessment of Mechanical Plant and other noisy equipment	Freight Terminal, freight village and each warehouse	Minimum of 1 week in duration following operation / occupation. Noise assessment report must be submitted to the Planning Secretary within two months of operation of the freight terminal and occupation of each tenancy, in accordance with CoC B139. Where operations do not commence within two months of occupation, the assessment report will be submitted within two months of the commencement of operations.	Verify predicted noise levels undertaken for CoC B138 assessment.	Notification to Site HSE Manager. An investigation will be undertaken in review of requirements under CoC B138.	Site HSE Manager	Continuous monitoring for 1 week.	CoC B139

Monitoring Focus	Area/ Location	Frequency / Duration	Exceedance / Trigger	Response / Remedial Measures	Responsibility	Monitors to be used / Validation of impacts	CoC
Operational Noise Monitoring	All nominated receivers	Noise monitoring to compare actual noise performance of the MIP West Precinct against the operational noise limits will be undertaken as follows: • Regular performance monitoring • Within 12 months of the commencement of operation of the Intermodal Terminal facility • Within 12 months of occupation of the first warehouse • Within 12 months 50% occupation of the site • Within 12 months 100% occupation of the site, or as otherwise agreed by the Secretary • For a minimum of 12 months following occupation of the entire site.	Exceedance of operational noise limits identified in in Table 3-3 and Table 3-4.	Notification to Site HSE Manager. Works will reduce and an investigation will be undertaken to determine sources and/or causes in accordance with Section 4.3 and Section 4.3.3 of this ONVMP. If a noise trigger threshold is exceeded the actions detailed in Section 4.3 and Section 4.3.1 will be implemented.	Site HSE Manager	Noise monitoring at residential receivers **Validation** Noise limits identified in Table 3-3 and Table 3-4**.**	CoC B140

Monitoring Focus	Area/ Location	Frequency / Duration	Exceedance / Trigger	Response / Remedial Measures	Responsibility	Monitors to be used / Validation of impacts	CoC
Operational Noise Monitoring	All nominated receivers (reference) and complainant address	Attended noise monitoring will be undertaken to determine compliance against the operational noise limits upon receipt of a noise complaint.	Exceedance of operational noise limits identified in Table 3-3 and Table 3-4	Notification to Site HSEQ Manager/ Advisor. Works will reduce and an investigation will be undertaken to determine sources and/or causes in accordance with Section 4.3 and Section 4.3.3 of this ONVMP. If a noise trigger threshold is exceeded the actions detailed in Section 4.3 and Section 4.3.1 will be implemented.	Site HSE Manager Noise consultant (if required)	Attended monitoring **Validation** Noise limits identified in Table 3-3 and Table 3-4**.**	CoC B140

Monitoring Focus	Area/ Location	Frequency / Duration	Exceedance / Trigger	Response / Remedial Measures	Responsibility	Monitors to be used / Validation of impacts	CoC
Noise Impact Monitoring	No. 9 Casula Road, Casula (or an equivalent location if access is denied).	Not <3months not >6months from commencement of operation. Then at 12 month intervals and 12 months after full site operations. Attended noise monitoring, for 4 contiguous hours in a single day, evening and night period conducted on days when the Precinct is likely to be operating at maximum capacity at the time. Unattended noise monitoring, for a period of 7 contiguous days not adversely affected by weather and must include the days of the attended surveys.	Exceedance of noise management levels identified in Table 3-3 and Table 3-4.	Notification to Warehouse Manager and Site HSEQ Manager/ Advisor. Works will reduce and an investigation will be undertaken to determine sources and/or causes in accordance with Section 4.3 and Section 4.3.3 of this ONVMP. If a noise trigger threshold is exceeded the actions detailed in Section 4.3 and Section 4.3.1 will be implemented. Undertake the assessment required by CoC B140A (f).	Site HSE Manager Warehouse Managers	Noise monitoring at residential receivers **Validation** $L_{Aeq, 15min}$ and L_{Amax} noise level arising from use of the Precinct (excluding rail operations on the rail link) To assess against noise limits in Table 3-3 and Table 3-4**.**	CoC B140A

4.1.2. Attended Monitoring

The attended measurements should be conducted at the potentially most noise-affected receivers in each noise catchment area (NCA) that is subject to the operational activity being monitored.

The attended measurements would typically be conducted at the following potentially affected receivers in each NCA, with justification provided for the final selected monitoring locations:

- AM1: 16 Corryton Court, Wattle Grove
- AM2: 22 Glenelg Court, Wattle Grove
- AM3: 11 Buckland Road, Casula
- AM4: 26 Goodenough Street, Glenfield
- Glenfield Farm: 88 Leacocks Lane, Casula (Equivalent locations have been identified as: 1. 90 Leacocks Lane, Casula; or 2. Adjacent to the Public Park to the north of Glenfield Farm).

In the event that access is impeded to the above locations and/or consideration of localised extraneous noise sources (e.g. air conditioners etc), a representative location will be sought nearby, while preserving the intent of the noise monitoring. Where more appropriate potentially noise affected receiver monitoring locations are used, justification for the final selected monitoring location is to be provided.

Following receipt of a complaint, the need for monitoring would be considered at the address of the complainant, or a suitable location representative of that receiver.

4.1.2.1. Attended Noise Monitoring Methodology

Noise monitoring is to record the sound levels relevant to the noise limits under investigation, and will include at minimum $L_{Aeq,\ 15min}$ and L_{Amax} (night-time), in addition to the $L_{A90,\ 15min}$. The L_{Amax}, L_{A1}, L_{A10}, and L_{A90}, and parameters are to be recorded for each measurement.

Attended noise monitoring will be conducted on days when the Precinct is likely to be operating at maximum capacity at the time. Where possible during a measurement, the noise level contribution ($L_{Aeq,\ 15min}$) of the Development will be determined in the absence of any influential source not associated with operations of the Facility for direct comparison to the relevant criteria.

Where direct measurement of operations is not practical, an appropriate monitoring methodology should be used, consistent with those identified in Section 7 '*Monitoring performance*' of the NPfI.

The noise measurement sample height should be 1.5m above ground level. The duration of each community noise measurement sample will be 15 minutes. All measurements will be completed with the sound level meter mounted to a tripod and with a windscreen fitted. The microphone will be oriented in the direction of the noise generating activities under investigation.

The calibration of noise monitors will be checked prior to the commencement of each round of attended monitoring, and the results recorded. Laboratory calibration will be undertaken as per the manufacturer's specifications.

No noise monitoring will be completed during periods where wind speeds exceed 3m/s or when raining. Wind speed and direction, along with prevailing meteorological conditions during monitoring should be recorded.

Measurements of industrial noise will be made at the potentially most affected receivers in each NCA, subject to the operations being monitored, or at the monitoring locations identified in Section 4.1.2 as relevant to the monitoring investigation being undertaken.

Measurements of rail noise will be facade-reflected levels (if free-field noise measurements are undertaken, 2.5dB will be added to the free-field noise results).

During operations, noise impacts associated with operations and construction may both be present. As such, operational noise emissions may be difficult to isolate. An appropriate noise measurement methodology should be used in these cases to estimate the operational noise emission component before comparison against the relevant noise limits.

If noise monitoring identifies that predicted noise levels are being exceeded, the acoustic consultant is to advise the operators following the monitoring. The procedures detailed in Section 4.3 should then be followed.

4.2. Reporting

Reporting requirements for monitoring, auditing and as required in the CoCs will be undertaken in accordance with the OEMP. Reporting requirements applicable to this ONMP are summarised in Table 4-2.

Table 4-2 Environmental reporting requirements

Requirement	Area / Location	Timeframe	Reporting Requirements	Responsibility	CoC
Rail Link					
Rail Noise Monitoring System Reporting	Rail Link	• Published on the Project Website • Annually, from the commencement of rail operations for a period of five years.	• The noise results will be publicly accessible as live data on the website for train passing the noise monitors, unless unforeseen circumstances (i.e. a system malfunction) have occurred. • The $L_{Aeq(15hour)}$ and $L_{Aeq(9hr)}$ results from each day will be available on the website within 1 hour of the period ending. • An annual report will be submitted to the Secretary from the commencement of rail operations for a period of five years. • The Secretary shall consider the need for further reporting following a review of results for year 5.	Site HSE Manager	CoCs B141 and B143
MIP West Precinct					
Operational Noise Monitoring Report	MIP West Precinct	• Within 12 months of the commencement of operations. • Within 12 months of occupation of the first warehouse. • Within 12 months 50% occupation of the site • Within 12 months 100% occupation	Operational Noise Monitoring Reports will, at a minimum, include the following information: • noise monitoring to assess compliance with the predicted operational noise levels and the noise limits specified in Table 3-5. • a validation by predictive modelling of the operational noise levels in terms of criteria and noise goals established in the Road Noise Policy (RNP, EPA, 2001) • sleep disturbance impacts compared to those determined in documents specified under CoC A3 (SSD 7709)	Site HSE Manager Qualified Acoustic Consultant	CoC B140

Requirement	Area / Location	Timeframe	Reporting Requirements	Responsibility	CoC
		of the site, or as otherwise agreed by the Secretary. • The Operational Noise Monitoring Reports will be submitted to the Secretary and the EPA within 60 days of completing the operational noise monitoring, or otherwise agreed by the Planning Secretary.	• impacts associated with annoying characteristics such as prominent tonal components, impulsiveness, intermittency, irregularity, and dominant low-frequency content • methodology, location, and frequency of noise monitoring undertaken, including monitoring locations at which the noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers • any required recalibrations of the noise model taking into consideration factors such as actual traffic numbers and heavy vehicle proportions • an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of all feasible and reasonable mitigation measures • identification of additional measures to those predicted in the documents specified under Condition A3 (SSD 7709), that would be implemented with the objective of meeting the criteria outlined in the RNP and NPfI (EPA, 2017), including timing of implementation • details of any complaints and enquiries received in relation to operational noise generated by the project between the date of commencement of operation and the date the report was prepared • procedures for the management of operational noise and vibration complaints.		
Noise Impact Monitoring / Preliminary Residual Noise Impact Report / Residual	R1 No. 9 Casula Road, Casula (or an equivalent location if access is denied)	Not <3months not >6months from commencement of operation. Then at 12 month intervals after the completion of the first	*Where no sustained exceedances are monitored* • A copy of the results of the noise survey must be provided to the Planning Secretary for information within one month of completion of the survey. *Where sustained exceedances are monitored*	Site HSE Manager Qualified Acoustic Consultant	CoC B140A

Requirement	Area / Location	Timeframe	Reporting Requirements	Responsibility	CoC
Noise Impact Mitigation Plan/ At Property Noise Mitigation Plan		noise survey and 12 months after full site operations.	• A copy of the results of the noise survey must be provided to the Planning Secretary for information within one month of completion of the survey. • Within 3 months of the attended noise survey, a Preliminary Residual Noise Impact Report summarising the findings including a draft Proposal for At Property Noise Mitigation Plan (PNMP) for R1 must be submitted to the Planning Secretary for information. • Within 12 months of the Residual Noise Impact Report being completed (or as otherwise agreed by the Planning Secretary) complete a Residual Noise Impact Mitigation Plan to investigate and assess feasible and reasonable receiver based treatments for those properties and detail a Proposal for PNMP for each property in accordance with subclauses B140A (a)-(d), and provide a copy of these plans to the Planning Secretary for information • Where the PNMP has identified mitigations, the Applicant must provide to the Planning Secretary a copy of the reports and plans identified in CoC B140A (g) with a summary of the state of agreements reached with property owners, and a summary of the execution of at source, in transmission pathway and at receiver mitigation every 6 months commencing from the completion of the Plans required at (g) until all mitigations are completed. • Where ongoing noise surveys determine there has been a substantial change in the noise levels specified in B140A (c), update the Residual Noise Impact Mitigation Plan and At Property Noise Mitigation Plan (s) and provide a copy of these plans to the Planning Secretary for information.		
Monitoring Report for Mechanical Plant and	Each Warehouse Freight Terminal	Operation or Occupation	• Within two months of operation of the freight terminal and occupation of each tenancy a monitoring report for mechanical plant and other noisy equipment will be submitted to the Secretary.	Site HSE Manager	CoC B139

Requirement	Area / Location	Timeframe	Reporting Requirements	Responsibility	CoC
Other Noisy Equipment	and Freight Village		• Where operations do not commence within two months of occupation, the assessment will be completed, and reporting submitted within two months of the commencement of operations.		

4.3. Exceedances of Noise Management Levels

4.3.1. Monitored Exceedances of Noise Limits

Noise monitoring data will be analysed to determine if the operational noise levels exceed the applicable noise limits, consistent with the EPA '*Noise Policy for Industry'* (EPA, 2017) (NPfI) and Section 7 '*Monitoring performance*' of that document.

In the event of an exceedance of the noise limits is identified, the following actions will be undertaken in the order in which they are listed:

- Identification of the monitored exceedance is to be reported to the Site HSEQ Manager/Advisor.
- Works / rail traffic identified as causing the exceedance during the monitoring are to be reduced immediately at the direction of the Site HSEQ Manager/Advisor.
- Determine if the exceedance is an atypical or single occurrence, or sustained occurrence.
- An investigation of the noise generating activities causing the exceedance is to be undertaken. This may include:
  - revisiting management measures/practices/sequencing etc to reduce noise levels and minimise impacts on receivers
  - plant and machinery exhaust/fittings/noise attenuators etc being inspected and verified for noise levels
  - provision of information on noise levels to surrounding and potentially affected residents should this be required (i.e. on request or following a complaint).
- Work / rail operations that are identified as potentially causing an exceedance are to continue operating in a limited or reduced capacity during the investigation process, where there remains a potential for a sustained exceedance of the relevant noise limit.
- Where noise mitigation or management measures have been implemented, additional monitoring is to be undertaken following the investigation and implementation of controls to verify the effectiveness of the implemented controls and confirm operational noise emissions are achieving the relevant noise limit.

4.3.2. Monitored Exceedances for CoC B140A Noise Survey

In the case that the noise survey undertaken for CoC B140A identifies a sustained exceedance of the relevant noise limits, an assessment is to then be undertaken addressing the items in CoC B140A (f) to (i).

4.3.3. Contingency Measures

If the above responses are not sufficient to resolve the monitored sustained exceedance of noise limits, the following corrective measures will be implemented:

- An investigation will be undertaken to determine the sources and/or causes of the sustained exceedance of the noise or vibration management levels.

- A specialist noise and vibration consultant will be engaged to identify feasible options to mitigate and manage the sustained exceedance of the noise limits. Options that may be investigated include:
  - use of alternative plant with lower noise emissions
  - reduced work / rail operations so that they meet the noise or vibration management levels
  - any other mitigation recommended by the noise and vibration consultant.

Following this, a follow up noise survey would be undertaken of the work / rail operations to confirm the effectiveness of any implemented controls and that the noise limits are achieved. Any adjustment of re-calibration of noise models and/or updates to and re-approval of this ONMP would then be undertaken, as necessary.

4.4. Review and Improvement

Review and improvement (including updates) of this ONMP will be undertaken in accordance with the CoCs and Section 6.2 of the OEMP [PREC-QPMS-EN-APP-00001]. Continuous improvement will be achieved by the ongoing evaluation of environmental management performance and effectiveness of this ONMP against environmental policies, objectives and targets, timely review of the ONMP and review/re-approval under the EP&A Act and EPBC Act.

A copy of the revised and re-approved ONMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure, as outlined in Section 1.4.1 of the OEMP.

4.5. Incidents

All noise incidents are to be reported and managed in accordance with the Logos Incident Reporting and Management Procedure (SHEMS-QM-13-PR-0126). Incidents are classified based on the incident's severity as shown in Section 4.6 of the OEMP [PREC-QPMS-EN-APP-00001].

All incidents will be managed and reported according to Section 4.6 of the OEMP.

4.6. Complaints

All noise and vibration complaints will be handled in accordance with Section 4.5.1 of the OEMP and the Community Communication Strategy (CCS).

4.7. Non-Compliances, Non-Conformances, and Corrective Actions

Non-compliance, non-conformances and resulting corrective actions are to be managed in accordance with Section 6.4 of the OEMP.

Appendix A Compliance Table

A.1 EPBC Act Approval

The EPBC Act approval for the MPW Concept was granted by DotEE (now DCCEEW) in September 2016 (No. 2011/6086). This approval was provided for the impacts on listed threatened species and communities (Sections 18 and 18A of the EPBC Act) and Commonwealth land (Sections 26 and 27A of the EPBC Act). The operation of the Development would be consistent with the EPBC Act Approval conditions.

The specific EPBC approval noise conditions and commitments relating to this ONMP are identified below.

Table A- 1 ONMP conditions from the Commonwealth 2011/6086 conditions of approval

Condition	Requirement	ONMP Section
6	Sections of the OEMP relating to noise must be prepared by a suitably qualified expert and must:	This ONMP
	a) be consistent with the Noise and Vibration Provisional Environmental Management Framework (2 July 2014), provided at Appendix O to the finalised EIS	
	b) incorporate all measures 5U to 5AJ (OEMP only) from Table 7.1 of the finalised EIS that are described as 'mandatory'	Section 3 Section 4
	c) explain how all measures 5U to 5AJ from Table 7.1 of the finalised EIS that are described as 'subject to review' have been addressed	Section 3 Section 4
	d) be approved by the Minister or a relevant New South Wales regulator.	TBC

A.2 EP&A Act Consent

The Development was approved under Part 4, Division 4.7 of the EP&A Act (SSD 7709 as modified, 11 November 2019).

The MPW Stage 2 CoC include provisions relating to the preparation and content expectations of this ONMP. These requirements and where they are addressed are provided below. Conditions have been separated into Primary Conditions, being those specific to the development of the OEMP, and Secondary Conditions, being those which are related to the environmental aspects associated with this plan.

Table A- 2MPW Stage 2 (SSD 7709) Condition Compliance Table

Condition	Requirement	ONMP Section
Primary Conditions		
B136	Prior to commencement of operation, the Applicant must prepare an Operational Noise Management Plan (ONMP) and submit it to the Planning Secretary for approval. The ONMP must be prepared by a suitably qualified and experienced person(s).	This ONMP
B137	The ONMP must for part of the OEMP and, in addition to the general management plan requirements listed in **Conditions C5** and **C6**, the ONMP must include monitoring and reporting as required under **Conditions B139**, **B140** and **B141**.	Section 4 and OEMP
B138	Prior to construction of the freight terminal, freight village and each warehouse, the Applicant must submit to the Secretary a Noise Assessment for Mechanical Plant and other noisy equipment to demonstrate that plant and equipment has been selected to meet the overall noise limits specified in **Table 4**.	Section 4.1.1
B139	The Applicant must carry out noise monitoring of mechanical plant and other noisy equipment for a minimum period of one week where valid data is collected following operation/ occupation of the freight terminal, freight village and each warehouse. The monitoring program must be carried out by a suitably qualified and experienced person(s) and a **Monitoring Report for Mechanical Plant** must be submitted to the Planning Secretary within two months of operation of the freight terminal and occupation of each tenancy to verify predicted mechanical plant and equipment noise levels.	Section 4.1.1

Condition	Requirement	ONMP Section
B140	Within 12 months of operation of the intermodal terminal facility; occupation of the first warehouse, 50% occupation of the site and 100% occupation of the site, or as otherwise agreed by the Planning Secretary, the Applicant must undertake **Operational Noise Monitoring** to compare actual noise performance of the project against predicted noise performance and prepare an **Operational Noise Report** to document this monitoring. The Report must include, but not necessarily be limited to: (a) noise monitoring to assess compliance with the predicted operational noise levels and the noise limits specified in **Table 4**; (b) a validation by predictive modelling of the operational noise levels in terms of criteria and noise goals established in the Road Noise Policy (RNP, EPA, 2001); (c) sleep disturbance impacts compared to those determined in documents specified under **Condition A3**; (d) impacts associated with annoying characteristics such as prominent tonal components, impulsiveness, intermittency, irregularity and dominant low-frequency content; (e) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which project noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers; (f) any required recalibrations of the noise model taking into consideration factors such as actual traffic numbers and heavy vehicle proportions; (g) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of all feasible and reasonable mitigation measures; (h) identification of additional measures to those predicted in the documents specified under **Condition A3**, that would be implemented with the objective of meeting the criteria outlined in the RNP and NPI (EPA, 2017), including timing of implementation; (i) details of any complaints and enquiries received in relation to operational noise generated by the project between the date of commencement of operation and the date the report was prepared; and (j) procedures for the management of operational noise and vibration complaints. The Operational Noise Report is to be verified by a suitably qualified and experienced noise and vibration expert. The Operational Noise Report must be submitted to the Planning Secretary and the EPA within 60 days of completing the operational noise monitoring referred to in (a) above or as otherwise agreed by the Planning Secretary.	Section 3.5 and Section 4.1.1

B140A	The Applicant is to conduct noise impact monitoring and residual noise impact mitigation in accordance with the following requirements: (a) the Applicant is to engage a Suitably Qualified and Experienced Acoustic Engineer to undertake a noise survey at R1 No. 9 Casula Road, Casula (or an equivalent location if access is denied). Evidence of access being sought and access being denied must be provided to the Planning Secretary before surveying is undertaken at an equivalent location; (b) the noise survey must be undertaken not less than three months and not more than six months from commencement of operation; (c) the noise survey is to be conducted in accordance with the Noise Policy for Industry ((NPfI) EPA 2017) to determine: i. the LAeq, 15min noise level arising from use of the Precinct in the EPA-defined day, evening and night-time periods (excluding rail operations on the rail link); and ii. the LAFmax noise level arising from use of the Precinct in the EPA-defined night-time period; (d) the noise survey must be both attended and unattended. The attended survey must be for a period of 4 contiguous hours in a single day, evening and night-time period conducted on days when the Precinct is likely to be operating at maximum capacity at the time. The unattended survey must be conducted for a period of 7 contiguous days not adversely affected by weather and must include the days of the attended surveys; (e) a copy of the results of the noise survey must be provided to the Planning Secretary for information within one month of completion of the survey; (f) if the noise survey identifies an exceedance arising from use of the Precinct of the LAeq, 15min and the LAFmax noise limits specified in condition B140A (the residual noise impacts), the Applicant is to conduct an assessment as follows: i. outlining and justifying the application of the approach to “sustained” exceedance having regard to the number of observed exceedances; ii. the identification of the likely source(s) of the residual noise impact; iii. an assessment of the significance of the LAFmax noise level events in accordance with Section 2.5 of the NPfI; iv. an assessment of the significance of the residual noise impacts in accordance with Table 4.1 of Section 4 of the NPfI; v. the feasible and reasonable source and pathway noise mitigation measures that have been implemented in respect of the source(s) of the residual noise impacts; vi. any further feasible and reasonable transmission pathway noise mitigation measures which are capable of being adopted to reduce residual noise impacts;	Section 3.5 and Section 4.1.1

vii. feasible and reasonable receiver based treatments which can be offered to affected property owners in accordance with Table 4.2 of Section 4 of the NPfI;

viii. an assessment of whether there are additional residential properties in Casula other than R1 which are considered to also be affected by residual noise impacts and the preparation of a list of property addresses of those properties likely to be affected;

ix. within 3 months of the attended noise survey, the preparation of a Preliminary Residual Noise Impact Report summarising the findings including a draft Proposal for At Property Noise Mitigation Plan for R1 and submit a copy of the report to the Planning Secretary for information;

(g) in respect of the properties identified in (f) above, and within 12 months of the Residual Noise Impact Report being completed (or as otherwise agreed by the Planning Secretary), the Applicant is to complete a Residual Noise Impact Mitigation Plan to investigate and assess feasible and reasonable receiver based treatments for those properties and detail a Proposal for At Property Noise Mitigation Plan for each property in accordance with subclauses (a)-(d), and provide a copy of these plans to the Planning Secretary for information.

(h) for all properties identified in the Residual Noise Impact Mitigation Plan as requiring feasible and reasonable receiver based treatments, the Applicant must:

i. liaise with identified owners of properties;

ii. provide the owners with a copy of the Proposal for At Property Noise Mitigation Plan for their respective property;

iii. within 3 months of the Plan being completed, make an offer to the respective owners to affect the receiver based treatments specified in the Proposal for At Property Noise Mitigation Plan within an agreed time line;

iv. if an agreement is reached with the property owner, execute the recommended mitigation treatment at no cost to the property owner, within an agreed time.

(i) the Applicant must provide to the Planning Secretary a copy of the reports and plans identified in this condition with a summary of the state of agreements reached with property owners, and a summary of the execution of at source, in transmission pathway and at receiver mitigation every 6 months commencing from the completion of the Plans required at (g) until all mitigations are completed;

(j) at 12 monthly intervals, until a date which is 12 months after the Site has become fully operational (as determined with the Planning Secretary's agreement), commencing 12 months after the completion of the first noise survey, the Applicant must engage a Suitably Qualified and Experienced Acoustic Engineer to undertake a further noise survey, assessment and report at R1 No. 9 Casula Road, Casula (or an equivalent location if access is denied) following the process in clauses (a)-(e) to determine whether there has been a substantial change in the noise levels specified in (c). Where such a substantial change has occurred, the plans referred to in (g) must be updated and the requirements in (h)-(i) must be implemented in respect of properties which have not been offered noise mitigation treatment to date; and

Condition	Requirement	ONMP Section
	(k) a copy of all reports and plans required under (j) are to be provided to the Planning Secretary within the relevant timelines prescribed under sub clauses (e), (f) ix, (g) and (i). *Note: In respect of requirements in this condition being in common with those in condition B140, the information that is common may be used to satisfy the requirements of both conditions.* *Note: In this condition, 'feasible and reasonable' has the meaning given in Fact Sheet F of the Noise Policy for Industry 2017.*	
B141	The Applicant must install and maintain a rail noise monitoring system on the rail link at the commencement of operation to continuously monitor the noise from rail operations on the rail link. The system must capture the noise from each individual train passby noise generation event, and include information to identify: (a) time and date of freight train passbys; (b) imagery or video to enable identification of the rolling stock during the day and night; (c) LAeq(15hour) and LAeq(9hour) from rail operations; and (d) LAF(max) and SEL of individual train passbys, measured in accordance with ISO3095; or (e) other alternative information as agreed with, or required by, the Planning Secretary. The results from the noise monitoring system, must be publicly accessible from a website maintained by the Applicant. The noise results from each train must be available as live data on the website, unless unforeseen circumstances (i.e. a system malfunction) have occurred. The LAeq(15hour) and LAeq(9hr) results from each day must be available on the website within 1 hour of the period ending.	Section 3.4.2 and Section 4.1.1.
B142	Prior to the commencement of operation, the Applicant must submit to the Planning Secretary for approval, **justification supporting the appropriateness of the location for rail noise monitoring**, including details of any alternative options considered and reasons for these being dismissed. The noise monitoring location(s) must be west of the MPW Stage 2 connection to the rail link constructed under MPE Stage 1.	Section 3.4.2 and Section 4.1.1.

Condition	Requirement	ONMP Section
B143	From the commencement of operation, the Applicant must provide an annual **Rail Noise Monitoring Report** to the Planning Secretary for a period of 5 years, or as otherwise agreed with the Planning Secretary. The Planning Secretary shall consider the need for further reporting following a review of the results for year 5. ***Note**: the above rail noise monitoring and reporting conditions may be satisfied by the implementation of relevant monitoring and reporting conditions under the MPE Stage 1 consent.*	Section 3.4.2 and Section 4.2.

Condition	Requirement	ONMP Section
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include: (a) detailed baseline data; (b) details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; (d) a program to monitor and report on the: (i) impacts and environmental performance of the development (ii) effectiveness of the management measures set out pursuant to paragraph (c) above; (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; (h) roles and responsibilities for implementing the plan; and (i) a protocol for periodic review of the plan.	Section 3 and Section 4.

Condition	Requirement	ONMP Section
Secondary Conditions		
B74	Noise barriers must minimise visual and amenity impacts and be designed in accordance with the Noise wall design guideline – Design guideline to improve the appearance of noise walls in NSW (RMS, March 2016).	
B129	Prior to the commencement of operation of any part of the development, the Applicant must construct a 5 m high noise wall along the entire length of the western internal road as shown in Appendix 1 (as detailed in the EIS and RtS Noise and Vibration Impact Assessment modelling).	
B130	The permitted hours of operation are detailed in Table 3 of the consent.	

Condition	Requirement	ONMP Section

B131 The noise generated by the development must not exceed the noise limits in Table 4 which are generated by the overall precinct operations (defined as all activities approved for MPW and MPE).

Table 4: Operational Noise Limits dB(A)

Location (residential receivers)	Day $L_{Aeq,15\ minute}$	Evening $L_{Aeq,15\ minute}$	Night $L_{Aeq,15\ minute}$	Night LAFmax Sleep Arousal Screening Level
Casula	46 dB	44 dB	39 dB	52 dB
Glenfield	49 dB	46 dB	42 dB	52 dB
Wattle Grove	44 dB	42 dB	42 dB	52 dB
Wattle Grove North	41 dB	41 dB	41 dB	52 dB

Notes: *To determine compliance with the $L_{Aeq,15\ minute}$ noise limits, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 m of a dwelling where the dwelling is more than 30 m from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 7 of the NPI). The modification factors in Fact Sheet C of NPI must also be applied to the measured noise levels where applicable.*

To determine compliance with the LAFmax Sleep Arousal Screening Level in Table 4 above, noise from the project is to be measured at 1 m from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 7 of the NPI).

The noise emission limits identified above apply under meteorological conditions of:

(i) wind speeds of up to 3 m/s at 10 m above ground level; or

(ii) 'F' atmospheric stability class.

Condition	Requirement	ONMP Section
B132	Terminal and rail port shuttle operations must comply with the following: (a) best practice plant for the intermodal terminal facility, including electronic automated container handling equipment or equipment with equivalent sound power levels; (b) locomotives using the development must meet the air emissions standards and noise requirements as specified in the Moorebank Precinct East – Stage 1 Project: Best Practice Review (SSD 14-6766), prepared by Arcadis dated 20 September 2017); (c) wagons using the development must incorporate available best practice noise technologies, such as “onepiece” freight bogies or three-piece freight bogies fitted with cross-bracing or steering arms; and permanently coupled ‘multi-pack’ steering wagons using Electronically Controlled Pneumatic (ECP) braking with a wire based distributed power system (or better practice technology); (d) automatic rail lubrication equipment must be used in accordance with ASA Standard T HR TR 00111 ST Rail Lubrication and top of rail friction modifiers, where required; and (e) the rail cross sectional profile must be maintained in accordance with ETN–01-02 Rail Grinding Manual for Plain Track to ensure the correct wheel/ rail contact position and hence to encourage proper rolling stock steering.	Section 3.4.2.
B133	For all terminal and rail operations, a monitoring and performance management regime is to be established in accordance with the conditions of this consent, including but not limited to the requirements of conditions B140- B143, with the objective of ensuring there is no deterioration in noise performance and continual improvement in rail noise outcomes from rail operations throughout the life of the development.	Section 3.4.2 and Section 4.1.1.

A.3 Final Compilation of Management Measures

The FCMMs were prepared as part of the consolidated assessment clarification responses. A list of the FCMMs as relevant to the operations, and how they have been applied in the ONMP are provided below.

Table A- 3 FCMM Compliance Table

FCMM Requirement		Where Addressed
2B	The ambient noise monitoring surveys undertaken within Casula, Wattle Grove and Glenfield would be continued throughout the construction and operation of the Proposal (with annual reporting of noise results up to two years beyond the completion of the Proposal).	Table 4-1
2C	In the event of any noise or vibration related complaint or adverse comment from the community, noise and ground vibration levels would be investigated. Remedial action would be implemented where feasible and reasonable.	Section 4.6
2D	Noise mitigation measures would be implemented to affected residential receivers at Casula which are subject to noise impacts above the established noise criteria. These mitigation measures could include (but are not limited to) attenuation at the receiver (i.e. treatment of dwellings) and/or attenuation at the source (i.e. installation of a noise wall on the Proposal site). The need for the selection of noise mitigation measures, and timing for implementation, would be subject to noise monitoring during operations and further modelling to be undertaken following the commencement of operations. Provision has been made for a noise wall in the event that it is deemed necessary during operations	Table 3-7, Table 4-1 and Table 4-2
2E	Best practice noise mitigation measures would be implemented for the operational phase of the Proposal including: • Noise monitoring (refer to mitigation measures 2B and 2C above) • A gate appointment system would be implemented to minimise truck loading/unloading wait times and resultant queueing. Trucks would be turned away from facility if arriving too early • Truck marshalling lanes would be included to minimise congestion and queueing • The provision of information signs and communication of MPW idle reduction policy.	Table 3-7

FCMM Requirement		Where Addressed
2G	SIMTA[1] would restrict port shuttle locomotives that do not meet the noise requirements of Environment Protection Licences (EPLs) 3142 and 12208 from entering the MPW Stage 2 rail link.	Table 3-7

Note 1. Qube now manages the IMT.