



Augusta Street Warehouse and Distribution Centre

Operational Noise Impact Assessment – MOD2

The Trustee for Huntingwood Property Trust

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Sydney NSW 2000

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Basis of Report

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Table of Contents

Basis of Report	i
1.0 Overview	5
2.0 MOD2 Design Changes	5
3.0 Operational Noise Limits	6
4.0 Operational Noise Assessment	6
4.1 Operational Noise Modelling	6
4.1.1 Operational Noise Sources	6
4.1.2 Noise Sources with Potential for Sleep Disturbance	10
4.1.3 Summary of Modelled Operational Scenarios	10
5.0 Predicted Noise Levels	15
5.1 Sleep Disturbance	16
6.0 Conclusion	17

Tables

Table 1	Operational Noise Limits	6
Table 2	On-Site Vehicle Traffic Data – Worst-case 15-Minute Period – MOD2	7
Table 3	Comparison of Assessed Vehicle Movements	8
Table 4	Typical Hardstand and Loading Dock Noise Sources	9
Table 5	Mechanical Plant	9
Table 6	Sleep Disturbance Noise Events – LAmax Sound Power Levels	10
Table 7	Summary of Modelled Realistic Worst-Case 15-minute Operational Scenarios – MOD2	12
Table 8	Operational Noise Assessment – MOD2	15
Table 9	Sleep Disturbance Assessment	16

Figures

Figure 1	MOD2 Site Masterplan	5
Figure 2	Modelled Noise Sources MOD2 – Overview	11



1.0 Overview

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by ESR Australia (ESR) to assess the operational noise impacts to accompany a Section 4.55(1A) Modification Application to modify the State Significant Development (SSD) consent to the Augusta Street Warehouse and Distribution Centre (SSD-36138263).

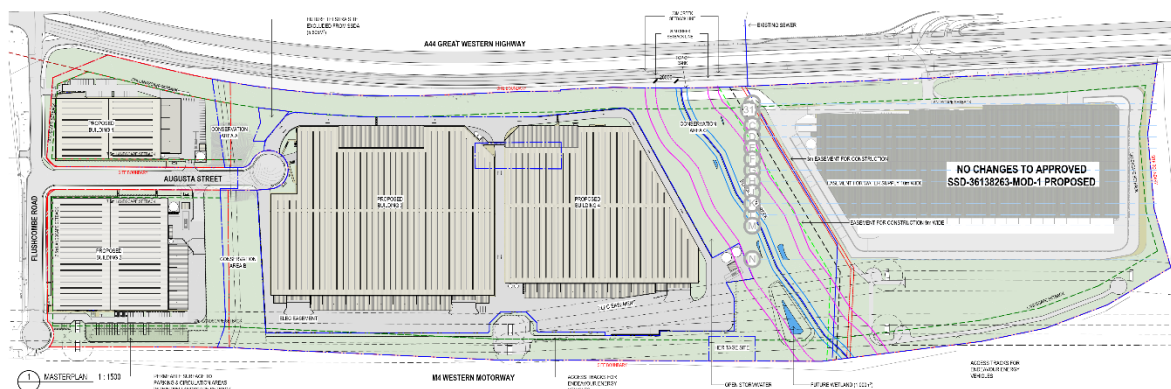
ESR obtained Development Consent SSD-36138263 from the Department of Planning, Housing and Infrastructure (DPHI) in December 2024. A Noise Impact Assessment (SSDA NIA) was prepared as part of the SSD-36138263 application (*SLR Report 610.30770-R01-v2.1 dated 9 March 2024*) and a modification to the layout (MOD1), particularly relating to the warehouse 3 and 4 access routes was prepared (*SLR Report 610.30770-R03-v1. Dated 19 September 2025*) and approved in October 2025.

The design of the development has been updated as part of a modification (MOD2) to Development Consent SSD-36138263. This report presents a review of the potential operational noise impacts for the MOD2 and compares the predicted noise levels to the noise limits for the site, as specified in the Development Consent SSD-36138263.

2.0 MOD2 Design Changes

The MOD2 scope proposes changes to Warehouses 1–4 within the Augusta Industrial Estate. These works comprise minor changes to internal warehouse and office configurations, updates to the warehouse and office façade designs, awnings, docks, signage, external lighting, and the construction of a skywalk access between Warehouses 3 and 4. Minor changes are also proposed to vehicular accessways and car parking, with coordinated updates for on lot landscaping. Further, consent is sought for tree removal within the road reserve of the Great Western Highway to facilitate approved upgrades works for the Flushcombe Road / Great Western Highway intersection.

Figure 1 MOD2 Site Masterplan



3.0 Operational Noise Limits

The operational noise limits outlined in Condition B25 of the Development Consent are shown in **Table 1**.

Table 1 Operational Noise Limits

Location	Day LAeq(15minute)	Evening LAeq(15minute)	Night LAeq(15minute)
R01 – R05, R11	53	43	41
R06 – R08	52	43	39
R09	54	48	43
R10	58	48	45
R12	63	53	48
R13 (Place of Worship)	48		
Industrial	68		
Commercial	63		

4.0 Operational Noise Assessment

4.1 Operational Noise Modelling

The SoundPLAN noise model prepared for the SSDA NIA has been updated for the MOD2 design and operations.

4.1.1 Operational Noise Sources

The development comprises four single storey warehouse buildings and one two storey warehouse building with associated ancillary offices, roads, heavy vehicle access, hardstands, light vehicle access and carparking. Vehicles accessing warehouse 1 to 4 would access the site from Augusta Street, with vehicle access to warehouse 5 via the Great Western Highway. Heavy vehicles would park in the hardstand loading areas while they are loaded/unloaded, before exiting the site. Light vehicle carparking is provided for each warehouse and would generally be used by staff.

Internal noise sources would generally be minimal and associated with typical logistical, distribution, warehousing and office space activities. There would be no use of manufacturing equipment within any warehouses.

Roof mounted mechanical plant would be provided for each office. The development would operate 24 hours a day.

The main sources of operational noise at the development are expected to include:

- On-site light and heavy vehicle movements
- Loading dock activities in hardstands
- Mechanical plant
- Off-site vehicle movements.

A summary of the expected noise sources and reasonable worst-case assessment scenarios associated with the operation of the development is provided below.



4.1.1.1 On-Site Traffic

Peak vehicle volumes specific to the updated warehouse 1 to 4 designs have been provided. As outlined **Section 1.0** and in the updated Transport and Access Impact Assessment (TAIA), the proposed modified development would result in a reduction in traffic generation of some 9 vehicles per hour two-way during the weekday AM and PM peak periods compared to the approved development.

The modelled on-site vehicles are representative of the expected peak 15-minute period for the daytime, evening, and night-time; and are summarised in **Table 2**. Heavy vehicles have been modelled in hardstands and on-lot truck access roads. Light vehicles have been modelled in car parks and on-lot light-vehicle access roads. A comparison of MOD2 vehicle movements compared to those assessed in the approved SSDA is provided in **Note 1**: **Total vehicles, includes both inbound and outbound vehicles. Volumes are rounded up to whole numbers for display purposes.**

Table 3.

Table 2 On-Site Vehicle Traffic Data – Worst-case 15-Minute Period – MOD2

Vehicle Type	Location	Sound Power Level (dBA)	Vehicle Speed (km/h)	Number of Vehicles in Worst-case 15-minute Period ¹		
				Daytime (7am to 6pm)	Evening (6pm to 10pm)	Night-time (10pm to 7am)
Warehouse 1						
Heavy trucks	Loading docks	108 ²	10	1	0	0
Medium trucks	Loading docks	97 ³	10	1	1	1
Light vehicles	Car park	90 ⁴	20	2	3	1
Warehouse 2						
Heavy trucks	Loading docks	108 ²	10	1	0	0
Medium trucks	Loading docks	97 ³	10	1	2	1
Light vehicles	Car park	90 ⁴	20	4	5	3
Warehouse 3						
Heavy trucks	Access routes	108 ²	25	2	1	1
	Loading docks		10			
Medium trucks	Access routes	97 ³	25	5	1	0
	Loading docks		10			
Warehouse 4						
Heavy trucks	Access routes	108 ²	25	2	0	0
	Loading docks		10			
Medium trucks	Access routes	97 ³	25	4	1	1
	Loading docks		10			
Warehouse 3-4						
Light vehicles	Car park	90 ⁴	20	16	11	5



Vehicle Type	Location	Sound Power Level (dBA)	Vehicle Speed (km/h)	Number of Vehicles in Worst-case 15-minute Period ¹		
				Daytime (7am to 6pm)	Evening (6pm to 10pm)	Night-time (10pm to 7am)
Warehouse 5						
Heavy trucks	Access routes	108 ²	20	5	2	1
	Loading docks and Entry/Exit		10			
	Ramps	111 ²	10			
Medium trucks	Access routes	97 ³	20	11	3	1
	Loading docks and Entry/Exit		10			
	Ramps	100 ³	10			
Light vehicles	Car park	90 ⁴	20	20	14	7

Note 1: Total vehicles, includes both inbound and outbound vehicles. Volumes are rounded up to whole numbers for display purposes.

Table 3 Comparison of Assessed Vehicle Movements

Vehicle Type	Number of Vehicles in Worst-case 15-minute Period ¹					
	Approved SSDA			MOD2		
	Daytime	Evening	Night-time	Daytime	Evening	Night-time
Warehouse 1						
Heavy trucks	1	0	0	1	0	0
Medium trucks	1	1	1	1	1	1
Light vehicles	2	3	1	2	3	1
Warehouse 2						
Heavy trucks	1	0	0	1	0	0
Medium trucks	2	2	1	1	2	1
Light vehicles	4	6	3	4	5	3
Warehouse 3-4						
Heavy trucks	4	1	1	4	1	1
Medium trucks	9	3	1	9	2	1
Light vehicles	17	12	6	17	11	6
Warehouse 5						
Heavy trucks	5	2	1	5	2	1
Medium trucks	11	3	1	11	3	1
Light vehicles	21	14	7	20	14	7

Note 1: Total vehicles, includes both inbound and outbound vehicles. Volumes are rounded up to whole numbers for display purposes.



4.1.1.2 Hardstands and Loading Docks

Details of the hardstand and loading dock noise sources are shown in **Table 4**. The various sources have been modelled in the hardstand areas (see **Figure 2**) based on the corresponding number of heavy vehicle movements in the reasonable worst-case 15-minute periods (see **Table 2**). Noise sources associated with the operations proposed at the Level 1 and Level 2 hardstand areas of warehouse 5 have been modelled based on the elevations shown in the architectural plans.

Table 4 Typical Hardstand and Loading Dock Noise Sources

Noise Source	Sound Power Level (dBA) ¹	Typical Duration of Use in Worst-case 15-minute Period ²
All Warehouses		
Truck reversing including alarm	107 ³	30 seconds ²
Forklift reversing alarm	102 ³	90 seconds ²
Air brakes	118	1 second ²
Roller door	94	15 seconds
Electric forklift	84	900 seconds ²

Note 1: SWLs based on measurement data, where appropriate.

Note 2: Duration is applied per vehicle, based on the number of sources considered in the modelled scenarios, as shown in.

Note 3: SWL includes a -3 dB reduction due to alarms being discrete events.

4.1.1.3 Internal Activities

The future usage of the warehouses would likely be associated with typical warehousing and distribution uses. Internal noise-generating activities at all warehouses are expected to generally be minimal. Internal noise-generating activities at all warehouses are generally expected to be minimal. A sound power level of 75 dBA has been applied at the loading dock openings in the facades of each warehouse to account for potential break-out noise from general internal activities, based on observations of loading activities at similar facilities. Warehouse roller shutter doors are assumed to be open during loading dock activities.

4.1.1.4 Mechanical Plant

At this early stage of the development the specific mechanical plant requirements for each warehouse have not been determined. Assumptions have been made that air-conditioning equipment would serve each office buildings and extraction fans would be required on each warehouse roof.

External mechanical plant has been modelled with indicative SWL data for equipment typical to a development of this size, as shown in **Table 5**. The locations of the sources are shown in **Figure 2**.

Table 5 Mechanical Plant

Noise Source	Sound Power Level (dBA)	Location
All Warehouses		
Air-conditioning equipment	78	Office roofs (one unit per office) (Figure 2). Expected operational hours are 8 am to 6 pm.
Extraction fans	90 (cumulative per warehouse)	Warehouse Roof. Assumed to operate 24/7.



4.1.2 Noise Sources with Potential for Sleep Disturbance

As the development is proposed to operate 24-hours a day, noise emissions during the night-time require assessment for potential sleep disturbance at the nearest residential receivers. The details of typical activities with the potential to cause sleep disturbance are shown in **Table 6**.

Table 6 Sleep Disturbance Noise Events – L_{Amax} Sound Power Levels

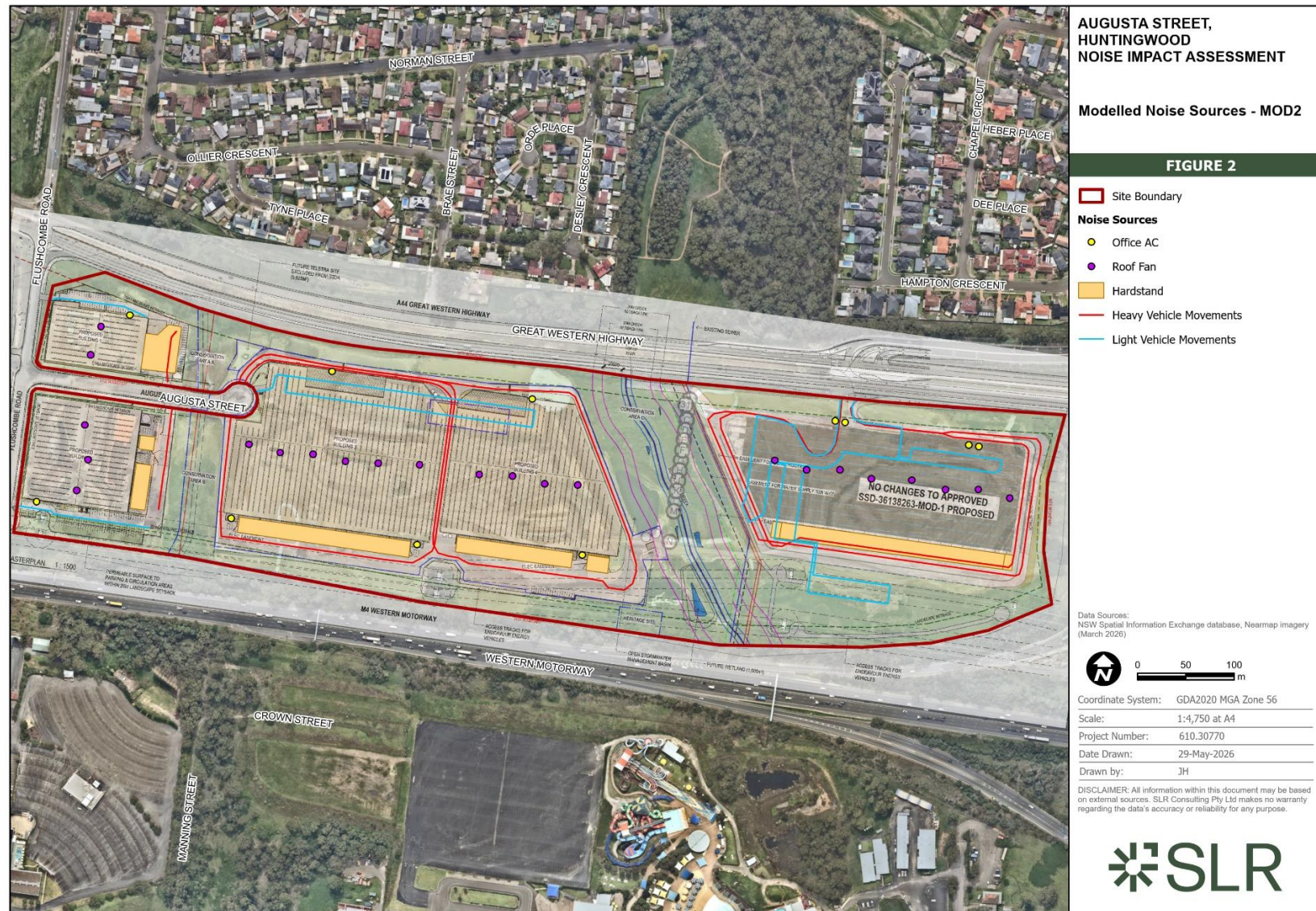
Noise Source	Sound Power Level L _{Amax} (dBA)
Heavy truck movement	111
Heavy truck airbrake	118
Truck reversing alarm	110
Forklift reversing alarm	105
Roller door	94

4.1.3 Summary of Modelled Operational Scenarios

The modelled realistic worst-case 15-minute operational scenarios, based on the activities, noise sources and sound power levels detailed above, are summarised in **Table 7**. The modelled source locations for the MOD2 masterplan are shown in **Figure 2**.



Figure 2 Modelled Noise Sources MOD2 – Overview



H:\Projects\SLR\610-SrvSYD\610-SYD\610.30770.00000 Augusta Street, Huntingwood\06 SLR Data\01 CADGIS\GIS\61030770_ArcPro\Project.aprx\61030770_G02 Modelled Noise Sources



Table 7 Summary of Modelled Realistic Worst-Case 15-minute Operational Scenarios – MOD2

Warehouse	Noise Source/Location	Modelled Scenario		
		Daytime	Evening	Night-time
Warehouse 1	Heavy Vehicles - Truck access road and hardstand	1 heavy truck. 1 medium truck	1 medium truck.	1 medium truck.
	Loading dock activities - Hardstand Area	2 trucks reversing in hardstand area including 1 airbrake release at end. 2 electric forklift loading/unloading truck, including reversing alarms.	1 truck reversing in hardstand area. 1 electric forklift loading/unloading truck, including reversing alarms.	1 truck reversing in hardstand area. 1 electric forklift loading/unloading truck, including reversing alarms.
	Light Vehicles - Car park	2 light vehicles.	3 light vehicles.	1 light vehicle.
	Mechanical Plant - Office and Warehouse Roof	1 office air conditioning unit. 2 warehouse extraction fans.	2 warehouse extraction fans.	2 warehouse extraction fans.
	Internal Activities	Internal forklift operations modelled at roller doors when open during loading dock activities as per Section 4.1.1.3.		
Warehouse 2	Heavy Vehicles - Truck access road and hardstand	1 heavy truck. 1 medium trucks.	2 medium trucks.	1 medium truck.
	Loading dock activities - Hardstand Area	2 trucks reversing in hardstand area including 1 airbrake release at end. 2 electric forklift loading/unloading truck, including reversing alarms.	2 truck reversing in hardstand area. 2 electric forklift loading/unloading truck, including reversing alarms.	1 truck reversing in hardstand area. 1 electric forklift loading/unloading truck, including reversing alarms.
	Light Vehicles - Car park	4 light vehicles.	5 light vehicles.	3 light vehicles.
	Mechanical Plant - Office and Warehouse Roof	1 office air conditioning unit. 3 warehouse extraction fans.	3 warehouse extraction fans.	3 warehouse extraction fans.
	Internal Activities	Internal forklift operations modelled at roller doors when open during loading dock activities as per Section 4.1.1.3.		



Warehouse	Noise Source/Location	Modelled Scenario		
		Daytime	Evening	Night-time
Warehouse 3	Heavy Vehicles - Truck access roads and hardstands	2 heavy trucks. 5 medium trucks.	1 heavy truck. 1 medium trucks.	1 heavy truck.
	Loading dock activities - Hardstand Areas	7 trucks reversing in hardstand areas including 2 airbrake releases at end. 7 electric forklifts loading/unloading trucks, including reversing alarms.	2 trucks reversing in hardstand areas including 1 airbrake release at end. 2 electric forklifts loading/unloading trucks, including reversing alarms.	1 trucks reversing in hardstand areas including 1 airbrake release at end. 1 electric forklift loading/unloading trucks, including reversing alarms.
	Mechanical Plant – Offices and Warehouse Roof	4 office air conditioning units (1 per office). 6 warehouse extraction fans.	6 warehouse extraction fans.	6 warehouse extraction fans.
	Internal Activities	Internal forklift operations modelled at roller doors when open during loading dock activities as per Section 4.1.1.3.		
Warehouse 4	Heavy Vehicles - Truck access roads and hardstands	2 heavy trucks 4 medium trucks.	1 medium truck.	1 medium truck.
	Loading dock activities - Hardstand Areas	5 trucks reversing in hardstand areas including 2 airbrake releases at end. 5 electric forklifts loading/unloading trucks, including reversing alarms.	1 truck reversing in hardstand areas including 1 airbrake release at end. 1 electric forklift loading/unloading trucks, including reversing alarms.	1 truck reversing in hardstand areas including 1 airbrake release at end. 1 electric forklift loading/unloading trucks, including reversing alarms.
	Mechanical Plant – Offices and Warehouse Roof	2 office air conditioning units (1 per office). 4 warehouse extraction fans.	4 warehouse extraction fans.	4 warehouse extraction fans.
	Internal Activities	Internal forklift operations modelled at roller doors when open during loading dock activities as per Section 4.1.1.3.		
Warehouse 3-4	Light Vehicles – Undercroft Car park	17 light vehicles.	11 light vehicles.	6 light vehicles.



Warehouse	Noise Source/Location	Modelled Scenario		
		Daytime	Evening	Night-time
Warehouse 5	Heavy Vehicles – Truck access roads and hardstands	5 heavy trucks. 11 medium trucks.	2 heavy trucks. 3 medium trucks.	1 heavy truck. 1 medium truck.
	Loading dock activities – Hardstand Areas	15 trucks reversing in hardstand areas including 5 airbrake releases at end. 15 electric forklifts loading/unloading trucks, including reversing alarms.	4 trucks reversing in hardstand areas including 1 airbrake release at end. 4 electric forklifts loading/unloading trucks, including reversing alarms.	2 trucks reversing in hardstand areas including 1 airbrake release at end. 2 electric forklifts loading/unloading trucks, including reversing alarms.
	Light Vehicles – Car park	20 light vehicles.	14 light vehicles.	7 light vehicles.
	Mechanical Plant – Office and Warehouse Roof	4 office air conditioning units (1 per office). 8 warehouse extraction fans.	8 warehouse extraction fans.	8 warehouse extraction fans.
	Internal Activities ¹	Internal forklift operations modelled at roller doors when open during loading dock activities as per Section 4.1.1.3.		



5.0 Predicted Noise Levels

The predicted operational noise levels for the MOD2 Masterplan development are summarised in **Table 8**.

The MOD2 Masterplan noise level predictions and comparison to the noise limits and SSDA NIA predicted result are shown in the table for comparison.

Table 8 Operational Noise Assessment – MOD2

Location	Receiver Type	Period	Noise Criteria	Predicted Noise Level LAeq(15minute) (dBA)		Exceedance (dB)	Compliance
				SSDA NIA	MOD2		
R01	Residential	Day	53	41	40	-	Yes
		Evening	43	37	36	-	Yes
		Night	41	35	35	-	Yes
R02	Residential	Day	53	45	45	-	Yes
		Evening	43	41	39	-	Yes
		Night	41	39	39	-	Yes
R03	Residential	Day	53	46	45	-	Yes
		Evening	43	41	39	-	Yes
		Night	41	39	38	-	Yes
R04	Residential	Day	53	47	46	-	Yes
		Evening	43	42	40	-	Yes
		Night	41	41	40	-	Yes
R05	Residential	Day	53	46	45	-	Yes
		Evening	43	41	41	-	Yes
		Night	41	41	41	-	Yes
R06	Residential	Day	52	44	42	-	Yes
		Evening	43	38	38	-	Yes
		Night	39	39	39	-	Yes
R07	Residential	Day	52	44	44	-	Yes
		Evening	43	38	38	-	Yes
		Night	39	38	38	-	Yes
R08	Residential	Day	52	39	40	-	Yes
		Evening	43	32	34	-	Yes
		Night	39	33	34	-	Yes
R09	Residential	Day	54	46	43	-	Yes
		Evening	48	40	37	-	Yes
		Night	43	38	36	-	Yes
R10	Residential	Day	58	44	42	-	Yes
		Evening	48	37	37	-	Yes
		Night	45	36	35	-	Yes



Location	Receiver Type	Period	Noise Criteria	Predicted Noise Level LAeq(15minute) (dBA)		Exceedance (dB)	Compliance
				SSDA NIA	MOD2		
R11	Residential	Day	53	43	43	-	Yes
		Evening	43	39	39	-	Yes
		Night	41	37	38	-	Yes
R12	Hotel	Day	63	46	44	-	Yes
		Evening	53	40	40	-	Yes
		Night	48	38	38	-	Yes
R13	Place of Worship	When in Use	48	44	44	-	Yes
R14	Industrial	When in Use	68	45	42	-	Yes
R15	Commercial	When in Use	63	51	51	-	Yes

The above assessment indicates that noise levels from the operation of the development are predicted to comply with the development consent noise limits at all receivers during all periods.

The predicted noise levels are generally consistent with the approved noise levels, with some minor differences at the nominated receivers due to the revised layout of the development associated with this modification and the approved MOD1 layout.

The MOD2 development is predicted to comply with the requirements of the NPfI and considered unlikely to result in noise impacts at the relevant sensitive receivers.

5.1 Sleep Disturbance

The predicted maximum noise levels at the most affected residential receiver during the night-time period are shown in **Table 9**.

Table 9 Sleep Disturbance Assessment

Location	Source	Maximum Noise Level LAmax (dBA)				Below Screening Level
		Sleep Dist. Screening Level	Predicted – SSDA NIA	Predicted – MOD2	Exceedance	
R01 (NCA01)	Heavy vehicle movements	59	51	54	-	Yes
	Heavy truck airbrake		55	53	-	Yes
	Truck reversing alarm		47	45	-	Yes
	Forklift reversing alarm		42	40	-	Yes
	Roller door		40	39	-	Yes
R02 (NCA01)	Heavy vehicle movements	59	56	56	-	Yes
	Heavy truck airbrake		59	59	-	Yes
	Truck reversing alarm		51	51	-	Yes
	Forklift reversing alarm		46	46	-	Yes
	Roller door		37	40	-	Yes



Location	Source	Maximum Noise Level LAmax (dBA)				Below Screening Level
		Sleep Dist. Screening Level	Predicted – SSDA NIA	Predicted – MOD2	Exceedance	
R04 (NCA01)	Heavy vehicle movements	59	58	57	-	Yes
	Heavy truck airbrake		55	54	-	Yes
	Truck reversing alarm		47	46	-	Yes
	Forklift reversing alarm		42	41	-	Yes
	Roller door		33	33	-	Yes
R06 (NCA02)	Heavy vehicle movements	54	55	56	2	No
	Heavy truck airbrake		49	51	-	Yes
	Truck reversing alarm		41	43	-	Yes
	Forklift reversing alarm		36	38	-	Yes
	Roller door		25	25	-	Yes
R09 (NCA03)	Heavy vehicle movements	60	47	47	-	Yes
	Heavy truck airbrake		55	54	-	Yes
	Truck reversing alarm		47	46	-	Yes
	Forklift reversing alarm		42	41	-	Yes
	Roller door		35	35	-	Yes
R10 (NCA04)	Heavy vehicle movements	63	47	47	-	Yes
	Heavy truck airbrake		55	55	-	Yes
	Truck reversing alarm		47	47	-	Yes
	Forklift reversing alarm		42	42	-	Yes
	Roller door		29	30	-	Yes

The above assessment indicates that noise levels from the operation of the development are consistent with the outcomes of the SSDA NIA and approved MOD1.

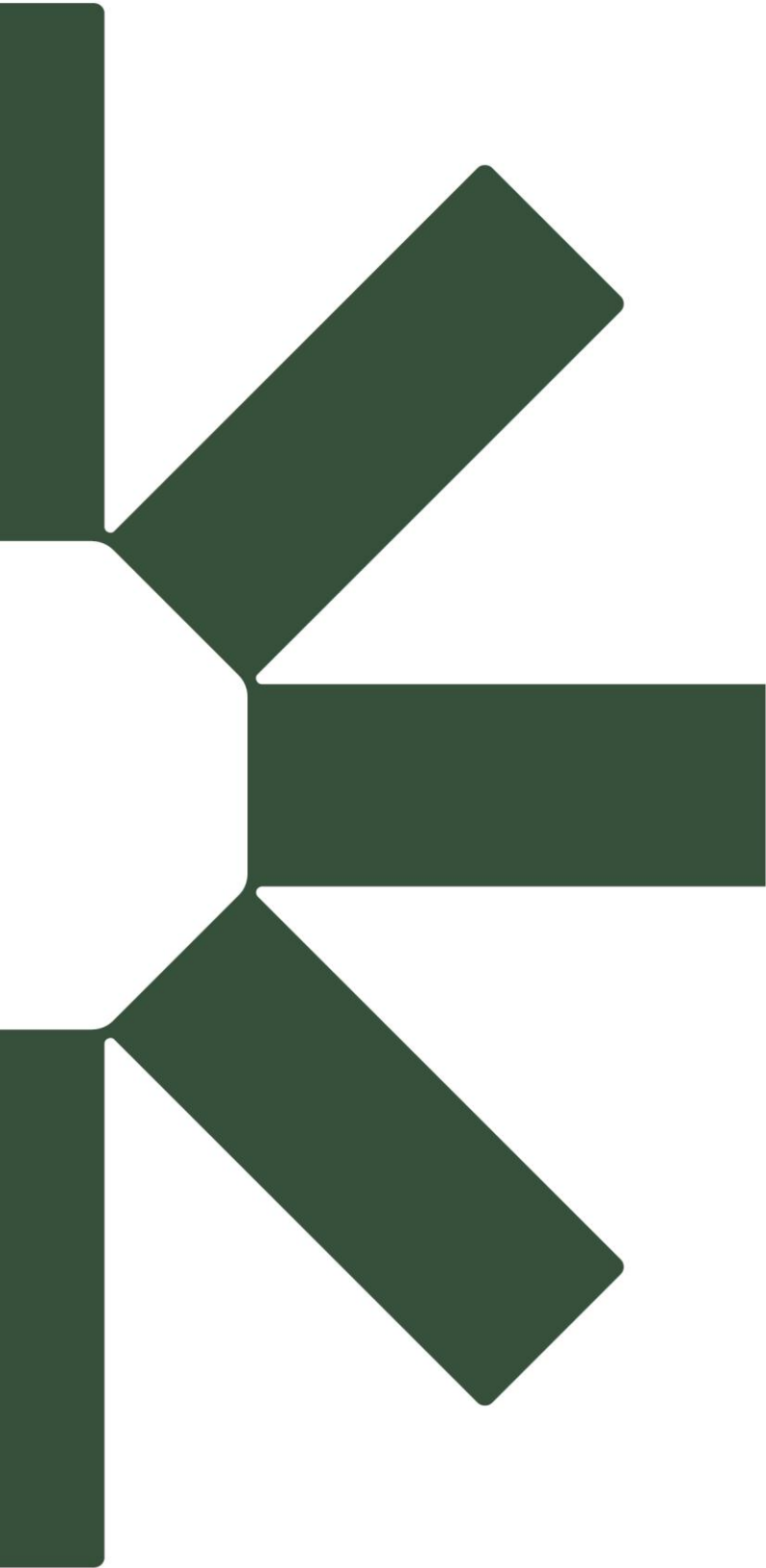
A detailed maximum noise assessment was conducted in the SSDA NIA which concluded that maximum noise events from truck movements during the night-time period would be unlikely to result in an adverse acoustic impact on the existing residences in NCA02, including R06. Based on the above, the predicted infrequent sleep disturbance exceedances are considered of low significance and do not warrant any further mitigation measures, consistent with the outcomes of the SSDA NVIA.

6.0 Conclusion

Operational noise emissions from the MOD2 Masterplan development have been assessed.

Operational noise levels from the MOD2 Masterplan development are predicted to comply with the relevant noise limits at all nearby receivers. The predicted noise levels are consistent with the approved development at these receivers and no additional noise mitigation or management measures are required and no additional noise mitigation or management measures are required.





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