
Appendix E

Noise and vibration technical information

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This appendix provides technical information relevant to the operational and construction noise and vibration assessments undertaken of the proposed design refinements described in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

The methodology and baseline environment for the operational and construction noise and vibration assessments are provided in Technical Paper 3 (Operational noise and vibration) and Technical Paper 4 (Construction noise and vibration) of the Environmental Impact Statement respectively.

Westmead metro station – construction

The proposed refinements include the regrading of Alexandra Avenue, between Hawkesbury Road and Hassall Street in Westmead. The scenarios assessed were:

- 'typical' work including supporting work such as importing and placing road base material
- 'peak' work including noise intensive equipment such as a concrete saw, vibratory roller or rockbreaker.

Table 1 and Table 2 provide a revised assessment of construction airborne noise impacts associated with the Westmead metro station site for the regrading works. Table 3 reflects the number of residential receivers predicted to be highly noise affected during the regrading works. The assessment has considered the worst-case scenario where equipment is working simultaneously in each scenario. In reality, there would be frequent periods when construction noise levels are much lower than the worst-case levels predicted and there would be times when no equipment is in use and no impacts occur.

Overall, there has been a slight increase in impacts compared to the assessment included in the Environmental Impact Statement. The 'peak' work of the proposed refinement is predicted to result in slightly more impacted receivers compared to the other daytime scenarios at the Westmead metro station construction site presented in the Environmental Impact Statement. This is primarily due to the additional noise intensive equipment required, such as rockbreakers and concrete saws. The number of receivers with impacts predicted is similar to, but slightly greater than, the 'peak' above-ground rail work presented in the Environmental Impact Statement, which includes slewing and rail tamping of the existing Sydney Train lines. The 'peak' noise intensive road work activities are expected to occur intermittently over a period of 10 weeks of the total construction period.

Table 1 Overview of NML exceedances (residential receivers) – Westmead metro station

Scenario	Activity	Indicative duration (months)	Number of receivers exceeding NML																			
			Standard hours daytime			Out of hours																
						Daytime out of hours			Evening			Night time			Sleep disturbance							
			1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB					
Road work	Typical	7	4	-	-	16	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Peak		150	39	5	372	71	17	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 2 Overview of NML exceedances (other sensitive receivers) – Westmead metro station

Scenario	Activity	Indicative duration (months)	Number of receivers exceeding NML																				
			Commercial			Child care			Educational			Place of worship			Public building			Medical			Passive recreation		
			1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB	1 10 dB	10 20 dB	>20 dB
Road work	Typical	7	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Peak		1	-	-	-	-	1	6	3	2	3	-	-	2	-	-	3	-	-	2	-	-

Table 3 Overview of highly noise affected receivers (residential) – Westmead metro station

Scenario	Activity	NCA01			NCA02		
		Day	Evening	Night	Day	Evening	Night
Road work	Typical	-	-	-	-	-	-
	Peak	6	-	-	10	-	-

Clyde stabling maintenance facility and Rosehill services facility – operation

Further design development since the exhibition of the Environmental Impact Statement has identified that the operational water treatment plant at the Clyde stabling and maintenance facility and Rosehill services facility would be relocated from adjacent to James Ruse Drive to within the Rosehill services facility on Unwin Street.

Sydney Metro is continuing to carry out design of the tunnel dive structure and associated infrastructure at Clyde stabling and maintenance facility. Additional aboveground services infrastructure would be required in the location previously identified in the Environmental Impact Statement for the operational water treatment plant, adjacent to James Ruse Drive (e.g. services infrastructure above the tunnel dive structure such as ventilation).

The operational noise impacts associated with the proposed refinements at Clyde stabling and maintenance facility and Rosehill services facility are discussed in Section 2.11 (Clyde stabling and maintenance facility and Rosehill services facility) of this Submissions Report. The operational airborne noise contours displaying these revised noise impacts are shown in Figure 1 and Figure 2.

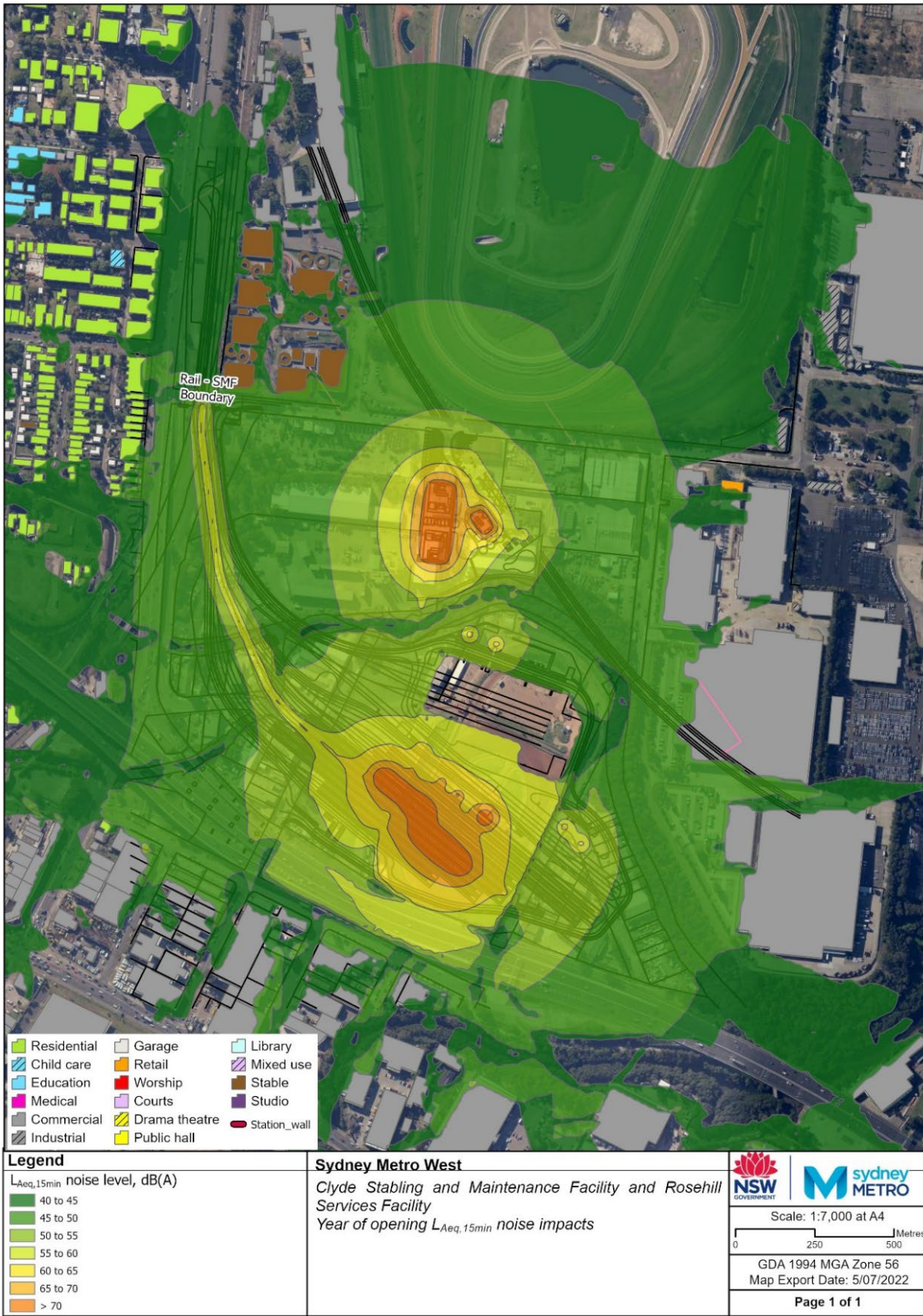


Figure 1 Clyde stabling and maintenance facility and Rosehill services facility - Year of opening noise impacts

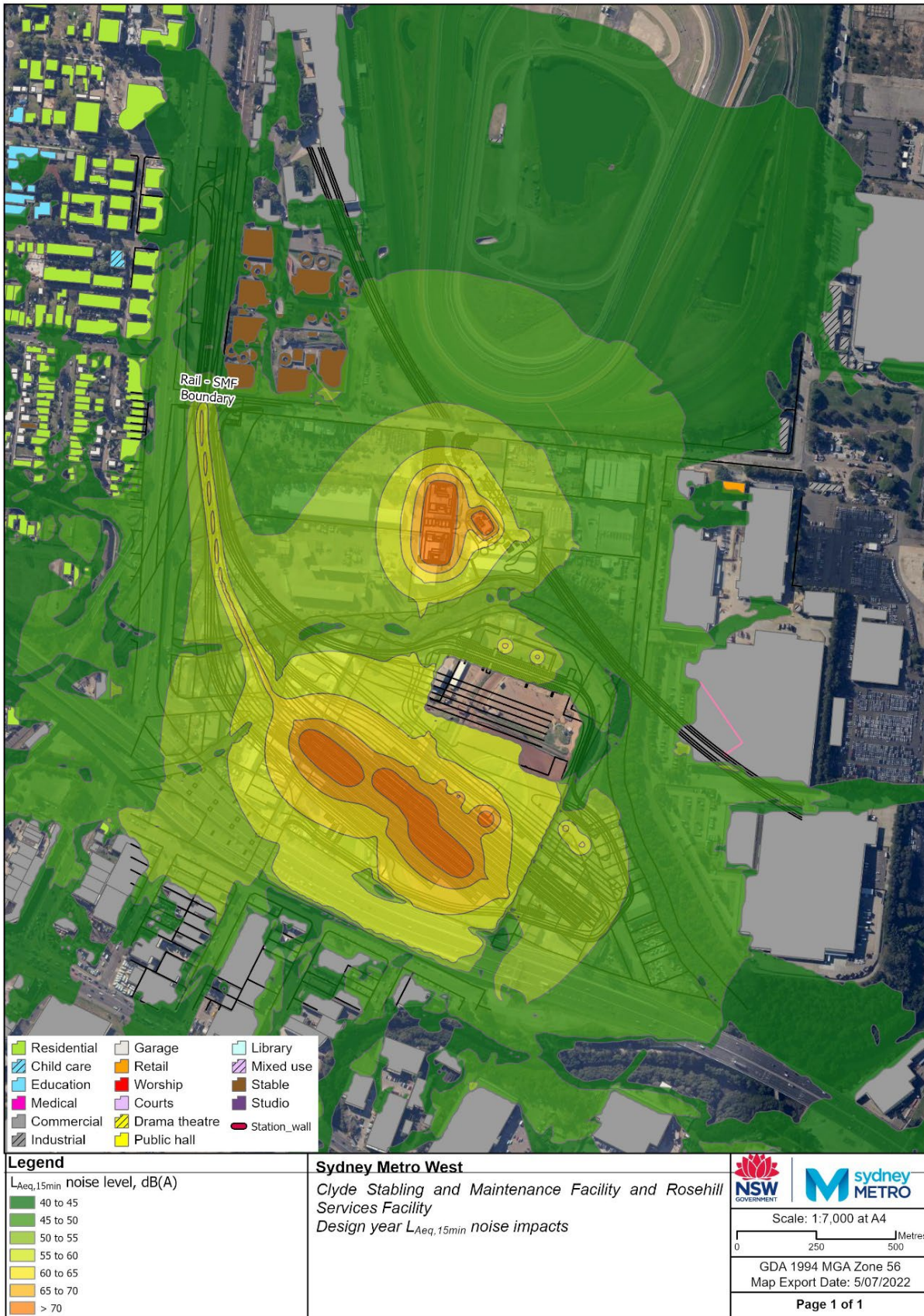


Figure 2 Clyde stabling and maintenance facility and Rosehill services facility - Year of design noise impacts

