

10 December 2021

Nicholas Lawler
CBRE Project Management
Level 21, 363 George Street
Sydney NSW 2000

Dear Nicholas,

New Liverpool Public School - Response to Submissions

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) has been engaged by the NSW Department of Education, School Infrastructure NSW to provide acoustic consultancy services for the proposed New Liverpool Primary School (NLPS). AECOM prepared a Noise and Vibration Impact Assessment (NVIA) (60624838-RPNV-06_02, dated 10 June 2021) which was submitted to the Department of Planning, Industry and the Environment (DPIE), as part of the Environmental Impact Statement (EIS).

AECOM recently updated the Noise and Vibration Impact Assessment (NVIA) in response to a submission received from the State Design Review Panel (SDRP) (60624838-RPNV-06_03, dated 29 October 2021).

Subsequently a request for information (RFI) was received from the Department of Planning, Industry and Environment (DPIE) which related to the NVIA. This letter sets out a response to this RFI.

2.0 Department of Planning, Industry and Environment (DPIE) request for information

2.1 RFI 8 Noise

The RFI relating to the NVIA is reproduced below.

Chapter 3.3.1 of the amended noise impact report, states that the Development Near Rail Corridors and Busy Roads – Interim Guideline, presents an internal criteria for sensitive receivers of 40 dB(A).

However, the report does not provide information regarding the internal noise levels that would likely be achieved within the pre-school and/or school buildings to comply with the above requirement (compared to the existing noise level at the rail corridor). Details of acoustic treatments to achieve this noise level have also not been described.

A detailed noise assessment is required to demonstrate that the proposed preschool, playground areas and the school buildings can achieve the required noise levels and are suitable to be constructed at this location, considering the criteria of the Development Near Rail Corridors and Busy Roads – Interim Guideline.

2.2 Response

The updated NVIA submitted with the RTS presented internal criteria for sensitive receivers (Section 3.3.1), details of acoustic treatments and the resultant internal noise levels (Section 5.6). For convenience all the relevant information from the updated NVIA has been reproduced below. In addition, information has been included regarding the playground areas.

2.2.1 Traffic noise criteria

Where an educational establishment or centre based child care facility is to be located on land in or adjacent to a rail or road corridor, the *State Environment Protection Policy (Infrastructure) 2007* (SEPP) requires the consent authority to consider any guidelines issued by the NSW Government. The *Development near Rail Corridors and Busy Road – Interim Guideline* was published by the Department of Planning in 2008 and presents noise criteria for educational institutions including child care centres. The criteria were presented in Table 10 of the NVIA, reproduced below.

Table 10 Traffic noise intrusion – Development Near Rail Corridors and Busy Roads – Interim Guideline

Type of occupancy	Noise criteria, dB(A)
Educational Institutions including child care centres	40

No specific criteria for recreational areas are presented in the *Development near Rail Corridors and Busy Road – Interim Guideline*. The *Road Noise Policy* presents noise criteria for open space, both active and passive uses. These criteria are applicable for proposed road projects, but are considered appropriate for use in new noise sensitive land use developments affected by traffic noise also. The *Road Noise Policy* notes that school playgrounds may include a mix of passive and active recreation areas. The Road Noise Policy criteria are presented in Table 1.

Table 1 Road traffic noise assessment criteria for non-residential land uses affected by proposed road projects

Existing sensitive land use	L _{Aeq, 15hr} Assessment criteria, dB(A) ¹	Additional considerations
Open space (active use)	60 dB(A) when in use	Active recreation is characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion. Passive recreation is characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, e.g. playing chess, reading.
Open space (passive use)	55 dB(A) when in use	In determining whether areas are used for active or passive recreation, the type of activity that occurs in that area and its sensitivity to noise intrusion should be established. For areas where there may be a mix of passive and active recreation, e.g. school playgrounds, the more stringent criteria apply. Open space may also be used as a buffer zone for more sensitive land uses.

Notes:

1. The noise level is to be assessed at the time and location regularly attended by people using the space. In this regard, 'regular' attendance at a location means at least once a week.

For the main southern playground area a criterion of 60 dB(A) is considered appropriate. For the passive play areas within the internal courtyard a criterion of 55 dB(A) is considered appropriate.

2.2.2 Measured traffic noise levels

Road and rail traffic noise measurements were made as part of the NVIA. Tables 24 and 25 of the NVIA presented the measured road and rail noise levels at the proposed preschool façade, these tables are reproduced below.

Table 24 Road traffic noise levels at NLPS façade, L_{Zeq, 15hr} levels, dB

Location	Octave Band Centre Frequency, Hz									Overall, L _{Aeq} level, dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Location 1: Forbes Street	64	63	58	53	51	51	45	41	31	55
Location 2: Lachlan Street	64	66	69	57	52	53	50	44	39	59
Location 3: Burnside Drive	72	76	66	58	55	55	53	48	40	61

Table 25 Rail noise levels at NLPS facade - Burnside Drive

Description	Octave Band Centre Frequency, Hz									Overall, L_{Aeq} level, dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Rail Traffic Noise Levels, $L_{eq, 1hr}$	59	62	60	58	55	56	56	54	53	58

2.2.3 Façade construction recommendations

Section 5.6 of the NVIA presented minimum acoustic performance of the façade elements, which are reproduced below:

- *Glazed elements*
 - *Maximum 50% façade area*
 - *Minimum R_w 35 acoustic performance*
 - *Indicative construction: 12.76 mm laminated glass*
 - *Windows must be closed to meet traffic noise intrusion requirements*
- *Opaque elements*
 - *Minimum R_w 45 acoustic performance*
 - *Indicative construction:*
 - *60 mm thick panelised brick, 28 mm furring channel with 25 mm bulk insulation in cavity and 13 mm plasterboard; OR*
 - *9 mm fibre cement sheet, 64 mm steel stud with 50 mm bulk insulation in cavity and 13 mm fire rated plasterboard*

2.2.4 Resultant internal noise levels

As presented in Section 5.6 of the NVIA, if these façade elements are included in the design, then the resultant noise levels would be 40 dB(A) or less within the proposed primary school and 39 dB(A) within the proposed child care centre. It should be noted that these noise levels are representative of the spaces closest to Burnside Drive and the Railway line. Noise levels in spaces further away would be lower.

Therefore it is concluded that the internal noise levels within the proposed childcare centre would meet the internal criterion of 40 dB(A) as outlined in the *Development near Rail Corridors and Busy Road – Interim Guideline*.

2.2.5 Resultant playground noise levels

Noise levels within the playground areas would vary with distance from the railway line and Burnside Drive. Traffic noise levels would be less than 57 dB(A) for most of the main southern playground. For the passive play areas within the internal courtyard the traffic noise levels would be 55 dB(A) or less in the seating areas. These traffic noise levels meet the recommended levels in the *Road Noise Policy*.

3.0 Conclusion

This letter presents traffic noise criteria, measurements, noise mitigation recommendations and resultant noise levels. It has been demonstrated that noise levels within classrooms, the childcare centre and playground areas meet all the relevant criteria. No further assessment is deemed necessary.

If you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Gayle Greer', written in a cursive style.

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