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Tuesday 20 December 2022

Prodigy Developments Australia Pty Ltd c/- FLDC Architects PO Box 159 KOGARAH NSW 1485 Our Reference

221355-01L-DD Rev01

For the attention of Mr Ray Taouk

Noise Assessment – Development Application (DA) Phase Proposed Commercial Development 324 Hume Highway, Bankstown

1.0 INTRODUCTION

Acoustic Consulting Engineers Pty Ltd was engaged by Prodigy Developments Australia Pty Ltd to prepare a noise assessment for the proposed commercial development at 324 Hume Highway Pty Ltd.

This report presents the findings from the noise assessment for the purpose of development application (DA) consideration only.

The findings from the noise assessment and recommendation are site specific and have been prepared for the particular investigation described in this report. The report should not be used in any other context or for any other purposes.

2.0 DESCRIPTION OF SITE AND PROPOSAL

The subject site at 324 Hume Highway, Bankstown (*Figure 1*) currently consists of a rundown/dilapidated building. The site is bounded by Hume Highway to the south, Davis Lane to the north, Bankstown North Public School on the eastern site boundary and a commercial/light industrial building on western boundary.

<image>

Figure 1 Site Location

The proposal is to re-develop the site to provide a commercial building, consisting of:

- car-parking on Basement Levels 1, 2 and 3;
- commercial spaces/tenancies and open spaces on Ground Level and Level 1; and
- commercial spaces/tenancies on Level 2

Appendix 1 shows conceptual floor plans of the proposed commercial development.

3.0 POTENTIAL ACOUSTIC ISSUES

Potential acoustic issues associated with the proposed commercial development would be due to:

- environmental noise from mechanical plant associated with the proposed development (car-park supply and exhaust air fans and air-conditioning equipment); and
- road traffic noise generated by the proposed development, potentially impacting on the residential receivers on the northern side of Davis Lane

External road traffic noise from Hume Highway would also impact commercial tenancies. However, the control of indoor road traffic noise for commercial development is not normally regulated by local governments. It is in the interest and responsibility for the developer(s)/end-user(s) to incorporate appropriate construction systems and fit-out to provide satisfactory indoor noise environment for their use of the space(s).

From inspections and review of the site location and drawings, it is considered that the above identified potential acoustic issues associated with the proposed commercial development would readily be addressed.

4.0 NOISE MEASUREMENT

Background noise levels representative of those at the nearest residential receivers were measured on from Wednesday 7 September 2022 to Friday 16 September 2022.

Measurement instrumentation consisted of a Type 1 SVAN977 sound and vibration analyser, a Type 1 ACO Pacific 7052E prepolarised condenser microphone and a Type 1 SVAN SV-30A acoustic calibrator.

The measured noise levels at Location 1 represent those at the residential receivers on Davis Lane to the north and the measured noise levels at Location 2 represent those at the residential receivers on Hume Highway to the south.

Figure 2 shows the noise monitoring locations.



Figure 2 Noise Monitoring Location

As environmental noise varies with time and the human ear is not equally sensitive to noise at different frequencies, A-weighted statistical levels are used to describe environmental noise. The common parameters used to describe environmental noise are the L_{Amax} , L_{A1} , L_{A10} , L_{A90} and L_{Aeq} levels measured over 15-minute intervals.

The L_{Amax} level is the maximum A-weighted sound pressure level over the sampling period. The L_{A1} , L_{A10} and L_{A90} levels are the A-weighted sound pressure levels exceeded for 1%, 10% and 90% of the sampling periods respectively. The L_{A90} level is usually referred to as the background noise level. The L_{Aeq} level is the A-weighted continuous equivalent (energy average) sound pressure level over the sampling period.

The L_{A90} acoustic parameter is used for the present noise assessment. Other acoustic parameters are provided for information only.

Appendices 2 and 3 provides a graphical presentation of the measured statistical noise levels at 15-minute intervals.

Table 1 presents the measured day/evening/night L_{A90} background noise levels at Locations 1 and 2, representative of those at the surrounding residences to the north and south respectively.

Date	Measured Existing L _{A90} Noise Environment, dB(A)		
	Day	Evening	Night
	Location 1 (north)	-	
Wednesday 7 September 2022		47.3	43.7
Thursday 8 September 2022	50.1	49.7	40.7
Friday 9 September 2022	47.8	49.2	44.6
Saturday 10 September 2022	47.1	47.8	43.4
Sunday 11 September 2022	45.1	47.3	43.5
Monday 12 September 2022	47.8	46.4	44.1
Tuesday 13 September 2022	50.1	45.8	41.8
Wednesday 14 September 2022	47.9	46.9	41.3
Thursday 15 September 2022	47.2	49.1	41.9
Rating L _{A90} Background Level	48	47	43
	Location 2 (south)		
Wednesday 7 September 2022		50.0	45.1
Thursday 8 September 2022	52.5	52.4	43.5
Friday 9 September 2022	51.1	51.4	46.1
Saturday 10 September 2022	49.2	49.4	43.4
Sunday 11 September 2022	48.2	48.1	43.0
Monday 12 September 2022	50.6	47.9	44.3
Tuesday 13 September 2022	52.7	48.8	43.2
Wednesday 14 September 2022	50.9	49.5	44.6
Thursday 15 September 2022	49.9	51.9	44.0
Rating L _{A90} Background Level	51	50	44

Table 1Measured Existing L_{A90} Background Noise Environment, dB(A)

5.0 NOISE ASSESSMENT OBJECTIVES

5.1 Noise from Mechanical Plant

The EPA Noise Policy for Industry (NPfI) is used as a reference to assess environmental noise from mechanical plant such as car-park supply and exhaust air fans and air-conditioning equipment associated with the proposed development.

The EPA:NPfI recommends the:

 $L_{Aeq,15min}$ noise levels from mechanical plant associated with a proposed development not to exceed the day/evening/night rating background L_{A90} noise levels by more than 5dB(A) at the residential receivers; and L_{Aeq,period} noise levels (period being entire day/evening/night) from a proposed development to be at least 5dB below the recommended amenity noise levels from existing and/or future industrial sources for the particular receiver areas.

Due to different averaging periods, the intrusiveness noise level (determined over 15-minute period) and amenity noise level (determined over an assessment period (day/evening/night)) may lead to situations where the same numerical value does not necessarily represent the same amount of noise for different time periods. To standardise the time periods for the intrusiveness and amenity noise levels, the NPfI assumes a default correction of +3dB to convert the $L_{Aeq,period}$ to $L_{Aeq,15min}$ noise level.

Table 2 provides the recommended $L_{Aeq,15min}$ noise levels from mechanical plant associated with the proposed development, established from the measured background noise levels presented in *Table 1* and the EPA:NPfI guideline. The recommended amenity noise levels are based on an urban residential area.

The project noise trigger levels are the lower of the intrusive and amenity noise levels. That is, noise from the development will achieve with both the intrusive and amenity noise levels, provided that the project noise trigger levels are achieved.

		Recommended L _{Aeq,15min} Noise Level, dB(A)				
Time of Day		Intrusiveness Level	Amenity Level	Trigger Level		
Residential Receivers to the North (Davis Lane)						
Day	(7:00am-6:00pm)	53	58	53		
Evening	(6:00pm-10:00pm))	52	48	48		
Night	(10:00pm-7:00am)	48	43	43		
	Residentia	l Receivers to the Sou	th (Hume Highway)			
Day	(7:00am-6:00pm)	56	58	56		
Evening	(6:00pm-10:00pm))	55	48	48		
Night	(10:00pm-7:00am)	49	43	43		

Table 2Recommended Environmental Noise Assessment Level, dB(A)

Notes: 1. Day is from 7:00am-6:00pm, Monday to Saturday and 8:00am-6:00pm, Sunday

2. Evening is from 6:00pm-10:00pm

3. Night is from 10:00pm-7:00am, Monday to Saturday and 10:00pm-8:00am, Sunday

5.2 Road Traffic Noise from Traffic Generation

With reference to the EPA Road Noise Policy, it is recommended that noise from traffic generation by the proposed commercial development should not exceed $55dB(A) L_{Aeq,1hr}$ at the nearest residences along Davis Lane during the peak hours.

6.0 ASSESSMENT

6.1 Environmental Noise

As the proposal is conceptual and development application has not been approved, mechanical plant (air-conditioning) has not been selected or finalised and details of equipment noise levels are not available at this time.

Based on the site location and similar development, it is considered that with appropriate equipment selection based on acoustic performance and siting, noise from air-conditioning equipment would be controlled to within the environmental noise assessment objectives presented in *Table 4*.

6.2 Noise from Traffic Generation

From McLaren Traffic Engineering and Road Safety Consultants' Report No. 220364.02FA dated 30 November 2022 (Traffic and Parking Impact Assessment of the Proposed Commercial Development at 324 Hume Highway, Bankstown), traffic generation by the proposed commercial development 47 movements during the peak morning and afternoon hours.

Residences along Davis Lane are approximately 17m from the centre of the road. Taking account of distance separation and number of vehicle movements, the predicted road traffic noise level at the nearest residences is 48dB(A) L_{Aeq,peak-hour} and complies with the recommended assessment objective of 55dB(A) L_{Aeq,1hr}.

6.3 Waste Collection

From the Operational Waste Management Plan prepared by Archer Consultants Pty Ltd dated December 2022, general waste collection will be once per week and recycling waste collection will also be once per week. Accordingly, noise from traffic generation associated with waste collection for the proposed commercial development will be minimal.

7.0 **RECOMMENDATION**

7.1 Environmental Noise

It is recommended that a qualified acoustic consultant be engaged during the design phase of the project, when details of mechanical plant and equipment (car-park supply and exhaust air fans and air-conditioning equipment) and noise emission levels are available, to review the potential environmental noise impact from the development.

Measures that could be considered to reduce noise from mechanical plant and equipment associated with the project include:

- appropriate equipment specification and selection based on acoustic performance;
- incorporation of acoustic attenuators and/or internally lined ductwork and bend for the car-park supply and exhaust air fans; and
- air-conditioning outdoor condensers located in purpose-built plantroom and/or located towards the northern part of the development site

Additionally, it is recommended that separate Development Applications and noise assessments be submitted to Council for the use of the retail/commercial units when the types of activities and tenants are known.

7.2 Waste Collection

Although traffic generation by waste collection associated with the proposed development will be minimal (twice per week for both general waste and recycling waste), it is recommended that waste collection be undertaken during daytime and outside peak-hour traffic generation by the development.

7.3 Road Traffic Noise Exposure

Road traffic noise from Hume Highway would also impact commercial tenancies. However, the control of road traffic noise for commercial development is not regulated by local governments.

It is in the interest and the responsibility for the developer(s)/end-user(s) to incorporate appropriate construction systems and fit-out to provide satisfactory indoor noise environment for their use of the space(s).

It is recommended that following development approval, a qualified acoustic engineer be engaged to review and advise appropriate construction systems/ mitigation measures to control road traffic exposure to the site.

8.0 SUMMARY

With appropriate equipment selection based on acoustic performance and siting, noise from mechanical plant and equipment (car-park supply and exhaust air fans and air-conditioning equipment) would be controlled to within the environmental noise assessment objectives.

As on-site vehicle activities will take place within the Basement Levels, it is expected that noise on-site vehicles associated with the proposed commercial development to be inaudible at the nearest residences.

Predicted noise level from additional traffic generation by the proposed commercial development readily complies with the assessment objective, in accordance with the EPA Road Noise Policy.

Noise from traffic associated with waste collection will be minimal. Albeit, it is recommended that waste collection be undertaken during daytime and outside peak-hour traffic generation by the development to minimise potential noise impact.

It is recommended that a qualified acoustic engineer be engaged during the design and construction stages to review and advise appropriate building construction systems/ mitigation measures to control road traffic exposure to the development site.

The assessment and recommendations in this report relate to acoustic considerations and for the purpose of development application (DA) only. Any other requirements should be addressed by others.

It is noted that fit-out and occupation of the individual commercial tenancies normally require separate Development Applications and noise assessments submitted (if required by Council) for the use of the commercial tenancies when the types of activities and tenants are known.

We trust the information in this report is satisfactory. Please do not hesitate to contact our office should further information or clarification be required.

Yours sincerely,

Dan Dang Principal Acoustic Engineer Acoustic Consulting Engineers Pty Ltd

Appendix 1

CONCEPTUAL FLOOR PLAN

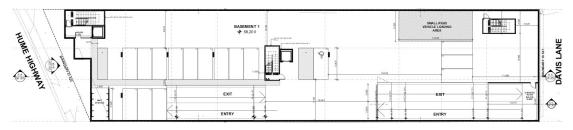
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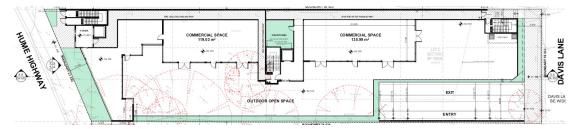
Basement Level 2



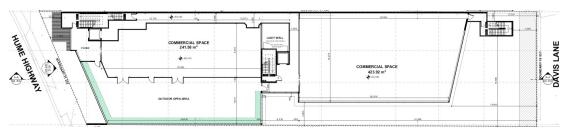
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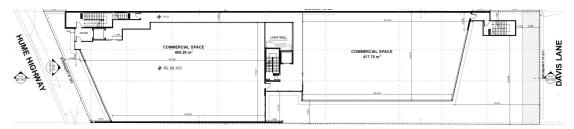
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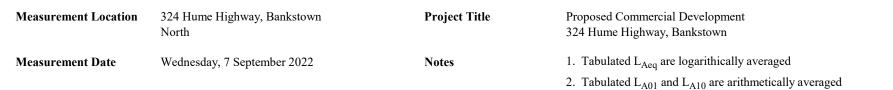
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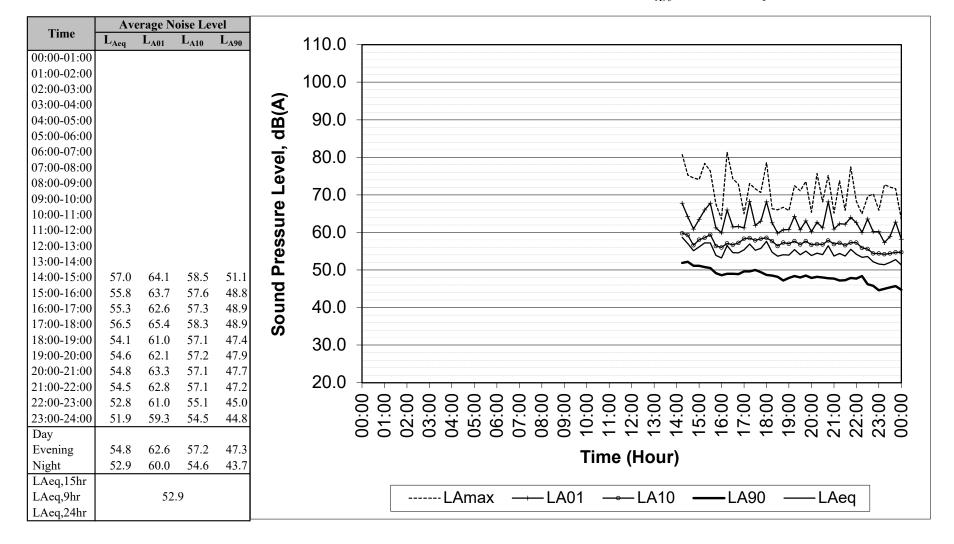
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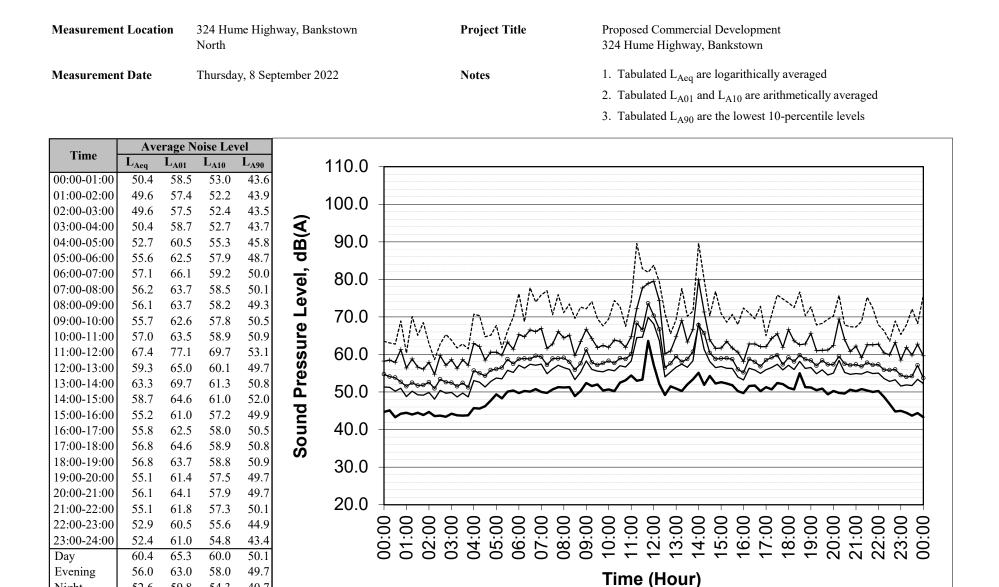


Appendix 2 EXISTING NOISE ENVIRONMENT Location 1 (North)



3. Tabulated L_{A90} are the lowest 10-percentile levels





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Night

LAeq,15hr

LAeq,9hr

LAeq,24hr

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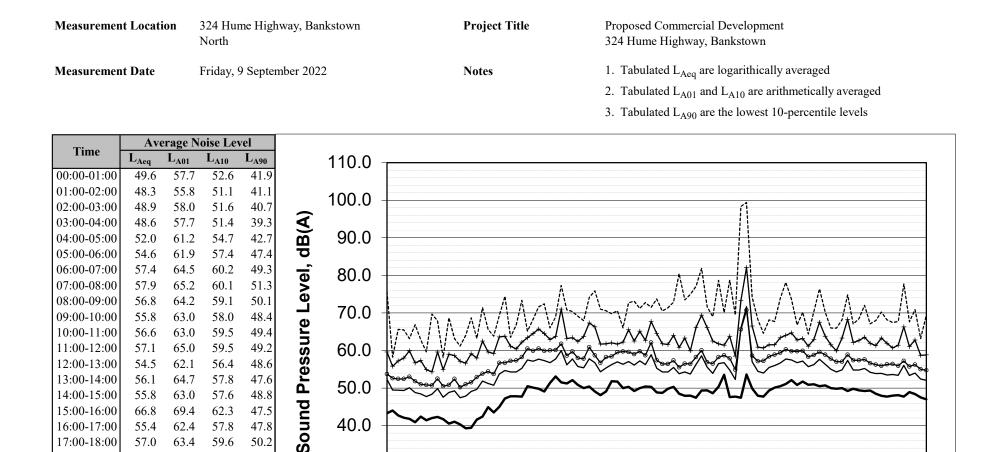
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20:00-21:00

21:00-22:00

22:00-23:00

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LAeq,15hr

LAeq,9hr

LAeq,24hr

Day Evening

Night

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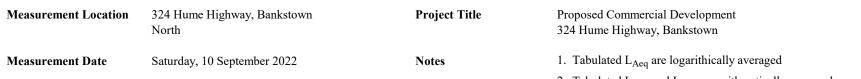
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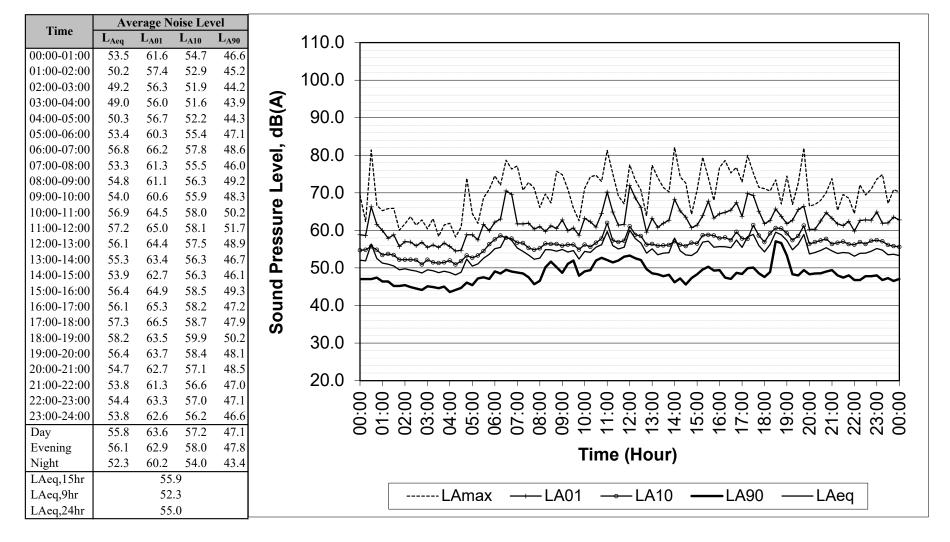
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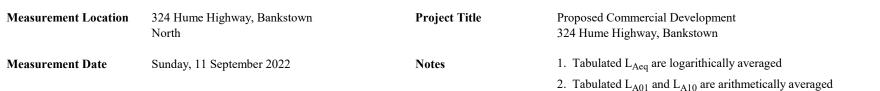
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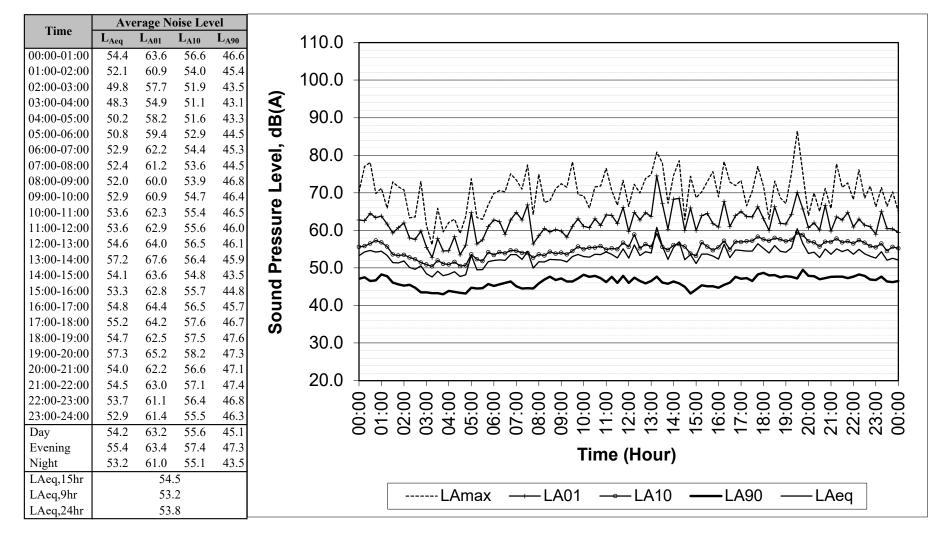


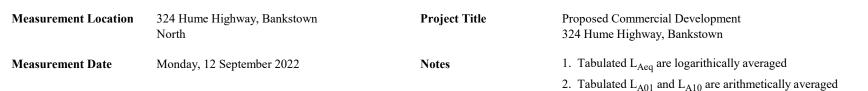
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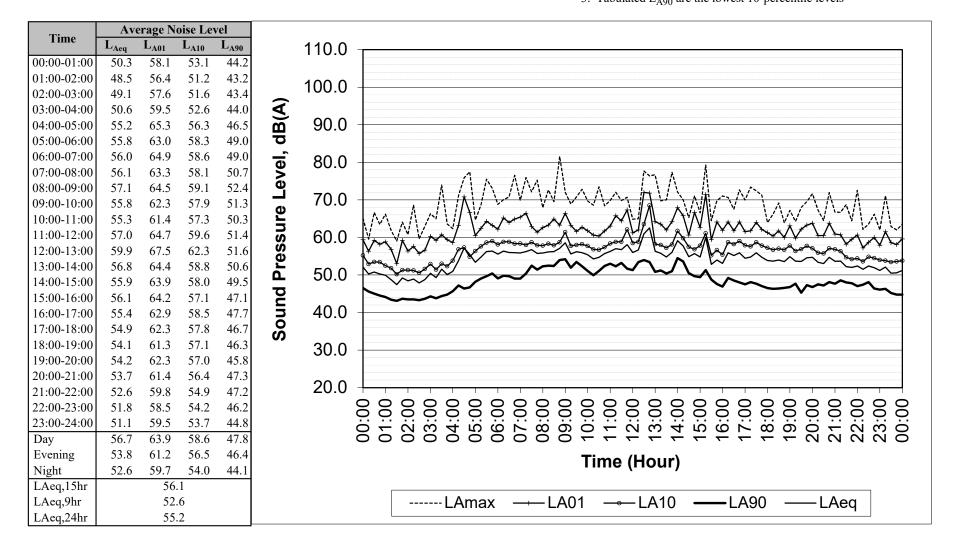


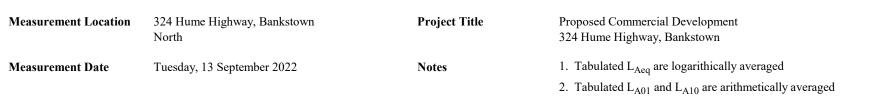


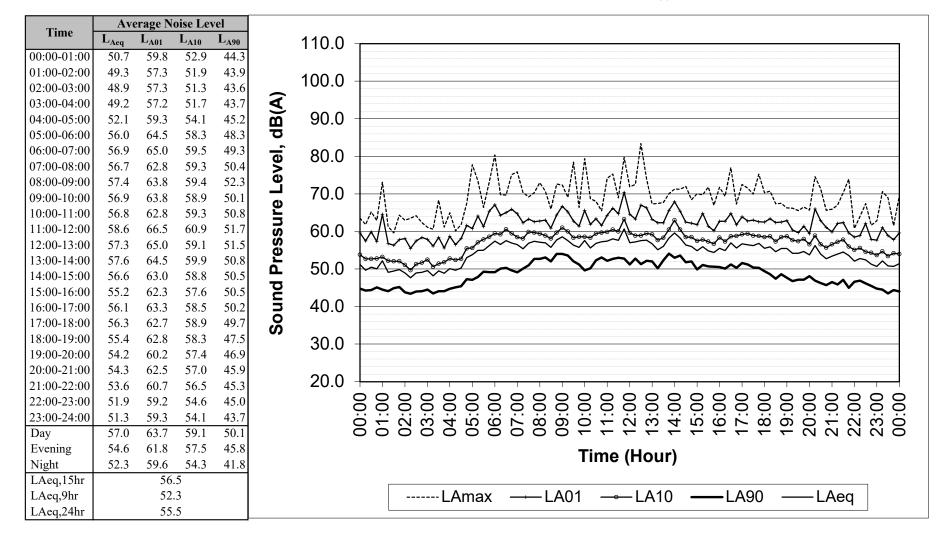
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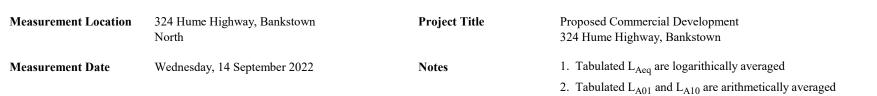


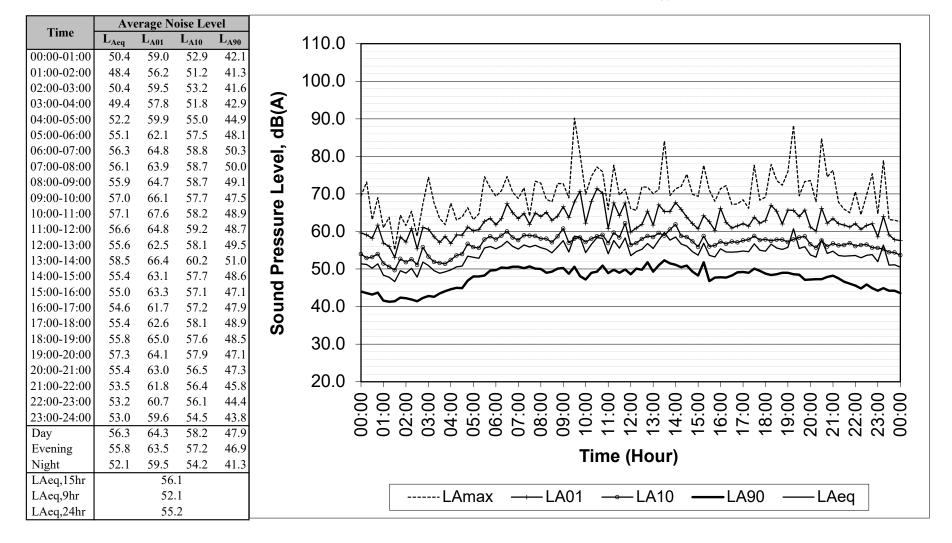


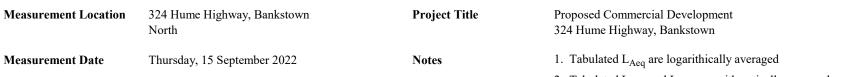




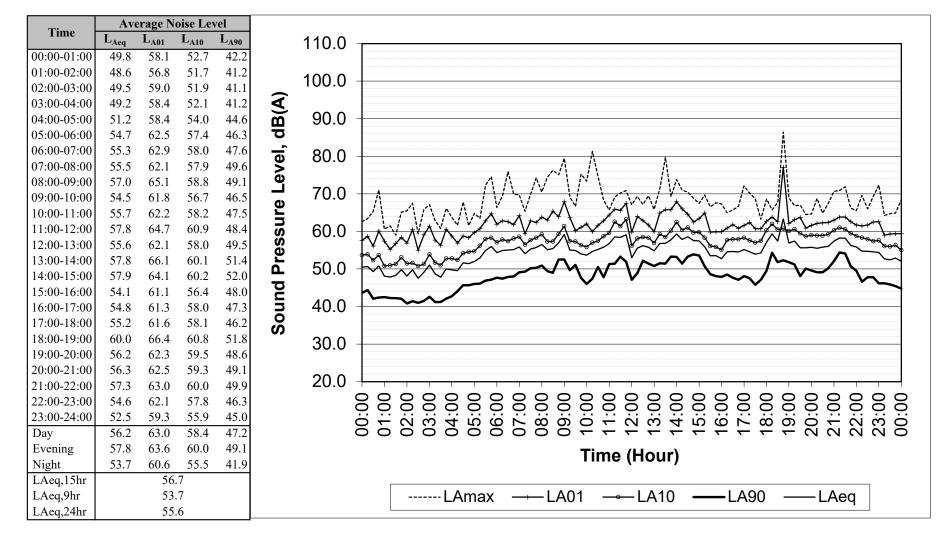


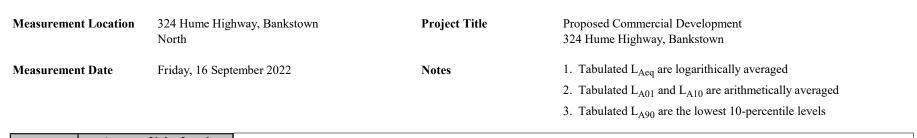


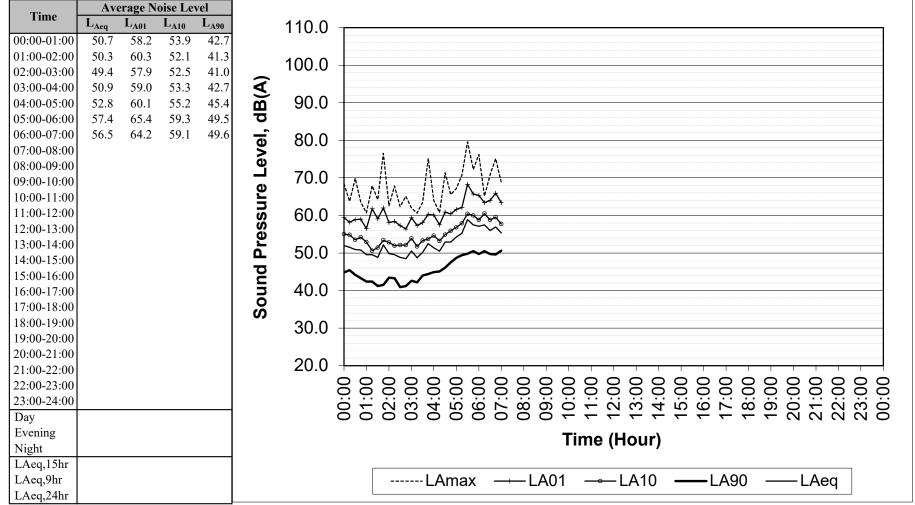




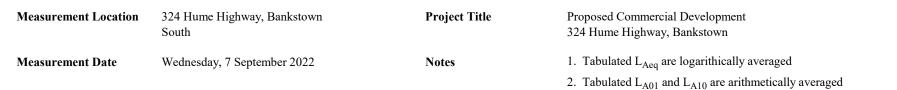
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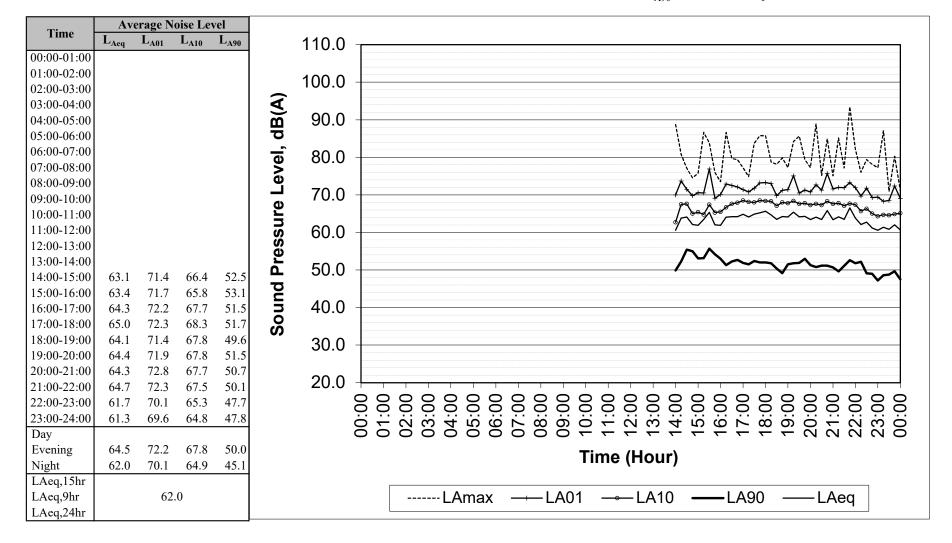


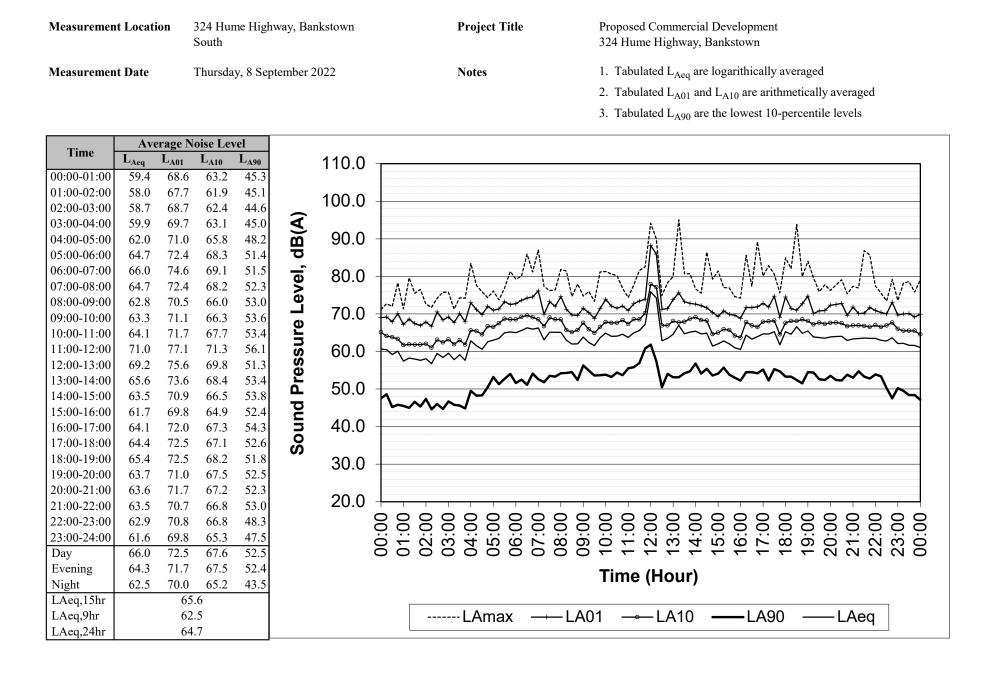


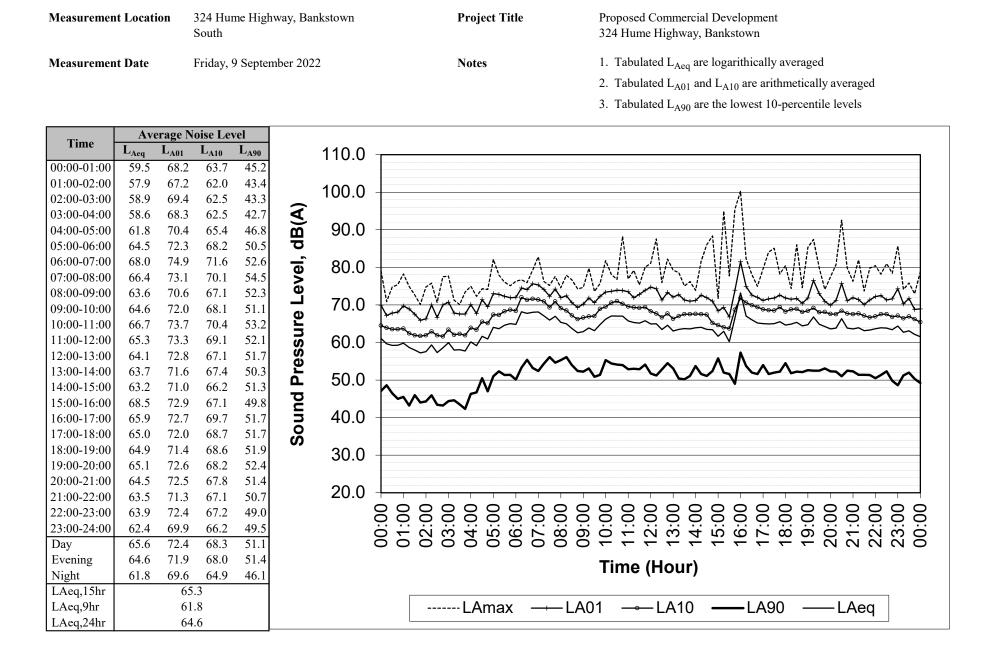


Appendix 3 EXISTING NOISE ENVIRONMENT Location 2 (South)

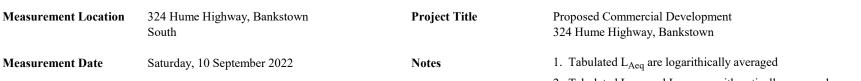




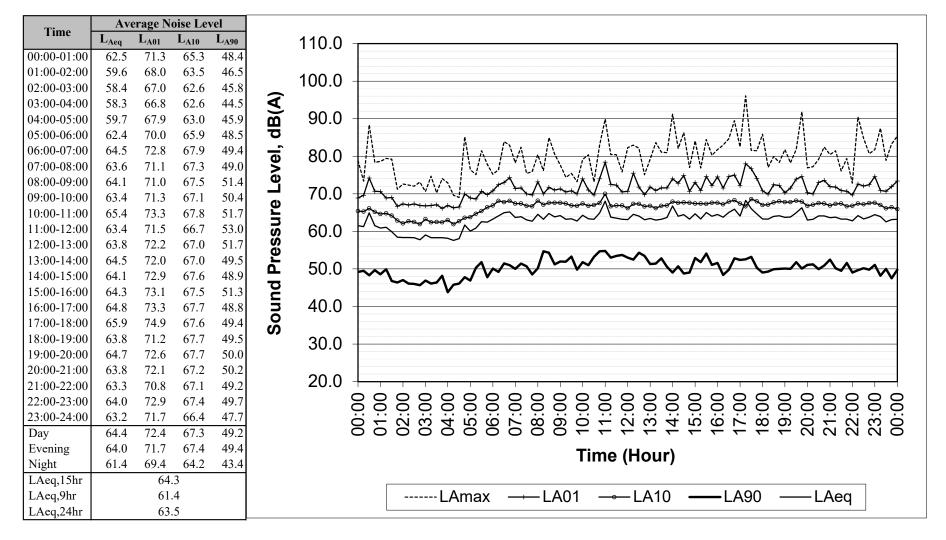


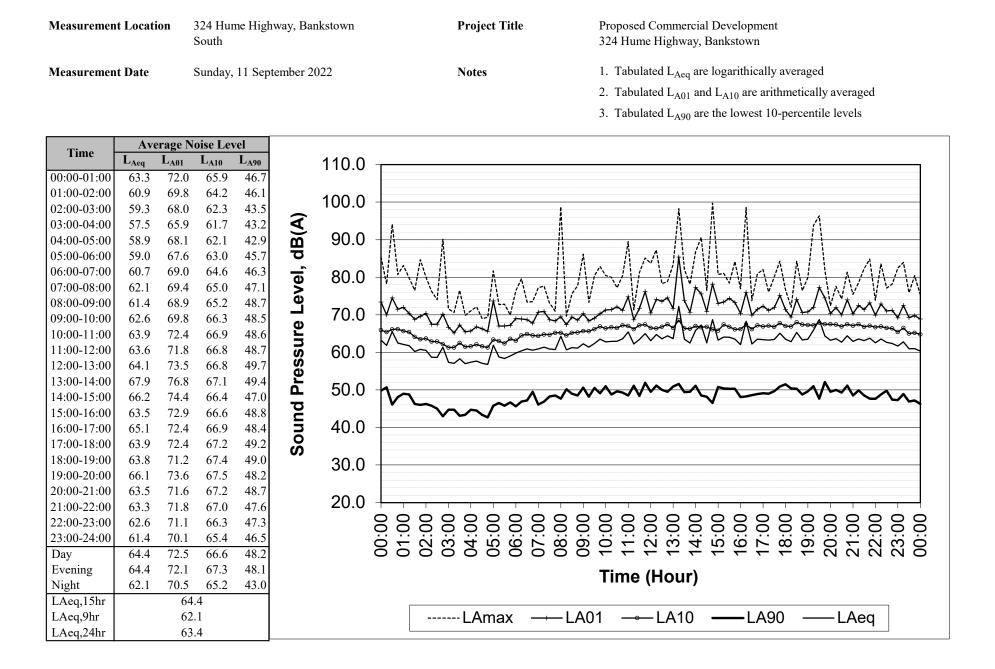


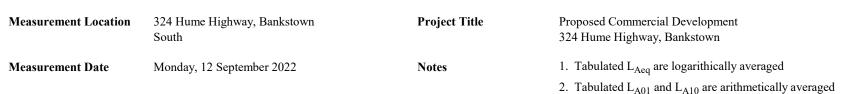
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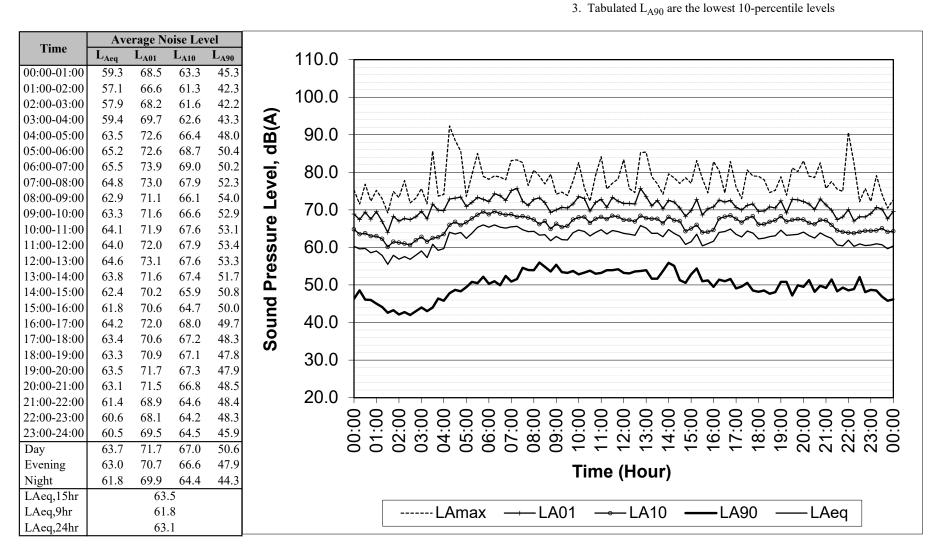
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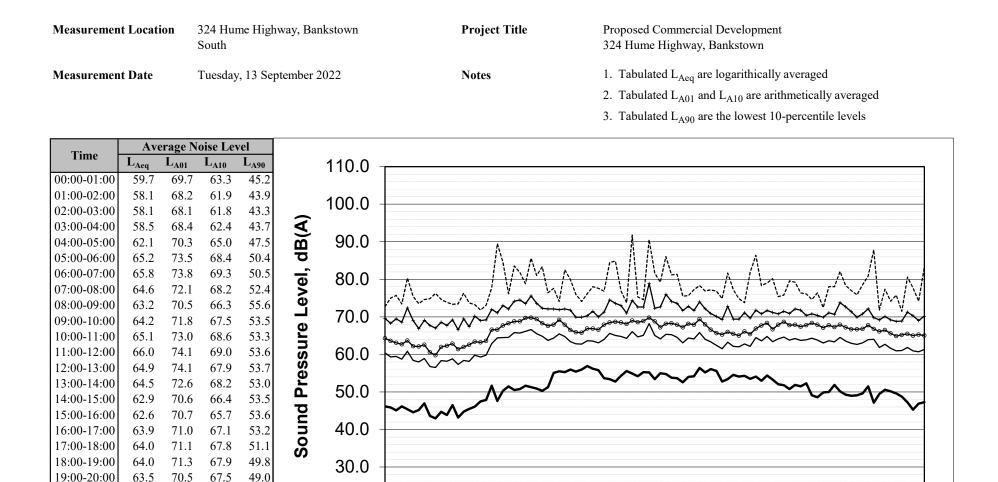






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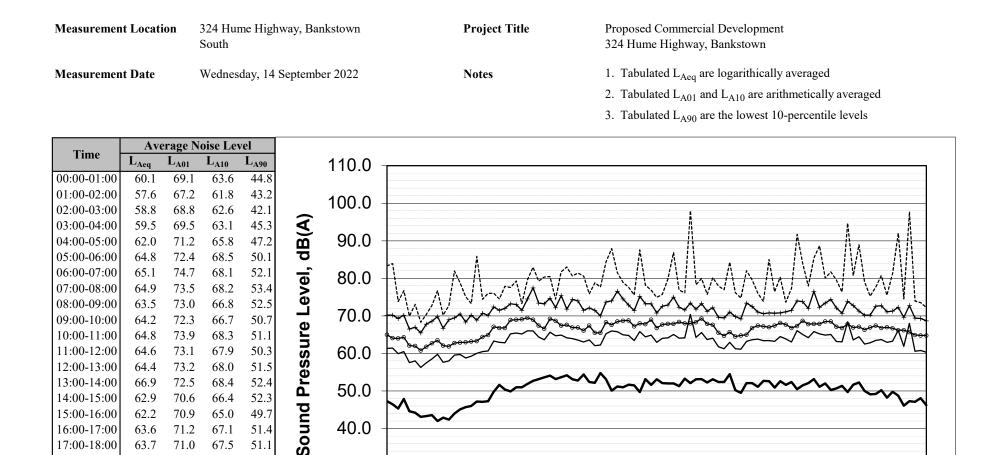
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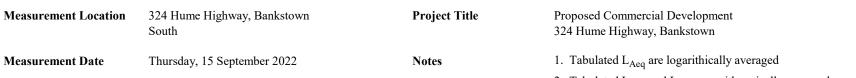
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2. Tabulated $L_{\rm A01}$ and $L_{\rm A10}$ are arithmetically averaged

