

Wednesday, 8 January 2020

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Department of Planning, Transport and Infrastructure
Level 3, 77 Grenfell Street, Adelaide SA 5000

SE Freeway Managed Motorway (Crafers to Stirling) Baseline Noise Monitoring

1 Introduction

This report outlines baseline environmental noise measurements undertaken by Resonate in Crafers near the Southeastern Freeway during the period 5 December to 16 December 2019.

2 Monitoring locations

There are residences located on both sides of the Southeastern Freeway between Crafers and Stirling, with the closest located 40m from the freeway. The locations have been chosen as they are representative of the most sensitive receivers on both sides of the freeway. The logging locations are shown in Figure 1.

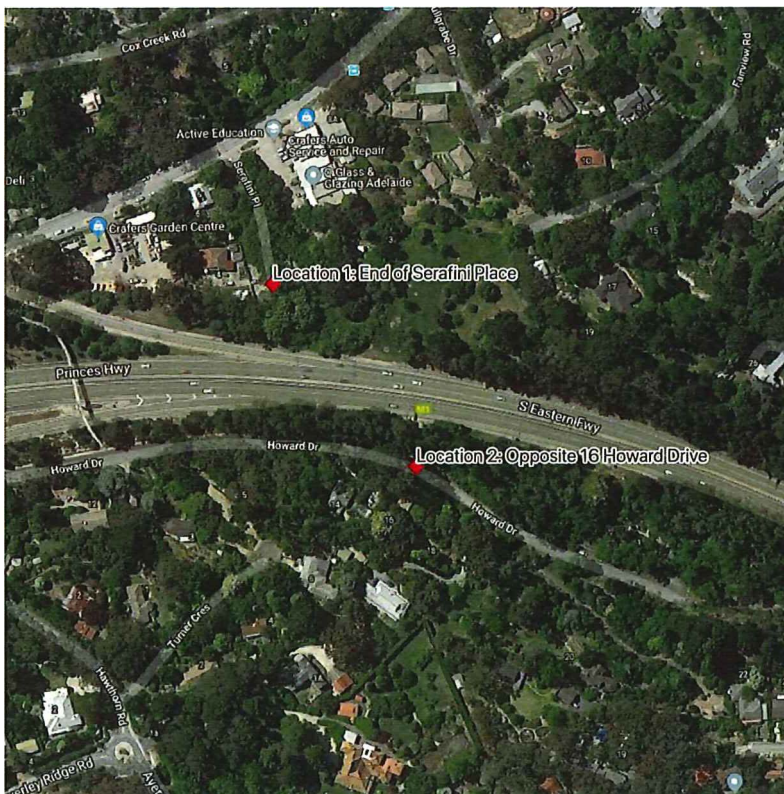


Figure 1 Location of noise loggers with respect to the Southeastern Freeway

3 Noise measurements

3.1 Instrumentation

The noise measurements were taken with calibrated Rion NL-22 sound level meters, which are Type 2 instruments suitable for field use. The sound level meter was calibrated both before and after the measurements using a Type 1 Brüel & Kjær 4231 sound level calibrator, and the calibration was found to have not drifted. Both the sound level meter and calibrator carry current calibration certificates from a NATA accredited laboratory. Copies of the calibration certificates are available on request.

3.2 Procedure

Noise measurements were undertaken in accordance with the following:

- The microphone of the sound level meter was at a height of approximately 1.2 metres above the ground
- A wind shield was used during all measurements
- Care was taken to avoid any effect on the measurement of extraneous noise
- Continuous noise measurement was conducted with data provided for each 15 minute interval during the measured time period.

4 Results

Table 1 and Table 2 provide a summary of the measured $L_{Aeq(period)}$ for each day in the measuring period for Location 1 and 2, respectively. It is noted that the weekend noise levels show a 1 – 2 dB(A) decrease from the weekday levels.

Table 1 Measured noise levels at Location 1 - 16 Howard Drive

Date	Day, $L_{Aeq(15-hour)}$	Night, $L_{Aeq(9-hour)}$
Thursday, 5 December 2018	67	63
Friday, 6 December 2018	69	61
Saturday, 7 December 2018	66	61
Sunday, 8 December 2018	66	62
Monday, 9 December 2018	67	62
Tuesday, 10 December 2018	67	62
Wednesday, 11 December 2018	67	63
Thursday, 12 December 2018	67	63
Friday, 13 December 2018	67	62
Saturday, 14 December 2018	65	61
Sunday, 15 December 2018	65	62
Monday, 16 December 2018	67	-
Overall	67	62

Table 2 Measured noise levels at Location 2 – End of Serafini Place

Date	Day, $L_{Aeq}(15\text{-hour})$	Night, $L_{Aeq}(9\text{-hour})$
Thursday, 5 December 2018	71	68
Friday, 6 December 2018	71	64
Saturday, 7 December 2018	70	63
Sunday, 8 December 2018	68	64
Monday, 9 December 2018	69	66
Tuesday, 10 December 2018	70	66
Wednesday, 11 December 2018	70	66
Thursday, 12 December 2018	69	66
Friday, 13 December 2018	70	66
Saturday, 14 December 2018	70	65
Sunday, 15 December 2018	70	66
Monday, 16 December 2018	71	-
Overall	70	65

The results of the noise monitoring at Location 1 are shown in Figure 2 and Figure 3, which presents the L_{eq} , L_{max} and L_{90} noise levels.

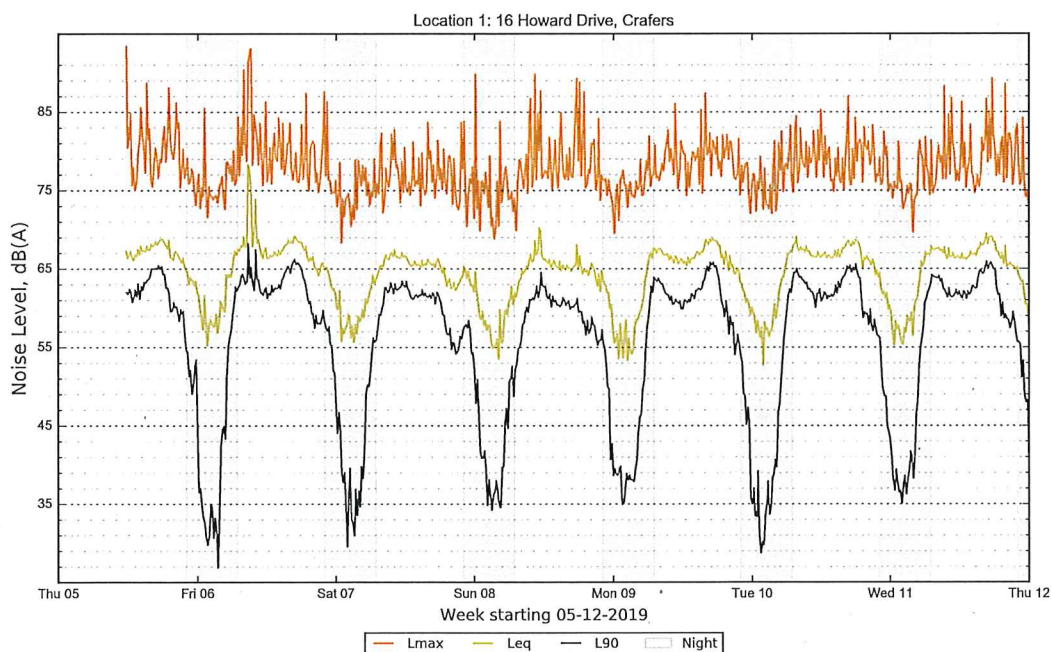


Figure 2 Continuous noise measurement results at Location 1, 5 - 12 December 2019

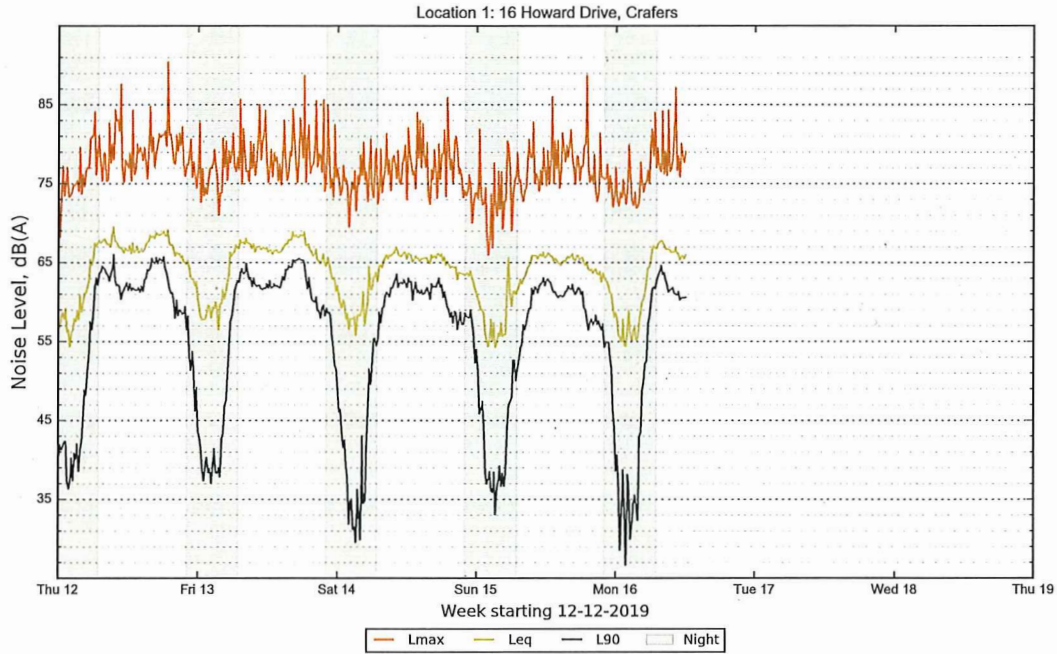


Figure 3 Continuous noise measurement results at Location 1, 12 - 16 December 2019

The results of the noise monitoring at Location 2 are shown in Figure 4 and Figure 5, which presents the L_{eq} , L_{max} and L_{90} noise levels.

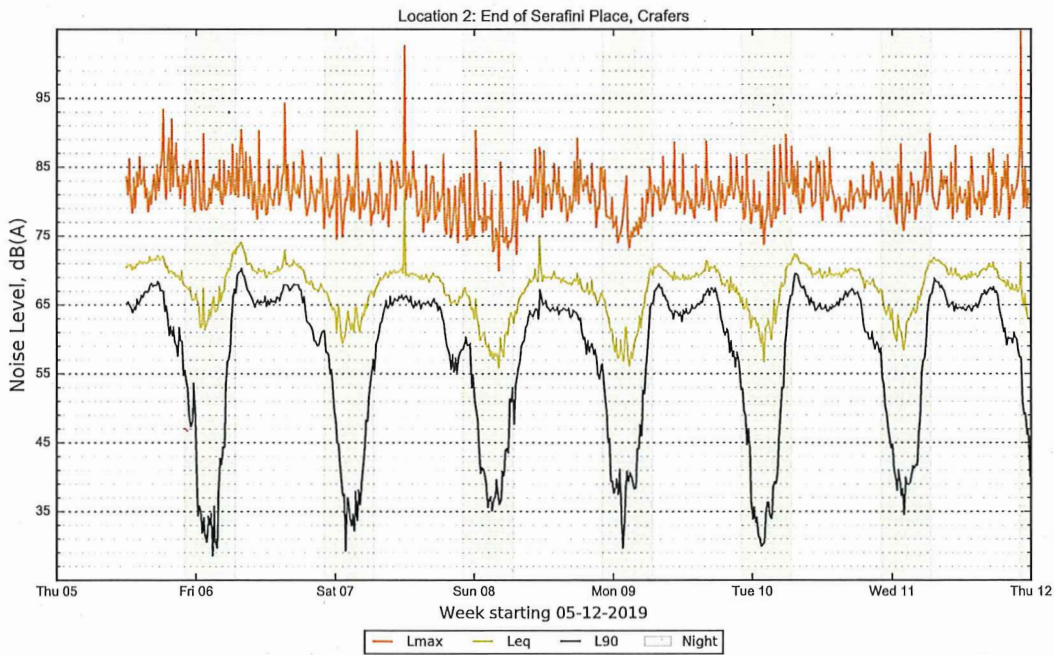


Figure 4 Continuous noise measurement results at Location 2, 5 - 12 December 2019

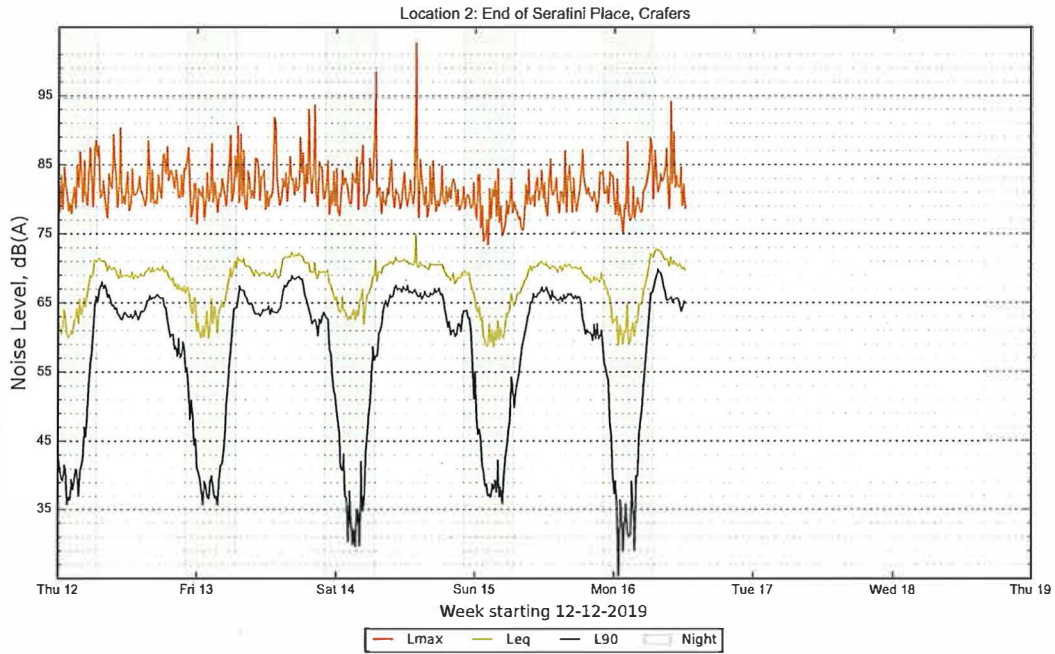


Figure 5 Continuous noise measurement results at Location 2, 12 - 16 December 2019