

Monday, 12 April 2021

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

This report outlines baseline environmental noise measurements undertaken by Resonate in Crafers near the Southeastern Freeway during the period 26 January to 4 February 2021. This report will compare these measurements with previous results obtained during the period 5 December to 16 December 2019.

### 1 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. We note that locations are the same as where the previous measurements occurred. The logging locations are shown in Figure 1.



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

## 2 Noise measurements

### 2.1 Instrumentation

The noise measurements were taken with calibrated Rion NL-42 sound level meters, which are Class 2 instruments suitable for field use. The sound level meter was calibrated both before and after the measurements using a Class 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.

### 2.2 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.

## 3 Results

Table 1 provide a summary of the measured  $L_{Aeq(period)}$  for each day and night for both locations and measurement periods.

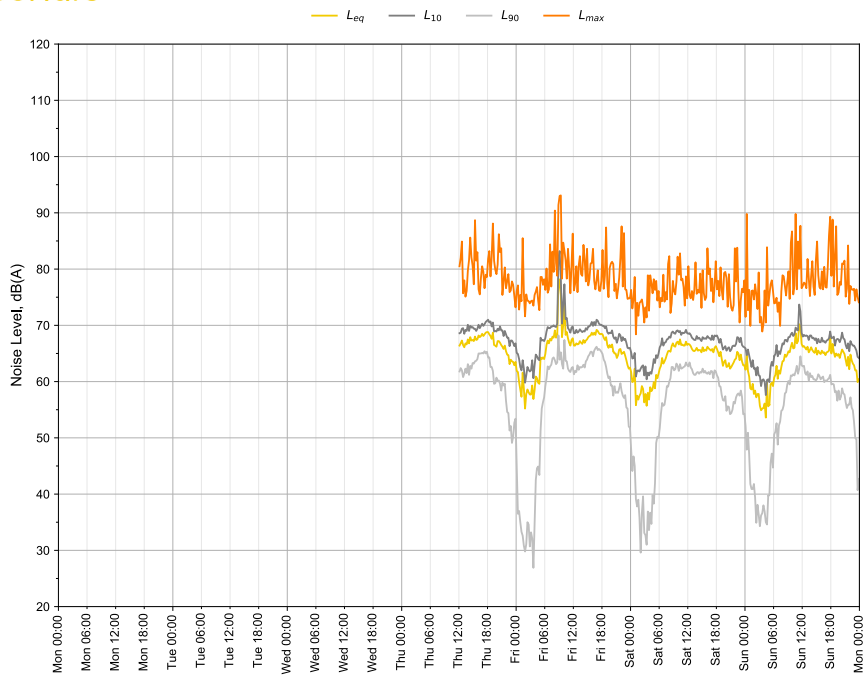
**Table 1 Unattended noise monitoring summary before and after project build**

Measurement Period	Location 1: Serafini		Location 2: Howard	
	Day, $L_{Aeq(15-hour)}$	Night, $L_{Aeq(9-hour)}$	Day, $L_{Aeq(15-hour)}$	Night, $L_{Aeq(9-hour)}$
5 – 16 December 2019	67	62	70	65
26 January – 4 February 2021	62	57	66	62
<b>Difference</b>	<b>-5</b>	<b>-5</b>	<b>-4</b>	<b>-3</b>

As seen in the above tables, the noise impact at the nearest receivers to the Southeastern Freeway has been reduced by the implementation of the project. This is most likely due to the resurfacing of the road with Open Graded Asphalt (OGA), which is a recognised low noise road pavement.

The results of the previous noise monitoring at Location 1 are shown in Figure 2 and Figure 3, which presents the  $L_{eq}$ ,  $L_{max}$ ,  $L_{10}$  and  $L_{90}$  noise levels.

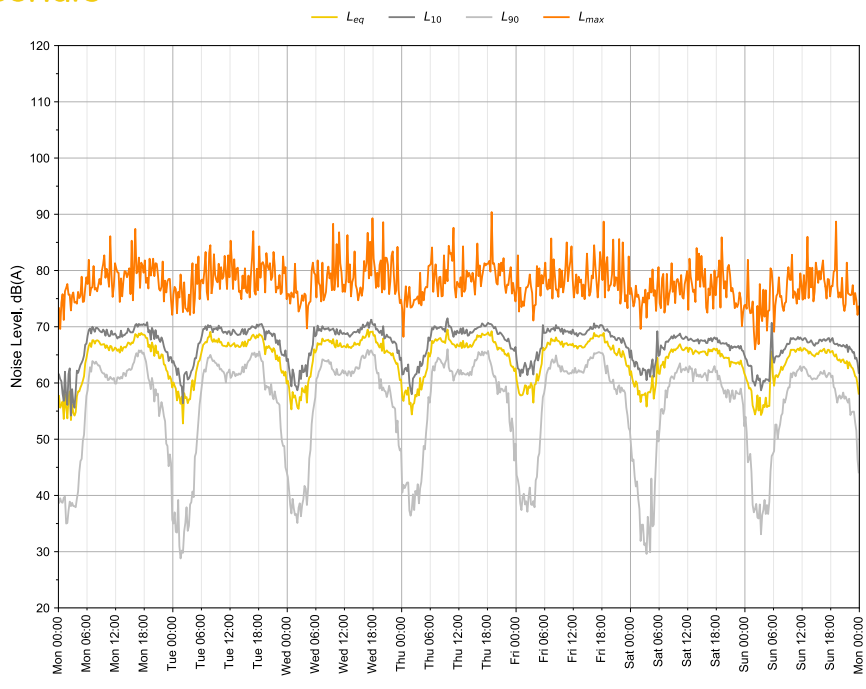
Location 1: End of Serafini 2019 - Week starting 2 December 2019



Rion NL-21  
123456  
Calibration:  
2021-02-16

Figure 2 Continuous noise measurement results at Location 1, 5 - 9 December 2019

Location 1: End of Serafini 2019 - Week starting 9 December 2019

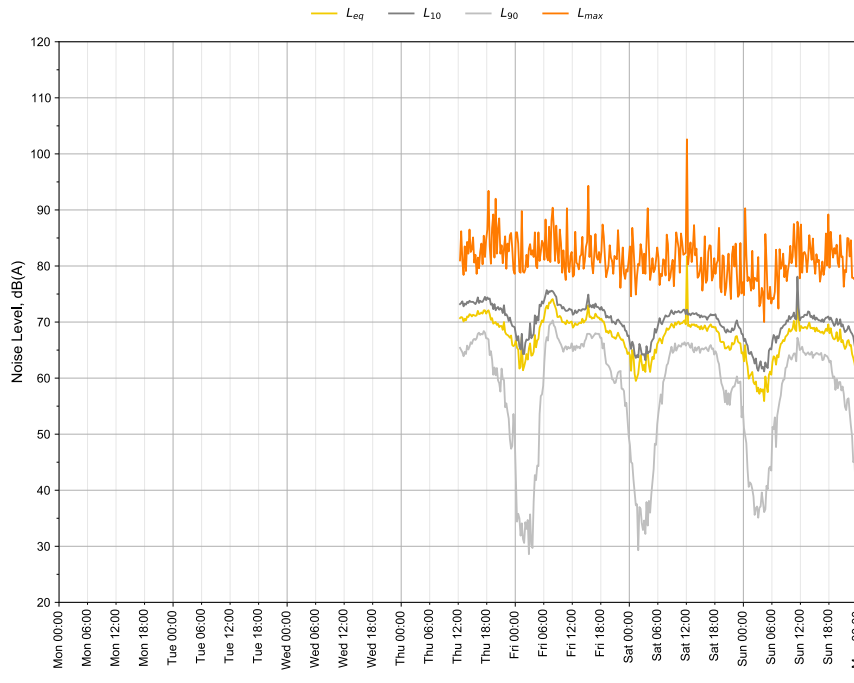


Rion NL-21  
123456  
Calibration:  
2021-02-16

Figure 3 Continuous noise measurement results at Location 1, 9 - 16 December 2019

The results of the previous noise monitoring at Location 2 are shown in Figure 4 and Figure 5, which presents the  $L_{eq}$ ,  $L_{max}$ ,  $L_{10}$  and  $L_{90}$  noise levels.

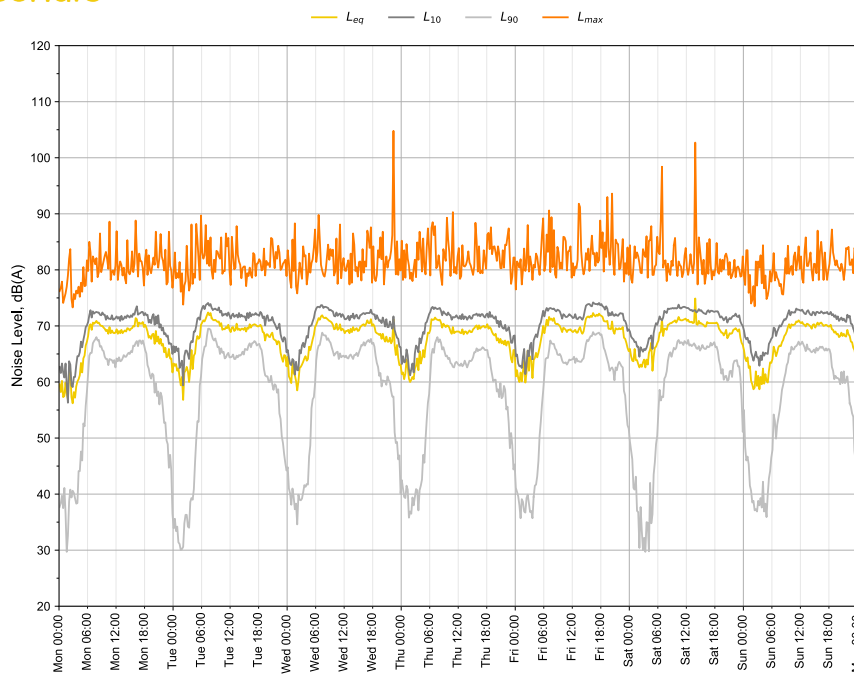
Location 2: 16 Howard Drive 2019 - Week starting 2 December 2019



Rion NL-21  
123456  
Calibration:  
2021-02-16

Figure 4 Continuous noise measurement results at Location 2, 5 - 9 December 2019

Location 2: 16 Howard Drive 2019 - Week starting 9 December 2019

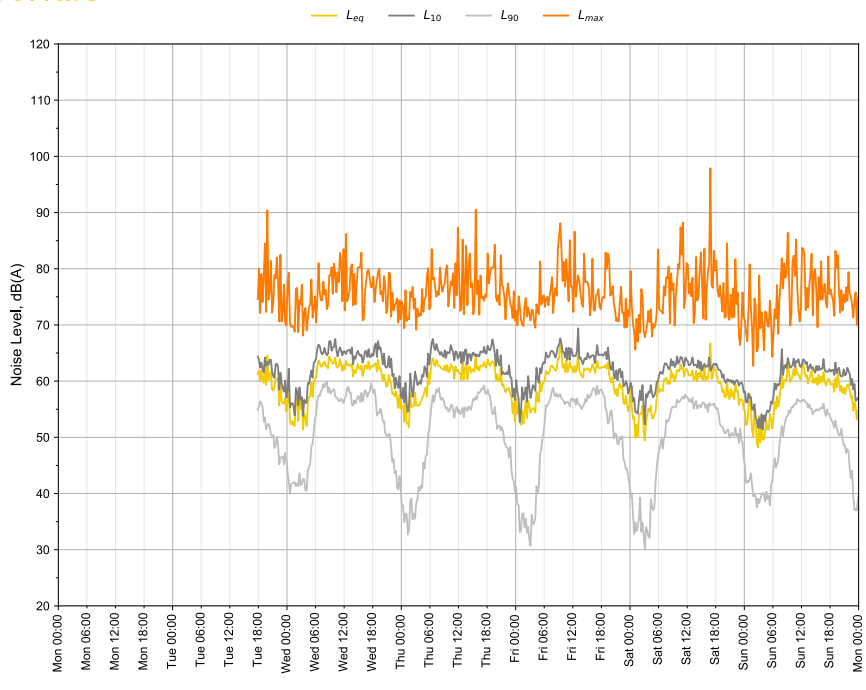


Rion NL-21  
123456  
Calibration:  
2021-02-16

Figure 5 Continuous noise measurement results at Location 2, 9 - 16 December 2019

The results of the previous noise monitoring at Location 1 are shown in Figure 6 and Figure 7, which presents the  $L_{eq}$ ,  $L_{max}$ ,  $L_{10}$  and  $L_{90}$  noise levels.

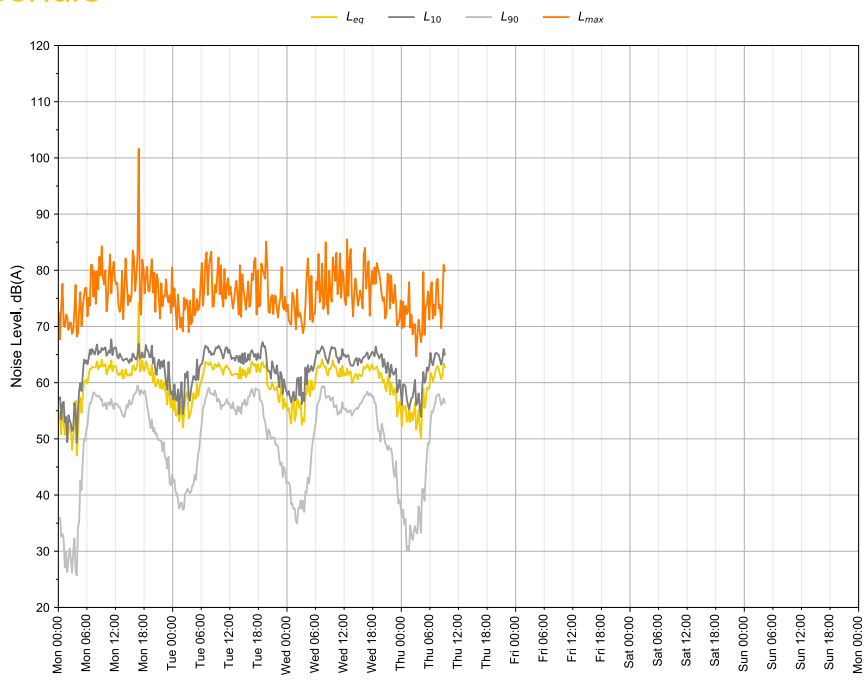
Location 1: End of Serafini Place 2021 - Week starting 25 January 2021



Rion NL-42  
946981  
Calibration:  
2021-05-13

Figure 6 Continuous noise measurement results at Location 1, 26 January - 1 February 2021

Location 1: End of Serafini Place 2021 - Week starting 1 February 2021

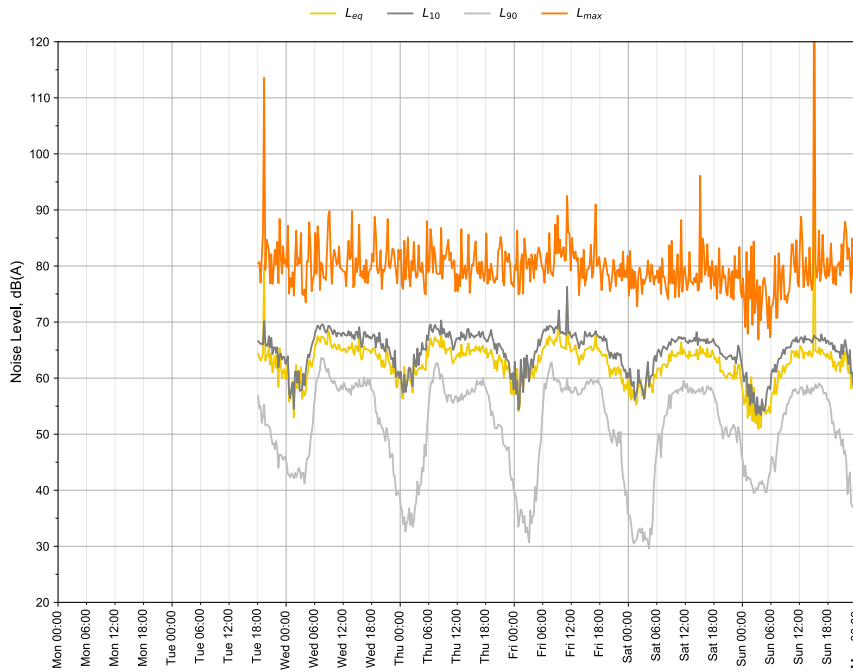


Rion NL-42  
946981  
Calibration:  
2021-05-13

Figure 7 Continuous noise measurement results at Location 1, 1 - 4 February 2021

The results of the previous noise monitoring at Location 2 are shown in Figure 8 and Figure 9, which presents the  $L_{eq}$ ,  $L_{max}$ ,  $L_{10}$  and  $L_{90}$  noise levels.

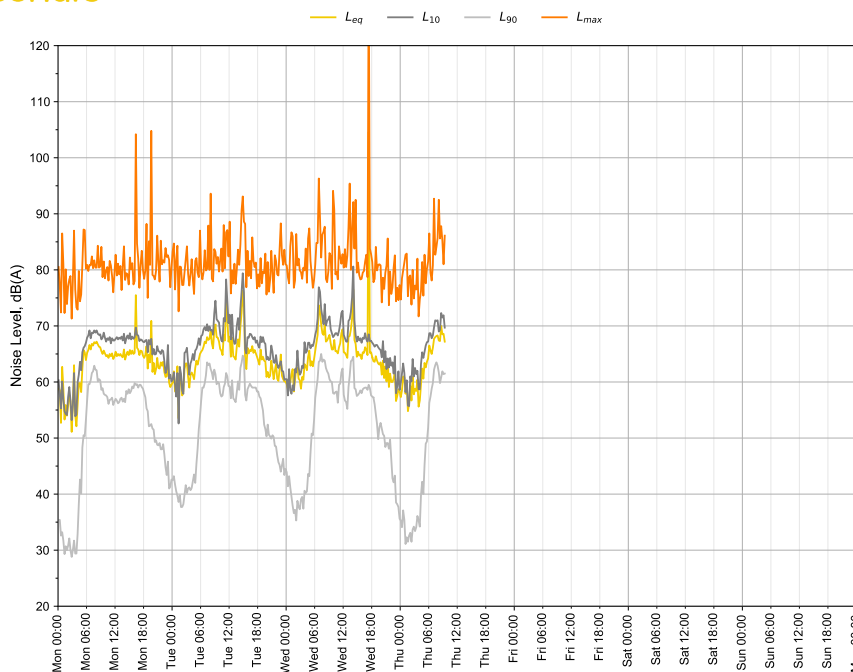
Location 2: 16 Howard Drive 2021 - Week starting 25 January 2021



Rion NL-42  
946984  
Calibration:  
2021-05-13

Figure 8 Continuous noise measurement results at Location 2, 26 January - 1 February 2021

Location 2: 16 Howard Drive 2021 - Week starting 1 February 2021



Rion NL-42  
946984  
Calibration:  
2021-05-13

Figure 9 Continuous noise measurement results at Location 2, 1 - 4 February 2021

