

## TRAFFIC NOISE MEASUREMENTS FRANCIS STREET, YARRAVILLE, 2002

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### SUMMARY

Noise levels, predominantly from traffic on Francis Street Yarraville, were monitored at various times from March to May 2002. Measurements were taken both before and after a truck curfew was implemented on 4 April 2002. The post-curfew noise monitoring showed a slight reduction in noise levels for weekends, but similar noise levels for weekdays between 8pm and 6am.

### BACKGROUND

Noise monitoring was undertaken in Francis Street, Yarraville from July to August 2001. These monitoring results, along with information on national noise policies, were reported in EPA Publication 820.

Drawing on the results of other studies, the report showed that approximately 8.5 per cent of people in the Melbourne urban area experience traffic noise levels of 65db or higher which is similar to those measured in Francis Street, Yarraville. It also showed that residents in Francis Street, experience levels of traffic noise that exceed some major road traffic noise objectives currently in use in various parts of Australia.

It should be noted that traffic noise objectives for arterial roads such as Francis Street do not currently exist in Victoria but that EPA is developing a SEPP for road traffic noise.

A truck traffic curfew was introduced as a management option with the aim of reducing both noise and air pollution. The curfew was introduced on 4 April 2002 and prohibited all non-local heavy vehicles with a gross vehicle mass rating of 4.5 tonne or more from using Francis Street between 8pm and 6am Monday to Saturday and between 1pm Saturday and 6am Monday.

The intention of the 2001/2002 noise monitoring was to provide a benchmark on the levels of noise experienced by residents prior to the introduction of the curfew and to establish whether the curfew reduced noise levels.

### RESULTS

The introduction of the curfew has led to an overall traffic reduction of 15 per cent and a 43 per cent reduction in trucks during the curfew periods.

The noise monitoring was conducted near the community centre on Francis Street, Yarraville at the same site as previous noise monitoring in 2001 was undertaken. The results of the monitoring data are presented in Figures 1 and 2 and a summary of data for a range of noise indicators is included in Appendix 1.

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The results of the noise monitoring data show for weekdays that the noise (averaged over periods of 9, 15, 18 and 24 hours and measured by the indicator  $L_{Aeq}$ ) is similar to that which occurred before the curfew (see Figure 1). For the weekend days, the curfew has led to a slight reduction in noise levels (see Figure 2).

EPA Publication 820 discusses some traffic noise objectives for major roads in Australian States. The VicRoads policy for retrofitting noise barriers on existing freeways,  $65\text{dB(A)}L_{eq}$  over an 18-hour period, was used as an indicator of impact (noting that there is currently no objective for arterial roads). The levels on 18 of the 22 days monitored after the introduction of the truck curfew exceeded this indicator.

In the 2002 survey, an indicator of peak noise levels (the  $L_{A1}$  indicator) was measured in addition to the average noise indicator. This indicator represents the noise level exceeded one per cent of the time and, while it is not a recognised traffic noise indicator, it does provide some information on peak noise levels experienced.

This indicator was only recorded during the 2002 measurements, which included a period before the introduction of the truck curfew. Figure 3 shows the average hourly  $L_{A1}$  noise level both before and after the curfew. While the day times levels generally only differ by about  $1\text{dB(A)}$  or less, the night time differential is about  $2\text{dB(A)}$  indicating that there has been a reduction in the peak level of noise experienced at night by the residents of Francis Street, Yarraville.

The noise monitoring results are consistent with the expected noise reductions from the decrease in

traffic volume on Francis Street. Based on experience elsewhere, reducing the total traffic volume by half will produce approximately a  $3\text{dB}$  reduction in noise levels.

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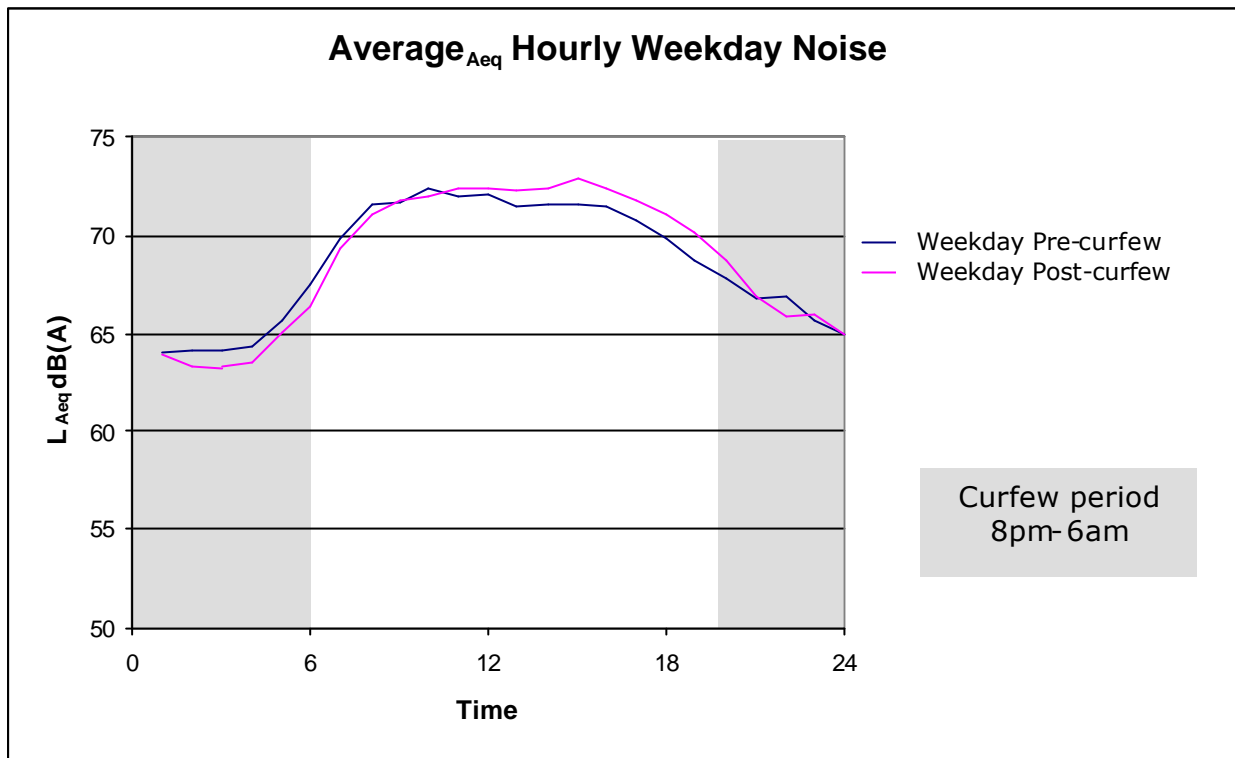


Figure 1: Average weekday pre and post-curfew 1hour  $L_{Aeq}$  noise levels

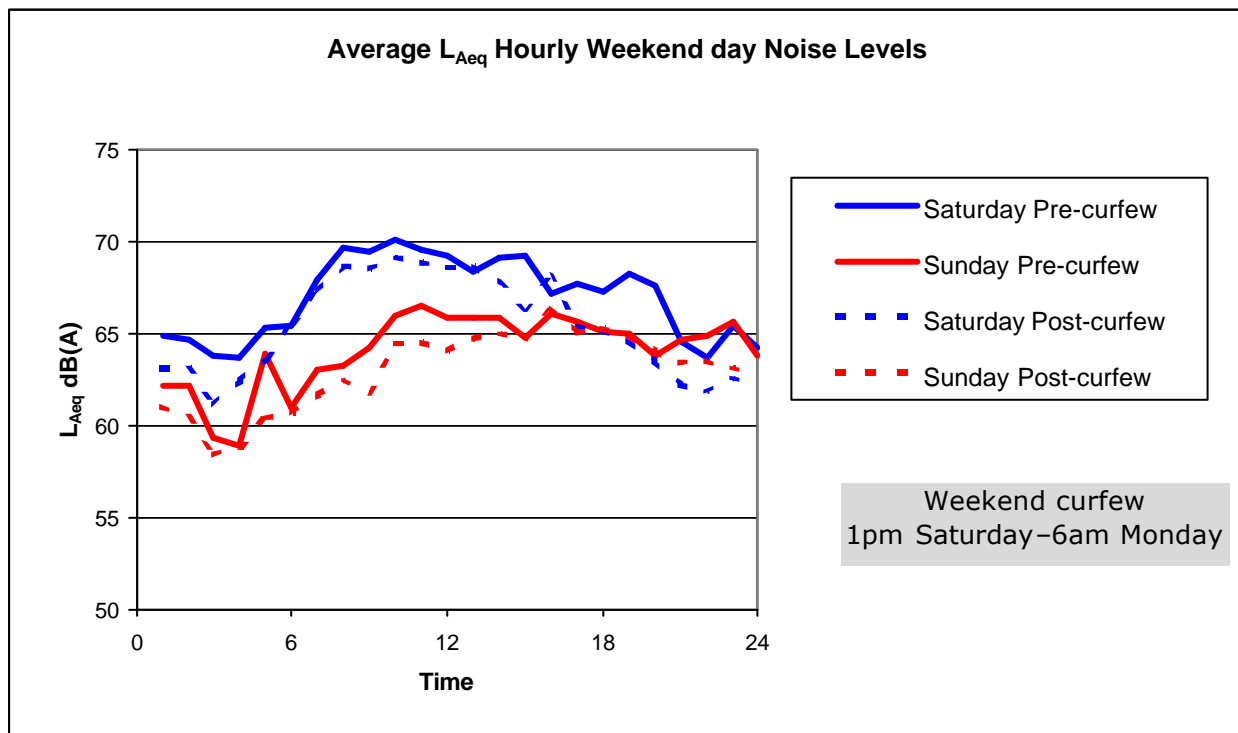


Figure 2: Average weekend day pre and post-curfew 1hour  $L_{Aeq}$  noise levels

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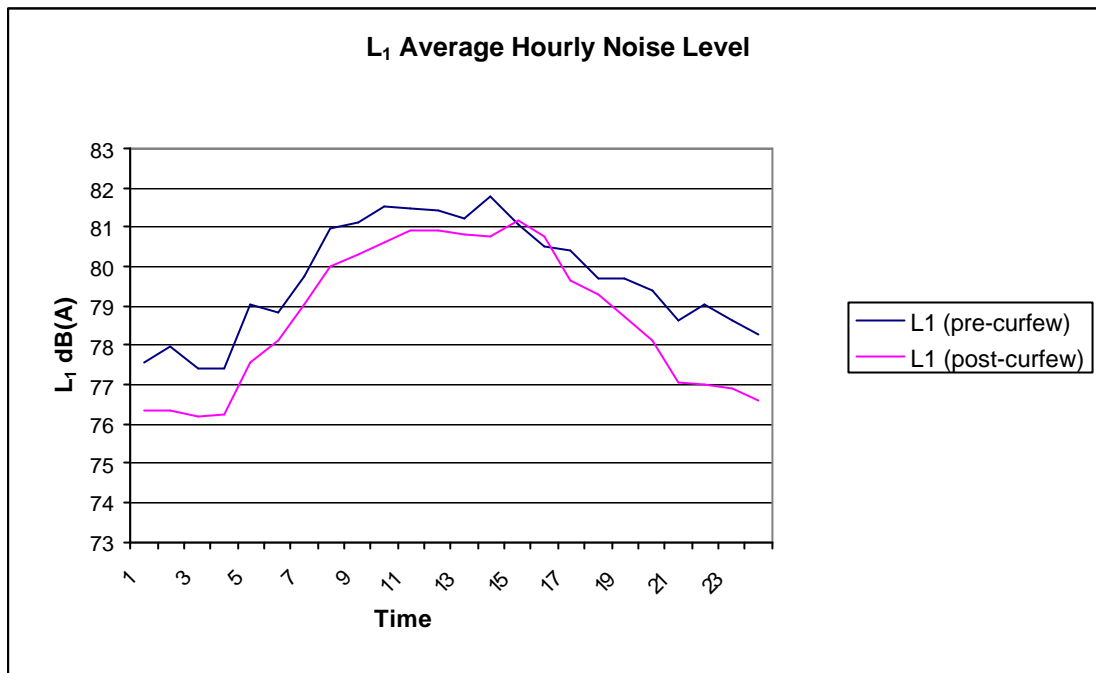


Figure 3: Hourly averaged  $L_{A1}$  noise levels pre and post curfew.

## CONCLUSION

- During the 2002 survey period, residents in Francis Street, Yarraville still experience levels of traffic noise that exceed some major road traffic noise objectives currently in use in various parts of Australia.
- The noise levels experienced by the Francis Street residents following the introduction of the night traffic curfew have not significantly changed during weekday nights, but noise levels during the curfew period at weekends have reduced slightly.
- The night time truck curfew has resulted in a reduction in peak noise levels, despite only a slight reduction in average noise levels.

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## APPENDIX 1

The indicators in the table below use a one hour  $L_{Aeq}$  arithmetically averaged over the full day, an 18-hour period (06.00-24.00), a 15-hour period (07.00-22.00), and a 9-hour period during the night (22.00-07.00).

### $L_{Aeq}$ averages for 24-hour, 18-hour, 15-hour and 9-hour periods

	Wed	Thur	Fri	Sat	Sun	Mon	Fri	Sat	Sun	Mon
	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	12-Apr	13-Apr	14-Apr	15-Apr
$L_{Aeq-24hr}$		70.4	69.8	66.9	64.1	70.5		66.6	62.3	68.7
$L_{Aeq-18hr}$		71.7	71	67.7	65.0	71.9		66.8	63.1	70.7
$L_{Aeq-15hr}$		71.8	71.2	67.8	65.3	72.1		66.9	63.5	71.3
$L_{Aeq-9hr}$	67.3	67.3	65.4	62.2	66.6	68.2	66.3	60.7	63.1	64.5

	Tue	Wed	Thur	Tue	Wed	Thur	Fri	Sat	Sun	Mon
	16-Apr	17-Apr	18-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr
$L_{Aeq-24hr}$	68.8	68.9	68.9		69.2	66.3	69.2	65.7	63.5	68.4
$L_{Aeq-18hr}$	70.6	70.5	70.4		70.9	66.7	70.6	66.5	64.8	69.9
$L_{Aeq-15hr}$	71.1	71.0	70.9		71.1	66.7	70.9	66.5	65.3	70.3
$L_{Aeq-9hr}$	64.8	64.9	65.4	65.3	65.8	65.4	64.2	60.5	64.2	65.4

	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon
	3-May	4-May	5-May	6-May	7-May	8-May	9-May	10-May	11-May	12-May	13-May
$L_{Aeq-24hr}$		65.1	62.8	68.5	68.9	68.9	69.3	69.3	65.3	63.5	69.1
$L_{Aeq-18hr}$		65.8	63.4	70.2	70.4	70.3	70.9	70.6	66.0	64.7	70.6
$L_{Aeq-15hr}$		65.8	63.5	70.5	70.7	70.6	71.3	70.9	66.0	65.0	70.8
$L_{Aeq-9hr}$	64.0	61.0	64.0	65.0	65.3	65.4	66.0	64.1	60.7	65.3	65.3