



Francis Street

Community
information



Monitoring program - Report three

In May 2012, EPA Victoria commenced a 12 month air quality monitoring and noise assessment project in Francis Street, Yarraville. This is the third quarter report, and nine months of monitoring and reporting is now complete. A final report will be published following the completion of the 12 month monitoring program and analysis.

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Summary

EPA is measuring air quality in Francis Street against daily and annual health based standards.

In regards to the daily standard, air quality in Francis Street is meeting the objectives on all but two days for all substances being measured. In regards to the annual finding, one substance, PM_{2.5} particles, is tracking slightly above the national advisory reporting standard. We will have a clear picture of this at the end of 12 months of testing.

During the first nine months of monitoring, there were two days that exceeded the daily PM₁₀ objective and none for PM_{2.5} - the two key particles being measured as part of this air monitoring program.

Ambient air quality standards are now being reviewed through a national process and EPA Victoria is contributing to this review¹. Current national standards remain the appropriate compliance standard while this review is underway.

Francis Street is busy, with an estimated 20,000 cars and trucks travelling each weekday between Williamstown Road and Whitehall Street. Pollution measures at slightly higher levels than that found at EPA's other fixed air monitoring stations in neighbouring residential areas.

Nitrogen dioxide levels were below the air quality objective; and benzo (a) pyrene measured over 12 months through an annual objective are

expected to remain below the annual objective based on results so far. The monitoring program for noise has continued to measure readings high enough to impact residents. Based on the World Health Organisation Guidelines for community noise², road traffic noise levels measured in Francis Street are high enough to cause annoyance and disturb speech and sleep.

What is being measured?

Noise

Noise monitoring is physically measured on site in fortnightly blocks periodically throughout the year; these results are recorded in decibels dB (A).

EPA uses a common regulatory standard to measure noise impacts, calculating the average maximum levels of 18 separate hourly readings that are recorded between 6am and midnight on an average day. EPA found noise levels recorded in February were similar to those taken in July and November.

To help understand different noise levels and patterns along Francis Street, EPA has measured noise at three sites, finding some differences in noise levels across the three sampling sites, but consistently lower levels of noise at the weekend across all sites.

HOW ARE THE MONITORING RESULTS ASSESSED?

Air

PM₁₀ and NO₂ levels were compared against State and National air quality objectives and goals³. The objectives have been set at levels that are designed to protect human health and wellbeing; however exposure by sensitive groups to air pollutants also results in health impacts even when levels are below existing national standards or objectives. The goals, expressed as a maximum number of high pollution days per year, are used to guide strategies for the management of activities affecting our air quality. The goals are for no more than 5 days to exceed the PM₁₀ daily objective each year, and no more than 1 day to exceed the NO₂ hourly objective.

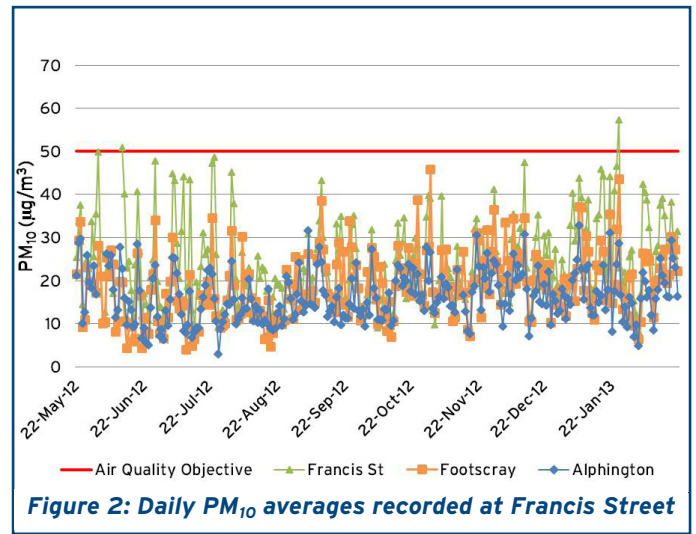
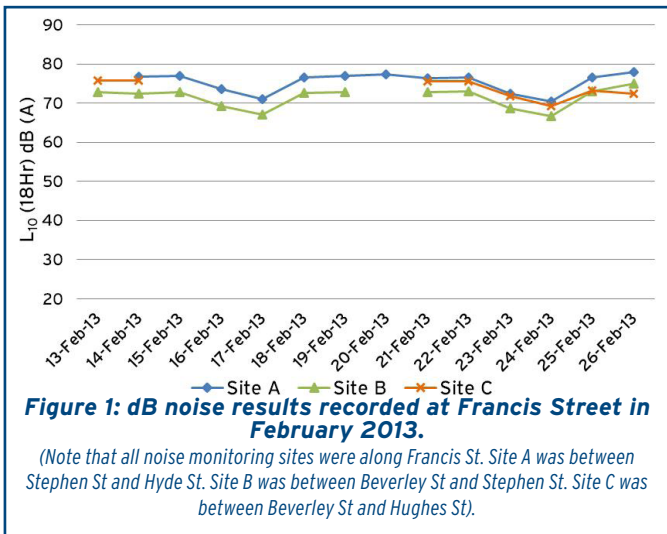
For PM_{2.5}, instead of objectives, the Ambient Air Quality National Environment Protection Measure (AAQ NEPM) specifies the use of advisory reporting standards for assessment⁴. The goal of the advisory reporting standard was to gather sufficient data nationally to facilitate a review of the AAQ NEPM.

This is now happening as part of the national review of ambient air quality standards.

Benzo (a) pyrene is assessed against the National Environment Protection (Air Toxics) Measure, 2004⁵.

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Air

EPA is measuring major air pollutants associated with motor vehicle emissions.

These include:

- Two types of small particles; those less than 10 micrometers in diameter (PM₁₀), which is also found in windblown dust, and particles less than 2.5 micrometers in diameter (PM_{2.5}) typically from burning or combustion, including fuel.
- Pollutants related to the burning or combustion of fuel including nitrogen dioxide (NO₂) and benzo (a) pyrene.

More information on these air pollutants is available on EPA's website <http://www.epa.vic.gov.au/your-environment/air/air-pollution>

Particles as PM₁₀

The PM₁₀ air quality objective (50 µg/m³) was not met on two days during the first nine months of monitoring at Francis Street.

The first day that exceeded the PM₁₀ objective was on 12 June 2012 and was associated with a period of poor air quality lasting for three hours before midday when light northerly winds prevented dispersion of air pollutants.

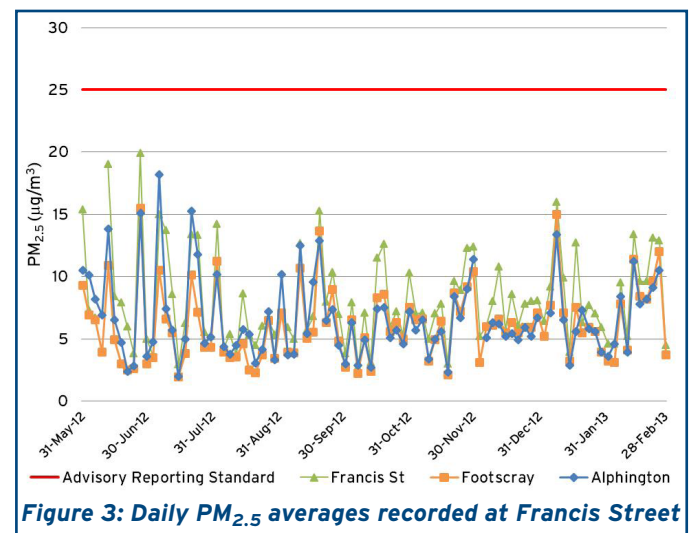
The second day that exceeded the PM₁₀ objective was on 25 January 2013 and was a widespread windblown dust event across Melbourne associated with a strong wind change during the early morning. PM₁₀ levels at Brooklyn and Dandenong also exceeded the PM₁₀ objective on this day.

PM₁₀ levels in Francis Street were higher in summer than in spring. This is linked to the hot and dry weather experienced in Melbourne during the recent summer.

Particles as PM_{2.5}

For the first nine months of monitoring, PM_{2.5} levels in Francis Street fell below the daily PM_{2.5} reporting standard (25 µg/m³) but were generally higher than levels recorded at Alphington and Footscray monitoring stations.

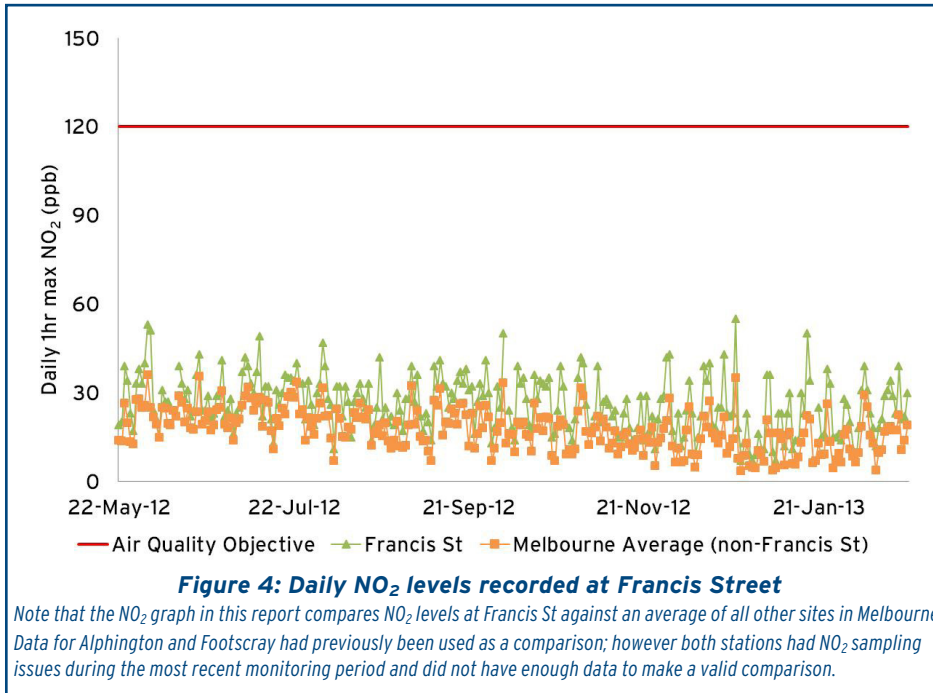
The PM_{2.5} average for the first nine months of monitoring is 8.1 µg/m³, so there is a possibility the annual PM_{2.5} reporting standard (8 µg/m³) may be exceeded. The results from Francis Street will be assessed against this standard after the 12 month monitoring program is completed.



Nitrogen dioxide (NO₂)

NO₂ levels measured at Francis Street have generally been higher than levels measured elsewhere in Melbourne, but remain within the state and national air quality objective (120 parts per billion).

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Benzo (a) pyrene

The assessment criterion for Benzo (a) pyrene is an annual objective (0.3 ng/m³). At the end of the 12 months of monitoring the results gathered throughout the year will be averaged and measured against this annual objective. Based on the first nine months of results, shown below, the annual objective is not anticipated to be exceeded.

	Maximum (ng/m ³)	Average (ng/m ³)
Benzo(a)pyrene	0.55	0.06

Table 1: 24-hour benzo (a) pyrene levels measured at Francis Street (31 May 2012 - 28 Feb 2012)

References

- 1 National Plan for Clean Air
<http://www.scew.gov.au/strategic-priorities/national-plan-for-clean-air.html>
- 2 Guidelines for Community Noise, World Health Organisation (1999), available at <http://www.who.int/docstore/peh/noise/guidelines2.html>
- 3 State Environment Protection Policy (Ambient Air Quality), Victoria Government Gazette No. S19, 9 Feb 1999 (amended Dec 2001), available at www.epa.vic.gov.au
- 4 National Environment Protection (Ambient Air Quality) Measure, National Environment Protection Council, available from www.comlaw.gov.au. See Schedule 4.
- 5 National Environment Protection (Air Toxics) Measure, National Environment Protection Council, available from www.comlaw.gov.au
- 6 EPA Noise Fact Sheet, Publication 1467, available at www.epa.vic.gov.au
- 7 EPA motor vehicle, tram and train web link
<http://www.epa.vic.gov.au/your-environment/noise/motor-vehicle-train-and-tram-noise>.

HOW ARE THE MONITORING RESULTS ASSESSED?

Noise

Noise levels are measured in decibels (dB)⁶. In Victoria, there is no official assessment criteria for arterial roads constructed prior to 1979 such as Francis Street.

More information on road traffic noise is available on EPA's website www.epa.vic.gov.au/your-environment/noise/motor-vehicle-train-and-tram-noise

MORE INFORMATION

EPA will provide the community with reports throughout the program.

Visit www.epa.vic.gov.au or phone EPA on 1300 EPA VIC (1300 372 842) for further information.