

ASSESSMENT OF AIR QUALITY, TRAFFIC NOISE AND COMMUNITY HEALTH PERCEPTIONS SURVEY

FRANCIS STREET, YARRAVILLE

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INTRODUCTION

Francis Street, Yarraville residents have expressed concern about the impact of heavy diesel truck traffic on their local environment. The volume of traffic along Francis Street during a typical weekday is approximately 18,000 vehicles, of which 25 to 30 per cent is diesel commercial traffic. In particular, residents have expressed concern about the potential health impacts of exposure to airborne particles and other air pollutants emitted from trucks and a loss of amenity due to traffic noise.

In 2001, EPA Victoria conducted an extensive monitoring study to measure the levels of key air pollutants and traffic noise in Francis Street. The monitoring results (EPA Publications 820 & 821) showed that:

- On five days, air quality (measured as particle concentrations), exceeded intervention levels defined in the State environment protection policy (Air Quality Management) [(SEPP (AQM))] indicating some increase in risk of adverse health effects for those residents with pre-existing heart and respiratory health conditions at the time of sampling; and
- residents in Francis Street experience higher levels of traffic noise than residents in many other areas in Melbourne.

Following this study, VicRoads introduced various initiatives including a Freeway Truck Travel Benefit program (to encourage trucks to use the Westgate Freeway instead of Francis Street) and a night-time and weekend truck curfew for Francis Street between Whitehall Street and Geelong Road in April 2002.

From late March to early August 2002, EPA conducted follow-up air quality and noise monitoring studies to assess the effectiveness of measures taken to reduce the levels of air pollutants and traffic noise. EPA also conducted a survey of the health perceptions of residents in the Francis Street area between May and August (refer EPA Publications 896, 897 and 898).

AMBIENT AIR MONITORING 2002

The 2002 air quality monitoring was conducted at Francis Street and at other EPA monitoring sites in Alphington, Richmond and Footscray. These other monitoring sites are typical inner suburban residential areas, not subject to high industrial traffic flows, and were chosen primarily to provide comparative background levels.

Particle concentrations at Francis Street were higher than at the compared EPA monitoring sites. Overall, the particle concentrations in 2002 were lower than those measured in 2001. Meteorological data from EPA's Paisley monitoring station suggest that the

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lower particle concentrations during July 2002 compared to 2001 (including those measured at Francis Street) are most likely to have been influenced by differences in wind speed and other weather conditions between the years than by the truck curfew introduced in April 2002.

Given what is already known about the dispersal of particles near major roads, it is likely that elevated levels would only affect the residences fronting Francis Street.

The 2002 results also indicated that the PM_{10} (a measure of airborne particles) intervention level was exceeded on only one occasion.

The 2001 results also revealed that the PM_{10} concentrations measured at Francis Street were significantly higher than at an EPA monitoring station beside a major arterial road in Collingwood and at other stations in typical suburban areas of Alphington, Richmond and Footscray.

The monitoring also showed that all measured nitrogen dioxide, carbon monoxide and sulfur dioxide concentrations were below the intervention levels in SEPP (AQM) and therefore did not indicate local air quality problems due to these pollutants.

TRAFFIC NOISE MONITORING 2001/ 2002

EPA also conducted noise monitoring near the Yarraville Community Centre during July and August in 2001. This initial monitoring 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, but that EPA is currently developing a State environment protection policy for road traffic noise).

As a consequence, further noise monitoring was conducted in Francis Street, Yarraville at various times between March and May 2002. The measurement point used was the same as for the measurements taken in 2001. Measurements were taken both before and after the truck curfew was implemented on 4 April 2002.

The intention of the second round of traffic noise monitoring was to measure the levels of noise experienced by residents at this time and to establish whether the introduction of the curfew has reduced the noise levels and disturbance caused by the traffic.

The 2002 noise monitoring results show that the introduction of the night traffic curfew has marginally reduced noise levels experienced by the Francis Street residents during the night. However residents still experience levels of traffic noise that exceed some major road traffic noise objectives currently in use in various parts of Australia.

RESIDENTS' HEALTH PERCEPTIONS SURVEY

The survey forms were delivered to 562 households in three areas of Footscray and Yarraville (including Francis Street). These areas were selected on the basis of similar socio-economic factors as well as exposure to different traffic volumes and mixes, in particular the density of truck traffic. The areas selected were:

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- Francis Street, Yarraville;
- Somerville Road, Yarraville; and
- Roberts Road, West Footscray.

The survey asked questions about:

- symptoms of physical illness such as physical disability and pain as well as general health;
- respiratory symptoms and diagnosed respiratory illnesses such as asthma and chronic obstructive pulmonary disease (COPD);
- annoyance by air pollution and noise; and
- emotional and mental health.

Additional questions were asked in relation to the household in which people were living, so other factors that can affect people's health, such as pets and type of heating, could be accounted for in the analysis.

The results of the general health perceptions survey found that the residents who responded in the three areas surveyed believed that their general health was poorer than the Australian average. Physical health did not differ across the respondents in the three areas. There were some small differences found between the three groups in the areas of mental health, vitality and general health.

Air pollution is known to impact on people who have existing diseases such as asthma, emphysema and COPD. This can lead to increases in symptoms such as coughing, wheezing, phlegm, and runny noses.

The survey asked questions relating to these

illnesses and symptoms which can be aggravated by air pollution.

Symptoms such as cough and cough with phlegm showed some differences between the areas, with Francis Street residents reporting higher incidence of these symptoms than residents of the other areas. These differences were however only marginally significant (in statistical terms) and it cannot therefore be concluded that they would have been found if all of the households in the areas had responded to the survey.

As noted above, given the fact that only slightly more than half the residents responded to the survey, the conclusions that can be reached with confidence about the whole of the population are limited. Another difficulty in interpreting the results is the high level of awareness of air pollution issues among the Francis Street residents compared to the other two areas. This can lead to bias in the self-reporting of symptoms. The results of the study therefore cannot be considered definitive but only indicative.

As noted above, overall the number of people who participated in the study was relatively small which limits the interpretation of the data. In particular, the number of surveys returned for children was extremely small which made it impossible to undertake an analysis of these data.

WHERE TO FROM HERE?

Together with the air and noise monitoring reports, EPA will forward the Residents' Health Perceptions Study Report on to the members of the Government working group dealing with transport issues in

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Yarraville. It is expected that the three reports will assist the relevant agencies in formulating advice to Government on possible further action to address residents' concerns.

The air and noise monitoring reports and complete report on the community health study are available on EPA's website: www.epa.vic.gov.au