

## FRANCIS STREET COMMUNITY HEALTH PERCEPTIONS STUDY

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### BACKGROUND

For some time, residents in Francis Street Yarraville have been concerned about the potential health effects of exhaust fumes from the large volume of heavy vehicle traffic that uses the street. In June and July 2001, EPA Victoria conducted air quality and noise monitoring in Francis Street. The results of this monitoring indicated that the air pollution levels in Francis Street, on occasion, exceeded the air quality objectives (intervention levels) contained in the *State environment protection policy (Air Quality Management)* [SEPP (AQM)].

The intervention levels in the SEPP (AQM) are trigger levels that, if exceeded, require further investigation. Given that the intervention levels were exceeded in the 2001 monitoring, EPA undertook to conduct further monitoring in Francis Street and to conduct a community health perceptions study in the area. These studies were undertaken between May and August 2002.

The results of the air and noise monitoring are the subject of separate EPA reports. This report provides a summary of the results of the community study.

### STUDY DESIGN

The study was designed to compare residents' perceptions of their health in three areas of Footscray and Yarraville. 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:

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

EPA's mobile air monitoring laboratory was situated in Francis Street Yarraville from May to August 2002. EPA also has a fixed site air monitoring station in Hansen Reserve, Roberts Road West Footscray. Traffic counts for each of the three roads were obtained from VicRoads.

Residents in each area were asked to fill out a community health survey for the adults and children in each household. Parents filled out the survey on behalf of their children.

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.

In addition questions were asked about the household in which people were living so that other things that can potentially affect people's health, such as pets and type of heating, could be accounted for in the analysis.

The survey forms were collected by EPA and sent to the University of the Sunshine Coast for analysis.

## **LIMITATIONS OF THE SURVEY DATA**

Slightly more than half (317 or 56 per cent) of the total population of 562 households located across the three areas completed the survey and returned it for analysis. More specifically, there was a lower response rate in Roberts Road than in either Somerville Road or Francis Street. The response rates in Francis Street and Somerville Road were similar.

Ideally, to be confident in drawing conclusions about the whole population rather than just about those who replied to the survey, nearly all households would have to participate. Since this was not achieved, the types of analysis which can be reliably carried out on the data and the extent to which firm conclusions can be drawn about the three populations are limited. In particular, it should be noted that the number of surveys returned for children was extremely small which made it impossible to undertake an analysis of these data. The findings reported below therefore relate only to the adult population in the study areas.

Nevertheless the results do tell us a considerable amount about the health perceptions of those who did respond. These results are worthy of

consideration in their own right since, on average, they inform us about the health perceptions of more than half of the population. Further, responses to some of the questions are statistically significant (that is, unlikely to have occurred by chance) and therefore provide a reliable basis for drawing conclusions about the populations themselves, not just those who responded.

## **WHAT DID THE STUDY FIND?**

The results of the general health 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 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 chronic obstructive pulmonary disease. 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.

The prevalence of doctor-diagnosed asthma was similar across respondents from all three areas. With respect to the health impacts that could be aggravated by air pollution, statistically significant differences were found between Francis Street and Roberts Road residents and Somerville Road and Roberts Road residents for self reported wheeze. (In this context statistically significant differences were those that were unlikely to have occurred by chance and which therefore have been interpreted as reflecting real differences between the populations.)

Both Francis Street and Somerville Road residents reported higher incidence of wheeze than the Roberts Road residents. Francis Street residents also reported a significantly higher incidence of sneezing and runny/blocked nose than the Somerville Road residents.

No other health outcomes showed statistically significant differences between the three study areas. 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. However the statistical significance of these differences was marginal and we cannot therefore conclude that they would be found if all of the households had responded to the survey.

With respect to environmental issues, the residents who responded from Francis Street reported a high perceived risk of adverse health effects, much higher than residents from the other areas. The degree of annoyance from air pollution and noise was also much greater in Francis Street residents than in residents from the other areas. Residents from Somerville Road reported higher annoyance levels than the Roberts Road residents. These results were statistically significant.

## **WHAT DO THESE RESULTS MEAN?**

As noted above, given the fact that only slightly more than half the residents responded to the survey there are limits to what we can say with confidence about the whole of the population. Another difficulty in interpreting the results is the high level of awareness of air pollution issues among the Francis Street residents compared with 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.

Within these limitations, the study results indicate that the incidence of wheeze, cough and sneezing appear to be higher in the communities exposed to higher levels of truck traffic, in particular Francis Street. This finding is consistent with the results of several overseas studies into the effects of air pollution from trucks on respiratory symptoms.

The 57 per cent of residents of Francis Street who responded to the survey also reported a higher level of annoyance by air pollution and noise in their local area. This can impact significantly on their quality of life.

## **WHERE TO FROM HERE?**

Together with the air and noise monitoring reports, EPA will forward this report on community health perceptions to the members of the Government working group dealing with transport issues in 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 perceptions study are available on EPA's website [www.epa.vic.gov.au](http://www.epa.vic.gov.au)