

Investigating health concerns in populations living near the Cleanaway landfill in Tullamarine

Background

The Cleanaway landfill is located in the City of Hume in a former stone quarry in Western Avenue, Tullamarine. The landfill is next to Melbourne Airport with the residential suburbs of Attwood, Tullamarine, Gladstone Park and Westmeadows within a 3 km radius (refer to map).

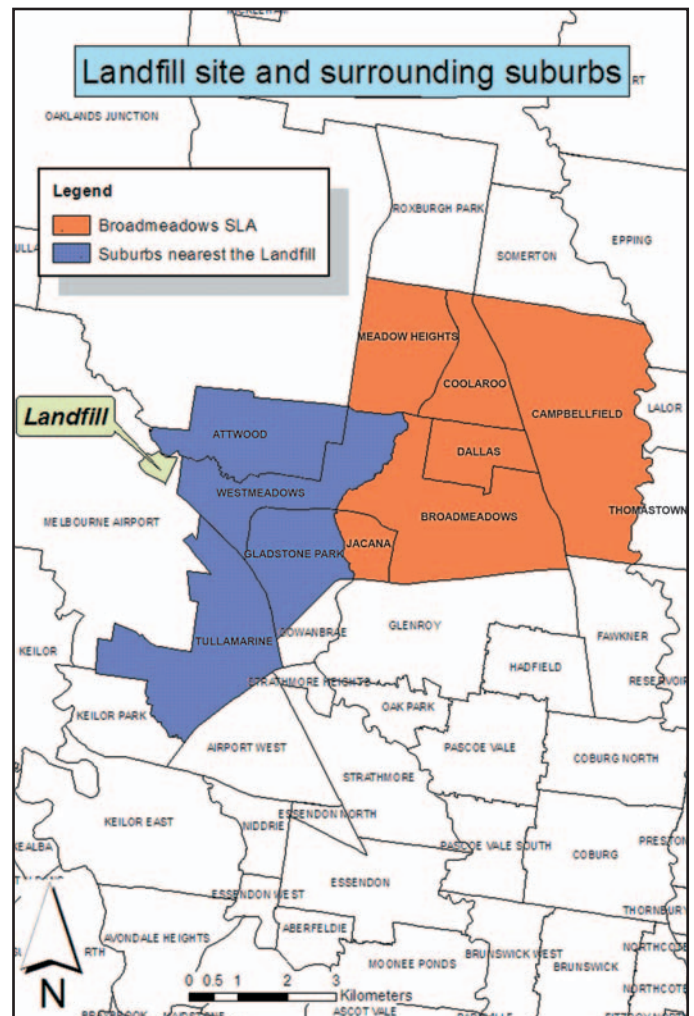
The landfill has operated since 1973. It was used for liquid and solid industrial wastes until 1988. Since this time, it has received only solid wastes.

What did this study involve?

In February 2006, Hume City Council, concerned residents and local representatives contacted the Department of Human Services for information on the level of disease in the population living near the landfill. Residents raised concerns about the potential for health problems, including cancers, miscarriages, multiple sclerosis, asthma and skin disorders.

The Department's Environmental Health Unit reviewed data on cancers, birth defects and other birth-related outcomes to see whether the rate of these conditions were higher in populations living near the landfill. High quality population data have been available for these conditions since the early 1980s. This public information sheet summarises this investigation. The comprehensive report is available by visiting our website (refer end of this sheet).

In Victoria, *The Cancer Council Victoria* runs the Victorian Cancer Registry, which collects cancer data and *The Consultative Council on Obstetric and Paediatric Mortality and Morbidity* manages birth-related data. Both assisted in this investigation.



Cancer

Staff at *The Cancer Council Victoria's* Cancer Epidemiology Centre compared the level and types of cancers in the population living near the landfill against the rest of metropolitan Melbourne.

Ten years' worth of data (1994–2003) were analysed to provide large enough numbers to produce meaningful comparisons. These years were selected because the City of Hume local government area started in 1994.

On average, 212 new cancers were diagnosed each year in the broader area around the landfill (ie. the Broadmeadows Statistical Local Area). The main cancers were of the breast, lung, bowel, prostate, melanoma and lymphoma, which made up almost two thirds of all cancers diagnosed in the area.

In comparison, 14,290 new cancers were diagnosed each year in the rest of metropolitan Melbourne. The main cancers and the proportion of these cancers were similar (or not statistically¹ different) to the population living near the landfill.

The Cancer Council Victoria adjusted this information for the size, and age distribution of each population of interest. Overall, there was no statistically significant difference between the cancer rates (for all cancers) in the population living near the landfill compared to the rest of Metropolitan Melbourne (*refer to table*).

The Cancer Council Victoria concluded that:

- cancer rates in the Broadmeadows SLA were slightly lower than the reference population (the rest of Metropolitan Melbourne) however this difference was not statistically significant.
- there is nothing in these figures to suggest any excess of cancers in the Broadmeadows region over a decade.

Cancer rates (age standardised) 1994–2003

Populations living near the landfill compared to the rest of metropolitan Melbourne

	Broadmeadows SLA*	Metropolitan Melbourne**
Male	321 new cancers diagnosed per 100,000 males	335 new cancers diagnosed per 100,000 males
Female	246 new cancers diagnosed per 100,000 females	264 new cancers diagnosed per 100,000 females
Both	281 cases per 100,000 people	294 cases per 100,000 people

* The Broadmeadows Statistical Local Area contains postcodes 3061 (Campbellfield), 3047 (Broadmeadows/Dallas), 3048 (Meadow Heights/Coolaroo), 3049 (Westmeadows/Attwood) and 3043 (Gladstone Park/ Tullamarine).

** All suburbs in metropolitan Melbourne minus suburbs in the Broadmeadows Statistical Local Area.

¹ Statistically different, or statistically significant refers to something that is unlikely to occur due to chance.

Birth defects and other birth related outcomes

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity compared over 90 different birth defect combinations and several birth-related conditions in the population living in postcodes nearest the landfill (ie within 3 kms) against the rest of Victoria.

Twenty years of data (1983–2003) were analysed. The populations living nearest to the landfill are postcodes 3043 (Tullamarine, Gladstone Park) and 3049 (Westmeadows, Attwood).

Overall, no statistically significant difference was seen between these postcodes and the rest of the state for:

- all birth defects (diagnosed up to the age of 15 years)
- low birth weight (babies weighing less than 2500 grams) or
- perinatal mortality (stillbirths plus babies living less than a month after birth).

Pre-term birth (less than 37 weeks) was the only birth-related outcome with a small, but statistically significant increase (7.9 per cent) compared to the rest of Victoria (7.6 per cent).

Preterm birth

Preterm babies (also known as premature babies) are born when the pregnancy is less than 37 weeks advanced. Generally, these babies also have lower birth weights.

The small increase in pre-term birth in the postcodes of 3043 and 3049 was further investigated by comparing preterm birth in this study area with preterm birth in a broader local population with similar characteristics, the Department of Human Services Northern Region.

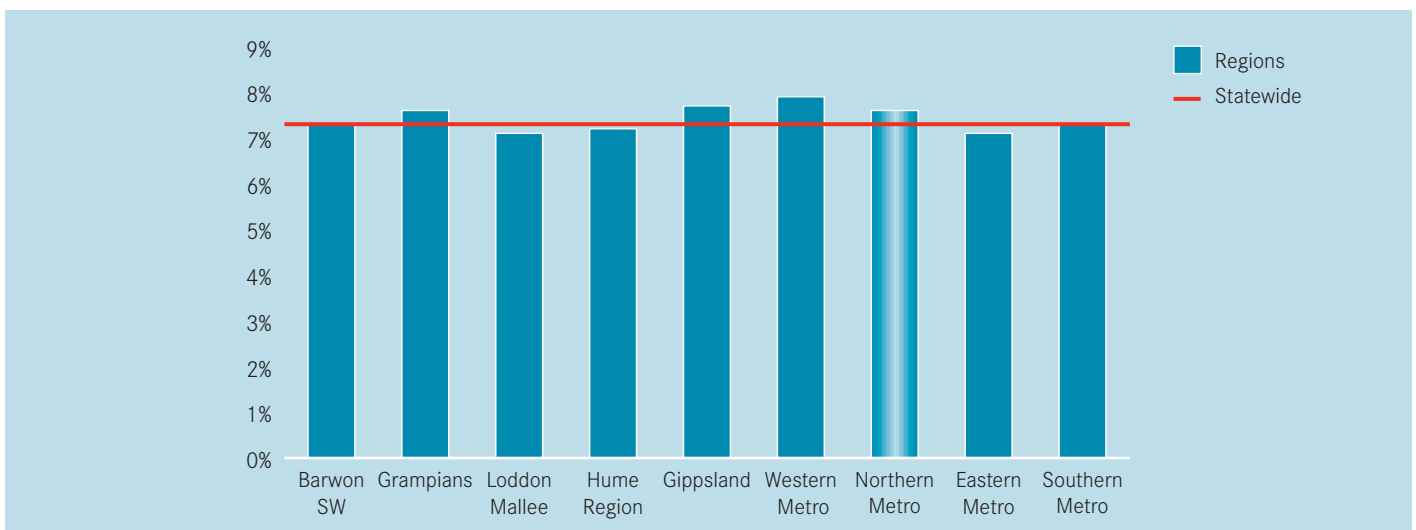
Data collected from 1993 to 2003 were used in this comparison as the Department’s Regional boundaries changed in 1993 and again in 2003. During this time, the Northern Region² comprised seven municipalities, including the City of Hume.

For this ten-year period, preterm birth (< 37 weeks) in postcodes 3043 and 3049 was similar (or not statistically different) to preterm birth (< 37 weeks) in the Department’s Northern Region. A number of Department of Human Services Regions also have levels of preterm birth slightly higher than the average for the State (ie. 7.5%) (refer to graph).

The Consultative Council for Obstetric and Paediatric Mortality and Morbidity concluded that:

- the small increase in preterm birth (< 37 weeks) in the area of Tullamarine, Gladstone Park, Westmeadows and Attwood is consistent with the level of preterm birth in the broader local area of the Department’s Northern Region.
- a range of factors can influence whether babies are born preterm, including the mother’s health and smoking habits, her socio-economic status and how many children she has had. The socio-demographics characteristics of the area are a likely influencing factor for this result.

Preterm births in DHS Regions and statewide, 1993–2003



² In 2004, the Department of Human Services Northern Region was amalgamated with the Western Region to form the North and West Metropolitan Region.

In Brief

This investigation:

- compared the rates of a number of conditions in the population living near the landfill with rates for the State as a whole (or other control areas)
- saw no statistically significant difference in the rates of cancer, birth defects or the majority of birth-related outcomes
- found that populations living nearest to the landfill have a slightly higher rate of preterm birth when compared to the state, but not when compared to the region as a whole. The socio-demographics characteristics of the area are a likely influencing factor for this result.

Conclusion

Overall, this investigation of available data sources for the population near the landfill site does not provide evidence that supports anecdotal claims that cancers, birth defects or adverse birth-related outcomes are higher in populations living near the landfill compared to the rest of Victoria (or other control groups).

More information

For more information about this study, or to obtain a copy of the study report please contact the Environmental Health Unit on 1300 761 874 or visit: www.health.vic.gov.au/environment/

For more information about the environmental management of the landfill please contact the Environment Protection Authority Victoria Information Centre on (03) 9695 2722 or visit www.epa.vic.gov.au/