



Environmental Health Indicators for New Zealand

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EXCEEDANCES OF CARBON MONOXIDE (CO) ENVIRONMENTAL STANDARDS IN NEW ZEALAND

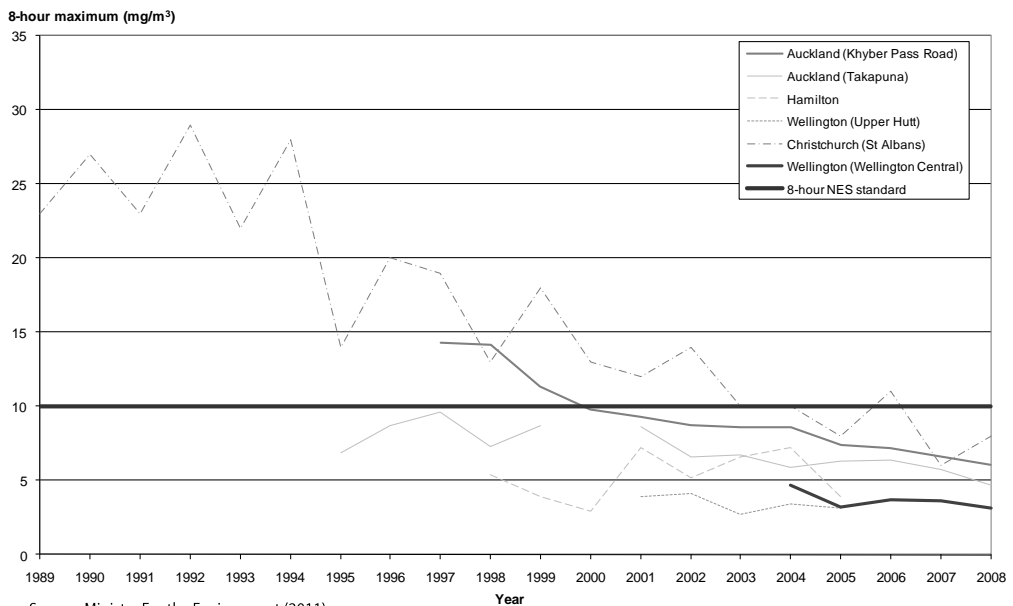
Air quality is a critical environmental health issue, as clean air is essential to life and development. Air pollution has been linked to a wide range of health effects, including by exacerbating respiratory and cardiovascular conditions (American Thoracic Society 1996, 2000) and causing restricted activity days (eg, air pollution causing breathing problems which prevent work attendance) (Fisher et al 2007).

The sources of air pollution can be domestic, vehicular, industrial and natural (including wind-blown dust). However, the key pressure on air quality in New Zealand is domestic heating, with high levels of particulate matter due to household wood and coal burning (Ministry for the Environment 2010a). In Auckland, population growth is increasing the number of vehicles on the road, which also contributes to poor air quality (Ministry for the Environment 2010c). In general, the concentration of pollutants in the air can be influenced by pollution sources, location, topography, time of day, weather conditions, wind patterns, season and specific emission types and levels.

CO is associated with health effects ranging from respiratory, neurobehavioral effects at low concentration (10 ppm) to unconsciousness and death after prolonged or acute exposure to high concentration of CO (> 500 ppm). It has a maximum concentration of 10 mg/m³ per eight hours according to the National Environmental Standards for Air Quality.

Figure 1 compares the eight-hour maximum levels of carbon monoxide at sites in Auckland, Hamilton, Wellington and Christchurch with the national environmental standard of 10 mg/m³ (measured as a running eight-hour average).

Figure 1:
CARBON MONOXIDE (CO) EIGHT-HOUR MAXIMUM LEVELS IN SIX MONITORED AIRSHEDS, 1989-2008



Source: Ministry For the Environment (2011)

Carbon monoxide (CO) eight-hour maximum levels

In 2008 all six sites met the national environmental standard for CO. Between 2003 and 2008 there was only been one exceedance (in the St Albans airshed in Christchurch in 2006) of the standard for CO.

References

- American Thoracic Society. 1996. Health effects of outdoor air pollution: Committee of the Environmental and Occupational Health Assembly of the American Thoracic Society. American Journal of Respiratory and Critical Care Medicine 153: 3-50.
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- Ministry for the Environment. 2010a. *Environmental Report Card February 2009 – Air Quality (Particulate Matter – PM10)*. Wellington: Ministry for the Environment.
- Ministry for the Environment. 2010c. *Reducing Vehicle Emissions*. URL: <http://www.mfe.govt.nz/issues/air/programme/vehicle.html> Accessed 11 June 2010.