

Air Quality Fact Resources

We breathe 11,000 litres of Auckland's air everyday.

This is based on a typical resting breathing rate of 7.5 litres per minute. Note that the breathing rate while walking is approximately 30 litres/minute and the rate during strenuous exercise is as high as 80 litres/minute. This means that an active person will breathe more than 14,000 litres per day. (Source: Auckland Regional Council Technical Publication 88, Ambient Air Quality: Monitoring Results for the Auckland Region 1964-1995)

The air pollution in many of Auckland's inner city streets regularly exceeds World Health Organisation standards.

For example, monitoring shows that in 2001 there were 48 exceedence days.

This is based on Auckland Regional Council ambient air quality monitoring results. Monitoring results are compared to proposed Ministry for the Environment guidelines, which are based on World Health Organisation standards. Exceedences of these standards are reported monthly to ARC's Environmental Management committee. The number of days where standards have been exceeded in recent years is summarised below for key pollutants (**PM₁₀** (particles less than 10 microns in diameter) **PM_{2.5}** (particles less than 2.5 microns in diameter) **CO** (Carbon Monoxide) and **NO₂** (Nitrogen Dioxide). The **total** represents the number of days where there was an exceedence of the standard for any pollutant (so if more than one exceedence occurs on one day that is only counted as one exceedence day):

	Number of days where at least one exceedence occurred										
	91	92	93	94	95	96	97	98	99	2000	2001
PM_{2.5}						10	7	6	3	3	6
PM₁₀				3	2	0	3	2	4	4	7
NO₂¹	0	0	0	2	0	0	0	23	27	23	28
CO²	21	8	9	11	3	5	47	32	31	3	2
Total³	21	8	9	16	5	13	57	53	57	33	48

(Source Auckland Regional Council)

¹ The number of days on which an exceedence occurred of the air quality targets (Peak) for NO₂ for either the 1 hour or 24 hour average target values.

² The number of days on which an exceedence occurred of the air quality targets (Peak) for CO for either the 1 hour or 8 hour average target values.

³ The total number of days on which an exceedence occurred of any of the air quality targets (Peak) for PM10, NO2, or CO (note: where more than one exceedence occurred on any one day, the number of exceedences is recorded as one).

Carbon monoxide levels in the region's air are higher than in London

This fact is based on a comparison of Auckland Regional Council ambient monitoring results with results for London. Monitoring methods and conventions are highly standardised around the world, which allows easy comparison. Two graphs comparing Auckland and London are appended. Note that air quality monitoring results for London are available from: www.aeat.co.uk/netcen/airqual

It is estimated that over 200 people in the Auckland region die each year as a direct result of air pollution caused by motor vehicles.

This fact is an initial estimate based on the same methodology used in a recent European study (*"Health Costs due to Road Traffic-related Air Pollution. An Impact assessment project of Austria, France and Switzerland"* Prepared for the WHO Ministerial Conference on Environment and Health, London, June, 1999. Note that this study was reported in *The Lancet*. Vol 356. September 2, 2000). Based on the conclusions of this study, the Medical officer of Health for Auckland, Dr Virginia Hope has estimated that the number of premature deaths due to air pollution is in the hundreds per year for the Auckland Region. The ministry of transport has commissioned a preliminary study from a group of leading New Zealand experts to review the health effects of motor vehicle emissions in New Zealand. This report is due to be released in March 2002 and is expected to include a current best estimate of premature deaths due to air pollution.

80% of the region's air pollution is the result of motor vehicle emissions

This is based on the results of the Auckland Air Emissions Inventory. (*Auckland Regional Council Technical Publication No.91, March 1998*). The inventory estimates emissions from all significant sources, including vehicles, domestic fires, waste burning and industry. The emissions inventory is currently being updated.

Every year in the Auckland region, motor vehicles travel about eight thousand million kilometres. This produces about:

- 130 000 tonnes of carbon monoxide,
- 20 000 tonnes of nitrogen oxides,
- 25 000 tonnes of hydrocarbons,
- 2000 tonnes of particulate.

Or about 500 tonnes per day of toxic pollutants.

These estimates are based on the Auckland Air Emissions Inventory. (*Auckland Regional Council Technical Publication No.91, March 1998*).

70% of the complaints received about air pollution are regarding open burning (eg. Backyard rubbish fires)

This is a typical percentage. In 2000, the ARC and local councils in the Auckland Region received a total of 2851 complaints about air pollution. Of these 1949 complaints were about open burning. This is approximately 70%.

A poorly maintained car can release 10 times the amount of pollution as a well maintained one.

An Australian study (*Federal Office of Road Safety 1996, Motor Vehicle Pollution in Australia, Report on the national in-service vehicles emissions study, Commonwealth of*

Australia) confirmed the importance of vehicle maintenance in reducing emissions, irrespective of vehicle age. The Australian study found that the most poorly maintained vehicles can emit up to 5 to 10 times the exhaust emissions of well maintained vehicles of the same age. The study also confirmed that the best maintained older vehicles often have lower emissions than poorly maintained newer vehicles. This study confirmed the findings of extensive overseas experience.

If you tune your vehicle every six months you can save up to 5% off your annual fuel bill

The Australian study (referred to above) found that regular servicing has significant fuel savings – around 5% for the most poorly maintained cars.

If everybody tunes their vehicle every 6 months, exhaust emissions could be reduced by 25%.

The Australian study (referred to above) also reported that on a fleet-wide basis, exhaust emission improvements of 25% for CO, 16% for VOC's and 9% for NO_x could be achieved by the regular servicing of vehicles. This would be a reduction of about 40,000 tonnes of pollutants every year.

How Do We Compare?

The following graphs compare the results of Auckland's ambient air quality monitoring measurements with comparable measurements in London. Maximum measured levels of Carbon Monoxide and Nitrogen Dioxide for both cities are compared. The graphs show that typically levels of carbon monoxide and nitrogen dioxide (two of the main motor vehicle pollutants) are higher in Auckland than in London.

