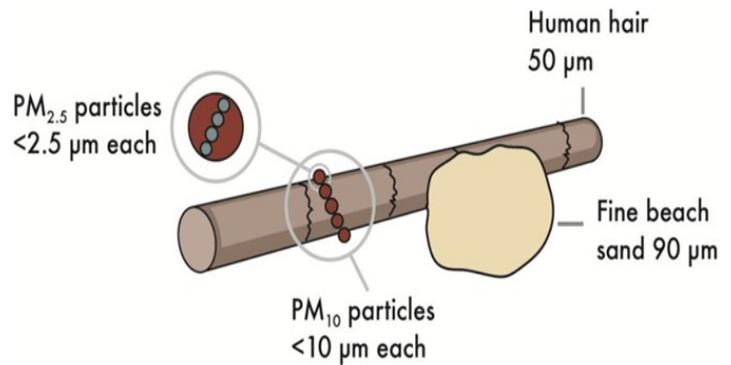


Annual Average PM₁₀ Concentration

HIGHLIGHTS IN 2013:

- **New Zealand’s annual average PM₁₀ was 16.0µg/m³ a decrease of 8 percent since 2006.**
- **Eighty-five percent (45/53) of monitored sites met the WHO long-term guideline.**
- **Eight monitoring sites exceeded the guideline: Anzac Park in Timaru, Alexandra, Woolston, Tahunanui, Invercargill, Gore, Awatoto and Khyber Pass Road in Auckland.**



Source: Ministry for the Environment & Statistics New Zealand, 2015

Long-term levels of high PM₁₀ can adversely affect health

Good air quality is fundamental to our health and wellbeing. We each breathe about 14,000 litres of air each day. Contaminants in outdoor air can adversely affect our health.

Particulate matter (PM) consists of small airborne particles, including solid matter and liquid droplets. PM in the air can contribute to heart and lung diseases, leading to hospital admission, cancer and premature death (WHO, 2013; Loomis et al., 2013).

PM₁₀ (particles with a diameter less than 10 micrometres) is the major air pollutant monitored in New Zealand. The annual average PM₁₀ concentration gives the best indicator of general air quality conditions and long-term exposure. Most PM₁₀ health impacts are associated with long-term exposure to PM₁₀ (Ministry for the Environment & Statistics New Zealand, 2014).

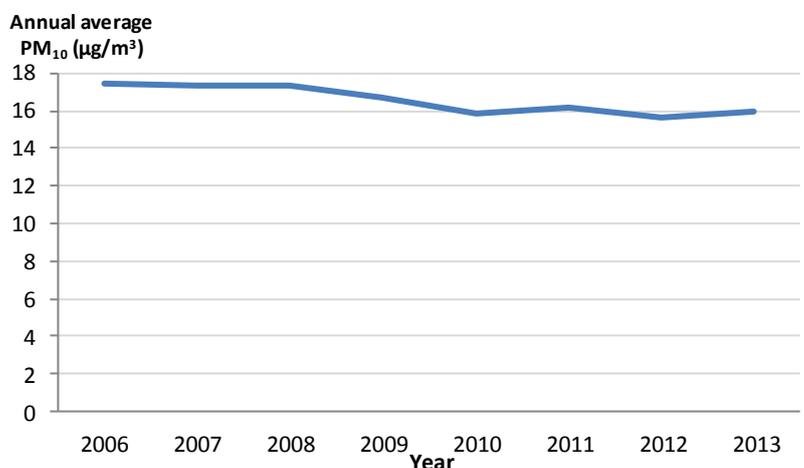
The World Health Organisation (WHO) recommends a 20µg/m³ guideline of annual average PM₁₀ to provide a minimum level of protection against long-term health risk (WHO, 2006).

In 2013, New Zealand’s annual average PM₁₀ was 16.0µg/m³, a decrease of 8 percent from 2006.

In 2013, New Zealand’s annual average PM₁₀ concentration was 16.0µg/m³ (at 53 monitoring sites), an 8 percent decrease from 17.4µg/m³ (at 38 monitoring sites) in 2006 (Figure 1).

The increase of annual average PM₁₀ level in 2011 was influenced by higher concentrations in Christchurch. The 2011 Canterbury earthquakes led to an increase in dust from silt, damaged roads and grit (Environment Canterbury, 2011).

Figure 1: Annual average PM₁₀ in New Zealand, 2006-2013



Source: Ministry for the Environment & Statistics New Zealand, 2015

In 2013, 45 out of 53 monitored sites met the WHO long-term guideline.

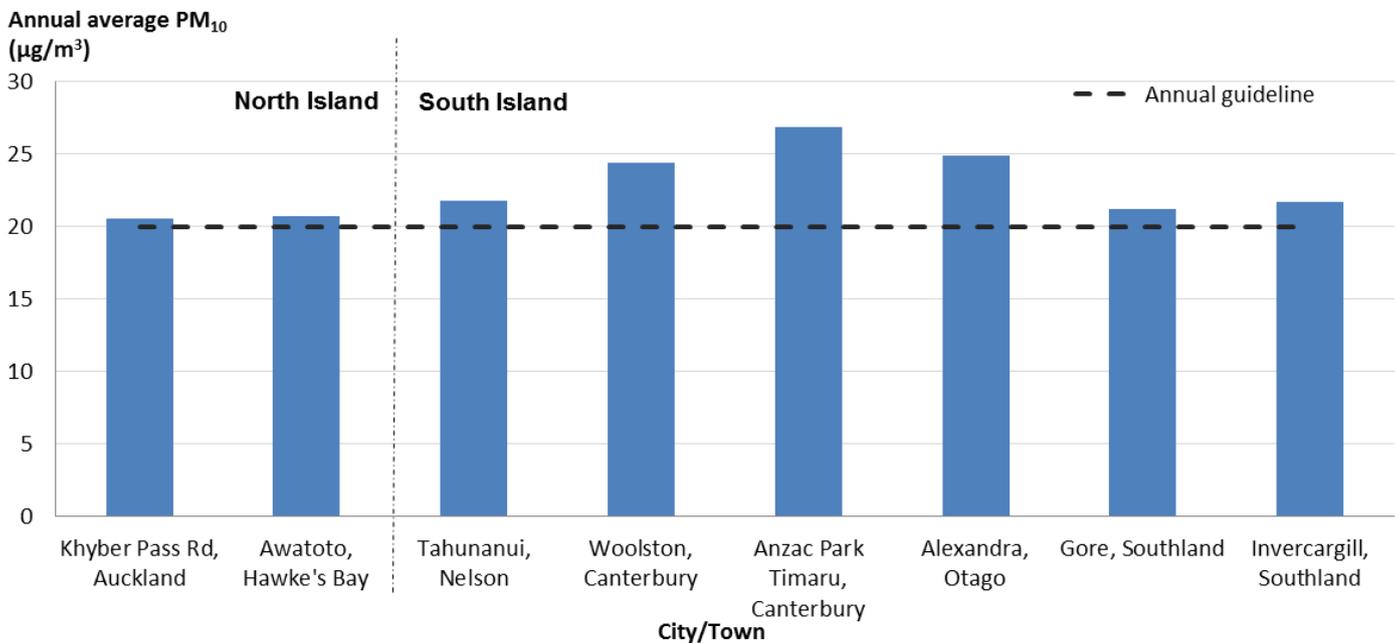
In 2013, 85 percent (45 out of 53) of the monitored sites in New Zealand met the WHO long-term (annual) guideline (20 µg/m³).

Monitored sites in the South Island generally had higher average PM₁₀ concentrations than those in the North Island. This can be attributed to the greater use of wood and coal fires for home heating in the South Island. The relatively settled winter weather conditions in the South Island can also limit the dispersal of pollutants (Ministry for the Environment & Statistics New Zealand, 2015).

There were eight monitored sites that exceeded the WHO annual guideline. Anzac Park in Timaru had the highest annual PM₁₀ level (26.9µg/m³), followed by Alexandra (24.9µg/m³) and Woolston (24.4µg/m³) (Figure 2).

Figure 2 shows the annual average PM₁₀ concentrations in the eight monitored sites that exceeded the annual PM₁₀ guideline in 2013.

Figure 2: PM₁₀ average concentrations at sites that exceeded the annual guideline, 2013.



Source: Ministry for the Environment & Statistics New Zealand, 2015

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