

AIR QUALITY

Annual Monitoring Summary 2013

What drives air pollution in Nelson?

Nelson is surrounded by hills and has a settled climate. Under clear skies during winter the air near the ground can be colder than the air above and smoke from domestic chimneys, factories and vehicle exhausts gets trapped. Winter is also the time when smoke emissions from home heating sources are at their maximum. The combined effect is that in Nelson during winter smoke concentrations can be much higher than normal for a city of this size.

During the winter domestic heating contributes 73% of the smoke (there are local variations in sources). By contrast vehicles contribute around 10% and natural sources such as sea aerosol and windblown soil about 10%. The remainder mainly comprises road dust and shipping emissions.

Small smoke particles (PM_{10}) enter the body through the lungs and affect human health. In extreme cases people with heart or lung problems can die.

Key Results

Nelson City Council started monitoring small smoke particles (PM_{10}) in 2001 in the Victory Square area (Airshed A, Figure 1). During

that year the maximum concentrations reached 165 micrograms ($\mu g/m^3$) per cubic metre and the National Environmental Standard (NES) of 50 $\mu g/m^3$ was exceeded on 81 days.

During 2013 the maximum smoke concentration in Airshed A reached 62 $\mu g/m^3$ and the NES was exceeded on 9 days. The average annual smoke concentration



was the lowest on record at 18 $\mu g/m^3$, down from an annual average of 42 $\mu g/m^3$ in 2001. Air quality in the Tahunanui area (Airshed B, Figure 2) exceeded the NES on one day during the spring/summer period (55 $\mu g/m^3$). Investigations indicate a substantial contribution of dust particles from roads and yards.

While Tahunanui monitoring sites and methods changed between 2002 and 2006 Tahunanui also shows a marked reduction in both smoke concentrations and number of days the Standards are breached.



Fig. 1. Airshed A.

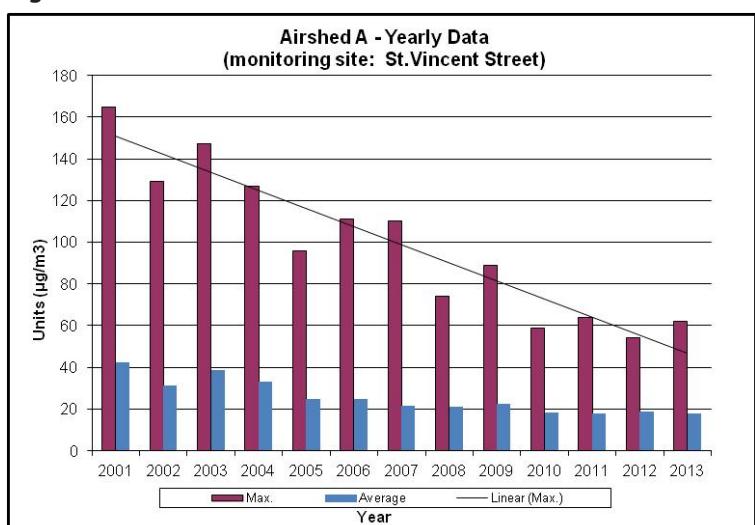
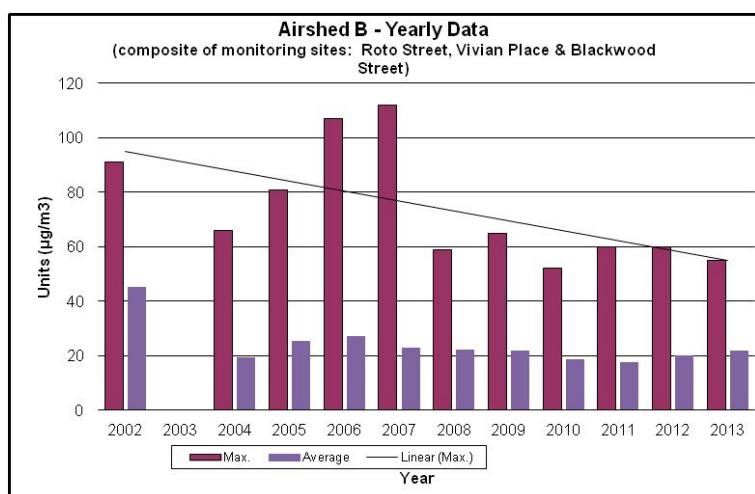


Fig. 2. Airshed B.





WHAT ARE WE DOING ABOUT IT?

Nelson Air Quality Plan

- Nelson City Council has an operative Air Quality Plan which places controls on activities affecting air pollution.
- Plan rules prohibit outdoor burning in urban areas, the use of open fires and the installation of enclosed burners in houses that do not already have an enclosed burner.
- The Council is now monitoring domestic burner use to ensure only approved burners are being used.

Good Wood

- Even clean burners contribute to air pollution when poor fuel is used.
- Burning wet wood produces more smoke, burning treated timber can release arsenic, and burning plastic produces dioxins.
- Nelson City Council established the Good Wood scheme to encourage people to buy and burn dry, untreated timber. There are currently eight wood merchants registered with the Good Wood scheme.



Industrial Emissions

- The Council is working with industry to reduce its contribution to air pollution through the resource consents process.
- Improvements are being made with many emitters installing cleaner burner technology such as at Nelson College for Girls, Nelson Hospital, Alsco Laundry and Nelson College.

Air Quality Review

Council will be gathering more information this winter to review our air quality controls and assess whether we are on track to comply with the national environmental standards. This includes gathering more air quality monitoring data in the Brook (Airshed C), undertaking an emissions inventory across all airsheds and establishing a working group to oversee the work. Along with the initiatives outlined above, Council's Eco Design Advisor will also be continuing to give advice about options for creating warm and healthy homes. For further information about air quality see <http://nelson.govt.nz/environment/air-quality>.