



# AIR QUALITY

## Annual Monitoring Summary 2010

### 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.
- On average during the winter period domestic heating

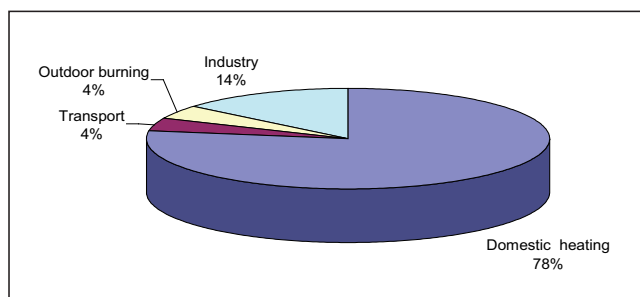


contributes 78% of the smoke (there are local variations in sources).

- By contrast industry contributes around 14% and vehicles about 4%.

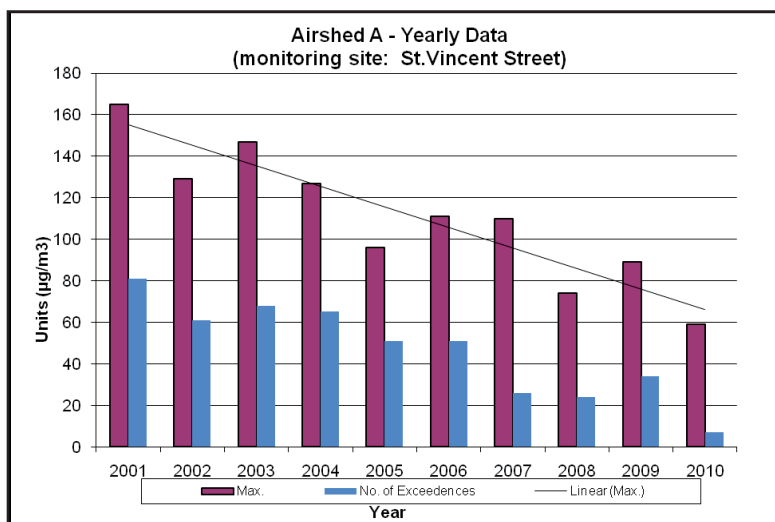
- Small smoke particles (PM10) enter the body through the lungs and affect human health. In extreme cases people with heart or lung problems can die.

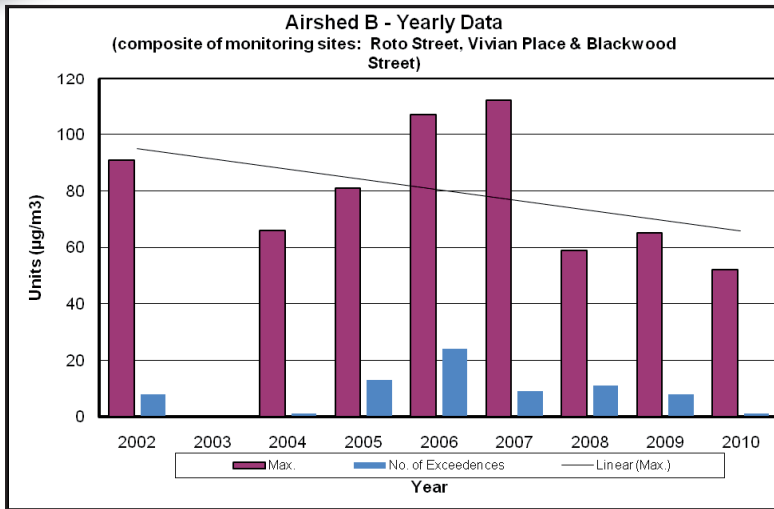
- Different types of fires produce different amounts of smoke. Generally the hotter the fire burns the less smoke it produces.
- Open fires and outdoor burning tend to produce the most smoke (per piece of wood) and modern enclosed wood burners and pellet fires the least.
- Air quality in Nelson can also be affected by chemical pollution not related to burning. Standards are in place for these pollutants and their levels are monitored.



### Key Results

- Nelson City Council started monitoring small smoke particles (PM10) in 2001 in the Victory Square area (Airshed A). During that year the maximum concentrations reached 165 micrograms ( $\mu\text{g}$ ) per cubic metre and the guideline value of  $50 \mu\text{g}/\text{m}^3$  (now a National Environmental Standard) was exceeded on 81 days.
- By 2010 the maximum concentration reached was  $60 \mu\text{g}/\text{m}^3$  and the standard was only exceeded on 7 days.
- Cold weather leads to more home heating and more smoke. Even when the influence of cold weather is taken into account there is a similar reduction in the level of small smoke particles.
- Many parts of Nelson including Atawhai, the Wood, and the Brook already meet the national standards for air quality.
- Pollution levels in these areas appear to be declining as older wood burners reach the end of their lives and are replaced by newer cleaner forms of heating.





- In 2002 Nelson City Council began monitoring small smoke particles in the Tahunanui (Airshed B) and set up a permanent monitoring site in 2005.
- 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.

## Initiatives to improve air quality

### 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.
- In addition to rules there is an assistance package (Clean Heat Warm Homes Pay as you Heat scheme) in place to help property owners phase out the types of fires that produce the most smoke and replace them with better insulation and cleaner heating options.
- To date 540 open fires and 1400 older burners have been replaced with cleaner heating appliances with Council assistance.



### INDUSTRIAL EMISSIONS

- The Council is working with industry to reduce its contribution to air pollution through the resource consents process.
- Polluting industries were required to apply for resource consent for their discharge before 28 August 2008 and work on this is on-going.

### GOOD WOOD

- Even clean air burners contribute more 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 nine wood merchants registered with the Good Wood scheme.
- For further information about Council environmental monitoring please visit [www.nelsoncitycouncil.co.nz/environment](http://www.nelsoncitycouncil.co.nz/environment).



**Nelson City Council**  
*te kaunihera o whakatū*

PO Box 645 Nelson 7040 • 03 546 0200

[www.nelsoncitycouncil.co.nz](http://www.nelsoncitycouncil.co.nz)