



WELLINGTON REGION

GREATER WELLINGTON
REGIONAL COUNCIL
ENVIRONMENT REPORT CARDS
2017



AIR QUALITY HOME HEATING IMPACTS



Why do we monitor air quality?

Everyone deserves clean air to breathe. Breathing polluted air can lead to respiratory (lung) and cardiovascular (heart) problems. Certain groups of people, such as children and the elderly, are especially vulnerable.

Greater Wellington Regional Council monitors air quality to check whether or not we are meeting national standards and guidelines for key air quality pollutants.

What do we monitor?

Different types of activities produce different types of air pollutants. One of the key sources of air pollution is wood smoke from home fires.

Wood smoke contains lots of fine particles that are called particulate matter (PM). We measure both PM_{10} (particles less than 10 microns in diameter) and $PM_{2.5}$ (particles less than 2.5 microns in diameter).

Across the region a total of **1,138 tonnes of PM_{10}** are produced every year:



81%
from home fires



7%
from backyard burning



11%
from traffic



1%
from industry

What did the 2017 results show?

Air quality in the Wellington Region is generally pretty good. However during the winter months some of our inland valley areas (such as Masterton and Wainuiomata) can experience very poor air quality because of smoke from home fires.

In 2017:



Average levels of PM_{10} met the national guideline at all sites



Average levels of $PM_{2.5}$ met the World Health Organization (WHO) guideline at all sites except Masterton East



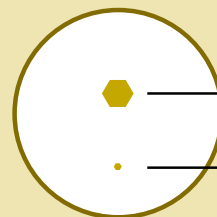
The national standard for PM_{10} was breached several times in the Masterton airshed.

How small is particulate matter?

Imagine a strand of human hair



Hair cross section



PM_{10}
< 10 μm diameter

$PM_{2.5}$
< 2.5 μm diameter

~ 70 μm

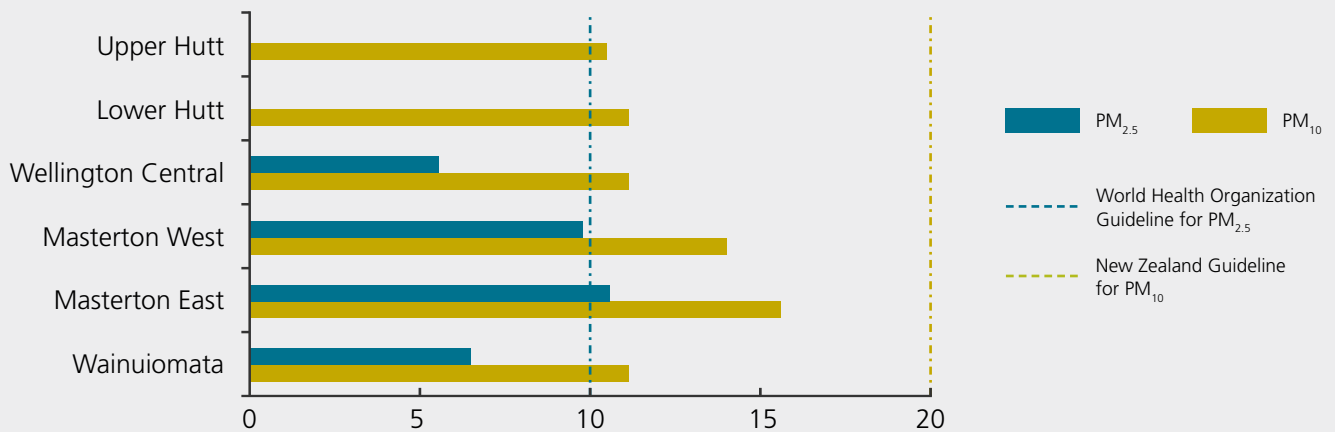
Fine beach sand



~ 90 μm

2017 Air Quality Monitoring Results

Annual average PM ($\mu\text{g}/\text{m}^3$)



Number of high pollution days

	PM _{2.5}	PM ₁₀
Upper Hutt	Not measured	0
Lower Hutt	Not measured	0
Wellington Central	0	0
Masterton West	28	3
Masterton East	43	5
Wainuiomata	6	0

PM_{2.5} World Health Organization Guideline allows 3 days above 25 $\mu\text{g}/\text{m}^3$
 M₁₀ National Standard allows 1 day above 50 $\mu\text{g}/\text{m}^3$



Did you know...

Burning treated timber (such as decking and fence posts) releases harmful toxins, like arsenic, which can harm your health.

Save yourself the smoke

When we breathe, the hairs in our nose and airways remove any large particles we inhale. However wood smoke contains fine particles (such as PM₁₀ and PM_{2.5}) that can get deep into your lungs and cause health problems.

Follow these better burning tips to get less smoke and more heat from your fire.



Dry wood

Use dry wood and don't burn treated wood



Smoke-free burning

Learn how to burn smoke-free
www.gw.govt.nz/better-burning



Don't dampen

Don't damp down the fire when you go to bed as this increases the amount of smoke produced by your fire



Clean chimney

Get your firebox checked and chimney cleaned every year

For further information:

Full details of the 2017 monitoring results can be found in our Air Quality Annual Data Report published online at www.gw.govt.nz/Annual-monitoring-reports

To view or download environmental monitoring data go to <http://graphs.gw.govt.nz>