



WELLINGTON REGION

GREATER WELLINGTON
REGIONAL COUNCIL
ENVIRONMENT REPORT CARDS
2017

AIR QUALITY TRAFFIC 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, as well as Regional Land Transport Plan targets.

What do we monitor?

Different types of activities produce different types of air pollutants. One of the key sources of air pollution is emissions from traffic.

There are a wide range of pollutants in traffic emissions. We measure nitrogen dioxide (NO₂) levels as the main indicator of traffic-related air quality because it's a specific marker for traffic emissions and also has harmful health impacts.

Nitrogen dioxide mainly affects the respiratory system (lungs). It can increase the risk of infection, aggravate asthma and affect lung development in children.

Across the region a total of 2,160 tonnes of nitrogen oxides are produced every year:



95%
from traffic



4%
from home fires



1%
from backyard burning

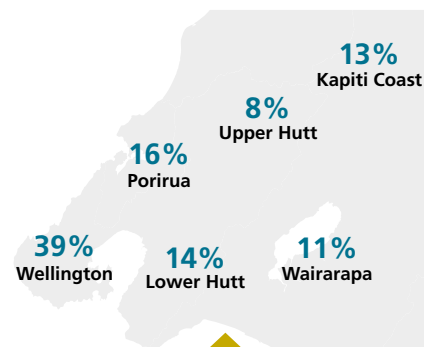
What did the 2017 results show?

Air quality in the Wellington Region is generally pretty good.

Levels of nitrogen dioxide are highest closest to roadsides, but varies greatly depending on traffic intensity and distance from intersections (where traffic starts and stops frequently). It tends to be worse when there are tall buildings on either side of the road and where there is a high frequency of diesel vehicles passing by.

In 2017:

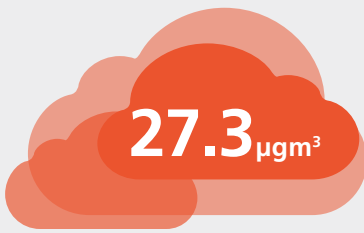
- ✓ Levels of the key indicator pollutant nitrogen dioxide met the **national standard** at all sites
- ✓ Levels of the key indicator pollutant nitrogen dioxide met the **international guideline** at all sites



Nearly 40 percent of the region's traffic emissions come from Wellington City.

2017 Air Quality Monitoring Results

Annual average nitrogen dioxide levels



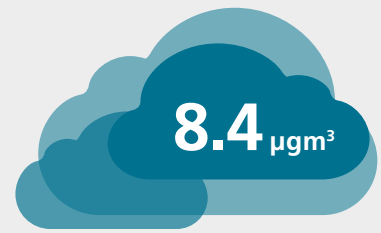
PEAK SITES (11 sites)

Peak sites have the highest levels of air pollution because they are close to busy roads, intersections and/or traffic lights, have tall buildings either side, and high numbers of diesel vehicles passing by.



ROADSIDE SITES (11 sites)

Roadside sites have moderate levels of air pollution because they are close to busy roads.



URBAN BACKGROUND SITES (6 sites)

Background sites, which are in residential areas away from busy roads, have low levels of air pollution.



Data comes from our "test-tube" sites which are:

- Temporary (the test-tubes have to be replaced every month)
- Low-tech and easy to maintain
- Measure nitrogen dioxide only
- Used to compare levels of nitrogen dioxide at many different places

Data comes from our reference monitoring sites which are:

- Permanent
- Hi-tech and hard to maintain
- Measure lots of different air quality and atmospheric conditions
- Used to determine whether we are meeting standards and guidelines

NO₂ levels

	Annual Average	No. exceedances (1-hour average of 200 μgm^3)
Upper Hutt	6.3	0
Wellington Central	14.1	0
Masterton West	5.4	0
National Environmental Standard (NES)	-	No more than 9 exceedances
World Health Organization (WHO) Guideline	40 μgm^3	-



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>