

NORTH-WEST REPORTING AREA

Includes Rodney, Wāitakerere Ranges and Great Barrier local boards

STATE OF AUCKLAND AIR QUALITY REPORT CARD

JULY 2014



QUICK FACTS

1 IN 4

CHILDREN SUFFER FROM ASTHMA IN NZ

THE SOCIAL COST FROM AIR POLLUTION IN AUCKLAND IS ESTIMATED TO BE **\$1.07 BILLION** PER YEAR

AROUND 300

PREMATURE DEATHS IN AUCKLAND OCCUR EACH YEAR DUE TO AIR POLLUTION

AIR QUALITY IN THE NORTH-WEST REPORTING AREA MEETS NATIONAL ENVIRONMENTAL STANDARDS FOR **AIR QUALITY**

THE AMOUNT OF PM₁₀ EMITTED INTO AUCKLAND'S AIR EACH DAY IS THE EQUIVALENT OF **200 BAGS OF CEMENT**

WHAT CAUSES OUR AIR POLLUTION?

Most air pollution comes from burning fuels such as diesel, petrol, wood, gas and oil. The burning process releases chemicals and small particles (particulates) into the air that are harmful to humans, lead to brown hazes and cause unpleasant odours.

In summer, transport is the biggest cause of air pollution, but in winter, home heating is the biggest problem; in fact, the amount of PM₁₀ (tiny solid and liquid particles) emitted into the air is tenfold. This is mainly caused by the wood burners many of us use to heat our homes.

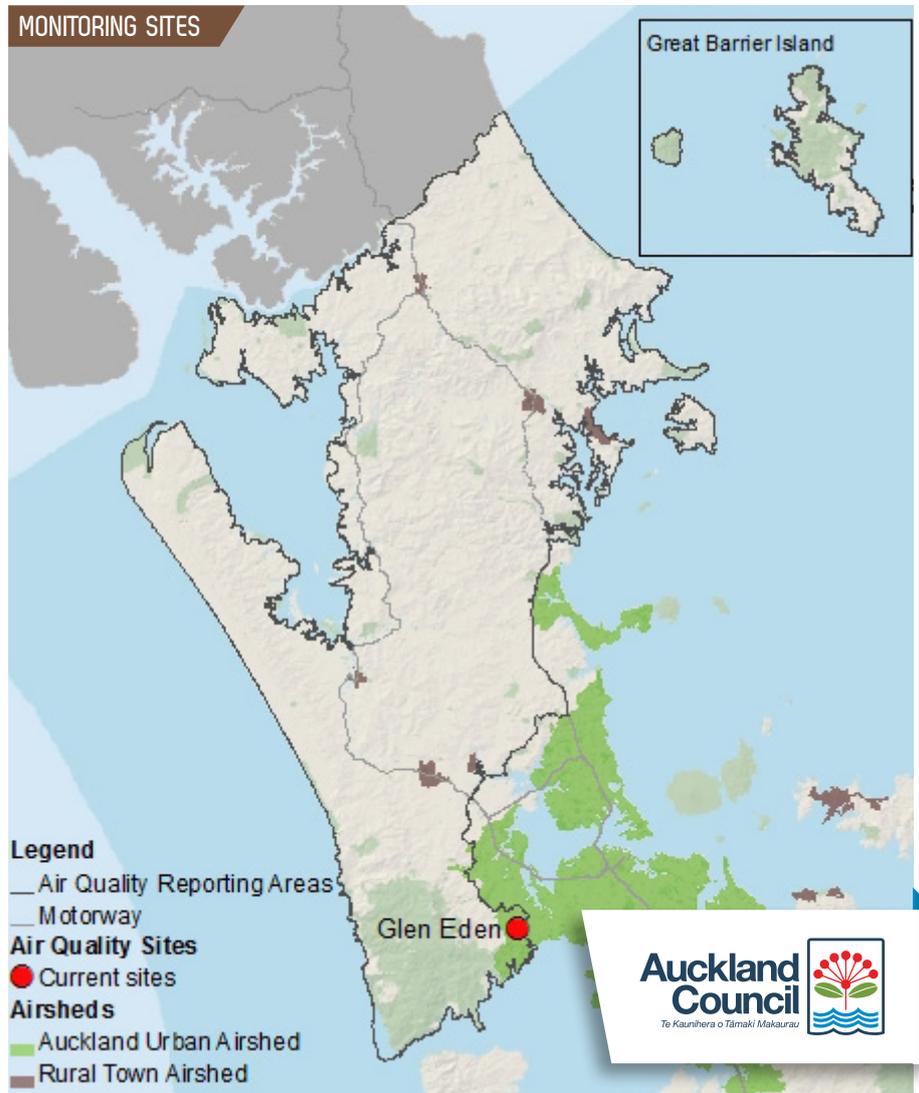
SUMMER WEEKDAY PM₁₀ (total = 4.4 t/day)



WINTER WEEKDAY PM₁₀ (total = 15.1 t/day)



MONITORING SITES



PM₁₀ AND PM_{2.5} PARTICLES

PM₁₀ are particles less than 10 microns in diameter and PM_{2.5} particles are less than 2.5 microns in diameter. These particles come from human activities, such as burning fuels and natural sources, including sea spray (salt) and pollen.

Each year about 3,000 tonnes of PM₁₀ is emitted into Auckland's air.

In Auckland, PM₁₀ and PM_{2.5} concentrations sometimes exceed air quality targets. Over the years, the average concentrations of PM₁₀ have decreased, but PM_{2.5} concentrations have remained relatively stable. This reduction is the result of advances in industrial and vehicle technology and better fuel standards.

Of the air pollutants that we measure, the levels of fine particles are still of most concern; fine particulates are easily inhaled and can lodge deep in the lungs where they adversely affect human health.

NITROGEN DIOXIDE (NO₂)

In Auckland, vehicles are the main source of nitrogen dioxides with concentrations at peak traffic sites exceeding air quality targets. Although the amount of NO₂ in the air is declining, levels are still of concern and cause adverse health problems.

Nitrogen dioxide can irritate the lungs, increasing susceptibility to asthma and lowering resistance to respiratory infections. Long-term exposure to low levels of NO₂ can affect lung growth in children and cause damage to plants.

Auckland Council monitors a variety of air quality parameters and potential pollution sources at 12 sites across the region to gain a picture of our air quality.

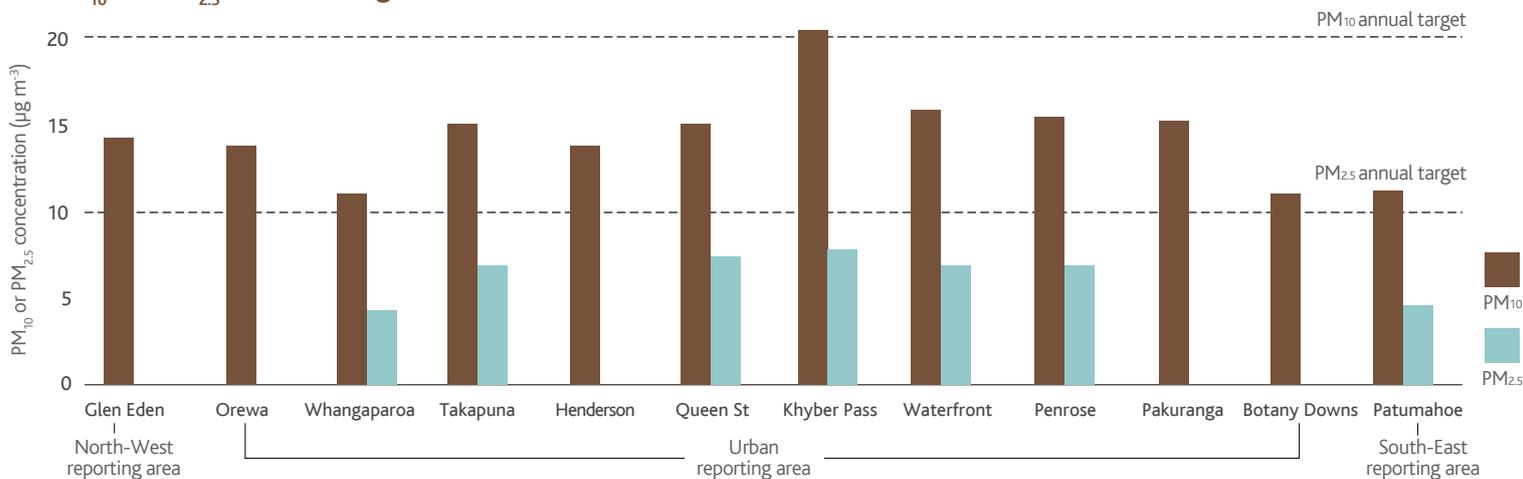
Monitoring has been carried out for many years, so we can understand how air quality changes over time.

A BROWN HAZE OVER AUCKLAND



A clear day (top) compared to a winter's morning (bottom) where poor air quality is causing a clearly visible brown haze.

PM₁₀ and PM_{2.5} annual average concentrations in 2013



FIND OUT MORE

This report card is part of a series prepared by the Auckland Council's Research, Investigations and Monitoring Unit, which undertakes monitoring and research to provide information and evidence to inform the council's activities and reporting. Auckland's environment must be healthy and resilient in order

to support life and lifestyle. More report cards can be found at: aucklandcouncil.govt.nz/stateofauckland. The report card series includes reporting on freshwater, terrestrial, marine, air, soil, capacity for growth, demographics and quality of life.

GET INVOLVED

Auckland Council provides more than 20 environmental programmes across the region for you to get involved with and improve your local environment.

► For more information: e-mail monitoring@aucklandcouncil.govt.nz or call us on 09 301 0101.

