

## Air Quality Monitoring Signs

We have installed four air quality monitoring signs outside the following schools:

1. Evendons Primary School, Wokingham
2. The Hawthorns Primary School, Wokingham
3. Westende Junior School, Wokingham
4. Emmbrook Junior School, Wokingham

The project has been funded by an air quality grant received from the Department for Environment Food & Rural Affairs (Defra) in February 2023.

In 2021, air quality monitors were installed in eight locations in Wokingham borough to collect similar air quality data. The current scheme has repurposed these monitors rather than purchasing new ones.

The repurposing of existing air quality units also supports the Council's Climate Emergency Action Plan and sustainability goals to reduce our carbon footprint by reusing existing assets.

The zephyr air quality monitors have been delivered by [Earth Sense](#) and [Yunex](#) neither of whom have produced real time air quality updates on signs before. The closest they have is for cold weather alerts when it drops below 3 degrees. In Scotland they use the monitors to text residents when air quality is poor.

This is a new initiative for both companies, neither have heard of this happening elsewhere in the UK. It took a while to get all the different technologies to work together which is why you will see the time lag between the funding date and project launch.

This project aims to provide real-time information and raise awareness of air quality issues for parents, children, and local commuters to impact travel habits and encourage active travel.

All four primary schools that have been selected for the roadside air quality monitoring project took part in the Defra funded school air quality project. The pupils have been actively involved in monitoring the pollution levels with hand-held monitors and learning about pollution and what changes they can make to have an impact on their local environment.

The four schools are encouraging their pupils and staff to use active travel (walk, wheel or cycle) to get to and from school and have also made great progress on their school travel plans using the Modeshift STARS online accreditation tool.

The four EarthSense Zephyrs will be monitoring nitrogen dioxide gas (NO<sub>2</sub>) and particulates PM 2.5 . They will be continuously monitoring the air quality and, every 15 minutes, they will be updating the signs with the current air quality status. The signs will display a happy face if the levels are under the recommended World Health Organisation (WHO) thresholds for nitrogen dioxide and PM 2.5, or a sad face if the levels exceed the WHO thresholds.

### **What do air quality signs do?**

The signs display happy and sad faces dependent on two pollution levels NO<sub>2</sub> and PM<sub>2.5</sub> levels. The signs update at 15-minute intervals. When the level for either pollutant is above the World Health Organisations (WHO) recommended limit, the sign displays a sad face. When it is below the recommended level it displays a happy face

### **What is NO<sub>2</sub>?**

Nitrogen dioxide is a brown gas, with the chemical formula NO<sub>2</sub>. NO<sub>2</sub> is released into the atmosphere when fuels are burned (for example, petrol or diesel in a car engine, or natural gas in a domestic central heating boiler or power station). NO<sub>2</sub> can affect our health.

### **What is PM<sub>2.5</sub>**

PM (Particulate matter) 2.5 refers to fine particles with a diameter of 2.5 micrometers or smaller. The particles are 100 times thinner than a human hair and can remain suspended in the air for long durations. Examples of PM<sub>2.5</sub> are things such as exhaust fumes and wood burning.