Worcestershire Regulatory Services
Supporting and protecting you

# WRS BOARD

## Date: 27th June 2024
## Title: Air Quality Update 2024

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| **Recommendation** | That members note the actions and, where they can, assist in enabling positive discussions about the improvement of air quality in Worcestershire and beyond. |
| **Summary** | This report is to provide members with an update on the local air quality management actions taken by WRS on behalf of the partners since 2023 and future projects. |
| **Report** | *In policy guidance, DEFRA sates that,*<br><br>*"Improving air quality is a priority for Government. Poor air quality results in adverse health impacts, as well as wider costs to society for instance to the National Health Service and environmental impacts threatening habitats and biodiversity. The impact of air pollution is not always evenly spread; poor air quality can have a disproportionate impact on certain groups, including those on low incomes. Government is committed to driving improvements to air quality through national measures to reduce emissions of harmful pollutants and by empowering local leaders to act to reduce people's exposure to air pollution*."[1]<br><br>Up until the end of 2023, the assessment of air quality in Worcestershire has been based on:<br><br>a) Palmes-type diffusion tubes for indicative measurement of ambient concentrations of nitrogen dioxide ($NO_2$)<br><br>b) Information and models produced at a national level or held by the Government (e.g National Atmospheric Emissions Inventory[2]). |

[1] para 1.1, https://laqm.defra.gov.uk/air-quality/featured/england-exc-london-policy-guidance/
[2] https://naei.beis.gov.uk/index

c) Continuous Monitoring with fixed sites in the County – currently at Wyre Forest House and Wychbold.

Across Worcestershire, currently there are 172 diffusion tubes in the locations (see Appendix 1, Map 1).

In early 2024, a network of real-time Zephyr 'low-cost' air quality sensors were installed on lampposts across the county (see Appendix 1, Map 2). The purpose of the project is to provide enhanced monitoring data and inform future policy decisions and actions to improve air quality as well as future behaviour change work. The sensors each monitor 9 different parameters in real-time; compounds of Nitrogen Oxide gas pollutants (NO, $NO_2$ and $NO_x$), Small, Fine and Ultra Fine Particulate Matter ($PM_{10}$, $PM_{2.5}$ and $PM_1$, respectively) as well as temperature, pressure and humidity. The locations of the monitors were selected based on several factors: locations near to schools and care homes for behaviour change opportunities, locations in areas of higher deprivation and/or fuel poverty, and proximity to locations of pollution from industrial, farming, domestic burning and traffic pollution sources. One monitor has been located close to an existing reference sensor for scientific purposes.

Appendix 2 contains line graphs to show information from some of the sensors this year so far.

**Air Quality Objectives**

In 2021, significant updates to the enabling legislation for Air Quality (The Environment Act 1995), have resulted in several refreshed Government guidance documents:

- DEFRA Air Quality Policy (PG22)[3] and Technical Guidance (TG22)[4]
- Environmental Improvement Plan 2023[5]
- Air Quality Strategy (2023)[6]

In 2023, new national $PM_{2.5}$ targets were established[7], each with an interim target:

[3] https://laqm.defra.gov.uk/air-quality/featured/england-exc-london-policy-guidance/
[4] https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/
[5] https://www.gov.uk/government/publications/environmental-improvement-plan
[6] https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery
[7] https://www.legislation.gov.uk/uksi/2023/96/contents/made

- 10 µg/m$^3$ annual mean concentration $PM_{2.5}$ nationwide by 2040, with an interim target of 12 µg/m$^3$ by January 2028

- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline

The aim of the annual mean target is to focus actions on the worst-polluted areas however, the population exposure reduction target requires concentrations to be driven down everywhere, even where they are already below 10µg/m$^3$. As a regional pollutant, $PM_{2.5}$ travels long distances and increases background levels across a wide area. It is therefore important that local authorities collaborate accordingly. As part of this work WRS are engaged with WM-Air (a commercial-research partnership organisation at the University of Birmingham) to establish a further background air quality monitoring supersite in Worcestershire and assist with wider regional air pollution research. We have also established dialogue with colleagues in the West Midlands Combined Authority to share knowledge and understanding of regional air quality issues.

In February 2024, the EU reached a provisional agreement, for the annual limits for $PM_{2.5}$ and $NO_2$ to be reduced from 25 µg/m³ to 10 µg/m³ and from 40 µg/m³ to 20 µg/m³ respectively. The deal still needs to be formally confirmed by the European Parliament and Council and then it will go through the adoption procedure.[8] The EU targets are thought to be a step towards the more stringent WHO Air Quality Guidelines[9].

The key current UK air quality objectives[10] for the main pollutants are:

**Nitrogen Dioxide**: 40 µg/m³ annual mean

**Fine Particulate Matter** ($PM_{2.5}$): 20 µg/m³ annual mean (reducing in line with the new $PM_{2.5}$ target, outlined above)

**<u>Other Activities</u>**

**Annual Air Quality Status Reports (ASR)**
Annual Status reports are required to be produced and sent to DEFRA annually, in June. The information in the Annual Status reports is primarily based on the $NO_x$ tube data gathered by

[8] https://www.reuters.com/business/environment/eu-strikes-deal-strengthen-air-quality-standards-2024-02-21/
[9] https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health
[10] https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update_20230403.pdf

WRS as well as information from each of the partner Authorities, including Worcestershire County Council. Each report is sent to DEFRA annually and is published on the WRS website by District[11]

**Air Quality Action Plan (AQAP) for Worcester City, Bromsgrove and Wyre Forest**

Worcester

In February 2023, work commenced on a steering group to take this forward. Senior representatives from Worcester City and Worcestershire County Councils were appointed as co-chairpersons. The Steering Group has met monthly since then and was supported by four topic specific sub- working groups on Transport, Sustainability, Public Health, and Planning. The groups looked to determine potential measures informed by the available source apportionment work.

The draft AQAP report was considered by the Licensing and Environmental Health and Environment Committees of Worcester City Council on 22 May and 6th June, respectively and a copy will be submitted to DEFRA before the 1st July, the deadline to meet DEFRA's requirements. A summary of the AQAP plus a full draft copy will go out for public consultation in July 2024 before a final draft is submitted to Worcester City Council's committees in October and November 2024, ahead of final publication scheduled for December 2025.

Wyre Forest and Bromsgrove

In May 2024, work commenced to progress AQAPs required for Bromsgrove and Wyre Forest Districts. This was delayed until then due to the lack of source apportionment data (information about traffic pollution sources) as representative traffic surveys could not be completed during COVID restrictions. Discussions with DEFRA mean that WRS has only until 1st November 2024 to submit a draft AQAP for each District and public consultation which, given that it has taken over 1 year to draw up the AQAP for Worcester City, is a significant undertaking by staff of both WRS and partner Authorities.

At the time of writing, AQAP workshops have taken place between each district and work has commenced to draft AQAPs for both Districts to meet the deadline.

[11] https://www.worcsregservices.gov.uk/all-services/pollution/air-quality/local-air-quality-reporting/

Wychavon

In discussion with the DEFRA LAQM Team, in September 2023 it was agreed that consideration for an AQAP would be delayed until a full year's worth of continuous monitoring data had been obtained for the site. Monitoring results from May 2023 to May 2024 indicate concentrations are within 75% of the AQ objectives for NO2 and, following further discussion with Defra it has been agreed not to proceed to AQAP at this time. There is a possibility that the data may indicate the possibility of revocation of the AQMA or, failing this, if the data indicates it is still required, proceeding to AQAP will be undertaken following a further period of review to be reported in the ASR 2025.

**Real-time Air Quality Portal**

Following a successful bid to the DEFRA Air Quality Grant in 2022, WRS were awarded a grant of over £260'000 in Feb 2023 to fund a network of real-time air quality monitoring equipment across the Districts. Earthsense were procured to supply, install and maintain a network of 26 monitors.

In January 2024 the monitors were successfully deployed across the County, making a total network of 27 monitors, the locations of which are publicly accessible via https://www.worcsregservices.gov.uk/airquality/. At the time of writing, quarterly reporting is being finalised for the current period.

**Air Quality - Behaviour Change**

In January 2024, utilising s106 air quality contributions and grant funding, we were able to employ a fixed-term technical officer post, focussed on Air Quality Behaviour Change. Around the same time, a 3-month Air Quality Behaviour Change survey, developed in collaboration with Worcestershire County Council Public Health team, was also published. The survey closed in May 2024, and we received an over 1300 responses. The survey responses and data are currently undergoing analysis, and a full report will be published soon. The data is also useful as a baseline study for the behaviour change work.

Responses were mainly from adults, with 50% aged 31-60 years and 46% respondents aged 61+. In terms of geographical spread, 29% were from Worcester City. 18% Wychavon, 17% Bromsgrove, 14% Wyre Forest, 12% Malvern and 9% Redditch.

Some of the most relevant findings are outlined below:

(1) travel habits**:** Over half of all respondents (54%) travelled 4 miles or less to their usual place of work, and 58% usually used the car to get to work**;**

(2) Knowledge and awareness of AQ issues: 88% of respondents told us they considered road traffic/ vehicle emissions to be the main source of outdoor air pollution, whilst almost a third (30%) told us it was burning at home (open fires/ log burners). Only around half of respondents were aware that air pollution can lead to serious ill health.

(3) Factors to improve air quality: Some 62% of the respondents consider walking as an activity to improve Air Quality, with 56% believing less car usage could do likewise in Worcestershire. Some 21% would consider using bike, 17% prefer to go to public transport and 12% would use an electric car.

(4) Barriers to change: responses included a lack of road segregation and the need to improve the cycle network, as well as a need for better public transport provision.

**Air Quality - Supplementary Planning Document**

Since September 2023, WRS has assisted planning policy officers working on the South Worcestershire Development Plan (SWDP) to an Air Quality Supplementary Planning Document (AQ SPD) for the South Worcestershire councils. At the time of writing, the intention is to publish and consult on the draft AQ SPD at the same time as the consultation for the Worcester City Air Quality Action Plan.

**Air Quality Strategy**

It is a requirement in DEFRA guidance that any district that does not have any Air Quality Management Area (in Worcestershire that is Malvern Hills and Redditch) must still have an Air Quality Strategy to improve local air quality, avoid exceedances and reduce the long-term health impacts associated with air pollution.

In 2023 WRS began to develop a countywide Air Quality Strategy with Public Health and sustainability colleagues alongside the AQAP work. As well as seeking to provide air quality and health and wellbeing improvements; a local strategy will contribute towards compliance with national air quality standards and policy beyond the specific focus of district AQAP's. At this time a strategy will be developed further in 2025

following completion of priority AQAP work, and consider any examples published by other authorities.

**Future work**

During 2024 the priority of officers is to complete the statutory duties identified in this report. However, looking forward, projects that are potentially important towards the Air Quality Strategy might include:

- source apportionment of fine particulate matter,
- integration of traffic and air quality data – something that we have begun to explore,
- potential future links with indoor air quality in houses and businesses.

The unfortunate withdrawal of the Air Quality Grant scheme for Local Authorities earlier this year by DEFRA means we currently have a limited set of options for financing some of this work. Given the recent changes in EU and WHO objectives, it is possible that a future Government might review and potentially introduce more ambitious UK targets for some air pollutants, for example a reduction in the objectives for nitrogen dioxide. Notwithstanding this, it seems likely that air quality, will remain a high-profile subject area for the foreseeable future with strong links to the health and climate change agendas.

## Sustainability

Clean Air is Goal 2 in the Environmental Improvement Plan 2023[12]. Improvements in air quality directly are directly linked to improvements in biodiversity and the national commitments in the transport decarbonisation plan.

## Contact Points

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## Background Papers

Local Air Quality Management Technical Guidance (TG22)

Local Air Quality Management Policy Guidance (PG22)

Environmental Improvement Plan 2023

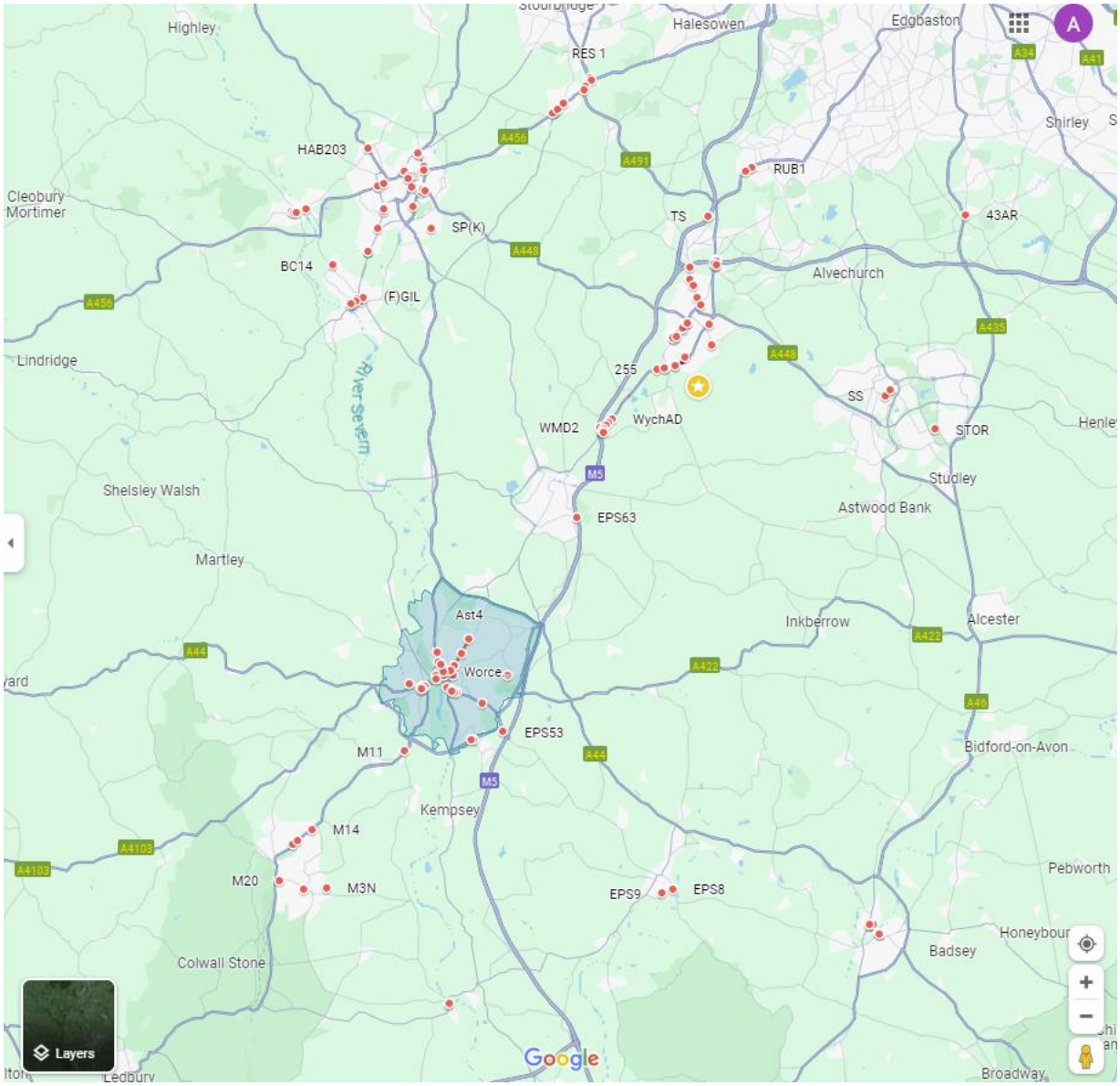
Air Quality Strategy: framework for local authority delivery (2023)

Decarbonising Transport; a better, greener Britain (2021)

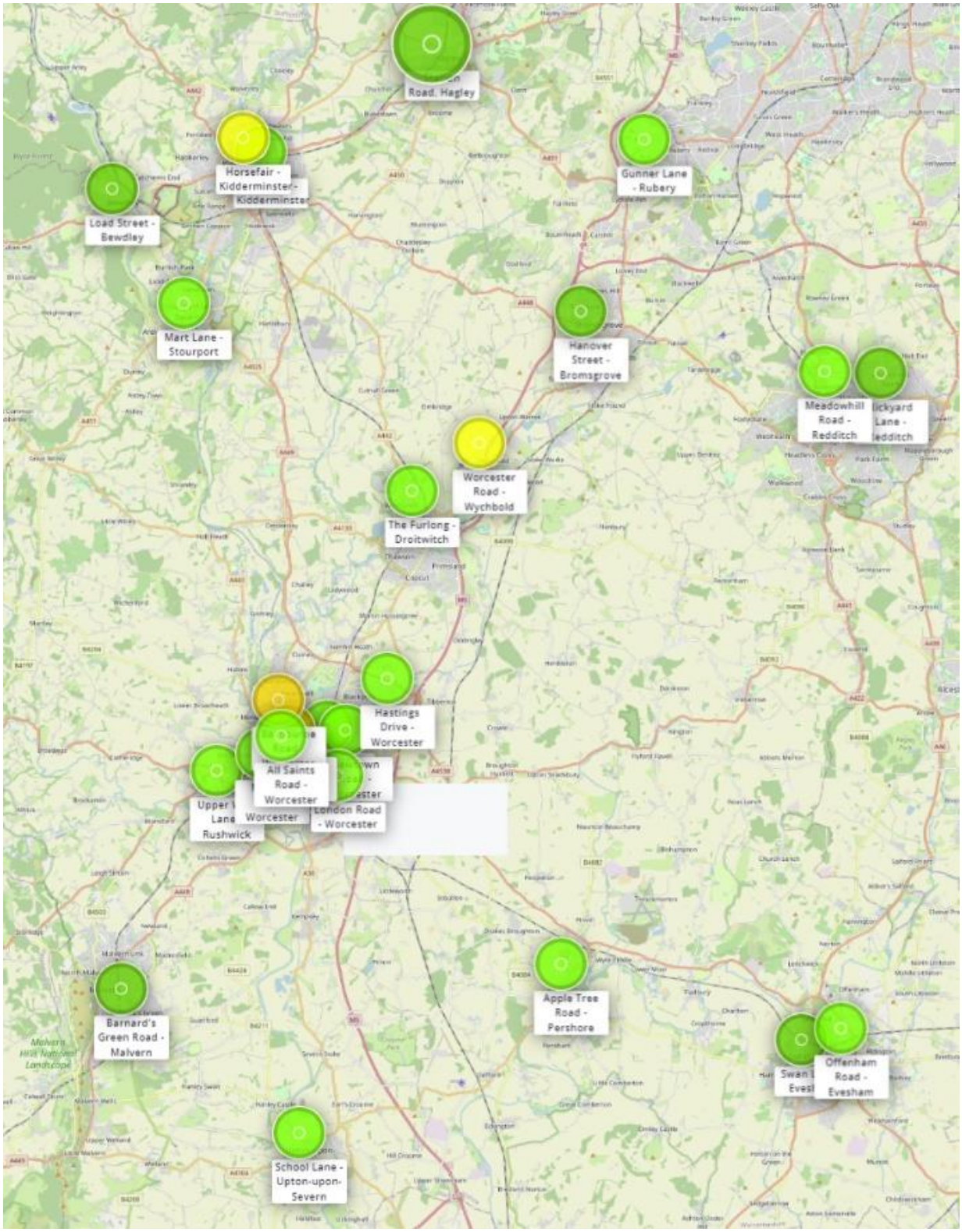
[12] https://www.gov.uk/government/publications/transport-decarbonisation-plan

## Appendix 1

Map 1 – NOx Diffusion Tube Locations across Worcestershire



Map 2 - Zephyr Air Quality Sensor locations in Worcestershire



## Appendix 2

*Figure 1 – A line graph on two sets of axes to compare the temperature in °C of the Horsefair, Kidderminster, to the measured value of $PM_{2.5}$ in $\mu g/m^3$ over the period of February-May 2024*

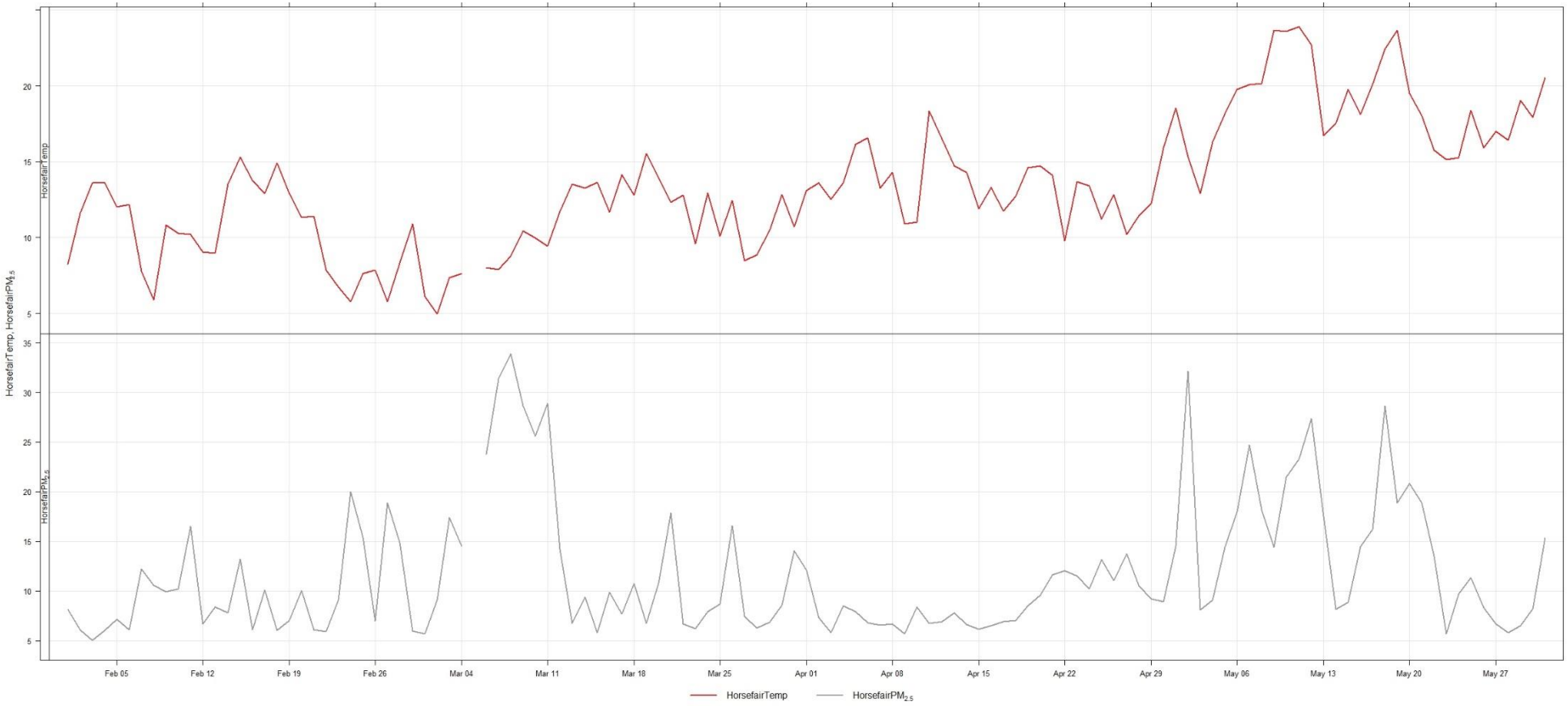


*Figure 2 – A line graph to compare the measured $NO_2$ in µg/$m^3$ of London Road, Worcester (an urban location), and Apple Tree Road, Pershore (a rural location), over the period of February-May 2024*