Bromsgrove District Council
www.bromsgrove.gov.uk

Worcestershire Regulatory Services
Supporting and protecting you

2026 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, as amended by the Environment Act 2021

Date: 30th June, 2026

Information	<Local Authority Name> Details
Local Authority Officer	Katherine Coleiro
Department	Technical Services
Address	Wyre Forest House Finepoint Way Kidderminster Worcestershire
Telephone	01905 822799
E-mail	enquires@worcsregservices.gov.uk
Report Reference Number	BDC/ASR/2026
Date	30/06/2026

Local Responsibilities and Commitment

This ASR was prepared by the Worcestershire Regulatory Services Technical Services Department on behalf of Bromsgrove District Council with the support and agreement of the following officers and departments:

Worcestershire Regulatory Services

Bromsgrove District Council

Worcestershire County Council

Worcestershire Regulatory Services (WRS) is a shared service formed from the Environmental Health and Licensing departments of the six Worcestershire District Councils. Responsibility of managing (monitoring and reporting of) local air quality transferred from the partnership councils to WRS in April 2011.

This ASR has not been signed off by a Director of Public Health. As in previous years, a copy of ASR will be provided to the DoPH office post publication.

If you have any comments on this ASR please send them to:

Technical Pollution Team

Worcestershire Regulatory Services

Wyre Forest House

Finepoint Way

Kidderminster

Worcestershire

DY11 7WF

Telephone – 01905 822799

Email – enquires@worcsregservices.gov.uk

Executive Summary: Air Quality in Our Area

Air Quality in Bromsgrove District Council

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Within Bromsgrove District Council there is currently one Air Quality AQMA declared, which is due to exceedances of NO_2;

- Worcester Road, AQMA declared 24th October 2011

In Worcester Road AQMA, the last exceedance of NO_2 was recorded in 2018, however concentrations were measured within 10% of the annual mean objective during 2024. Within the Worcester Road AQMA, NO_2 concentrations decreased at location BC (Ye Olde Black Cross, Worcester Road, Bromsgrove, B61 7AG) from 38.1µg/m^3 (2024) to 33.7µg/m^3 (2025), a reduction of 11.5%. Although no exceedances have occurred within the AQMA over the last year, concentrations remained above 10% of the objective in 2024; in 2025, concentrations reduced to below -10% of the objective for NO_2. In accordance with national guidance (LAQM.TG22), the AQMA will be retained at this time.

Concentrations within the two further AQMAs; Lickey End AQMA and Redditch Road AQMA remained well within the annual objective in 2025.

Within Redditch Road AQMA the last exceedance was recorded in 2016. Within the Lickey End AQMA the last exceedance of NO2 at relevant exposure was recorded in 2014.

In accordance with national guidance (LAQM.TG22) Bromsgrove District Council revoked both the AQMAs on 1st December 2025.

In 2025 Bromsgrove District Council continued to monitor nitrogen dioxide across the district using a network of passive diffusion tubes. The monitoring network is made up of 40 tubes and representative of relevant exposure from traffic emissions. No exceedances of the annual mean objective for NO_2 have been recorded in the Bromsgrove District during the 2025 monitoring year. No exceedances of the objectives were recorded in the previous year's 2021 – 2024.

In summary, there has been a decrease in annual concentrations of NO_2 at 5.6% across all the monitoring sites from 2024 to 2025.

Following a review of the monitoring networks for diffusion tubes, several changes have been implemented. This includes one new monitoring site added and the removal of five monitoring sites across the network in 2025.

No annual means greater than 60µg/m^3 have been recorded indicating that it is extremely unlikely that there have been any exceedances of the 1-hour mean objective for NO_2 at any monitoring sites.

Local authorities are expected to take action to reduce emissions and concentrations of particulate matter ($PM_{2.5}$). Within Bromsgrove District Council there are three low-cost sensors; called Zephyr's. The Zephyr sensors provide indicative monitoring of a range of

pollutants including; PM_1, $PM_{2.5}$ and PM_{10}. Table C.10. The annual average at the three Zephyr sensors locations are;

- Hanover Street, Bromsgrove: 8.56µg/m^3
- Gunner Lane, Rubery: 7.53µg/m^3
- Station Road, Hagley: 7.13µg/m^3

WRS have also analysed the DEFRA national background maps to determine the projected $PM_{2.5}$ concentrates across the district. The average annual $PM_{2.5}$ at the 218 locations across the Bromsgrove District is 6.51µg/m^3 with the lowest concentration of 5.90µg/m^3 and the highest concentration being 7.13µg/m^3.

Overall concentrations are well below the annual mean legally binding target of 10µg/m^3 to be achieved across England by 2030.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

Bromsgrove District Council has taken forward a number of direct measures during the current reporting year of 2025 in pursuit of improving local air quality.

Air Quality Action Plan

Following discussions with the Defra LAQM team in May 2024 it was confirmed an AQAP is required for the Worcester Road, Bromsgrove AQMA. A steering group was formed in May 2024 which included officers representing Worcestershire Regulatory Services, Bromsgrove District Council, Highways & Maintenance and Public Health at Worcestershire County Council. The Steering Group worked in partnership to develop an AQAP for Bromsgrove District Council incorporating several improving actions to reduce NO_2 emissions within the AQMA's. The BDC Air Quality Action Plan 2025-2030 was published in March 2025.

Real-time Air Quality Monitoring Project

WRS were successfully granted a bid for the Air Quality Grant Scheme 2022/23 to establish an enhanced real-time air quality monitoring network across Worcestershire, focusing on main areas of air quality concern in Worcestershire for purposes of providing enhanced monitoring data on a range of pollutants. Additionally, the proposal included informing the public and vulnerable groups of the status of air pollution in real time to encourage behaviour change.

The scheme has involved the installation of approximately 26 'low-cost Air Quality Monitors' which measure NO_2, PM_{10}, and $PM_{2.5}$ across the county for a period of 3 years (with EA MCERTS standard accreditation as indicative ambient particulate matter LAQM) Locations are as follows:

- Hanover Street, Bromsgrove
- Gunner Lane, Rubery
- Station Road, Hagley

Earthsense and WRS have designed a publicly accessible portal to the real time monitoring data which launched in May 2024. A summary of monitored the results from 2025 is provided in Appendix F.

Additional $PM_{2.5}$ Monitoring Project

Through late 2025 - early 2026 Bromsgrove District considered options for additional Particulate Matter $PM_{2.5}$ monitoring within the district.

The first project extends the contract of the existing low-cost sensor network, outlined above, for a further 3-year period to January-May 2030. This allows continued monitoring of pollutant concentrations at three fixed locations across the district to support long-term trend analysis including monitoring near Schools and within Worcester Road AQMA. The project facilitates behaviour change initiative within the district.

The second project is a local source apportionment study of $PM_{2.5}$ in partnership with the University of Birmingham (UoB), and part funded by the Department of Public Health (DoPH) Worcestershire County Council.

The project will improve understanding of local particulate matter through detailed chemical characterisation unavailable to any other local authorities outside of Worcestershire. It will enhance understanding of pollutant sources and utilising the data gathered and academic expertise available to inform future local, and potentially regional or national, strategies to address PM and other pollution.

Worcestershire Regulatory Services are delivering this unique air quality monitoring project in partnership with the University of Birmingham (UoB) on behalf of Bromsgrove District Council.

Bromsgrove District Council and Redditch Borough Council provision of electric Vehicle Charging Infrastructure

Plans for approximately 120 vehicle charging point are to be installed at 33 locations following the collaboration of Redditch and Bromsgrove's agreement to a long-term 15-to-20-year contract with EV infrastructure provider Zest.

There are currently several sites which are active which are located in

- Astwood Bank car park in Redditch
- Kenilworth Close, Redditch
- New Road, Bromsgrove

Further charge points are planned to be installed across other sites during the long-term contract.

Ultra-Low Emission Taxi Infrastructure Scheme

The ULEV taxi scheme now has seen the installation of 9 live operational chargers and work is currently ongoing to deliver an additional 4 chargers across the district. The project is for a duration of 10 years.

Worcestershire County Council Improvement Actions

Worcestershire County Council Highways Department have developed a number of major infrastructure improvement schemes within the district that are at various stages of delivery. These are set forth below.

A38 Bromsgrove Route Enhancement Programme (BREP) Major Scheme

The A38 Bromsgrove Route Enhancement Programme (BREP) aims to provide additional highway capacity and promote walking and cycling as an alternative, through a range of improvements along the A38 corridor. The scheme is currently in progress for delivery and has commenced to provide links between the town centre, rail station and facilities including local centres, retail and residential areas.

Phase 1 and 2 of the schemes have been completed. Phase 3 is currently in delivery with a future Phase 4 being planned. Full details of the scheme can be found on the County Council's website below: A38 Bromsgrove Route Enhancement Programme (BREP) | Worcestershire County Council

Worcestershire Bus on Demand Scheme

Worcestershire on Demands provides a flexible alternative to fixed rout public transport, allowing passengers to book journeys via app. The service has expanded to include additional zones and improve connections within Bromsgrove and neighbouring areas.

The full map is below: Worcestershire on Demand | Worcestershire County Council

The Bromsgrove Local Cycling and Walking Infrastructure Plan (LCWIP)

The Bromsgrove Local Cycling and Walking infrastructure plan has been developed and will be available for public engagement in late 2026. The document will be revised and adopted in 2027.

Local cycling and walking infrastructure plans (LCWIPs) | Worcestershire County Council

Conclusions and Priorities

Across Bromsgrove District Council monitoring results have observed decreases in nitrogen dioxide at monitoring locations between 2020-2025. Measured concentrations have followed a general downward trend over this period, reflecting continued improvements in air quality across the district.

In accordance with national guidance (LAQM.TG22), Redditch Road AQMA and Lickey End AQMA were formally revoked in December 2025 following sustained compliance with the annual mean objective for NO_2. Monitoring data demonstrates Redditch Road AQMA has been compliant for 8 years and Lickey End AQMA has been compliant for 10 years.

At the end of 2025, there is one remaining AQMA within Bromsgrove District Council; Worcester Road AQMA monitoring data indicates that air quality objectives were achieved during 2025, representing the first full year of compliance for the AQMA since declaration in 2018. In accordance with national guidance (LAQM.TG22), the AQMA will be retained at this time.

Bromsgrove District Council published the BDC Air Quality Action Plan 2025-2030 for the Worcester Road AQMA in March 2025 following a review from Defra in May 2024, incorporating several improving actions to reduce NO_2 emissions within the AQMA.

Within Bromsgrove District Council there is a diffusion tube monitoring network of 40 tubes. No exceedances of the annual mean objective for nitrogen dioxide have been recorded in the Bromsgrove District during the 2025 monitoring year. During the previous years of 2021-2024 no exceedances of the objectives were recorded.

In summary, there has been an annual decrease in concentrations of NO_2 at 5.6% across all the monitoring sites in Bromsgrove District Council from 2024 to 2025. No annual means greater than 60µg/m^3 have been recorded indicating that it is extremely unlikely that there have been any exceedances of the 1-hour mean objective for NO_2 at any monitoring sites.

Review and assessment of the 2026 data will be conducted to help inform future projects and strategies to improve air quality across the district. Real time information will enable a better understanding of air quality in the borough to help inform decision making and requirements for further action as necessary.

Bromsgrove District Council has not identified any new significant sources impacting air quality within the reporting year of 2025. Applications for a number of new developments have been identified within the Bromsgrove District area. The proposals have been

assessed as part of the planning process and are not expected to have a significant impact on local air quality should they become operational. Where air quality is a relevant concern in terms of new developments there will be proportionate mitigation measures. Details of applications of ongoing significant developments within the Bromsgrove District area are listed in Appendix C.

Increasing awareness and knowledge of air quality is evolving through Behavioural Change interactions with local schools and communities, Clean Air Day 2026 campaign and working with LA teams around the county to ensure air quality is considered appropriately within local strategy and policy.

Local authorities are expected to take action to reduce emissions and concentrations of particulate matter. Within Bromsgrove District Council there are three low-cost sensors; called Zephyr's. the Zephyr sensors provide indicative monitoring of a range of pollutants including; PM_1, $PM_{2.5}$ and PM_{10}.

WRS analysed the DEFRA national background maps to determine the projected $PM_{2.5}$ concentrates across the district. The average annual $PM_{2.5}$ at the 218 locations across the Bromsgrove District is 6.51µg/m^3 . To summarise concentrations are well below the annual mean legally binding target of 10µg/m^3 for $PM_{2.5}$ to be achieved across England by 2030.

Key priorities for the next year:

- Continue to monitor air pollutants at key locations across the district utilising the existing diffusion tube network for NOx and real-time low-cost sensors for other pollutants including indicative $PM_{2.5}$
- Review and assess the data from local monitoring sites, and available national sources and guidance to inform future projects and strategies to improve air quality across the district
- Promoting public access to the Earthsense portal of real time monitoring data on a range of air pollutants to enhance public knowledge and encourage behavioural change.
- Ensure proportionate mitigation measures are included within new developments where air quality is a relevant concern.
- Ensure air quality is considered appropriately within local strategy and policy where appropriate including working with Air Quality Partners.

- Maintain relationships with neighbouring authorities and institutions to stay abreast of issues and developments that could impact or benefit air quality in Bromsgrove District, and to ensure our work is recognised in the wider West Midlands community.
- Progression of $PM_{2.5}$ source apportionment study within Bromsgrove in partnership the University of Birmingham.

How to get Involved

There are several examples' members of the public can help to improve local air quality:

- **Walk or cycle, leave your car at home:** Leaving your car at home and walking or cycling instead will benefit in three ways - increased exercise, reduced pollution exposure and will reduce individual's pollution emissions.
- **Turn off your engine when stationary or parked, don't 'idle'**, particularly outside sensitive receptors such as schools, hospitals, care homes and residential properties.
- **General travel planning advice** is available on Worcestershire County Council's website (including walking, cycling, bus maps and timetables) and Government website: community transport and travel to school).
    - Travel and Roads | Worcestershire County Council
    - Smarter choices: changing the way we travel – GOV.UK(www.gov.uk)
- **Hold meetings by Conference** Call by phone or video conference via Teams, Zoom, Facetime, or other service, rather than driving to meetings. This reduces fuel and other travel costs, vehicle maintenance and hire cost, increases productivity through reduction in hours lost through unnecessary travel;
- **Facilitate Flexible Working Arrangements** for non-front-line staff to work remotely rom home or nearer home facilities for one or more days a week thus removing or reducing any journey to work. This reduces congestion which has beneficial impacts for delivery times, reduced business costs and thus economic benefits. Additionally, provides social benefits through improved work life balance for

employees, reduces local air quality and reduced emergency vehicle response times.

- **Switch Fleet to Low Emission Vehicles:** The government is currently providing grants for up to 75% of Electric Vehicle (EV) charging points, up to 40 charge points: Workplace Charging Scheme: guidance for applicants - GOV.UK (www.gov.uk)
- If you must drive follow fuel efficient driving advice, often known as **'Smarter Driving Tips'**, to save on fuel and reduce your emissions. Several websites promote such advice including:
    - Save money and emissions through ecodriving – Energy Saving Trust
    - How to drive economically – Eco-driving tips | AA (theaa.com)
    - Fuel Consumption & CO2 Databases | Vehicle Certification Agency (vehiclecertification-agency.gov.uk)
- **Reduce air pollution from open fires and wood-burning stoves:** Advice is available from Defra on choosing the right stove, using the right fuels and maintenance enabling householders to reduce their impact on their health and air quality from open fires and wood burning stoves. Further information is available on the Smokeless Zones and Public Advice pages on WRS website.

Air pollution can affect all of us over our lifetime however certain groups will be more sensitive to the effects of air pollution. Vulnerable groups include adults and children with lung or heart conditions such as asthma, chronic bronchitis, emphysema and chronic obstructive lung disease (COPD)[1][2]. Senior citizens are more likely to be affected by respiratory diseases and children are more likely to be affected by air pollution due to relatively higher breathing and metabolic rates as well as a developing lung and immune system.

Vulnerable individuals and groups can keep informed of:

- Current levels and forecasts of air pollution from Defra at: DEFRA UK Air

[1] http://www.breathelondon.org/

[2] https://www.londonair.org.uk/LondonAir/guide/MyActionsForMe.aspx

- If you are sensitive to the effects of air pollution, it may be appropriate to limit the length of time spent in areas of local poor air quality – see advice from Defra at Daily Air Quality Index
- Pollution levels can be monitored on our Earthsense portal and can provide advice on what to do when levels are high at: Worcestershire Air\ EarthSense

Further information for the general public on reducing your family's exposure to poor air quality in Worcestershire and how individuals, business and schools can assist with reducing their impact on local air quality is available at Protecting Me and Others from Air

Table of Contents

Figures

Tables

1 Local Air Quality Management

This report provides an overview of air quality in Bromsgrove District Council during 2025. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Bromsgrove District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by Bromsgrove District Council can be found in Table 2.1. The table presents a description of the three AQMAs that are currently designated within Bromsgrove District Council Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMAs and the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean

Bromsgrove District Council have revoked the following AQMAs in Bromsgrove:

- Redditch Road AQMA – Revoked December 2025
- Lickey End AQMA – Revoked December 2025

The Worcester Road AQMA will continue to be monitored, and consideration will be made to revoke this in the future dependant on measured data, national objectives and LAQM guidance at the time.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Highest Concentration: Declaration	Highest Concentration: Current Year	Number of Years Compliant with Air Quality Objective	Name and date of AQAP Publication	Web Link to AQAP
Lickey End, Bromsgrove AQMA	26th July 2001 Revoked 1st December 2025	NO_2 Annual Mean	Residential properties along four roads emanating from the Junction 1 M42	YES	45.7µg/m^3	31.6µg/m^3	10 years	Bromsgrove District Council AQAP February 2025	
Redditch Road, Bromsgrove AQMA	17th February 2010 Revoked 1st December 2025	NO_2 Annual Mean	Long stretch of the A38 including a number of residential properties	YES	45.6µg/m^3	24.8µg/m^3	8 years	Bromsgrove District Council AQAP February 2025	
AQMA No 4 Worcester Road Bromsgrove	24th October 2011	NO_2 Annual Mean	Compromises mainly the B4091 Worcester Road single carriageway of the southwest of the town centre properties along road name 2.	NO	56µg/m^3	34.2µg/m^3	1 year	Bromsgrove District Council AQAP February 2025	BDC AQAP

☒ **Bromsgrove District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Bromsgrove District Council confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Bromsgrove District Council

Defra's appraisal of last year's ASR concluded

1. BDC have produced a high-quality ASR with a large amount of discussion of the trends observed, as well as evidence of proactivity in terms of reviewing their monitoring network and deploying low cost sensors.
2. In Table 2.1, the AQMA descriptions differ slightly from the portal, there should be consistency between these two sources.
3. In Table 2.1, it should state that Worcester Road AQMA has been compliant with the AQO for zero years as there have been concentrations within 10% of the AQO at diffusion tube monitoring sites for the past five years.
4. In Table 2.2, BDC have included the estimated percentage reduction expected from the completion of each AQAP measure, this is encouraging to see.
5. BDC have amended their monitoring network in 2024 with the addition of four new sites and the removal of five existing sites. BDC have included clear reasoning for these changes which is welcomed and should be continued when changes are made in the future.
6. It is encouraging to see that BDC are carrying out additional monitoring at three indicative low cost Zephyr sensors, as well as displaying the results of these monitors within a separate appendix. When the final ASR is published, this appendix should be included within the same document following the title on page 52.
7. BDC have included the comments noted in the previous ASR appraisal and have responded to these comments. It is clear that these comments have been taken on board in this ASR.
8. Lickey End and Redditch Road AQMAs have been compliant for nine and seven years respectively, BDC should prioritise revoking these AQMAs in 2025 in line with LAQM TG 22.

The above comments are noted, and the following actions have been undertaken accordingly:

- Point 2 has been noted and amended to reflect the description on the Portal as suggested.
- The record for Worcester Road showing the AQMA has been compliant with the AQO for one year has been amended in Table 2.1.
- In respect of point 8, BDC have revoked both Redditch Road AQMA and Lickey End AQMA on 1st December 2025.

Bromsgrove District Council has taken forward a number of direct measures during the current reporting year of 2025 in the interest of improving local air quality, outlined below;

Air Quality Action Plan

Bromsgrove District Council have produced an AQAP for the Worcester Road AQMA. Following discussions with the Defra LAQM team in May 2024 it was confirmed an AQAP is required for the Worcester Road, Bromsgrove AQMA. A steering group was formed in 2024 to develop the AQAP to reduce NO_2 emissions within the AQMA. The Steering Group comprised officers from Bromsgrove District Council, Worcestershire County Council and WRS from public health, technical pollution (air quality), strategic planning, sustainability, highways and transport disciplines, and representation from the NHS. The BDC Air Quality Action Plan 2025 – 2030 was published in March 2025, following public consultation.

Countywide AQ Strategy - Behavioural Change Officer (BCO) work and Improving Air Quality Communication

During 2025, the BCO at WRS supported by Technical Officers and the Air Quality Lead have undertaken a range of direct and indirect interactions to raise awareness of air pollution and encourage behavioural change to improve local air quality including:

- 16 primary/secondary schools visited in Bromsgrove.
- Delivery of a number of assemblies and programs at 5 local schools
- Developed the freely available Breathe Better Worcestershire Air Quality toolkit for primary schools with the University of Worcester
- Produced a local promotional campaign to raise awareness of air quality, encourage use of the public portal to real-time air quality monitoring and behavioural change for Clean Air Day 2025

- The Air Quality pages on WRS website have undergone significant transformation to update information displayed and improve user friendliness following best practice examples identified in the Air Quality Information System publications

Actions and information on all BC activities have been published here. The BC work highlighted above has since been recognised nationally and included on Defra's Air Quality Hub providing guidance for local authorities across the UK.

Real-time Air Quality Monitoring Project

In February 2023, WRS were successful in a bid to the Air Quality Grant Scheme 2022/23 to establish an enhanced real-time air quality monitoring network across Worcestershire. The scope of the bid was to establish a real-time air quality monitoring network across the main areas of air quality concern in Worcestershire for purposes of providing enhanced monitoring data on a range of pollutants. Additionally, the proposal included informing the public and vulnerable groups of the status of air pollution in real time to encourage behaviour change.

The scheme has involved the installation of approximately 26 'low-cost Air Quality Monitors' which measure NO^{2}, PM^{10}, and $PM^{2.5}$ across the county for a period of 3 years (with EA MCERTS standard accreditation as indicative ambient particulate matter devices). The results of monitoring will be used to inform decision making and requirements for further action as necessary.

In 2023 the experienced sensor provider Earthsense were appointed as successful suppliers following a rigorous procurement process. The sensors, known as 'Zephyrs' are provided, operated and serviced by Earthsense who also provide data access.

Appropriate monitoring locations were determined by WRS in collaboration with Public Health, Worcestershire County Council Street Lighting team and Earthsense taking into consideration requirements of Bromsgrove District Council.

The locations have been chosen to maximise data capture within locations proximal to vulnerable communities and/or from a range of sources of air pollution including transport, solid fuel burning, industry and agriculture.

Three of the twenty-six monitors were installed in the Bromsgrove District between January and May 2024, following completion of required structural assessments. These are located on:

- Hanover Street – Bromsgrove
- Gunner Lane – Rubery
- Station Road – Hagley

Earthsense and WRS have designed a publicly accessible portal to the real time monitoring data which launched in May 2024. A summary of monitored the results from 2025 is provided in Appendix F.

Additional $PM_{2.5}$ Monitoring Project

Through late 2025 - early 2026 Bromsgrove District Council considered options for additional Particulate Matter $PM_{2.5}$ monitoring within the district. Two projects were approved in March 2026.

The first project extends the contract of the existing low-cost sensors, outlined above, for a further 3-year period to January-May 2030. This provides continued assessment of pollutant concentrations in fixed locations and tracking of reductions or increases in ambient measured parameters over time. Additionally, two of the current sensors are located near schools enabling opportunities to undertake behavioural change activities and the third is located in the Worcester Road AQMA.

The second project is a local source apportionment study of $PM_{2.5}$ within the district. In partnership with the University of Birmingham (UoB), Worcestershire Regulatory Services are delivering this exciting air quality monitoring project in Bromsgrove on behalf of the district council. The project is also part funded by the DoPH, Worcestershire County Council.

The study will provide a characterisation of the sources of PM utilising the specialist monitoring equipment and expertise available from UoB at this time. A mobile supersite will be located at a fixed location for one month in summer and one in winter providing a comprehensive set of PM observations. Data analysis and written report will be provided by an experienced academic researcher. The preferred option is to locate the mobile supersite at a local school providing an additional educational opportunity to the program.

This local project also links to similar research[3] undertaken by UoB at the Birmingham Air Quality Supersite (BAQS). UoB have recently embarked upon monitoring in Worcestershire to ascertain air quality upwind of Birmingham. A fixed supersite replicating the BAQS facility located at a Malvern Hills location for a period of 12 to 24 months from November 2025. This will provide invaluable insight into PM air pollution in Worcestershire culminating in a published paper in 2 - 3 years' time. Bromsgrove lies on a direct SW - NE trajectory between the Malvern Hills rural upwind supersite and Birmingham BAQS location.

This project provides a unique opportunity to chemically characterise local PM sources unavailable to any other local authorities outside of Worcestershire now and possibly at any other time. It will enhance understanding of pollutant sources and utilising the data gathered and academic expertise available to inform future local, and potentially regional or national, strategies to address PM and other pollution.

At time of writing financial contracts are in place and negotiations with local schools to find a suitable location are underway.

Bromsgrove District Council and Redditch Borough Council provision of electric Vehicle Charging Infrastructure

Plans for approximately 120 vehicle charging point are to be installed at 33 locations following the collaboration of Redditch and Bromsgrove agreement to a long-term contract with EV infrastructure provider Zest.

There are currently four sites which are active and are located in:

- Astwood Bank car park in Redditch
- Aston Fields car park in Bromsgrove
- Kenilworth Close, Redditch
- New Road, Bromsgrove

[3] Comparative receptor modelling for the sources of fine particulate matter (PM2.5) at urban sites in the UK - ScienceDirect

Ultra-Low Emission Taxi Infrastructure Scheme

The ULEV taxi scheme now has seen the installation of 9 live operational chargers and work is currently ongoing to deliver an additional 4 chargers across the district. The project is for a duration of 10 years.

Technical Planning document

The document includes guidance on requirements for air quality assessments, standard recommendations expected for air quality mitigation measures, and advice relating to good practice for new development. Consultants / agents are signposted to the information so that they are aware of the requirements in relation to development and submitting suitable assessments.

This is a live document that is continuously updated where changes are required.

Worcestershire County Council Improvement Actions

Worcestershire County Council Highways Department have developed a number of major infrastructure improvement schemes within the district that are at various stages of delivery. These are briefly set out below.

A38 Bromsgrove Route Enhancement Programme (BREP) Major Scheme

The A38 Bromsgrove Route Enhancement Programme (BREP) aims to provide additional highway capacity and promote walking and cycling as an alternative, through a range of improvements along the whole corridor. The scheme is currently in progress for delivery and has commenced to provide links between the town centre, rail station and facilities including local centres, retail and residential areas.

Phase 1 and 2 of the schemes have been completed. Phase 3 is currently in delivery with a future Phase 4 being planned. Full details of the scheme can be found on the County Council's website below: A38 Bromsgrove Route Enhancement Programme (BREP) | Worcestershire County Council

Worcestershire Bus on Demand Scheme

Worcestershire on Demands offers an alternative transport option to fixed route public transport services. The scheme commenced in Bromsgrove and allows passengers to book on to the service from an app. Transport will collect the passenger from a designated pick-up point and will drop off at the required location. Unlike fixed route bus services, the service is flexible depending on the destinations and collection points. The scheme

commenced in Bromsgrove and Bus on demand has continued in expand with additional zones being added including the North Central Zone which links across Western Bromsgrove and into eastern Wyre Forest. Revised provision has also been put in place to enable greater flexibility to travel between zones.

The full map is below: Worcestershire on Demand | Worcestershire County Council

The Bromsgrove Local Cycling and Walking Infrastructure Plan (LCWIP)

The Bromsgrove Local Cycling and Walking infrastructure plan has been developed and will be available for public engagement in late 2026. The document will be revised and adopted in 2027.

Challenges and barriers

The principal challenges and barriers to implementation that Bromsgrove District Council anticipates facing relate to the specific site conditions at each AQMA, as well as cost implications and difficulties associated with improving existing infrastructure.

The area of the Worcester Road AQMA, where regular exceedances of the objectives have been recorded historically, is best described as a ‘street canyon’. It comprises narrow streets with continuous buildings on either side and is a major route for traffic in and out of Bromsgrove. The street canyon restricts the dispersal of NO_2 and therefore represents a more significant issue than would be the case in a more open scenario.

The A38 Bromsgrove Route Enhancement Programme (BREP) is a major scheme, which aims, to address congestion and unreliable journey times along the A38 BREP in Bromsgrove and support the growth in the currently adopted plan. The proposals also include bus priority and active travel provision to facilitate modal shift. The BREP is currently in delivery with construction activity due to complete at the end of 2026. The ongoing development activities have resulted in traffic diversions and driver avoidance of construction works; which could have led to an influence on traffic conditions on both the strategic road network and local roads in and around the town centre in 2025.

Although the Lickey End and Redditch Road AQMAs have been revoked the areas remain significant routes on the strategic road network with high volumes of traffic and congestion at times. A significant diffusion tube network remains in place here to ensure adequate coverage of monitoring.

Securing funding for improvement schemes is a key factor. Ensuring uptake of greener methods of transport and changes in behaviour are also difficult to achieve without incentives or a lack of alternative options being in place. The current cost of electrical vehicles or hybrids means this alternative is out of the reach for many people.

Large scale residential development is also proposed within the Bromsgrove District and the wider area in future years. Consequently, solving the problem of poor air quality at problem locations within the district may be difficult. Even without further development, and increasing numbers of vehicles, the current road network is already stretched with significant congestion.

While 16 primary and secondary Schools have been visited over the course of 2025 by the WRS Behavioural Change Officer (BCO) to engage in awareness of air pollution and promote behaviour change; a lack of school and community response to invitations to participate is a barrier to improve local air quality.

Bromsgrove District Councils key priorities for the coming year are:

- Promoting low-emission transport through LEVI capacity funding
- Countywide AQ Strategy - Encouraging awareness and behavioural change interventions linked to focussed real time monitoring data
- A38 BREP MRN Scheme - active travel and bus infrastructure enhancements
- Continue to monitor air pollutants at key locations across the district utilising the existing diffusion tube network for NOx and real-time low-cost sensors for other pollutants including indicative $PM_{2.5}$
- Review and assess the data from local monitoring sites, and available national sources and guidance to inform future projects and strategies to improve air quality across the district
- Promoting public access to the Earthsense portal of real time monitoring data on a range of air pollutants to enhance public knowledge and encourage behavioural change.
- Ensure proportionate mitigation measures are included within new developments where air quality is a relevant concern.
- Ensure air quality is considered appropriately within local strategy and policy where appropriate including working with Air Quality Partners.
- Maintain relationships with neighbouring authorities and institutions to stay abreast of issues and developments that could impact or benefit air quality in Bromsgrove

District, and to ensure our work is recognised in the wider West Midlands community.

- Progression of $PM_{2.5}$ source apportionment study within Bromsgrove in partnership the University of Birmingham.

Measures stated above and in Table 2.2 – Progress on Measures to Improve Air Quality will help contribute towards compliance within the Bromsgrove District Council area and enable the revocation of the existing AQMA Worcester Road in the future.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
Priority Air Quality Actions														
3	LEVI Capacity Funding	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2025	2029	WCC, BDC	£3.4m local EV Infrastructure Fund	Fully Funded (subject to business case process)	£1 million - £10 million	Planning	35%*	Number of EV chargers installed	Funding secured and two preferred charge point operators notified - detailed contract negotiations underway	subject to 3-stage business case process
13	Countywide AQ Strategy - Encouraging awareness and behavioural change interventions linked to focussed real time monitoring data	Public Information	Via other mechanisms	2024	2027	WRS, WCC, District Councils	Not Yet Identified	To Be Confirmed	£10k-50k	Planning	<1.5%	Number of responses to survey, hits on website, data captured. Changed behaviour identified from repeat survey in future	Gen public baseline AQ Survey, followed by 2 targeted surveys with HoW college and local schools in 2024. School assemblies ran until December 2025 and plans to engage with schools for future assemblies. Developed toolkit for primary schools with UoW.	AQ Toolkit available for schools to download from WRS website
16	A38 BREP MRN Scheme - active travel and bus infrastructure enhancements	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2024	2026	WCC	DfT	Phase 3 Fully Funded	>£10million	Implementation	<0.2%	Completion of works	In Delivery for completion late 2026/2027	
1	EV Charging Strategy	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2025	2025	WCC, BDC	LEVI capability funding	Fully Funded	£50k - £100k	Implementation	35%*	Publication of Strategy	Public consultation took place June 2025 and EV Strategy published late 2025 - see County website	A low risk but change in central govt policy could impact the efficacy of the strategy

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
2	Public EV Charging Points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2024	2025	WCC, BDC	Government sponsored Charging Infrastructure Investment Fund	Funded	£50k-£100k	Implementation	35%*	Installation of chargepoints. Number of vehicles charging / number of new users	Installation of 5 additional public chargepoints in Bromsgrove Town due by spring 2025	Contract with supplier for 10+ years, potentially further charge points in lifetime of AQAP
4	Bus fleet improvements (local bus services)	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2025	2026	Bus Operators,WCC,WRS	Not Yet Identified	To Be Confirmed	£1 million-£10million	Planning	9%	% of bus fleet Euro 6	Enhanced Partnership (EP) with bus operators formalised and published March 2025	Funding availability, Operator Agreement
5	Countywide AQ Strategy - Behavioural Change Officer Post	Public Information	Via other mechanisms	2024	2026	WRS	S106	Funded	£100k - £500k	Implementation	<1.5%	Future Stakeholder engagement	Post fulfilled Feb 2024. Has visited 61 primary and secondary schools across the county inc. 13 in BDC, undertaken 2 targeted surveys, worked directly with 11 schools delivering assemblies, participation in number of events and festivals, developed AQ toolkit for primary schools with UoW.	
6	Countywide AQ Strategy - Encouraging awareness via Public Portal of real time monitoring data	Public Information	Via the Internet	2024	2027	WRS, Earthsense, WCC, District Councils	Defra, Districts	Fully Funded	£100k - £500k	Completed	<1.5%	Number of website hits on public portal	Monitors deployed Jan 2024, Public Portal access from May 2024. Contract with Earthsense extended until 2030	
7	Air Quality Improvements from New Development	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	2035	WCC, BDC, Developers	s106 Funding	Funded	£1 million - £10 million	Planning	<1.5%	s106 agreements completed	2 Phased developments, Phase 1 of each dev being delivered, remaining are in planning stages. supporting AQ road improvements in Worcester Road AQMA	Subject to planning applications being approved for later phases. Big impacts delivered in later development phases

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
8	Local bus service improvements funded from Bus Service Improvement Plan (BSIP) and Enhanced Partnership (EP)	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2026	2030	WCC incl Public Health, BDC, key stakeholders, Active Travel England	BSIP funding	To Be Confirmed	£1 million - £10 million	Planning	<0.3%	Bus patronage (passenger demand)	Enhanced Partnership (EP) with bus operators formalised and published March 2025	
9	Bromsgrove Local Cycling and Walking Infrastructure Plan (Scheme Delivery)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2025	2035	WCC incl Public Health, BDC, key stakeholders, Active Travel England	Active Travel England, Developer contributions	To Be Confirmed	>£10million	Planning	<1.5%	Scheme delivery monitoring (e.g. cycle counts)	Planning Phase	Funding Availability; LCWIP programme likely to cover a 10-15 year period
10	Bromsgrove Local Cycling and Walking Infrastructure Plan (Development)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2024	2025	WCC incl Public Heatlh, BDC, key stakeholders, Active Travel England	WCC, Active Travel England	Fully funded	£50k-£100k	Planning	<0.2%	LCWIP completed by March 2025	Planning Phase	
11	Countywide AQ Strategy - Raising awareness events	Public Information	Other	2023	Ongoing	WCC Public Health, WRS	Not yet identified	To be confirmed	£10k-50k	Implementation	<0.2%	Support minimum of 3 national events. Number of events attended. Number of people engaged	Clean Air Night 2026 promotion and Heart of Worcestershire College community event in 2024.	Reduced PH resource to support programme of events.
12	Countywide AQ Strategy - Communications Plan	Policy Guidance and Development Control	Other	2025	Ongoing	WCC Public Health, WRS	Not yet identified	To be confirmed	£10k-50k	Planning	<0.2%	Production of communication plan	Significant update to AQ info on WRS website June 2025 and CAD2025 campaign to promote following AQIS review. AQ Incorporated into emerging WRS communications plan and future BC strategy 2026	Countywide strategy delayed until outcome of LA reorganisation.
14	Eco Driving Training/Scheme	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2025	Ongoing	BDC	BDC	To Be Confirmed	£10k-50k	Planning	<0.2%	Number of operatives completing training	Implementation of technology to monitor driving behaviour within vehicles. Launch of vehicle user's handbook; sets out requirements of staff and includes sections on driving with an environmental focus.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
15	Travel Choices	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2025	2030	WCC incl Public Health, BDC, key stakeholders - schools, UoW	Not Yet Identified	To Be Confirmed	£50k - £100k	Planning	<1.5%	Number of walking, cycling, scooting and number of participating organisations and activities delivered	Planning Phase	Funding availability
17	Travel to school	Promoting Travel Alternatives	School Travel Plans	2025	2030	WCC incl Public Health, BDC, Schools & Colleges	Not Yet Identified	To Be Confirmed	£100k-£500k	Planning	<1.5%	Number of walking, cycling, scooting, car, and park & stride trips; Number of participating schools and of activities delivered	Planning Phase. Exploring utilising DRT to support	Funding availability
18	Bus stop infrastructure – bus shelter provision	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2025	2030	WCC, Bus operators	Not Yet Identified	To Be Confirmed	£500k-£1million	Planning	<0.2%	Bus patronage (passenger demand)	Planning Phase	Funding availability
19	Demand Response Travel (DRT)	Alternatives to private vehicle use	Other	2024	2025	WCC,Bus Operators,BDC	WCC	To Be Confirmed	£1million-£10m	Implementation	<0.2%	Bus patronage (passenger demand)	Expansion of the existing Worcestershire On Demand DRT beyond Bromsgrove (North East Worcs Expansion Zone) - expansion commenced August 2024	
20	BDC Vehicle Fleet Upgrade - Refuse Collection Vehicle and other Heavy and Light Commercial Vehicle Upgrades	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2024	2029	BDC	BDC	Funded	£1 million-£10million	Implementation	<0.2%	Replacement of vehicles	Rolling replacement programme mostly running on HVO. Housing considering replacement of some Vans with EV	

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[4], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Prior to 2025 there were no automatic scientific reference methods for $PM_{2.5}$ monitoring stations in Worcestershire that are recognised by DEFRA for measuring against ambient air quality directives. In April 2025 the first of two planned AURN $PM_{2.5}$ monitoring stations in Worcestershire, was installed in Worcester. The Worcester Tolladine site is approximately 16.4km to the North-East of the Bromsgrove District.

A full 12-month dataset was not available for the 2025 assessment period for the Worcester Tolladine site AURN, to measure against ambient air quality directives. The nearest AURN $PM_{2.5}$ monitoring station, in 2025 with full annual data, is the Birmingham Ladywood site approximately 20km to the north of the Bromsgrove District.

WRS has reviewed the DEFRA national background maps to determine projected $PM_{2.5}$ concentrations within the Bromsgrove District for the 2025 calendar year. The average total $PM_{2.5}$ at the 218 locations (centre points 1km x 1km grids) across the Bromsgrove District is 6.51µg/m^3 with the lowest concentration of 5.90µg/m^3 and the highest concentration being 7.13µg/m^3. $PM_{2.5}$ concentrations within the Bromsgrove District are well below the annual average EU limit value for $PM_{2.5}$ of 25µg/m^3 and are below the proposed annual average limit value for $PM_{2.5}$ target of 10µg/m^3 across England by 2030.

Three low-cost sensors offering publicly accessible real time monitoring data were deployed within the Bromsgrove District Council area in 2025. The sensors, known as ‘Zephyrs’ provide data on a range of pollutants including PM_1, $PM_{2.5}$ and PM_{10}. Tabulated and graphical results for 2025 are shown in the appendices Table C.9, Table C.10, Table C.11, Table C.12 and $PM_{2.5}$ averages for 2025 are summarised in the table below:

[4] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

Location	Average $PM_{2.5}$($\mu g/m^3$)	Installation
Hanover Street, Bromsgrove	8.71$\mu g/m^3$	January 2024
Gunner Lane, Rubery	7.73$\mu g/m^3$	January 2024
Station Road, Hagley	7.28$\mu g/m^3$	May 2024

These low-cost sensors have been certified as suitable for indicative monitoring for particulate matter within the UK using the Environment Agency's Indicative instrument certification scheme (MCERTS). However, the following advice from Defra is acknowledged: 'While low-cost sensors can provide useful indicative data, at present they are not approved for use in statutory legal reporting (LAQM) of data against the National air quality objectives as they are not accurate enough to meet the expanded uncertainty requirements of equivalent [scientific reference] instruments.'

The measured data from the low-cost sensor network and Defra background pollution maps indicate that $PM_{2.5}$ concentrations within the Bromsgrove District are well below the interim and legally binding targets set out in the Air Quality Strategy (England) 2023 and subsequent amendments in the Environmental Improvement Plan 2025:

Pollutant and Metric	Target	Target Year
$PM_{2.5}$ annual mean concentration	Interim target: 12$\mu g/m^3$	2028
$PM_{2.5}$ annual mean concentration	Legally binding target: 10$\mu g/m^3$	2030

As noted in section 2.2, Bromsgrove District Council have funded the continuation of the Low-cost sensors for a further 3 years extending the continued monitoring of pollutants including $PM_{2.5}$ until 2030. Additionally, as outlined above, the council with the support of DoPH (WCC) have commissioned a local source apportionment study of $PM_{2.5}$ within the district to chemically characterise sources of PM utilising the specialist monitoring

equipment and expertise available locally at this time. Worcestershire Regulatory Services are delivering this unique air quality monitoring project in partnership with the University of Birmingham (UoB) on behalf of Bromsgrove District Council.

WRS has reviewed the fraction of mortality attributable to particulate air pollution published by the Department of Health & Social Care. The estimated fraction of mortality attributable to particulate air pollution in 2024 (most recent year available) was 5.1%. This is below the national figure for England (5.3% in 2024), and the district figure is lower than the West Midlands regional figure (5.3% for 2024).

Fingertips | Department of Health and Social Care

More information on the Public Health Outcomes Frameworks that examines indicators that help to understand the trends in public health can be found at Public Health Outcomes Framework - OHID (phe.org.uk)

There are currently no declared smoke controlled areas operating within the Bromsgrove District. More information, maps, and guides on the type of fuels that can be used can be found at: Smoke Control Areas | Worcestershire Regulatory Services (worcsregservices.gov.uk) Worcestershire Regulatory Services hold 49 records of complaints of nuisance from smoke in the Bromsgrove District in 2025, most of which relate to bonfires or burning of waste or other enquiries. 3 records of complaints are attributable to wood burning stoves in residential developments which were either unsubstantiated, not pursued or resolved without requirement for enforcement action.

Considering the above no additional actions are currently planned by Bromsgrove District Council in relation to the reduction of $PM_{2.5}$ levels. However, it is anticipated that any actions taken to improve NO_2 levels across the region as part of the BDC Air Quality Action Plan 2025 – 2030 will likely result in a linked improvement in $PM_{2.5}$ levels.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within 2025 by Bromsgrove District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2021 and 2025 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

No automatic (continuous) monitoring that are recognised by Defra for measuring against ambient air quality directives was undertaken within the Bromsgrove District Council area during 2024.

3.1.2 Non-Automatic Monitoring Sites

Bromsgrove District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 40 sites during 2025. Table A.1 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.2 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2025 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Within Bromsgrove District Council there is a diffusion tube monitoring network of 40 tubes. During completion of the 2025 annual status report; no annualisation was required because each location captured 10-12 months data. No exceedances of the annual mean objective for nitrogen dioxide have been recorded in the Bromsgrove District during the 2025 monitoring year. During the previous years of 2021-2024 no exceedances of the objectives were recorded. It should be noted the COVID-19 pandemic significantly impacted measured air pollutant concentrations between 2020 – 2021 due to the associated lockdowns and restrictions affecting travel patterns and behaviours. However, as traffic levels across Worcestershire returned to 98% of pre pandemic levels during 2022, annual concentrations of NO_2 have also risen. It is observed that concentration trends have normalised between 2023-2025.

In summary, there has been an annual decrease in concentrations of NO_2 at 5.6% across all the monitoring sites from 2024 to 2025. The most significant decrease was recorded at Loc.19, (93 Redditch Road, Bunsford Hill, B60 4JP); a reduction of 4.1µg/m^3, which represents a decrease of 16.1% from 25.6µg/m^3 to 21.5µg/m^3.

Overall, the highest concentration of NO_2 annual mean in 2025 was 34.2 µg/m^3 at location WR (14 Hanover Street, B61 7JH), which was 21.6% below the annual mean objective. This decreased from 36.2 µg/m^3 to 34.2 µg/m^3 (5.4% reduction) from the previous year. This site is located within the Worcester Road AQMA.

Additionally further increases were observed at various sites within Bromsgrove District Council; the largest increase of 3.4 µg/m^3 occurred at Loc. FL2 (lamppost adjacent to new housing on Fox Lane near Rock Hill junction, B61 7LJ), increasing 14.9% from 23.0 µg/m^3 to 26.4 µg/m^3.

The A38 Bromsgrove Route Enhancement Programme (BREP) is a major scheme which resulted in traffic diversions and driver avoidance of works; which could have led to an influence on traffic conditions on both the strategic road network and local roads in and around the town centre in 2025.

Within the Redditch Road AQMA the highest concentration recorded was 24.8µg/m^3 at RR (Redditch Road, Bromsgrove). This is 30.6% below the annual objective. NO_2 has consistently been below the objective for a significant period at Redditch Road AQMA, with the last exceedance occurring in 2016 when two sites marginally exceeded with concentrations of 40.5 µg/m^3 at locations 18 and 19. As such in line with LAQM. TG22 the Redditch Road AQMA was revoked 1st December 2025.

The highest concentrations of NO_2 within the Lickey End AQMA were 31.6µg/m^3 at diffusion tube F1 in 2025. This concentration was 21% below the annual objective. These results have decreased from 2024 by 9.3%, and the results have stayed below the objective since 2019 at monitoring locations when calculated back to nearest relevant exposure. As such in line with LAQM. TG22 the Lickey End AQMA was revoked 1st December 2025.

Within the Worcester Road AQMA, NO_2 concentrations decreased from 36.2 µg/m^3 (2024) to 34.2 µg/m^3 (2025), an 5.4% reduction. Although no exceedances have occurred within the AQMA within 2025, concentrations remained within 10% of the objective until 2024; in 2025, concentrations reduced 10% below the objective. In accordance with national guidance (LAQM.TG22), the AQMA will be retained at this time; Bromsgrove District Council will continue monitoring and progress actions within the AQAP to secure further NO_2 reductions.

Following a review of the monitoring networks for diffusion tubes, several changes have been implemented. This includes one new monitoring site added in 2025.

- 38SL, Lamppost no.7 outside 38 School Lane Bromsgrove, B60 1JE

This site was added due to concerns over network changes and future development.

The monitoring network had five monitoring locations removed in 2025.

- LE4, Harvester, Birmingham Road, Lickey End
- HAG 4, Lamppost opp Shell Garage Worcester Road
- 11, 74 Worcester Road, Hagley
- HAG 5, On low sign near 4 Cross Keys Mews

- Ken, Lamppost o/s 12 & 14 Kendal Close, Bromsgrove

The sites located in Hagley (HAG4, 11 and HAG5) have been removed due to the reductions in concentrations in NO_2 in this area recorded over a long period time. There remains a sufficient tube network located in Hagley due to the former AQMA status.

The site located at LE4 has been removed due to ongoing building works to site location which resulted in a lack of access to the tube location.

KEN has been removed from the monitoring network due to being below the objective for a number of years.

In summary there have been no exceedances of the Air Quality Objective for annual average nitrogen dioxide. No annual means greater than 60µg/m3 have been recorded indicating that it is extremely unlikely that there have been any exceedances of the 1-hour mean objective for NO2 at any monitoring sites.

3.2.2 Particulate Matter (PM_{10})

PM_{10} has not been monitored in 2025 in terms of scientific reference methods.

3.2.3 Particulate Matter ($PM_{2.5}$)

$PM_{2.5}$ has not been monitored in 2025 in terms of scientific reference methods.

3.2.4 Sulphur Dioxide (SO_2)

SO_2 has not been monitored in 2025.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
FL1	2C Fox Lane behind Greyhound Pub (second house past pub), B61 7NL	Roadside	395079	269797	NO_2	No	0.0	6.96m	No	2.1
FL2	Lamppost next to new houses close to road on Fox Lane near to Rock Hill junction, B61 7LJ	Roadside	395118	269721	NO_2	No	0.0	1.60m	No	2.1
RH1	8 Rockhill, Bromsgrove, B61 7LJ	Roadside	395243	269844	NO_2	Yes - Worcester Road AQMA	0.0	6.25m	No	2.2
WR4	188 Worcester Road, Bromsgrove, B61 7AZ	Roadside	395312	269938	NO_2	Yes - Worcester Road AQMA	0.0	7.50m	No	2.2
WR2	159 Worcester Road, Bromsgrove, B61 7HN	Roadside	395511	270180	NO_2	Yes - Worcester Road AQMA	0.0	2.2m	No	2.2

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
WR3	138 Worcester Road, Bromsgrove, B61 7AS	Roadside	395501	270190	NO_2	Yes - Worcester Road AQMA	0.0	4.42m	No	2.5
BC	Ye Olde Black Cross, Worcester Road, Bromsgrove, B61 7AG	Roadside	395685	270424	NO_2	Yes - Worcester Road AQMA	0.0	2.1m	No	2.3
BCX	16 Worcester Road, Bromsgrove, B61 7AG	Roadside	395807	270549	NO_2	Yes - Worcester Road AQMA	0.0	2.7m	No	5.3
WR	14 Hanover Street, B61 7JH	Roadside	395702	270423	NO_2	Yes - Worcester Road AQMA	0.0	6.4m	No	1.4
BR	35 Birmingham Road, Bromsgrove, B61 0DR	Roadside	396292	271210	NO_2	No	0.0	3.40m	No	2.2
LE7	371 Birmingham Road, Lickey End, B61 0EY	Urban Background	396916	273014	NO_2	Yes - Lickey End AQMA	0.0	15.9m	No	2.1
1	3A Alcester Road, Lickey End, B60 1JT	Roadside	396999	272979	NO_2	Yes - Lickey End AQMA	0.0	11.70m	No	1.8
LIK1	288 Birmingham Road (next to Harvester)	Roadside	396939	272934	NO_2	Yes - Lickey End AQMA	0.0	10m	No	1.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
LIK2	1 Old Birmingham Road Lickey End B60 1DD	Roadside	396995	273129	NO_2	Yes - Lickey End AQMA	0.0	5.5m	No	1.5
LE5	5 Old Birmingham Road, Lickey End, B60 1DD	Roadside	396999	273143	NO_2	Yes - Lickey End AQMA	0.0	6.53m	No	1.9
LE6	308 Birmingham Road, Lickey End, B61 0HJ	Urban Background	396958	273157	NO_2	Yes - Lickey End AQMA	0.0	18.30m	No	2.1
F1	J1 M42 roundabout, Street Light LP 4957 at junction with Old Birmingham Road, B60 1DD	Roadside	397010	273112	NO_2	Yes - Lickey End AQMA	20.0	2.31m	No	2.0
TS	Smallholdings, Wildmoor Lane, Catshill, B61 0RJ	Rural	396613	275085	NO_2	No	0.0	51m	No	1.8
RUB1	Library Way off New Road, LP at end of Library Way backs onto A38 B45 9JS	Roadside	398555	277200	NO_2	No	0.0	2m	No	1.6
RES 1	26 Stourbridge Road, Hagley Downpipe Front of Property, DY9 0QT	Roadside	391445	281179	NO_2	No	0.0	15m	No	2.1

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
9	78 Kidderminster Road, Hagley, DY9 0QL	Roadside	391210	280668	NO_2	No	0.0	8.3m	No	2.0
KR62	62 Kidderminster Road, Hagley, DY9 0QL	Roadside	391182	280631	NO_2	No	0.0	7m	No	2.0
RES 3	104 Kidderminster Road South, Hagley Downpipe Front of Property, DY9 0JJ	Roadside	389827	279590	NO_2	No	0.0	14.3m	No	2.0
HAG 3	1 Cross Keys Mews , Worcester Road, West Hagley, DY9 0LG	Roadside	389909	279629	NO_2	No	0.0	3m	No	1.6
RES 4	23 Worcester Road, Hagley Downpipe Front of Property DY9 0LF	Roadside	390025	279765	NO_2	No	0.0	14.5m	No	2.1
SBR1	On lamppost outside 61 Stourbridge Road, Bromsgrove B61 0AL	Roadside	396127	271516	NO_2	No	4.8	2.2	No	1.9
SBR2	On lamppost outside Sainsbury Local 189 Stourbridge Road B61 0AR	Roadside	395996	272063	NO_2	No		3.5	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SBR3	On lamppost outside 285 Stourbridge Road, B61 Last house on left before M42 underpass	Roadside	395825	272841	NO_2	No	12.0	1.0	No	1.9
SR	2 Stoke Road, Aston Fields, Bromsgrove, B60 3EH	Roadside	396780	269450	NO_2	No	0.0	4.9m	No	1.9
18	84 Redditch Road, Bunsford Hill, B60 4JR	Roadside	395180	268549	NO_2	Yes - Redditch Road AQMA	0.0	1.6m	No	2.0
19	93 Redditch Road, Bunsford Hill, B60 4JP	Roadside	395188	268564	NO_2	Yes - Redditch Road AQMA	0.0	2.7m	No	1.9
HR	52 Hanbury Road, Stoke Heath, B60 4LU	Roadside	394772	268441	NO_2	Yes - Redditch Road AQMA	0.0	5m	No	2.2
16	58 Redditch Road, Bromsgrove, B60 4JN	Roadside	394701	268444	NO_2	Yes - Redditch Road AQMA	0.0	2.3m	No	2.2
255	255 Worcester Road (A38 Roundabout), B61 7JD	Roadside	394408	268417	NO_2	No	0.0	12m	No	2.3
PR1	Lamppost opposite 1 Perryfields Road,	Suburban	395795	272309	NO_2	No	0.0	0.6m	No	1.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Bromsgrove, B61 8SY									
RUB2	Beacon House, Callowbrook Lane, Rubery, B45 9HX	Roadside	398273	277039	NO_2	No	0.0	4.5m	No	1.5
RUB3	Signpost opposite 57 Callowbrook Lane, Rubery, B45 9HW	Roadside	398475	277174	NO_2	No	6.0	1m	No	1.6
RR	Redditch Road, Bromsgrove on lamppost rear of Avon Close	Roadside	395674	268860	NO_2	Yes - Redditch Road AQMA	6.0	1.46m	No	2.1
439AR	Lamppost outside 439 Alcester Road, Wythall, B47 6JL	Roadside	407908	275162	NO_2	No	4.0	2.2m	No	2.0
38SL	Lamppost no.7 outside 38 School Lane Bromsgrove, B60 1JE	Roadside	397080	272541	NO_2	No	9.9	1.4m	No	

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2025 (%) (2)	2021	2022	2023	2024	2025
FL1	395079	269797	Roadside	100.0	100.0	13.0	18.7	16.4	12.9	14.8
FL2	395118	269721	Roadside	100.0	92.3	27.2	29.7	29.2	23.0	26.4
RH1	395243	269844	Roadside	100.0	100.0	22.0	25.1	22.8	22.6	21.9
WR4	395312	269938	Roadside	100.0	100.0	21.4	23.9	23.4	23.1	22.4
WR2	395511	270180	Roadside	100.0	100.0	25.6	27.8	28.4	29.5	28.5
WR3	395501	270190	Roadside	100.0	90.4	21.5	27.4	24.7	24.0	23.5
BC	395685	270424	Roadside	100.0	100.0	31.5	37.4	35.4	38.1	33.7
BCX	395807	270549	Roadside	100.0	100.0	29.6	32.4	31.5	31.0	29.8
WR	395702	270423	Roadside	100.0	100.0	32.3	36.2	36.6	36.2	34.2
BR	396292	271210	Roadside	100.0	100.0	21.1	23.1	22.6	21.6	22.0
LE7	396916	273014	Urban Background	100.0	100.0	20.0	22.0	21.4	19.9	21.1
1	396999	272979	Roadside	100.0	100.0	22.0	22.7	17.1	16.7	16.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2025 (%) (2)	2021	2022	2023	2024	2025
LIK1	396939	272934	Roadside	100.0	75.0	22.3	28.8	26.7	25.9	22.1
LIK2	396995	273129	Roadside	100.0	100.0	21.5	24.7	23.2	22.8	21.4
LE5	396999	273143	Roadside	100.0	100.0	21.0	23.8	23.1	22.5	22.4
LE6	396958	273157	Urban Background	100.0	100.0	23.6	26.1	21.6	21.5	19.7
F1	397010	273112	Roadside	100.0	100.0	28.5	29.4	33.3	34.8	31.6
TS	396613	275085	Rural	100.0	100.0	16.3	19.0	17.7	16.7	17.6
RUB1	398555	277200	Roadside	100.0	100.0	21.0	21.7	22.6	21.4	20.1
RES 1	391445	281179	Roadside	100.0	100.0	14.2	16.5	15.0	14.1	13.6
9	391210	280668	Roadside	100.0	100.0	21.5	22.8	21.9	21.2	20.2
KR62	391182	280631	Roadside	100.0	100.0	20.0	20.7	20.2	19.2	17.1
RES 3	389827	279590	Roadside	100.0	100.0	15.8	18.4	15.5	14.2	15.4
HAG 3	389909	279629	Roadside	100.0	100.0	26.7	31.8	30.7	29.8	26.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2025 (%) (2)	2021	2022	2023	2024	2025
RES 4	390025	279765	Roadside	100.0	100.0	22.6	23.7	23.6	23.8	23.0
SBR1	396127	271516	Roadside	100.0	100.0	26.6	28.6	28.4	27.7	25.2
SBR2	395996	272063	Roadside	100.0	82.7	20.5	22.8	22.1	20.6	20.1
SBR3	395825	272841	Roadside	100.0	82.7	27.8	31.7	30.2	28.4	26.8
SR	396780	269450	Roadside	100.0	90.4	19.0	21.7	21.0	21.2	20.4
18	395180	268549	Roadside	100.0	100.0	25.1	25.9	25.6	25.2	22.8
19	395188	268564	Roadside	100.0	92.3	25.5	26.4	25.6	25.6	21.5
HR	394772	268441	Roadside	100.0	100.0	23.5	26.4	24.3	24.5	22.6
16	394701	268444	Roadside	100.0	82.7	21.8	21.7	22.9	22.2	21.5
255	394408	268417	Roadside	100.0	92.3	17.3	19.8	17.5	18.3	17.2
PR1	395795	272309	Suburban	100.0	100.0			17.6	16.5	16.8
RUB2	398273	277039	Roadside	100.0	100.0				16.1	14.2

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2025 (%) (2)	2021	2022	2023	2024	2025
RUB3	398475	277174	Roadside	100.0	100.0				19.3	18.4
RR	395674	268860	Roadside	100.0	100.0				27.7	24.8
439AR	407908	275162	Roadside	100.0	100.0				22.0	21.3
38SL	397080	272541	Roadside	83.3	84.6					14.4

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **Diffusion tube data has been bias adjusted.**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.**

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

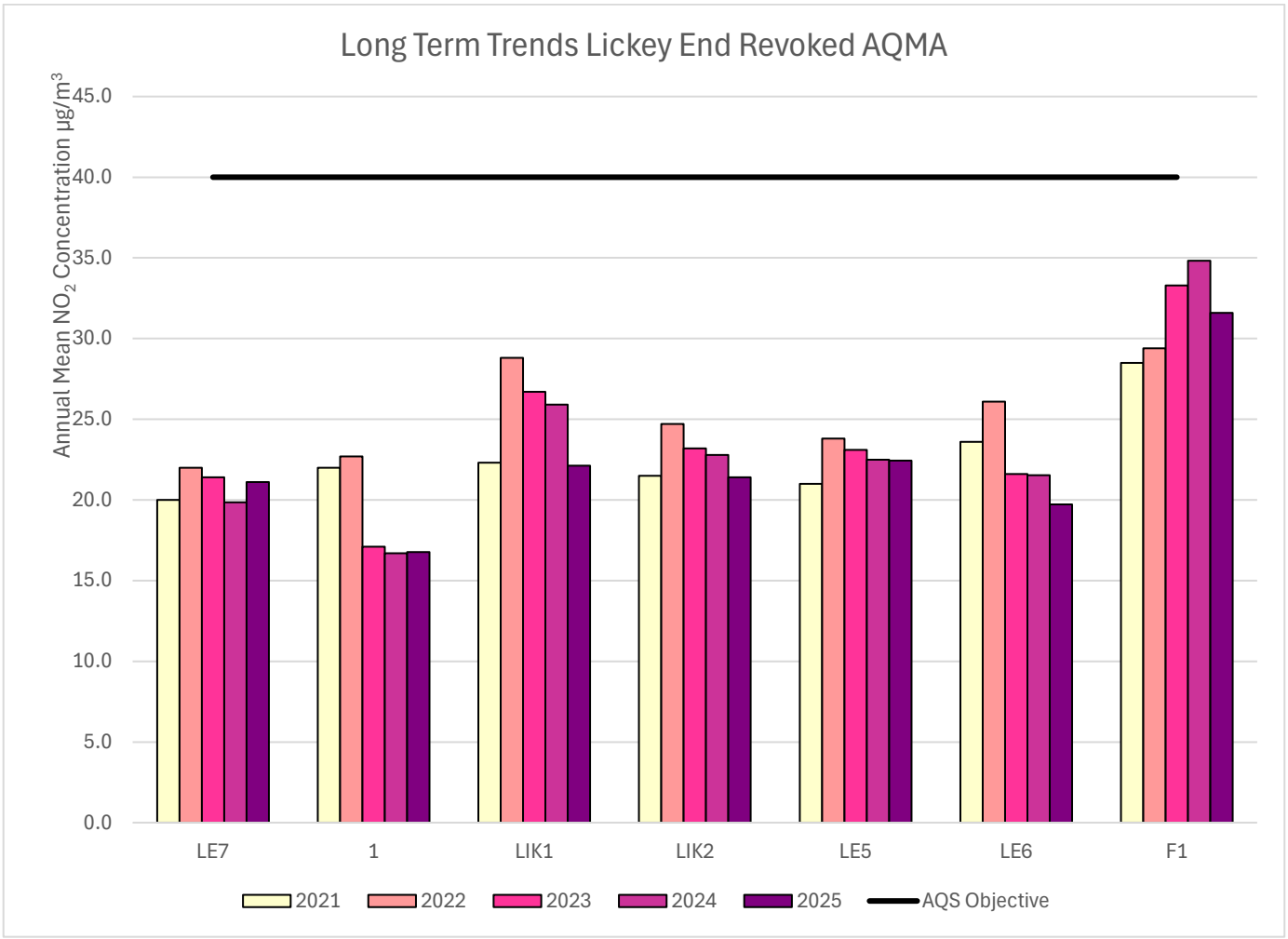
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

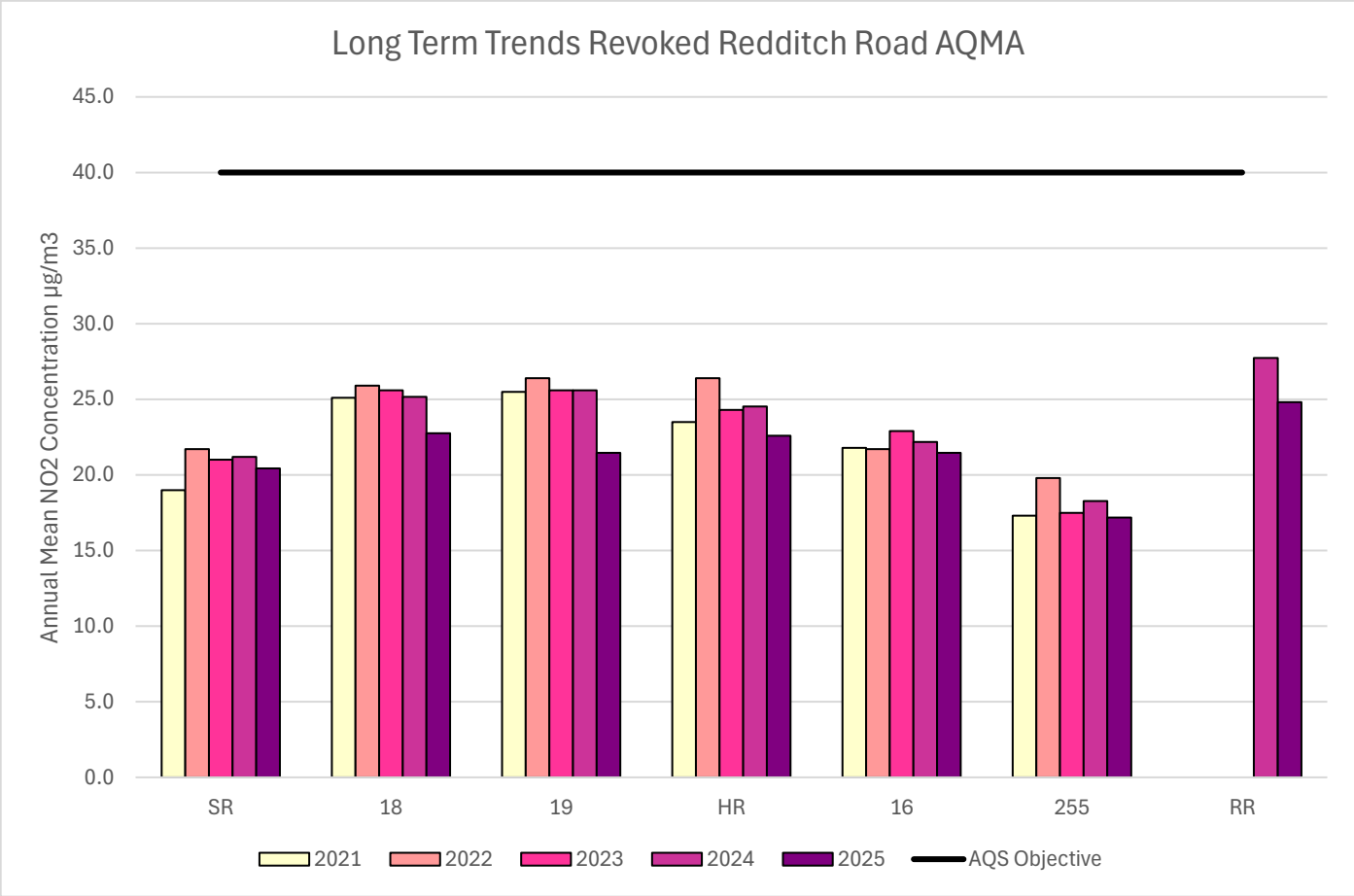
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

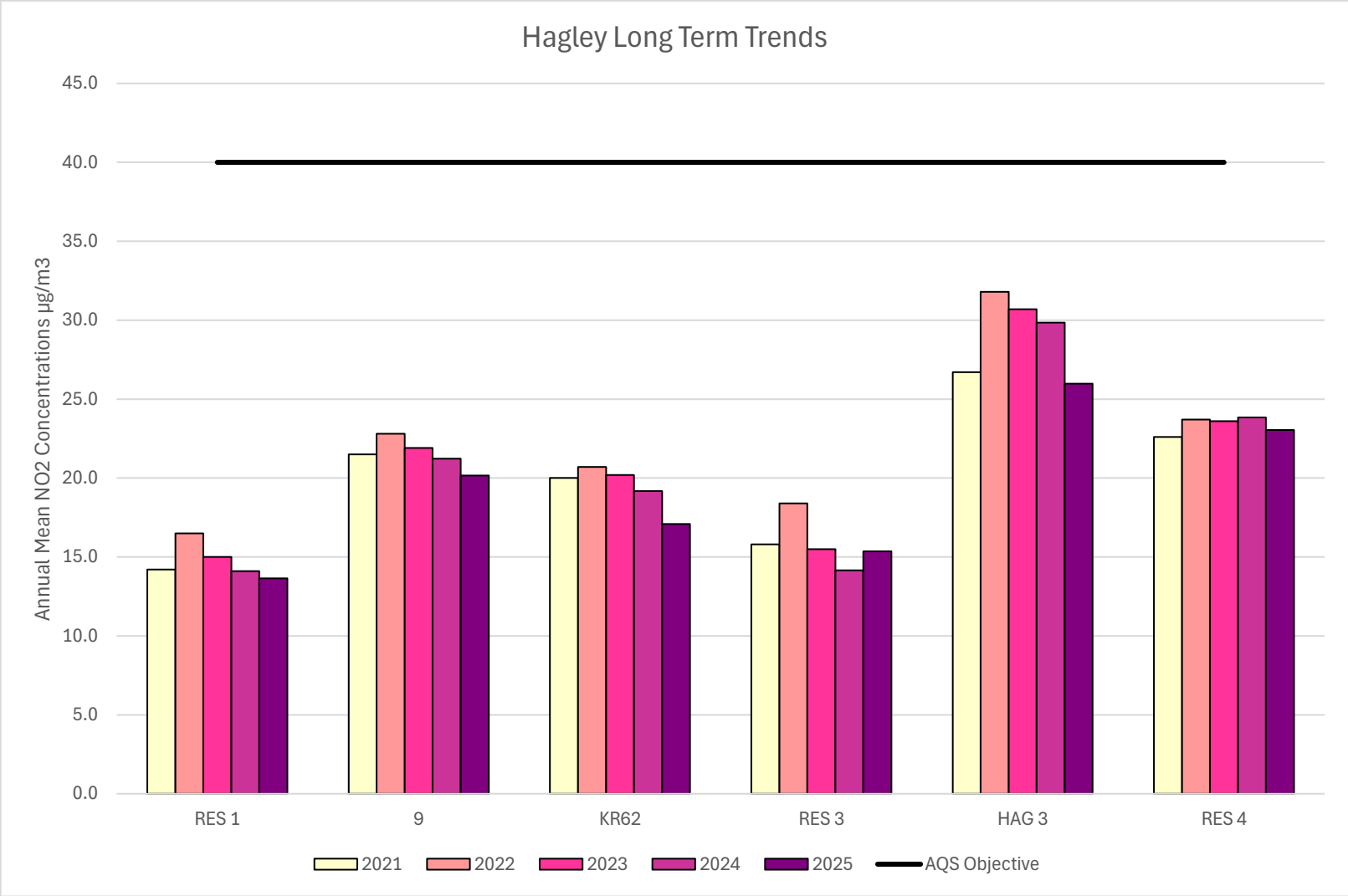
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

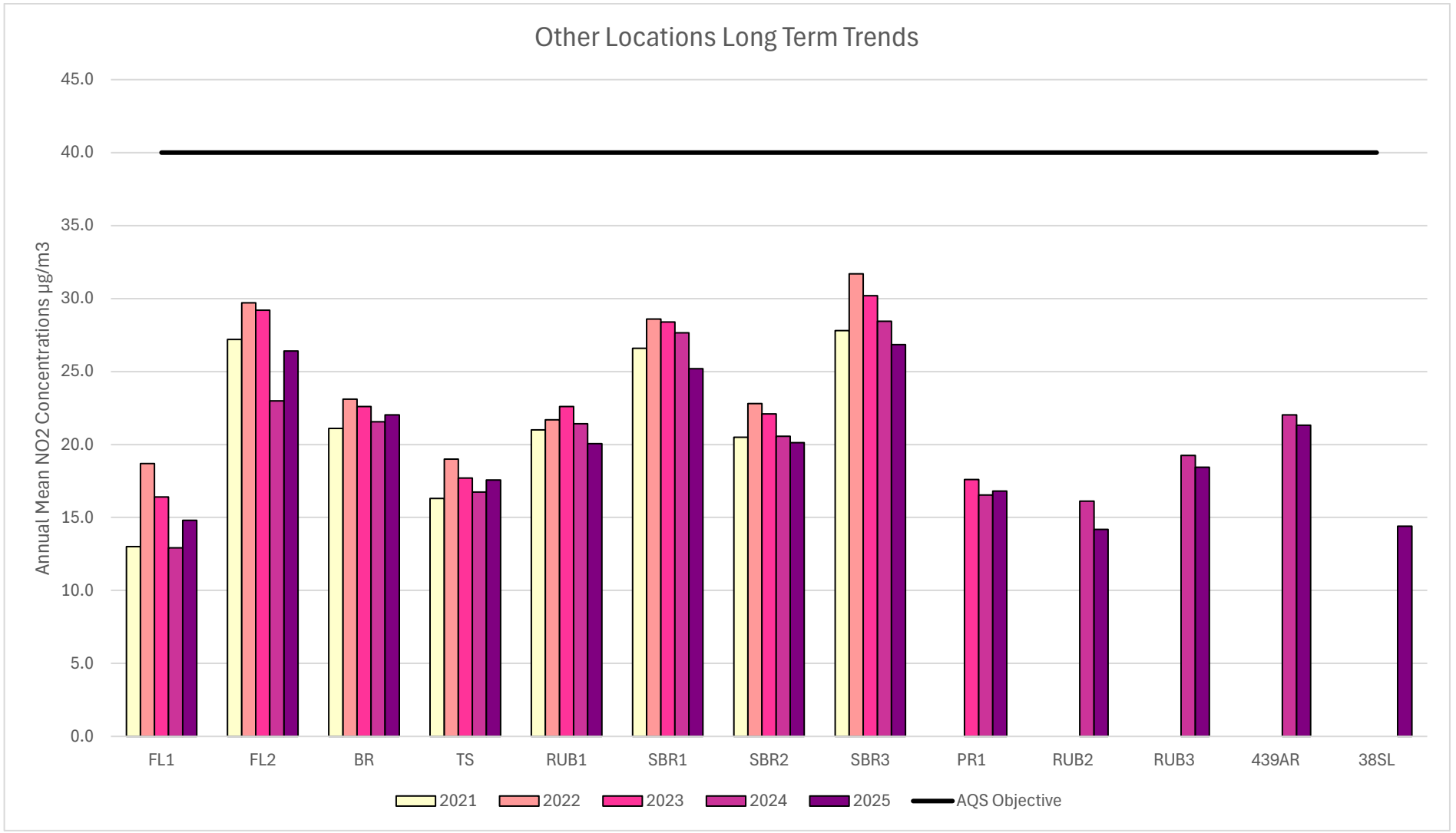
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO_2 Concentrations


Long Term Trends Lickey End Revoked AQMA
Annual Mean NO2 Concentration µg/m3
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
LE7
1
LIK1
LIK2
LE5
LE6
F1
2021
2022
2023
2024
2025
AQS Objective


Long Term Trends Revoked Redditch Road AQMA
Annual Mean NO2 Concentration µg/m3
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
SR
18
19
HR
16
255
RR
2021
2022
2023
2024
2025
AQS Objective


Hagley Long Term Trends
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Annual Mean NO2 Concentrations µg/m3
RES 1
9
KR62
RES 3
HAG 3
RES 4
2021
2022
2023
2024
2025
AQS Objective


Other Locations Long Term Trends
Annual Mean NO2 Concentrations µg/m3
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
FL1
FL2
BR
TS
RUB1
SBR1
SBR2
SBR3
PR1
RUB2
RUB3
439AR
38SL
2021
2022
2023
2024
2025
AQS Objective

Appendix B: Full Monthly Diffusion Tube Results for 2025

Table B.1 – NO_2 2025 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
FL1	395079	269797	22.1	19.2	18.3	13.7	10.9	8.2	9.6	9.4	12.1	12.5	16.1	14.9	13.9	14.8		
FL2	395118	269721	32.8	29.4		24.3	23.2	25.6	21.0	16.3	24.1	25.4	27.7	23.2	24.8	26.4		
RH1	395243	269844	25.1	24.6	25.2	20.3	18.7	19.0	17.5	18.1	17.8	20.1	18.6	21.8	20.6	21.9		
WR4	395312	269938	28.3	25.6	23.7	22.2	18.6	16.4	13.7	19.9	19.9	20.5	21.6	22.7	21.1	22.4		
WR2	395511	270180	35.1	32.9	30.7	30.6	23.3	20.3	15.9	23.5	25.0	25.9	29.5	29.0	26.8	28.5		
WR3	395501	270190	27.9	25.6	25.0	19.9		17.3	16.1	19.8	19.2	21.0	23.1	27.8	22.1	23.5		
BC	395685	270424	40.0	35.7	32.1	30.0	29.8	30.5	28.5	29.9	28.4	29.3	32.6	33.0	31.7	33.7		
BCX	395807	270549	34.0	34.0	34.4	28.5	24.9	22.8	17.2	26.6	31.4	26.9	29.4	25.8	28.0	29.8		
WR	395702	270423	41.5	36.4	41.6	39.9	33.5	24.1	21.2	31.1	25.2	28.1	22.5	40.9	32.2	34.2		
BR	396292	271210	26.8	23.0	27.5	21.7	19.8	15.1	16.0	18.3	19.3	19.8	23.0	18.3	20.7	22.0		
LE7	396916	273014	24.8	24.2	26.5	24.0	18.8	12.0	15.5	18.7	17.2	17.4	20.2	18.7	19.8	21.1		
1	396999	272979	20.5	19.1	20.9	15.8	12.5	11.1	14.3	14.1	13.7	14.9	16.5	15.8	15.8	16.8		
LIK1	396939	272934	28.9	24.5	23.7	19.3	17.0	18.5	18.8	18.3	18.4				20.8	22.1		
LIK2	396995	273129	28.0	22.8	23.2	17.7	15.1	18.3	18.9	17.8	19.4	20.0	20.4	20.0	20.1	21.4		
LE5	396999	273143	26.4	19.9	23.5	18.1	15.9	18.9	18.1	18.0	18.4	21.3	35.3	19.4	21.1	22.4		
LE6	396958	273157	23.8	22.7	21.4	16.7	12.7	16.3	14.2	16.0	16.8	19.5	22.9	19.5	18.5	19.7		
F1	397010	273112	38.5	29.4	35.2	29.8	23.1	33.8	25.2	30.4	30.1	28.0	23.4	29.4	29.7	31.6		
TS	396613	275085	21.5	24.1	22.1	18.9	13.2	9.5	8.5	15.1	14.6	14.6	18.7	17.4	16.5	17.6		
RUB1	398555	277200	19.0	22.9	23.2	19.5	19.4	16.2	17.2	16.9	17.9	18.6	18.3	17.1	18.9	20.1		
RES 1	391445	281179	19.6	14.4	14.5	12.1	9.2	10.5	9.8	10.9	12.2	13.5	14.7	12.5	12.8	13.6		
9	391210	280668	23.9	22.2	22.7	19.5	17.2	15.2	15.9	16.9	17.6	17.2	19.8	19.3	19.0	20.2		
KR62	391182	280631	19.4	19.1	19.6	14.2	13.8	14.7	16.3	13.5	13.6	15.8	17.0	15.8	16.1	17.1		
RES 3	389827	279590	19.2	17.5	24.8	15.7	11.3	9.7	7.6	11.3	12.7	13.4	15.3	14.8	14.4	15.4		
HAG 3	389909	279629	30.0	26.2	16.3	20.7	23.4	25.8	18.7	28.1	25.4	26.4	28.2	24.0	24.4	26.0		
RES 4	390025	279765	24.1	25.3	27.1	21.0	18.4	14.7	28.7	16.3	16.8	20.7	23.3	23.6	21.7	23.0		
SBR1	396127	271516	33.0	27.9	29.4	18.3	18.7	21.3	23.9	21.0	21.0	21.1	24.3	24.2	23.7	25.2		
SBR2	395996	272063	27.6	24.9	24.0	19.1	15.6	13.6	13.8	16.0	16.3	18.2			18.9	20.1		
SBR3	395825	272841	31.3	30.5	32.5	26.9	24.5	17.9	20.2	23.6	21.8	23.0			25.2	26.8		
SR	396780	269450	24.2	23.9	24.2	19.3	17.3	12.3		15.1	17.8	19.7	20.5	17.0	19.2	20.4		
18	395180	268549	31.2	26.7	22.8	24.6	17.9	13.6	13.8	19.0	20.0	20.0	21.9	25.3	21.4	22.8		
19	395188	268564	28.3	29.8	24.8	21.6	15.5	14.8	13.3	13.5		18.8	20.9	20.8	20.2	21.5		
HR	394772	268441	26.2	25.7	26.0	20.5	17.3	16.8	21.5	18.0	20.6	18.5	23.1	20.8	21.2	22.6		
16	394701	268444	29.1	23.1		21.9		13.4	12.8	18.6	19.3	19.7	21.8	22.1	20.2	21.5		
255	394408	268417		23.8	22.1	18.3	13.7	11.0	12.4	13.1	14.6	16.0	16.3	16.6	16.2	17.2		
PR1	395795	272309	20.6	18.7	18.5	16.3	14.7	10.6	11.8	12.0	15.2	16.8	17.1	17.4	15.8	16.8		
RUB2	398273	277039	16.3	18.7	11.1	16.2	12.0	10.1	10.2	11.0	13.1	13.8	14.4	13.2	13.3	14.2		

RUB3	398475	277174	21.2	22.1	19.7	20.8	14.1	12.9	12.1	14.7	17.4	17.4	19.1	16.6	17.3	18.4		
RR	395674	268860	30.4	31.0	26.6	30.3	19.4	18.0	14.5	21.7	20.6	19.8	24.5	23.0	23.3	24.8		
439AR	407908	275162	28.7	24.6	18.3	19.3	15.7	16.2	16.7	14.5	20.4	21.0	23.5	21.5	20.0	21.3		
38SL	397080	272541			19.8	15.6	13.8	10.6	11.3	10.9	12.2	13.5	12.3	15.4	13.5	14.4		

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1.**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **Local bias adjustment factor used.**

☐ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **Bromsgrove District Council confirm that all 2025 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within Bromsgrove District Council During 2025

Bromsgrove District Council has not identified any new significant sources impacting air quality within the reporting year of 2024.

Details of applications of ongoing significant developments within the Bromsgrove District area are as follows:

Planning Ref	Address	Proposal
16/1132/PLAN	Land at Whitford Road, Bromsgrove. Worcestershire	Further development with outline planning permission for 490 dwellings with further 118 units being built in 2025
16/04179/PLAN	Land at Perryfields Road, Bromsgrove. Worcestershire	Further development with the outline planning permission for 1,300 dwellings with further 140 units being built in 2025

Additional Air Quality Works Undertaken by Bromsgrove District Council During 2025

Bromsgrove District Council have undertaken the required work to revoke Redditch Road AQMA and Lickey End AQMA, in accordance with national guidance (LAQM.TG22). Monitoring data demonstrates Redditch Road AQMA has been compliant with the annual mean objective for NO_2 for 8 years and Lickey End AQMA has been compliant for 10 years, and as such were formally revoked 1st December 2025 following sustained compliance.

QA/QC of Diffusion Tube Monitoring

The following UKAS accredited company provided Bromsgrove District Council with nitrogen dioxide tubes and analysis in 2025;

Gradko International Limited

St. Martins House

77 Wales Street

Winchester

SO23 0RH

diffusion@gradko.com

The 20% Triethanolamine (TEA)/ Deionised Water preparation method is used. Gradko International Limited participate in the AIR NO2 Proficiency Testing Scheme (AIR PT). All monitoring undertaken has been completed in accordance with the 2025 Diffusion Tube Monitoring Calendar, i.e. on or within ± 2 days of the specified date.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Bromsgrove District Council recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance regarding the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Bromsgrove District Council have applied a local bias adjustment factor of 1.06 to the 2025 monitoring data, this has been calculated using the ‘Diffusion Tube Data Processing

Tool spreadsheet'. The calculation details have also been provided in Table C.1. Local Bias Adjustment Calculation.

WRS has determined the appropriate local bias adjustment factor utilising the Diffusion Tube Data Processing Tool V6.0. The site used is the colocation study at Wyre Forest House, Kidderminster which is the head office for WRS. The installation is collocated with three diffusion tubes and is largely run and managed for the purpose of undertaking a local bias adjustment factor for the county. WRS are responsible for maintaining the monitoring network across the six-district councils within Worcestershire and therefore the handling and processing of the diffusion tubes is the same for each area.

The local bias adjustment factor has also been utilised again for this assessment as it is more conservative compared with the national bias adjustment factor (0.89, Defra published National Diffusion Tube Bias Adjustment Spreadsheet Version 03/25). This approach is consistent with previous ASRs and undertaken, following consultation with Defra LAQM helpdesk and technical guidance.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2025	Local	-	1.06
2024	Local	-	1.03
2023	Local	-	0.97
2022	Local	-	0.97
2021	National	03/22	0.84

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	12				
Bias Factor A	1.06 (1.01 - 1.12)				
Bias Factor B	-6% (-11% - -1%)				
Diffusion Tube Mean (µg/m^3)	12.3				
Mean CV (Precision)	3.2%				
Automatic Mean (µg/m^3)	13.1				
Data Capture	98%				
Adjusted Tube Mean (µg/m^3)	13 (12 - 14)				

Notes:

A single local bias adjustment factor has been used to bias adjust the 2025 diffusion tube results.

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO_2 monitoring locations within Bromsgrove District Council area required distance correcting during 2025.

QA/QC of Automatic Monitoring

No automatic monitoring that complies with accepted scientific reference methods for the purposes of LAQM reporting has been undertaken in 2025.

Summary of Low Cost Air Quality Sensor Monitoring

Table C.3– Details of Low-Cost Sensor Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	Sensor Type	In AQMA?	Which AQMA? (1)	Distance to Relevant Exposure (m) (1,2)	Distance to kerb of nearest road (m) (1)	Inlet Height (m)
1574	Hanover Street - Bromsgrove	Roadside	395714	270471	NO, NO_2, O_3, PM_1, $PM_{2.5}$, PM_{10}	Earthsense Zephyr	YES	Worcester Road AQMA	127.24	2.9	0.235
1589	Gunner Lane - Rubery	Roadside	398038	277062	NO, NO_2, O_3, PM_1, $PM_{2.5}$, PM_{10}	Earthsense Zephyr	NO	N/A	122.06	1.27	0.235
1543	Station Road – Hagley	Roadside	390263	280525	NO, NO_2, O_3, PM_1, $PM_{2.5}$, PM_{10}	Earthsense Zephyr	NO	N/A	196.77	1.62	0.235

Table C.4 – Monthly Air Quality Sensor Monitoring Results NO_2

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Data
1574	395714	270471	41.87	33.19	35.90	27.42	22.99	18.92	15.85	18.14	23.70	27.24	31.44	31.41	**27.31**
1589	398038	277062	24.85	21.49	19.25	14.72	12.45	9.67	7.43	8.04	11.29	14.29	18.18	21.89	**15.26**
1543	390263	280525	29.65	22.54	21.89	17.05	13.32	10.66	9.35	10.45	14.25	16.04	19.47	21.47	**17.16**

Table C.11 - Monthly Air Quality Sensor Monitoring Results PM10

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Data
1574	395714	270471	20.89	21.77	22.50	17.23	11.70	9.99	9.01	9.60	7.79	11.10	10.18	11.46	**13.56**
1589	398038	277062	15.50	19.53	14.98	15.18	10.00	8.29	7.96	7.97	6.39	9.63	8.02	9.02	**11.39**
1543	390263	280525	17.02	18.27	17.66	13.37	8.58	7.44	6.96	7.10	5.65	8.54	8.08	9.03	**10.60**

Table C.12 - Monthly Air Quality Sensor Monitoring Results $PM_{2.5}$

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean Data
1574	395714	270471	13.16	13.08	14.14	11.20	8.00	6.63	6.12	6.48	4.69	6.70	6.09	6.67	**8.56**
1589	398038	277062	10.30	12.79	13.15	10.54	7.22	5.77	5.57	5.60	3.93	5.94	4.70	5.14	**7.53**
1543	390263	280525	11.33	11.87	11.99	9.49	6.41	5.36	4.99	5.20	3.58	5.36	4.88	5.40	**7.13**

Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 – Map of Non-Automatic Monitoring Site

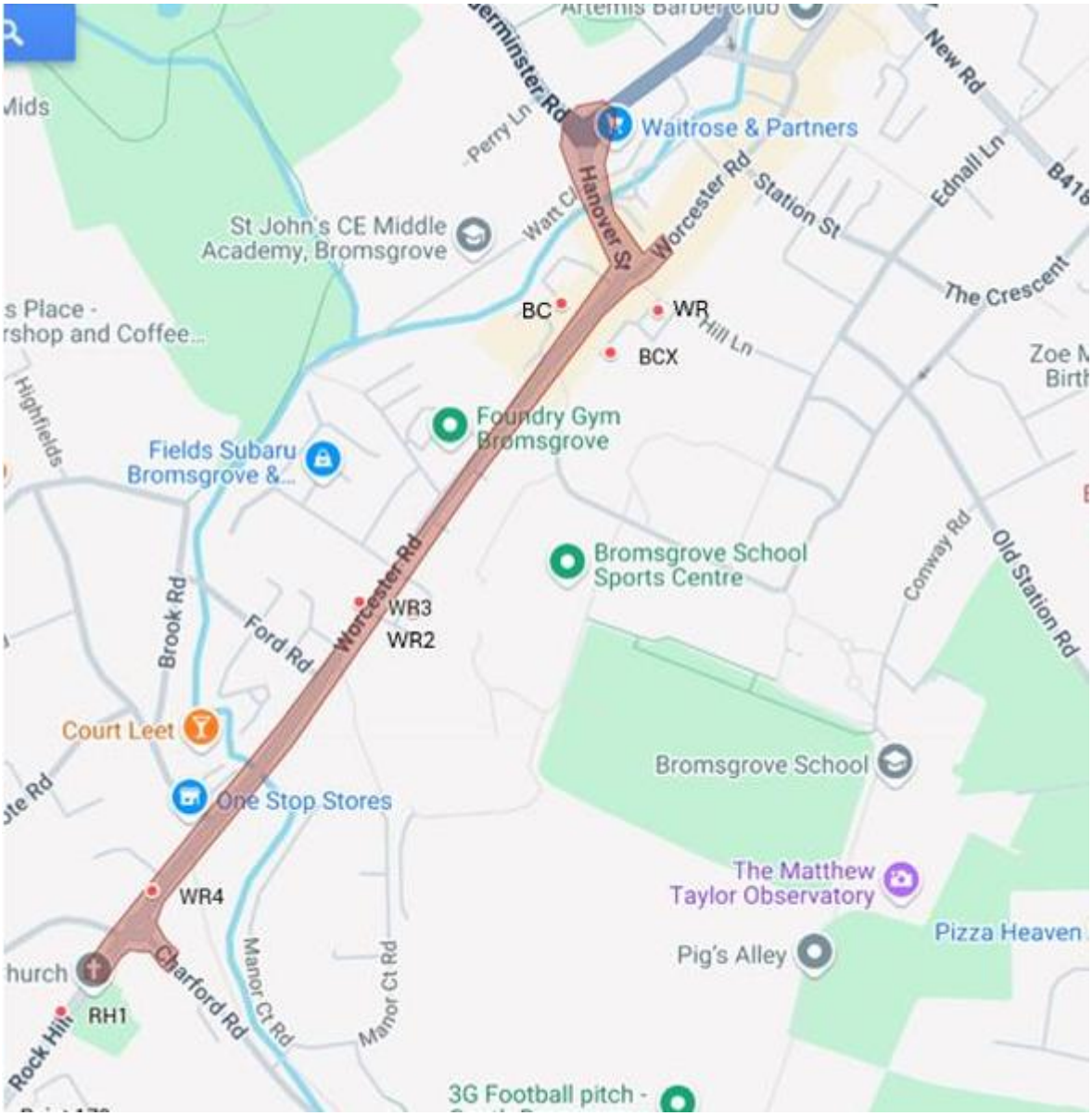


Figure D.1a Worcester Road AQMA and monitoring locations: RH1, WR4, WR2, WR3, BC, BCX and WR

Figure D.1b: Bromsgrove monitoring locations: LE7, 1, F1, LIK2, LE5 and LE6

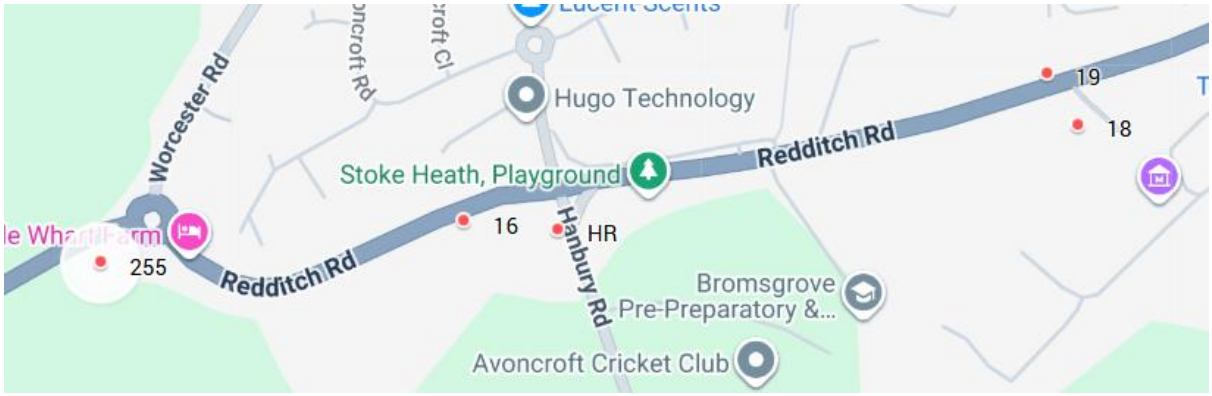


Figure D.1c: Bromsgrove monitoring locations: 255, 16, HR, 18 and 19

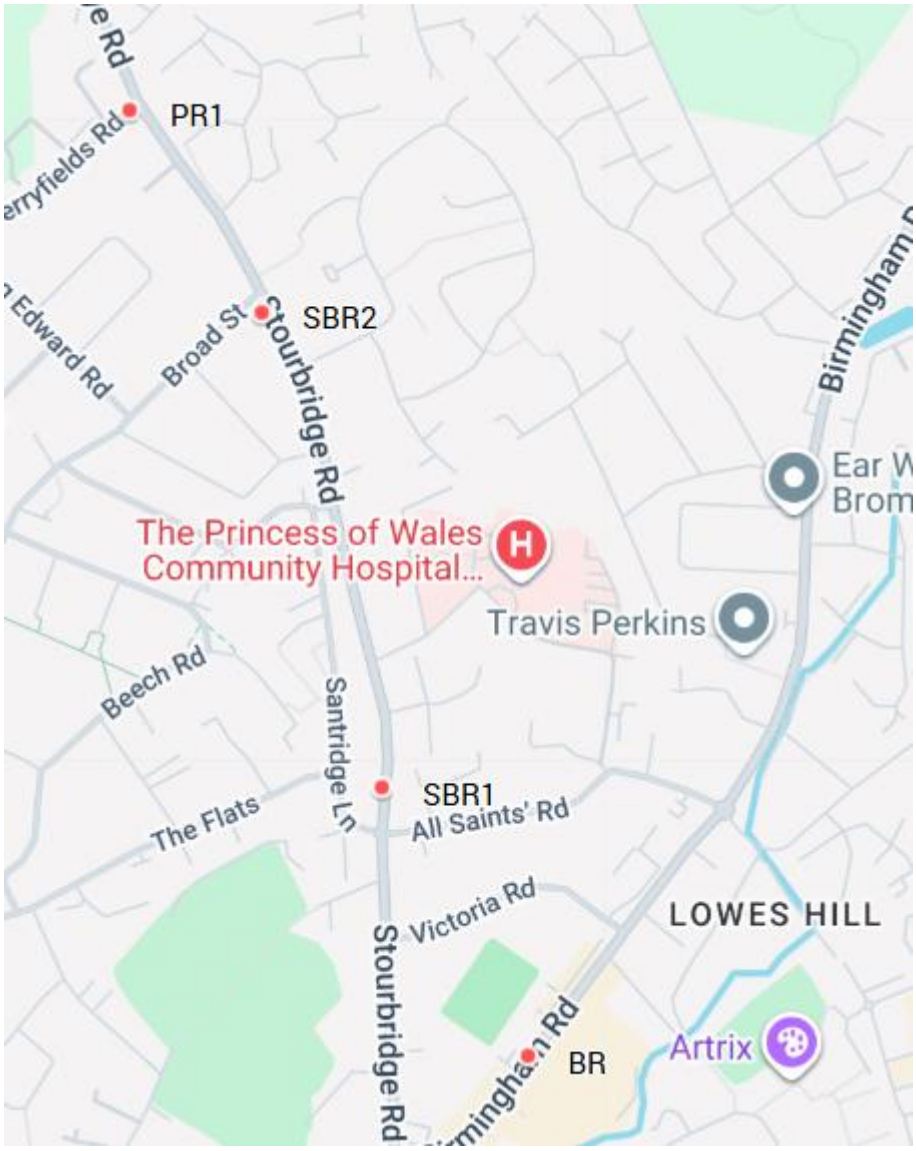


Figure D.1d: Bromsgrove monitoring locations: PR1, SBR1, SBR2 and BR

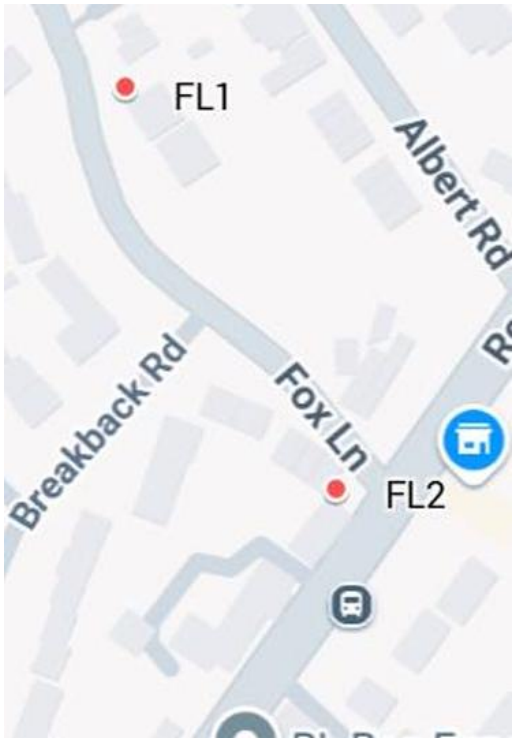


Figure D.1e: Bromsgrove monitoring locations: FL1 and FL2

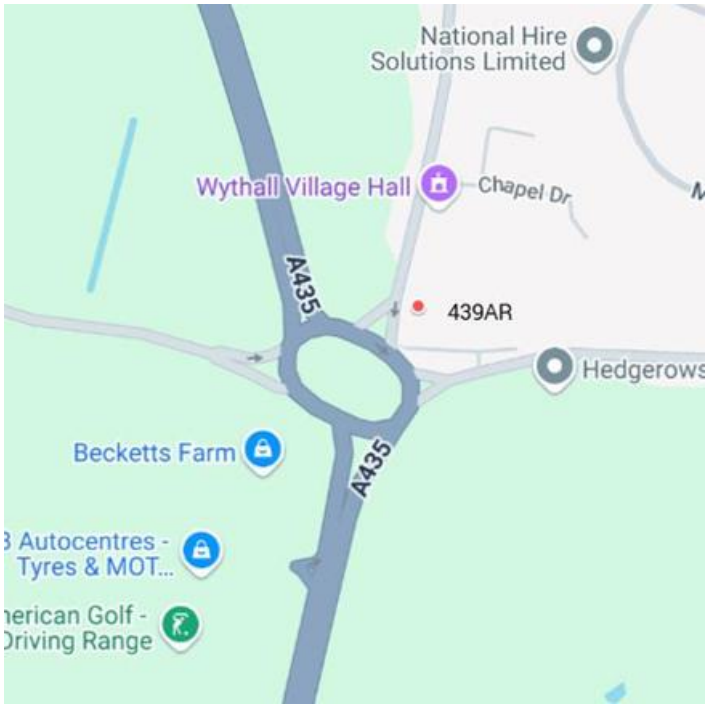


Figure D.1f: Bromsgrove monitoring locations: 439AR

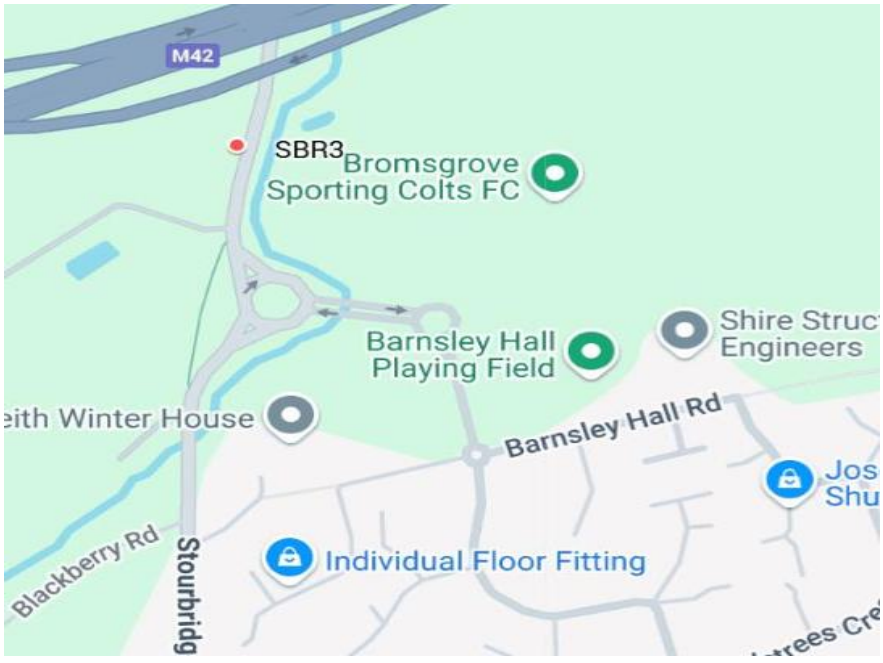


Figure D.1g: Bromsgrove monitoring locations: SBR3

Figure D.1h: Bromsgrove monitoring locations: TS.

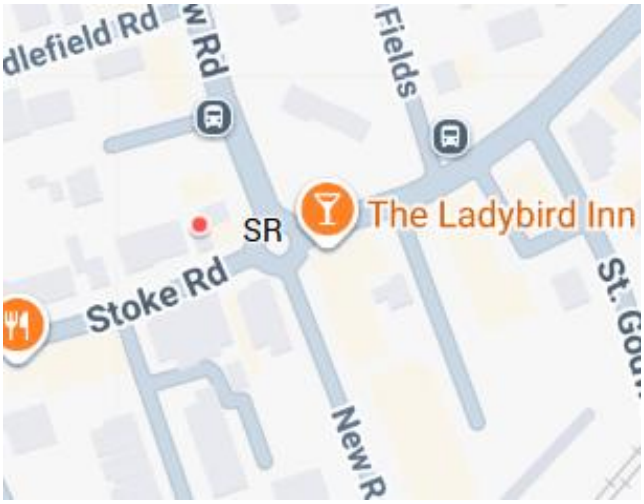


Figure D.1i: Bromsgrove monitoring locations: SR.

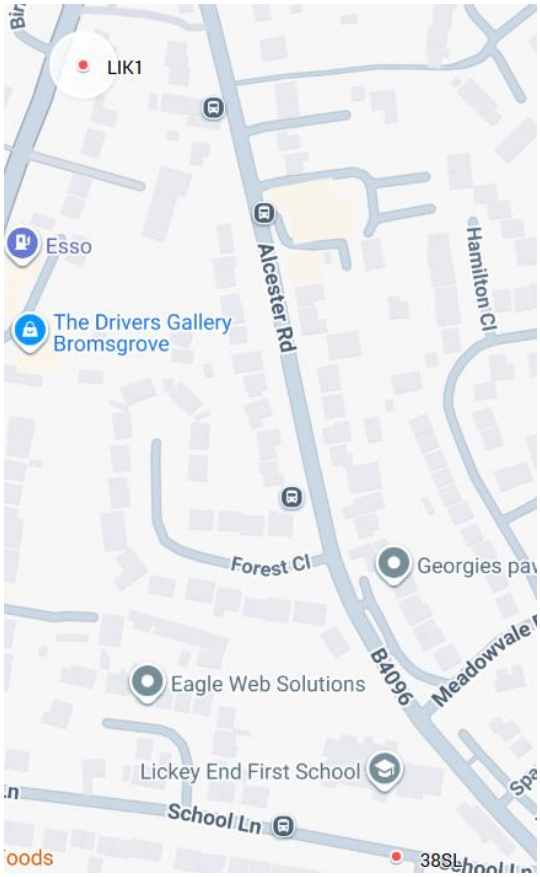


Figure D.1j: Bromsgrove monitoring locations: 38SL and LIK1.

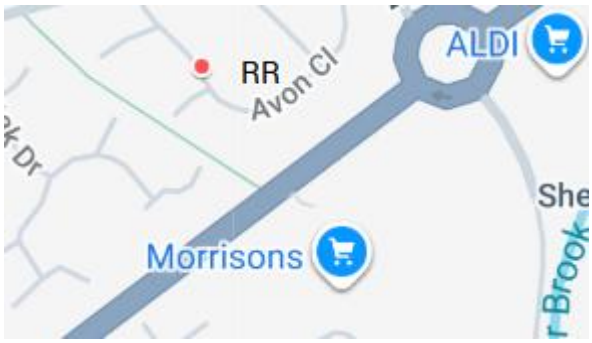


Figure D.1k: Bromsgrove monitoring locations: RR.

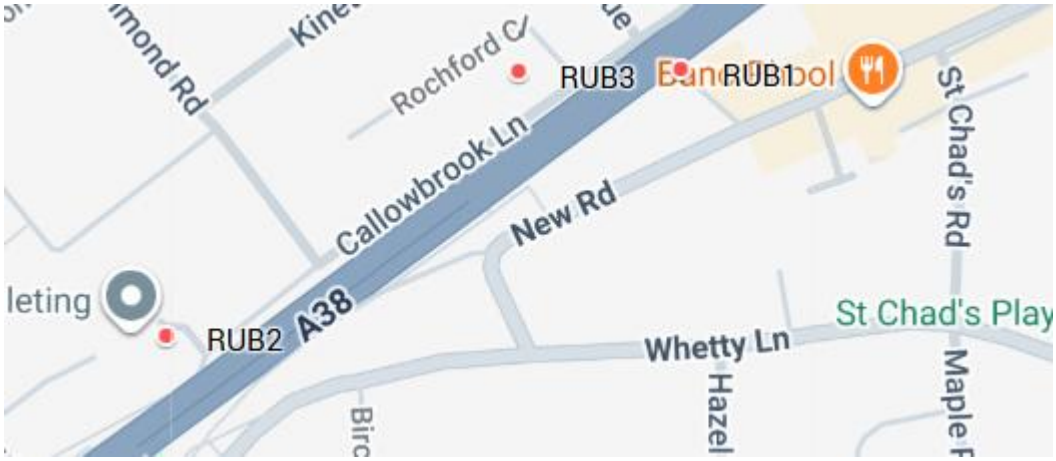


Figure D.1l: Bromsgrove monitoring locations: RUB1, RUB2 and RUB3.

Figure D.1m: Bromsgrove monitoring locations: RES1, 9 and KR62.

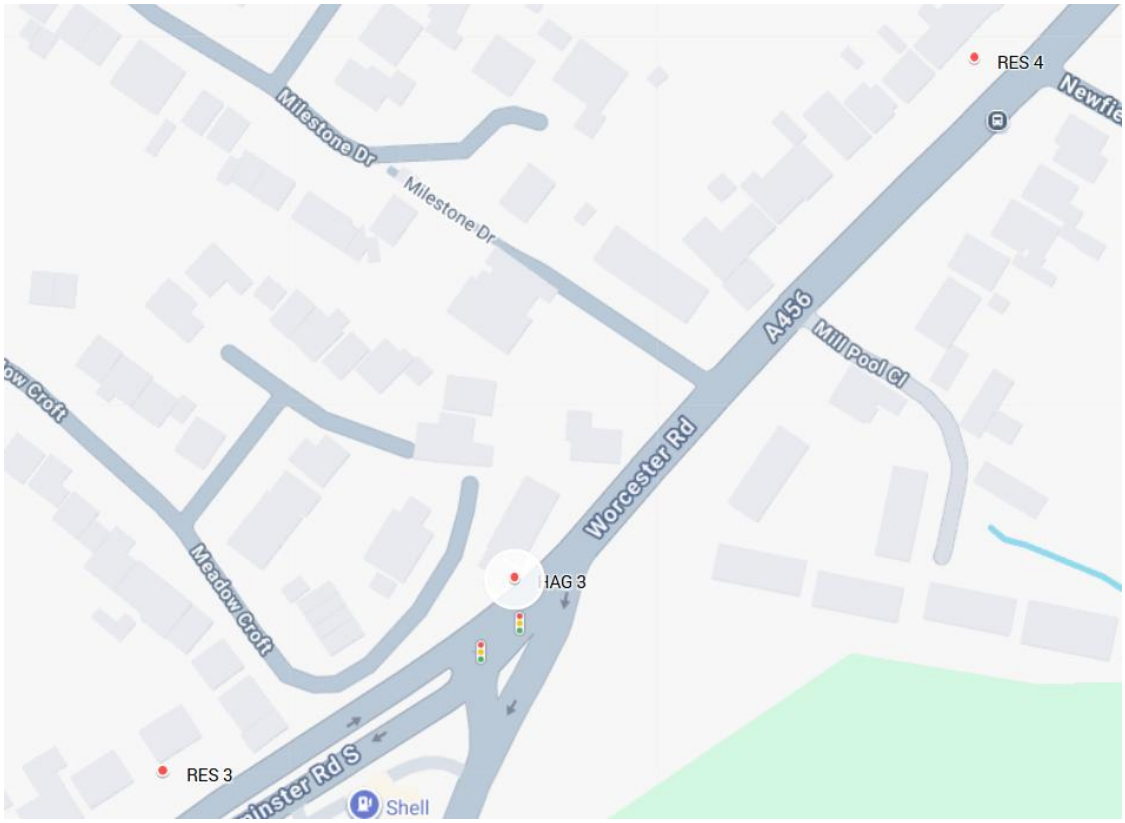


Figure D.1n: Bromsgrove monitoring locations: RES3, HAG3 and RES4.

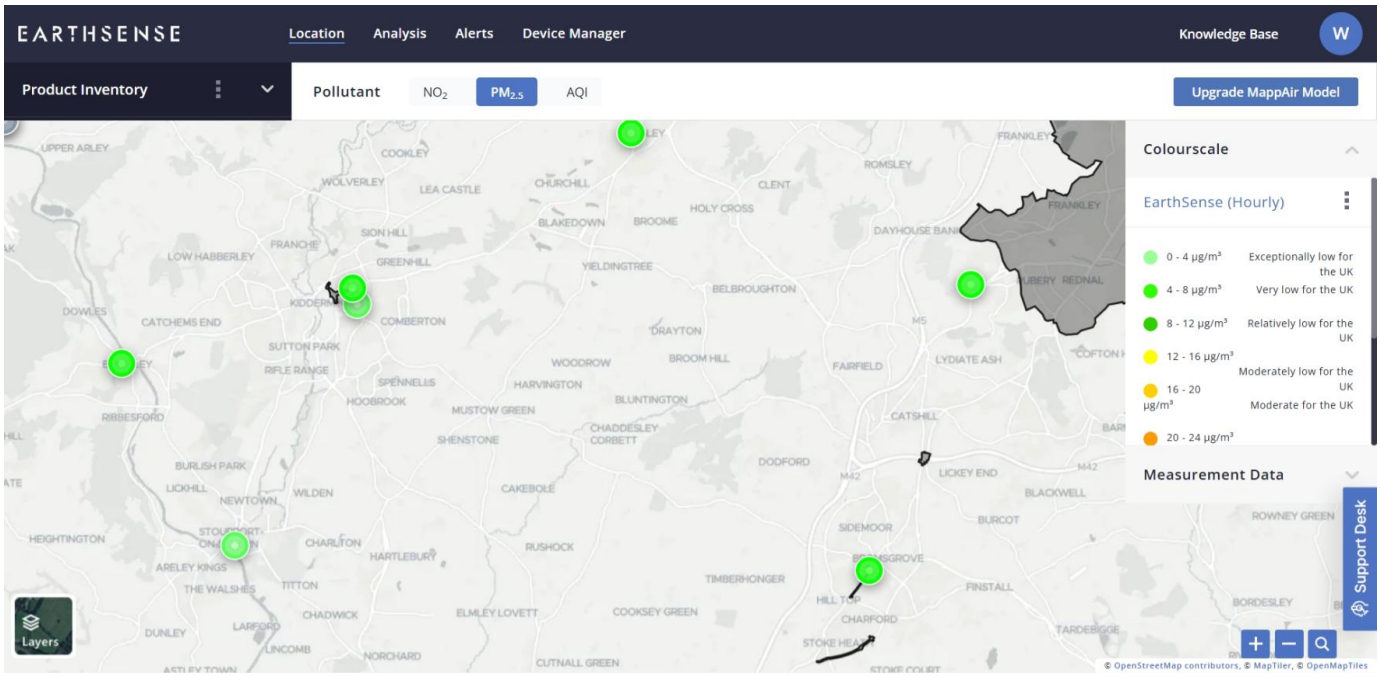
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[5]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual mean
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[5] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Appendix F: Low-Cost Air Quality Sensors Measurements 2025: Bromsgrove



Public Portal: [Worcestershire Air | EarthSense]

Project Information

Real time air quality monitoring for 3-year period funded by Defra Air Quality Grant (2022 - 23) and 10% match funding by each Worcestershire district council. Low-cost sensors (Zephyrs) installed and maintained by Earthsense who also provide real time data portal.

Sensors were installed between January and May 2024.

General information

Zephyrs are one of the available low-cost sensors that have been certified as suitable for indicative monitoring for particulate matter within the UK using the Environment Agency's Indicative instrument certification scheme (MCERTS).

These low-cost sensors have been certified as suitable for indicative monitoring for particulate matter within the UK using the Environment Agency's Indicative instrument certification scheme (MCERTS). However, the following advice from Defra is acknowledged: 'While low-cost sensors can provide useful indicative data, at present they

are not approved for use in statutory legal reporting (LAQM) of data against the National air quality objectives as they are not accurate enough to meet the expanded uncertainty requirements of equivalent [scientific reference] instruments.

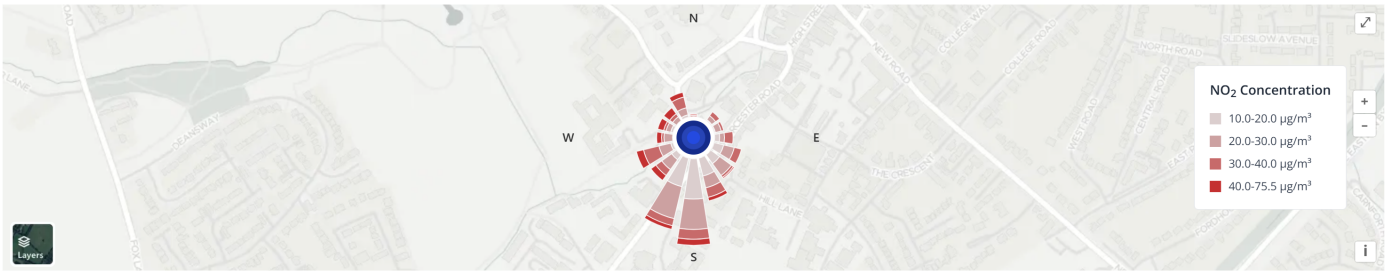
MyAir Analysis Report

Device: Hanover Street - Bromsgrove

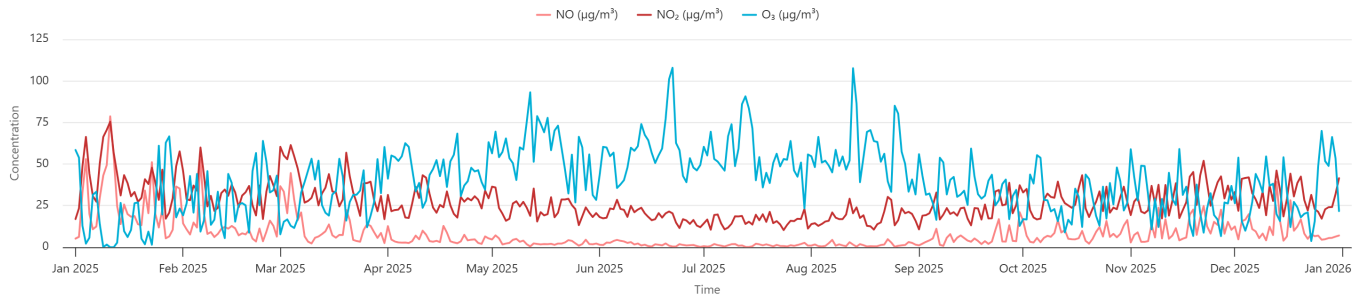
Time Period: 1 Jan 2025 - 1 Jan 2026

Time Average: 24 Hour

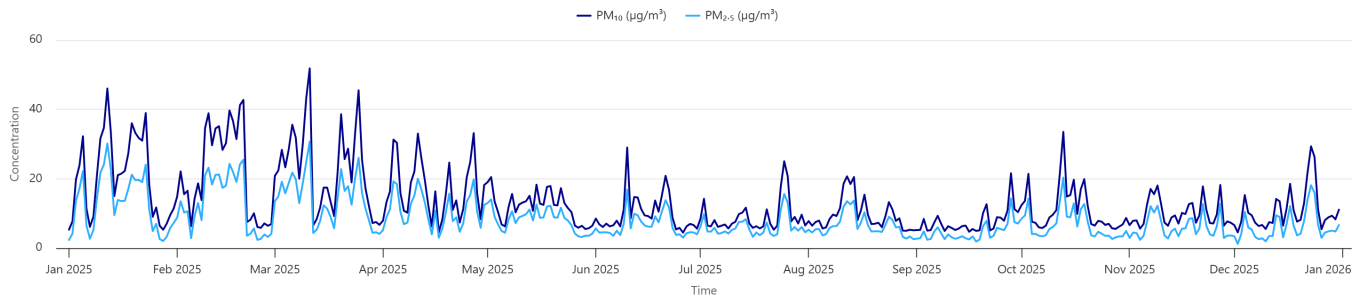
Zephyr | 1574 | Hanover Street - Bromsgrove Modelled



Gases Zephyr



Particulates Zephyr



Gas Averages

NO_2	27	µg/m³
NO	8	µg/m³
O_3	40	µg/m³

Particulate Averages

PM_{10}	14	µg/m³
$PM_{2.5}$	9	µg/m³

MyAir Analysis Report

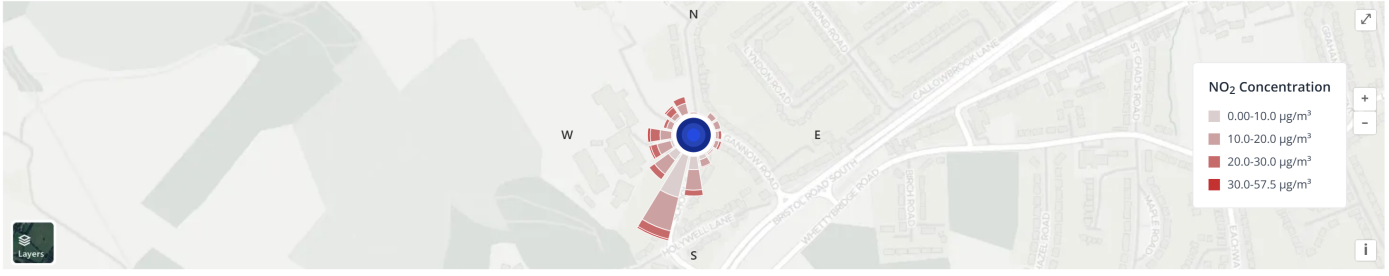
Device: Gunner Lane - Rubery

Time Period: 1 Jan 2025 - 1 Jan 2026

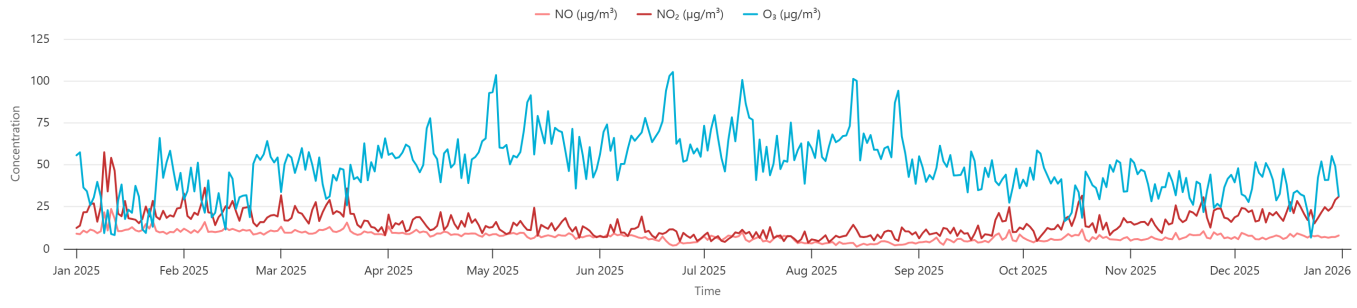
Time Average: 24 Hour

Zephyr | 1589 | Gunner Lane - Rubery Modelled

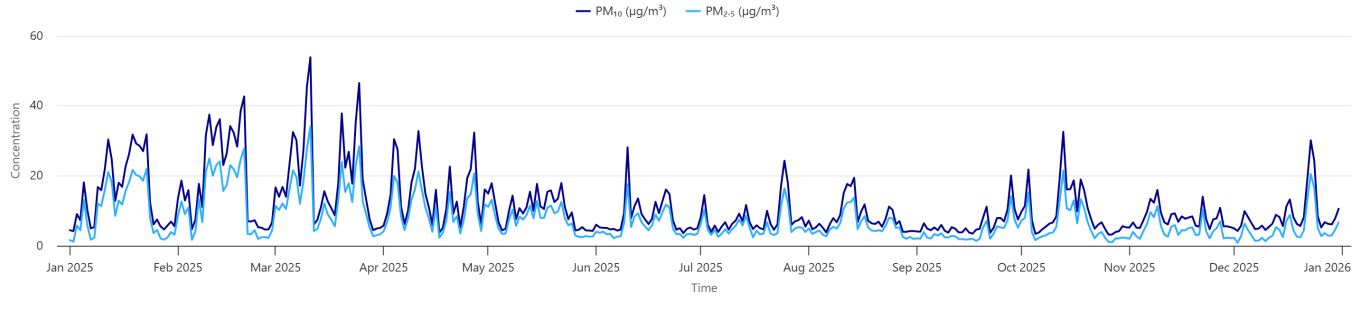
NO2 Pollution Rose



Gases Zephyr



Particulates Zephyr



Gas Averages

NO_2	15	µg/m³
NO	8	µg/m³
O_3	49	µg/m³

Particulate Averages

$PM_{2.5}$	8	µg/m³
PM_{10}	11	µg/m³

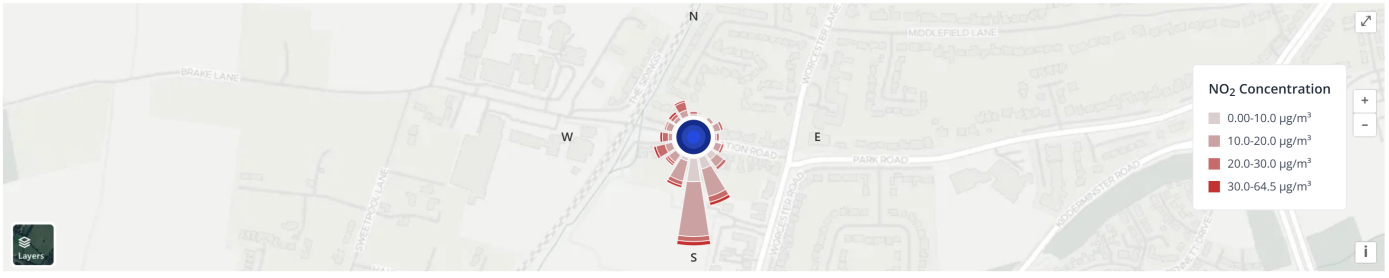
MyAir Analysis Report

Device: Station Road - Hagley

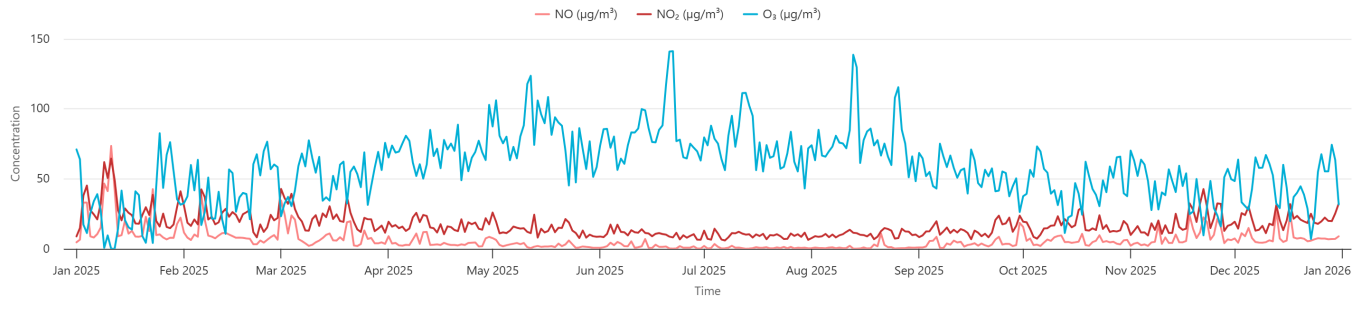
Time Period: 1 Jan 2025 - 1 Jan 2026

Time Average: 24 Hour

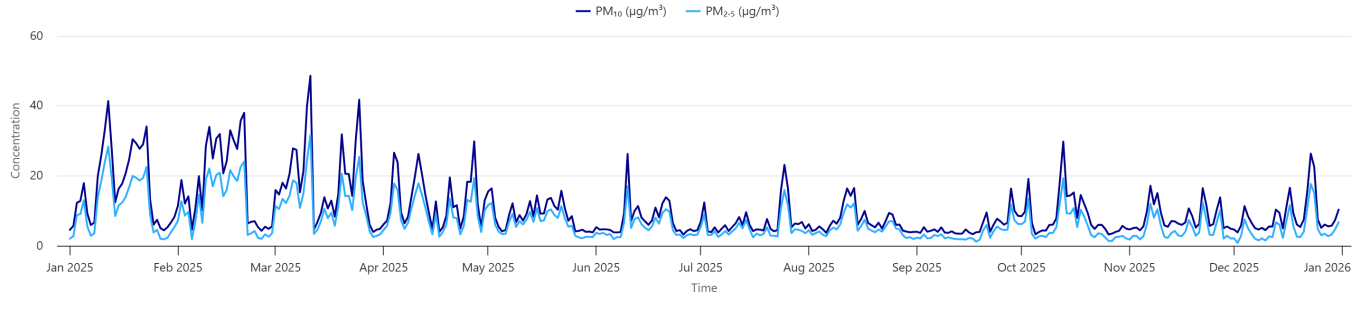
Zephyr | 1543 | Station Road - Hagley Modelled



Gases Zephyr



Particulates Zephyr



Gas Averages

NO_2	17 µg/m³	NO	6 µg/m³	O_3	58 µg/m³

Particulate Averages

$PM_{2.5}$	7 µg/m³	PM_{10}	11 µg/m³

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
UoB	University of Birmingham
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
DoPH	Department of Public Health

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.
- Worcestershire Regulatory Services (2025) Air Quality Annual Status Report for Bromsgrove District Council.
- Worcestershire Regulatory Services (2025) Air Quality Action Plan for Bromsgrove District Council 2025 – 2030.