



Wyre Forest
District Council

2025 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: June, 2025

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Local Responsibilities and Commitment

This ASR was prepared by Worcestershire Regulatory Services for Wyre Forest District Council with the support and agreement of the following officers and departments:

Worcestershire Regulatory Services

Worcestershire County Council Highways Department

Wyre Forest District 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. The DoPH office has requested a copy of the ASR be forwarded for information post publication.

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Executive Summary: Air Quality in Our Area

Air Quality in Wyre Forest District

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. PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.

This Annual Status Report (ASR) provides an overview of air quality in the Wyre Forest District during 2024, as required under the local air quality management (LAQM) framework 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. It

summarises the monitoring data for key pollutants, assesses compliance with national air quality objectives, and outlines progress made from local actions.

The report also identifies areas where air quality remains a concern and highlights the council's priorities for continued improvement as set out in the Wyre Forest Air Quality Action Plan (2025-2030). Through monitoring, partnership working, and engagement with local communities, Wyre Forest District Council remains committed to protecting public health and supporting a cleaner, healthier environment.

Monitoring across the Wyre Forest District area for nitrogen dioxide (NO₂) is undertaken via a network of passive diffusion tubes located in the main urban centres of Kidderminster, Stourport-on-Severn and Bewdley, along with a continuous analyser situated at Wyre Forest House. Additionally, four low-cost sensors provide data on a range of parameters including NO₂, PM₁₀ and PM_{2.5} across the Wyre Forest.

Two Air Quality Management Areas (AQMA's) have been declared by Wyre Forest District Council for exceedances of the annual mean objective for nitrogen dioxide (NO₂):

- Welch Gate, Bewdley AQMA (Declared January 2003)
- Horsefair/Coventry Street, Kidderminster AQMA (Declared January 2003, amended in July 2009 to include part of the Kidderminster Ring Road and Coventry Street)

Details of the declarations and maps of the AQMAs can be found on the following pages of the WRS website: [Air Quality Management Area Declarations | Worcestershire Regulatory Services](#)

Air quality across the Wyre Forest District generally continues to show improvement, with the majority of monitoring locations remaining below national objective thresholds for NO₂. The Horsefair/Coventry Street AQMA has now recorded five consecutive years below the annual mean objective, although some sites remain within 10% of the threshold and will continue to be closely monitored.

In the Horsefair/Coventry Street AQMA, the majority of the diffusion tubes showed a decrease in NO₂ compared to 2023, with the remainder showing minimal increases. The highest NO₂ concentration recorded in this AQMA was 38.5µg/m³ (at tube (F)69COV), which remains within 10% of the annual objective and justifies retaining the AQMA at this time.

In contrast, concentrations within the Welch Gate AQMA in Bewdley have increased significantly in 2024, with a recorded NO₂ level of 50.4 µg/m³ (highest in the district), compared to 40.8 µg/m³ in 2023.

Bewdley is a historic Georgian town and tourist destination with narrow streets and a single road bridge connecting east and west sides of the River Severn. Parts of the local area in the vicinity of the bridge are prone to flooding. In 2022, the Environment Agency embarked on a significant flood defence improvement scheme. A one-way traffic management system has been imposed on Bewdley Bridge for the duration of the works opening in November 2023, closing off access for traffic from traversing west to east side of the river. As a result, Welch Gate (B4190), and the AQMA, has been the predominant route for outbound traffic to access the bypass to the west and south of Bewdley, the eastern side of the town and all major local destinations beyond.

It is considered that the measured increase in NO₂ concentration in the AQMA is directly likely linked to the rise in traffic through Welch Gate (B4190) as a result of the temporary traffic management system. The bridge is expected to reopen to two-way traffic in 2025, and subsequent monitoring will assess whether this leads to an anticipated reduction in NO₂ concentrations.

No exceedances of the annual mean objective for ambient nitrogen dioxide were recorded outside of the AQMA's.

Automatic monitoring at Wyre Forest House recorded a valid data capture of 99.5% and reported an annual mean NO₂ concentration of 12.1 µg/m³ which is well within the objective limit. There were no exceedances of the hourly mean objective at this site.

Particulate matter is not currently monitored using reference equivalent analysers in the district. However, data from four real-time low-cost sensors (Zephyrs), along with Defra background maps, indicate that PM₁₀ and PM_{2.5} concentrations are below the 2028 interim target of 12 µg/m³ and either below or close to the 2040 legally binding target of 10 µg/m³. These low-cost sensors, now active in Kidderminster, Stourport and Bewdley, provide continuous local data to support public engagement and decision-making.

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.

Key developments in 2024 included:

- Installation of three new low-cost sensors in Kidderminster, Bewdley, and Stourport.
- Launch of a real-time public-facing air quality portal in April 2024.
- Recruitment of a dedicated Behaviour Change Officer, to work with local schools and community settings to raise awareness of air quality and promote sustainable travel.
- Progress on the draft Wyre Forest Air Quality Action Plan (2025-2030), which was published in March 2025.
- Continued partnership with Worcestershire County Council and Public Health on campaigns such as Clean Air Night 2024.

Wyre Forest District Council, in collaboration with air quality partner(s) Worcestershire County Council (WCC), and others, have developed an AQAP incorporating a number of improving actions to reduce NO₂ emissions within the Welch Gate, Bewdley and Horsefair/Coventry Street, Kidderminster AQMAs. The [WFDC Air Quality Action Plan 2025 – 2030](#) was published in March 2025.

Development of an ambitious countywide Air Quality Strategy as reported in the last ASR, has been postponed for 2025. Progress has been delayed until local authority reorganisation, announced by government in Dec 2024, has been completed in Worcestershire. However, certain potential elements of the strategy, such as improving communication of air quality, are evolving through other work streams for example Behavioural Change interactions with local schools and communities, Clean Air Day 2025 campaign and working with LA teams around the county to ensure air quality is considered appropriately within local strategy and policy.

Conclusions and Priorities

Air quality across the Wyre Forest District continues to improve overall, with most monitoring sites recording nitrogen dioxide levels below the national objective of 40 µg/m³.

The Horsefair/Coventry Street AQMA has been below the annual mean objective for five years, though some readings remain within 10% of the limit, justifying continued monitoring.

The Welch Gate AQMA saw a significant increase in NO₂ levels in 2024, likely due to temporary traffic changes linked to flood defence works. This AQMA recorded the district's highest NO₂ level at 50.4 µg/m³, up from 40.8 µg/m³ in 2023. Levels are expected to drop in 2025 once normal traffic resumes.

No exceedances of the annual mean objective for ambient nitrogen dioxide were recorded outside of the AQMA's.

While particulate matter is not measured by reference-equivalent methods, our network of low-cost sensors and Defra background maps indicate that PM₁₀ and PM_{2.5} levels are already below the 2028 interim target of 12 µg/m³ and either below or close to the 2040 legally binding target of 10 µg/m³. The low-cost sensors in Kidderminster, Stourport and Bewdley also aid in public awareness and planning.

Priorities for 2025 include:

- Finalising the AQAP 2025-2030 and submission to Defra following public consultation.
- Progressing AQAP measures.
- Continue monitoring of air pollutants at key locations across the district.
- Review and assessment of first calendar year's data from low-cost sensors 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
- Exploring a potential PM_{2.5} source apportionment study within Worcestershire with the University of Birmingham.
- Improving air quality information and direction to WRS webpages following recommendations of Defra's Air Quality Information Systems review
- Ensure proportionate mitigation measures are included within new developments where air quality is a relevant concern.
- Work with teams from around the county to ensure air quality is considered appropriately within local strategy and policy where appropriate.

- Maintain relationships with neighbouring authorities and institutions to stay abreast of issues and developments that could impact or benefit air quality in Wyre Forest District, and to ensure our work is recognised in the wider West Midlands community

How to get Involved

There are a number of ways 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, community transport and travel to school).
- **Hold meetings by Conference Call** by phone or video conference via Teams, Zoom, or Facetime 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 from 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 - GOV-UK Find a grant](#)
- If you have to drive follow fuel efficient driving advice, often known as '**Smarter Driving Tips**', to save on fuel and reduce your emissions. A number of websites promote such advice including:

[How to drive economically - Eco-driving tips | AA](#)

[Advice for large fleets to reduce costs and emissions - Energy Saving Trust](#)

[How to save fuel - the ultimate guide | RAC Drive](#)

- **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:
<https://uk-air.defra.gov.uk/>.
- 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 <https://uk-air.defra.gov.uk/air-pollution/daq>
- 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 Pollution | Worcestershire Regulatory Services \(worscsregservices.gov.uk\)](#).

¹ [Breathe London](#)

² [London Air Quality Network Guide](#)

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1 Local Air Quality Management

This report provides an overview of air quality in the Wyre Forest District during 2024. 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 Wyre Forest 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 (AQMA) 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 AQMA declared by Wyre Forest District Council can be found in Table 2.1. The table presents a description of the two AQMA that are currently designated within the Wyre Forest District. Appendix D: Map(s) of Monitoring Locations and AQMA provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation(s) are as follows:

- NO₂ annual mean

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?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Horsefair/Coventry Street, Kidderminster	Declared 06/01/2003, Amended 30/07/2009	NO ₂ Annual Mean	An area of residential & commercial properties in The Horsefair & Blackwell Street, extended to include part of the Kidderminster Ring Road and residential properties in Coventry Street.	No	54	38.5	5 years	Published March 2025	Wyre Forest District Council Air Quality Action Plan (2025-2030)
Welch Gate, Bewdley	Declared 06/01/2003	NO ₂ Annual Mean	A short section of Welch Gate from junction with Dog Lane encompassing a number of residential properties	No	47	50.4	Not compliant	Published March 2025	Wyre Forest District Council Air Quality Action Plan (2025-2030)

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

☒ Wyre Forest District Council confirm that all current AQAPs have been submitted to Defra.

2.2 Progress and Impact of Measures to address Air Quality in the Wyre Forest District

Defra's appraisal of last year's ASR concluded that the report was well structured, detailed, and provided the information specified in the Guidance.

Defra provided the following comments on last year's report:

1. The Council have correctly applied QA/QC protocols for annualisation and have selected an appropriate bias adjustment factor using a national factor.
2. The Council have demonstrated consistency between the ASR submission and the supplementary Excel ASR Table.
3. The graphical trends showing the changes in annual mean NO₂ concentrations from non-automatic monitoring are well presented and accurately demonstrate the annual mean concentrations compared against the corresponding air quality objective for NO₂.
4. The Council have assessed the non-automatic monitoring data for 2023 and the previous years of 2019-2022, and have determined that the 2 AQMAs are not ready for revocation in light of the data seen in 2023.
5. Figures presented in the report are well-labelled and allow the reader to see which non-automatic sites are present with the AQMAs within the Council's jurisdiction.
6. The Council's Action Plan has not yet been published and the Council should aim to get this published by the indicated date of November 2024.

WRS welcome Defra's positive feedback and are pleased that the 2024 ASR met the required standards. We acknowledge Defra's observations regarding the AQMA's and agree that revocation is not currently appropriate based on the monitoring data.

Air Quality Action Plan

Since Defra's review, a new Air Quality Action Plan has been produced for Wyre Forest District within agreed timeline with Defra and in accordance with the Environment Act 2021 and revised guidance published in Aug 2022 (LAQM.TG22 and PG22).

The timeline for the various stages and delivery of a revised countywide AQAP, and establishment of a new countywide Air Quality Strategy, were set out in the [2023 ASR](#). However, following the introduction of new enforcement policy by Defra in June 2023, it

has been necessary to amend the previously published framework to prioritise production of a standalone AQAP for each district with an existing AQMA.

A steering group was formed in May 2024 to develop a new AQAP comprising officers from Wyre Forest District Council, Worcestershire County Council and WRS, from public health, technical pollution (air quality), strategic planning, sustainability, highways and transport disciplines, and also representation from the NHS. The Steering Group has developed an AQAP incorporating a number of improving actions to reduce NO₂ emissions within the Welch Gate, Bewdley and Horsefair/Coventry Street, Kidderminster AQMAs which are summarised in Table 2.2. Full details of the measures and formation of the AQAP process are provided within the [WFDC Air Quality Action Plan 2025 – 2030](#), published in March 2025.

Wyre Forest District Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 23 measures are included within Table 2.2, with the type of measure and the progress Wyre Forest District Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2. More detail on these measures can be found in the [2025 Action Plan](#).

Key developments in 2024 are:

- **Deployment of three new low-cost sensors** through DEFRA grant funding, expanding indicative coverage of NO₂, PM₁₀, and PM_{2.5} in the district.
- **Launch of the public-facing air quality portal** providing real-time data from low-cost sensors across Kidderminster, Stourport, and Bewdley. This has significantly enhanced engagement and awareness.
- **Initial delivery of local community engagement initiatives**, such as campaigns for Clean Air Day events and school visits, coordinated through WRS and Public Health colleagues.

Real-time Air Quality Monitoring Project

In February 2023, Defra confirmed that WRS had been 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 NO₂, PM₁₀, 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.

In addition to the existing Horsefair, Kidderminster Zephyr monitor, which was installed in 2022, three of the monitors have been deployed within the Wyre Forest District area in January (Lea Street, Kidderminster and Load Street, Bewdley) and May (Mart Lane, Stourport) 2024, following completion of required structural assessments.

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 2024 is provided in Appendix F (uploaded separately).

Wyre Forest District Council expects the following measures to be completed over the course of the next reporting year:

- **Installation of new public EV charging points**, including infrastructure enabled through the LEVI programme and private investment.
- **Implementation of the EV Charging Strategy**, expected to support long-term modal shift and improve air quality in hotspot areas.

- **Further expansion of school and community engagement campaigns** through the Behaviour Change Officer role.
- **Completion of the Wyre Forest Local Cycling and Walking Infrastructure Plan (Development Phase)** in partnership with Worcestershire County Council and Active Travel England.

Wyre Forest District Council's priorities for the next reporting year are:

- Finalising the AQAP 2025-2030 and submission to Defra following public consultation. (Completed March 2025)
- Progressing AQAP measures.
- Continue monitoring of air pollutants at key locations across the district.
- Review and assessment of first calendar year's data from low-cost sensors 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.
- Exploring a potential PM_{2.5} source apportionment study within Worcestershire with the University of Birmingham.
- Improving air quality information and direction to WRS webpages following recommendations of Defra's Air Quality Information Systems review.
- Ensure proportionate mitigation measures are included within new developments where air quality is a relevant concern.
- Work with teams from around the county to ensure air quality is considered appropriately within local strategy and policy where appropriate.
- Maintain relationships with neighbouring authorities and institutions to stay abreast of issues and developments that could impact or benefit air quality in Wyre Forest District, and to ensure our work is recognised in the wider West Midlands community.

Partnership working in 2024 involved:

- Worcestershire County Council, including Public Health and Highways.
- Worcestershire Acute Hospitals NHS Trust.
- Community organisations and local schools.

The principal challenges and barriers to implementation that Wyre Forest District Council anticipates facing are:

- Funding dependencies on third-party grants and business case approvals.
- Public resistance to behaviour change.

Progress on the following measures has been slower than expected:

- **Bus service and fleet upgrades**, which remain in planning stages pending funding and operator alignment.
- **Implementation of NHS site EV charging and travel plans**, which await confirmation of suitable funding sources.
- **Development of an ambitious countywide Air Quality Strategy** as reported in the last ASR, has been postponed for 2025. Progress has been delayed until local authority reorganisation, announced by government in Dec 2024, has been completed in Worcestershire. However, certain potential elements of the strategy, such as improving communication of air quality, are evolving through other work streams for example Behavioural Change interactions with local schools and communities, Clean Air Day 2025 campaign and working with LA teams around the county to ensure air quality is considered appropriately within local strategy and policy.

Wyre Forest District Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in the Horsefair/Coventry Street AQMA and support improvements in the Welch Gate AQMA, particularly as traffic patterns normalise following the expected reopening of Bewdley Bridge in 2025.

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
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, WFDC	LEVI capability funding	Fully Funded	£50k - £100k	Implementation	34 - 45%*	Publication of Strategy	public consultation summer 2024, adoption of final strategy late 2024/early 2025	
2	LEVI Capital Funding	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2025	2028	WCC, WFDC	£3.4m local EV Infrastructure Fund	Fully Funded (subject to business case process)	£1 million - £10 million	Planning	34 - 45%*	Number of EV chargers installed	Planning Phase	subject to 3- stage business case process
3	Public EV Charging Points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Late 2024	Early 2025	WCC, WFDC	Privately funded, WFDC	Funded	£1 million - £10 million	Implementation	34 - 45%*	Number of vehicles charging / number of new users	Installations to begin when private contractor have secured funding partner	Cost to Council £88k for the movement of a high voltage substation
4	EV charging on NHS estate car parks	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2025	2030	Worcestershire Acute Hospitals NHS Trust	Trust own/External such as Low carbon Funds and Charitable funds	To Be Confirmed	£1 million - £10 million	Planning	34%*	Number of EV chargers installed	Planning Phase	
5	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 available May 2024. 2000 hits from 400 users in 2024. Promotion in schools, events and campaign for Clean Air Day 2025.	
6	Bus fleet improvements (local bus services)	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2025	2026	Bus Operators, WCC	Not Yet Identified	To Be Confirmed	£1 million-£10million	Planning	1 - 5%	% of bus fleet Euro 6	Enhanced Partnership (EP) with bus operators formalised and published March 2025.	Funding availability, Operator Agreement

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
7	Local bus service improvements funded from Bus Service Improvement Plan (BSIP) and Enhanced Partnership (EP)	Transport Planning and Infrastructure	Bus route improvements	2026	2030	WCC. Bus operators	BSIP funding	To Be Confirmed	£1 million - £10 million	Planning	<0.4%	Bus patronage (passenger demand)	Enhanced Partnership (EP) with bus operators formalised and published March 2026.	
8	Wyre Forest Local Cycling and Walking Infrastructure Plan (Scheme Delivery)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2025	2035	WCC inc. Public Health, WFDC, key stakeholders, Active Travel England	Active Travel England	To Be Confirmed	>£10million	Planning	<1.5%	Scheme delivery monitoring (e.g. cycle counts)	Planning Phase	Funding availability
9	Air Quality Improvements from New Development	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	2036	WFDC, Developers	s106 Funding	To Be Confirmed	>£10million	Planning	<1.5%	s106 agreements completed	2 Phased developments, first one partially delivered, remaining are in planning stages	Subject to planning applications being approved. Big impacts delivered in later development phases
10	Local Community Engagement	Public Information	Via other mechanisms	2024	Ongoing	WFDC, Community organisations	WFDC	To Be Confirmed	<£10k	Planning	<0.2%	Number of participating organisations and Activities delivered. Changed behaviour identified from future surveys	Planning Phase	
11	Wyre Forest Local Cycling and Walking Infrastructure Plan (Development)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2024	2025	WCC inc. Public Health, WFDC, key stakeholders, Active Travel England	WCC, Active Travel England, developer contributions	Fully funded	£50k- £100k	Planning	<0.2%	LCWIP completed by March 2025	Planning Phase	
12	Travel plans to NHS sites	Promoting Travel Alternatives	Workplace Travel Planning	2025	2030	Worcestershire Acute Hospitals NHS Trust	Trust own development/External sources such as Low carbon Funds and Charitable funds. Also stake holders support.	To Be Confirmed	£50k - £100k	Planning	<0.2%	ModeSHIFT of staff work journeys	Planning Phase	
13	North West Worcs Corridor NWWC Strategic Network improvements	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2027	2029	WCC	Not yet identified	To Be Confirmed	>£10million	Planning	<1.5%	Improvement in Congestion data	Planning Phase - Proposal submitted to Midlands Connect for Major Road Network Funding.	Subject to Strategic Outline Business Case outcomes.

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
14	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 following AQIS review	Reduced resource to pursue a formal strategy in 2025. Delayed until outcome of LA reorganisation
15	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	<0.2%	Number of responses to survey, hits on website, data captured. Changed behaviour identified from repeat survey in future	Public baseline survey followed by 2 targeted surveys with Heart of Worcestershire college. BC officer has visited 61 schools across the County, worked directly with 11 schools delivering assemblies and attending events, presented at Global Bike Bus Summit Apr25, developed toolkit for primary schools with University of Worcester.	
16	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 01/2024 promotion. Heart of Worcestershire College community event and Welcome to University of Worcester in 2024, Global Bike Bus Summit Apr 2025, WRS campaign for Clean Air Day 06/2025	Reduced PH resource to support.
17	Travel Choices	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2025	2030	WCC inc. Public Health, WFDC, 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
18	Depot Infrastructure	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2025	2026	WFDC	Not Yet Identified	Not funded	£50k-£100k	Planning	<0.2%	Infrastructure provided	Subject to Business Case once grid capacity identified.	
19	Taxi Fleet Improvements	Promoting Low Emission Transport	Taxi Licensing conditions	2027	Ongoing	WRS, WFDC	Taxi community	Not funded	>£10million	Planning	<0.6%	Licenses issued	Policy introduced	

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
20	Travel to school	Promoting Travel Alternatives	School Travel Plans	2025	2030	WCC, WFDC, Schools & Colleges	Not Yet Identified	To Be Confirmed	£100k-£500k	Planning	<0.2%	Number of walking, cycling, scooting, car, and park & stride trips; Number of participating schools and of activities delivered	Planning Phase	Funding availability
21	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
22	Demand Response Travel (DRT)	Alternatives to private vehicle use	Other	2029	2029	WCC, Bus Operators, WFDC	Not Yet Identified	To Be Confirmed	£1 million-£10million	Planning	<0.2%	Bus patronage (passenger demand)	Planning Phase	Funding availability
23	Wyre Forest Vehicle Fleet Upgrade - Refuse Collection Vehicle	Vehicle Fleet Efficiency	Local Authority Fleets (grey fleets)	2025	2027	WFDC	WFDC	Funded	£1 million - £10 million	Implementation	<0.2%	Replacement of vehicles	Rolling replacement programme	

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 Strategy³, 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.

There are currently 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. The nearest AURN PM_{2.5} monitoring station is the Birmingham Ladywood site approximately 19 kilometres to the north-east of the Wyre Forest District. However, WRS have assisted the Defra AURN expansion project team with potential locations for two PM_{2.5} monitors in Worcestershire which are expected to be operational in 2025.

In January 2024, three additional low-cost sensors were installed in the Wyre Forest District, following a successful bid through the Defra Air Quality Grant 2022/23. These low-cost sensors complement the existing Zephyr installed in the Horsefair AQMA and are designed to monitor NO₂, NO_x, PM₁₀, PM_{2.5}, O₃, as well as basic meteorological data. Graphical results for 2024 for all the sensors are shown in Appendix F, and PM_{2.5} averages for 2024 are summarised in table below:

Location	2023 Average PM _{2.5} (µg/m ³)	2024 Average PM _{2.5} (µg/m ³)	Installation
Horsefair, Kidderminster	11.8	11.60	February 2022
Lea Street, Kidderminster	N/A	7.37	January 2024
Load Street, Bewdley	N/A	7.60	January 2024
Mart Lane, Stourport	N/A	5.42	March 2024

³ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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.’

However, in the absence of any other monitoring sources these sensors provide the only local PM data in Wyre Forest at this time.

WRS has reviewed the DEFRA national background maps⁴ to determine projected PM_{2.5} concentrations across the Wyre Forest District area for the 2024 calendar year. The annual average total PM_{2.5} at 197 locations (centre points of 1km x 1km grids) across the Wyre Forest District is 6.06µg/m³, with a minimum concentration of 5.44µg/m³ and a maximum concentration of 7.30µg/m³. This modelled average is lower than the overall average PM_{2.5} concentration of 8.00µg/m³ recorded by the local low-cost sensor network in 2024. However, both sources indicate that the annual average PM_{2.5} concentrations in the Wyre Forest District are generally below the interim and legally binding targets set out in the Air Quality Strategy (England) 2023:

Pollutant and Metric	Target	Target Year
PM _{2.5} annual mean concentration	Interim target: 12µg/m ³	2028
PM _{2.5} annual mean concentration	Legally binding target: 10µg/m ³	2040

WRS has reviewed the fraction of mortality attributable to particulate air pollution (indicator D01) as published by Public Health England as part of the Public Health Outcomes Framework⁵. The fraction of mortality attributable to particulate emissions in Wyre Forest District in 2023 (the most recent year available) was 4.3%. This falls below the national

⁴ [Background Mapping data for local authorities - 2021 - DEFRA UK Air - GOV.UK](#)

⁵ [Public Health Outcomes Framework | Fingertips | Department of Health and Social Care](#)

figure for England (5.2% in 2023) and below the figure for the West Midlands region (5.6% in 2023).

More information on the Public Health Outcomes Frameworks that examines indicators that help us understand trends in public health can be found at:

[Public Health Outcomes Framework | Fingertips | Department of Health and Social Care](#)

There are currently five declared smoke control areas operating within the Wyre Forest District Council area:

- Habberley, Kidderminster
- Offmore, Kidderminster
- Hoobrook, Kidderminster
- Spennells, Kidderminster
- Franche, Kidderminster

More information, maps and guides on the type of fuels that can be used can be found at:

[Smoke Control Areas | Worcestershire Regulatory Services](#)

WRS hold 55 records of complaints of nuisance from smoke in the Wyre Forest District in 2024, most of which relate to bonfires or burning of other waste or other enquiries. 11 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 Wyre Forest District Council in relation to the reduction of PM_{2.5} levels. However, it is anticipated that any actions taken to improve NO₂ levels across the district as part of the WFDC AQAP 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 2024 by Wyre Forest District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Wyre Forest District Council undertook automatic (continuous) monitoring using one recognised reference method analyser monitoring nitrogen dioxide. Table A.1 in Appendix A shows the details of the automatic monitoring site.

The [Air Quality in the United Kingdom \(ukairquality.net\)](https://ukairquality.net) page presents automatic monitoring results for Wyre Forest District Council.

Maps showing the location of the monitoring site is provided in Appendix D. Further details on how the monitor is calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Wyre Forest District Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 49 sites during 2024.

In 2024, the diffusion tube network was updated to reflect changing monitoring priorities. New tubes were installed in four locations, while monitoring was discontinued at eight locations due to consistently low readings and/or the location was no longer considered suitable for effective monitoring. Full details of the current diffusion tube network are provided in Table A.2 in Appendix A.

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 (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. 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 2024 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.

Table A.5 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

All NO₂ diffusion tube locations in Wyre Forest District achieved a data capture greater than 75% in 2024 and therefore did not require annualisation.

When comparing 2024 NO₂ concentrations to previous years, the data reflects a continuation of the post-pandemic stabilisation trend. The district-wide average NO₂ concentration in 2024 was 26.4µg/m³, which is slightly higher than 2023 (25.8 µg/m³), yet still below pre-pandemic levels. Concentrations remain notably lower than those recorded in 2018, the most recent year considered representative of typical conditions prior to COVID-19, with a district-wide reduction of approximately 19% compared to that baseline.

NO₂ levels recorded during 2020 and 2021 were significantly reduced due to the impact of national lockdowns on travel and transport patterns. As traffic volumes returned to near pre-pandemic levels in 2022 and 2023, NO₂ concentrations correspondingly rose but have since begun to plateau. The overall trend suggests that local air quality remains improved relative to the pre pandemic baseline, likely aided by infrastructure changes and ongoing mitigation measures across the district.

The highest NO₂ concentration in 2024 was recorded at WG(B), Welch Gate, Bewdley, with a value of 50.4 µg/m³, which represents a notable increase from the 2023 value of 40.8 µg/m³. This escalation reaffirms the continued exceedance of the annual mean air quality objective of 40 µg/m³. This site lies within the Welch Gate AQMA, which will therefore remain in place and be prioritised in the forthcoming Air Quality Action Plan (AQAP) 2025–2030.

The increase in measured NO₂ levels in the Welch Gate AQMA in 2024 is considered to be directly attributable to the ongoing traffic management scheme imposed on Bewdley Bridge. Since late 2023, a one-way system has been implemented as part of flood defence construction works which has diverted a significant volume of outbound traffic from Bewdley town centre through Welch Gate. This has led to increased traffic volumes and congestion in the AQMA, with consequential air quality impacts.

The Environment Agency expects these flood alleviation works to be completed and two-way traffic to resume on Bewdley Bridge in 2025. As such, it is anticipated that traffic pressures (and associated NO₂ concentrations) at Welch Gate will subsequently reduce. Monitoring will continue throughout 2025 to assess the impact of any change in traffic flows following the reopening of the bridge.

The second highest concentration was 38.7 µg/m³ at Mitton Lodge, Vale Road, Stourport (S ML). Three additional sites recorded levels above 36 µg/m³:

- (F)69COV, Coventry Street, Kidderminster – 38.5 µg/m³
- (F)FBS(S), Bridge Street, Stourport – 38.7 µg/m³
- A1, High Street, Stourport – 36.3 µg/m³

These locations remain below the air quality objective but are within 10% of the threshold and will continue to be monitored closely.

The Horsefair/Coventry Street AQMA remains below the objective, with its highest reading of 38.5 µg/m³ recorded at (F)69COV. Of the 11 diffusion tubes located within the Horsefair/Coventry Street AQMA, 7 recorded a decrease in NO₂ concentrations compared to 2023, while the remaining 3 existing sites showed slight increases (typically less than 1 µg/m³). One new tube, THBS, recorded a value of 21.6 µg/m³ which is well below the annual objective of 40 µg/m³. Although this AQMA has now remained below 40 µg/m³ for five consecutive years, LAQM Technical Guidance (LAQM.TG22) advises that revocation should only be considered when all relevant sites show three consecutive years below 36 µg/m³. Therefore, no changes to this AQMA are proposed at this time.

Notably, locations HF(K) and HF(K)(F) in Blackwell Street, Horsefair, continue to show reductions of over 50% compared to pre-pandemic 2018 levels, demonstrating the long-term benefit of road infrastructure improvements completed in 2021.

The automatic monitoring station at Wyre Forest House (WFH) recorded an annual mean NO₂ concentration of 12.1 µg/m³ in 2024. This is a slight increase from the 2023 value of 11.9 µg/m³, and still well below the air quality objective. The site achieved a data capture rate of 99.5%, with no exceedances of the hourly mean NO₂ objective (200 µg/m³, not to be exceeded more than 18 times per year).

3.2.2 Particulate Matter (PM₁₀)

There were no automatic PM₁₀ monitoring stations within Wyre Forest District in 2024 that were recognised by Defra for measuring against ambient air quality directives.

3.2.3 Particulate Matter (PM_{2.5})

There were no automatic PM_{2.5} monitoring stations within Wyre Forest District in 2024 that were recognised by Defra for measuring against ambient air quality directives.

3.2.4 Sulphur Dioxide (SO₂)

Sulphur Dioxide (SO₂) is not monitored within the Wyre Forest District.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Which AQMA? ⁽¹⁾	Monitoring Technique	Distance to Relevant Exposure (m) ⁽²⁾	Distance to kerb of nearest road (m) ⁽¹⁾	Inlet Height (m)
WFH	Kidderminster, Stourport Road	Roadside	381768	273551	NO2	No	N/A	Chemiluminescent Detection	3.0	11.0	1.5

Notes:

(1) N/A if not applicable

(2) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

Table A.2 – 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)
WFH1 , WFH2 , WFH3	Co location Study, Wyre Forest House Finepoint Way, Kidderminster	Roadside	381768	273551	NO2	No	N/A	11.0	Yes	1.5
HLR1	139 Stourport Road, Kidderminster	Roadside	382148	274587	NO2	No	0.0	18.6	No	1.7
SR(K)	431 Stourport Road, Kidderminster	Roadside	382429	275315	NO2	No	9.0	3.0	No	2.3
SPR2	Park House, Sutton Park Road, Kidderminster	Roadside	382496	275417	NO2	No	0.0	7.0	No	1.7
(F)447(S)	447 Stourport Road, Kidderminster	Roadside	382447	275506	NO2	No	0.0	10.6	No	1.7
SP(K)	20 Jay Park Crescent, Spennells, Kidderminster	Urban Background	384486	274596	NO2	No	11.0	1.7	No	2.3
100CRS	100 Chester Road South, Kidderminster	Roadside	383766	275723	NO2	No	0.0	12.5	No	1.6
PL2	2 Pelham Lodge, Kidderminster	Roadside	384065	276196	NO2	No	0.0	10.4	No	1.8
TCH	10 Chester Rd Sth, Kidderminster	Roadside	384086	276228	NO2	No	1.0	2.0	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)
(F)COMR(K)	Sandalwood Apartments, 25 Comberton Road, Kidderminster	Roadside	384214	276242	NO2	No	13.5	3.5	No	2.2
470CRN	470 Chester Road North, Kidderminster	Roadside	384154	276340	NO2	No	0.0	4.9	No	1.9
CR3	20 Comberton Road, Kidderminster	Roadside	384069	276304	NO2	No	0.0	13.1	No	1.9
CR2	Severn Valley Lock & Safe, 9/10 Comberton Road, Kidderminster	Roadside	383890	276333	NO2	No	0.0	3.4	No	2.0
CAS1	Caspers Polish Shop, 99 Comberton Hill, Kidderminster	Roadside	383636	276377	NO2	No	1.5	2.7	No	2.5
(F)69COV	69 Coventry Street, Kidderminster	Roadside	383552	276870	NO2	Horsefair/Coventry Street AQMA	0.0	5.5	No	1.8
(F)SGC	6/7 St George's Court, Kidderminster	Roadside	383475	276760	NO2	Horsefair/Coventry Street AQMA	0.0	10.0	No	1.8
K3	53 Coventry Street, Kidderminster	Roadside	383726	276909	NO2	Horsefair/Coventry Street AQMA	0.0	2.7	No	1.3
K2	34 Leswell Lane, Kidderminster	Roadside	383657	276890	NO2	Horsefair/Coventry Street AQMA	0.0	3.1	No	1.8
K1	50 Radford Avenue, Kidderminster	Roadside	383391	277086	NO2	Horsefair/Coventry Street AQMA	0.0	2.1	No	2.5

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)
21HF	21 Horsefair, Kidderminster	Roadside	383338	277215	NO2	Horsefair/Coventry Street AQMA	0.0	4.7	No	3.0
THBS	Tomkinson House, Broad St, Kidderminster	Roadside	383302	277163	NO2	Horsefair/Coventry Street AQMA	0.0	5.7	No	2.0
Z1	Dudley Street, Kidderminster	Roadside	383319	277122	NO2	Horsefair/Coventry Street AQMA	0.5	1.6	No	2.4
HF(K)	Horsefair, Kidderminster	Roadside	383311	277087	NO2	Horsefair/Coventry Street AQMA	0.0	2.5	No	2.5
HF(K)(F)	Hudson Florists on Horsefair, Kidderminster	Roadside	383304	277071	NO2	Horsefair/Coventry Street AQMA	0.0	2.5	No	2.5
K4	1 Silver Street, Kidderminster	Urban Background	383337	276998	NO2	Horsefair/Coventry Street AQMA	0.0	18.2	No	2.4
SBR121	121 Stourbridge Road, Kidderminster	Roadside	383905	277857	NO2	No	0.0	2.4	No	2.7
334CRN	334 Chester Road North, Kidderminster	Roadside	383965	277823	NO2	No	0.0	3.1	No	2.2
383CRN	383 Chester Road North, Kidderminster	Roadside	384175	277275	NO2	No	0.0	11.0	No	2.4
CSLOC	Flats at top of Coventry Street, Kidderminster	Roadside	384205	277121	NO2	No	0.0	7.9	No	1.9
SRLEC	Lucy Edwards Court, Sutton Road, Kidderminster	Roadside	382183	276388	NO2	No	0.0	9.5	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)
BH166	166 Bewdley Hill, Kidderminster	Roadside	382135	276409	NO2	No	2.0	5.0	No	2.2
(F)BR(K)	52 Bewdley Road, Kidderminster	Roadside	382437	276542	NO2	No	0.0	6.5	No	1.7
HAB203	203 Habberley Lane, Kidderminster	Roadside	381713	278069	NO2	No	0.0	3.1	No	1.5
(F)GIL	10 The Gilgal, Stourport	Roadside	381482	271534	NO2	No	0.0	2.0	No	2.3
16MS	16 Mitton St, Stourport	Roadside	381382	271363	NO2	No	2.2	2.0	No	2.1
S ML	Mitton Lodge, Vale Rd, Stourport	Roadside	381256	271511	NO2	No	0.0	4.2	No	2.0
(F)19YS(S)	19 York Street, Stourport	Roadside	381086	271268	NO2	No	0.0	1.7	No	2.3
(F)25YS(S)	Stourport Nails Centre, 22 York Street, Stourport	Roadside	380990	271268	NO2	No	0.0	1.5	No	2.5
HS(S)	High Street corner of York Street, Stourport	Roadside	380974	271268	NO2	No	0.0	4.0	No	2.8
(F)FBS(S)	Flamingo's, 21 Bridge Street, Stourport	Roadside	380933	271247	NO2	No	0.0	1.9	No	2.4
A1	36 High Street, Stourport	Roadside	380989	271298	NO2	No	0.0	3.2	No	2.4
KSW(S)	Chapman Opticians, 20B	Roadside	381072	271347	NO2	No	0.0	4.0	No	2.3

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)
	High St, Stourport									
HS4(S)	Angie Monroe Hairdressers, 4 High Street, Stourport	Roadside	381169	271420	NO2	No	0.0	4.4	No	2.4
BC14	lamppost o/s 14 Burlish Crossing, Stourport	Roadside	380185	272978	NO2	No	5.3	1.7	No	1.9
KID22(B)	22 Kidderminster Road, Bewdley	Roadside	373996	275464	NO2	No	0.0	3.0	No	2.4
(F)WG42	42 Welch Gate, Bewdley	Roadside	378383	275328	NO2	No	0.0	1.7	No	2.3
WG(B)	88 Welch Gate, Bewdley	Roadside	378465	275292	NO2	Welch Gate, Bewdley	0.0	0.9	No	2.5
LS(B)	The Melting Pot, Load Street, Bewdley	Roadside	378590	275302	NO2	No	0.0	3.0	No	2.3
B1	Adam & Eves, Load Street, Bewdley	Roadside	378513	275317	NO2	No	0.0	1.1	No	2.3

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.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
WFH	381768	273551	Roadside	99.5	99.5	N/A	13.9	13.0	11.9	12.1

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

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

☒ Where exceedances of the NO₂ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

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%).

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
WFH1 , WFH2 , WFH3	381768	273551	Roadside	100.0	100.0	N/A	10.6	13.3	12.0	12.1
HLR1	382148	274587	Roadside	100.0	100.0	14.3	16.9	18.2	17.6	18.5
SR(K)	382429	275315	Roadside	92.4	92.4	28.3	32.9	33.7	34.0	31.5
SPR2	382496	275417	Roadside	100.0	100.0	23.1	24.5	28.7	28.4	27.4
(F)447(S)	382447	275506	Roadside	100.0	100.0	18.0	19.6	21.5	21.0	21.1
SP(K)	384486	274596	Urban Background	90.3	90.3	9.4	9.7	11.5	10.4	9.8
100CRS	383766	275723	Roadside	84.9	84.9	11.2	12.6	15.0	14.3	14.7
PL2	384065	276196	Roadside	100.0	100.0	12.6	13.7	16.2	15.6	15.2
TCH	384086	276228	Roadside	100.0	100.0	28.8	31.9	37.8	36.7	34.9
(F)COMR(K)	384214	276242	Roadside	100.0	100.0	22.9	27.3	31.1	28.6	27.7
470CRN	384154	276340	Roadside	100.0	100.0	22.3	24.5	28.3	28.6	28.4

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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
CR3	384069	276304	Roadside	100.0	100.0	16.0	19.4	22.1	21.0	21.7
CR2	383890	276333	Roadside	100.0	100.0	22.8	26.4	29.7	30.3	31.5
CAS1	383636	276377	Roadside	100.0	100.0	26.4	29.7	35.7	32.9	32.8
(F)69COV	383552	276870	Roadside	100.0	100.0	34.5	35.1	39.3	38.6	38.5
(F)SGC	383475	276760	Roadside	100.0	100.0	22.1	24.8	28.4	27.0	27.0
K3	383726	276909	Roadside	92.4	92.4	25.3	27.3	29.5	27.6	28.0
K2	383657	276890	Roadside	100.0	100.0	16.2	17.0	21.4	20.5	18.6
K1	383391	277086	Roadside	100.0	100.0	16.9	16.9	19.8	18.9	18.6
21HF	383338	277215	Roadside	100.0	100.0	21.2	23.5	27.2	25.1	25.4
THBS	383302	277163	Roadside	100.0	100.0	N/A	N/A	N/A	N/A	21.6
Z1	383319	277122	Roadside	100.0	100.0	N/A	N/A	22.1	22.5	21.5
HF(K)	383311	277087	Roadside	100.0	100.0	28.4	24.4	28.0	28.1	28.4
HF(K)(F)	383304	277071	Roadside	90.5	90.5	29.6	25.9	27.9	29.8	29.2

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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
K4	383337	276998	Urban Background	100.0	100.0	19.6	18.2	22.7	21.3	21.1
SBR121	383905	277857	Roadside	100.0	100.0	22.6	25.8	29.2	28.3	28.5
334CRN	383965	277823	Roadside	100.0	100.0	26.4	29.3	33.3	33.5	31.9
383CRN	384175	277275	Roadside	100.0	100.0	15.7	16.4	18.7	18.0	17.8
CSLOC	384205	277121	Roadside	100.0	100.0	23.4	24.2	27.3	26.5	27.2
SRLEC	382183	276388	Roadside	100.0	100.0	22.9	25.0	29.6	28.0	28.8
BH166	382135	276409	Roadside	92.4	92.4	19.6	21.6	23.2	22.5	21.2
(F)BR(K)	382437	276542	Roadside	100.0	100.0	19.8	22.3	25.6	24.4	24.1
HAB203	381713	278069	Roadside	100.0	100.0	18.9	21.9	25.4	23.6	23.0
(F)GIL	381482	271534	Roadside	100.0	100.0	20.6	22.4	25.4	25.8	25.6
16MS	381382	271363	Roadside	100.0	100.0	N/A	N/A	N/A	N/A	35.1
S ML	381256	271511	Roadside	100.0	100.0	N/A	N/A	N/A	N/A	38.7
(F)19YS(S)	381086	271268	Roadside	100.0	100.0	19.0	21.4	24.3	24.0	23.4

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 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
(F)25YS(S)	380990	271268	Roadside	92.4	92.4	23.1	24.8	29.1	29.1	26.9
HS(S)	380974	271268	Roadside	90.5	90.5	24.7	27.6	31.8	31.7	31.8
(F)FBS(S)	380933	271247	Roadside	84.3	84.3	28.3	31.9	36.6	36.7	38.7
A1	380989	271298	Roadside	100.0	100.0	27.0	29.1	33.6	35.1	36.3
KSW(S)	381072	271347	Roadside	100.0	100.0	21.5	23.7	28.6	26.9	26.5
HS4(S)	381169	271420	Roadside	100.0	100.0	21.6	23.6	27.8	27.9	27.7
BC14	380185	272978	Roadside	92.4	92.4	N/A	N/A	N/A	N/A	17.9
KID22(B)	373996	275464	Roadside	100.0	100.0	22.6	25.4	29.0	28.5	23.6
(F)WG42	378383	275328	Roadside	100.0	100.0	19.4	21.7	24.8	26.1	31.2
WG(B)	378465	275292	Roadside	100.0	100.0	29.4	31.9	37.9	40.8	50.4
LS(B)	378590	275302	Roadside	90.5	90.5	20.9	24.0	27.5	25.8	25.3
B1	378513	275317	Roadside	100.0	100.0	23.0	27.0	30.7	29.0	25.9

☒ 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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, 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 NO₂ Concentrations

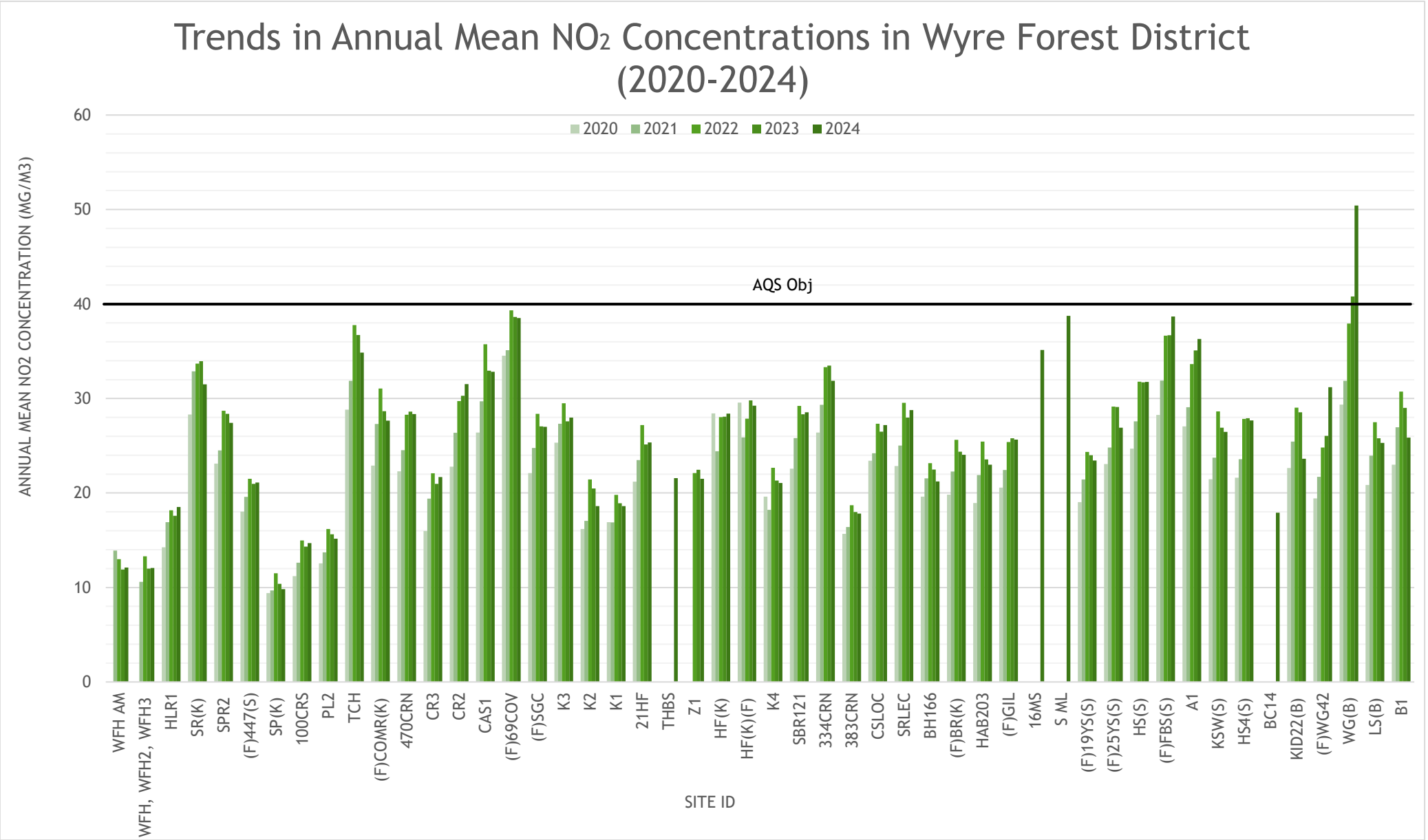


Figure A.2 – Trends in Annual Mean NO₂ Concentrations in Horsefair/Coventry Street

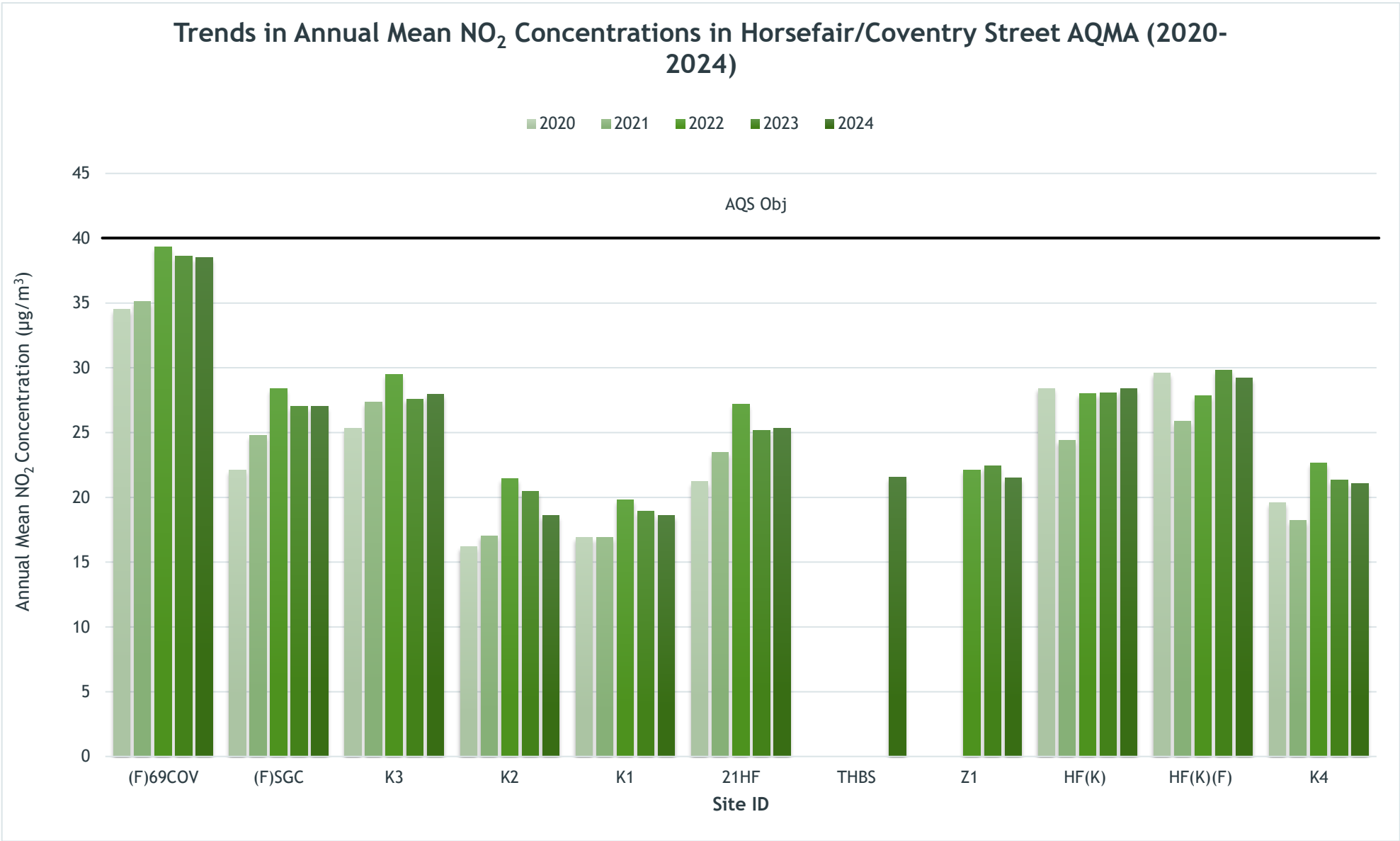


Figure A.3 – Trends in Annual Mean NO₂ Concentrations in Kidderminster excluding locations within AQMA

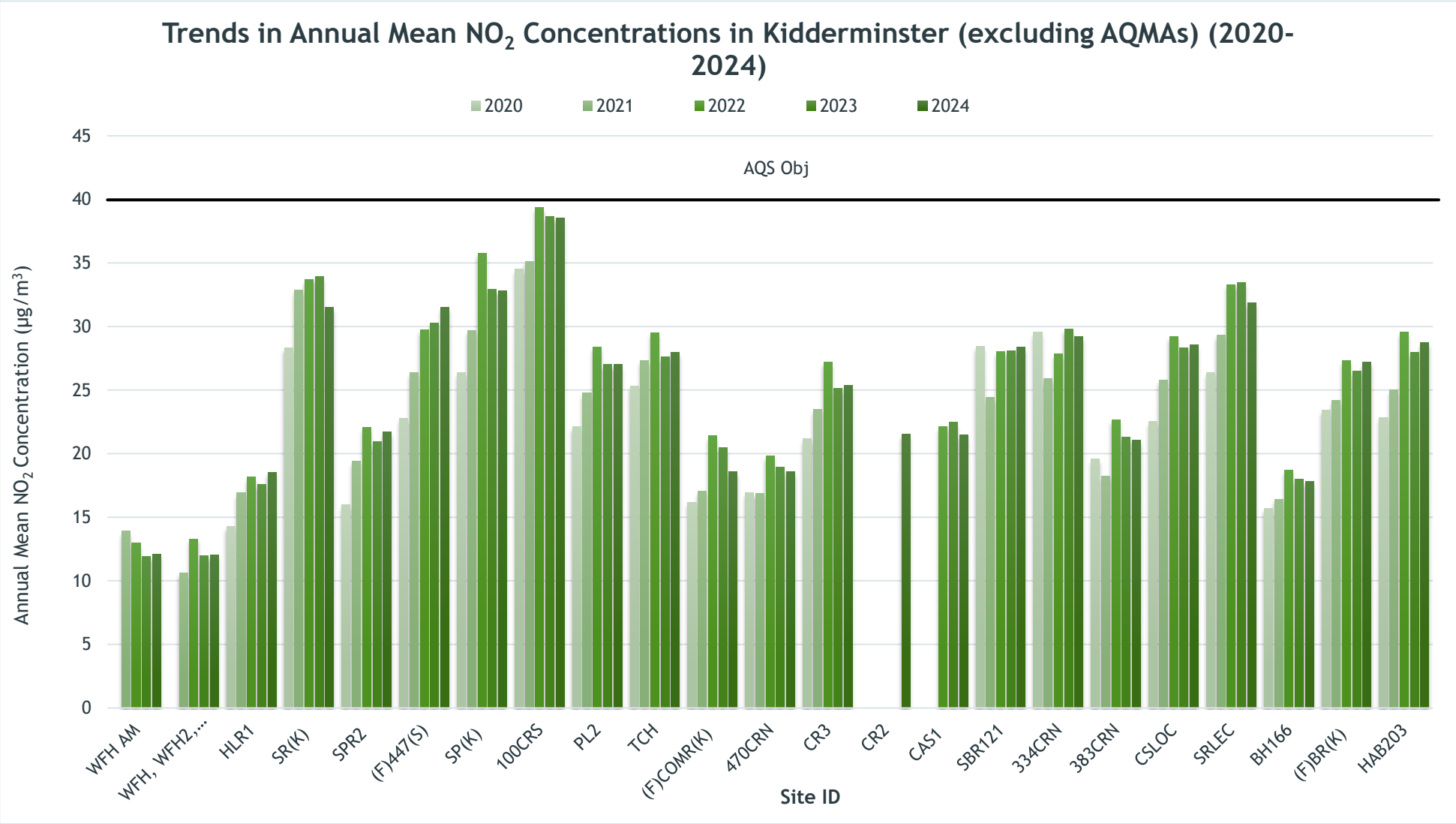


Figure A.4 – Trends in Annual Mean NO₂ Concentrations in Stourport on Severn

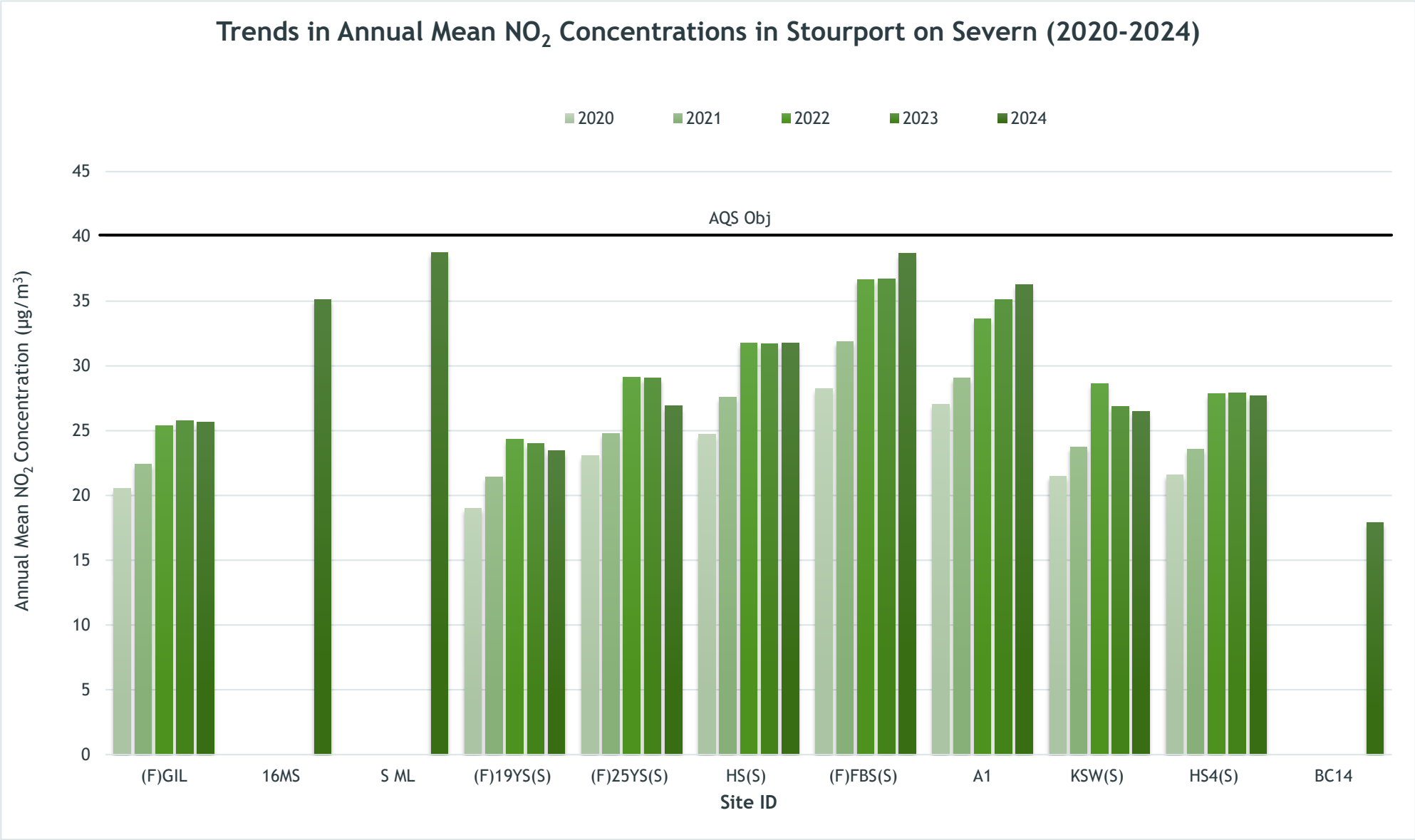


Figure A.5 – Trends in Annual Mean NO₂ Concentrations in Bewdley

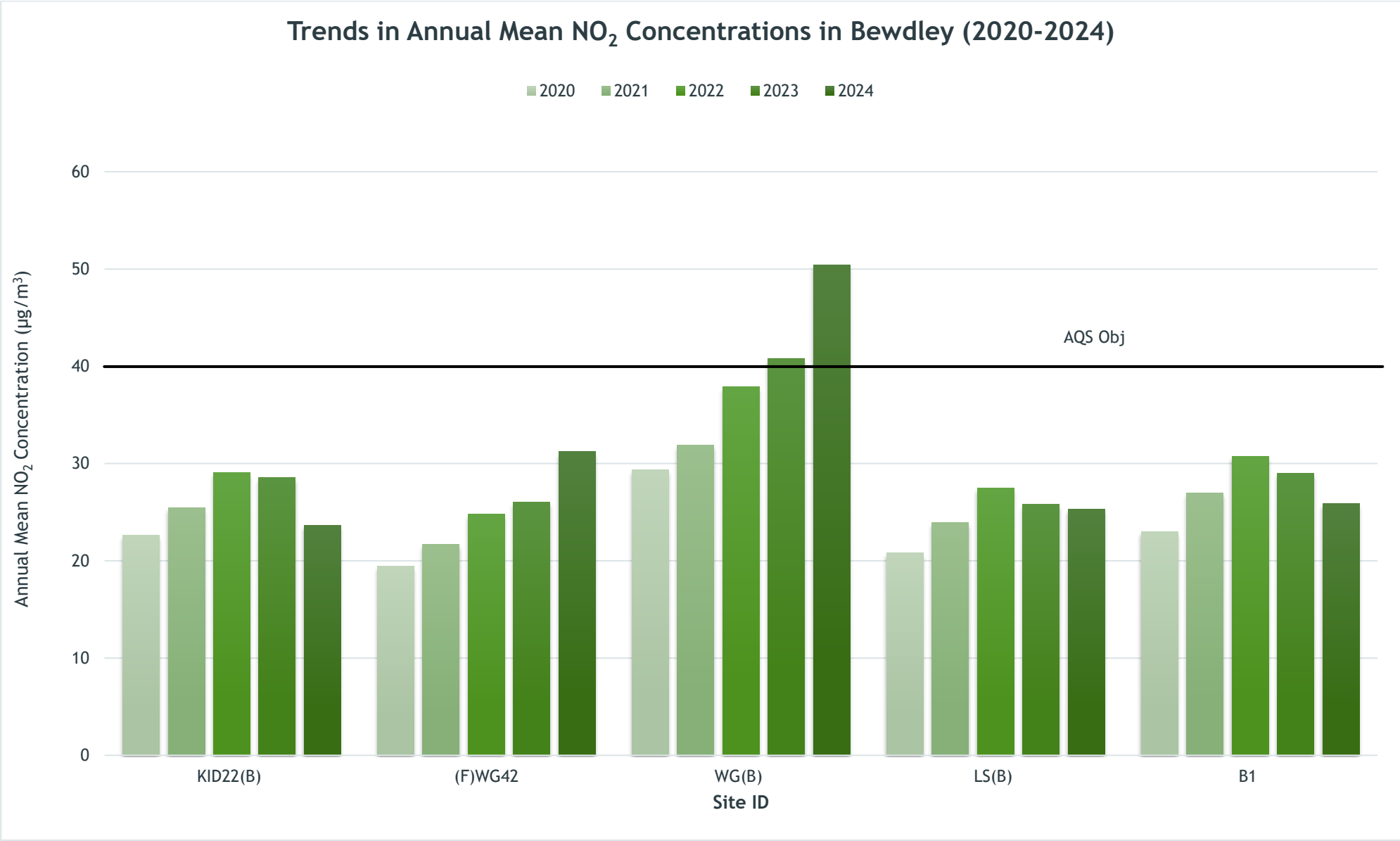


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
WFH	381768	273551	Roadside	99.5	99.5	N/A	0	0	0	0

Notes:

- Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.
- Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.
- If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.
- (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%).

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO₂ 2024 Diffusion Tube Results (µg/m³)

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 (1.02)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
WFH1	381768	273551	18.0	13.9	12.3	8.0	9.5	5.2	7.2	8.2	12.8	16.3	16.8	13.2	-	-	N/A	Triplicate Site with WFH1, WFH2 and WFH3 - Annual data provided for WFH3 only
WFH2	381768	273551	18.3	13.4	12.8	8.5	9.9	5.3	7.1	7.7	12.3	15.6	17.1	13.7	-	-	N/A	Triplicate Site with WFH1, WFH2 and WFH3 - Annual data provided for WFH3 only
WFH3	381768	273551	18.4	13.6	13.1	8.0	9.6	5.4	6.9	8.5	11.8	15.5	17.4	14.0	11.8	12.1	N/A	Triplicate Site with WFH1, WFH2 and WFH3 - Annual data provided for WFH3 only
HLR1	382148	274587	23.4	20.9	17.8	14.9	16.8	10.5	13.2	12.8	17.8	23.1	20.5	26.1	18.2	18.5	N/A	
SR(K)	382429	275315		36.2	36.2	29.9	29.1	24.1	26.7	24.7	31.4	31.1	37.9	32.2	30.9	31.5	N/A	
SPR2	382496	275417	32.2	31.7	31.1	24.7	24.9	21.7	24.4	23.0	23.3	30.8	28.3	26.5	26.9	27.4	N/A	
(F)447(S)	382447	275506	27.9	22.9	20.5	18.2	17.6	15.9	17.7	16.9	21.3	20.8	25.3	23.1	20.7	21.1	N/A	
SP(K)	384486	274596	16.6	11.3	9.4	7.3	7.2	5.6	6.3	6.4	8.9	-	15.6	11.5	9.6	9.8	N/A	
100CRS	383766	275723	21.3	17.4	13.4	11.7	11.3	10.2	-	11.3	13.2	16.1	-	18.0	14.4	14.7	N/A	
PL2	384065	276196	23.4	16.4	13.7	12.5	12.3	9.6	10.4	10.7	14.8	16.2	19.2	19.0	14.9	15.2	N/A	
TCH	384086	276228	41.3	39.0	30.9	34.7	33.0	33.1	31.9	29.5	36.8	26.0	40.4	33.4	34.2	34.9	N/A	
(F)COMR(K)	384214	276242	33.1	31.7	28.7	23.4	24.4	22.8	22.4	23.2	26.5	30.3	29.1	29.7	27.1	27.7	N/A	
470CRN	384154	276340	33.5	34.1	31.2	25.1	25.3	20.2	24.6	24.2	22.1	30.8	33.5	28.9	27.8	28.4	N/A	
CR3	384069	276304	26.9	22.4	18.3	17.1	18.8	16.2	16.4	16.7	19.0	36.9	25.2	21.2	21.3	21.7	N/A	
CR2	383890	276333	40.2	30.7	31.9	31.5	31.4	28.2	25.4	24.2	35.5	30.3	32.4	29.0	30.9	31.5	N/A	
CAS1	383636	276377	38.6	37.7	33.9	32.0	29.7	30.0	30.6	31.3	27.5	21.3	38.4	35.0	32.2	32.8	N/A	
(F)69COV	383552	276870	42.1	41.7	42.5	37.5	37.6	35.6	35.1	36.0	39.1	35.0	37.1	33.6	37.7	38.5	N/A	
(F)SGC	383475	276760	32.7	29.5	27.6	25.8	25.7	23.1	21.1	23.5	25.9	27.9	29.3	25.4	26.5	27.0	N/A	
K3	383726	276909	37.9	30.1	27.1	22.0	27.3	-	23.4	19.6	27.7	29.4	33.0	24.1	27.4	28.0	N/A	
K2	383657	276890	26.3	21.7	15.3	16.4	17.0	12.4	14.7	13.8	17.4	21.0	23.1	19.6	18.2	18.6	N/A	
K1	383391	277086	26.7	24.9	17.5	13.9	14.7	12.9	14.9	14.3	14.6	20.1	23.0	21.5	18.2	18.6	N/A	
21HF	383338	277215	31.5	27.8	22.4	21.6	21.6	20.9	22.2	22.0	24.6	26.3	28.6	28.8	24.8	25.4	N/A	
THBS	383302	277163	29.1	25.3	19.7	17.4	17.2	16.2	16.9	16.3	18.0	24.8	28.2	24.4	21.1	21.6	N/A	

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 (1.02)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Z1	383319	277122	28.4	26.6	22.0	18.4	17.5	15.9	16.0	17.1	18.2	21.5	27.5	23.7	21.1	21.5	N/A	
HF(K)	383311	277087	34.6	33.0	31.9	23.4	24.0	23.0	23.4	24.1	25.0	27.6	33.4	30.6	27.8	28.4	N/A	
HF(K)(F)	383304	277071	38.0	32.7	30.5	25.0	24.5	24.3	26.4	24.7	25.4	29.4	34.3	-	28.7	29.2	N/A	
K4	383337	276998	28.0	25.5	21.9	16.4	16.2	15.7	18.2	18.5	16.2	22.4	26.3	22.4	20.6	21.1	N/A	
SBR121	383905	277857	36.0	30.3	27.0	25.7	26.9	24.4	24.8	25.8	26.9	28.6	28.1	31.1	28.0	28.5	N/A	
334CRN	383965	277823	37.1	36.1	35.8	31.3	31.7	24.7	29.5	27.4	32.0	32.9	36.5	20.0	31.2	31.9	N/A	
383CRN	384175	277275	25.9	21.3	18.5	13.9	14.4	9.7	12.9	12.3	15.9	21.2	24.1	19.6	17.5	17.8	N/A	
CSLOC	384205	277121	33.2	33.0	26.6	23.8	22.2	24.1	22.8	26.5	21.4	26.3	30.1	29.7	26.6	27.2	N/A	
SRLEC	382183	276388	35.9	29.4	27.2	26.1	25.4	26.3	27.3	25.7	25.4	26.4	32.2	30.9	28.2	28.8	N/A	
BH166	382135	276409	-	26.3	24.0	18.3	19.5	13.2	17.4	17.9	17.5	25.9	27.6	21.1	20.8	21.2	N/A	
(F)BR(K)	382437	276542	30.7	27.9	25.0	18.3	21.1	18.6	20.9	19.9	21.7	27.4	27.8	23.5	23.6	24.1	N/A	
HAB203	381713	278069	25.8	24.7	23.5	19.2	22.9	18.2	18.6	17.9	23.6	27.5	26.2	22.5	22.5	23.0	N/A	
(F)GIL	381482	271534	33.9	29.4	22.7	21.0	22.1	18.6	20.6	17.5	24.5	38.4	24.1	28.7	25.1	25.6	N/A	
16MS	381382	271363	46.2	35.2	29.8	28.7	36.8	28.9	29.2	28.2	43.4	28.8	41.7	36.2	34.4	35.1	N/A	
S ML	381256	271511	41.7	37.3	39.5	40.9	40.4	42.0	38.2	37.7	39.0	39.6	40.3	19.0	38.0	38.7	N/A	
(F)19YS(S)	381086	271268	29.4	23.9	23.3	20.3	21.4	20.2	19.8	19.8	22.5	23.7	26.8	24.5	23.0	23.4	N/A	
(F)25YS(S)	380990	271268	32.5	32.3	28.1	25.3	25.4	-	27.1	26.1	24.0	31.4	6.9	30.9	26.4	26.9	N/A	
HS(S)	380974	271268	34.2	34.8	36.2	29.9	-	23.2	30.2	28.0	27.7	34.7	34.3	29.2	31.1	31.8	N/A	
(F)FBS(S)	380933	271247	40.7	36.2	-	38.5	38.4	39.0	-	33.8	40.0	31.1	41.5	39.8	37.9	38.7	N/A	
A1	380989	271298	41.1	34.4	33.7	33.8	34.3	34.8	33.5	31.9	39.0	34.8	38.8	36.8	35.6	36.3	N/A	
KSW(S)	381072	271347	31.0	29.9	31.9	23.6	26.2	18.6	23.4	21.0	24.3	26.3	27.9	27.2	25.9	26.5	N/A	
HS4(S)	381169	271420	30.7	31.2	29.7	24.6	26.0	21.5	22.8	22.0	24.2	33.0	30.1	29.9	27.1	27.7	N/A	
BC14	380185	272978	24.4	21.6	17.9	14.3	13.7	-	12.7	12.1	15.4	20.5	21.1	19.1	17.5	17.9	N/A	
KID22(B)	373996	275464	28.9	26.6	23.3	21.8	22.2	17.3	18.7	17.2	23.4	24.9	25.2	28.5	23.2	23.6	N/A	
(F)WG42	378383	275328	35.8	32.2	29.6	27.8	29.5	26.2	27.1	26.6	35.7	30.8	33.8	31.9	30.6	31.2	N/A	
WG(B)	378465	275292	52.7	54.5	56.0	46.3	52.1	48.0	46.5	43.7	49.4	51.5	45.6	46.8	49.4	50.4	N/A	
LS(B)	378590	275302	29.5	27.9	23.9	22.2	-	19.5	22.5	19.6	24.8	26.8	30.9	25.2	24.8	25.3	N/A	
B1	378513	275317	29.6	28.8	22.4	23.6	21.9	20.1	21.6	20.0	27.9	28.6	29.8	29.9	25.3	25.9	N/A	

☒ All erroneous data has been removed from the NO₂ 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.
- ☒ Wyre Forest District Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.
NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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 the Wyre Forest District During 2024

No new significant sources or changes to existing sources of air pollution were identified in the Wyre Forest District during 2024. However, temporary changes in traffic flow patterns around Bewdley continued due to the ongoing closure of Bewdley Bridge, with a reopening expected in 2025. The impact of this closure on NO₂ concentrations within the Welch Gate AQMA is being monitored closely.

Additional Air Quality Works Undertaken by Wyre Forest District Council During 2024

- Three new real-time Zephyr monitoring sensors were installed to provide indicative coverage of NO₂, PM₁₀, and PM_{2.5} across Kidderminster, Stourport and Bewdley.
- A public facing air quality portal was launched in April 2024 to display real-time data from the zephyr network.
- A co-location study was continued at Wyre Forest House to support local bias adjustment of diffusion tube data.

QA/QC of Diffusion Tube Monitoring

The following UKAS accredited company provided Wyre Forest District Council with nitrogen dioxide diffusion tubes and analysis in 2022:

Gradko International Limited

St. Martins House

77 Wales Street

Winchester

SO23 0RH

diffusion@gradko.com

The 20% Triethanolamine (TEA) / De-ionised 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 2023 Diffusion Tube Monitoring Calendar, i.e. on or within ± 2 days of the specified date.

Diffusion Tube Annualisation

Annualisation of diffusion tubes is only required when the annual data capture is less than 75% but more than 25%. No diffusion tubes in the Wyre Forest District had a data capture below 75% so annualisation was not required for any tubes in the 2024 monitoring year.

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 with regard to 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/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Wyre Forest District Council have applied a local bias adjustment factor of 1.02 to the 2024 monitoring data. A summary of bias adjustment factors used by Wyre Forest District Council over the past five years is presented in Table C.1.

WRS has determined the appropriate local bias adjustment factor utilising the Diffusion Tube Data Processing Tool v5.3. The site used was the co-location study at Wyre Forest House, Kidderminster. The local bias adjustment factor has been used for this assessment as it is more conservative compared with the national bias adjustment factor (0.84, Defra published National Diffusion Tube Bias Adjustment Spreadsheet Version 04/25). This approach is consistent with previous two 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
2024	Local	-	1.02
2023	Local	-	0.97
2022	Local	-	0.97
2021	National	03/21	0.84
2020	National	03/20	0.78

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input
Periods used to calculate bias	12
Bias Factor A	1.02 (0.97 - 1.08)
Bias Factor B	-2% (-7% - 3%)
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	11.8
Mean CV (Precision)	2.8%
Automatic Mean ($\mu\text{g}/\text{m}^3$)	12.1
Data Capture	97%
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	12 (11 - 13)

Notes:

A single local bias adjustment factor has been used to bias adjust the 2024 diffusion tube results.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1. In 2024, Wyre Forest had no tubes that required a fall off with distance calculation.

QA/QC of Automatic Monitoring

Data management of the automatic monitors at Kidderminster Stourport Road (WFH) and the Zephyr analyser in Horsefair, Kidderminster are undertaken by Air Quality Data Management (AQDM) on behalf of Worcestershire Regulatory Services.

Local Site Operator (LSO) duties at Kidderminster Stourport Road (WFH) are carried out by the Technical Pollution team at Worcestershire Regulatory Services. Calibration is carried out monthly, audit/servicing is carried out bi-annually. The annual data capture was 99.6%. The 2024 data has been fully ratified and is available on [Air Quality in the United Kingdom \(ukairquality.net\)](https://ukairquality.net)

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of PM₁₀/PM_{2.5} monitor utilised within Wyre Forest District does not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within Wyre Forest District Council District recorded data capture of greater than 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.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within Wyre Forest District Council required distance correction during 2024.

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

Figure D.1 – Map of Horsefair/Coventry Street AQMA and Monitoring Locations

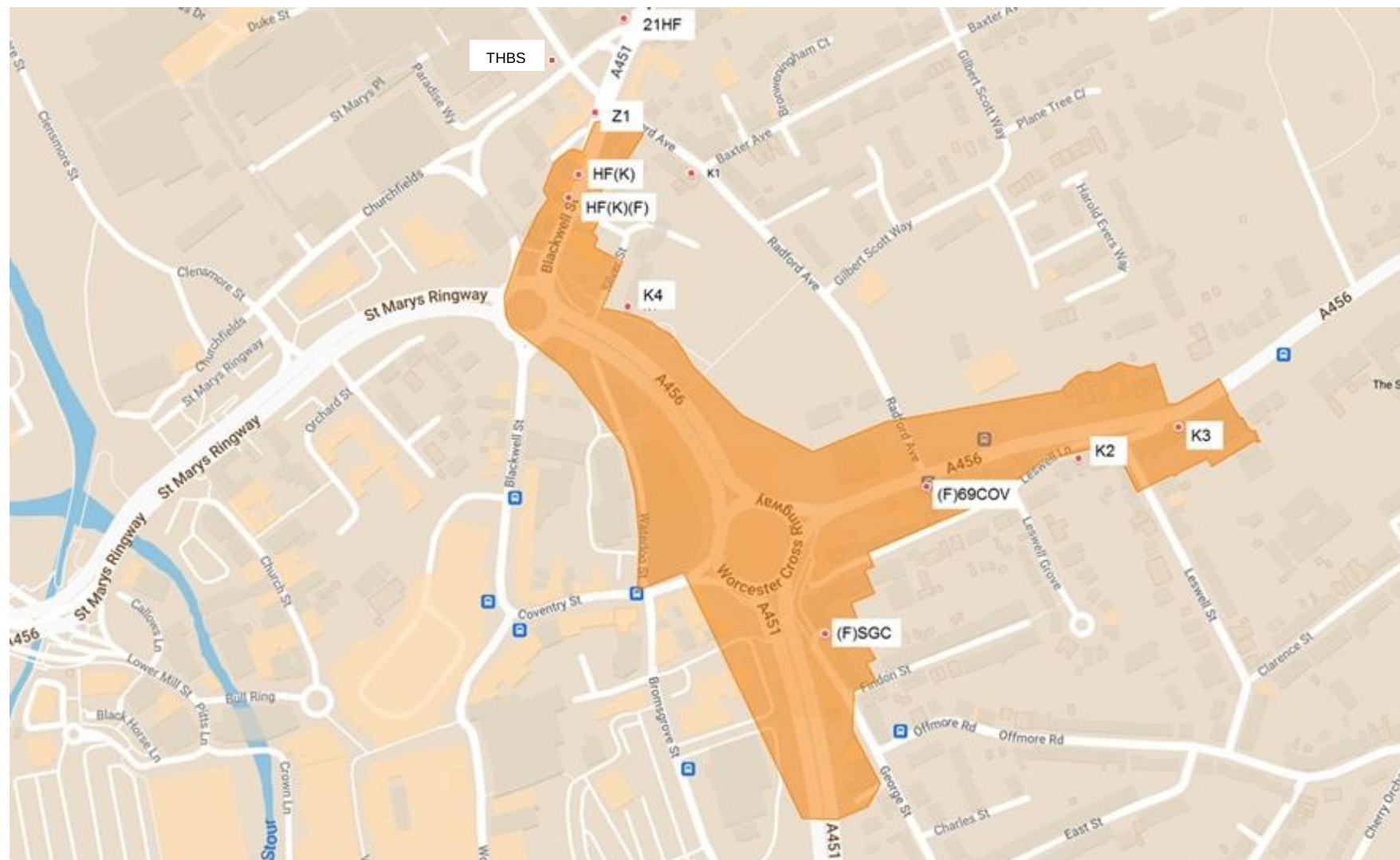


Figure D.2 – Map of Welch Gate AQMA and Monitoring Locations

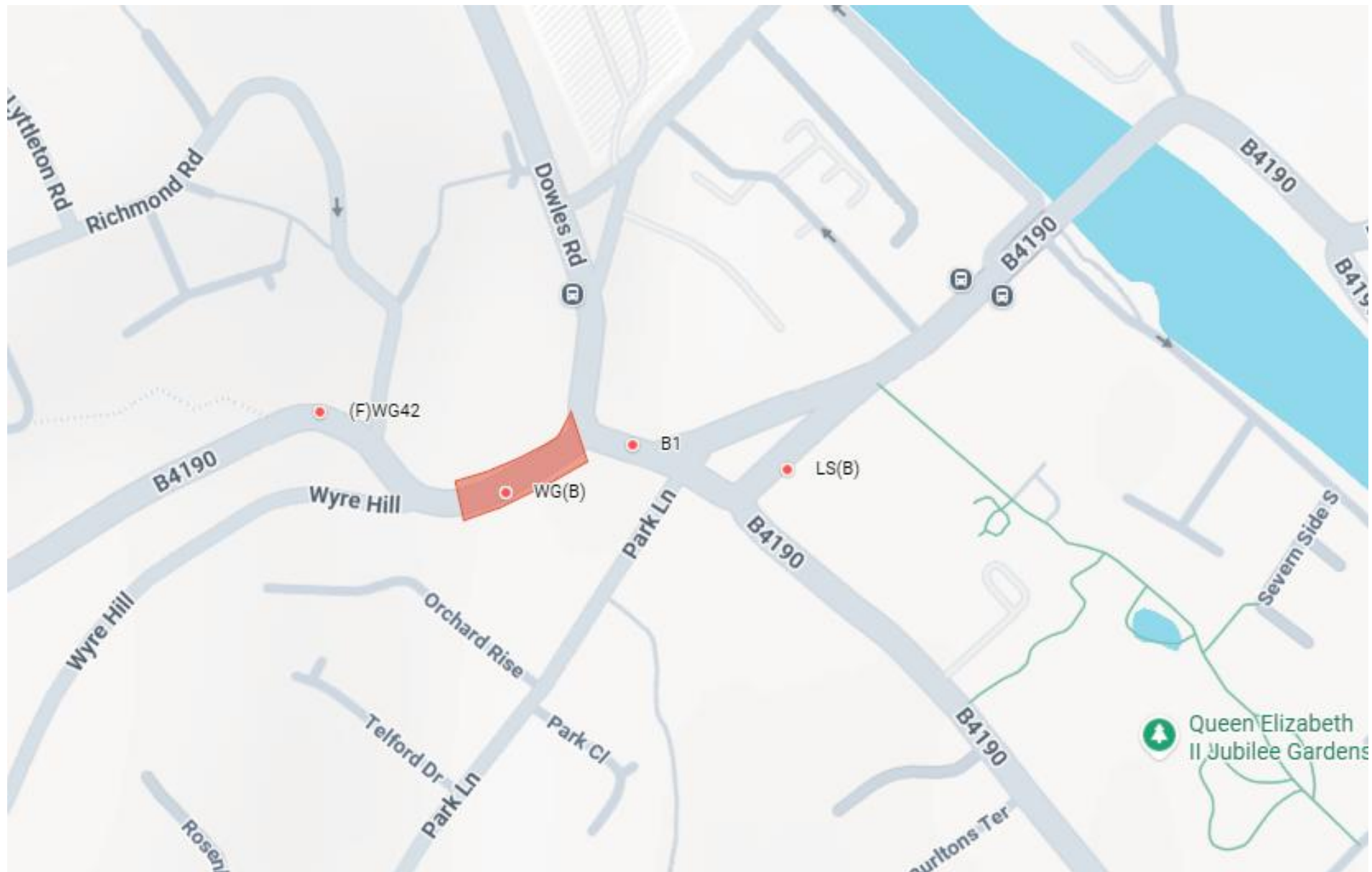


Figure D.3 – Map of Chester Road North (A449). East of Kidderminster Town Centre Monitoring Locations

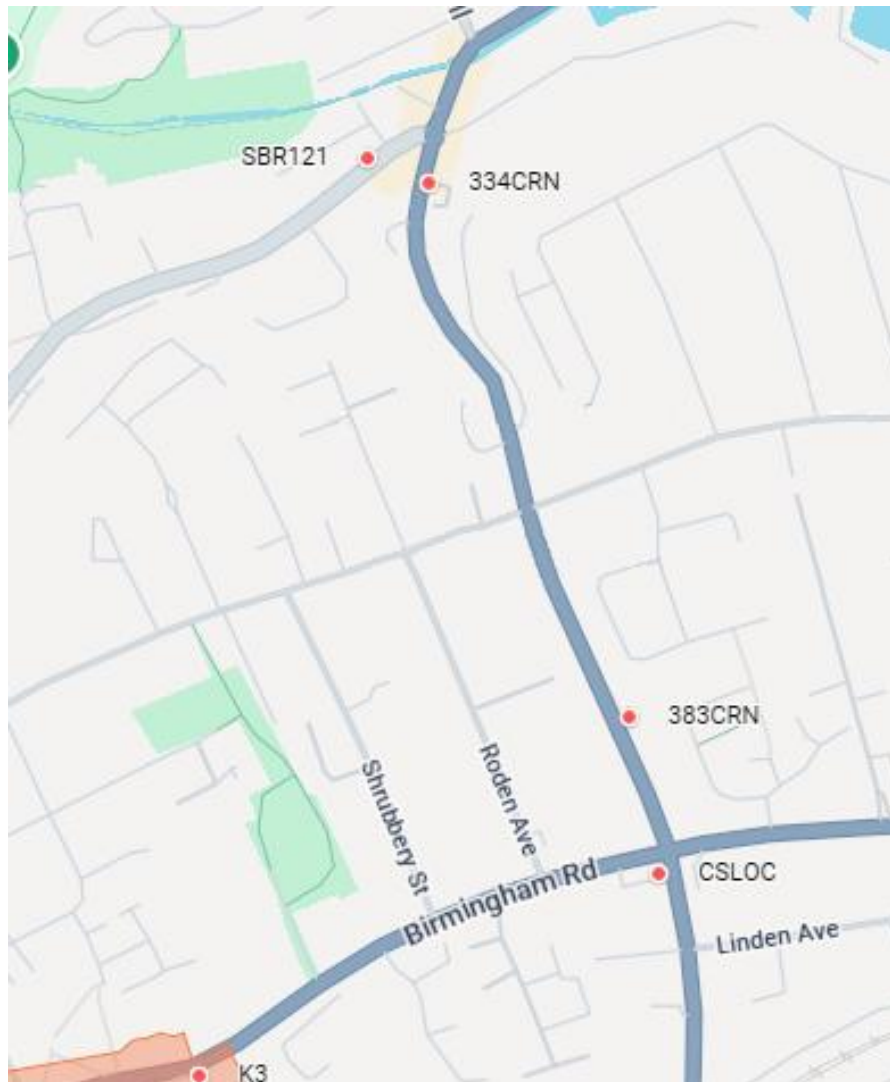


Figure D.4 – Map of Comberton Road, Comberton Hill and Chester Road North and South (A449). East of Kidderminster Town Centre Monitoring Locations

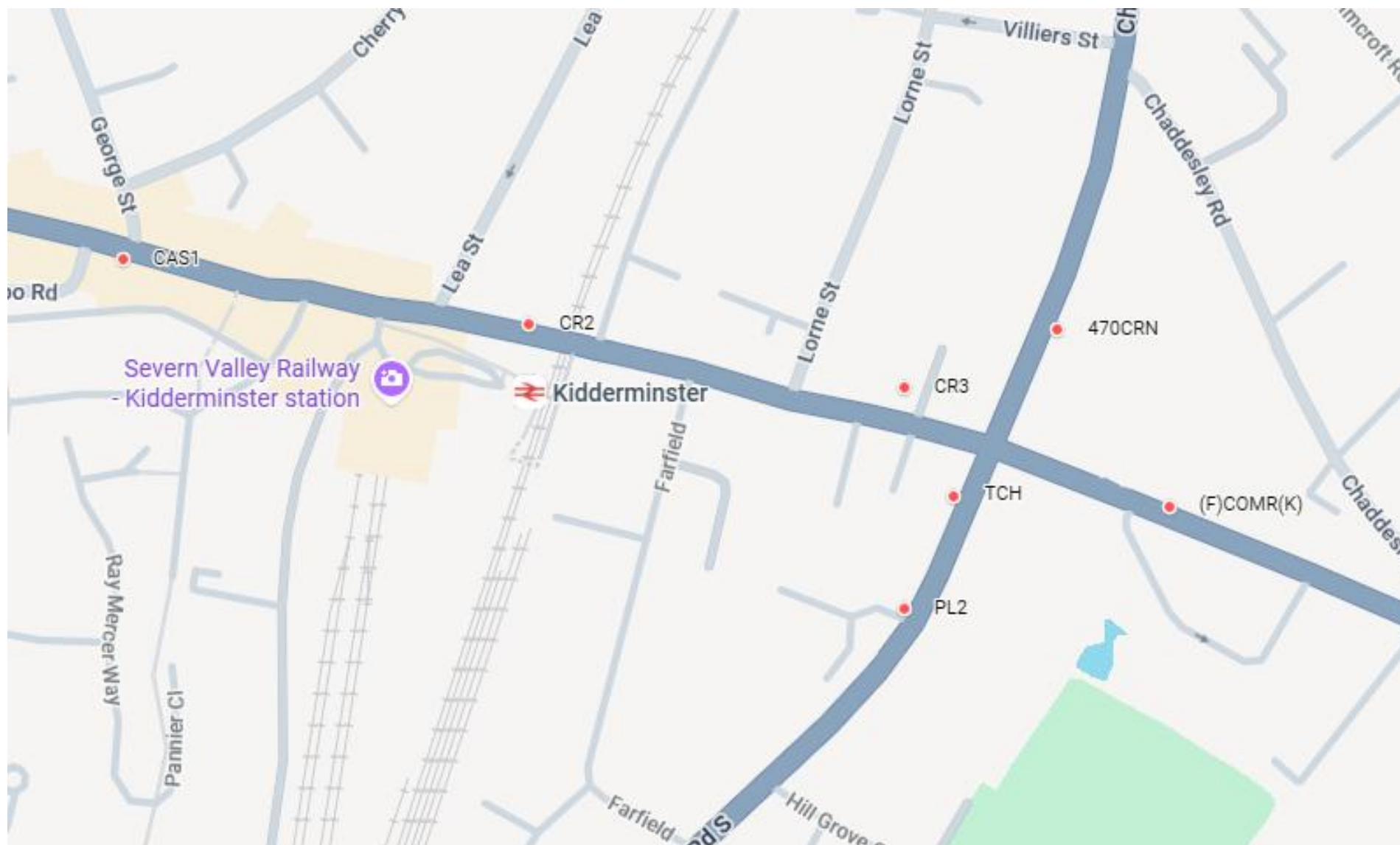


Figure D.5 – Map of Chester Road North South (A449) and Urban Background Monitoring Locations

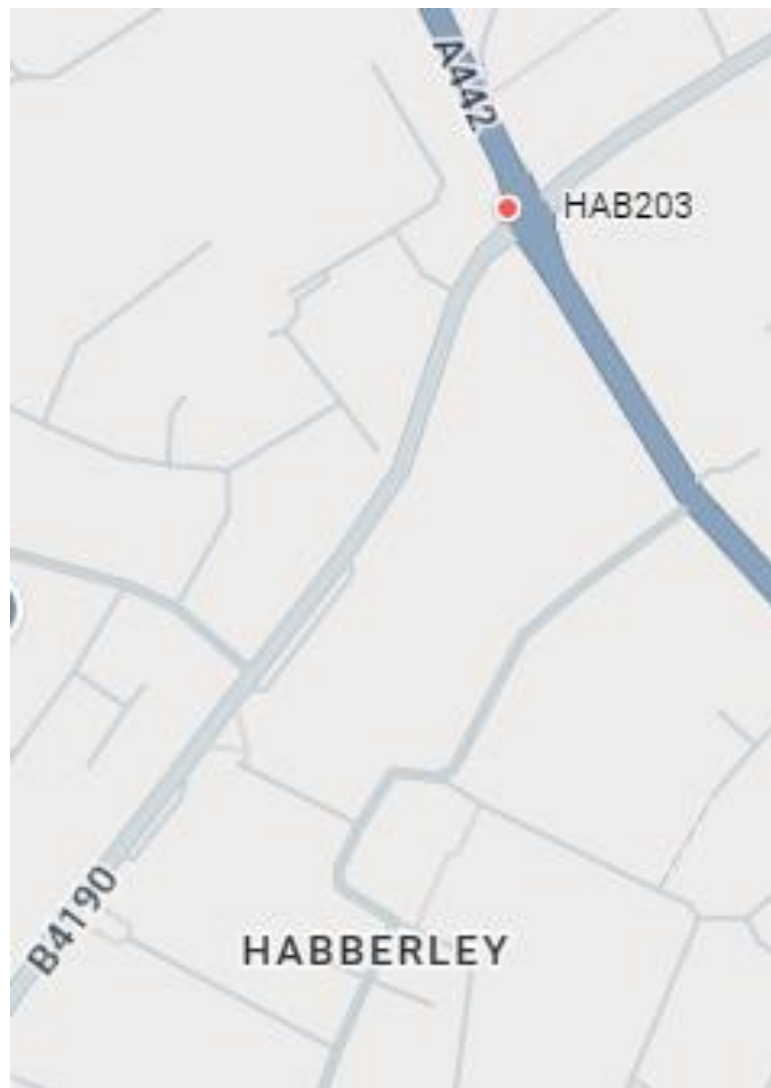


Figure D.6 – Map of West of Kidderminster Town Centre Monitoring Locations



Figure D.7 – Map of South of Kidderminster Town Centre Monitoring Locations

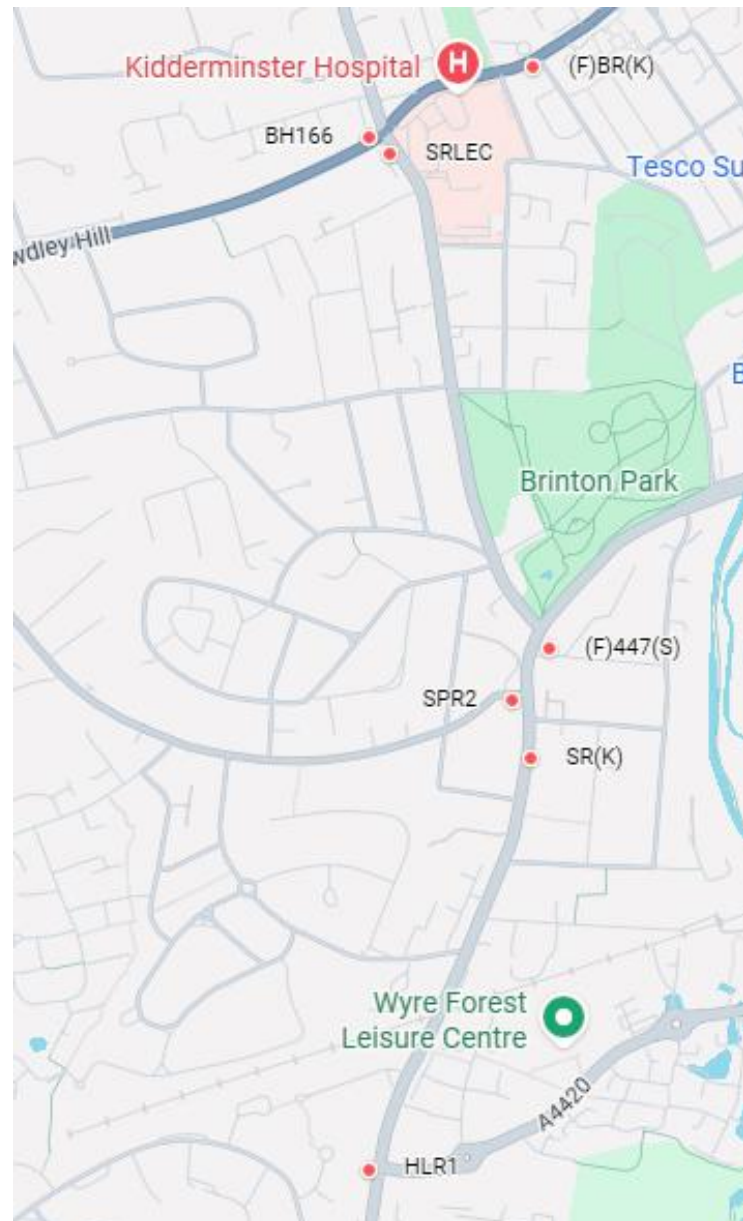


Figure D.8 – Map of Burlish Crossing and Wyre Forest House Monitoring Locations

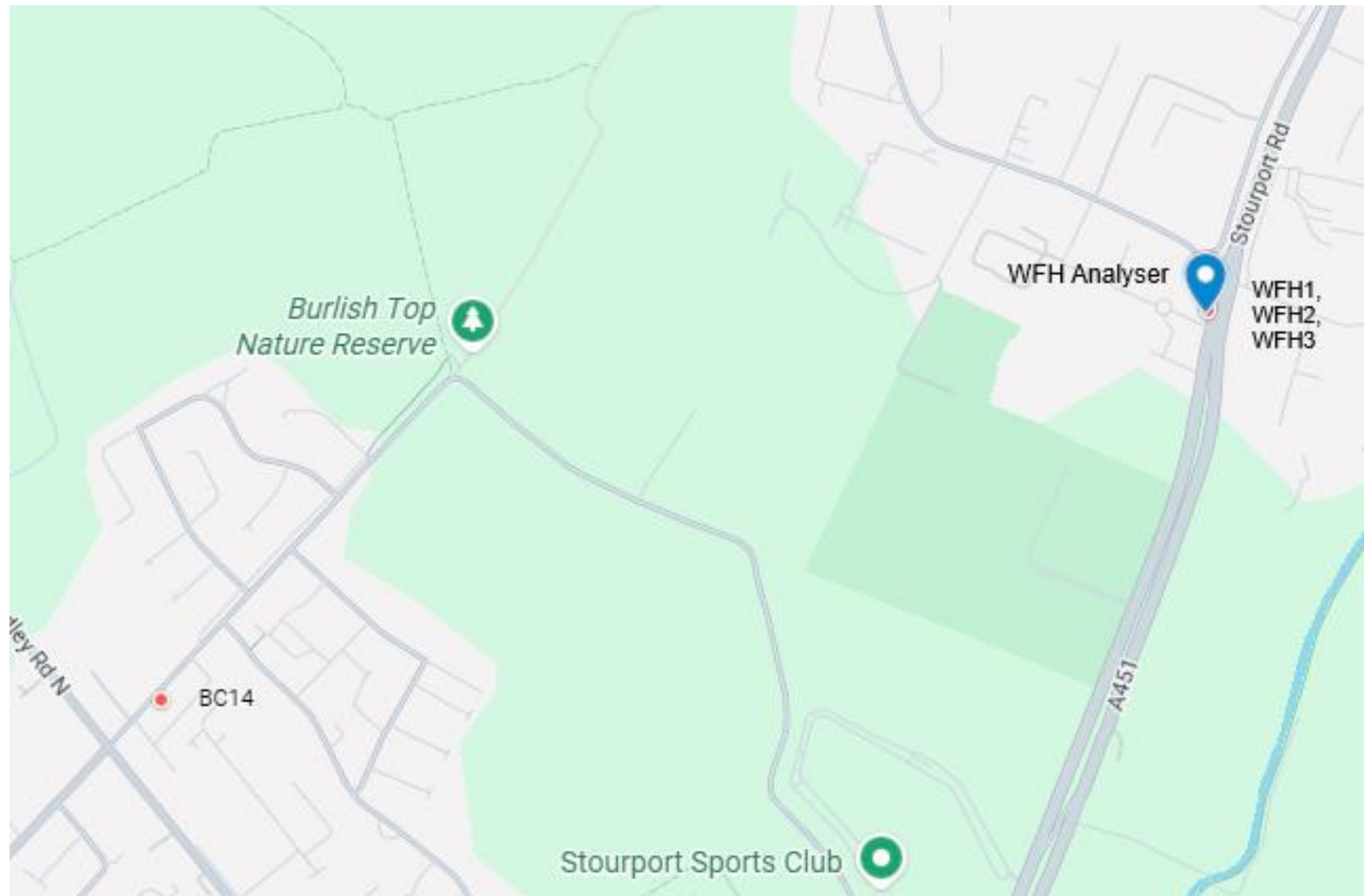


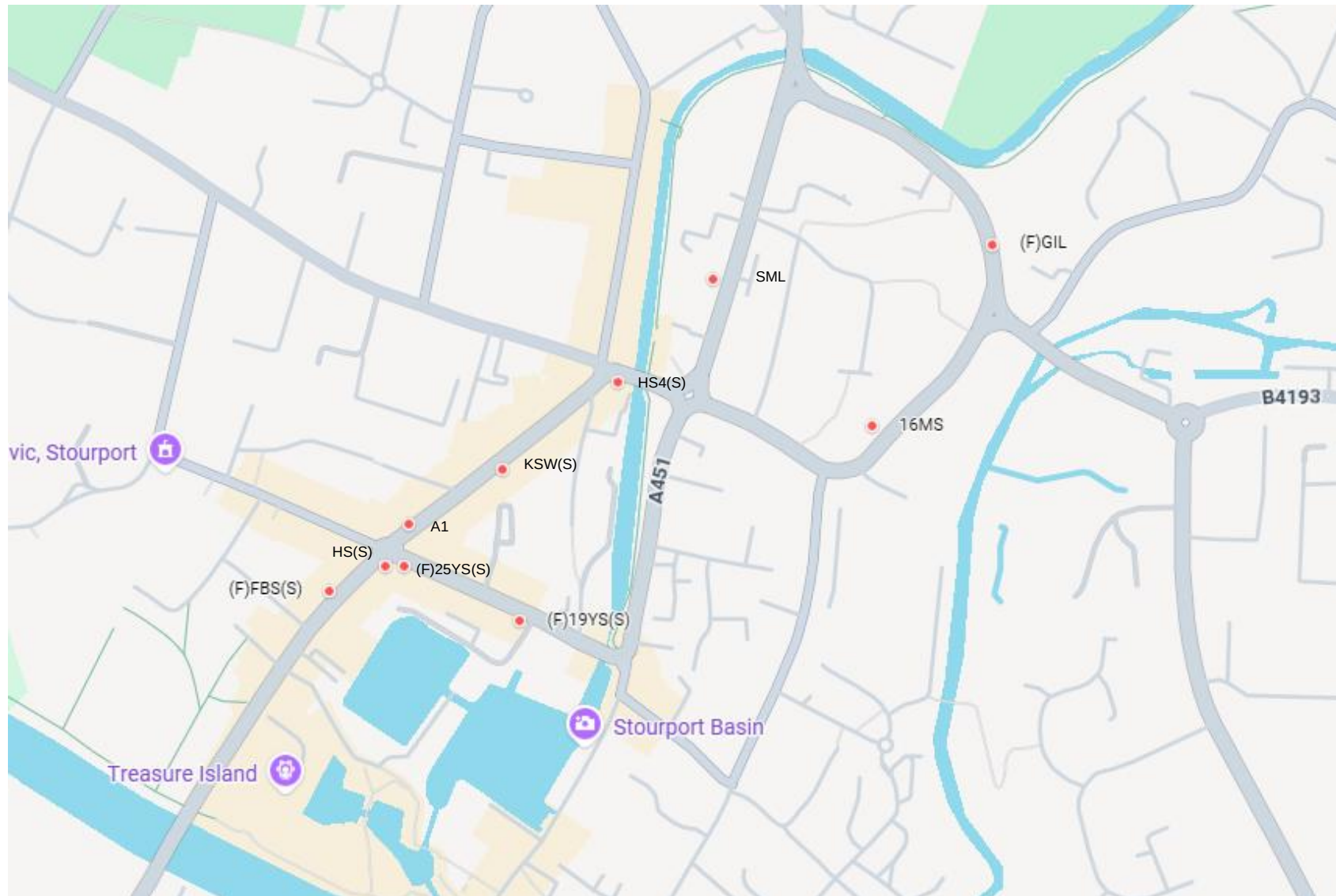
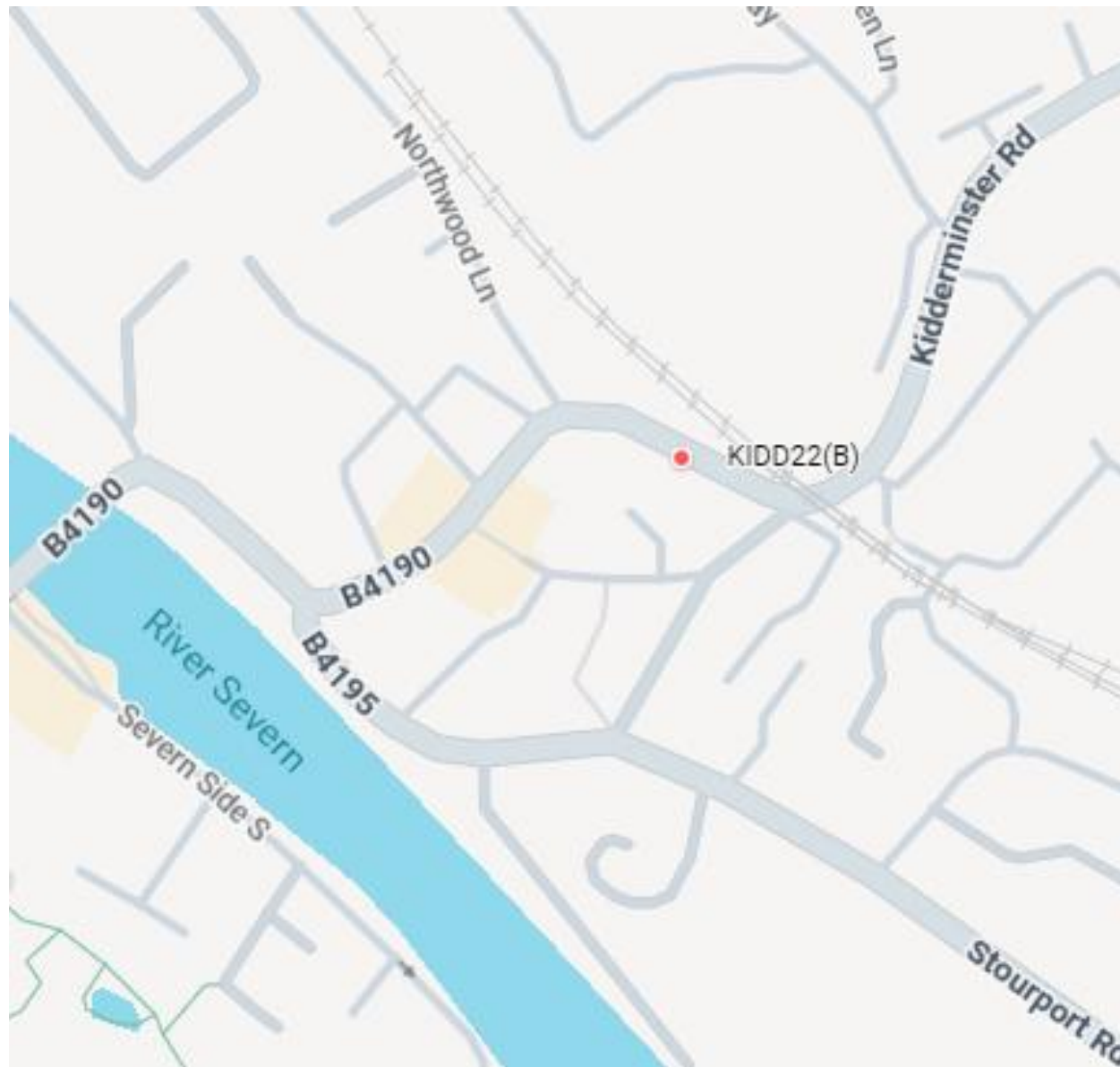
Figure D.9 – Map of Stourport-on-Severn Monitoring Locations

Figure D.10 – Map of East of Bewdley Town Centre Monitoring Location



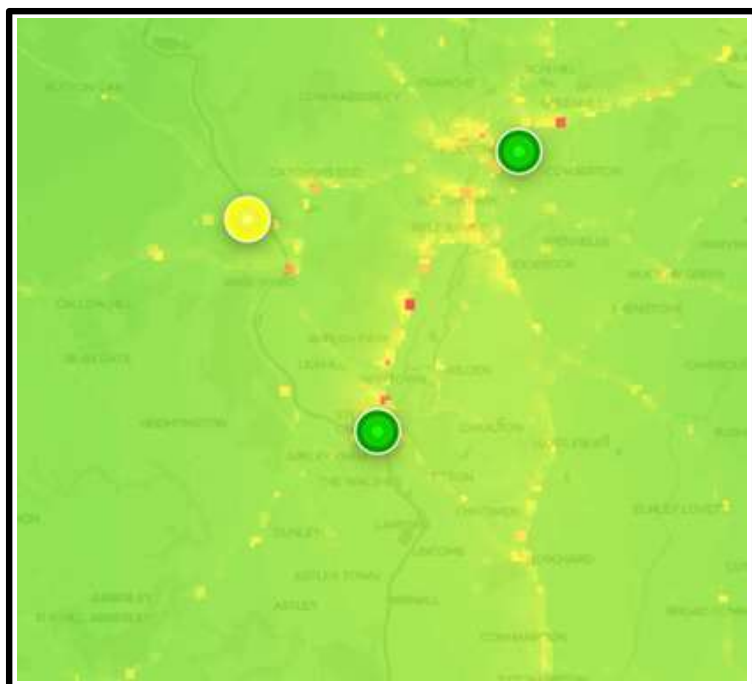
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁶

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

⁶ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Low-Cost Air Quality Sensors Measurements 2024: Wyre Forest



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

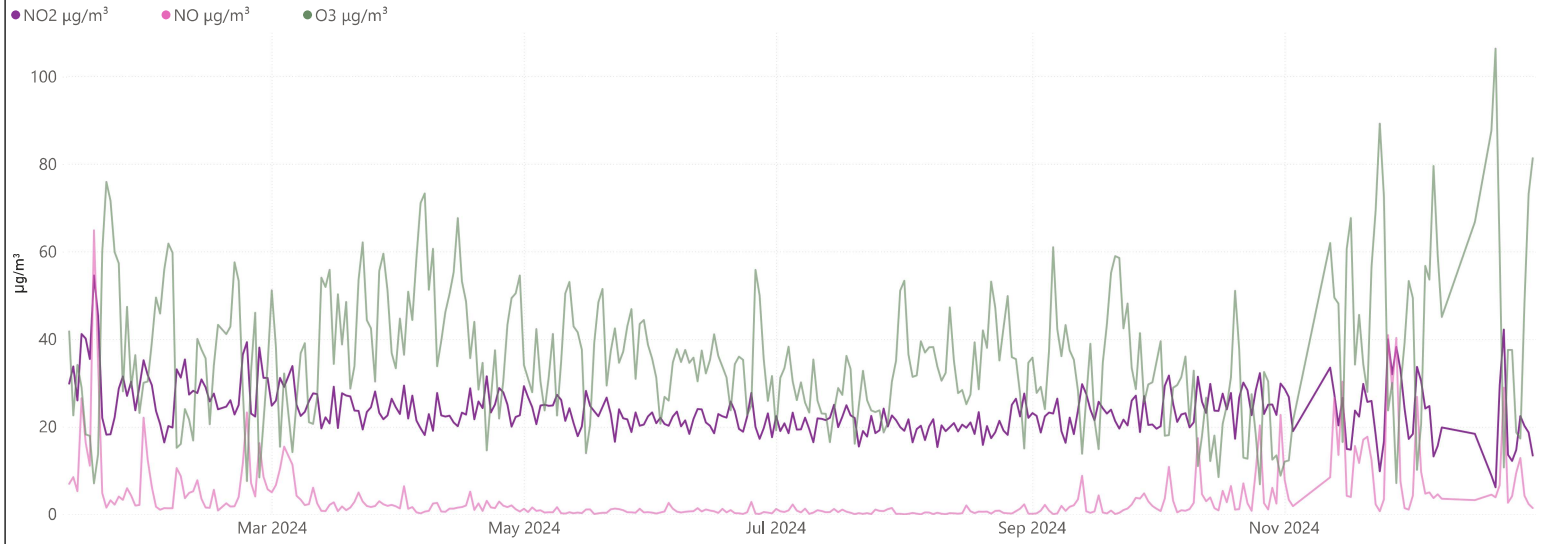
Zephyrs are one of the available low-cost sensors that have been certified as suitable for indicative monitoring for particulate matter within the UK using the Environment Agency's Indicative instrument certification scheme (MCERTS).

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. However, Defra recognise there is growing interest in using these sensors among local authorities and are looking into producing a new FAQ on the use of low-cost sensors to make the position clearer.

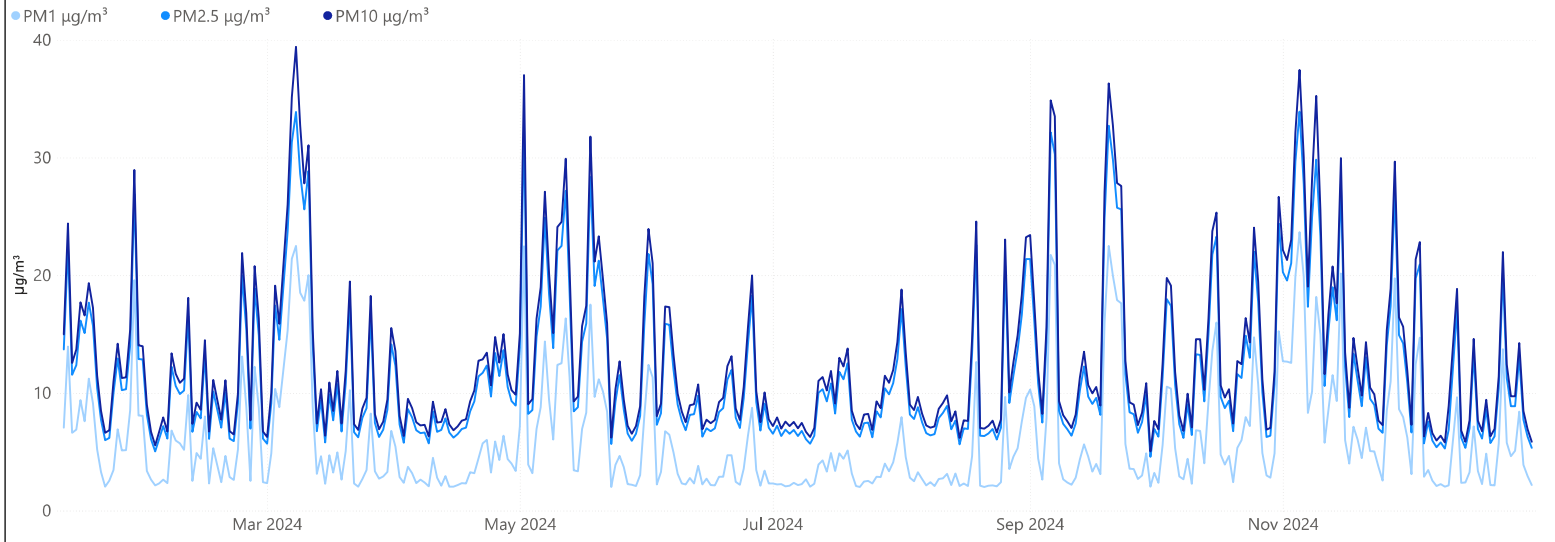
Horsefair - Kidderminster

Worcestershire
Regulatory Services
Supporting and protecting you

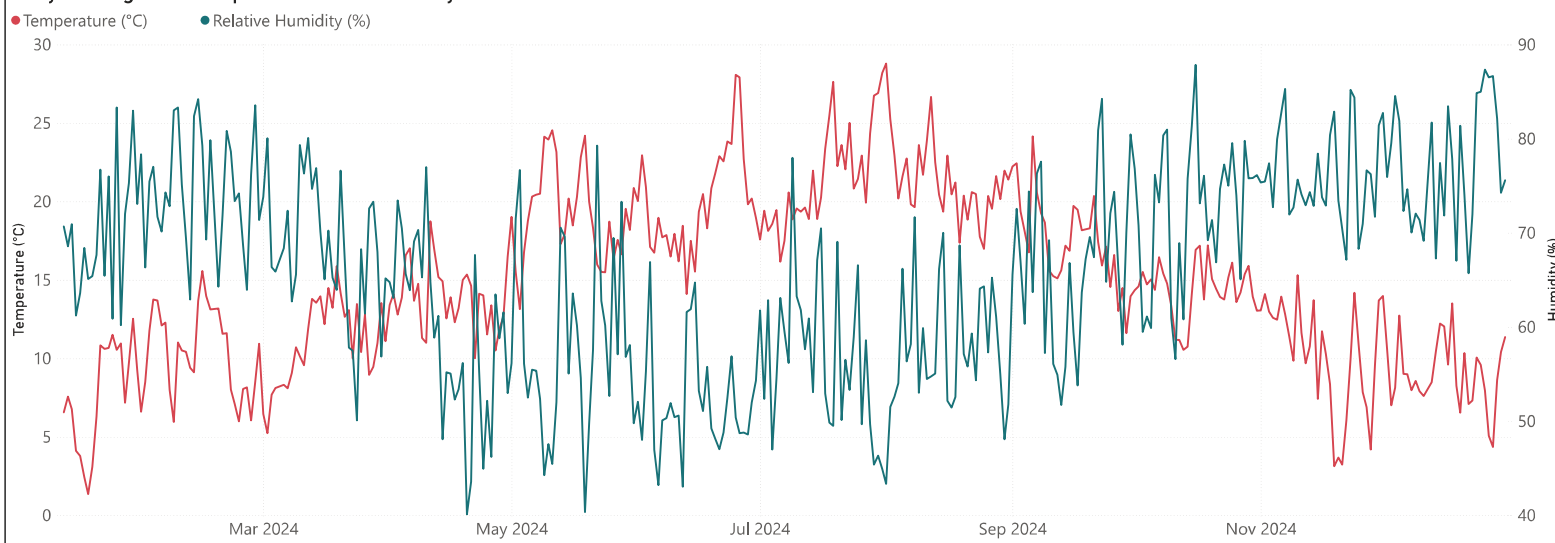
Daily Averages of NO₂, NO and O₃



Daily Averages of PM₁, PM_{2.5} and PM₁₀



Daily Averages of Temperature and Humidity



Yearly Averages

24.46

Average NO₂ µg/m³

4.38

Average NO µg/m³

37.85

Average O₃ µg/m³

15.05

Average Temperature (°C)

5.88

Average PM₁ µg/m³

11.60

Average PM_{2.5} µg/m³

12.75

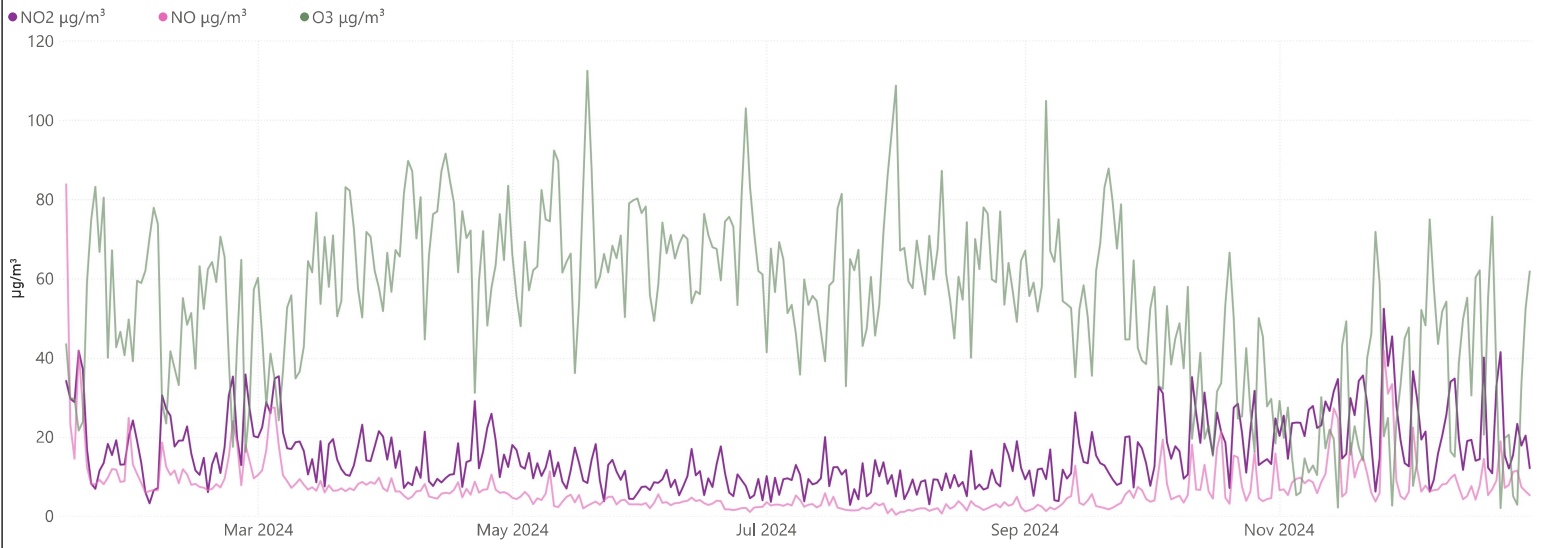
Average PM₁₀ µg/m³

65.34

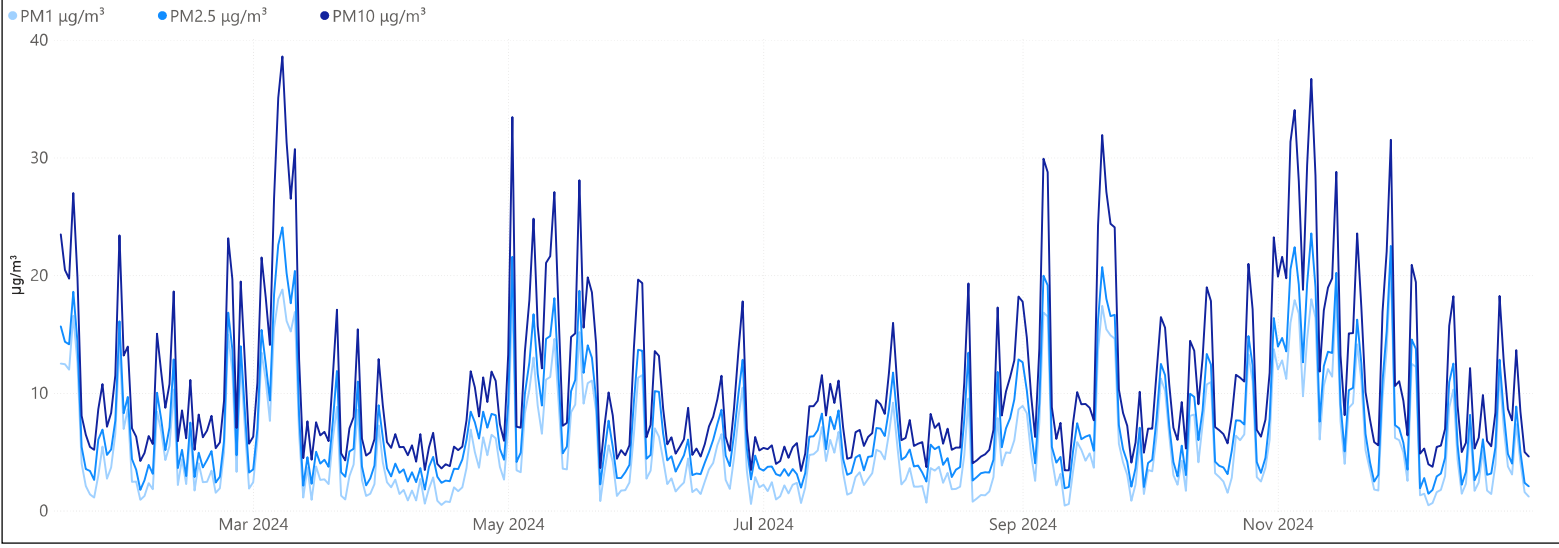
Average Relative Humidity (%)

Lea Street - Kidderminster

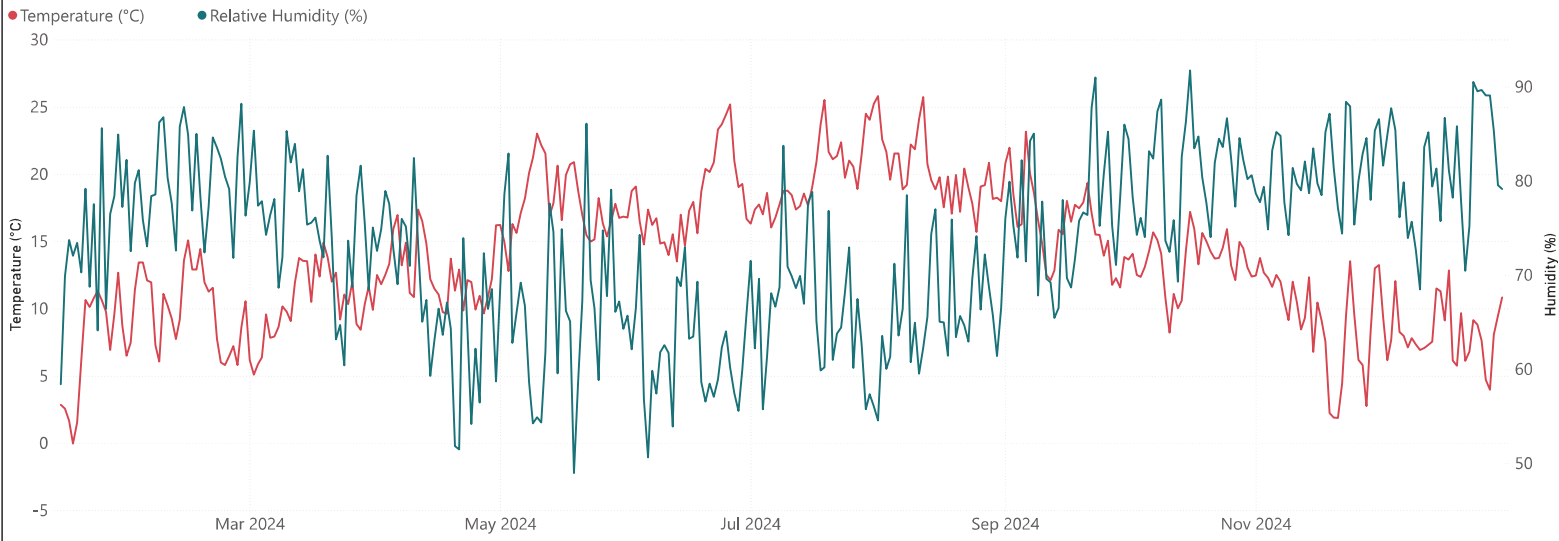
Daily Averages of NO2, NO and O3



Daily Averages of PM1, PM2.5 and PM10



Daily Averages of Temperature and Humidity



Yearly Averages

15.49

Average NO2 $\mu\text{g}/\text{m}^3$

7.14

Average NO $\mu\text{g}/\text{m}^3$

53.96

Average O3 $\mu\text{g}/\text{m}^3$

13.89

Average Temperature ($^{\circ}\text{C}$)

5.61

Average PM1 $\mu\text{g}/\text{m}^3$

7.37

Average PM2.5 $\mu\text{g}/\text{m}^3$

10.98

Average PM10 $\mu\text{g}/\text{m}^3$

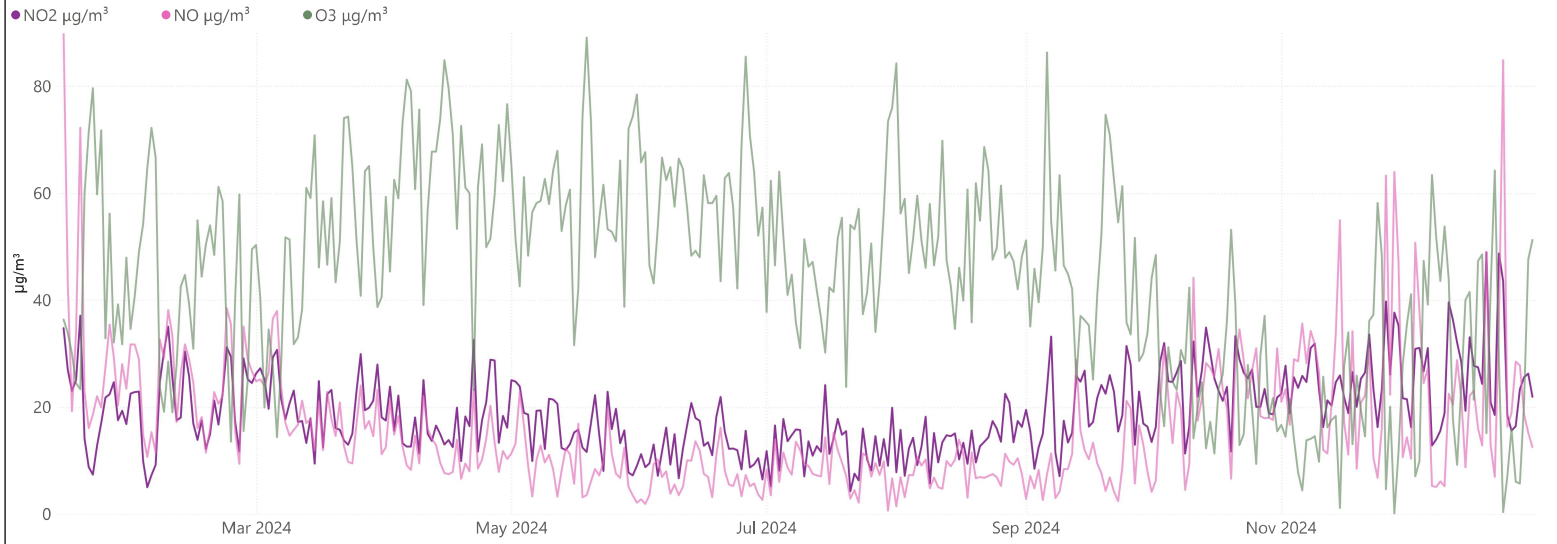
73.10

Average Relative Humidity (%)

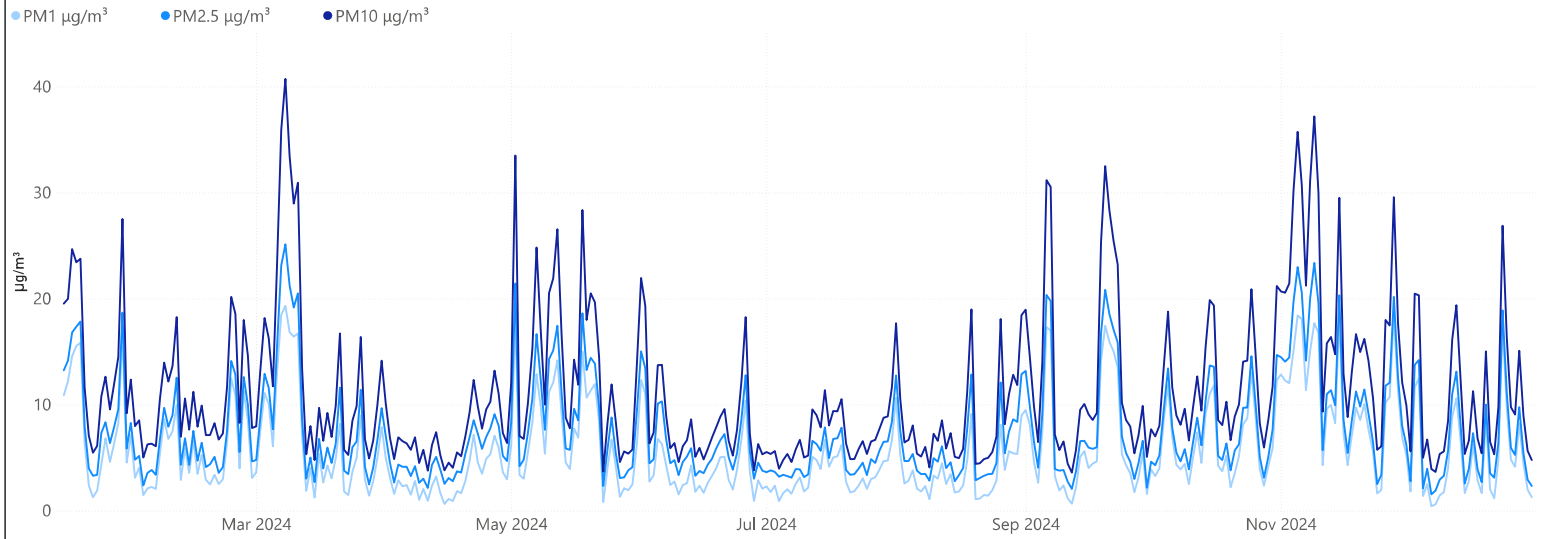
Load Street - Bewdley

Worcestershire
Regulatory Services
Supporting and protecting you

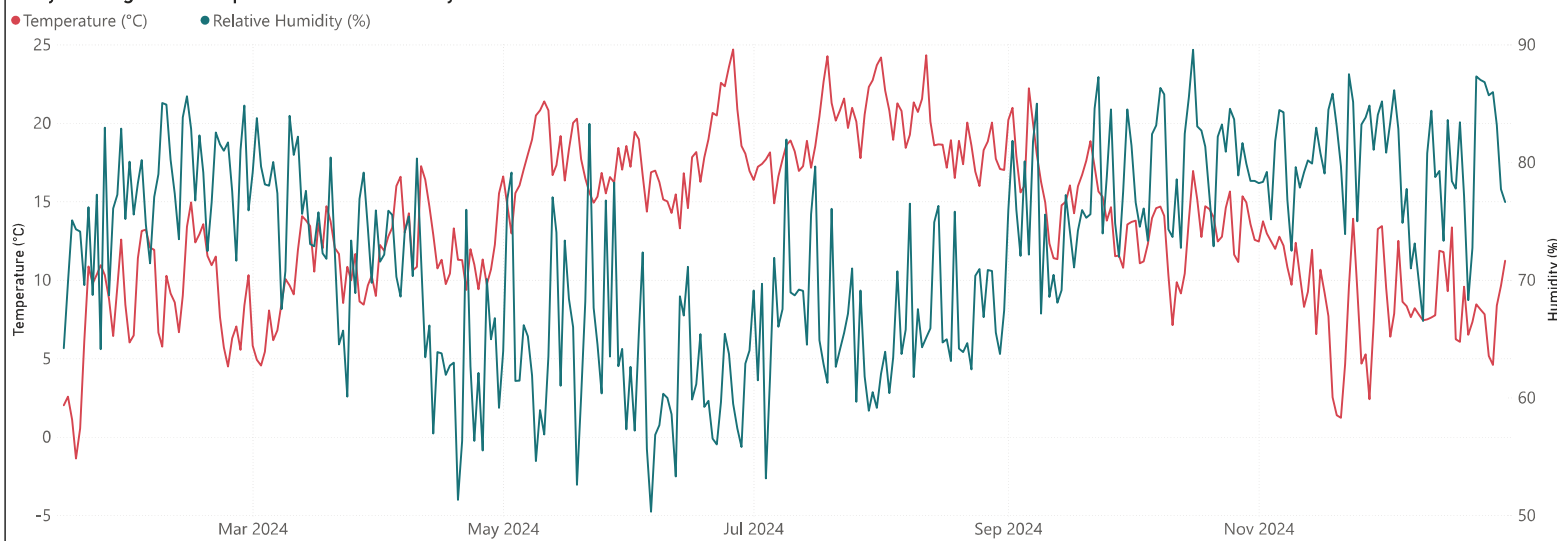
Daily Averages of NO2, NO and O3



Daily Averages of PM1, PM2.5 and PM10



Daily Averages of Temperature and Humidity



Yearly Averages

19.05

Average NO2 $\mu\text{g}/\text{m}^3$

16.06

Average NO $\mu\text{g}/\text{m}^3$

45.05

Average O3 $\mu\text{g}/\text{m}^3$

13.89

Average Temperature ($^{\circ}\text{C}$)

5.82

Average PM1 $\mu\text{g}/\text{m}^3$

7.60

Average PM2.5 $\mu\text{g}/\text{m}^3$

11.40

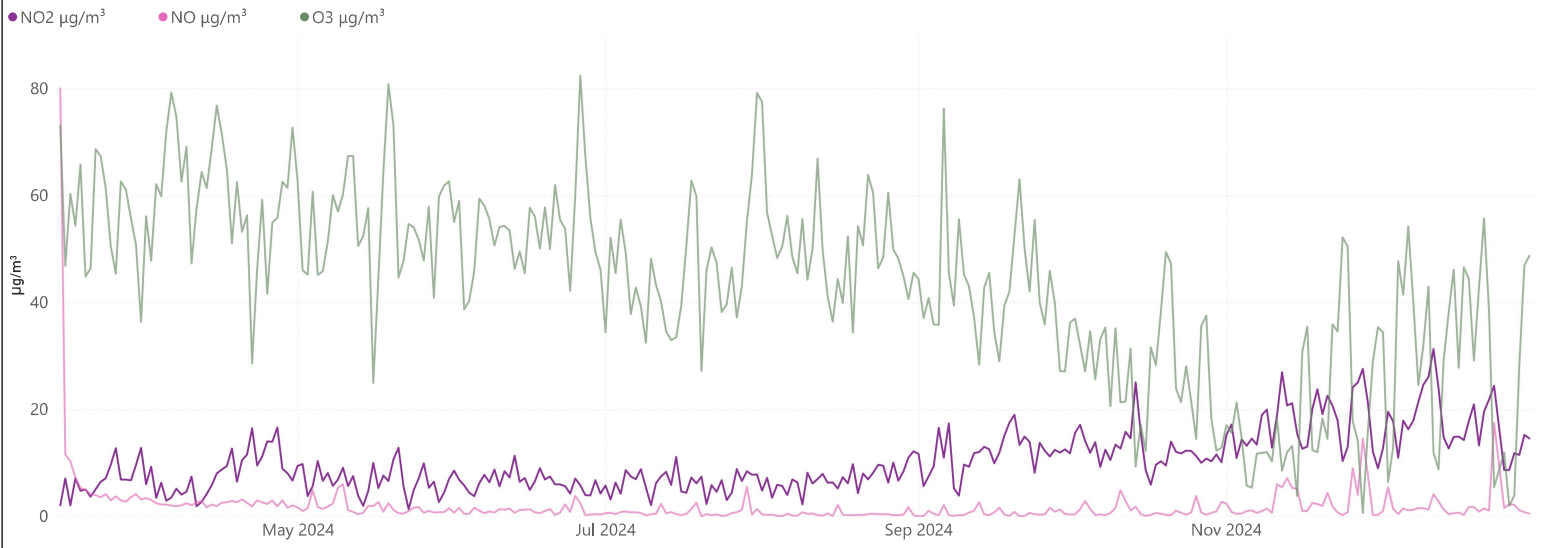
Average PM10 $\mu\text{g}/\text{m}^3$

72.51

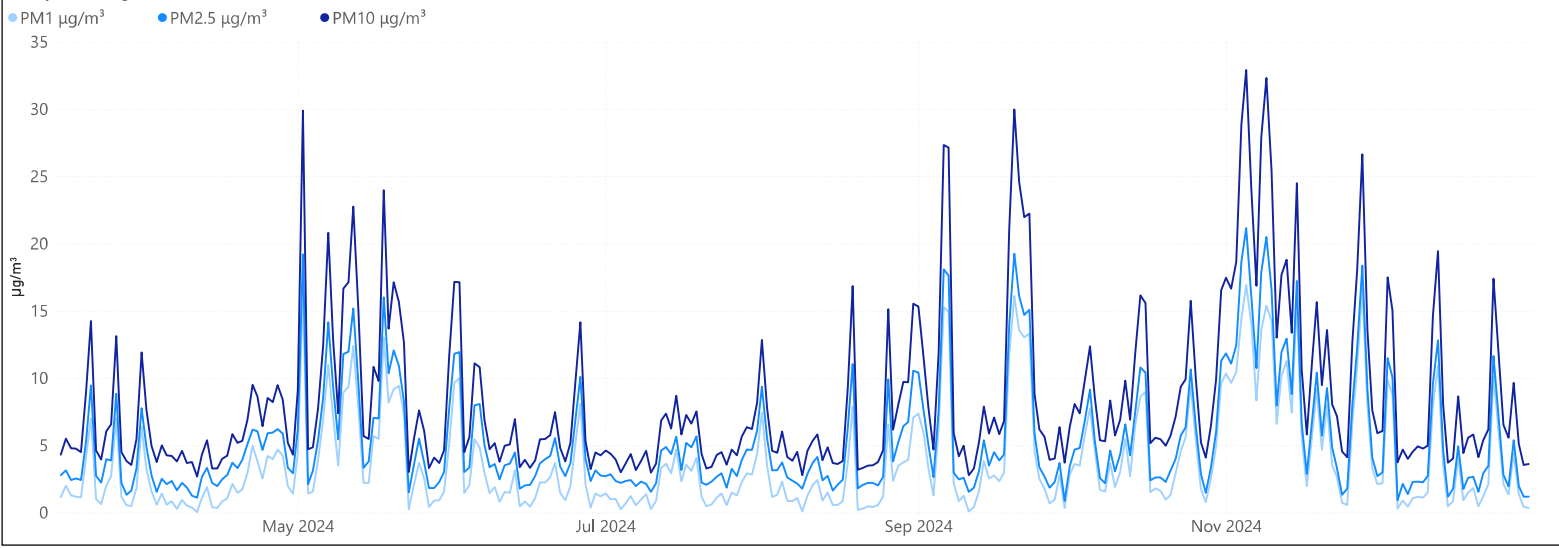
Average Relative Humidity (%)

Mart Lane - Stourport

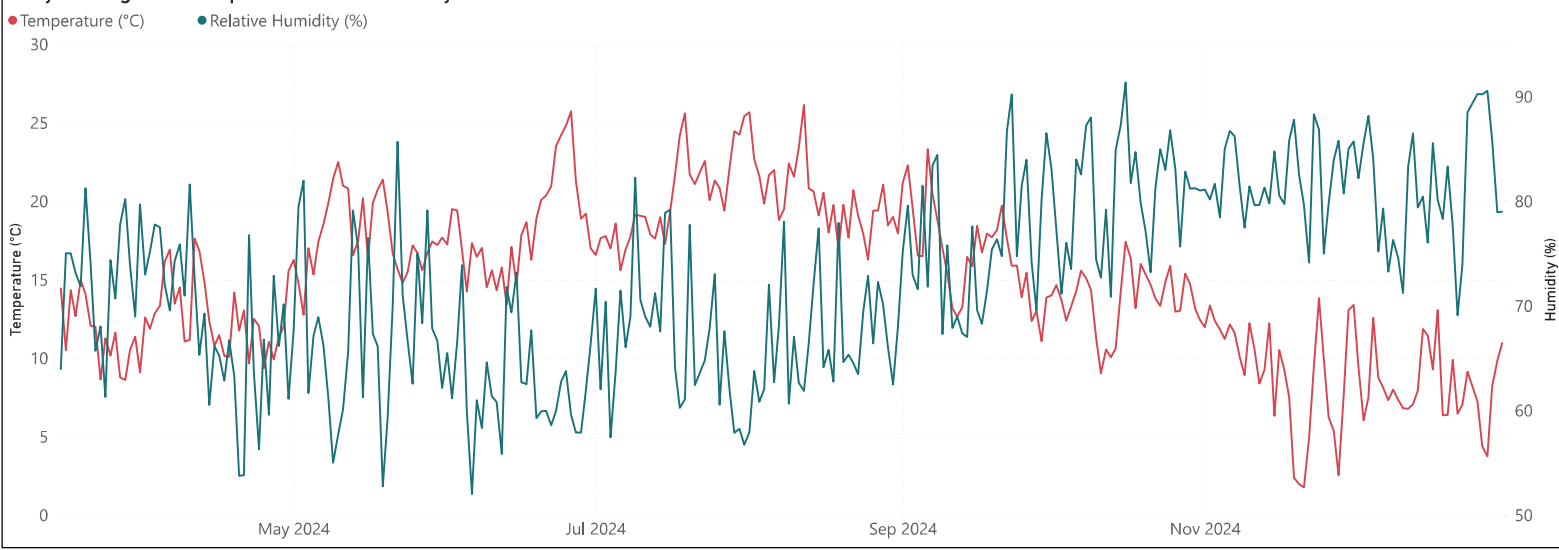
Daily Averages of NO2, NO and O3



Daily Averages of PM1, PM2.5 and PM10



Daily Averages of Temperature and Humidity



Yearly Averages

10.20

Average NO2 $\mu\text{g}/\text{m}^3$

1.83

Average NO $\mu\text{g}/\text{m}^3$

43.47

Average O3 $\mu\text{g}/\text{m}^3$

15.05

Average Temperature ($^{\circ}\text{C}$)

3.85

Average PM1 $\mu\text{g}/\text{m}^3$

5.42

Average PM2.5 $\mu\text{g}/\text{m}^3$

8.53

Average PM10 $\mu\text{g}/\text{m}^3$

72.46

Average Relative Humidity (%)

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
AURN	Automatic Urban and Rural Network (Defra) - UK's largest automatic monitoring network and is the main network used for compliance reporting against the Ambient Air Quality Directives (by Gov't)
COPD	Chronic obstructive pulmonary disease - the name for a group of lung conditions that cause breathing difficulties that includes emphysema and chronic bronchitis
Defra	Department for Environment, Food and Rural Affairs
DoPH	Director of Public Health
EV	Electric Vehicle
HGV	Heavy Goods Vehicle
HoW College	Heart of Worcestershire College
LAQM	Local Air Quality Management
LAQM.TG(22)	Local Air Quality Management Technical Guidance 2022 - Defra's statutory guidance for local authorities monitoring and reporting on air quality
LEVI	Local Electric Vehicle Infrastructure
LSO	Local Site Operator
MCERTS	The Environment Agency's Monitoring Certification Scheme
NHS	National Health Service
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

Abbreviation	Description
SO ₂	Sulphur Dioxide
UoW	University of Worcester
WCC	Worcestershire County Council
WFDC	Wyre Forest District Council
WRS	Worcestershire Regulatory Services
Zephyr	A type of low-cost, real-time air quality sensor used for indicative monitoring

References

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- Wyre Forest District Council Air Quality Action Plan (2025-2030)
- Public Health Outcomes Framework