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: July, 2025

Information	Horsham District Council Details
Local Authority Officer	Isabelle Carter
Department	Environmental Health and Licencing
Address	Horsham District Council, Albery House, Springfield Road, Horsham, RH12 2GB
Telephone	01403 215609
E-mail	ehl@horsham.gov.uk
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Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Horsham District Council with the support and agreement of the following officers and departments:

- Sussex Air
- Horsham District Council Sustainability Officer
- West Sussex County Council Transport Planning and Policy Senior Planner
- West Sussex County Council Public Health Health Protection Team

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

- Horsham District Council, Albery House, Springfield Road, Horsham, RH12 2GB
- 01403 215609
- ehl@horsham.gov.uk

Executive Summary: Air Quality in Our Area

Air Quality in Horsham 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 lung cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

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

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

Table ES 1 - Description of Key Pollutants

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

Horsham District is primarily agricultural in character and does not incorporate a significant heavy industrial base or major transport hubs. Air quality in the majority of Horsham district is good however there are a few areas where elevated concentrations of pollutants occur.

The main source of air pollution locally is road traffic emissions from major roads, notably the A24, which intersects the district north – south; A264 to the north of Horsham; A272 and A281 at Cowfold; and A283 at Storrington. Two Air Quality Management Areas (AQMAs) have been declared in the district, in the village of Cowfold (Cowfold AQMA) and

town centre of Storrington (Storrington AQMA), both for the exceedances of the annual mean objective for nitrogen dioxide (NO_2).

Air Quality Action Plans (AQAPs) were prepared for both AQMAs; the Storrington AQAP was submitted to Defra in 2012 and the Cowfold AQAP in 2013 and both were updated in 2020. The preparation of a district-wide AQAP is ongoing and will be published following a public consultation. The new AQAP will present and discuss the last ten years' worth of monitoring data and modelling results for future NO2 concentrations in the AQMAs and will contain a range of schemes and measures that Horsham District Council (HDC) wishes to take forward. More information about the AQMAs can be found on HDC's Air Quality webpage.

Nitrogen dioxide (NO_2)

- Urban background and roadside sites have shown an improvement in the last five years. This is believed to have been driven largely by general improvements in vehicle emissions standards but also to some extent by the implemented local traffic management measures, although it is difficult to isolate the impacts of individual interventions.
- There were no days of Moderate or higher NO_2 air pollution in Cowfold, Horsham, Storrington in 2024.
- WHO recommended 2021 Air quality guidelines level for NO_2 annual mean is 10 µg/m3. Based on this guideline all sites in Horsham District, except for urban background and two roadside sites (Faygate 1 and Horsham 13), were exceeding WHO guidelines in 2024.
- In 2024, as in previous years, NO_2 pollution tended to peak in the rush hours during weekdays. Concentrations at continuous monitoring roadside sites in 2024 during the working week were similar to, but slightly higher than, concentrations on the weekend.
- Monitoring within Storrington AQMA showed an average decrease of 12.1% when compared to 2023. And, for the first time since monitoring started, there were no sites with concentrations within 10% of the annual mean NO_2 objective.
- Monitoring within Cowfold AQMA showed an average decrease of 10.4% when compared to 2023. The AQMA hasn't recorded any sites with concentrations within 10% of the annual mean NO_2 objective since 2020, therefore the council is proposing to revoke the AQMA, more details in Appendix E: Cowfold AQMA Revocation Proposal.

Particulate matter (PM_{10}/$PM_{2.5}$)

- Storrington was involved in a research project and began monitoring $PM_{2.5}$ and PM_{10} in 2022. In June 2024, the site was added to the AURN.
- A new $PM_{2.5}$ analyser was installed in Cowfold.
- In 2024, annual mean concentrations of PM_{10} showed a decrease of 21.5% at Park Way and a decrease of 8% at Storrington AURN from 2023 levels.
- In 2024 annual mean concentrations of $PM_{2.5}$ at Storrington AURN showed no change from 2023 levels.
- Horsham Parkway registered one day of 'Moderate' PM_{10} pollution in 2024.
- There were no days of Moderate or higher $PM_{2.5}$ pollution in Storrington in 2024.
- In 2024, the highest concentrations of PM at Storrington AURN tended to occur during the winter months, with a peak in November, recording 11.3 µg/m^3 for $PM_{2.5}$ and 18.9 µg/m^3 for PM_{10}. This trend was also seen at Horsham Park Way, with the highest PM_{10} concentration in January, recorded at 24.7 µg/m^3.
- Domestic combustion of wood and coal in stoves and open fires is a large contributor to emissions of particulate matter both in the UK, and across Europe, and is a large contributor towards elevated concentrations in winter months and during the evenings.
- Automatic monitoring at the Horsham Park Way and Storrington AURN sites indicates that both the annual mean and 24-hour UK objective were complied with in 2024 and all the previous years of monitoring. Horsham Park Way PM_{10} concentrations have been following a relatively constant trend in the past five years.
- The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 sets the target to ensure that the annual mean concentration of $PM_{2.5}$ in ambient air is equal to or less than 10 micrograms per cubic metre (µg/m^3) by 31st December 2040. The 2040 target was achieved by Storrington AURN in 2024.
- WHO recommended 2021 Air quality guidelines level for $PM_{2.5}$ and PM_{10} annual mean is 5 and 15µg/m^3 respectively. Horsham Park Way was above WHO guidelines in 2024 for particulate matter. Storrington AURN meets the level for PM_{10}, but not for $PM_{2.5}$.

Although the work under the Local Air Quality Management (LAQM) is the legal obligation of district councils, actions aimed at improving air quality most of the time require the cooperation of other departments and organisations. HDC works in cooperation with other

stakeholders, such as planning, UK Health Security Agency (UKHSA), West Sussex County Council (WSCC) highways, neighbouring Local Authorities, Sussex Air Quality Partnership, and the Environment Agency. The assessment and implementation of the identified traffic management schemes is done in cooperation with WSCC as they are the authority responsible for roads and transport management. Steering groups were set up for each of the AQMAs. They have contributed to the development of the Action Plans and are the decision-making body for the action plan measures to be taken forward. The Council is consulted on planning applications for HDC Development Management and WSCC minerals and waste.

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.

The Environmental Improvement Plan[1] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant most harmful to human health. The Air Quality Strategy[2] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[3] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel, and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Horsham District Council has taken forward several measures during the recent years in pursuit of improving local air quality. The key actions undertaken in 2024 were:

- Increasing availability of electric vehicles charging points

[1] Defra. Environmental Improvement Plan 2023, January 2023

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

[3] DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

- Improving Sussex automatic monitoring network with a new $PM_{2.5}$ analyser installed in Cowfold in 2024. Detail on this can be found in Appendix F: 'Low-cost' pollution sensors in Horsham.
- Continuation of the monitoring programme, which includes the operation and maintenance of three air quality monitoring stations, with the data and Air Alert forecasts shared at http://www.sussex-air.net
- Ongoing work with Planning Policy and Development Control to ensure the impacts of new development are mitigated and/or offset
- Attending Defra's workshops for Local Air Quality Management and Sussex Air partnership meetings. With this, we can take informed proactive actions
- Air quality promotion via website and social media
- Working with the County Council to support development of projects promoting improvements to Major Road Network routes through the district, for example the A24, which could reduce traffic routing through the AQMAs.
- Working with the County Council to support projects to improve sustainable transport provision. This includes Bus Service Improvement Plan improvements to bus stops and real time passenger information, and working to develop Local Cycling and Walking Infrastructure Plan measures, for example through supporting Strategic Transport Improvement Programme feasibility study measures being considered for key locations in Horsham.

Conclusions and Priorities

The Council's priorities for the coming year are:

- Publishing the update of the Air Quality Action Plan
- Exploring the viability of a Smoke Control Area declaration
- Reduction in solid fuel burning
- Delivery of the HDC's vehicle replacement programme
- Expansion of Electric Vehicle and infrastructure network
- Promotion of Public Transport usage, youth travel cards and bus passes
- Continued work with WSCC to increase the rate of active travel to and from schools and to support other strategic improvements to transport infrastructure
- Contacting schools in Horsham District directly to inform them of national events such as Walk to School Week (May 2025) to promote active travel and educate students on the benefits this has on health and air quality.

- Continued work with the steering groups on the development and implementation of AQAP measures
- Continued work with Planning Policy and Development Control to secure air quality mitigation from new development
- Internal applications for s106 funding to facilitate the implementation of actions within the AQAP
- Improvements to the air quality website and communications to make air quality information more accessible to the public

The main challenges and barriers to implementation that HDC anticipates facing are:

- Availability of resources and funding for AQAP measures
- Challenges related to cost-effectiveness and enforcement of measures to tackle localised air pollution hotspots in rural areas where problems arose due to through traffic

How to get Involved

The public can get involved by supporting behavioural change initiatives such as car sharing, walking, cycling, using public transport, joining the Car Club, buying zero-emissions vehicles for personal and commercial travel, turning liquid fuelled vehicle engine's off when stationary, minimising wood burning and only burning dry, well-seasoned wood and composting instead of having bonfires wherever possible. More information on how to get involved can be found at Help to improve Horsham District's air quality page.

Two air quality Steering Groups have previously been established in the district: Storrington Steering Group and Cowfold Steering group. Their objective is to progress the work on the Storrington and Cowfold Action Plans. Each group is a partnership of Councillors and officers from Horsham District Council and West Sussex County Council and includes representatives from the Parish Council.

For further information on the work being done, please visit the Horsham District Council website or contact:

- Environmental Health and Licencing Department:
  tel. 01403 215609; email: ehl@horsham.gov.uk
- https://www.horsham.gov.uk/environmental-health/air-quality

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1 Local Air Quality Management

This report provides an overview of air quality in Horsham District Council 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 Horsham 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 G.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

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

- NO_2 annual mean of 40 µg/m^3

Currently, there are 363 AQMAs in England declared for Nitrogen Dioxide, with 342 for exceedances of annual mean objective and 21 for exceedances of 1-Hour and annual mean[4].

We propose to revoke Horsham Cowfold AQMA (see Appendix E: Cowfold AQMA Revocation Proposal).

[4] https://uk-air.defra.gov.uk/aqma/summary

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
Horsham AQMA No1	Dec-10	NO_2 Annual Mean	Storrington town centre incorporating West Street, the High Street, and part of School Hill and Manleys Hill.	No – Roads controlled by WSCC	50.2 µg/m^3 (Storrington 1,2)	32.7 µg/m^3 (Storrington 19n) – No exceedance	5 years* (2020-2024)	Storrington Air Quality Action Plan, October 2012 (updated in 2020)	https://www.horsham.gov.uk/environmental-health/air-quality/air-quality-reports-and-assessments
Horsham Cowfold AQMA	Oct-11	NO_2 Annual Mean	Cowfold town centre incorporating The Street, part of Station Road and Bolney Road.	No – Roads controlled by WSCC	40.5 µg/m^3 (Cowfold 1,2) 45.9µg/m^3 (Cowfold 7n)	24.9 µg/m^3 (Cowfold 7n) – No exceedance	6 years* (2019-2024)	Cowfold Air Quality Action Plan, September 2013 (updated in 2020)	https://www.horsham.gov.uk/environmental-health/air-quality/air-quality-reports-and-assessments

Notes:

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

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

* The LAQM TG (2022) states "Where NO_2 monitoring is completed using diffusion tubes, to account for the inherent uncertainty associated with the monitoring method, it is recommended that revocation of an AQMA should be considered following three consecutive years of annual mean NO_2 concentrations being lower than 36 µg/m^3 (i.e. within 10% of the annual mean NO_2 objective)." In Storrington and Cowfold, the hotspot locations are measured using diffusion tubes. In Storrington, of the 5 years of compliance, 2024 was the first year to have concentrations below 36 µg/m^3. In Cowfold, of the 6 years of compliance, 5 had concentrations below 36 µg/m^3. This is why HDC are revoking the Cowfold AQMA, but not yet the Storrington AQMA.

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

Defra's appraisal of last year's ASR concluded that on the basis of the evidence provided, the conclusions reached were accepted for all sources and pollutants.

- "As the Cowfold AQMA has remained compliant with the relevant AQOs for 5 consecutive years the council must progress with measures to revoke this AQMA."

Since then, HDC has proposed to revoke Cowfold AQMA. A revocation proposal is provided in Appendix E: Cowfold AQMA Revocation Proposal.

Horsham 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. 20 measures are included within Table 2.2, with the type of measure and the progress Horsham 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 their respective Action Plans and previous Annual Status Reports at HDC's Air Quality Report and Assessments page. Key completed measures are:

- Expanding Sussex automatic monitoring network with a new $PM_{2.5}$ reference analyser installed in Cowfold in 2024.
- Installed 3 air quality sensors in the district, expanding the availability of essential air quality data
- Continuation of the monitoring programme, which includes the operation and maintenance of three air quality monitoring stations.
- Ongoing work with Planning Policy and Development Control to ensure the impacts of new development are mitigated and/or offset
- Delivered an Electric Vehicle event as part of the Defra-funded taxi engagement campaign to facilitate a transition to EV vehicles by taxi drivers.
- Attending Defra's workshops for Local Air Quality Management and Sussex Air partnership meetings. With this, we can take informed proactive actions

- Working with the AQMAs steering groups on the development and implementation of AQAP measures
- Air quality promotion via website and social media
- Working with the County Council to support development of projects promoting improvements to Major Road Network routes through the district, for example the A24, which could reduce traffic routing through the AQMAs.
- Working with the County Council to support projects to improve sustainable transport provision. This includes Bus Service Improvement Plan improvements to bus stops and real time passenger information, and working to develop Local Cycling and Walking Infrastructure Plan measures, for example through supporting Strategic Transport Improvement Programme feasibility study measures being considered for key locations in Horsham.

Horsham District Council's priorities for the coming year are:

- Improving of Sussex automatic monitoring network with new PM and NO_2 analysers installed in Park Way AQMS in 2025. This will provide more data on the air quality within Horsham town and expand monitoring of PM2.5
- Origin destination ANPR camera survey and air quality modelling study for Storrington AQMA
- Publishing the update of the Air Quality Action Plan
- Continued work with Planning Policy and Development Control to secure air quality mitigation from new developments
- Improvements to the air quality website and communications to make air quality information more accessible to the public
- Delivery of the HDC's vehicle replacement programme
- Expansion of Electric Vehicle Network
- Continued work with WSCC to increase the rate of active travel to and from schools
- Continued work with WSCC to support other strategic improvements to transport infrastructure
- Contacting schools in Horsham District directly to inform them of national events such as Walk to School Week (May 2025) to promote active travel and educate students on the benefits this has on health and air quality.
- Continued work with the steering groups on the development and implementation of AQAP measures

- Internal applications for s106 / CIL funding to facilitate the implementation of actions within the AQAP
- Exploring the viability of a Smoke Control Area declaration

Horsham District Council worked to implement these measures in partnership with the following stakeholders during 2024:

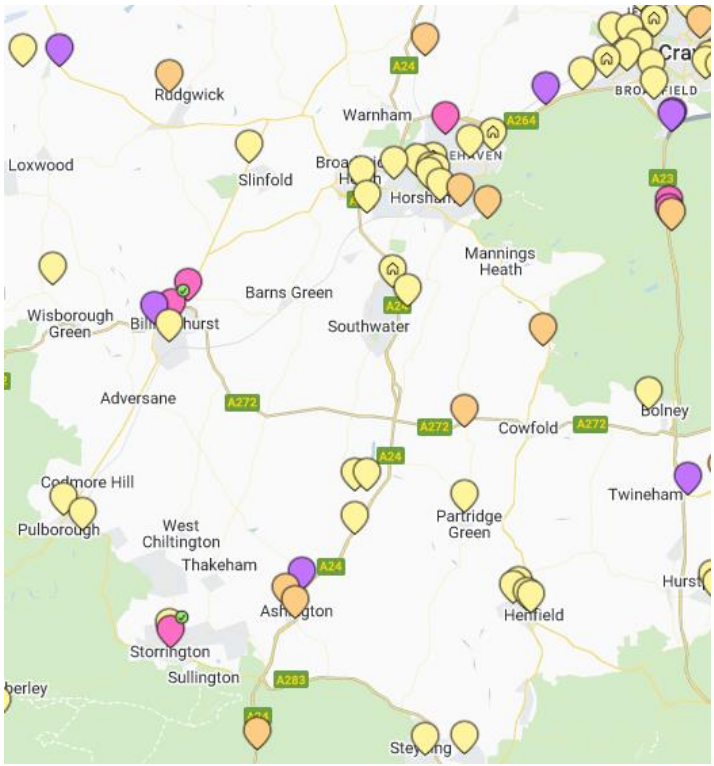
- Planning Officers
- Public Health England
- WSCC highways
- Neighbouring districts local authorities
- Sussex Air Partnership
- Environmental Agency

The principal challenges and barriers to implementation that Horsham District Council anticipates facing are the identification of schemes that are feasible, deliverable and can generate a positive business case and having funding to pursue bigger projects. The achievement of congestion improvement measures in has been challenging as there are no easy solutions, and many of the solutions fall outside the power of HDC to implement. Horsham District Council anticipates that the measures stated above and in Table 2.2 will continue to bring compliance in Storrington and Cowfold AQMA.

2.2.1 Promotion of Electric Vehicles

Because Horsham District relies on car transport, it will be essential to ensure that the District supports a transition to electric cars. Infrastructure is already being put in place to enable this transition, in March 2020 HDC approved its Electric Vehicle (EV) Charge Point Strategy which aims to enable the provision of EV infrastructure across the district. Figure 2.2.1 illustrates the locations of charging points currently (July 2025) in the district. More information can be found in HDC's electric cars and charging points page.

Figure 2.2.1 – Charging Points in the District (Zap Map)



Horsham District council continued with the programme to electrify the fleet and consider EV options when replacing vehicles.

Sussex Air was successful with their bid for the 2021/2022 Air Quality Grant which included a Taxi Study. The aim of the proposed taxi engagement project is to facilitate a transition to EV vehicles by taxi drivers and it will help the district to build an infrastructure that is convenient, reliable and works for the taxi trade and will drive the progression of taxi licensing policies for EV drivers. As part of the project two mini forums were delivered for licensing officers and elected members across Sussex, and two surveys – East Sussex and West Sussex – were available to gauge opinions about electric vehicles from the taxi and private hire trade across Sussex. In 2024, HDC hosted a free electric car event (Figure 2.2.2), an opportunity for business owners and individuals to learn about the benefits of electric vehicles (EVs). A summary of the project is available on Sussex Air Taxi Project page.

Figure 2.2.2 – Discover Electric Event 2024

2.2.2 Air Quality and Climate Change

The challenges of climate change and poor air quality are closely related, and there are substantial benefits to tackling both together. By reducing harmful emissions, local authorities can not only contribute to global efforts to combat climate change but also deliver immediate local benefits, including improved air quality and public health. This dual approach presents a unique opportunity for local authorities to maximise the impact of their actions, making our communities more resilient, healthy, and sustainable.

Horsham District's Climate Action Strategy has several measures related to transport. A large proportion of air pollution and carbon emissions are from transport, of which the vast majority are from car-transport. Reducing the number of cars on the road would support the decarbonisation of the district, while providing multiple co-benefits including reduced air pollution and health and wellbeing.

2.2.3 Storrington through traffic

Although Storrington is not on WSCC Lorry Route Network of strategic and local roads recommended for use by lorries and heavy goods vehicles, the annual average weekday traffic of HGVs going through West Street in 2024 was approximately 350 per day.

In 2022 West Sussex County Council and Storrington & Sullington Parish Council undertook a review of the 7.5T weight limit restriction on the B2139 School Hill and A283

Manley's Hill in Storrington. This restriction (TRO) is marked "Except for Access" with an additional plate, where this refers solely to any side road access, delivery, or collection point between the restriction signs. The restriction has been in place since 2019 as one of the measures implemented to improve air quality within the designated Air Quality Management Area (AQMA).

As part of this review, a CCTV traffic survey was undertaken of Goods Vehicles entering from either end of the restriction and an additional CCTV camera was located within the restriction length. After the survey, 51 letters were sent to companies that were breaching the 7.5T weight limit restriction and more signs were installed (Figure 2.2.3).

Figure 2.2.3 – Weight restriction signs in Storrington

There are challenges with enforcement of breaches of weight restriction for HGVs accessing B2139 School Hill. Local Transport Authorities can now apply for 'Part 6' powers to enforce 'moving traffic offences' which would include Traffic Regulation Order breaches such as in relation to this weight restriction. WSCC has now adopted these powers and has confirmed initial back office procedures to support these. However, for the time being, the only utilisation of the powers is for bus gates implemented across West Sussex as part of residential developments. In terms of other moving traffic offences, such as weight restrictions, these will not be considered until such time as a Moving Traffic Enforcement Policy has been adopted by the County Council. There is no confirmed timetable for preparation of this policy at this time.

In addition, Storrington Air Quality Steering Group is investigating how to reduce the traffic going through the village and improve driver's behaviour related to speeding. The group is exploring schemes such as:

- Reduction of the speed limit of B2139 Amberley Road through a Traffic Regulation Order

- Implementation of a 20mph zone through the Community Highways Scheme
- Apply for the WSCC Lane Rental Scheme to Install Speed Indicator Devices

It is expected that the schemes will help improve noise, pollution and safety, as smoother driving style reduces particulate emissions from tyre and brake wear - which still represents a significant cause of air pollution from zero-emission vehicles; and improve active travel, lowering traffic speeds reduces the dominance of motor vehicles and makes our streets safer, more inviting, less polluted, and more attractive for walking, cycling and public transport trips.

2.2.4 Pulborough A29 Landslide

The landslide occurred in January 2023 at the narrowest part of the A29 in Pulborough, where both sides are flanked by steep embankments. WSCC is continuing its efforts to resolve the ongoing situation with the A29 and takes routine detailed inspections of the trees and the embankments.

Until works can be carried out to both private embankments, it is not safe to re-open the road under normal conditions. WSCC have decided to install traffic signals and concrete blocks to reduce the risk to the highway and people.

The traffic signal-controlled system introduced is intuitive and adapts to traffic flow fluctuations. Traffic detection cameras help monitor queue lengths at either end, adjusting the green time given in each direction until either the demand is serviced, or the maximum timer has elapsed. But despite WSCC efforts, congestion and traffic queuing has been observed and are having an effect on local air quality.

In 2024, HDC expanded NO2 monitoring in Pulborough near the landslide around Church Hill, where pollution dispersion is affected by the topography and vegetation.

HDC will continue working with WSCC to find solutions to reduce congestion and have installed anti-idling signs near the traffic lights (Figure 2.2.4).

Figure 2.2.4 – No idling sign in Pulborough

A29 landslide update are available at: https://www.westsussex.gov.uk/campaigns/a29-pulborough.

2.2.5 Sensor Network

Horsham District Council undertook continuous monitoring using air Sensors at 3 sites during 2024. Appendix F: 'Low-cost' pollution sensors in Horsham shows the details of the monitoring sites, with automatic monitoring results also available at Brighton & Hove and Sussex Public Air Quality Portal.

2.2.6 Other schemes

West Sussex County Council's "Breathing Better" initiative is a joint effort with district and borough councils to reduce air pollution. Updated in 2023, the strategy supports the West Sussex Climate Change Strategy 2020–2030 and aims to cut harmful pollutants like nitrogen dioxide and particulate matter, which are linked to serious health impacts including respiratory and cardiovascular conditions.

Air quality has shown improvement since 2019 due to cleaner vehicles and reduced traffic during the pandemic. However, rising use of wood and coal for home heating presents new concerns. The plan encourages sustainable travel, cleaner technologies, and behaviour changes, such as reducing engine idling, to support healthier communities and long-term environmental goals.

There are several strategies being developed through WSCC and partners to improve active and sustainable travel, such as the Bus Service Improvement Plan programme measures to improve bus stops, shelters, Real Time information etc. as well as larger Strategic Transport Improvement Programme schemes that are in early development, for example for key parts of Horsham. There are crossovers in some of these areas with the Public Realm Improvements that HDC are progressing in Horsham town centre.

WSCC have a long-established car sharing scheme to allow members of the public to share their commute or other driving commitments. Through this scheme, drivers are matched with others doing the same journey at the same times so they can car share or offer lifts. The service is free, and arrangements or compensation are agreed independently by the commuters. This reduces pollution by reducing the overall number of journeys taking place.

The UK has a zero-emission vehicle mandate that all new cars and vans should be zero emission by 2035, while the UK also has a central government fleet commitment to ensure 100% of government owned cars and vans are zero emission by 2027. Schemes like this are likely to lead to increased zero emissions uptake in local authorities.

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	Speed Reduction Schemes in **Cowfold** and **Storrington** to improve air quality and facilitate active travel	Traffic management	Reduction of speed limits, 20mph zones	2025	2030	Storrington & Sullington Parish Council / Cowfold Parish Council / HDC / WSCC /	WSCC / Lane rental scheme / Community Highway Scheme / S106	Not funded	£50k - £100k	Planning	Lower speed limits can encourage shifts towards more sustainable transportation, such as walking and cycling increased feelings of safety. Areas where 20 mph speed limits have been implemented often see a reduction in vehicle numbers or changes in driving patterns, contributing to overall reductions in emissions and improvements in air quality.	Improve noise, pollution and safety. Improve active travel. Improved traffic flow / reduction in traffic congestion. Reduction of emissions at hotspots.	Storrington and Cowfold Parishes have installed Speed Indicator Devices around the village	Potentially use S106 to match fund or provide more detailed evidence. Storrington Traffic & Transport Committee meetings
2	Electric vehicle charging network	Promoting Low Emission Transport	Other	2020	2031	HDC / WSCC	Connected Kerb	Funded	£500k - £1million	Implementation	Small initial impact on emissions but aim to facilitate the uptake of more LE vehicles.	Increase % of charging points installed on streets	Contract with Connected Kerb which will enable the large scale to roll out of thousands of public electric vehicle charge points across the district within the next decade was signed in 2021.	Over 45 on street charge points have been installed in Horsham District, with works planned for an additional 28 charge points in council car parks. More information available on HDC Electric cars and charging points webpage
3	Air quality and emissions mitigation guidance for Sussex	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2014	Ongoing	HDC / Sussex Air	HDC	Funded	<£10k	Implementation	1% in the AQMA	Reduction in emissions from transport associated with new development through mitigation and compensation. Assessment of emissions from development required with application. Scheme of mitigation required.	The updated guidance (2021) has been published on HDC website and its application is tested in HDC and neighbouring districts within Sussex. It provides advice to developers on how to address local air quality when making a planning application.	Sussex Air partners are reviewing the guidance.
4	Taxi Study	Promoting Low Emission Transport	Taxi emission incentives	2021	2024	HDC / WSCC / Sussex Air / Lets Experience Electric / Energy Savings Trust / Connected Kerb	Defra and HDC	Funded	£10k - £ 50k	Completed	Small initial impact on emissions but aim to facilitate the uptake of more low emission vehicles.	Increase % of ULEV's by Taxis and private hire vehicles	Taxi engagement campaign to facilitate a transition to EV vehicles by taxi drivers across Sussex.	More details available on Sussex Air webpage
5	Replacement of HDC vehicle fleet	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2013	Ongoing	HDC	HDC	Partially Funded	£500k - £1million	Implementation	Small initial impact on emissions but aim to facilitate the uptake of more LE vehicles.	Introduction & increase % of ULEV's into Council's vehicle fleet.	Replacement of HDC Neighbourhood Wardens vehicle fleet from petrol to hybrid vehicles. Vehicles that ran on diesel were switched to	

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
													sustainable-sourced Hydrogenated Vegetable Oil (HVO) fuel. All electric sweepers for Horsham's town centre.	
6	Sussex Air network and website	Public Information	Via the Internet	2012	Ongoing	Sussex Air / HDC	Local Authority	Funded	£50k - £ 100k	Implementation	No direct impact on emission reductions but optimising use of monitoring network data	Increase access to the website	Information on how to help improve air quality, air quality projects, health advice, health effects and real time air quality information	
7	Walking and Cycling Measures	Promoting Travel Alternatives	Other	2012	Ongoing	HDC / WSCC	HDC / WSCC	Partially Funded	£1million - £10k million	Implementation	Direct impact on air quality issues in the short to medium are not likely to be significant, however they form part of a wider approach of promoting a culture of using alternative travel options to single occupancy car use.	Increase in active travel		West Sussex Active Travel Strategy 2024-2036 Horsham's Local Cycling and Walking Infrastructure Plan Horsham District Council Infrastructure Delivery Plan (IDP) – July 2024
8	Improve bus service and information	Alternatives to private vehicle use	Other	2013	Ongoing	WSCC / Local Bus Operators	DfT	Not funded	> £10 million	Ongoing	1 % in the AQMA	Work with local bus service to utilise best available Euro standard vehicles for AQMA routes. Promote use of transport /travel plans to increase use of sustainable transport.	Real Time Passenger Information screens; Bus Stop Improvements; Bus fare discount scheme; Digital Demand Responsive Transport	Latest updates at; West Sussex Bus Service Improvement Plan
9	Reduce single occupancy car use by supporting carpool and car sharing schemes, and other modes of transport.	Alternatives to private vehicle use	Car & lift sharing schemes	2023	Ongoing	HDC	Local Authority	Not funded	< £10k	Implementation	Direct impact on air quality issues in the short to medium are not likely to be significant, however they form part of a wider approach of promoting a culture of using alternative travel options to single occupancy car use	Reduction in single occupancy car use		West Sussex Car Share scheme Co-Wheels car sharing club
10	**Storrington** Low Emission Zone feasibility Study	Traffic Management	UTC, Congestion management, traffic reduction	2012	2030	HDC / WSCC / Storrington & Sullington Parish Council	Section 106	Partially funded	£50k - £100k	Planning	Significantly reduce levels of HGVs, achievement of annual mean air quality objective	Traffic count, measured concentration at Storrington mini roundabout	2014-16 Project Trial available at Storrington AQMA page	In 2014-16 a trial was undertaken in partnership with Siemens UK using their Greenzone low emission zone solution. It is expected that there would still remain significant challenges with the practical

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
														enforcement of any restrictions and exemptions required for local access even if previous technological issues including signal reception and data connection problems are overcome.
11	**[Storrington]** Reduction of the speed limit of B2139 Amberley Road	Traffic Management	UTC, Congestion management, traffic reduction	2025	2027	HDC / WSCC / Storrington Parish Council	Traffic Regulation Order	Not Funded	< £10k	Planning	Direct impact on air quality issues in the short to medium are not likely to be significant, however they form part of a wider approach of promoting changing driver's behaviour	Reduction in speeding through the village.		Storrington Traffic & Transport Committee meetings
12	**[Storrington]** Review on-street car parking and loading bay provision	Traffic Management	UTC, Congestion management, traffic reduction	2013	On hold	HDC/WSCC	WSCC	Not Funded	< £10k	On Hold	1% in the AQMA	Reduction in nitrogen dioxide concentrations in Storrington. Improved traffic flow / reduction in traffic congestion.	Some issues related to the scheme: The potential impact of congestion related air quality issues associated with deliveries and parking is not known; Potential sensitives regarding changes to availability of parking; The need to meet the needs of local businesses requiring deliveries.	A more detailed air quality assessment of changes to and re-designation of parking-bays and loading bays could be investigated further. Progression of a review will likely require local support and identification of resource to support this.
13	**[Storrington]** Enforcement of the weight restriction for HGVs accessing School Hill.	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2019	On going	HDC/Storrington & Sullington Parish Council	WSCC	Partially Funded	£50k - £100k	Implementation	1% in the AQMA	Reduction in nitrogen dioxide concentrations in Storrington. Improved traffic flow / reduction in traffic congestion.	WSCC have no powers to use ANPR cameras to issue Penalty Charge Notice and the cost estimates for CCTV ANPR camera equipment obtained in 2020 were found prohibitively high. In 2022, WSCC and the Parish Council reviewed this scheme (Storrington HGV Survey).	WSCC would have to apply for Part 6 powers and is reviewing the practicalities of applying for these enforcement powers, including the business case for back-office arrangements for enforcement before considering what sites would be most appropriate to enforce.
14	**[Storrington]** Freight Delivery Partnership	Promoting Low Emission Transport	Public Vehicle Procurement – Prioritising uptake of low emission vehicles	2013	Ongoing	HDC / WSCC	-	Not Funded	£100k - £500k	Ongoing	Unknown but expected low	Emission reductions sought through partnership working with local businesses to minimise impact of deliveries etc. on the village.	Encourage use of WSCC preferred lorry route rather than A283 through Storrington AQMA.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
15	**[Storrington]** Community minibus	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2013	Ongoing	HDC / WSCC	Section 106	Funded	£50k - £100k	Ongoing	1 % in the AQMA	Enhance existing Storrington minibus service by replacing existing diesel fleet with Low /Zero emission vehicles.		Liaise with local bus operators to improve the emissions standards of buses operating through the AQMA. Explore opportunities to improve and create new community-led transport schemes.
16	**[Storrington and Cowfold]** A27 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	2013	Unknown	Highways England/ WSCC	Highways England	Funded	> £10 million	Aborted	2.5% in the AQMA	Reduction in nitrogen dioxide concentrations. Improved traffic flow / reduction in traffic congestion.	Options for major improvements have previously been developed by National Highways. However, the Chichester scheme was cancelled in 2017 and the Arundel, Worthing and Lancing schemes were cancelled in 2024.	Latest updates at: https://nationalhighways.co.uk/our-roads/south-east/a27-arundel-bypass/ Improvements to the A27 and complementary public transport improvements at these locations are priorities in the West Sussex Transport Plan
17	**[Cowfold]** Improvement of crossings in Cowfold to facilitate active travel	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2025	2030	Cowfold Parish Council, HDC, WSCC	WSCC Lane rental scheme Community Highway Scheme	Not funded	£100k - £500k	Planning	Unknown but expected low			Cowfold Neighbourhood and Infrastructure Development Plans
18	Strategic improvements to the A24 Worthing-Horsham corridor	Traffic Management	Strategic highway improvements, Re-prioritising Road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2015	Unknown	Highways England / WSCC	Highways England	Not Funded	£1 million – £10 millions	Planning	Unknown but expected low-medium	Reduction in nitrogen dioxide concentrations. Improved traffic flow / reduction in traffic congestion.	WSCC has undertaken a feasibility study of the A24 corridor between Worthing and Horsham including a package of traffic junction and sustainable transport measures. These proposals intended to encourage longer distance traffic flows to stay on the A27, A280, A24 and A264 corridors for journeys for example to and from the south west and north east of the county, and to avoid use of less suitable routes such as the B2139/A283/A272 through Amberley,	This scheme is in the early stages of development and requires the further develop of designs, consultation, development of business case and securing of funding to deliver the package of measures.

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													Storrington and Cowfold.	
19	Expansion of the monitoring network	Public Information	Via the internet	2025	Ongoing	HDC/Sussex Air	S106 HDC CIL	Partially Funded	£10k - £50k	Planning	None	Upgrading analysers and expanding the number and sites for monitoring	3 AQMS and 3 real-time air quality sensors proving live information to the public.	Road permission to install monitors and use street lighting is not always permitted.
20	Breathing Better	Public Information	Via the internet	2024	Ongoing	WSCC, District and borough councils in West Sussex.				Ongoing	Unknown but expected low		Published in 2019 and updated in 2023. Planned to be a live document that all partners review and develop.	West Sussex Breathing Better

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[5], 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.

An Interim Planning Guidance on the consideration of the Environment Act $PM_{2.5}$ targets in planning decisions was published in October 2024. HDC requires future development applicants to ensure that appropriate mitigation measures are implemented from the design stage, streamlining the process for planning, and ensuring the minimum amount of pollution is emitted and that exposure is minimised. This approach corroborates with the Air Quality and Emissions Mitigation Guidance for Sussex developed by Sussex-air and implemented in 2021 that all new developments are required to implement mitigation / offsetting measures commensurate with their size/predicted emissions of NO_2 and $PM_{2.5}$.

HDC has expanded continuous $PM_{2.5}$ monitoring across the district at:

- Park Way Air Quality Station from 2025
- Cowfold Air Quality Station from 2024
- Cowfold (sensor) from 2024
- Storrington mini roundabout (sensor) from 2024
- Langhurst Wood Road (sensor) from 2024

The data will further enhance the air quality database and provide a more detailed and substantive understanding of particulate concentrations across the region. This data will be used in our public engagement projects and is available on Sussex Air website and Brighton & Hove and Sussex Public Air Quality Portal.

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

2.3.1 Fraction of Mortality Attributable to Particulate Matter Pollution

The district reported a population-weighted concentration of 6.3 µg/m^3 in 2023, the latest dataset made available at the time of writing the latest available data (Figure 2.3). $PM_{2.5}$ levels are used to calculate an indicator in the Public Health Outcomes Framework (PHOF) – Fraction of Mortality Attributable to Particulate Matter Pollution. This indicator is calculated for each local authority in England, and it intended to enable Directors of Public Health to prioritise action on air quality in their local area. The estimated fraction of mortality attributable to long term exposure to current (2023) levels of anthropogenic $PM_{2.5}$ was 4.8% in Horsham District (Figure 2.4).

Figure 2.3 – Air pollution: fine particulate matter (new method - concentrations of total $PM_{2.5}$) for Horsham

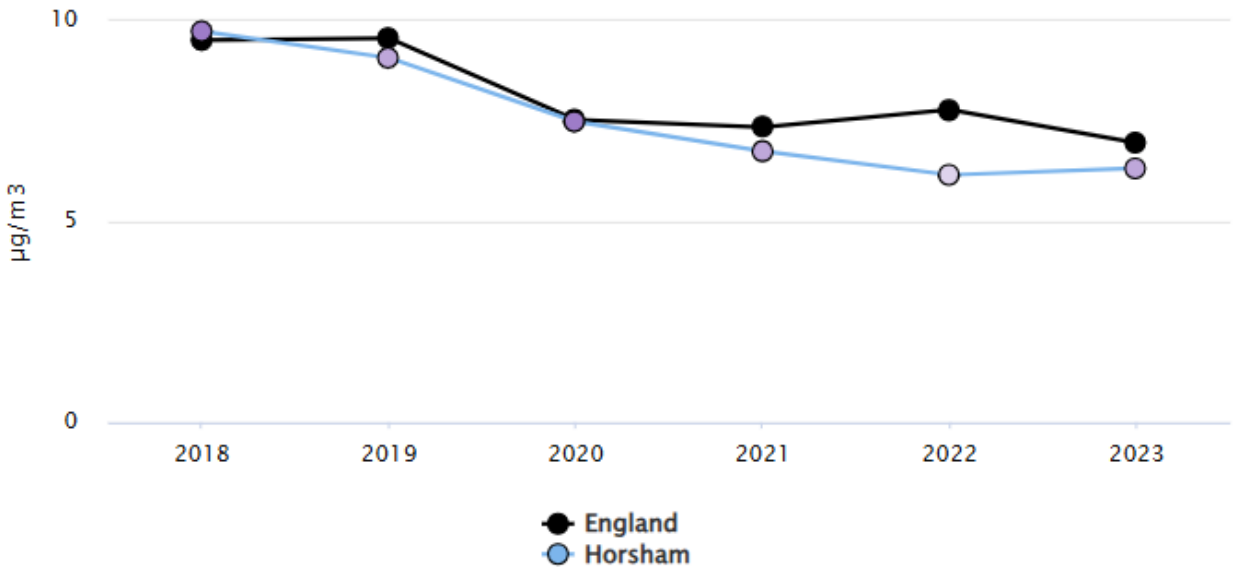
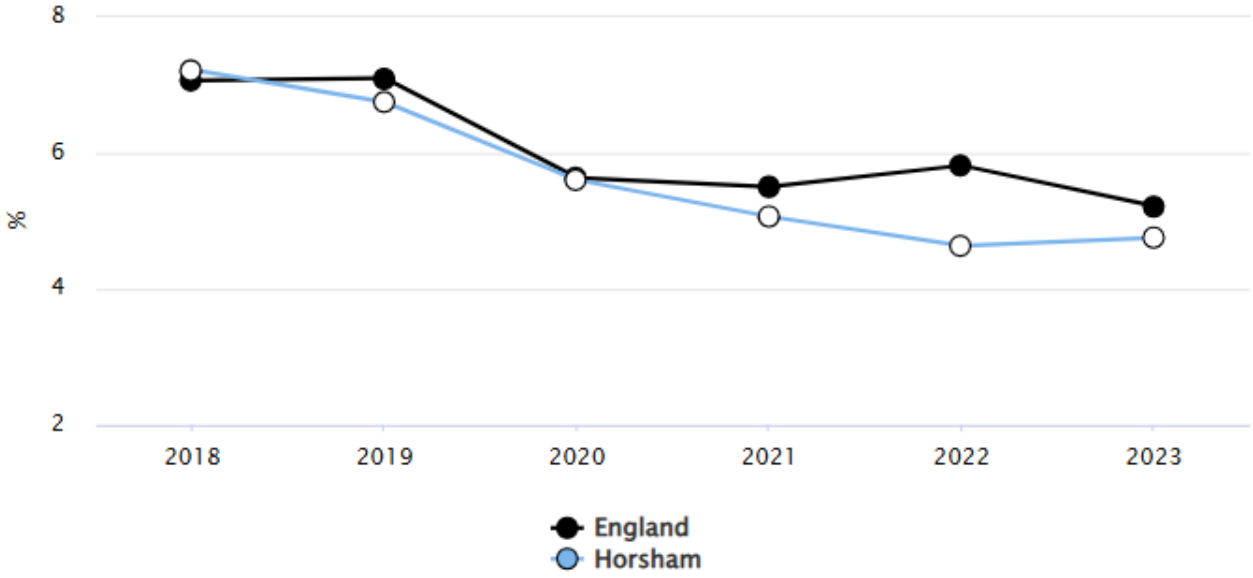


Figure 2.4 – Fraction of mortality attributable to particulate air pollution (new method) for Horsham

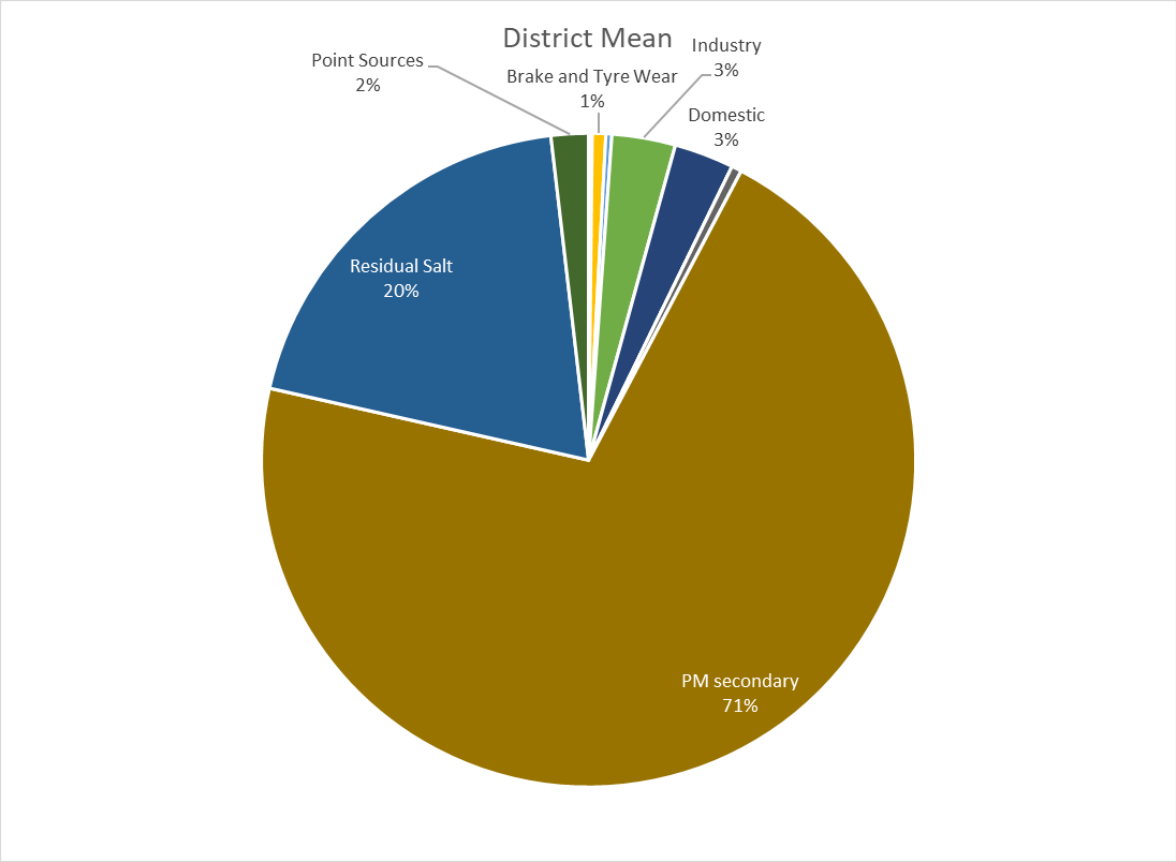


2.3.2 $PM_{2.5}$ Background Concentrations

The total concentration of a pollutant comprises those from explicit local emission sources such as roads, chimney-stacks, etc., and those that are transported into an area by the wind from further away. If all the local sources were removed, all that would remain is that which comes in from further away; it is this component that is called 'background'.

In many situations the background contribution may represent a significant or dominant proportion of the total pollutant concentration, so it is important that authorities give this careful consideration. A good understanding of background concentrations is important when completing air quality assessments as this in turn allows for a good understanding of local pollutant sources. Figure 2.5 shows the Estimated mean background $PM_{2.5}$ concentrations in the district. PM Secondary is the main source of background $PM_{2.5}$, these are fine particles that are formed within the atmosphere rather than being emitted directly, these particles can travel long distances, influenced by atmospheric chemistry and weather patterns.

Figure 2.5 – Estimated background $PM_{2.5}$ concentrations in Horsham district (base year 2021)

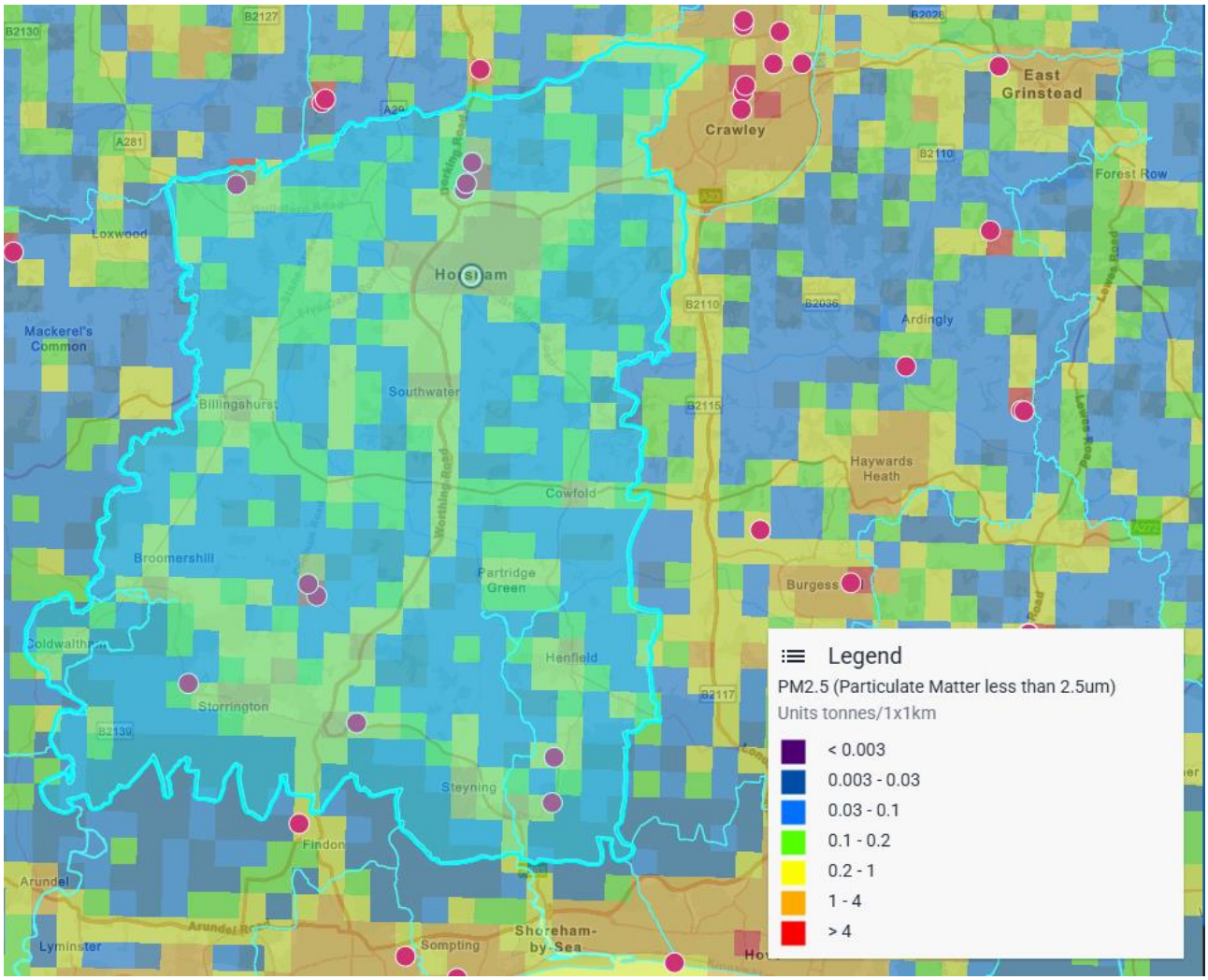


2.3.3 $PM_{2.5}$ sources

The $PM_{2.5}$ point sources in Horsham District identified in the National Atmospheric Emission Inventory (Figure 2.6) are:

- Ambion Brick Co Ltd
- Baggeridge Brick Plc
- Biffa Waste Services Ltd
- Ibstock Brick Ltd
- Star Energy Weald Basin Ltd
- UK Waste Management Ltd.
- Viridor Waste Disposal Ltd
- Viridor Waste Management Ltd
- Wienerberger Limited

Figure 2.6 – UK Emissions Interactive Map



Esri UK, Esri, TomTom, Garmin, METI/NASA, USGS | Created by Ricardo on behalf of DESNZ and DEFRA. Powered by Esri.

Research has shown that wood burning is a large contributor to primary emissions of $PM_{2.5}$, and unlike most pollutants, emissions from domestic wood burning are increasing in many European countries. According to data from the National Atmospheric Emissions Inventory (NAEI), UK domestic wood burning emissions more than doubled from 6.8 kilotonnes in 2009 to 14.4 kilotonnes in 2018, before plateauing in recent years.

According to the Non-gas map created by Kiln for Affordable Warmth Solutions, in conjunction with the Department for Business, Energy and Industrial Strategy, Horsham District has 36.2% non-gas dwellings, and has a 6.8% Fuel Poverty incidence. Table 2.3 shows the geographic concentration of wood burners across Horsham District, the data was collected from the research "Where are the wood burners in England and Wales?" produced by University College London.

Table 2.3 - Wood burners across Horsham District

Electoral Ward	Woodburning heat sources per km2	% houses that have wood burner
Billingshurst	8.5	16
Bramber, Upper Beeding & Woodmancote	15.8	29.7
Broadbridge Heath	63.9	6.6
Colgate & Rusper	7.1	22.6
Cowfold, Shermanbury & West Grinstead	15.1	38.5
Denne	83.7	10.4
Forest	104.5	16.1
Henfield	29.6	18.8
Holbrook East	57.1	3.7
Holbrook West	124.6	12.7
Itchingfield, Slinfold & Warnham	17.7	43.1
Nuthurst & Lower Beeding	15.9	47.6
Pulborough, Coldwaltham & Amberley	15.0	32.1
Roffey North	161.2	10.0
Roffey South	72.4	8.6
Rudgwick	18.1	42.4
Southwater North	24.4	14.4
Southwater South & Shipley	255.5	18.8
Steyning & Ashurst	25.7	28.2
Storrington & Washington	30.3	23.7
Trafalgar	232.4	20.8
West Chiltington, Thakeham & Ashington	22.1	32.4

West Sussex County Council is the enforcement authority under Regulation 16 of The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020. The WSCC Trading Standards Service will investigate reports of non-compliance in accordance with its published Enforcement Policy.

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

This section sets out the monitoring undertaken within 2024 by Horsham 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

Horsham District Council undertook automatic (continuous) monitoring at 3 sites during 2024. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The HDC's Air Quality Monitoring Data page presents automatic and non-automatic monitoring results for Horsham District Council, with automatic monitoring results also available through the Sussex-Air and UK-Air website.

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

3.1.2 Non-Automatic Monitoring Sites

Horsham District Council undertook non-automatic (i.e. passive) monitoring of NO2 at 47 sites during 2024 with 49 diffusion tubes. Monitoring was in-line with the Defra diffusion tube deployment calendar, apart from the months of November, which was exposed for an additional week, and December, which was deployed 6 days later than the schedule.

Table A.2 in Appendix A presents the details of the non-automatic sites.

Triplicate tubes have been used at all three automatic analyser sites:

- HO2 Horsham Park Way (junction of Park Street and Park Way in Horsham)
- HO4 Storrington AURN (junction of Manley's Hill and Meadowside in Storrington)
- HO5 Cowfold (Bolney Road/The Street, Cowfold)

- From May, one of the diffusion tubes was removed and Cowfold was a duplicate site for the remainder of the year. This was due to the NO_x analyser scheduled to be removed, but this was delayed until November.

Diffusion tube changes in the past 5 years:

- 2020:
  - Cowfold 9n – began monitoring at Oakfield Road, Cowfold.
  - Horsham 12 – began monitoring at Albany House, Bishopric, Horsham.
- 2021:
  - No changes.
- 2022:
  - Broadbridge Heath 1 – began monitoring at 3 Cheesmer Way, Broadbridge Heath.
  - Horsham 4N – stopped monitoring at this location.
  - N. Horsham 3N – began monitoring on Rusper Road Roundabout
- 2023:
  - A29_Pulborough1,3,4,5 – HDC carried out a short term (3-month – April, May and June 2023) diffusion tube survey using tubes placed along the relevant traffic routes following a landslide on the A29.
  - Cowfold 9n.1 – due to overhanging trees at the site of Cowfold 9n, the diffusion tube was redeployed further along the road.
  - Horsham 9n.1 – Horsham 9n was installed behind a traffic sign and there were concerns regarding the flow around the inlet sampling probe, so the diffusion tube was redeployed at a nearby location.
  - Horsham 12.1 – due to overhanging trees at the site of Horsham 12, the diffusion tube was redeployed further along the road.
  - Pulborough 3 – began monitoring near Chestnut Walk on London Road in Pulborough.
- 2024:
  - A281_A24 – monitored for a three-month period near Firs Close, Horsham
  - Faygate – monitored for a four-month period at Calvert Link, Faygate

- Horsham 12.2 – Horsham 12.1 was moved to the other side of the road, as it was a more suitable location for monitoring, with more relevant exposure.
- Horsham 13 – began monitoring outside Arunside and St John's primary school in Horsham.
- Pulborough 1 – began monitoring at Swan Corner, Station Road in Pulborough.
- Pulborough 3 – stopped monitoring near Chestnut Walk on London Road in Pulborough.
- Pulborough 4 – began monitoring at the bottom of Church Hill in Pulborough.
- Pulborough 3.1 – due to being a more suitable location, Pulborough 3 was moved to the top of Church Hill / London Road in Pulborough.

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

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B: Full Monthly Diffusion Tube Results for 2024. 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 NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

All Sussex-Air network sites were compliant with the relevant air quality objectives and standards for NO_2 long term and short-term objectives. In some locations, the annual mean concentrations for NO_2 in 2020 are lower than the 2021-2023 results, expected to be due to the COVID-19 pandemic. However, the annual mean concentrations for NO_2 have showed a general downward or levelling-off trend between 2020 and 2024. In 2024 there were no monitoring sites where the annual mean NO_2 objective was exceeded in the district.

Figure A.1 to Figure A.5 in Appendix A show the trends in annual mean NO_2 concentrations measured at the diffusion tube and continuous monitoring sites in the district over the monitoring period 2020-2024. The results of diffusion tube monitoring indicate an average decrease of 13.4% in NO_2 concentrations at roadside locations in 2024 as compared to the previous year. It should be noted that due to the COVID-19 pandemic, the monitoring results for 2020 and 2021 are not representative of typical air quality conditions, and in two locations the diffusion tube results in 2024 are higher than those in 2020 (Storrington 6, Storrington 7). However, all the long-term sites show a continuing overall downward trend in measured concentrations of NO_2 over the last five years, which applies both to roadside and background locations. This can be attributed to decreasing background concentrations and is also indicative of a gradual improvement in fleet emissions.

Horsham Town Sites

Data capture was good (above 75%) for all sites during 2024, apart from Horsham 12.2 and Broadbridge_1.1, which had 67% and 58.5% data capture respectfully. The reason for the low data capture for Broadbridge_1.1 was due to the lamppost in which the diffusion tube was installed on being removed part-way through the year, so the diffusion tube was relocated to a nearby road. The results collected from the previous monitoring location was removed from the data set.

Between February and May, the B2237 Worthing Road was closed near the location of diffusion tube Horsham 8N. With fewer vehicles using the road during this period, traffic-related pollution was temporarily reduced. As a result, the NO_2 levels recorded at this site may appear lower than usual for those months, which could have slightly lowered the overall annual average.

Horsham sites showed an average decrease of 13.8% in 2024 in relation to 2023. The highest annual mean NO_2 concentration of 21.7 µg/m³ was recorded at N. Horsham 3N, located on Rusper road roundabout. This site also had the highest concentration in 2023.

The analysis of hourly mean concentrations at monitoring station HO2 (Figure A.6) by day of the week indicates that the highest concentrations were recorded during morning and afternoon traffic peaks throughout the working week from Monday to Friday. The highest average monthly concentrations in the year were recorded in January and November, of 21.7 and 20.8 µg/m^3, respectively.

Cowfold Sites

Data capture was good (above 75%) for all Cowfold sites during 2024, apart from Cowfold 6N which has 43.4% data capture due to monitoring at this site only beginning in August.

Cowfold sites showed an average decrease of 11% in 2024 in relation to 2023, and the sites located within the AQMA, a 10.4% decrease. There hasn't been any breach of annual mean NO_2 objective in the past five years, which is why we are moving to revoke the AQMA.

The analysis of hourly mean concentrations at monitoring station HO5 (Figure A.6) by day of the week indicates that the highest concentrations were recorded during morning and afternoon traffic peaks throughout the working week from Monday to Friday. The highest monthly average concentration in the year was recorded in January (21.9 µg/m^3).

The NO_2 analyser in Cowfold was permanently removed in November 2024 and replaced with a $PM_{2.5}$ analyser.

Storrington Sites

Data capture was good (above 75%) for all sites during 2024.

Storrington sites showed an average decrease of 12.1% in 2024 in relation to 2023, the same decrease was measured in sites located within the AQMA. Whilst the AQMA encompasses the whole High Street in the town centre, in recent years the only area within 10% of exceedance of the annual mean objective for NO_2 has been the mini roundabout of Manley's Hill and School Hill, as shown by the results at Storrington 19n. Technically, HDC could proceed to revoking the West Street/High Street part of the Storrington AQMA, which has for several years been in compliance with the annual mean objective for NO_2. However, continued action aimed at reducing traffic flows and congestion on the High Street has benefited the air quality within the whole of the AQMA. As such, no changes are proposed at present and the boundaries of the Storrington AQMA can remain unchanged.

Storrington 19n recorded the highest annual mean NO_2 concentration for the 2024 (32.7 ug/m³). While this site has been the only location to consistently register concentrations within 10% of the objective over the past five years, 2024 marks the first year it fell below that threshold and shows compliance.

The analysis of hourly mean concentrations at monitoring station HO4 (Figure A.6) by day of the week indicates that the highest concentrations were recorded during morning and afternoon traffic peaks throughout the working week from Monday to Friday. The highest monthly average concentration in the year was recorded in November (21.4 µg/m^3).

Pulborough Sites

In late January 2023, a landslide caused an embankment to collapse along the A29 in Pulborough, reducing Church Hill to a single-lane carriageway managed by traffic lights. In 2024, HDC installed three new diffusion tubes to monitor the air quality surrounding the affected area. The area's topography and landscape, combined with persistent queues of idling vehicles, has exacerbated the canyon effect, leading to significantly elevated NO_2 levels compared to other nearby diffusion tube sites. The long-term monitoring site in Pulborough (Pulborough 2) has shown an overall decreasing trend in NO_2 concentrations.

Remaining Sites

The monitoring sites in Billingshurst, Henfield, Southwater, Faygate, Ashington, Rusper and Steyning have remained below the objective in the past five years. The concentrations measured in 2024 were all below 20 µg/m^3.

3.2.2 Coarse particulate Matter (PM_{10})

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50 µg/m^3, not to be exceeded more than 35 times per year.

An automatic TEOM particulate monitor has been permanently located at Park Way in Horsham town centre for over twenty years, giving 15-minute measurements of particulate matter concentrations. In the end of April 2022 three particulate matter analysers were installed in Storrington as part of Defra's Particulate Matter research study, in 2023 HDC were able to keep Fidas analyser after the one-year study in Storrington, and in July 2024

the analyser was incorporated into the AURN. Details of data collections and ratification are presented in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

Data capture was above 75% at Park Way (HO2) and Storrington (HO4) sites in 2024 and no annualisation has been required.

Automatic monitoring of PM_{10} at Horsham Park Way (HO2) and Storrington AURN (HO4) site indicated that both the annual and daily mean objectives for PM_{10} were complied with in 2024 and in the previous five years of monitoring. The annual mean PM_{10} concentration recorded in 2024 at Horsham showed a decrease of 21.5% in relation to the previous year, and a decrease of 8% at Storrington AURN (Figure A.7). Data shows a levelling off in annual mean concentrations of PM_{10} over the period of 2020 to 2024 across Sussex.

The analysis of hourly mean concentrations at monitoring station HO2 (Figure A.8) indicates that PM_{10} concentrations were greater in the evening compared to other times of the day. Whereas analysis of HO4 showed PM_{10} concentrations fairly consistent throughout the daytime but tended to be higher in the morning (around rush-hour) and decreasing overnight. There is a spike on Thursdays at 8am, that is considerably higher than other concentrations. The highest average monthly concentrations in the year were recorded in January (24.6 µg/m^3) at Horsham and November (18.9 µg/m^3) at Storrington.

WHO recommended 2021 Air quality guidelines level for coarse particulate matter (PM_{10}) annual mean is 15µg/m^3. Horsham Park Way (HO2) has exceeded the 15µg/m3 annual mean for PM_{10}, but Storrington AURN (HO4) was below this threshold.

3.2.3 Fine particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

In 2024, we began monitoring fine particulate matter ($PM_{2.5}$) in Cowfold using a Thermo 1405 FDMS analyser. However, due to persistent equipment issues, very limited data was captured during the year. The analyser was first installed in March but had to be removed shortly after due to a component failure. Following the arrival of a replacement part, the unit was reinstalled in July. Unfortunately, it had to be withdrawn again just weeks later for repairs, after reporting noisy and frequently negative readings – a problem seen across similar FDMS units in the Sussex network at the time. The analyser was eventually reinstalled in November.

In the end of April 2022 three particulate matter analysers were installed in Storrington (HO4) as part of Defra's Particulate Matter research study, in 2023 HDC were able to keep Fidas analyser after the one-year study in Storrington, and in 2024 the analyser was integrated into the AURN. Details of data collections and ratification are presented in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

Data capture was above 75% at Storrington (HO4) in 2024 and no annualisation has been required. Data capture was below 25% at Cowfold (HO5), so annualisation was not able to be performed. The annual mean concentrations of $PM_{2.5}$ at Horsham Park Way (HO2) were estimated from the PM_{10} measurements, as per method described in Box 7.7 of Technical Guidance TG (22).

Monitoring data at monitoring station HO4 shows a levelling off in annual mean concentrations of $PM_{2.5}$ over the period of 2020 to 2024 (Figure A.9). The analysis of hourly mean concentrations at HO4 (Figure A.10) indicates that $PM_{2.5}$ concentrations were fairly consistent throughout the daytime but showed more variability towards the end of the week. There is a spike on Thursdays at 8am, that is considerably higher than other concentrations. Figure A.10 indicates that the highest average monthly concentrations in the year at HO4 were recorded in January and November measuring 10.9 $\mu g/m^3$ and 11.3 $\mu g/m^3$, respectively.

With regard to the fine particulates 2040 target annual mean, estimated concentrations at Horsham Park Way (HO2) sites was above the annual mean 10$\mu g/m^3$ limit. The 2040 target is not exceeded at Storrington AURN (HO4).

The estimated concentrations of $PM_{2.5}$ at Horsham Park Way (HO2) and Storrington (HO5) were above the WHO-recommended guideline value of 5$\mu g/m^3$ taken as annual mean in 2024.

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)
HO2	Horsham Park Way	Roadside	517485	130590	NO_2, PM_{10}	No	N/A	Chemiluminescence (APNA-370); TEOM	8.9	1.5	3.0
HO4	Storrington AURN	Roadside	509083	114198	NO_2, PM_{10}, $PM_{2.5}$	No	N/A	Chemiluminescence (T200); FIDAS200	9.6	4.6	3.3
HO5	Cowfold	Roadside	521356	122553	NO_2, $PM_{2.5}$*	Yes	Horsham Cowfold AQMA	Chemiluminescence (ML9841B); FDMS 1405F	4.0	6.5	2.0

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).

*Monitoring for $PM_{2.5}$ at HO5 had a data capture below 25% so was not included in the results table (Table A.8), as data could not be annualised.

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)
Ashington sites										
Ashington 1	Church Ln / Fairfield Rd	Urban Background	513053	115867	NO_2	No	10.0	1.1	No	2.0
Billingshurst sites										
Billingshurst 1	High St / St Mary's Cl	Roadside	508649	125858	NO_2	No	2.2	1.5	No	2.6
Billingshurst 2	East St / Windmill Pl	Roadside	509026	125936	NO_2	No	9.2	1.5	No	1.9
Billingshurst 3	Natts Ln / Groomsland Dr	Roadside	508515	124926	NO_2	No	11.8	1.7	No	1.9
Broadbridge Heath sites										
Broadbridge_Heath 1 *	Cheesmer Way	Roadside	514596	130556	NO_2	No	1.0	1.8	No	2.3
Broadbridge_Heath 1.1	Buck Way	Roadside	514603	130621	NO_2	No	3.5	2.6	No	1.9
Cowfold sites										
Cowfold 1, Cowfold 2	The St (between the roundabouts)	Roadside	521324	122613	NO_2	Yes - Horsham Cowfold AQMA	5.0	1.7	No	2.7
Cowfold 3	Station Rd (near roundabout)	Roadside	521269	122675	NO_2	Yes - Horsham Cowfold AQMA	18.4	1.4	No	2.7
Cowfold 4	Brook Hill (near roundabout)	Roadside	521312	122703	NO_2	Yes - Horsham Cowfold AQMA	25.0	2.3	No	2.0
Cowfold 5N *	Station Rd / Thornden	Roadside	521070	122706	NO_2	No	23.0	3.6	No	2.5
Cowfold 6N	South Leas Bus Stop (A281)	Roadside	521309	122248	NO_2	No	3.0	1.4	No	2.0
Cowfold 7n	3 Huntscroft Gardens, Bolney Road	Roadside	521430	122487	NO_2	Yes - Horsham Cowfold AQMA	2.6	1.1	No	2.4
Cowfold 8n	Fairfield Cottages	Urban Background	521413	122636	NO_2	No	8.5	1.1	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)
Cowfold 9N *	Oakfield Rd / Bolney Rd	Roadside	521584	122457	NO_2	No	4.5	1.0	No	2.0
Cowfold 9N.1 *	Oakleigh (Bolney Rd)	Roadside	521626	122471	NO_2	No	7.0	1.5	No	2.2
Cowfold AU A, Cowfold AU B, Cowfold AU C	Cowfold AQMS	Roadside	521357	122552	NO_2	Yes - Horsham Cowfold AQMA	23.8	6.5	Yes	2.0
Faygate sites										
Faygate 1	Calvert Link, Faygate	Kerbside	523221	134924	NO_2	No	17.0	0.3	No	2.0
Henfield sites										
Henfield 1n	High St / Cagefoot Lane	Roadside	521493	115906	NO_2	No	0.0	2.0	No	2.3
Horsham sites										
A281_A24	A281 (Worthing Rd closed)	Other	515513	131159	NO_2	No	2.2	12.0	No	2.0
Horsham 1N *	Park Way	Roadside	517489	130607	NO_2	No	3.5	2.0	No	2.2
Horsham 3N	Hillside	Urban Background	516010	130484	NO_2	No	7.6	2.2	No	2.0
Horsham 4N *	Goring's Mead	Urban Background	517680	130069	NO_2	No	9.8	1.2	No	2.5
Horsham 5N	Harwood Rd West	Roadside	518214	131143	NO_2	No	7.5	1.4	No	2.4
Horsham 6N	Littlehaven Station	Roadside	518653	132481	NO_2	No	10.0	1.5	No	2.2
Horsham 7N	Warnham Rd (near Redford Ave)	Roadside	516954	132213	NO_2	No	12.0	1.8	No	2.3
Horsham 8N	Worthing Rd (near Cricketfield Rd)	Roadside	516647	130221	NO_2	No	6.5	1.8	No	2.4
Horsham 9n.1	Station Rd (Century House)	Roadside	518120	131162	NO_2	No	1.0	1.6	No	2.2
Horsham 12 *	Albion Way / Kings Gate	Roadside	516909	130755	NO_2	No	3.5	1.5	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)
Horsham 12.1 *	29 Albion Way	Roadside	516853	130621	NO_2	No	9.0	1.5	No	2.3
Horsham 12.2	Albion Way / Bishopric	Roadside	516873	130702	NO_2	No	1.0	4.1	No	2.0
Horsham 13	St John's and Arunside Primary School	Roadside	516307	130498	NO_2	No	13.0	2.3	No	2.3
N. Horsham 1N *	Langhurst Wood Rd / A264	Roadside	517702	133570	NO_2	No	4.9	1.9	No	2.4
N. Horsham 2N	Langhurst Wood Rd	Kerbside	517476	134013	NO_2	No	5.0	0.4	No	1.7
N. Horsham 3N	Rusper Rd Roundabout	Roadside	518832	133450	NO_2	No	200.0	1.3	No	2.4
Park Way 1, Park Way 2, Park Way 3	Park Way AQMS	Roadside	517488	130588	NO_2	No	8.9	3.0	Yes	3.0
Pulborough sites										
A29_Pulborough1 *	Glebe Lands	Roadside	505825	118857	NO_2	No	6.0	0.8	No	2.2
A29_Pulborough3 *	St Mary's School	Roadside	505320	119002	NO_2	No	5.0	2.0	No	1.8
A29_Pulborough4 *	Broomers Hill Lane	Rural	506351	118728	NO_2	No	6.0	1.6	No	2.0
A29_Pulborough5 *	The Moat	Urban Background	505407	118854	NO_2	No	3.0	1.5	No	2.0
Pulborough 1	Station Rd / London Rd	Roadside	504567	118561	NO_2	No	1.7	1.8	No	2.0
Pulborough 2	Lower St	Roadside	505288	118630	NO_2	No	2.0	1.5	No	2.0
Pulborough 3 *	London Rd / Chestnut Walk	Roadside	504878	118932	NO_2	No	7.0	1.8	No	1.8
Pulborough 3.1	London Rd (top of Church Hill)	Roadside	504785	118791	NO_2	No	4.5	1.6	No	2.5
Pulborough 4	Church Hill	Roadside	504647	118635	NO_2	No	26.0	1.3	No	1.9

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)
Rusper sites										
Rusper 1	Rusper Primary School	Kerbside	520537	137137	NO_2	No	8.9	0.7	No	1.9
Southwater sites										
Southwater 1 *	Worthing Rd (Opp Nursery)	Roadside	515639	126599	NO_2	No	1.0	1.5	No	2.0
Southwater 1.1	Worthing Rd / Southwater Business Park	Roadside	515630	126133	NO_2	No	43.0	2.2	No	2.1
Southwater 2	Worthing Rd / Southwater St	Roadside	515746	127430	NO_2	No	18.0	2.2	No	1.9
Steyning sites										
Steyning 4N	High St (near Sheep Pen Ln)	Roadside	517644	111171	NO_2	No	1.5	1.4	No	2.1
Storrington sites										
Storrington 1	Manley's Hill Roundabout (eastbound side)	Roadside	508958	114272	NO_2	Yes - Storrington AQMA	2.5	1.1	No	2.8
Storrington 3	School Hill (Roundabout)	Roadside	508933	114295	NO_2	Yes - Storrington AQMA	0.0	1.2	No	2.5
Storrington 4	High St (near Old Mill Dr)	Roadside	508830	114274	NO_2	Yes - Storrington AQMA	2.8	2.2	No	3.0
Storrington 5	West St (Opp Church St)	Roadside	508742	114286	NO_2	Yes - Storrington AQMA	1.9	1.9	No	2.3
Storrington 6	Pulborough Rd (near Reed Cl)	Roadside	508395	114444	NO_2	No	8.3	1.8	No	2.6
Storrington 7	Amberley Rd / The Willows	Roadside	508365	114385	NO_2	No	6.7	1.7	No	2.2
Storrington 8 AURN, Storrington 9 AURN, Storrington 10n AURN	Storrington AURN	Roadside	509087	114198	NO_2	No	9.6	4.6	Yes	3.3

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)
Storrington 11n	53 West St	Roadside	508522	114363	NO_2	Yes - Storrington AQMA	3.5	1.6	No	2.3
Storrington 12n *	West St / Rectory Rd	Roadside	508598	114323	NO_2	Yes - Storrington AQMA	7.0	2.3	No	2.2
Storrington 13n	18 West St	Roadside	508668	114306	NO_2	Yes - Storrington AQMA	0.5	1.6	No	2.4
Storrington 14n *	Cobden, Washington Rd	Kerbside	509319	114160	NO_2	No	20.0	0.9	No	2.6
Storrington 14.1	Moorings, Washington Rd	Roadside	509345	114142	NO_2	No	18.4	1.4	No	1.8
Storrington 15n *	Thakeham Rd / Fryern Rd	Roadside	509103	114532	NO_2	No	12.0	1.7	No	2.2
Storrington 16n	School Hill (by Car Park)	Roadside	508971	114355	NO_2	No	11.4	1.5	No	2.3
Storrington 17n	33 Church St	Urban Background	508678	114148	NO_2	No	1.5	1.4	No	2.0
Storrington 18n *	Amberley Rd / Amberley Cl	Roadside	508215	114348	NO_2	No	5.0	1.9	No	2.2
Storrington 19n	Manley's Hill Roundabout (westbound side)	Roadside	508946	114268	NO_2	Yes - Storrington AQMA	0.5	1.0	No	2.2

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.

* These diffusion tubes were not active in 2024. However, they have been included as they have data reported within 2020-2023, displayed in Table A.4.

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

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
HO2	517485	130590	Roadside	95.1	92.9	18.8	21.1	17.7	16.2	15.7
HO4	509083	114198	Roadside	96.7	96.7	17.4	20.1	17.6	17.4	16.6
HO5	521356	122553	Roadside	98.9	95.5	23.6	20.3	21.0	24.6	16.2

☒ **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 NO_2 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/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 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 NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
Ashington sites										
Ashington 1	513053	115867	Urban Background	91.7	92.5	-	-	-	-	7.7
Billingshurst sites										
Billingshurst 1	508649	125858	Roadside	83.3	83.0	23.8	22.2	20.3	19.7	15.6
Billingshurst 2	509026	125936	Roadside	100.0	66.0	-	-	-	-	12.4
Billingshurst 3	508515	124926	Roadside	40.0	17.0	-	-	-	-	10.8
Broadbridge Heath sites										
Broadbridge_Heath 1	514596	130556	Roadside	N/A	N/A	-	-	-	10.2	-
Broadbridge_Heath 1.1	514603	130621	Roadside	100.0	58.5	-	-	-	-	11.5
Cowfold sites										
Cowfold 1, Cowfold 2	521324	122613	Roadside	100.0	100.0	26.8	26.5	26.4	24.1	21.5
Cowfold 3	521269	122675	Roadside	100.0	100.0	24.6	26.5	25.5	24.1	21.9
Cowfold 4	521312	122703	Roadside	100.0	100.0	22.5	22.2	20.3	19.5	17.5
Cowfold 5N	521070	122706	Roadside	N/A	N/A	20.4	21.3	20.3	18.7	-
Cowfold 6N	521309	122248	Roadside	100.0	43.4	21.7	20.5	20.3	19.6	16.5
Cowfold 7n	521430	122487	Roadside	100.0	100.0	30.2	31.2	31.7	28.3	24.9
Cowfold 8n	521413	122636	Urban Background	100.0	100.0	10.9	10.5	10.3	8.9	8.1
Cowfold 9N	521584	122457	Roadside	N/A	N/A	19.3	18.3	18.7	-	-
Cowfold 9N.1	521626	122471	Roadside	N/A	N/A	-	-	-	18.2	-

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
Cowfold AU A, Cowfold AU B, Cowfold AU C	521357	122552	Roadside	100.0	100.0	19.2	19.9	20.0	17.5	15.8
Faygate sites										
Faygate 1	523221	134924	Kerbside	100.0	32.1	-	-	-	-	8.3
Henfield sites										
Henfield 1n	521493	115906	Roadside	100.0	100.0	19.9	20.9	18.2	18.2	16.6
Horsham sites										
A281_A24	515513	131159	Other	100.0	24.5	-	-	-	-	11.8
Horsham 1N	517489	130607	Roadside	N/A	N/A	21.6	23.2	22.6	20.9	-
Horsham 3N	516010	130484	Urban Background	83.3	92.5	9.5	9.9	8.8	7.6	7.2
Horsham 4N	517680	130069	Urban Background	N/A	N/A	9.1	9.0	8.7	-	-
Horsham 5N	518214	131143	Roadside	100.0	100.0	21.0	22.7	21.6	20.4	18.1
Horsham 6N	518653	132481	Roadside	75.0	73.6	18.2	19.5	17.6	15.0	14.3
Horsham 7N	516954	132213	Roadside	100.0	100.0	18.6	19.4	18.9	16.6	13.5
Horsham 8N	516647	130221	Roadside	83.3	83.0	19.1	20.7	19.9	18.7	13.4 *
Horsham 9n.1	518120	131162	Roadside	100.0	100.0	22.1	23.3	24.1	20.3	17.3
Horsham 12	516909	130755	Roadside	N/A	N/A	30.5	33.4	29.7	-	-
Horsham 12.1	516853	130621	Roadside	N/A	N/A	-	-	-	20.1	-
Horsham 12.2	516873	130702	Roadside	66.7	64.4	-	-	-	-	22.0
Horsham 13	516307	130498	Roadside	100.0	92.5	-	-	-	-	8.6

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
N. Horsham 1N	517702	133570	Roadside	N/A	N/A	16.8	17.6	13.9	-	-
N. Horsham 2N	517476	134013	Kerbside	100.0	100.0	15.8	14.6	14.1	14.1	11.9
N. Horsham 3N	518832	133450	Roadside	100.0	100.0	-	-	-	26.2	21.7
Park Way 1, Park Way 2, Park Way 3	517488	130588	Roadside	100.0	100.0	18.4	19.9	19.6	17.0	15.6
Pulborough sites										
A29_Pulborough1	505825	118857	Roadside	N/A	N/A	-	-	-	8.1	-
A29_Pulborough3	505320	119002	Roadside	N/A	N/A	-	-	-	9.1	-
A29_Pulborough4	506351	118728	Rural	N/A	N/A	-	-	-	9.2	-
A29_Pulborough5	505407	118854	Urban Background	N/A	N/A	-	-	-	6.3	-
Pulborough 1	504567	118561	Roadside	100.0	34.0	-	-	-	-	16.2
Pulborough 2	505288	118630	Roadside	100.0	100.0	15.7	16.7	16.1	15.8	12.2
Pulborough 3	504878	118932	Roadside	N/A	N/A	-	-	-	14.7	-
Pulborough 3.1	504785	118791	Roadside	91.7	90.6	-	-	-	-	28.9
Pulborough 4	504647	118635	Roadside	100.0	34.0	-	-	-	-	35.1
Southwater sites										
Southwater 1	515639	126599	Roadside	N/A	N/A	21.2	21.7	19.4	19.0	-
Southwater 1.1	515630	126133	Roadside	90.9	83.3	-	-	-	-	10.2
Southwater 2	515746	127430	Roadside	75.0	73.9	-	-	-	-	13.5

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
Rusper sites										
Rusper 1	520537	137137	Kerbside	100.0	100.0	-	-	-	-	11.4
Steyning sites										
Steyning 4N	517644	111171	Roadside	100.0	100.0	16.2	19.0	18.5	18.2	15.7
Storrington sites										
Storrington 1	508958	114272	Roadside	100.0	100.0	31.6	24.3	32.9	32.9	28.6
Storrington 3	508933	114295	Roadside	100.0	100.0	23.3	24.8	23.7	21.8	19.3
Storrington 4	508830	114274	Roadside	100.0	100.0	25.5	25.9	26.7	24.5	23.3
Storrington 5	508742	114286	Roadside	100.0	100.0	18.7	19.9	19.0	19.2	16.4
Storrington 6	508395	114444	Roadside	100.0	100.0	14.8	17.1	17.4	17.9	15.9
Storrington 7	508365	114385	Roadside	100.0	100.0	15.6	17.6	17.7	18.8	15.9
Storrington 8 AURN, Storrington 9 AURN, Storrington 10n AURN	509087	114198	Roadside	100.0	100.0	20.5	21.7	21.7	19.8	17.3
Storrington 11n	508522	114363	Roadside	91.7	92.5	25.0	26.5	25.9	24.8	20.7
Storrington 12n	508598	114323	Roadside	N/A	N/A	20.0	23.0	22.4	20.9	-
Storrington 13n	508668	114306	Roadside	91.7	90.6	21.4	23.1	23.0	21.1	18.4
Storrington 14n	509319	114160	Roadside	N/A	N/A	27.8	25.8	26.3	23.5	-
Storrington 14.1	509345	114142	Roadside	100.0	100.0	-	-	-	-	26.1
Storrington 15n	509103	114532	Roadside	N/A	N/A	14.9	15.4	14.6	14.7	-

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
Storrington 16n	508971	114355	Roadside	91.7	90.6	18.9	19.2	18.4	17.5	15.1
Storrington 17n	508678	114148	Urban Background	100.0	83.0	9.8	10.0	9.6	8.2	7.6
Storrington 18n	508215	114348	Roadside	N/A	N/A	13.4	18.1	15.4	13.7	-
Storrington 19n	508946	114268	Roadside	100.0	100.0	38.4	39.6	38.1	37.0	32.7

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

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

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

Notes:

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

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

NO_2 annual means exceeding 60 µg/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%).

* The results at Horsham 8N were lower than expected due to roadworks at the beginning of 2024. The road was shut so with fewer vehicles using the road during this period, traffic-related pollution was temporarily reduced. As a result, the NO_2 levels recorded at this site may appear lower than usual for those months, which could have slightly lowered the overall annual average.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations: Horsham and Broadbridge Heath

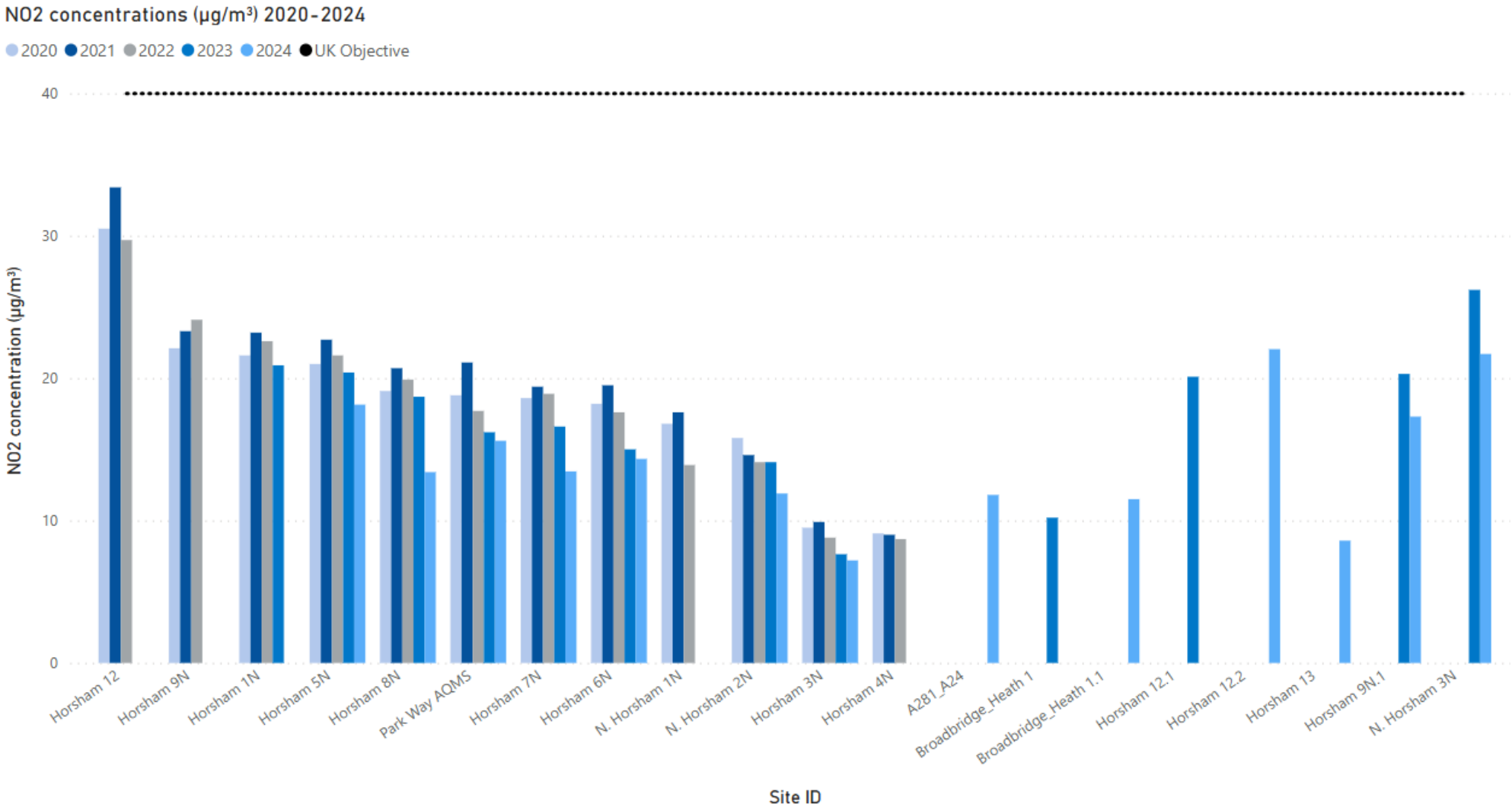


Figure A.2 – Trends in Annual Mean NO_2 Concentrations: Cowfold

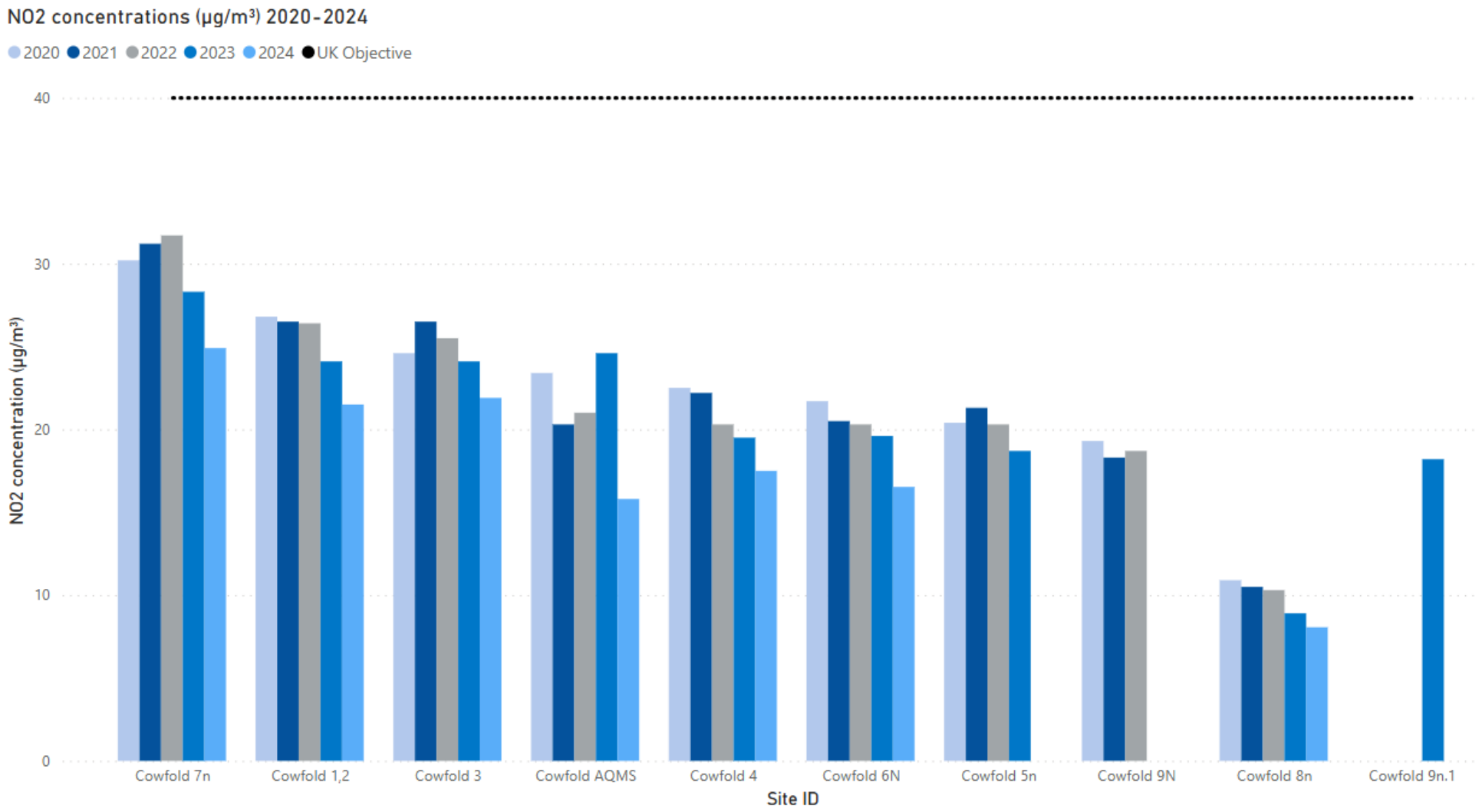


Figure A.3 – Trends in Annual Mean NO_2 Concentrations: Storrington

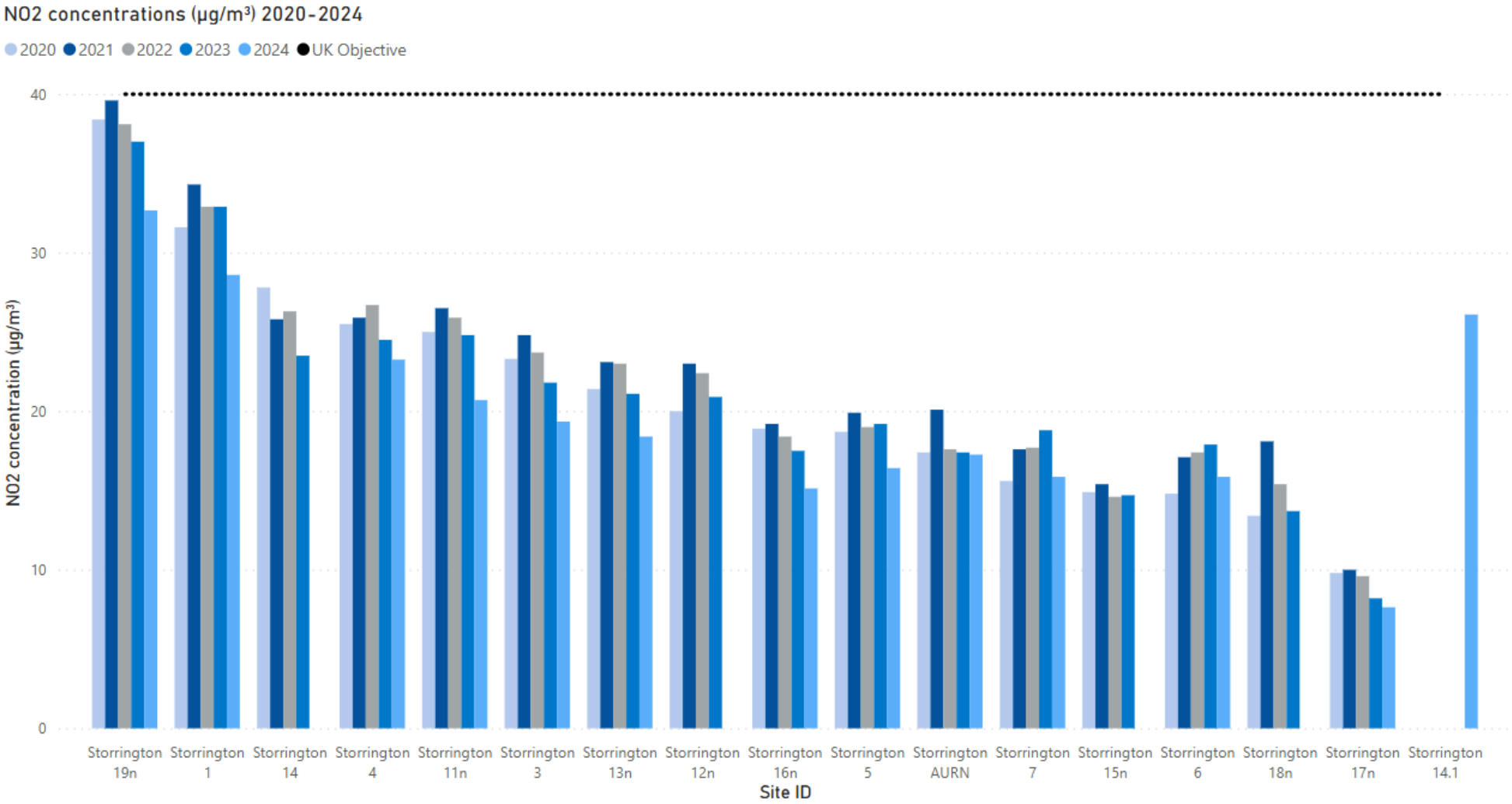


Figure A.4 – Trends in Annual Mean NO_2 Concentrations: Billingshurst, Henfield, Southwater, Steyning, Faygate, Ashington and Rusper

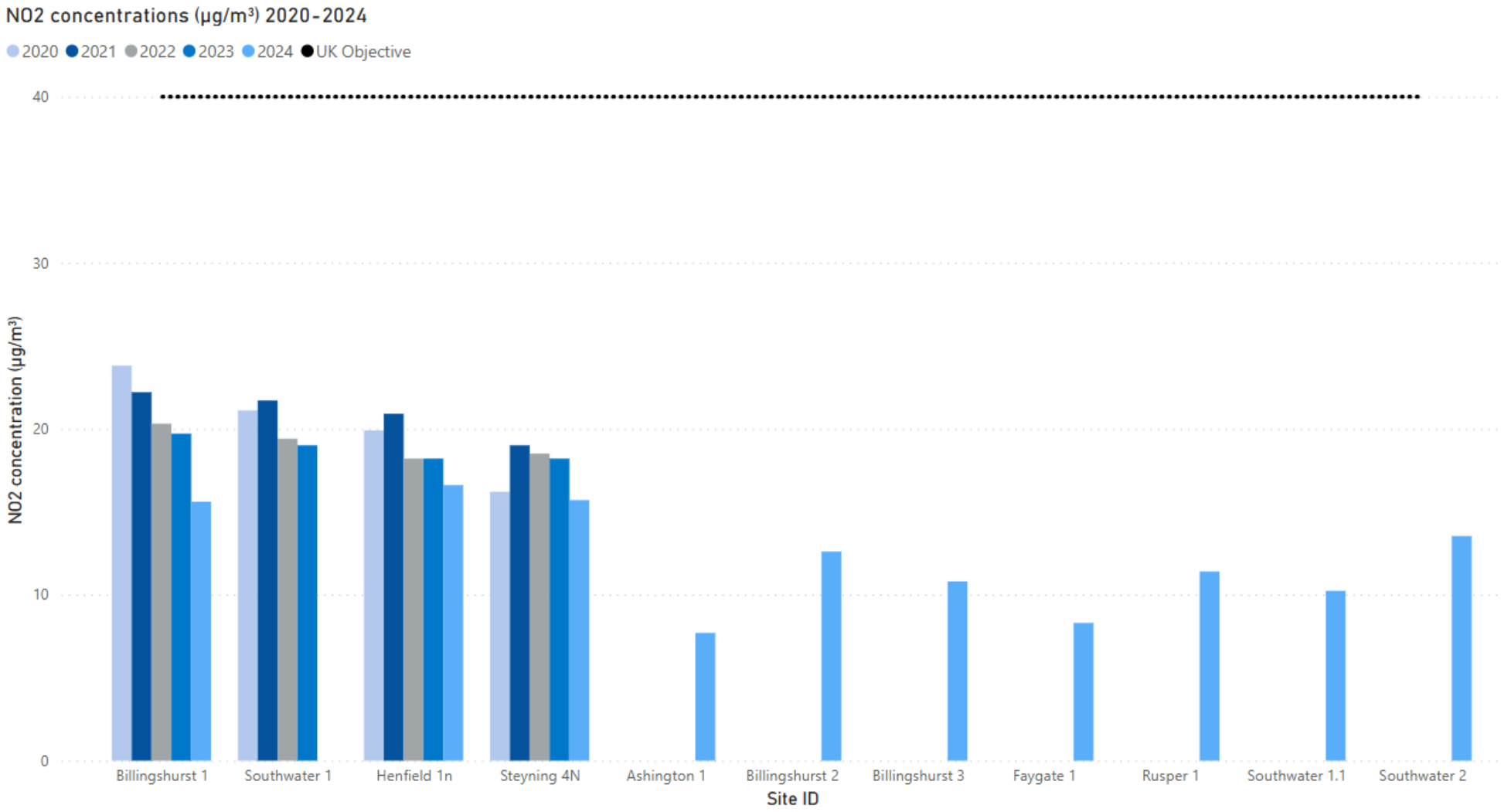


Figure A.5 – Trends in Annual Mean NO_2 Concentrations: Pulborough

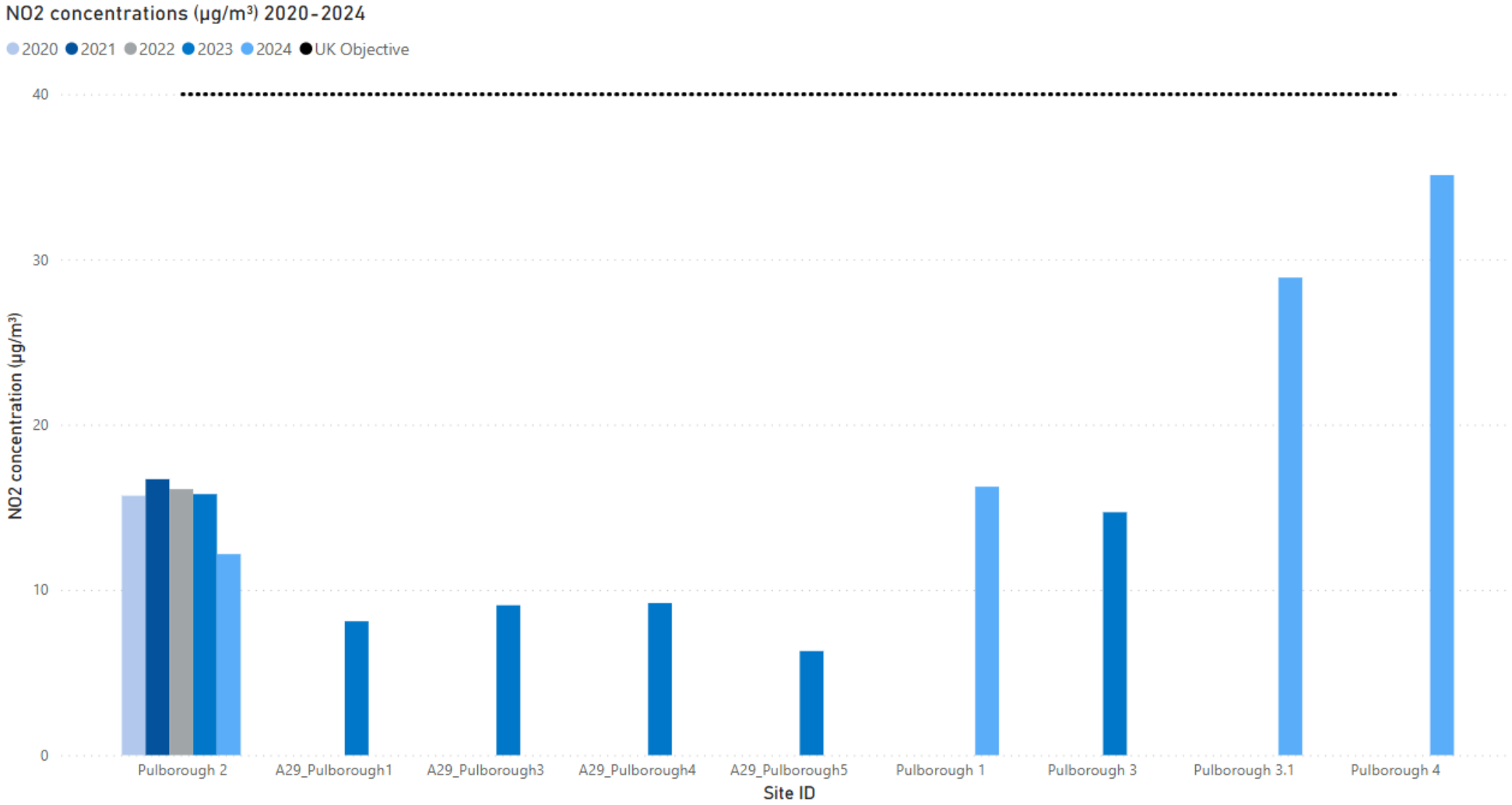


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200 µg/m^3

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
HO2	517485	130590	Roadside	95.1	92.9	0	0	0 (66.3)	0	0
HO4	509083	114198	Roadside	96.7	96.7	0	0	0 (77.2)	0	0
HO5	521356	122553	Roadside	98.9	95.5	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg/m^3 have been recorded.

Exceedances of the NO_2 1-hour mean objective (200 µg/m^3 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%).

Figure A.6 – Monitoring Results: NO_2 Concentrations trends (µg/m^3) at HO2 Park Way, HO4 Storrington AURN and HO5 Cowfold in 2024

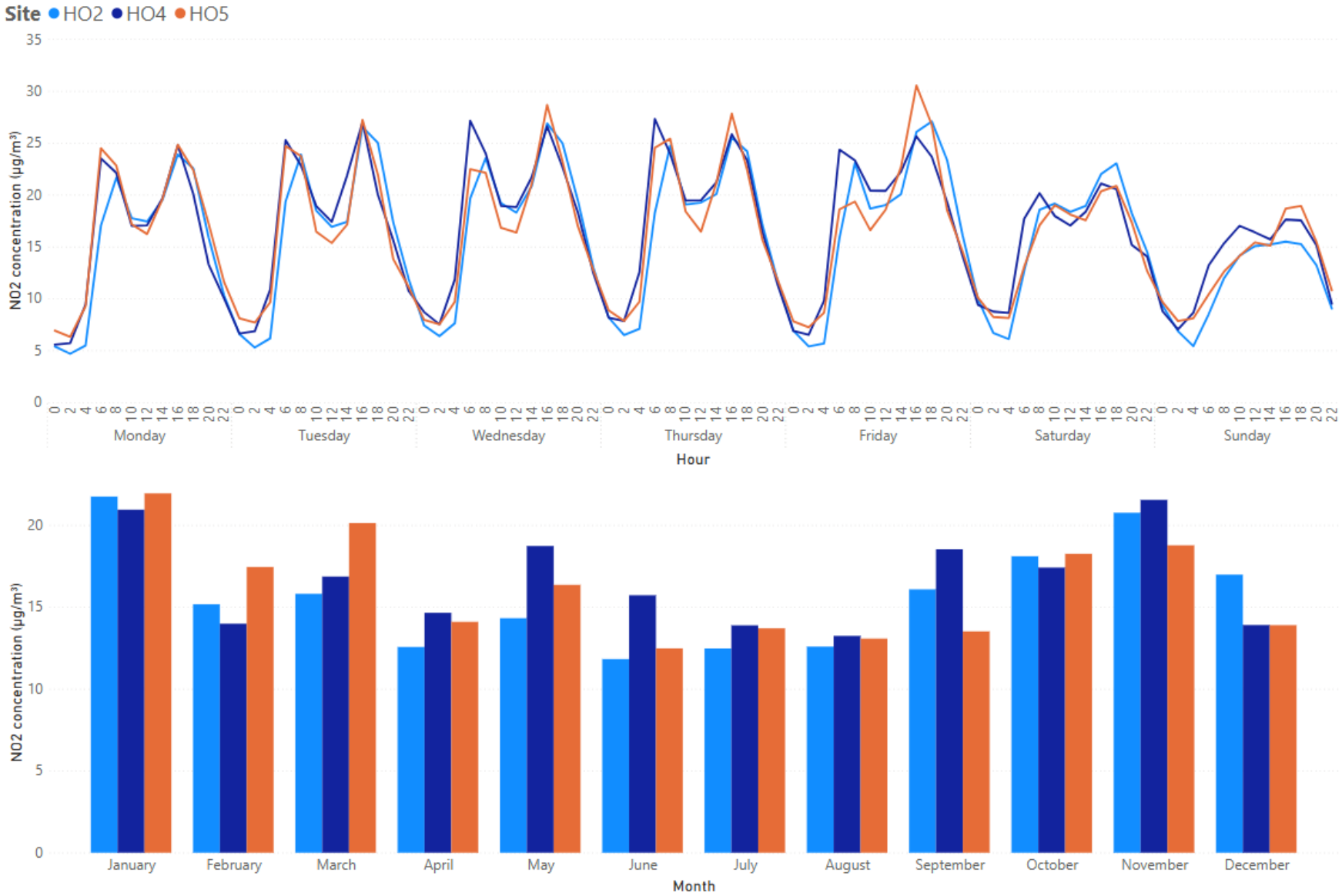


Table A.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

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
HO2	517485	130590	Roadside	99.6	99.6	15.7	17.5	19.3	20.5	16.1
HO4	509083	114198	Roadside	99.6	99.6	-	-	14.0	13.7	12.6

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

Notes:

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

Exceedances of the PM_{10} annual mean objective of 40 µg/m^3 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.

(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.7 – Trends in Annual Mean PM_{10} Concentrations (µg/m³)

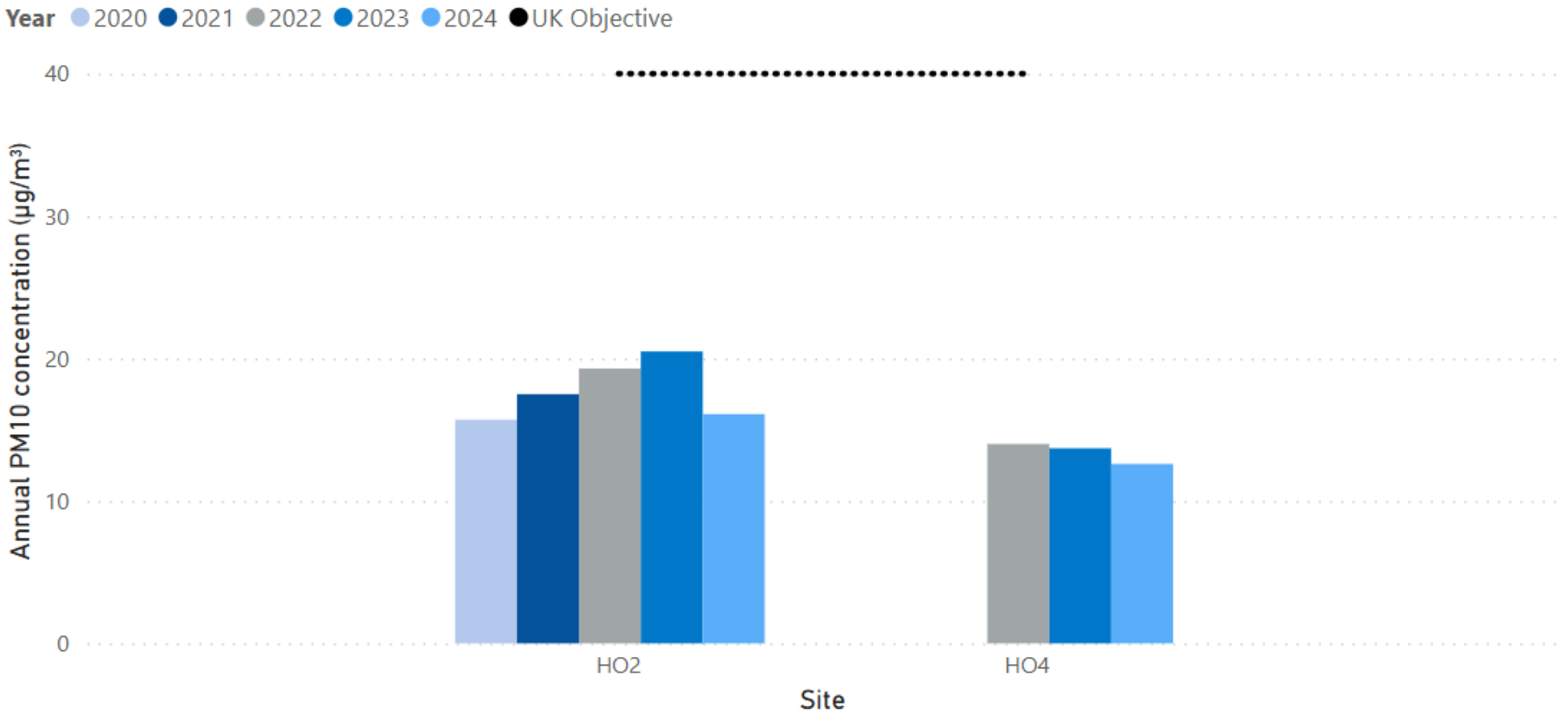


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50 µg/m^3

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
HO2	517485	130590	Roadside	99.6	99.6	0	0	0	0	1
HO4	509083	114198	Roadside	99.6	99.6	-	-	0 (21.5)	0	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50 µg/m^3 have been recorded.

Exceedances of the PM_{10} 24-hour mean objective (50 µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-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%).

Figure A.8 – Monitoring Results: PM_{10} Concentrations trends (µg/m³) at HO2 Park Way and HO4 Storrington AURN in 2024

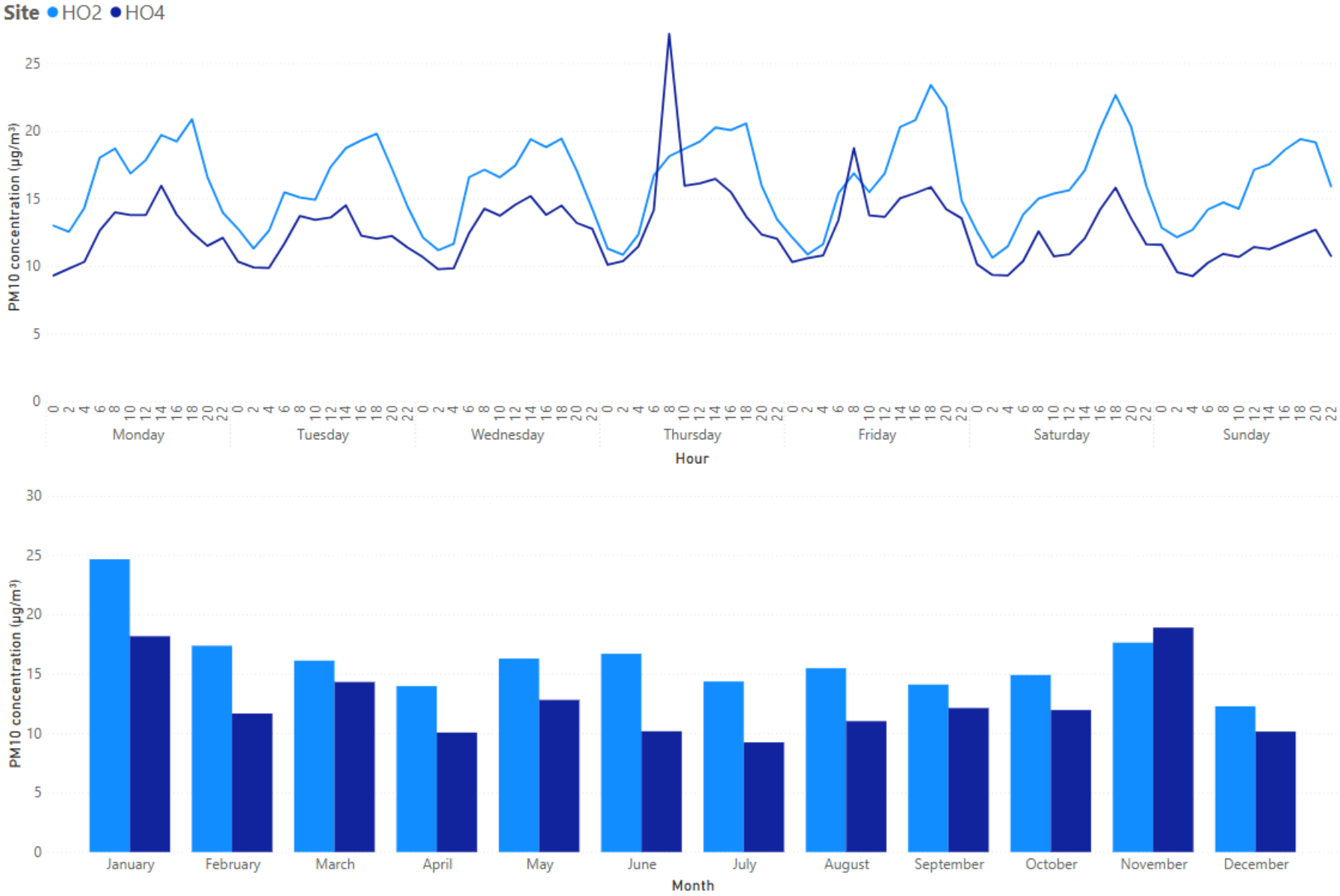


Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

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
HO2 *	509083	114198	Roadside	99.6	99.6	11.0	12.3	13.1	14.6	10.1
HO4	521356	122553	Roadside	99.6	99.6	-	-	7.3	7.7	7.7

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

Notes:

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

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.

(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%).

* $PM_{2.5}$ values for HO2 were estimated from the PM_{10} data using: a nationally derived correction multiplying ratio of 0.7 (2020-2021); subtracting a national factor of 6.4 (2022); subtracting a national factor of national factor 5.9 (2023); and subtracting a national factor of 6.0 (2024).

Figure A.9 – Trends in Annual Mean $PM_{2.5}$ Concentrations (µg/m³)

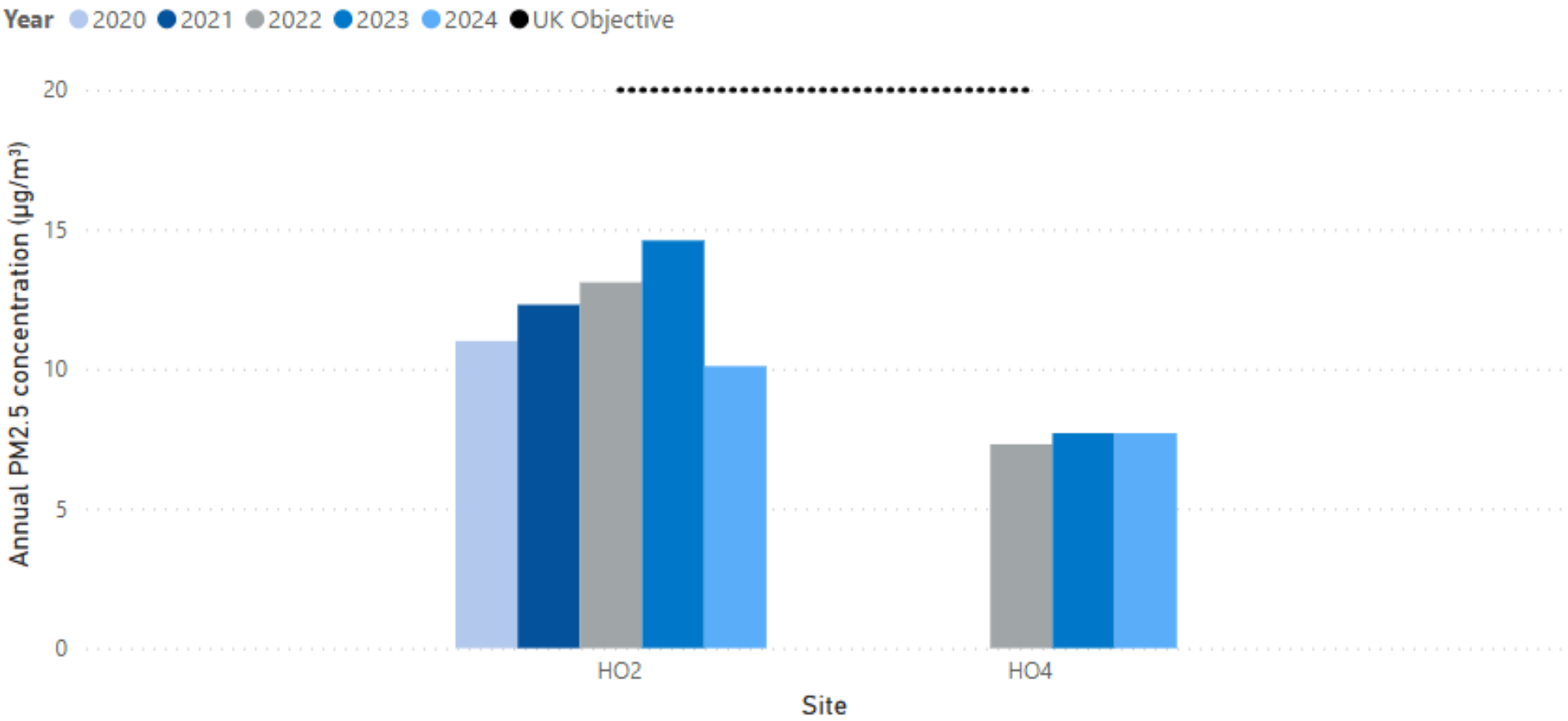
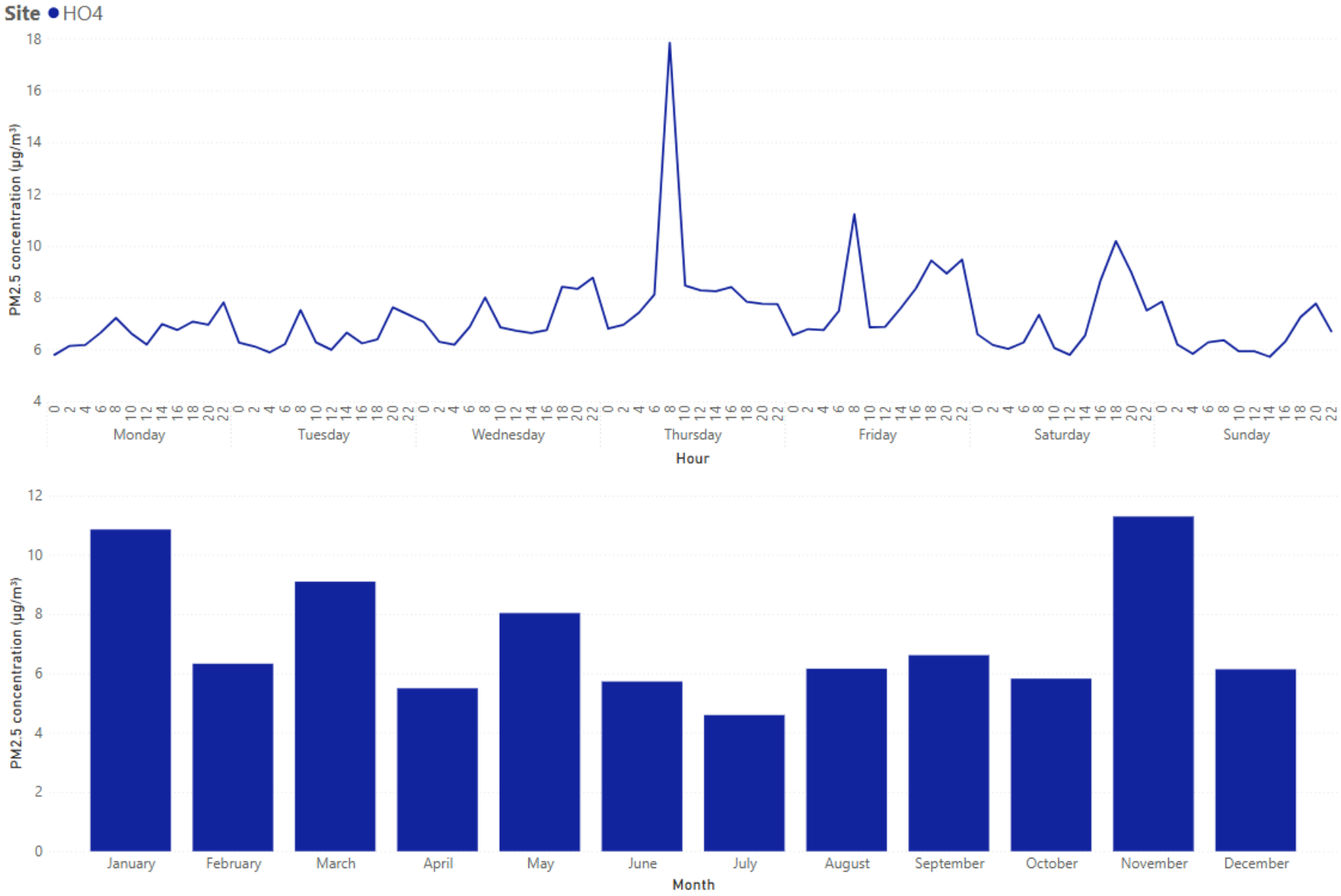


Figure A.10 – Monitoring Results: $PM_{2.5}$ Concentrations trends (µg/m³) at HO4 Storrington AURN in 2024



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.78)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Ashington sites																		
Ashington 1	513053	115867	19.9	9.4		8.2	8.2	6.1	7.4	6.8	7.9	11.2	13.7	10.0	9.9	7.7	-	
Billingshurst sites																		
Billingshurst 1	508649	125858	25.9			19.6	19.7	16.8	17.1	17.6	14.5	18.0	26.2	24.6	20.0	15.6	-	
Billingshurst 2	509026	125936	23.2	14.2	18.5	13.7	15.5	13.2	13.0	13.0					15.5	12.4	-	
Billingshurst 3	508515	124926		13.2	14.4										13.8	10.8	-	
Broadbridge Heath sites																		
Broadbridge 1.1	514603	130621						11.2	15.5	13.3	13.6	19.0	10.9	15.9	14.2	11.5	-	
Cowfold sites																		
Cowfold 1	521324	122610	31.2	21.7	30.6	26.8	30.7	27.9	27.5	26.4	23.7	29.1	29.3	25.4	-	-	-	Duplicate Site with Cowfold 1 and Cowfold 2 - Annual data provided for Cowfold 2 only
Cowfold 2	521324	122613	31.3	25.6	30.9	24.5	28.2	27.9	27.4	27.0	22.1	29.2	30.7	27.0	27.6	21.5	-	Duplicate Site with Cowfold 1 and Cowfold 2 - Annual data provided for Cowfold 2 only
Cowfold 3	521269	122675	34.2	28.3	27.4	27.0	30.8	26.1	25.6	25.6	28.9	27.9	29.1	25.9	28.1	21.9	-	
Cowfold 4	521312	122703	26.7	25.7	24.6	24.6	21.6	19.7	19.6	19.2	16.8	20.5	25.2	24.3	22.4	17.5	-	
Cowfold 6N	521309	122248								19.6	20.2	22.0	23.2	23.9	21.8	16.5	-	
Cowfold 7n	521430	122487	**43.1**	36.2	36.4	28.2	32.0	34.8	33.0	31.7	33.1	33.4	13.1	27.7	31.9	24.9	-	
Cowfold 8n	521413	122636	11.9	12.7	10.8	10.0	10.0	7.5	8.8	6.5	8.6	10.8	14.4	12.0	10.3	8.1	-	
Cowfold AU A	521357	122552	26.2	24.1	23.0	21.4	17.7	18.5	19.9	18.6	17.5	24.2	21.2	17.0	-	-	-	Triplicate Site with Cowfold AU A, Cowfold AU B and Cowfold AU C - Annual data provided for Cowfold AU C only
Cowfold AU B	521357	122552	26.4	14.4	25.5	19.0	21.5	19.8	16.7	18.4	18.5	22.7	21.0	15.4	-	-	-	Triplicate Site with Cowfold AU A, Cowfold AU B and Cowfold AU C - Annual data provided for Cowfold AU C only
Cowfold AU C	521357	122552	23.5	23.1	21.3	20.1									20.3	15.8	-	Triplicate Site with Cowfold AU A, Cowfold AU B and Cowfold AU C - Annual data provided for Cowfold AU C only

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 <(0.78)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Faygate sites																		
Faygate 1	523221	134924				9.4	10.2	6.8	8.3						8.7	8.3	-	
Henfield sites																		
Henfield 1n	521493	115906	28.1	21.4	23.2	21.3	21.2	18.2	17.2	16.9	18.2	24.1	25.3	19.9	21.3	16.6	-	
Horsham sites																		
A281_A24	515513	131159					16.4	15.4	13.7						15.2	11.8	-	
Horsham 3N	516010	130484	17.1	9.2	10.9		7.6	3.7	5.8	5.1	7.9	11.0	14.3	8.9	9.2	7.2	-	
Horsham 5N	518214	131143	36.2	21.5	22.2	19.1	20.0	17.9	19.7	17.4	28.9	25.0	27.4	23.8	23.3	18.1	-	
Horsham 6N	518653	132481	17.1	19.2	20.9	17.0			14.9		17.1	20.3	24.4	20.5	19.0	14.3	-	
Horsham 7N	516954	132213	13.2	18.4	20.1	15.0	18.8	16.8	14.7	13.4	17.4	22.8	15.2	21.2	17.3	13.5	-	
Horsham 8N	516647	130221		10.1	11.8	9.6		17.6	15.1	16.2	21.6	22.8	24.9	22.1	17.2	13.4	-	Roadworks from February to April. Road was shut so concentrations lower than expected.
Horsham 9n.1	518120	131162	29.1	19.8	23.1	18.1	22.0	21.4	14.9	17.9	22.2	24.4	26.8	25.9	22.1	17.3	-	
Horsham 12.2	516873	130702	33.9	19.5	33.8	30.1		30.8	24.8	25.3				25.9	28.0	22.0	-	
Horsham 13	516307	130498		13.7	15.8	11.6	10.6	7.9	9.9	8.8	9.6	10.8	10.1	12.3	11.0	8.6	-	
N. Horsham 2N	517476	134013	13.6	15.9	17.8	17.8	16.3	13.1	14.8	13.6	13.9	13.9	18.4	13.9	15.3	11.9	-	
N. Horsham 3N	518832	133450	22.3	34.4	26.7	25.7	30.6	30.4	26.9	24.3	26.1	34.0	22.0	30.6	27.8	21.7	-	
Park Way 1	517488	130588	23.8	22.2	20.4	19.7	20.4	17.5	18.1	15.8	16.6	21.7	25.2	19.5	-	-	-	Triplicate Site with Park Way 1, Park Way 2 and Park Way 3 - Annual data provided for Park Way 3 only
Park Way 2	517488	130588	24.0	20.8	21.3	18.5	19.6	17.6	16.3	16.4	17.9	22.1	24.1	21.7	-	-	-	Triplicate Site with Park Way 1, Park Way 2 and Park Way 3 - Annual data provided for Park Way 3 only
Park Way 3	517488	130588	30.2	20.5	21.1	19.0	19.1	17.4	13.9	16.5	13.5	19.3	25.7		19.9	15.6	-	Triplicate Site with Park Way 1, Park Way 2 and Park Way 3 - Annual data provided for Park Way 3 only
Pulborough sites																		
Pulborough 1	504567	118561									20.6	25.7	19.3	20.6	21.6	16.2	-	
Pulborough 2	505288	118630	22.4	17.4	11.9	14.5	15.4	12.8	10.3	11.1	18.1	18.0	15.4	19.9	15.6	12.2	-	

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 <(0.78)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Pulborough 3.1	504785	118791	25.7		**52.5**	39.3	41.2	**40.4**	**41.6**	32.1	**40.7**	**40.0**	18.7	34.7	37.0	28.9	-	
Pulborough 4	504647	118635									**54.4**	**50.8**	**43.6**	37.6	**46.6**	35.1	-	
Rusper sites																		
Rusper 1	520537	137137	19.3	15.5	14.7	13.6	14.6	12.6	11.7	11.7	14.5	15.4	18.2	14.2	14.7	11.4	-	
Southwater sites																		
Southwater 1.1	515630	126133		14.2	12.5	14.6	11.9	10.5	8.2	10.5	12.4	23.8		12.6	13.1	10.2	-	
Southwater 2	515746	127430	30.2	18.8		18.8	15.6	14.8	13.3		15.6	16.2		8.2	16.8	13.5	-	
Steyning sites																		
Steyning 4N	517644	111171	28.8	18.6	21.9	17.9	19.3	16.9	16.3	16.5	18.6	23.0	21.7	21.7	20.1	15.7	-	
Storrington sites																		
Storrington 1	508958	114272	**47.1**	33.4	**41.0**	36.4	35.6	34.8	27.6	32.0	**40.9**	35.4	**41.0**	34.8	36.7	28.6	-	
Storrington 3	508933	114295	33.8	18.1	27.4	24.4	25.0	22.4	22.0	22.9	19.7	28.0	27.3	26.6	24.8	19.3	-	
Storrington 4	508830	114274	37.5	32.7	37.6	26.0	32.4	27.1	26.9	26.0	25.4	34.2	25.5	26.5	29.8	23.3	-	
Storrington 5	508742	114286	30.4	17.1	18.3	18.2	21.7	20.1	18.0	16.4	20.4	25.1	27.2	19.6	21.0	16.4	-	
Storrington 6	508395	114444	26.9	19.6	25.3	17.9	18.6	15.0	15.7	16.3	15.2	33.0	22.1	18.4	20.3	15.9	-	
Storrington 7	508365	114385	25.5	16.8	21.7	23.1	18.5	18.0	16.2	20.4	20.7	22.1	22.7	18.3	20.3	15.9	-	
Storrington 8 AURN	509087	114198	26.0	19.6	23.2	21.5	26.1	25.1	17.6	21.2	21.5	24.7	24.6	20.1	-	-	-	Triplicate Site with Storrington 8 AURN, Storrington 9 AURN and Storrington 10n AURN - Annual data provided for Storrington 10n AURN only
Storrington 9 AURN	509087	114198	20.5	15.9	22.4	21.3	26.0	23.4	16.9	20.1	24.0	22.1	22.3	20.3	-	-	-	Triplicate Site with Storrington 8 AURN, Storrington 9 AURN and Storrington 10n AURN - Annual data provided for Storrington 10n AURN only
Storrington 10n AURN	509087	114198	21.3	20.6	21.4	21.0	26.3	23.5	22.6	20.8		25.2	25.2	19.7	22.1	17.3	-	Triplicate Site with Storrington 8 AURN, Storrington 9 AURN and Storrington 10n AURN - Annual data provided for Storrington 10n AURN only
Storrington 11n	508522	114363	26.0	16.0	33.7	23.3	25.9	27.2	26.2	26.9		32.5	27.9	26.7	26.6	20.7	-	

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 <(0.78)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
Storrington 13n	508668	114306	30.0	21.9	25.9	19.8		20.4	20.1	20.5	19.7	27.7	30.1	24.0	23.6	18.4	-	
Storrington 14.1	509345	114142	**41.7**	29.8	35.4	29.1	37.2	35.7	39.9	35.5	25.0	36.3	**40.1**	16.3	33.5	26.1	-	
Storrington 16n	508971	114355	28.7	17.3	18.8	18.1		16.1	16.8	18.1	16.8	24.1	20.7	17.9	19.4	15.1	-	
Storrington 17n	508678	114148	14.3	10.2	11.3	8.7	9.8	7.0	7.3	8.3	9.3	11.7			9.8	7.6	-	
Storrington 19n	508946	114268	31.1	19.8	**53.4**	**44.1**	**49.6**	**49.4**	**48.1**	**46.6**	**43.2**	**40.7**	35.2	**41.3**	**41.9**	32.7	-	

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

☒ **Horsham District Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Horsham District Council During 2024

Horsham District Council has not identified any new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by Horsham District Council During 2024

Horsham District Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

HDC followed the Defra Diffusion Tube Deployment Calendar in 2024, apart from the months of November, which was exposed for an additional week, and December, which was deployed 6 days later than the schedule.

The diffusion tubes are sourced from Socotec in Didcot using the 50% TEA in acetone preparation method. The national bias adjustment factor was obtained from Defra national bias adjustment factor database (spreadsheet version number 06/25 published in June 2025) based on 37 co-location studies. The bias adjustment factor given for this methodology was 0.78.

Laboratories participate in two QA/QC schemes. The new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) is run by LGC and supported by the Health & Safety Laboratory. The other scheme is a monthly field intercomparison Exercise operated by the National Physics Laboratory (NPL). Defra advises that local authorities should use diffusion tubes supplied by laboratories that have demonstrated satisfactory performance under the QA/QC schemes.

Socotec is a UKAS accredited laboratory and participates in both QA/QC schemes described above. The list of those laboratories which have performed satisfactorily in the AIR-PT scheme is provided to local authorities on the LAQM Support website. In the latest

available AIR-PT results Socotec have scored 87.5% in round AR068 (January to February 2025). The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2.

Diffusion Tube Annualisation

Annualisation (short to long term data adjustment) is required for any site with data capture less than 75% but greater than 25%. Annualisation was required for 9 sites in 2024:

- Broadbridge 1.1 – the lamppost in which the diffusion tube was deployed on was removed in May 2024, so the tube was relocated around the corner and data collection was resumed in June. As the new location was further from the main road than the previous one, the earlier results were not used.
- Horsham 6N – site was missing data for May, June and August 2024.
- Horsham 12.2 – site was missing data for May, September, October, November 2024.
- Billingshurst 2 – monitoring at this site was stopped after August 2024.
- Pulborough 4 – monitoring at this site began in September 2024.
- Faygate 1 – monitoring was undertaken for four months (April – July) following a resident concern regarding increased bus traffic.
- Pulborough 1 – monitoring at this site began in September 2024.
- Southwater 2 – site was missing data for March, August and November.
- Cowfold 6N – monitoring at this site began in August 2024.

Details of annualisation can be seen in Table C.1 and Table C.2.

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor - Horley	Annualisation Factor BH0 - Brighton Preston Park	Annualisation Factor CI1 - Chichester	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
Broadbridge 1.1	1.0577	1.0591	1.0050	1.0406	14.2	14.8
Horsham 6N	0.9216	0.9494	1.0227	0.9646	19.0	18.4
Horsham 12.2	1.0067	1.0576	0.9616	1.0086	28.0	28.3
Billingshurst 2	1.0446	1.0454	0.9739	1.0213	15.5	15.9

Site ID	Annualisation Factor - Horley	Annualisation Factor BH0 - Brighton Preston Park	Annualisation Factor CI1 - Chichester	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
Pulborough 4	0.9186	0.9183	1.0630	0.9666	46.6	45.0
Faygate 1	1.3464	1.2068	1.1282	1.2271	8.7	10.6
Pulborough 1	0.9186	0.9183	1.0630	0.9666	21.6	20.8
Southwater 2	1.0232	1.0295	1.0391	1.0306	16.8	17.3
Cowfold 6N	0.9780	0.9727	0.9680	0.9729	21.8	21.2

Table C.2 – Details of sites used for Annualisation Summary

Site Name	Site Type	Data capture
Horley	AURN - Suburban Industrial	98%
BH0 - Brighton Preston Park	AURN - Urban Background	98%
CI1 - Chichester	Locally Managed - Suburban	95%

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 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/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method (Figure C.1).

Horsham District Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by Horsham District Council over the past five years is presented in Table C.3. Although the local bias adjustment factor was not used, the calculation is in Table C.4.

Table C.3 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	06/25	0.78
2023	Local (Storrington, Cowfold, Park Way)		0.80
2022	Local (Cowfold)		0.80
2021	Local (Storrington, Cowfold, Park Way)		0.83
2020	Local (Storrington, Cowfold, Park Way)		0.74

Table C.4 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1 – HO2 Park Way	Local Bias Adjustment Input 2 – HO4 Storrington AURN	Local Bias Adjustment Input 3 – HO5 Cowfold AQMS
Periods used to calculate bias	10	11	11
Bias Factor A	0.79 (0.73 - 0.87)	0.75 (0.7 - 0.82)	0.78 (0.73 - 0.83)
Bias Factor B	27% (15% - 38%)	33% (22% - 43%)	29% (21% - 37%)
Diffusion Tube Mean (µg/m^3)	19.8	22.3	21.0
Mean CV (Precision)	6.3%	6.9%	5.9%
Automatic Mean (µg/m^3)	15.6	16.8	16.3
Data Capture	91%	95%	94%
Adjusted Tube Mean (µg/m^3)	16 (14 - 17)	17 (16 - 18)	16 (15 - 17)

Notes:

A combined local bias adjustment factor of 0.77 was calculated, but not applied to the data.

Figure C.1 – National Diffusion Tube Bias Adjustment Factor Spreadsheet V06/25

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/25

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of September 2025
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory.
Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List
If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List
If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List
If a year is not shown, we have no data[2]

Step 4:
Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.
If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method	Year[5]	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A)
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cambridge City Council	11	20	15	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cardiff Council / Shared Regulatory Services	9	35	31	14.2%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	9	24	20	21.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	11	36	26	37.9%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	City Of York Council	11	13	11	16.0%	P	**0.86**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	22	18	22.9%	G	**0.81**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	26	20	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	East Suffolk Council	9	26	20	32.8%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	10	47	36	30.5%	G	**0.77**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Hull City Council	10	21	16	25.4%	P	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Hull City Council	9	27	20	35.3%	G	**0.74**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	10	21	18	13.7%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	11	22	16	32.3%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Wrexham County Borough Council	10	15	13	17.0%	G	**0.85**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Gravesham Borough Council	11	21	19	9.7%	P	**0.91**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	35	24	43.5%	G	**0.70**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	26	20	32.6%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	23	17	34.0%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	10	31	23	33.4%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	30	23	33.7%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Thanet Distric Council	10	19	15	24.3%	G	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Wirral Council	9	14	12	19.9%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Derry City And Strabane District Council	11	28	32	-11.8%	G	**1.13**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Derry City And Strabane District Council	11	11	7	58.1%	G	**0.63**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham District Council	11	22	17	31.1%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	10	36	28	32.5%	G	**0.75**
SOCOTEC Didcot	50% TEA in Acetone	2024	KS	Leeds City Council	11	29	20	42.7%	G	**0.70**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	11	24	18	36.4%	G	**0.73**
SOCOTEC Didcot	50% TEA in Acetone	2024	UC	Leeds City Council	10	25	19	31.2%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Huntingdonshire District Council	10	28	23	21.1%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	39	21	84.1%	G	**0.54**
SOCOTEC Didcot	50% TEA in Acetone	2024	UB	North East Lincolnshire Council	10	12	10	20.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	21	18	15.7%	G	**0.86**
SOCOTEC Didcot	50% TEA in Acetone	2024	UI	North Lincolnshire Council	11	13	11	17.3%	P	**0.85**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Horsham District Council	10	20	16	26.6%	G	**0.79**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Horsham District Council	11	21	16	27.0%	G	**0.79**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Vale Of White Horse District Council	11	19	13	44.9%	G	**0.69**
SOCOTEC Didcot	50% TEA in acetone	2024		**Overall Factor[3] (37 studies)**				**Use**		**0.78**

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1. No diffusion tube NO_2 monitoring locations within Horsham District required distance correction during 2023.

QA/QC of Automatic Monitoring

Data collection and ratification for the HO2 Horsham Park Way and HO5 Cowfold monitoring stations is undertaken by Bureau Veritas through a contract with Sussex Air Partnership. For more information, please visit the Sussex Air Quality Partnership website

at http://www.sussex-air.net. The operation and data management for both stations are carried out to the AURN standards, however, the data quality could be further improved if independent inter calibrations site audits were carried out (which are requirement for AURN sites).

HO4 Storrington AURN monitoring station is an AURN site. A number of organisations are involved in the day-to-day running of the network. Currently, the role of Central Management and Co-ordination Unit (CMCU) for the whole AURN is contracted to Bureau Veritas, whilst Quality Assurance and Quality Control (QA/QC) activities are contracted to Ricardo Energy & Environment. The responsibility for operating individual monitoring sites is assigned to local organisations, such as local authority Environmental Health Officers with relevant experience in the field. Calibration gases for the network are supplied by BOC Limited and are provided with a UKAS certificate of calibration by Ricardo Energy & Environment.

Calibrations and checks at all stations are undertaken every two or four weeks by an inhouse Local Site Operator and the analysers are maintained under contract with instrument suppliers/manufacturers for all three stations. All data presented within this ASR have been previously ratified. Live and historic data is available at UK-Air website.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

Particulate monitoring Data provided by Bureau Veritas the Sussex Air Quality Network includes appropriate correction factors, as specified in the UK Approval of Particulate Matter Monitoring Instruments.

Automatic Monitoring Annualisation

All automatic monitoring locations within Horsham District recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO_2 concentrations corrected for distance are presented in Table A.3. No automatic NO_2 monitoring locations within Horsham District required distance correction during 2024.

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

Figure D.1 – Map of Automatic Monitoring Sites

Figure D.2 – Map of Non-Automatic Monitoring Sites –Horsham and Broadbridge Heath

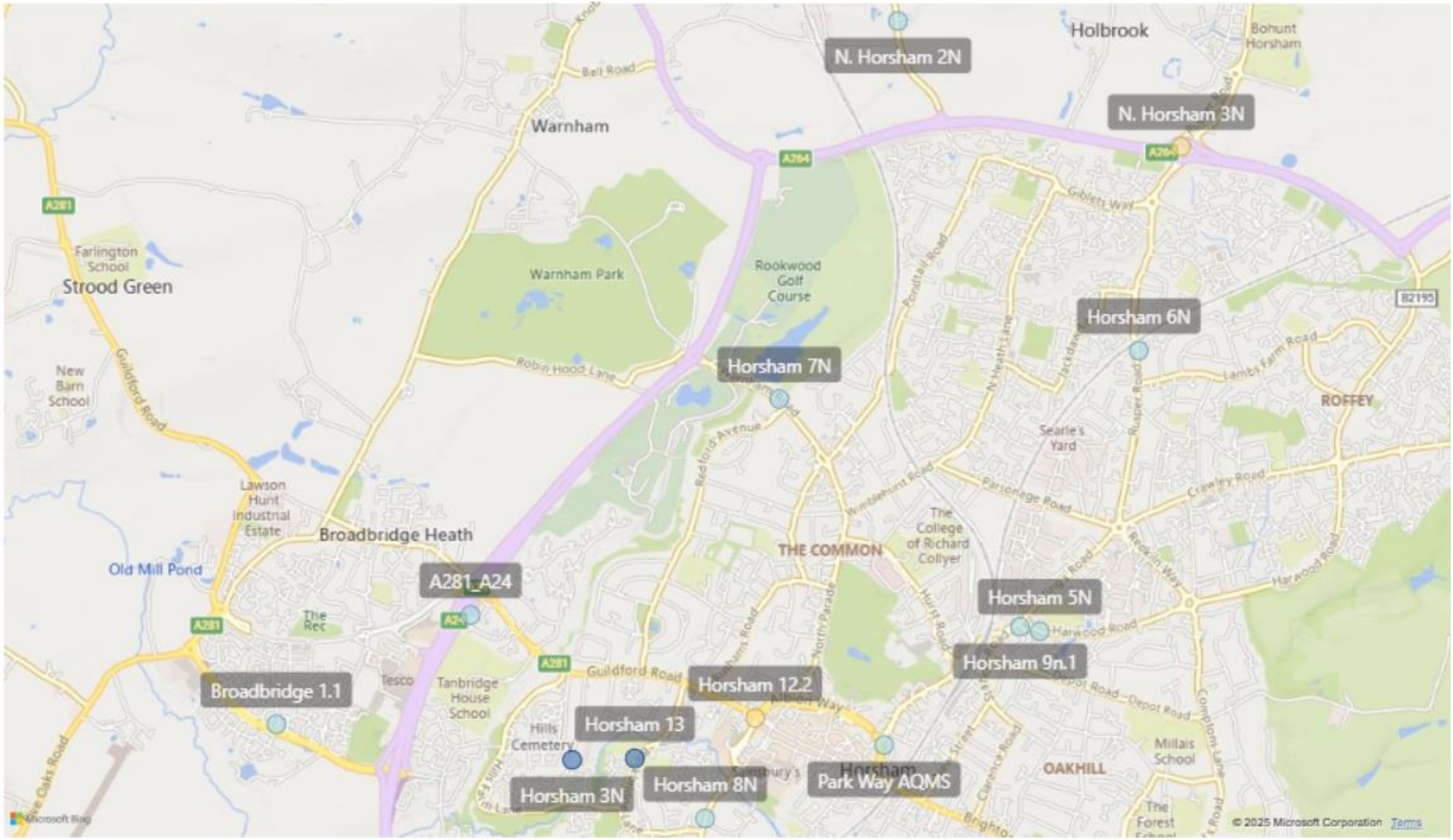


Figure D.3 – Map of Non-Automatic Monitoring Sites – Rusper and Faygate

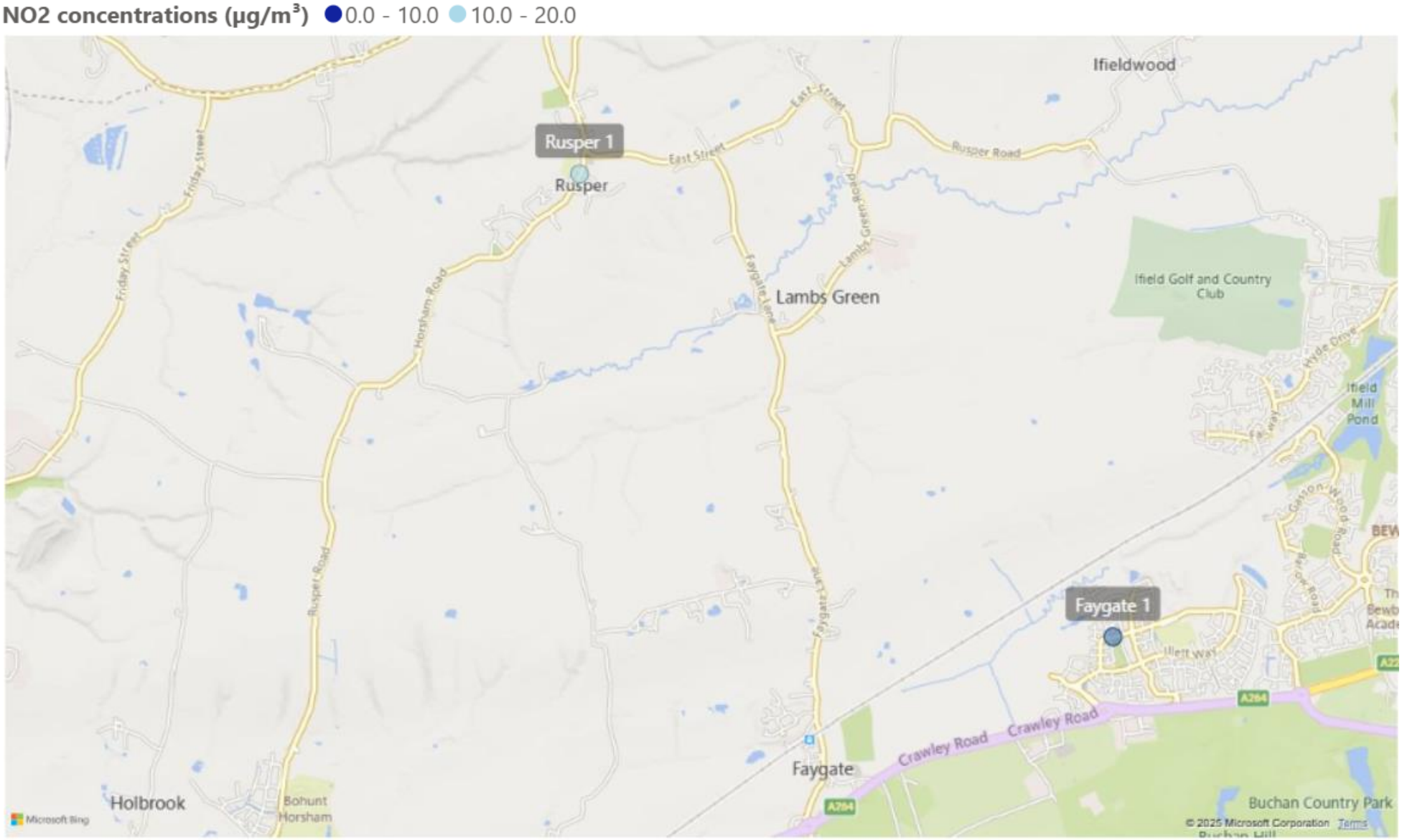


Figure D.4 – Map of Non-Automatic Monitoring Sites – Cowfold and AQMA boundary

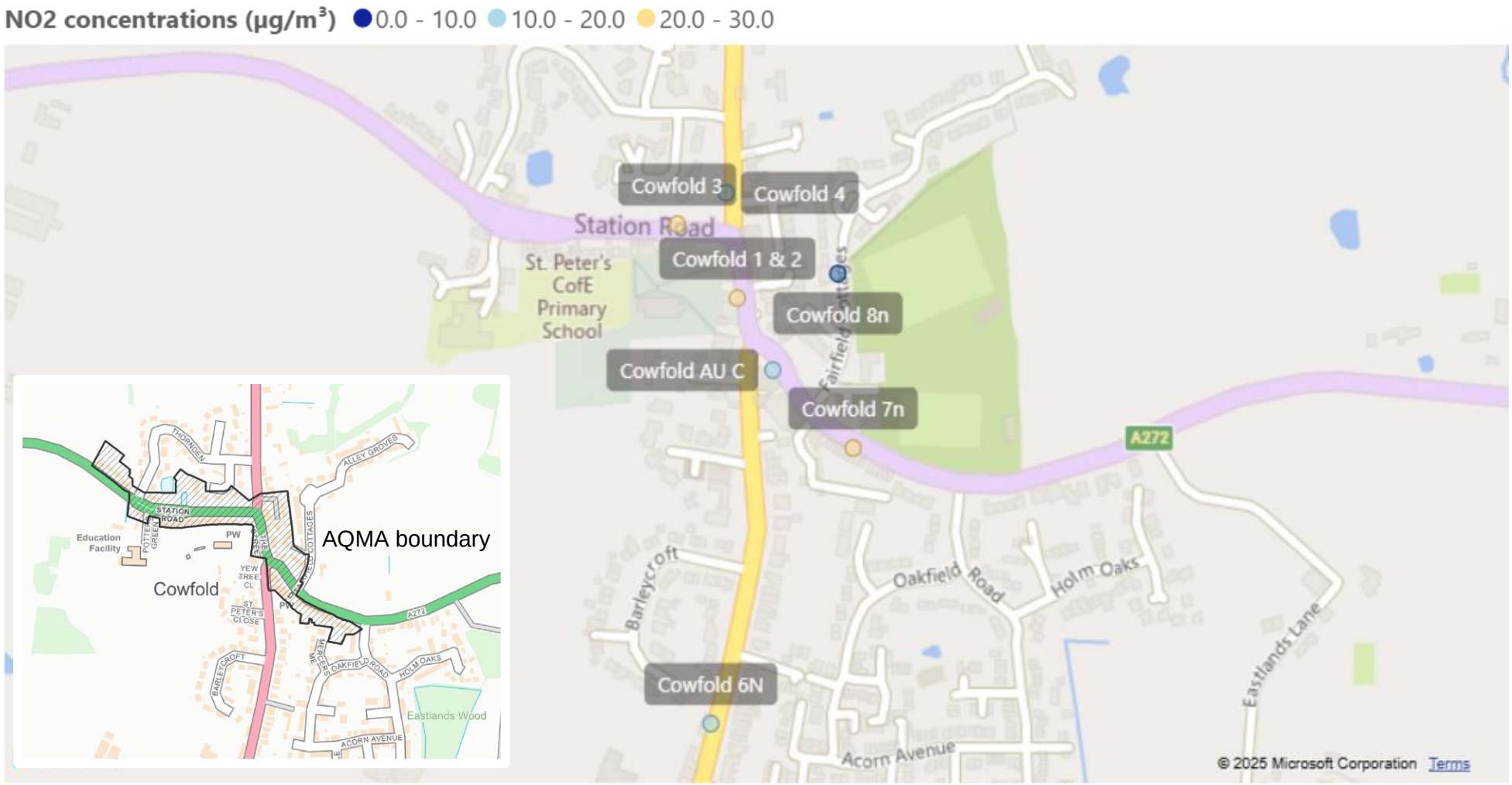


Figure D.5 – Map of Non-Automatic Monitoring Sites – Storrington and AQMA boundary

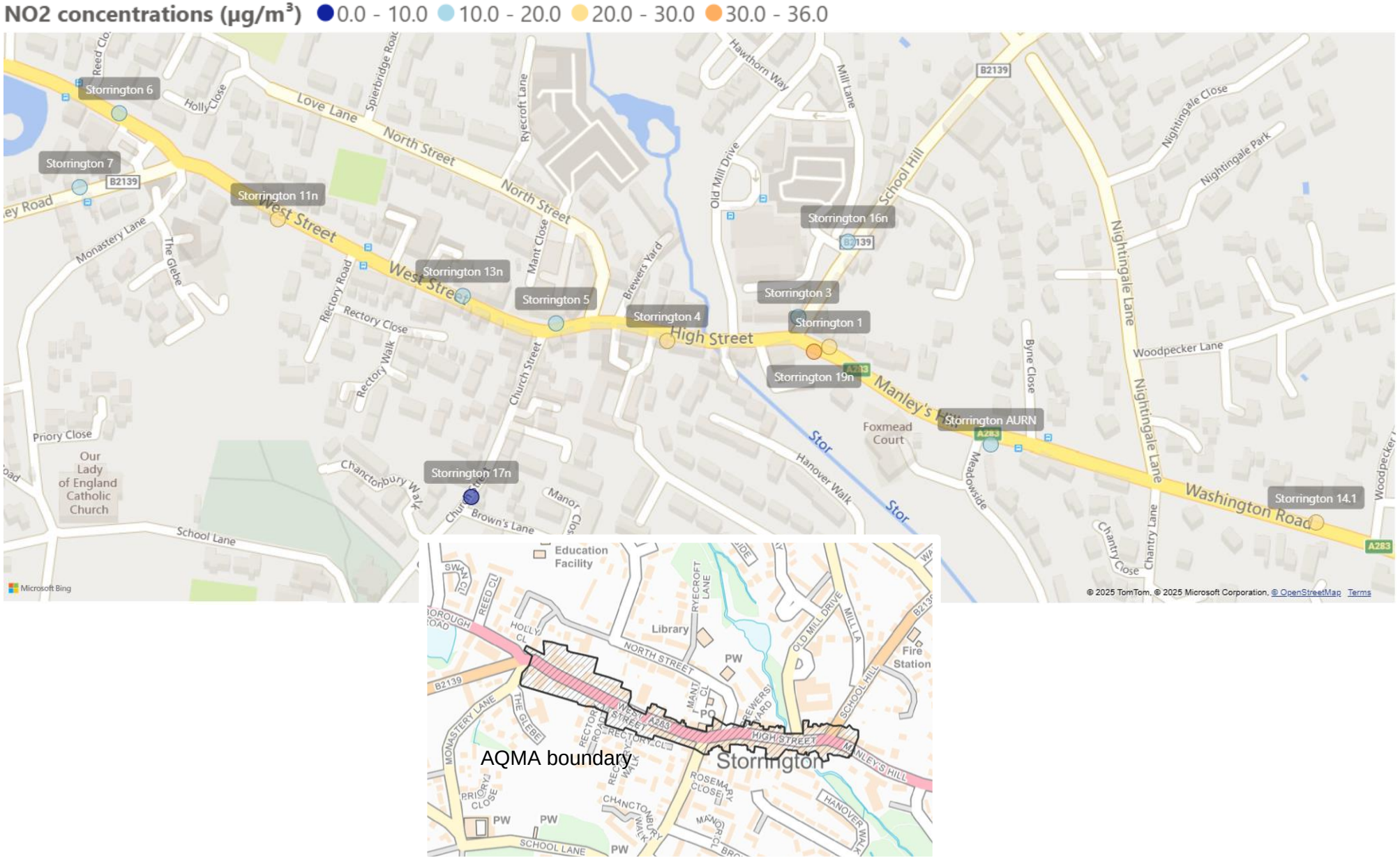


Figure D.6 – Map of Non-Automatic Monitoring Sites – Billingshurst

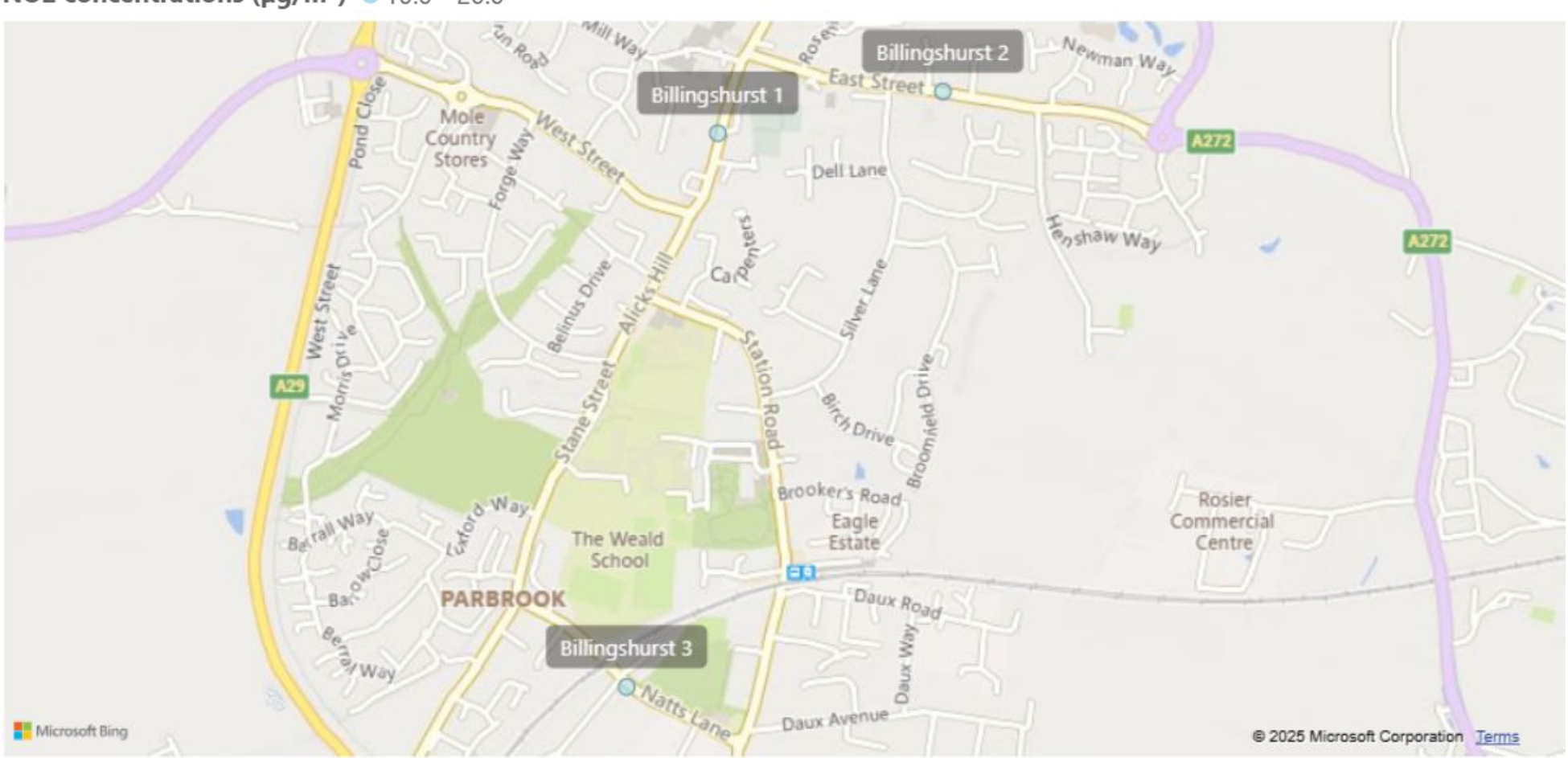


Figure D.7 – Map of Non-Automatic Monitoring Sites – Southwater

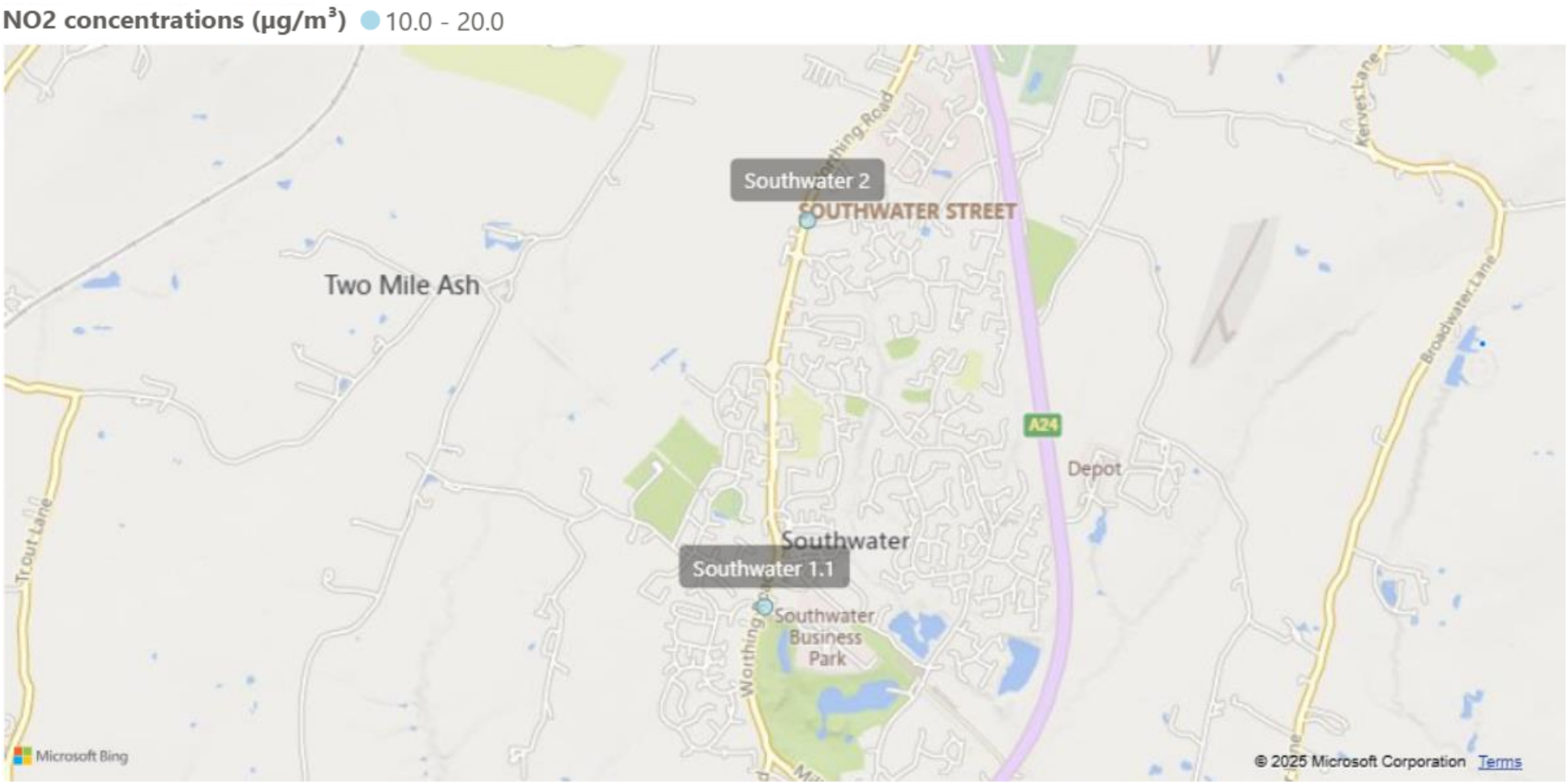


Figure D.8 – Map of Non-Automatic Monitoring Sites – Pulborough

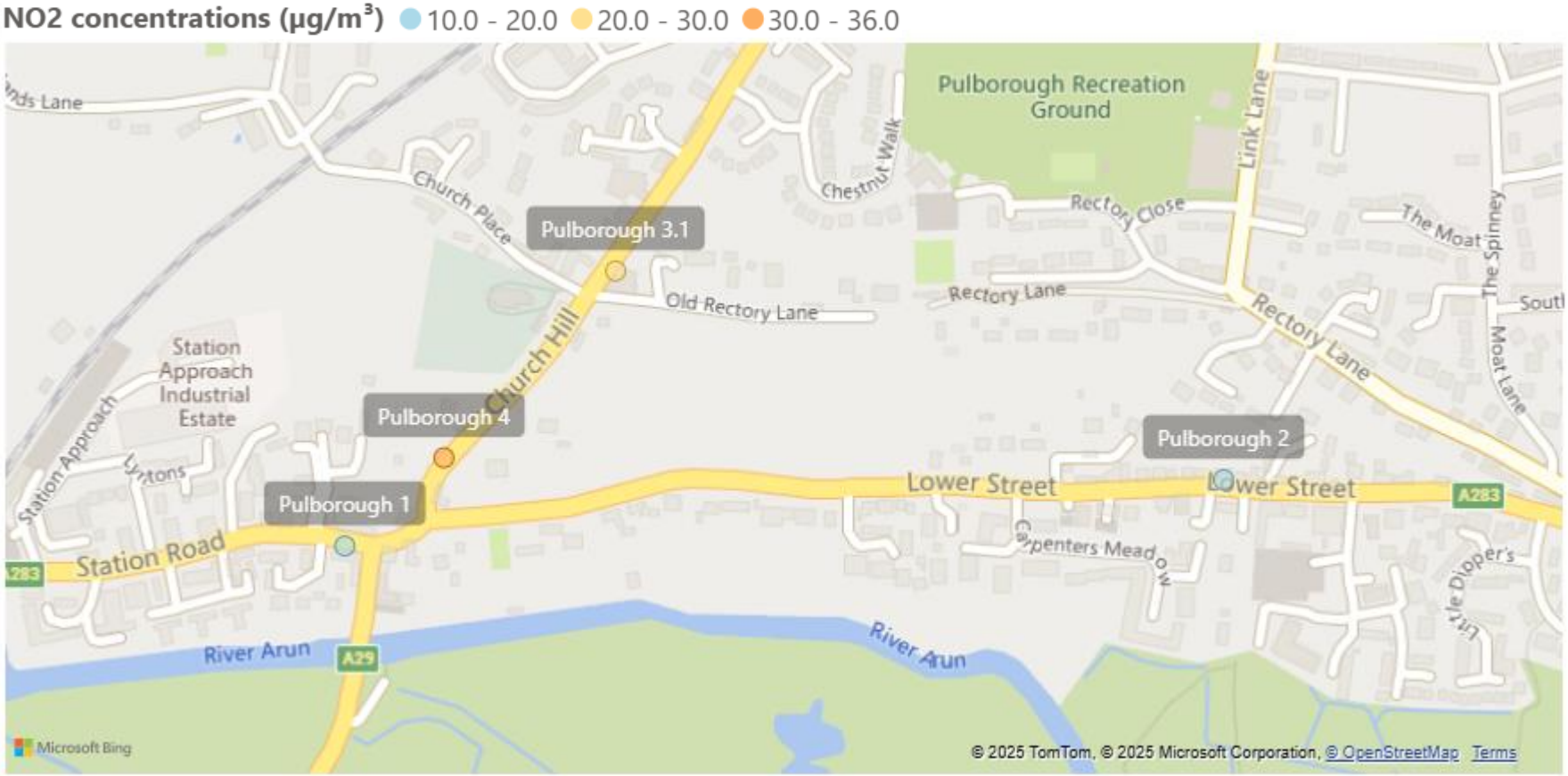


Figure D.9 – Map of Non-Automatic Monitoring Sites – Steyning

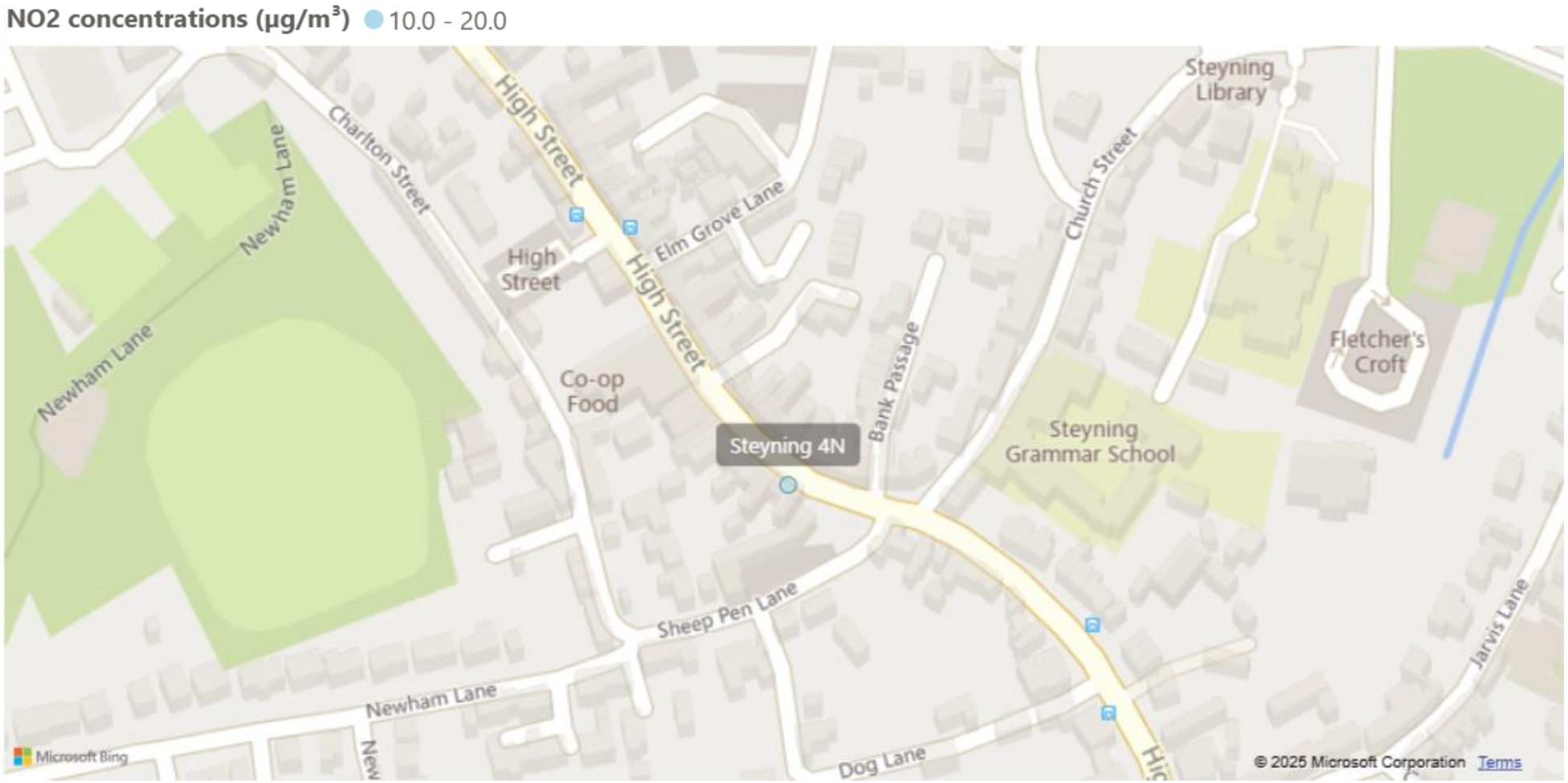


Figure D.10 – Map of Non-Automatic Monitoring Sites – Henfield

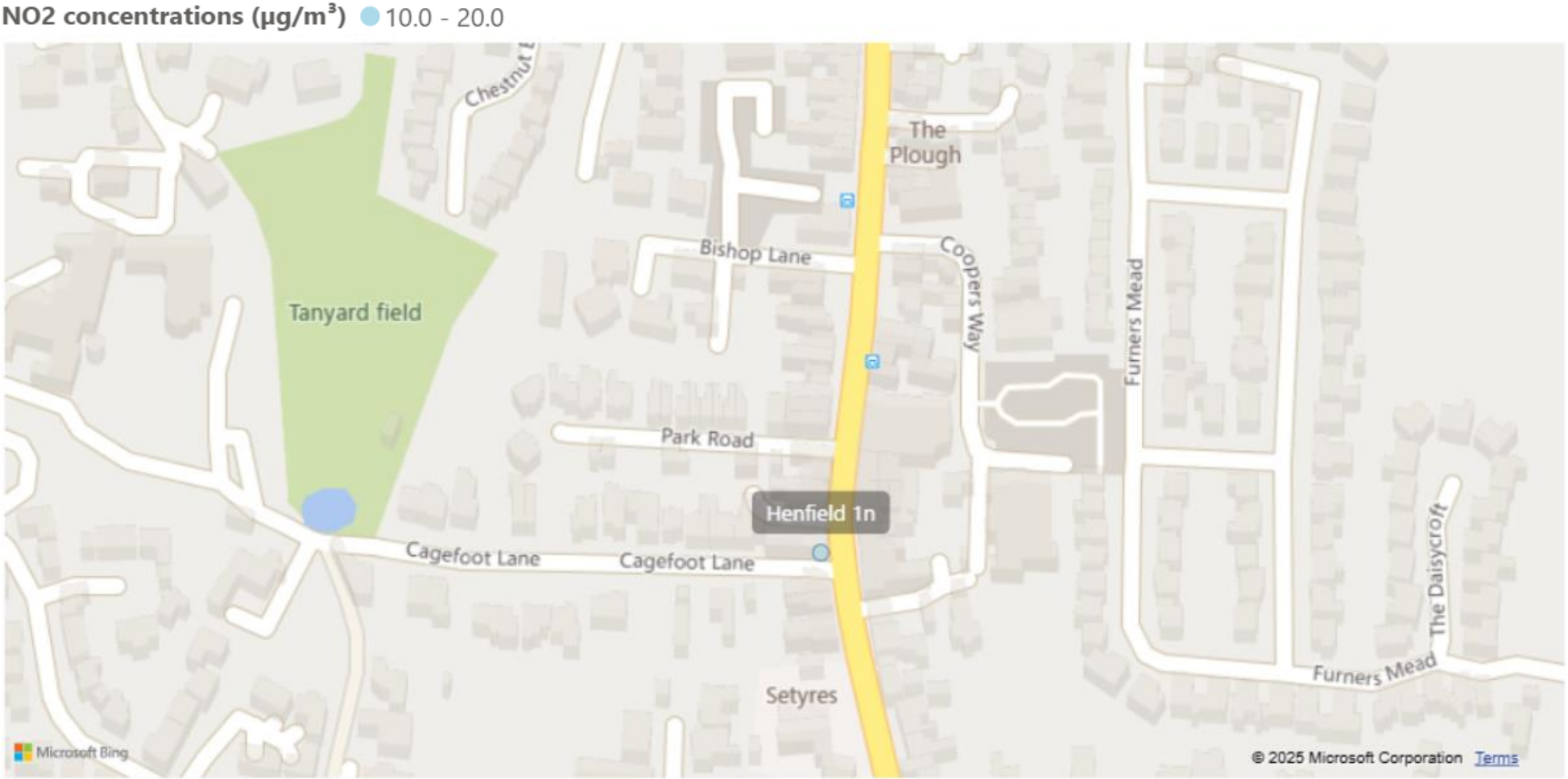
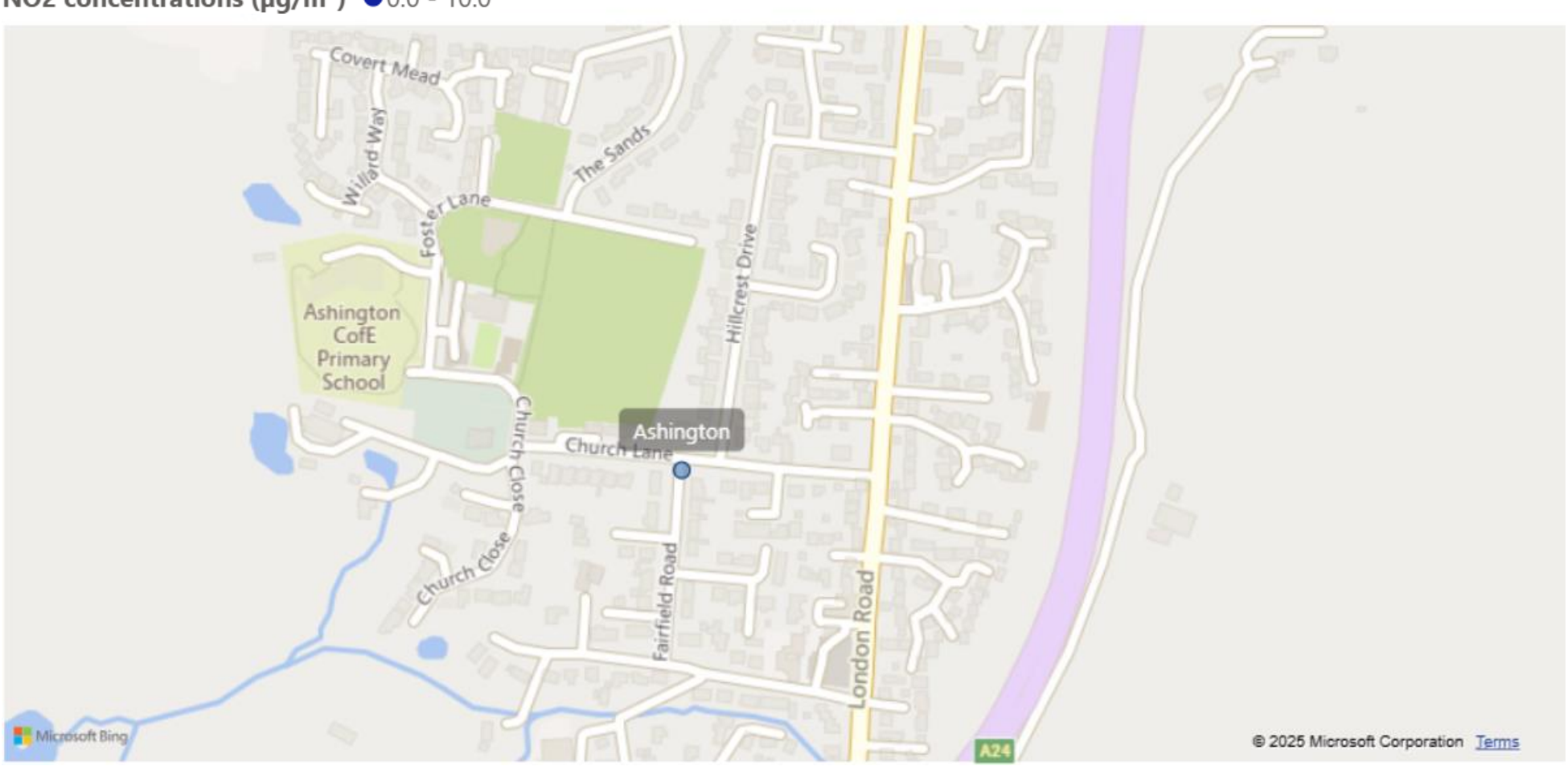


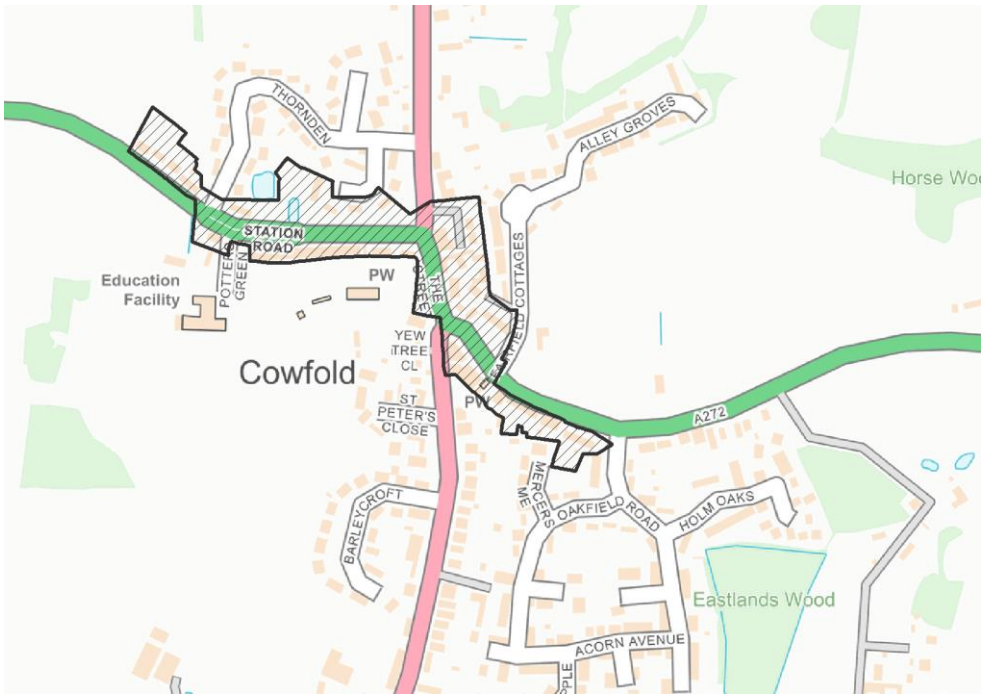
Figure D.11 – Map of Non-Automatic Monitoring Sites – Ashington



Appendix E: Cowfold AQMA Revocation Proposal

Horsham District Council declared “Horsham Cowfold AQMA” an Air Quality Management Area (AQMA) in 2011 due to measured exceedances of the annual mean nitrogen dioxide (NO_2) air quality objective. The AQMA covered Cowfold town centre incorporating The Street, part of Station Road and Bolney Road as show in Figure E.1.

Figure E.1 – Map of Cowfold AQMA Boundary



A number of measures were considered to improve air quality in Cowfold AQMA and accelerate the achievement of compliance. The implementation of measures in and Cowfold has been challenging as there are no easy solutions, and many of the solutions fall outside the power of HDC to implement. Below a list of measures considered since the AQMA was declared.

- **Review of on-street car parking and loading bay provision**
    - Delivery arrangements to the Coop before it moved to the former Old Coach House pub site. At present, there are not known to be significant on-street car parking or loading issues within Cowfold affecting air quality receptor hotspot locations through the village. Therefore, no specific action is proposed at this point in time. However, any planning applications coming forward for use of the former Coop building, as well as any continuing or

emerging community concerns about on street parking or loading issues should be monitored in relation to air quality impacts.

- **Improved signage on strategic routes to discourage longer distance lorry traffic using the A272 through Cowfold**
    - An assessment of the movement of vehicles (particularly HGVs) through Cowfold carried out in Spring 2019 concluded that only a small number of HGVs could potentially be re-routed away from Cowfold village centre. However, data did not include details of the specific origins or destinations of these flows, so not all these candidate flows would be suitable for transfer.
    - The proposal has not been pursued further due to several concerns: uncertainty about the significance of traffic movement in air quality terms, five years of compliance with the Air Quality Objective in Cowfold since 2019, unclear signage messaging, lack of enforcement mechanisms, and the anticipated cost of the scheme
- **LEZ/CAZ**
    - LEZ trial in Storrington in 2014/15 concluded it would not be possible to implement.
    - Based on experience and practicality questions, expected reservations about feasibility and effectiveness of LEZ in Cowfold.
- **20 mph speed limit**
    - Feasibility study by Ricardo-AEA in Storrington 2013 predicted no improvement in AQ.
- **Traffic gating**
    - Concerns it is not practical to implement, could lead to non-compliance and rat-running
    - Feasibility study by Ricardo-AEA in Storrington 2013 did not conclude if it would be possible.
- **Redesign of the two roundabouts**
    - Cost of signalising junctions is significant and whilst improving AQ at Huntscroft Cottages, it is likely to worsen congestion and queues elsewhere in the village.
- **Upgrading pedestrian crossing on The Street to latest technology**

  - It is not believed that any benefit can be achieved to traffic flows in Cowfold through changes to the operation of the pedestrian crossing.

- **Realignment of A272 Bolney Road adjacent to Huntscroft Cottages**
  - The Council had applied for Defra's air quality grant to provide partial funding for the Realignment of A272 Bolney Road adjacent to Huntscroft Cottages but was unsuccessful.
  - That is because, even though it was a positive impact expected on NO_2 concentrations at relevant receptors, overall emissions would remain unchanged. It was also not possible to incorporate the scheme in WSCC Strategic Transport Investment Programme (STIP) due to existing pressures.
  - This scheme is therefore not being considered for further progression at this time but could still be considered in the future

- **Monitoring pollutants**
  - Began monitoring $PM_{2.5}$ in 2024
  - Installed a real-time analyser that measures NO_2, particulate matter ($_{1, 2.5, 10}$), and ozone.

- **Promotion of alternative travel options**
  - This includes a number of measures focusing on working with local businesses, promoting electric vehicles, improving public transport, promoting travel plans, encouraging walking and cycling, and working with schools. These schemes are being investigated through various delivery avenues and are subject to different feasibility and value for money considerations.

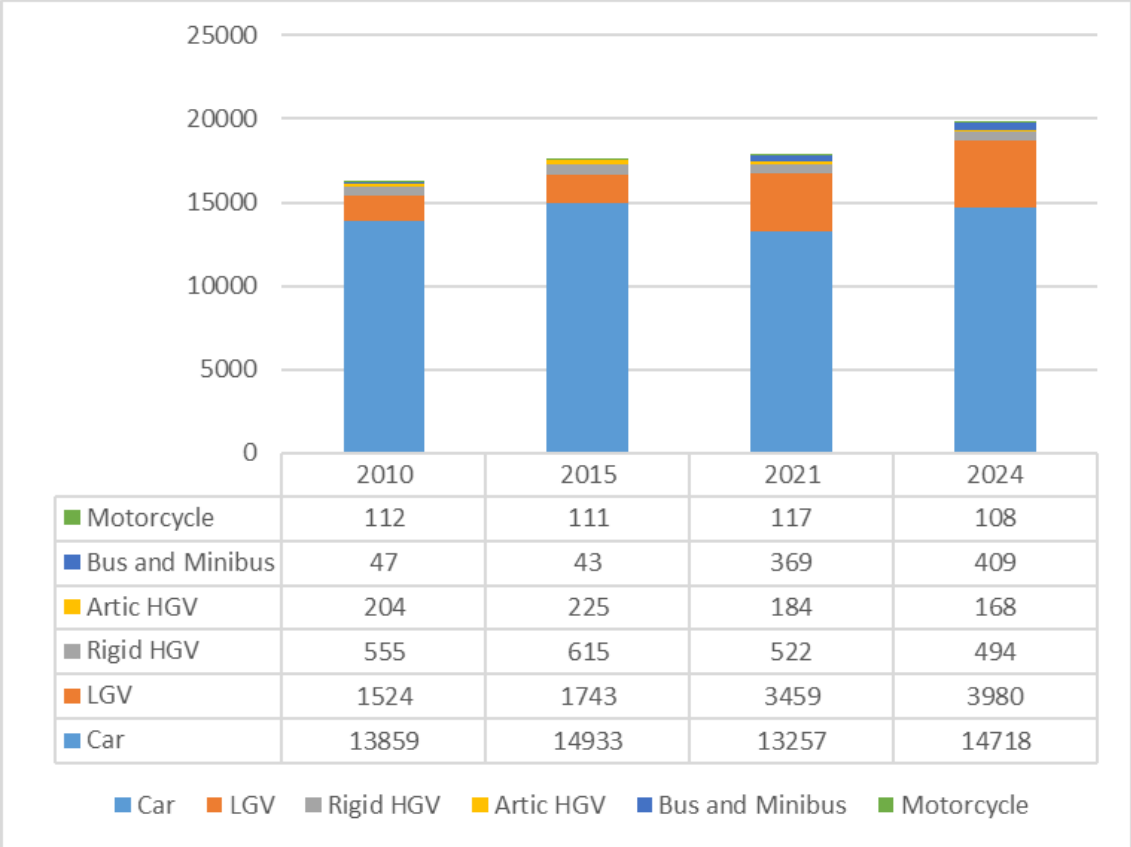
- **Improvements in the national vehicle fleet**

- **Air Quality Planning Guidance**
  - The guidance takes a low-emission strategies' approach to avoiding health impacts of cumulative development, by seeking to mitigate or offset emissions from the additional traffic and buildings. Hence, applicants are required to submit a mitigation plan detailing measures to mitigate and/or offset the impacts and setting out itemised costing for each proposed measure, with the total estimated value of all the measures being equal to the total damage costs.

- **A27 improvements**
    - A27 Arundel bypass (cancelled): following the Chancellor of the Exchequer's announcement to the House of Parliament on 29 July 2024, the A27 Arundel Bypass will not be taken forward.
    - A27 Worthing and Lancing improvements: following the Chancellor's announcement (12 August 2024), these schemes will also not be taken forward.
- **Electric cars and charging points**
    - We're working with Connected Kerb, West Sussex County Council and District councils across the county on a new charge point network across West Sussex. It's the largest-ever local authority roll-out of electric vehicle charging points in the UK and was launched on Monday 20 June 2024.

Road traffic is the most significant local source of NO_2 in the AQMA, and there is no industry or other point or local diffuse sources of emissions in the area. The total number of vehicles increased since 2010 (Figure E.2), and also their classification. There is a downward trend in the number of HGVs, but an upward trend of LGVs, Buses and coaches. The Covid pandemic had an impact on the average weekday flow. In 2021 volume of traffic was 6% lower than what would have been expected for that same year if the same trend was applied.

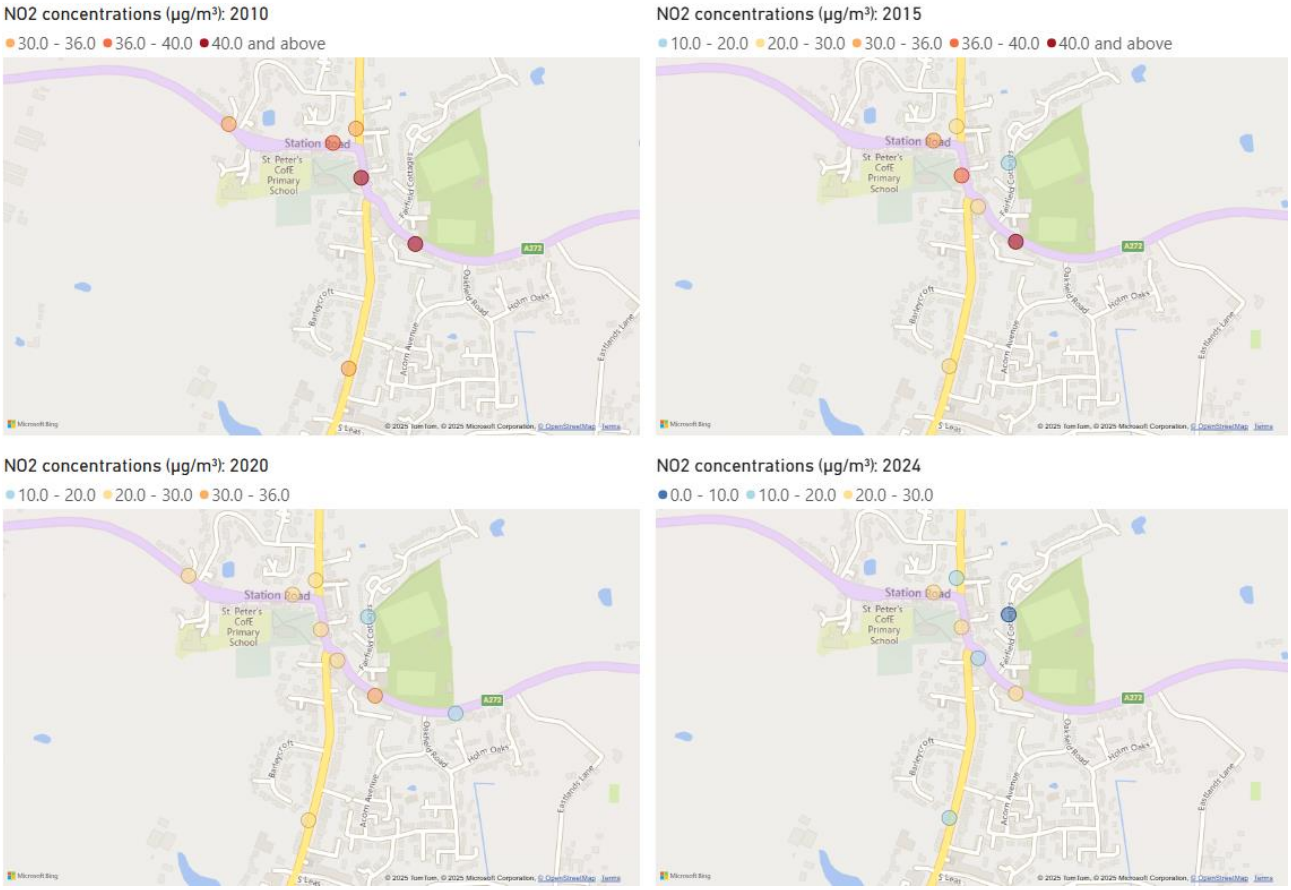
Figure E.2 – Traffic classification at A272 Cowfold, Cowfold Rd, just exit of Fairfield Cottages Road from 2010-2024



	2010	2015	2021	2024
Motorcycle	112	111	117	108
Bus and Minibus	47	43	369	409
Artic HGV	204	225	184	168
Rigid HGV	555	615	522	494
LGV	1524	1743	3459	3980
Car	13859	14933	13257	14718

HDC has been monitoring NO_2 in Cowfold since 2008. Currently, there are nine diffusion tubes in Cowfold, of which five are within the AQMA, including a triplicate site and an air quality monitoring station with continuous NOx analyser (Figure E.3). There has been no exceedance of the objectives since 2020 and concentrations in 2019 were only marginally over 10% of the annual mean NO_2 objective (36.1 µg/m^3). Horsham District Council is satisfied that the objectives will continue to be met at all locations in the future and consequently proposes to revoke the AQMA.

Figure E.3 – Air Quality Monitoring at Cowfold AQMA 2010 - 2024



In considering this, reference has been made to Defra's TG22 Technical Guidance:

> *3.57 The revocation of an AQMA should be considered following three consecutive years of compliance with the relevant objective as evidenced through monitoring. Where NO_2 monitoring is completed using diffusion tubes, to account for the inherent uncertainty associated with the monitoring method, it is recommended that revocation of an AQMA should be considered following three consecutive years of annual mean NO_2 concentrations being lower than 36 µg/m^3(i.e. within 10% of the annual mean NO_2 objective). There should not be any declared AQMAs for which compliance with the relevant objective has been achieved for a consecutive five-year period.*

We are satisfied that the criteria have been met and the revocation process will begin upon receipt of Defra approval and acceptance of this report.

- HDC will continue to monitor air quality pollutants in Cowfold,
- Air quality and emissions mitigation guidance for Sussex (2021) will still apply for relevant development
- Actions to improve Air Quality in Cowfold will continue to be reviewed in the ASR and AQAP

Appendix F: 'Low-cost' pollution sensors in Horsham

There has been a significant growth in the development of low-cost sensor systems capable of measuring air pollutants in recent years, and both the technology and methods of operation continue to evolve rapidly. Typically, these instruments represent a lower capital investment cost when compared to more complex continuous methods of monitoring, and their use can reduce the extent of running costs over a yearly period. As such, they are an attractive option that allows measurements to be undertaken at improved spatial and temporal resolutions. However, this comes with a trade-off on the accuracy and precision of the measurements being made.

Horsham district is part of Brighton Sussex Real-Time network, with 3 sensors installed within the district (Figure F.2 and Table F.1). Live air quality data can be accessed in close to real time on the Brighton & Hove and Sussex Real-Time Air Quality Portal (Figure F.1, Figure F.3, Figure F.4, Figure F.5). The portal provides an indication of local air quality for awareness raising and community engagement and has been funded by the DEFRA air quality grant and the city council's Carbon Neutral Fund in support of the BHCC part. A summary of the results from these sensors can be seen in Table F.2.

Figure F.1 – Snapshot of the Brighton & Hove and Sussex Public Air Quality Portal

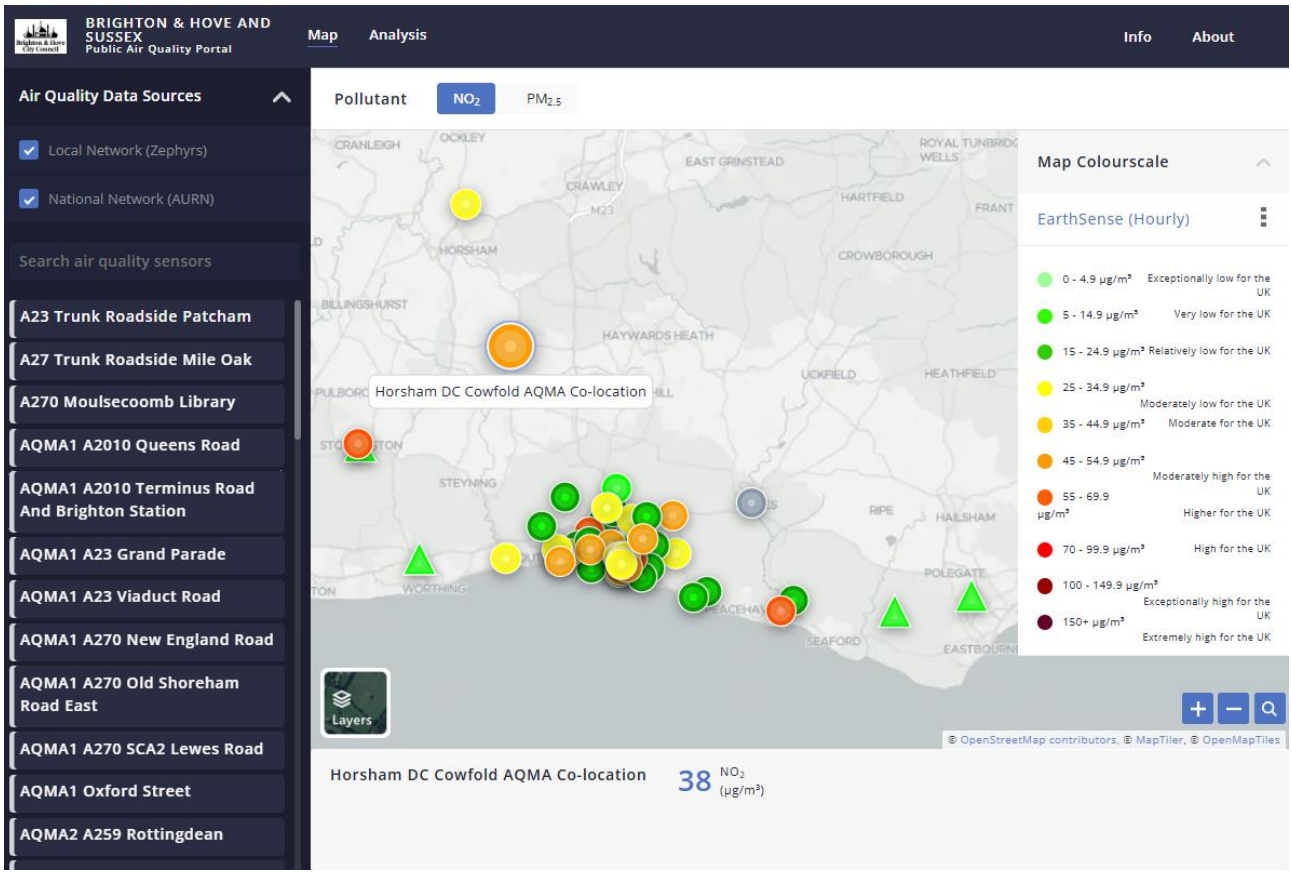


Figure F.2 – Air Quality Sensors installed in Horsham

The monitoring equipment being used are known as Zephyr sensors, and they are provided and maintained by EarthSense. The EarthSense sensors have a MCERTS certification for indicative ambient particulate, and can be operated in two ways:

- **For qualitative measurements**: Providing qualitative measurement data for the analysis of particulate pollution trends, and source identification studies based for example on pollution roses etc.
- **For quantitative measurements**: Providing measurement data with the uncertainty defined for indicative instruments (+/- 50%). This can be achieved on condition that each instrument used for measurement has been calibrated on the specific site where monitoring is taking place against a standard reference method for a period of two weeks and the resulting slope and intercept have been used for instrument calibration. Using non-standard filters and procedures for this purpose is not acceptable. To maintain the validity of data this calibration has to be repeated at least every twelve months or when the instrument is moved to a different site. They cannot be used on national automatic monitoring networks for compliance reporting against the Ambient Air Quality Directives

For gaseous (NO, NO_2, CO, O_3 or SO_2) sensor systems there is no current certification scheme, and therefore it is not possible to distinguish which the better sensor systems are until this is in place. A European Certification Scheme for gaseous sensor systems is currently under development.

The data from the fleet of Zephyrs operated by the council does indicate that there are no areas currently breaching any of the human health air quality objectives.

Table F.1 – Details of "Low-Cost" Sensors in Horsham District

Site	Pollutants Monitored	Site Type	Location	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Monitoring started
Horsham DC Langhurst Wood	NO_2, NO, O_3, SO_2, H_2S, CO, PM_1, $PM_{2.5}$, PM_{10}	Industrial	Langhurst Wood Road	517360	134236	21st August 2024
Horsham DC Storrington AQMA	NO_2, NO, O_3, CO_2, PM_1, $PM_{2.5}$, PM_{10}	Roadside (AQMA)	Manley's Hill/School Hill mini-roundabout	508932	114273	22nd August 2024
Horsham DC Cowfold AQMA Co-location	NO_2, NO, O_3, PM_1, $PM_{2.5}$, PM_{10}	Roadside (AQMA)	Co-located with the automatic air quality station	521356	122553	03rd April 2024

Table F.2 – Annual Mean Monitoring Results: Sensors

Site	Data Capture (%)	NO_2 (µg/m³)	NO (µg/m³)	O_3 (µg/m³)	SO_2 (µg/m³)	H_2S (µg/m³)	CO (mg/m³)	CO_2 (ppm)	PM_1 (µg/m³)	$PM_{2.5}$ (µg/m³)	PM_{10} (µg/m³)
Horsham DC Langhurst Wood	36.3	12.8 (44.1)	9.7 (56.6)	38.4 (142.1)	3.8(22.7)	2.2(17.9)	0.2(1.0)	n/a	4.8 (22.2)	6.5 (25.4)	10.1 (39.7)
Horsham DC Storrington AQMA	36.0	33.8 (103.5)	37.9 (250.0)	54.9 (131.9)	n/a	n/a	n/a	578.1 (733.9)	4.8 (20.7)	6.5 (24.3)	10.3 (39.1)
Horsham DC Cowfold AQMA Co-location	64.1	20.4 (72.1)	5.7 (71.4)	56.3 (184.2)	n/a	n/a	n/a	n/a	5.6 (24.1)	7.5 (29.0)	11.3 (44.0)

Notes:

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

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 F.3 – Trends in pollutants concentrations at Horsham DC Storrington AQMA

Figure F.4 – Trends in pollutants concentrations at Horsham DC Langhurst Wood

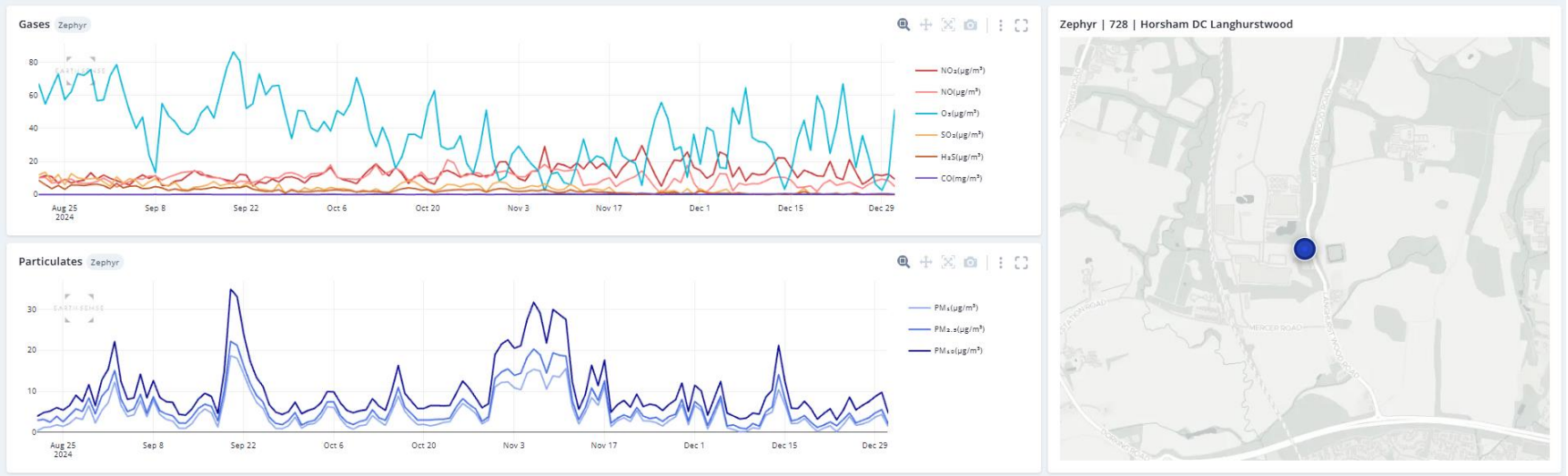


Figure F.5 – Trends in pollutants concentrations at Horsham DC Cowfold AQMA Co-location

Appendix G: Summary of Air Quality Objectives in England

Table G.1 – Air Quality Objectives in England[6]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200 µg/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})	50 µg/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)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266 µg/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/m^3).

Glossary of Terms

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

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.