Swindon Borough Council

2025 Air Quality Annual Status Report (ASR)

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

Date: October 2025

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Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Swindon Borough Council ('Swindon') with the support and agreement of the following officers and departments:

Public Health

Environmental Health

This ASR has been approved by the Director of Public Health and the Air Quality Steering Group which they Chair.

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If you have any comments on this ASR please send them to the Head of Environmental Health; Damon Green at dgreen@swindon.gov.uk.

Executive Summary: Air Quality in Our Area

Air Quality in Swindon

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

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

Traffic derived Nitrogen Dioxide (NO_2) remains the main pollutant of immediate local concern in Swindon due to the Air Quality Management Area on Kingshill Road.

The Council now runs a network of 45 diffusion tubes at 39 sites across Swindon; to monitor NO_2 levels, to inform local development plans, and identify areas of concern. The great majority of diffusion tubes are located close to roads, and all monitor NO_2 levels monthly. The diffusion tubes are supplied and analysed by Socotec UK Ltd's Environmental Science laboratory in Didcot. An online map of our monitoring locations may be found here: https://maps.swindon.gov.uk/sbcatmycouncil.aspx under the [Planning] heading; and [Air Quality Monitoring Stations] sub heading.

The overall trend in Swindon with regard to NO_2 remains one of improvement. In 2024, 36 diffusion tubes recorded lower roadside levels of NO_2 and 5 diffusion tubes recorded higher levels of NO_2 at the roadside (*S4: 186 Kingshill Road, S14: Iffley Road, S15: 102 Kingshill Road, S17: A420 South Marston, S23: 30 Devizes Road*). 4 diffusion tubes were newly installed in 2024 and so cannot be compared to previous years. The average improvement across our network was 11%, at the roadside, but the worst performing diffusion tube site showed 43% higher levels (S15: 102 Kingshill Road) than in 2023.

We are fortunate to host a DEFRA Automatic Urban and Rural Network (AURN) node (Walcot UKA00650), which seems to confirm the improving trend (15% improvement in 2024 over 2023 results, Urban Background). Over the 5-year period between 2020 and 2024, the air quality at sites where we have measured across that period has improved by

16% on average, and this appears to be confirmed by the Walcot monitoring node referenced above (23% improvement)

There are reasons to treat these 2024 monitoring results with a modicum of caution however. In 2024, a number of diffusion tubes were found to be missing on collection. A number were also found to be damaged or visibly contaminated on collection. A further number of results were also discarded as clear outliers. All of these issues reduce the overall power of our survey in 2024, and we maintain a watching brief.

After adjusting for nationally computed measurement bias, only 2 diffusion tubes recorded levels above 40µg/m^3 at the roadside over the monitoring year, and so needed to be adjusted for the distance between the roadside and the nearest receptor (S15: 102 Kingshill Road, S30: Corner of Kingshill/Clifton St). After adjusting for this fall off with distance, only diffusion tube S15 recorded a receptor level above the 40µg limit, at 54.6µg/m^3. This monitoring location lies within the AQMA and has recorded our highest receptor levels over several years. This year's results at this location represents a 43% worsening of NO_2 levels here, and an apparent return to NO_2 levels last seen here in 2017. This result may be seen as anomalous when compared with the wider trend however, and it is not confirmed by identical diffusion tubes nearby on the same stretch of road (S7, S11, S19, S29, S30) which recorded improvements of between 44% and 9% on the previous year in 2024. No other tubes within our network recorded NO_2 levels within 10% of the 40µg/m^3 limit.

The other main pollutant of concern in Swindon, similarly to wide areas of England, is fine particulate matter ($PM_{2.5}$). This pollutant is a transboundary pollutant which particularly affects the South East and South of England, with levels generally decreasing as distance from the South East corner of England increases. Swindon Borough Council does not measure $PM_{2.5}$ in our area, but we are fortunate to benefit from DEFRA's Walcot monitoring suite (UKA00650), which does, since 2022. Results from this node in calendar year 2024 show that ambient $PM_{2.5}$ levels in Swindon improved over previous results; with a measured value of 6.3µg/m^3 in 2024, against 6.7µg in 2023 and 7.8µg in 2022. There is now a welcome and clear 3-year trend of ambient $PM_{2.5}$ levels in Swindon moving towards the World Health Organisation target of 5µg/m^3 as an annual average. The legal requirement in England, via the Environment Act 2021, is 10µg/m^3 by 2040 and a 35% Population Exposure Reduction on 2018 levels, by the same date, and according to national models, every 1km^2 grid square in Swindon now meets the annual average component.

Whilst most $PM_{2.5}$ originates outside of our boundary and so is not under our direct influence, $PM_{2.5}$ arguably has a greater health impact than NO_2, and we will engage in any centrally led effort to reduce $PM_{2.5}$ whilst maintaining local pressure on this pollutant through our work regulating polluting industry, the use of polluting domestic fuels, and responding appropriately to reports of large fires.

The Public Health Outcomes Framework indicator D01; the estimated fraction of mortality attributable to particulate air pollution, indicates that particulate air pollution is a component in 5.0% of mortality in Swindon (2023). Swindon is indicated to be the worst affected area in the South West, but lies below the England average of 5.2%. Swindon's Joint Strategic Needs Assessment (JSNA) 2024 with regard to air quality describes the problem and identifies those areas, both by Ward and Lower Super Output Area, which are most vulnerable, to both NO_2 and $PM_{2.5}$ pollution, according to the UK Health Security Agency produced vulnerability indicators. Fortunately, those areas where we see the highest pollutant levels are not the most vulnerable.

No new major emission sources were identified in this period in Swindon. The previously vacated Honda manufacturing site is currently being developed into a large commercial and distribution hub alongside the A419, but is not yet fully built out.

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.

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. In Swindon, our actions are focussed on $PM_{2.5}$ as a wide area pollutant, and on reducing local NO_2 emissions, especially in our Air Quality Management Area (AQMA).

A DEFRA Air Quality Grant funded Public Health Practitioner has worked through 2024 on outreach and communications programs to educate around the topic of air pollution, travel choices, and elective burning, particularly in schools and community groups. The digital messaging signs funded through the same grant continue to deliver nudge messages to drivers in the AQMA to encourage more environmentally sensitive driving. Several programs aimed at fostering environmentally sensitive and healthy travel choices in Swindon are embedded as business as usual.

The Environmental Health team prioritise appropriate checks on emitting businesses as part of the Local Air Pollution Prevention and Control regime, including carrying out checks on retailers selling domestic fuels, and also taking appropriate action on large fires and other emitting happenings. Swindon is very well connected to the National gas grid, and so non-elective burning is considered to be very low.

We use the results from our monitoring network, the DEFRA Walcot (UKA00650) suite, and national models when considering new development proposals, working closely with Planning and Highways colleagues.

The 'Swindon Plan', which was brought in by the new political administration in 2024, rests on 3 missions; one of which is to 'Build a Greener Swindon'. The Build a Greener Swindon mission aims to lead Swindon towards net zero, become a net zero Council, protect the environment, and provide greener planning and transport. All actions that seek to act on Carbon inevitably reduce fossil fuel use, and so improve air quality.

The Solar Together Wiltshire group buy scheme, in partnership with Wiltshire Council, ran through 2024. A further round of this project is also about to be opened at the time of writing. 480 Swindon residents signed up in the last Solar Together scheme round.

Our Travel Plan Officer ran the Swindon Summer Trails initiative in 2024 to encourage families to get out exploring Swindon on foot in the Summertime, and this initiative will run in 2025 too. An evaluation of the project may be found here: https://www.swindontravelchoices.co.uk/wp-content/uploads/2025/01/Swindon-Summer-Trails-Challenge-end-of-project-report.pdf.

An advice booklet (https://modeshift.org.uk/news/transport-behaviour-change-with-swindon-house-hunters/) was produced and circulated via local estate agents which seeks to encourage buyers to consider their travel options and behaviours before moving into a new home.

Travel plans are provided to housing developers in Swindon in our larger expansion areas such as Wichelstowe, Oakfield and Redlands. In addition; our 5 years School Safe Environment Zone programme has recently completed; improving air quality, reducing congestion around schools, and increasing options for travel to schools. (https://www.swindon.gov.uk/info/20135/traffic_management/1147/school_safe_environment_zones_ssez)

Conclusions and Priorities

In 2024, all but 5 monitoring sites showed improvement in line with the recent trend. The average improvement of NO_2 levels across our monitoring network in 2024 was 11%, and this is in line with reference standard results from the DEFRA AURN node at Walcot (15%). 5 monitoring sites showed a worsening of measured NO_2 levels, and most of those lie within areas where we have current concerns, or have had in the past; such as Iffley Road, Devizes Road, and within or close to the AQMA. One monitoring site within the AQMA (S15), historically our worst performing site, returned a 43% worsening in 2024, and is the single monitoring site showing receptor levels above the 40µg/m^3 limit in 2024; apparently erasing 7 years of progress here. There are reasons to be slightly sceptical of this single result however, and we await the 2025 results set to help confirm or reject this result in due course. Several of our monitoring sites suffered regular signs of interference through 2024, and we have also rejected a number of clearly anomalous results from our laboratory across the year.

There is insufficient evidence to revoke the Kingshill AQMA at this time. The existing AQMA boundaries remain relevant for our Action Plan, with all historic exceedances, and sites within 10% of the objectives, contained within it.

How to get Involved

The Head of Environmental Health contributes to the JSNA on air quality in Swindon, and works closely with the Consultant in Public Health, Health Protection on the topic. The Environmental Health team is a consultee for all large developments in the Borough, and also works with Highways colleagues to provide an air quality input to transport decisions.

Members of the public who would like to help improve Swindon's air quality are encouraged to:

- Avoid burning garden or other waste where possible. Use Swindon's Green Waste scheme where you are able: https://www.swindon.gov.uk/info/20015/bins_rubbish_and_recycling/444/garden_waste_subscription

- Avoid the use of solid fuel heating such as wood or coal burners where alternatives such as central heating are available and healthy indoor temperatures can be maintained without burning solid fuel. Guidance on healthy indoor temperatures may be found here: https://assets.publishing.service.gov.uk/media/5c5986f8ed915d045f3778a9/Min_temp_threshold_for_homes_in_winter.pdf

- Choose active modes of travel; such as walking and cycling, or public transport for local journeys. Visit the Swindon Travel Choices website: https://www.swindontravelchoices.co.uk/

- Choose greener vehicles when replacing existing vehicles; alternative fuel over petrol, petrol over diesel, smaller over larger. Grants are available: https://www.gov.uk/plug-in-vehicle-grants .

- Consider renewable technologies to supplement or replace home energy use. Use a renewable supplier for grid energy. See the Solar Together group buying scheme.

- Watch the Swindon Plan 'Build a Greener Swindon' mission for ways to get involved in reducing fossil fuel use in Swindon: https://www.swindon.gov.uk/info/20028/open_data_and_transparency/952/council_priorities_the_swindon_plan

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1 Local Air Quality Management

This report provides an overview of air quality in Swindon 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 Swindon to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by Swindon can be found in Table 2.1. The table presents a description of the single AQMA that is currently designated within Swindon. Swindon reviewed and renewed the Air Quality Action Plan for Kingshill in December 2023.

Appendix D: Map(s) of Monitoring Locations and AQMAs provides links to maps of AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO_2 annual mean

We propose no changes to the AQMA in the current year.

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 the Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Kingshill	02/05/2018	NO_2 Annual Mean	An area encompassing 14 properties on Kingshill Road west of the junction of Clifton Road	NO	56µg/m^3	54.6 µg/m^3	0	Kingshill Air Quality action Plan v1.1, March 2024	https://www.swindon.gov.uk/downloads/file/10506/kingshill_air_quality_action_plan

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

☒ **Swindon confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Swindon

Defra's appraisal of last year's ASR concluded that the report was well structured, detailed, and provided the information specified in guidance. The report was accepted for all sources and components. The following comments were offered to help improve future reports, with appropriate responses:

1. *The "Local Engagement and How to get Involved" section could be expanded with examples of local engagement and links to useful websites and information.*
    a. The Local Engagement and How to Get involved section has been expanded in this report.
2. *Good discussion around PM2.5 is provided and related measures have been included in the AQAP. The council has considered the sources of PM2.5 in the borough in detail. Whilst the council has access to the AURN monitor, they could consider undertaking further PM2.5 monitoring. Also the PHOF D01 indicator could be included within the report.*
    a. Swindon has no current plans to undertake its own $PM_{2.5}$ monitoring due to cost and other resource constraints.
    b. The Public Health Outcomes Framework D01 indicator is included and discussed in this edition.
3. *The Council has included an appropriate QA/QC section. It is noted that diffusion tube S1 is included in the annualization table but wasn't annualised. This is a quirk of the Defra spreadsheet: the DC was under 75% but 9 months of data was recorded. It would be useful to include some discussion of annualisation in the main text in future reports. In this case it would be helpful to explain this in text for clarity.*
    a. The quirk in the template spreadsheet is noted, and where this materialises in future it will be noted and discussed.
4. *The reference list is brief. The Council should ensure all references used in the report are included.*
    a. References have been added appropriately in this report.
5. *It is noted that "µg/m^3" is not appropriately superscripted in some places. The Council should ensure they screen for such errors.*
    a. Further screening has been undertaken this year.

Swindon 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. 15 measures are included within Table 2.2, with the type of measure and the progress Swindon 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. Key completed measures are:

- The Traffic Regulation Order (TRO) (measure 1), our principle measure, restricting heavy vehicles on Kingshill, has moved through all formal stages and is now being implemented. At the time of writing, contractors are preparing foundation designs for alternative routes, and power supplies are being arranged.
    - This measure has been held up by resource and churn within the Highways team, and difficulty with contractors, but the scheme is now expected to be in place by the end of 2025.
- Active Travel Outreach (measure 2), including that funded by a DEFRA Air Quality Grant, continues apace in Swindon, and we estimate that this could deliver 5% reduction of emissions in the AQMA.
- Variable Message Signage (VMS) (measure 3) has been installed on Kingshill approaches; to deliver nudge messaging to drivers, to foster more environmentally sensitive driving or alternative routes. The signage has worked continuously since installation. We estimate this measure may deliver around 2% reduced emissions in the AQMA.
- A Bus Service Improvement Plan (measure 4) is now in place in Swindon from June 2024, and includes improved and protected routes, new orbital routes and mobility transport hubs, and bus advantage schemes such as gates and signal schemes. Our Enhanced Bus Partnership plan has been in place since 2023 to drive major improvements to bus services in Swindon.
- Our town centre regeneration project (measure 5), centred around the Fleming Way Bus Boulevard scheme, is nearing completion and is due for public opening in Summer 2025. This project provides a new bus terminus in the town centre and improved cycling and walking access to the centre. This may deliver up to 2% improvement in emissions.

- 22 new on street Electrical Vehicle charging point parking bays (measure 9) have been directly provided so far by Swindon Borough Council, thanks to central government funding. The Council also enables private provision of public chargers, and 90 of these are currently listed on the 'ZapMap' app in Swindon.
- The provision of Bus Signal Advantage (measure 14) schemes is now included in our A Bus Service Improvement Plan, at pages 36 and 37. This measure, with other actions around bus services is crucial to provide a real alternative to cars.

Swindon expects the following measures to be completed over the course of the next reporting year:

- Full implementation of the Kingshill TRO with alternative routes in place. We expect this measure to reduce emissions within the AQMA by around 5%.
- Fleming Way improvements including a new bus terminus boulevard open and in use.
- Staff travel plan in place. This plan should reduce driving by Council staff, and so the pollutants emitted by them in travelling to work, but it is not possible to quantify the likely air quality impact. The measure will provide a lead to other large concerns in the Borough.
- Further improvements to the Old Town Railway Cycle Path, funding permitting. This is an important link between West Swindon and Wichelstowe, and the town centre, and may displace up to 2% of the emissions from combustion engine vehicle travel between those points.

Swindon's priorities for the coming year are to continue working through all of the remaining measures in our Air Quality Action Plan, to help Swindon transition to a zero Carbon future as part of the Greener Swindon mission, reducing emissions from all sources. More specifically:

- To physically put in place the TRO for Kingshill to remove most heavy vehicles from the road and deliver substantial reductions in NO_2 emissions here

The principal challenges and barriers to implementation that Swindon anticipates facing are around resources. Local Government finance is in a precarious state, necessitating structure and resource base changes in the majority of local authorities, including Swindon. Swindon is transitioning to a new 'Target Operating Model' which will necessitate structural changes. Staff retention and churn could impact the ongoing progress in a material way.

Progress on the following measures has been slower than expected. As noted above, we would have liked to have implemented the Kingshill TRO sooner, but staff shortages in the Highways team has meant that commissioning the work has taken longer than expected. In addition, it has been difficult to get contractors for the foundation and electrical work to enable the new signage.

Swindon anticipates that the measures stated above and in Table 2.2 will achieve compliance in Kingshill. NO_2 concentrations within Kingshill generally have been responding well to our, and wider, efforts to reduce emissions from road vehicles here. Monitoring site S15 has delivered a disappointing result this year, notwithstanding that it is not consistent with other nearby sites. We must follow through on our action plan measures to ensure that we are able to demonstrate sustainable compliance with national objectives.

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	Defra AQ Grant Funding	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	Kingshill Weight Limit	Freight and Delivery Management	Strategic Routing for HGVs	2024	2025	LA Strategic Transport	Public Health	No	Fully Funded	£100k - £500k	Implementation	5%	Traffic Regulation Order in Place	Fully funded. Commissioning of civils and electrical work well under way.	This has faced delays due to resource shortages in Highways team and delays with contractors, including internal streetworks teams.
2	Active Travel Outreach	Promoting Travel Alternatives	Promotion of Cycling. Promotion of Walking. Workplace Travel. Planning. Promotion of use of rail and inland waterways. Modeshift Stars travel planning activity. Swindon Transport Conversation. Engagement. Town Centre Access and Active. Travel Map. Other local walking/cycle maps	2023	2025	LA Public Health. LA Strategic Transport	Internal Funding, BAU. Public Health Funding. DEFRA Grant Funding	Yes	Fully Funded	£50k - £100k	Implementation	5%	Reduction in measured NO_2	Programme of work ongoing. Active travel also embedded in Highways team and Public Health team, with multiple workstreams and projects in train.	On track
3	Variable Message Signage	Public Information	Via other mechanisms	2023	2025	LA Highways	DEFRA Grant Funding	Yes	Fully Funded	£59k - £100k	Implementation	<2%	Sign units installed and in use.	VMS units installed and working well since early 2024. Completed.	None expected

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
4	Enhanced Bus Partnership, Bus Service Improvement Plan,	Transport Planning & Infrastructure	Bus route Improvements. Other	2021	Ongoing	LA Transport	Internal, BAU	No	Funded	BAU	Implementation	<2%	44% increase in passenger boardings by 2030, 13% by 2025. 40% increase in propensity to use the bus. Doubling of Bus Mode Share in Highworth and Wroughton, and new developments	Plan in place	
5	Town Centre Regeneration (inc. Bus Boulevard)	Transport Planning & Infrastructure	Public Transport Improvements – interchanges, stations and services	2023	2025	LA Highways	Future High Streets Fund, internal, LEP	No	Funded	£33m	Implementation	<2%	New town centre bus boulevard built out and in use.	Construction underway. Completion anticipated Summer 2025.	
6	Staff Travel	Promoting Travel Alternatives	Workplace Travel Planning (inc. SBC)	2018	2025	LA Highways	Internal, BAU	No	Funded	NA	Implementation	<1%	SBC Staff Travel Plan review.	ongoing	
7	Old Town Railway Cycle Path	Transport Planning & Infrastructure	Cycle Network	2024	2025	LA Highways	TBC	No	Not yet funded	£1m	Awaiting funding	<2%	Improved cycle way in regular use.	Drainage works in 2022. No funding streams yet identified for further improvements.	Funding the major constraint.
8	Local Logistics Partnership	Freight and Delivery Management	Freight Partnerships for Swindon including last mile town centre deliveries	2023	2024	LA Highways	Internal, BAU	No	Funded	BAU	Implementation	<5%	Local Logistics Partnership in place and functioning well.	LLP in place. Completed.	
9	Public EV Charging	Promoting Low Emission Transport	Procuring Alternative Fuelling Infrastructure	2025	ongoing	LA Highways	External Grants, TBC	No	Not yet funded	TBC	Planning	NA	Appropriate levels of EV charging for fleet.	NA	22 charging points provided in 2024.
10	Transport Modelling Application	Traffic Management and Forward Planning	Other	2024	2024 initial outputs	LA Highways	Internal, BAU	No	Not yet funded	TBC	Market Testing	NA	New modelling solution in use	Market testing	Funding
11	Schools Sustainable Transport	Promoting Travel Alternatives	Other	2023	2025	LA Public Health. LA Highways	Internals, DEFRA Grant	Yes, partially	Partially funded, partially BAU	BAU	Implementation	<1%	More pupils arriving at school by active travel modes	Promotions and outreach undertaken in conjunction with Action 2; eg ModeStars	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
12	Local Transport Plan, Town Centre Movement Strategy	Policy Guidance and Development Control	Other Policy	2023	ongoing	LA Planning. LA Highways	Internal, BAU	No	Funded, BAU	BAU	Implementation	<2%	Plan priorities in place	Plans in Place	
13	Local Enterprise Partnership Priorities	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote low emission vehicles…	2023	ongoing	Swindon and Wiltshire LEP	Internal, BAU	No	BAU	TBC	Implementation	<1%	Increased Hydrogen fuelling facilities on main regional corridors	Plan in Place	Rivan Industries Consultation launched on Green Hydrogen site north of Swindon April 2025.
14	Bus Signal Advantage Scheme	Traffic Management	Bus Priority	2024	2025	LA Highways	Internal, BAU	No	Not yet funded	TBC	Planning	<1%	Bus Signal Advantage scheme in place	High Level Planning	Funding possibly a constraint.
15	Growth Modelling	Policy Guidance and Development Control	Other	2024	2025	LA Highways / Planning Policy	Internal	No	TBC	TBC	Planning and Design	TBC	Mitigation measures to be agreed	Moving from concept to detailed approach	In design as part of transport modelling linked outputs

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[1], 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 than 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework identifies that the fraction of mortality attributable to particulate air pollution (D01, new method, 2020) in Swindon is 5.0% for 2023; the latest available, which is higher than the regional (SW) average (4.3%) but lower than the England average (5.2%). Swindon is the Easternmost area within the South West Regional grouping and is likely to receive more $PM_{2.5}$ from external sources to the East and South.

Swindon notes the World Health Organisation's $PM_{2.5}$ guidelines, which reduce the previous aspirational annual mean target to 5µg/m^3, from 10µg, along with a suite of interim targets for nations unable to immediately achieve the ultimate guideline. This reflects the very low threshold for health impacts from $PM_{2.5}$ and will serve to drive regional and global reduction of this pollutant.

Swindon further notes the Environment Act 2021, and the more recent Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, which sets two $PM_{2.5}$ targets in law, to be met by the end of 2040, and is expected to drive national reductions. The Regulations set both an annual mean target of 10µg/m^3, commensurate with WHO interim target four, and a Population Exposure Reduction Target (PERT) of 35% by the same date. Swindon notes the interim targets, for 2028, of 12µg (which Swindon meets, modelled, for all of its 232 x1km^2 grid squares in 2024) and 22% PERT reduction from 2018 base.

The new $PM_{2.5}$ legal limits will not be assessed at local scale, but it is useful to compare Swindon's local levels to the new future annual mean limits, to inform and motivate progress. In year 2024, current models suggest that Swindon already meets the absolute

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

limit of 10 µg/m^3 in all of its 1km grid squares. 2024 is the first year for which that is the case, and is somewhat confirmed by reference standard results from the DEFRA Swindon Walcot monitoring suite in the borough.

Swindon relies on the DEFRA background mapping resource to estimate maximum ambient $PM_{2.5}$ in Swindon, by 1km grid square. DEFRA's AURN node at Walcot in Swindon has measured Urban Background $PM_{2.5}$ to reference standard since June 2022 however. Full year 2024 results for the Walcot node are reported in Appendix A.

Background mapping for 2024 suggests that, of Swindon's 232 grid squares; none exceeded a $PM_{2.5}$ level of 10 µg/m^3 (8 in 2023) the highest at 8.72 µg/m^3, the lowest 6.24. The highest levels are, expectedly, seen around the urban centre of Swindon, bounded by the M4 motorway to the South, the A419 to the East and North, and the Borough boundary to the West.

The Mean modelled level of $PM_{2.5}$ across Swindon Borough in 2024 was 6.95µg/m^3 (2023: 8.65µg), and the Median was 6.76 (2023: 8.40µg).

Along with local traffic, domestic solid fuel burning is thought to be the likely biggest local contributor to $PM_{2.5}$ levels that is under any potential local influence. Census 2021 identified, however, that there are very low numbers relying on solid fuel as their primary home heat source. Overall, 0.0% of homes in Swindon rely on solid fuel, and the worst Middle Super Output Area returns only 0.1%. This is significantly lower than neighbouring local authority areas, which have larger rural populations that may not benefit from good gas connections. This might indicate that Swindon may not be in a position to influence locally generated $PM_{2.5}$ to any great degree, other than by reducing elective and top up heating burning and fugitive emissions.

Notwithstanding, and with the benefit of a DEFRA Air Quality Grant, Swindon is currently running outreach and campaign work around $PM_{2.5}$ generation, seeking to influence behaviours mostly around elective burning, where this is not needed for home heating, and also fugitive and incidental generation via bonfires etc.

With regard to traffic derived $PM_{2.5}$ pollution; actions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, & 15 in the Kingshill Air Quality Action Plan could also be expected to exert downward pressure on local $PM_{2.5}$ emissions. It is noted that the greatest primary $PM_{2.5}$ contribution from traffic is now brake, tyre and road surface erosion, and that work is underway nationally and beyond to reduce this through product standards.

In addition; Swindon's Build a Greener Swindon mission and Solar Group Buying project is expected to reduce fossil fuel produced energy demand, so decreasing $PM_{2.5}$ emissions more widely. Swindon's new 'Swindon Plan', which has 3 missions around making Swindon's infrastructure better, reducing inequalities, and achieving nett zero is expected to limit exposure to $PM_{2.5}$ over time.

Swindon maintains the proactive enforcement stance on smoke nuisance from bonfires and similar burning that it put in place during the Covid-19 pandemic, and fully complies with its statutory responsibilities around permitted processes in Swindon; ensuring that emitting companies do not emit more than they are permitted to.

Swindon is taking the following measures to address $PM_{2.5}$:

- Solar group buying scheme. Repeated measure.
- 'Greener Swindon' mission; transitioning Swindon to a zero Carbon future. New measure.
- Outreach campaigns on active travel and elective burning. Ongoing measure.

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

This section sets out the monitoring undertaken within Swindon by Swindon Borough 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

Swindon undertook no automatic monitoring on its own account in 2024. There is a DEFRA Automatic Urban and Rural Network (AURN) node at Walcot however, which measures Ozone, Nitric Oxide, Nitrogen Dioxide, Nitrogen oxides as Nitrogen Dioxide, PM_{10}, and $PM_{2.5}$, and results from that suite are presented in this document where appropriate. The results from this node may be accessed online here: https://uk-air.defra.gov.uk/data/flat_files?site_id=SWHO . Table A.1 in Appendix A shows the details of the automatic monitoring sites.

Maps showing the location of the monitoring sites may be found here: https://maps.swindon.gov.uk/sbcatmycouncil.aspx .

3.1.2 Non-Automatic Monitoring Sites

Swindon undertook non-automatic (i.e. passive) monitoring of NO_2 at 39 sites during 2024 Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided online at https://maps.swindon.gov.uk/sbcatmycouncil.aspx on the [My Maps] [Planning] [Air Quality Monitoring Stations] layer. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

In 2024, one monitoring site only exceeded the national objective for annual average NO_2 concentrations at the receptor; site S15 on Kingshill (54.6 µg/m^3), within the existing AQMA. This result is not confirmed by other nearby monitoring sites, and we await the 2025 results to draw a firm conclusion on what appears to be an anomalous result. We have suffered a larger than usual number of missing or damaged diffusion tubes in 2024, and have also rejected a number of clearly outlying data points from the laboratory, and so the power of our survey work is somewhat reduced, and so we hesitate to draw a firm conclusion as a result.

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 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site (most often at the roadside), following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.5 in Appendix A compares the ratified continuous monitored 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.

3.2.2 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 40µg/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 50µg/m^3, not to be exceeded more than 35 times per year.

3.2.3 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.

We are pleased to see the ambient level of $PM_{2.5}$, as measured by DEFRA node UKA00650 continuing to fall over time, and note that national background modelling suggests that all of Swindon now meets the 10µg/m^3 national objective for this pollutant. Levels of $PM_{2.5}$ fell further in 2024, from 6.7µg/m^3 in 2023 to 6.3µg/m^3 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)
UKA00650	DEFRA AURN Swindon Walcot	Other	416341	184379	NO_2, PM_{10}, $PM_{2.5}$	No	N/A	FIDAS, Chemiluminescence	53.0	40.5	1.8

Notes:

(1) N/A if not applicable

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

Table A.2 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S1	GWR Museum	Roadside	414629.34	184736.82	NO_2	No	0.3	2.0	No	2.5
S3	S4, 8 Okus Road	Roadside	414758.67	183718.55	NO_2	No	4.8	2.3	No	2.5
S4	186 Kingshill Rd	Roadside	414257.86	183972.1	NO_2	No	2.3	2.0	No	2.6
S5	Chalet School, Queens Drive	Roadside	416088.78	184906.88	NO_2	No	0.0	7.5	No	2.8
S6	Swindon 8 - 102 Bath Road	Roadside	414925.19	183741.49	NO_2	No	6.9	3.0	No	2.7
S7	No. 81 Kingshill Road	Roadside	414625.93	183848.04	NO_2	Yes, Kingshill	6.0	1.6	No	2.3
S8	Aylesbury Street	Roadside	415108.27	185157.98	NO_2	No	1.6	1.1	No	2.4
S9	Manchester Rd	Roadside	415156.96	185100.84	NO_2	No	0.2	2.6	No	2.8
S10	Meadow Way Badbury	Roadside	419347.33	180974.53	NO_2	No	6.5	36.7	No	1.8
S11	Kingshill Rd/Clifton St	Roadside	414733.29	183782.89	NO_2	Yes, Kingshill	3.2	1.3	No	2.9
S12	Westcott Place	Roadside	414075.8	184040.99	NO_2	No	11.6	1.2	No	2.8

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)
S13	Cricklade Rd (Moonraker)	Roadside	415677.18	187335.48	NO_2	No	4.4	1.3	No	2.9
S14	Iffley Rd from 10.05.2017	Roadside	413893.07	185621.33	NO_2	No	0.7	7.7	No	2.0
S15	102 Kingshill Road	Roadside	414698.37	183800.27	NO_2	Yes, Kingshill	0.1	1.3	No	2.5
S16	86 Clifton Road	Roadside	414755.79	183788.58	NO_2	No	10.0	8.6	No	2.6
S17	A420 South Marston	Roadside	419437.78	186764.67	NO_2	No	8.2	12.5	No	2.7
S18	63 Kingshill Rd	Roadside	414552.28	183884.71	NO_2	Yes, Kingshill	6.0	2.0	No	2.8
S19	No. 85 Kingshill Road	Roadside	414654.35	183833.97	NO_2	Yes, Kingshill	1.8	1.4	No	2.4
S20, S21, S22	37 Devizes Rd	Roadside	415547	183552.03	NO_2	No	4.5	1.8	No	2.4
S23	30 Devizes Road	Roadside	415554.74	183494.78	NO_2	No	3.5	2.0	No	2.4
S24	68 Cheney Manor Rd (Rodbourne Rd)	Roadside	415532	183666	NO_2	No	2.6	2.4	No	2.3
S25	Tadpole Lane	Roadside	411973.26	189625.23	NO_2	No	16.0	0.7	No	2.3
S26	66 Ermin St	Roadside	417398.65	187353.88	NO_2	No	0.7	1.9	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S2, S27, S28	Bath Rd Car Park	Roadside	415289.6	183789.81	NO_2	No	3.3	5.3	No	2.6
S29	Opp 101 Kingshill Road	Roadside	414707.53	183806.25	NO_2	Yes, Kingshill	7.9	1.8	No	2.5
S30	Corner of Kingshill/ Clifton Street	Roadside	414756.8	183782.97	NO_2	Yes, Kingshill	15.7	1.4	No	2.3
S31	Wanborough Road - Merlin Way	Roadside	418426.51	186275.44	NO_2	No	2.9	0.6	No	2.4
S32	516A Cricklade Road	Roadside	415666.52	187458.47	NO_2	No	10.7	0.8	No	2.2
S33	Whitworth Road/ Moonrakers	Roadside	415591.43	187366.75	NO_2	No	8.4	1.3	No	2.3
S34	Beechcroft Road/ Moonrakers	Roadside	415720.84	187414.25	NO_2	No	6.1	0.4	No	2.5
S35	32 Swindon Street Highworth	Roadside	420029.62	192366.81	NO_2	No	2.1	2.5	No	2.1
S36	Highworth - Cricklade Road	Roadside	419987.18	192409.43	NO_2	No	2.1	1.6	No	2.3
S37	St Michaels Avenue Corner/ Highworth	Roadside	420036.74	192478.9	NO_2	No	3.2	1.2	No	2.5
S38	Hanleys, High Street - Highworth	Roadside	420078.36	192450.06	NO_2	No	2.1	1.8	No	2.3
S39	Goddard Arms - Cricklade Street	Roadside	415711.69	183817.45	NO_2	No	1.1	1.7	No	2.6

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)
S40	10 Marlborough Road - Wroughton	Roadside	414879.63	180586.08	NO_2	No	3.8	0.9	No	2.9
S41	No.88 High Street - Wroughton	Roadside	414408.83	180472.53	NO_2	No	2.8	0.2	No	2.5
S42	Nythe Farm A419	Roadside	419050.23	185658.12	NO_2	No	6.0	2.1	No	1.5
S43	Lainesmead School Triplicate with AURN	Urban Background	416318	184402	NO_2	No	-31.2	37.4	Yes	2.4
S44	Lainesmead School Triplicate with AURN	Urban Background	416318	184402	NO_2	No	-31.2	37.4	Yes	2.4
S45	Lainesmead School Triplicate with AURN	Urban Background	416318	184402	NO_2	No	-31.2	37.4	Yes	2.4

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean 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
UKA00650	416341	184379	Other	96.9	96.9	9.9	10.3	10.2	8.9	7.6

☒ **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
S1	414629.34	184736.82	Roadside		75.0	24.3	27.2	25.6	23.6	19.8
S3	414758.67	183718.55	Roadside		100.0	14.1	15.3	14.9	13.3	11.8
S4	414257.86	183972.1	Roadside		90.6	23.8	25.6	27.1	22.2	22.6
S5	416088.78	184906.88	Roadside		100.0	22.2	19.5	21.5	21.3	18.3
S6	414925.19	183741.49	Roadside		100.0	28.1	29.4	26.0	23.3	18.7
S7	414625.93	183848.04	Roadside		92.5	38.3	**40.5**	36.5	31.9	29.0
S8	415108.27	185157.98	Roadside		100.0	17.8	18.0	19.5	18.1	16.7
S9	415156.96	185100.84	Roadside		92.5	27.6	29.7	32.5	34.7	26.9
S10	419347.33	180974.53	Roadside		100.0	18.1	15.6	14.7	13.3	12.0
S11	414733.29	183782.89	Roadside		92.5	32.4	35.1	33.0	30.8	26.2
S12	414075.8	184040.99	Roadside		100.0	22.9	25.0	24.6	22.7	19.0
S13	415677.18	187335.48	Roadside		90.6	28.0	19.8	28.9	24.5	21.1

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
S14	413893.07	185621.33	Roadside		81.1	27.0	29.1	25.2	26.9	29.7
S15	414698.37	183800.27	Roadside		100.0	**40.6**	**45.0**	**42.2**	38.7	**55.4**
S16	414755.79	183788.58	Roadside		90.6	21.1	21.7	21.9	21.7	18.7
S17	419437.78	186764.67	Roadside		100.0	14.7	15.9	15.8	13.5	13.7
S18	414552.28	183884.71	Roadside		100.0	24.4	26.7	25.2	22.1	18.3
S19	414654.35	183833.97	Roadside		83.0	32.7	33.1	35.9	33.0	26.9
S20, S21, S22	415547	183552.03	Roadside		92.5	31.8	33.8	33.8	29.5	27.5
S23	415554.74	183494.78	Roadside		100.0	28.6	29.6	30.3	23.4	24.6
S24	415532	183666	Roadside		75.0	31.3	36.2	34.7	32.4	22.9
S25	411973.26	189625.23	Roadside		100.0	12.8	13.6	13.4	11.9	11.6
S26	417398.65	187353.88	Roadside		92.5	22.4	23.7	22.0	19.3	17.9
S2, S27, S28	415289.6	183789.81	Roadside		100.0	16.0	16.5	16.8	15.0	12.6
S29	414707.53	183806.25	Roadside		100.0	**51.8**	**53.1**	**56.0**	**55.4**	31.3

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
S30	414756.8	183782.97	Roadside		90.6	**62.2**	**67.0**	**69.4**	**56.9**	**49.6**
S31	418426.51	186275.44	Roadside		100.0	14.1	14.3	13.9	12.1	11.1
S32	415666.52	187458.47	Roadside		60.4	26.1	24.4	30.6	27.2	20.9
S33	415591.43	187366.75	Roadside		100.0	25.4	28.6	29.0	25.2	23.2
S34	415720.84	187414.25	Roadside		58.5	26.3	28.1	30.1	26.2	23.5
S35	420029.62	192366.81	Roadside		83.0	16.4	17.5	17.7	15.2	13.7
S36	419987.18	192409.43	Roadside		100.0	16.3	17.5	18.0	13.6	13.1
S37	420036.74	192478.9	Roadside		100.0	27.7	29.8	28.8	25.8	22.3
S38	420078.36	192450.06	Roadside		100.0	13.7	13.6	13.7	11.7	10.5
S39	415711.69	183817.45	Roadside		90.6	24.0	28.6	29.7	25.1	22.9
S40	414879.63	180586.08	Roadside		90.6	16.5	17.6	14.7	15.3	13.8
S41	414408.83	180472.53	Roadside		90.6	17.1	18.1	16.5	15.7	14.4
S42	419050.23	185658.12	Roadside		83.0	37.8	**42.3**	**43.3**	**42.8**	30.6

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
S43	416318	184402	Urban Background		100.0					7.5
S44	416318	184402	Urban Background		100.0					7.2
S45	416318	184402	Urban Background		90.6					7.7

☒ **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 40µg/m^3 are shown in **bold**.

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

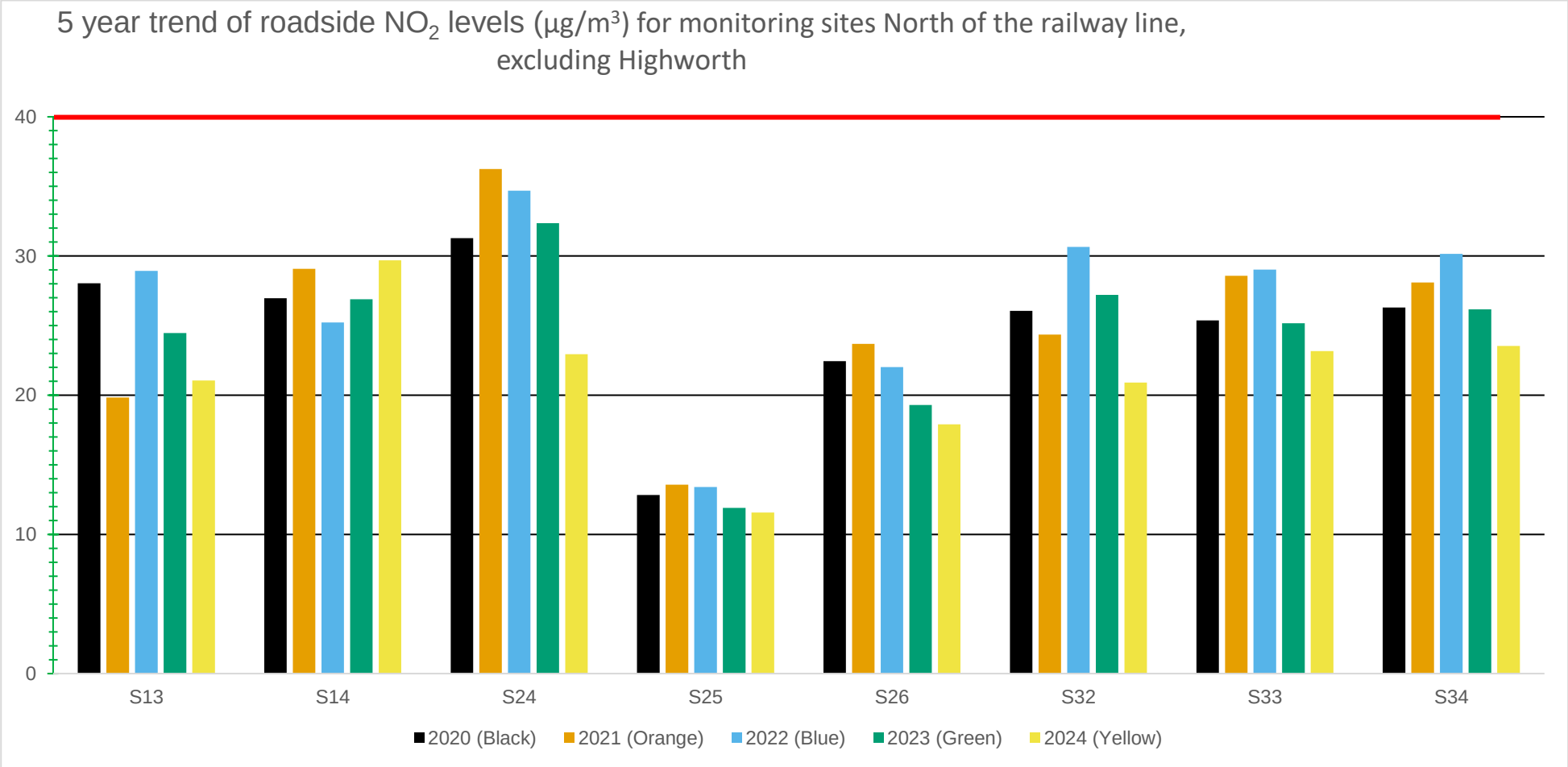
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

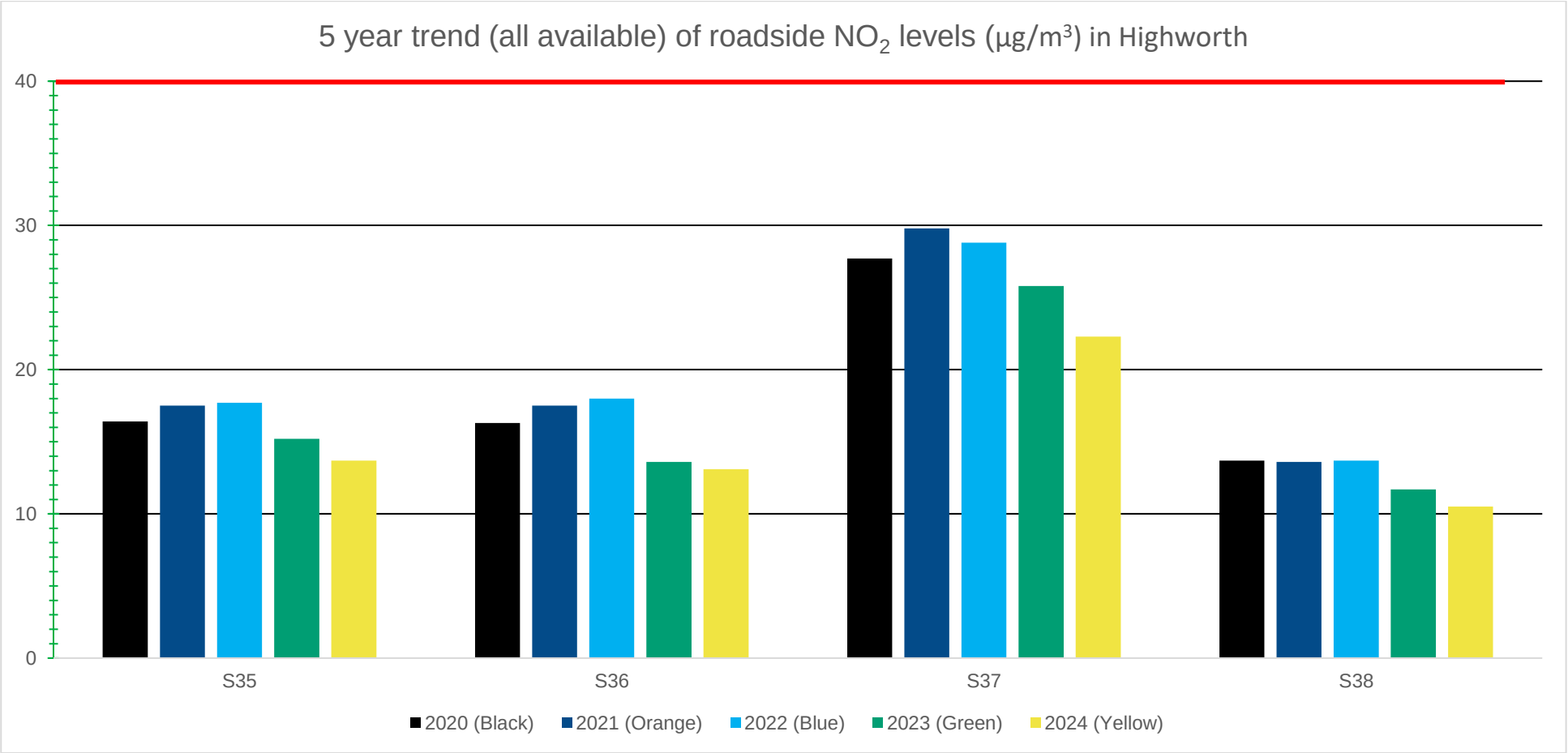
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

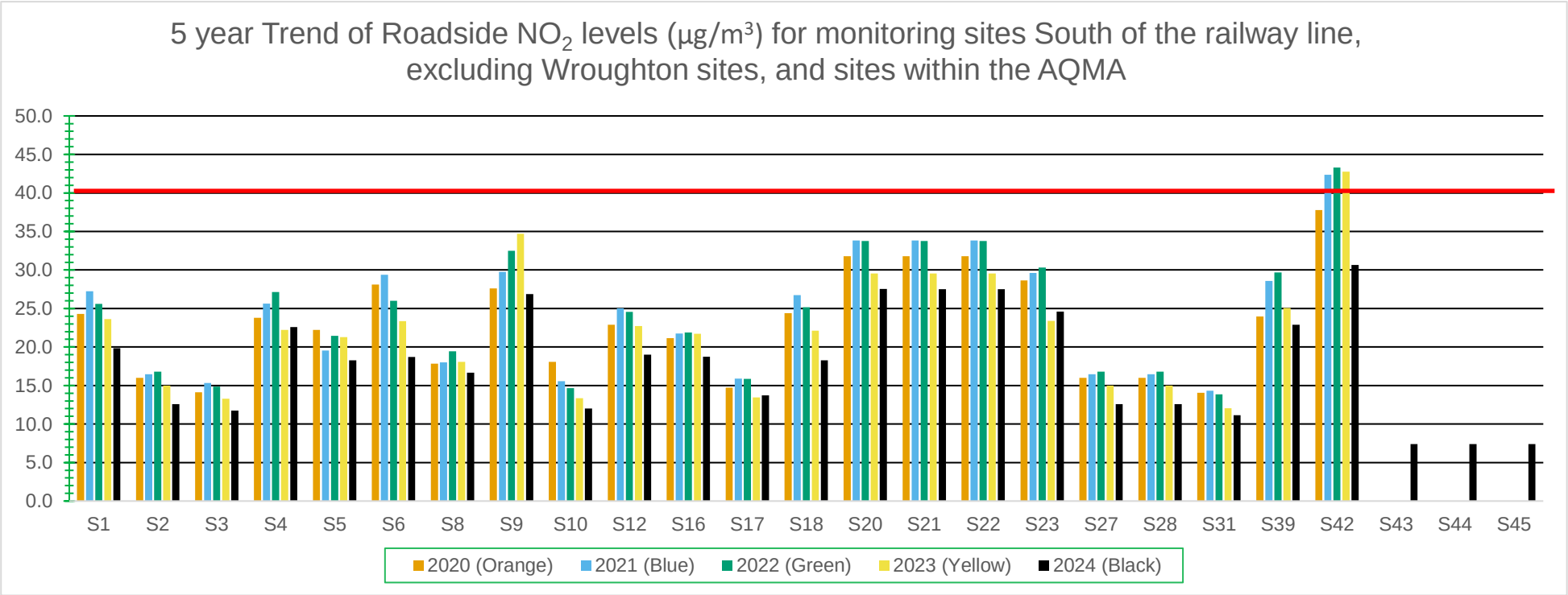
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

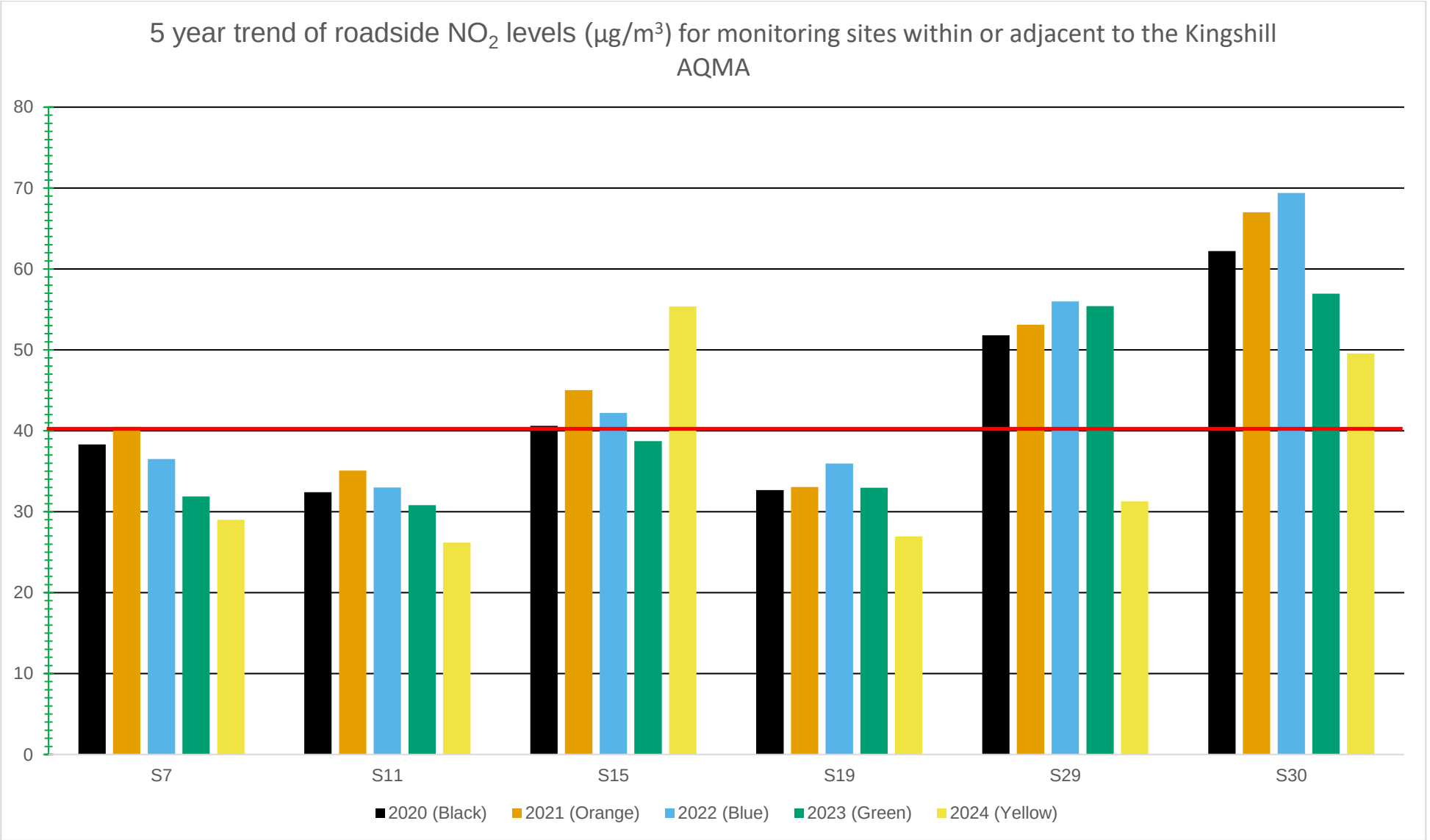
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO_2 Concentrations




5 year trend (all available) of roadside NO2 levels (µg/m3) in Highworth
40
30
20
10
0
S35
S36
S37
S38
2020 (Black)
2021 (Orange)
2022 (Blue)
2023 (Green)
2024 (Yellow)


5 year Trend of Roadside NO2 levels (µg/m3) for monitoring sites South of the railway line, excluding Wroughton sites, and sites within the AQMA
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
S1
S2
S3
S4
S5
S6
S8
S9
S10
S12
S16
S17
S18
S20
S21
S22
S23
S27
S28
S31
S39
S42
S43
S44
S45
2020 (Orange)
2021 (Blue)
2022 (Green)
2023 (Yellow)
2024 (Black)


5 year trend of roadside NO2 levels (µg/m3) for monitoring sites within or adjacent to the Kingshill AQMA
80
70
60
50
40
30
20
10
0
S7
S11
S15
S19
S29
S30
2020 (Black)
2021 (Orange)
2022 (Blue)
2023 (Green)
2024 (Yellow)

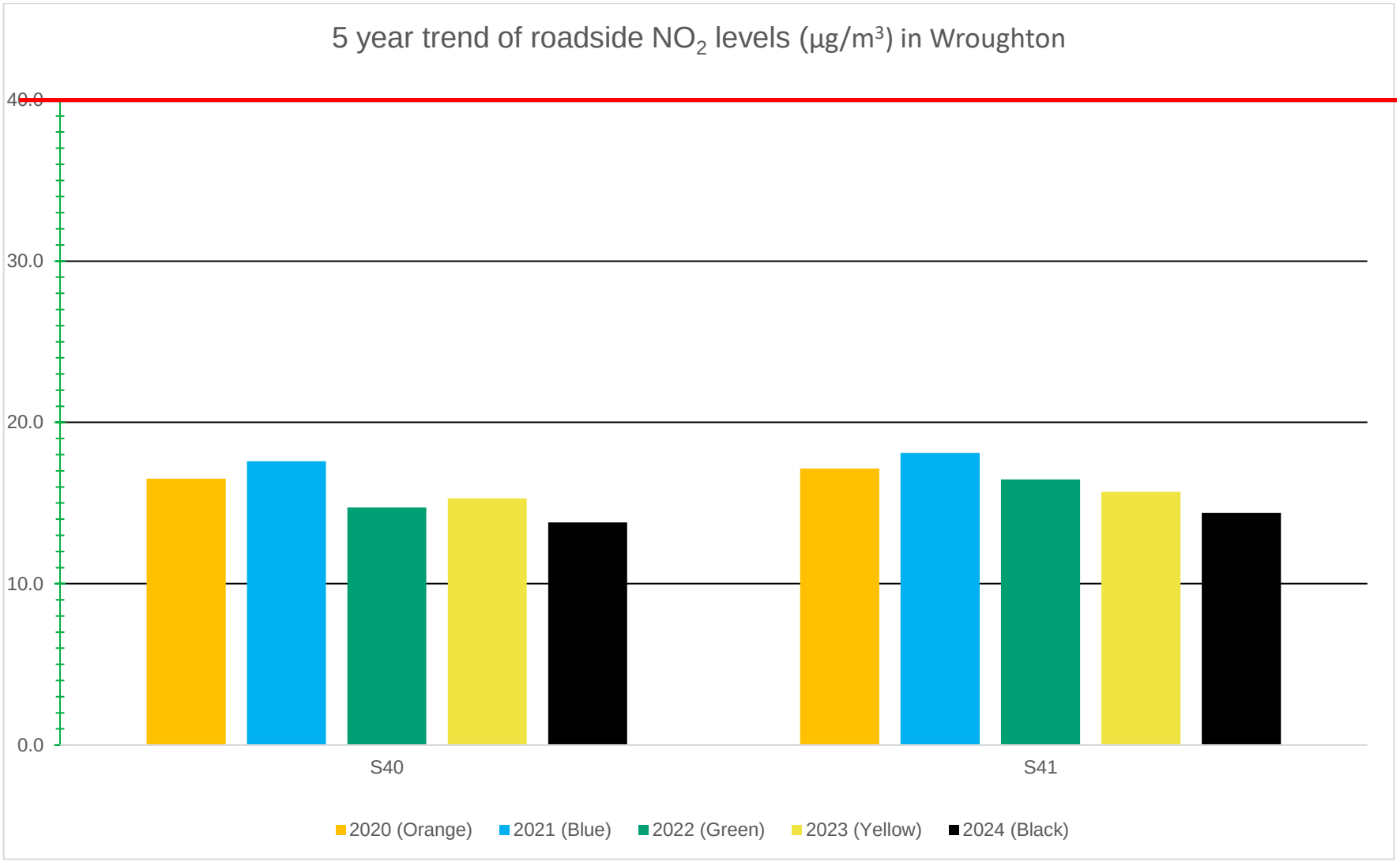

5 year trend of roadside NO2 levels (µg/m3) in Wroughton
40.0
30.0
20.0
10.0
0.0
S40
S41
2020 (Orange)
2021 (Blue)
2022 (Green)
2023 (Yellow)
2024 (Black)

Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/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
UKA00650	416341	184379	Other	96.9	96.9	0	0	0	0	0

Notes:

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

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

Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

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
UKA00650	416341	184379	Other	98.4	98.3	NA	NA	12.9	11	10.4

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

Notes:

The annual mean concentrations are presented as $\mu g/m^3$.

Exceedances of the PM_{10} annual mean objective of 40$\mu g/m^3$ 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%).

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/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
UKA00650	416341	184379	Other	98.4	98.3	NA	NA	1 (18.8)	0	0

Notes:

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

Exceedances of the PM_{10} 24-hour mean objective (50µg/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%).

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

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
UKA00650	416341	184379	Other	98.4	98.3	NA	NA	7.8	6.7	6.3

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

Notes:

The annual mean concentrations are presented as $\mu g/m^3$.

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%).

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S1	414629	184737		30.8	26.6	19.9	24.5	23.6	24.6	22.5	28.5	27.8			25.4	19.8	-	
S2	415290	183790	21.6	10.6	19.7	14.8	13.8	11.9	14.4	13.8	19.0	19.3	23.9	14.9	-	-	-	Triplicate Site with S2, S27 and S28 - Annual data provided for S28 only
S3	414759	183719	21.2	8.2	15.1	15.4	16.3	11.4	12.2	10.2	17.7	15.4	23.0	14.8	15.1	11.8	-	
S4	414258	183972	32.5	33.9	31.6	25.0	26.4	30.1	26.1	20.8	24.9	31.8	35.4		29.0	22.6	-	
S5	416089	184907	24.7	19.1	27.1	21.2	23.3	27.8	26.4	25.6	24.6	19.3	28.0	14.2	23.4	18.3	-	
S6	414925	183741	34.7	14.8	29.8	22.6	24.8	21.7	21.8	21.0	27.2	22.6	33.8	12.9	24.0	18.7	-	
S7	414626	183848	46.8	23.2	39.0		41.6	35.5	36.0	29.9	40.5	35.9	47.9	32.9	37.2	29.0	-	
S8	415108	185158	26.4	22.6	24.8	20.3	18.2	15.2	18.6	14.3	21.9	23.8	32.5	17.8	21.4	16.7	-	
S9	415157	185101		33.4	36.4	38.8	37.5	32.5	36.4	27.0	40.4	37.1	42.3	17.2	34.5	26.9	-	
S10	419347	180975	17.1	14.1	19.4	14.1	15.0	14.2	17.1	14.6	12.4	15.7	18.9	12.1	15.4	12.0	-	
S11	414733	183783		37.2	41.4	34.5	34.3	26.8	30.7	23.3	54.9	18.1	39.4	29.1	33.6	26.2	-	
S12	414076	184041	20.8	11.9	27.5	27.5	26.0	21.3	23.6	21.1	29.5	26.0	35.1	22.3	24.4	19.0	-	
S13	415677	187335	18.9		32.4	29.2	29.8	24.5	27.6	19.8	31.8	27.8	35.8	19.4	27.0	21.1	-	
S14	413893	185621	43.7		42.1	36.0	40.9	29.0	34.4	28.1	35.6	41.9	49.0		38.1	29.7	-	
S15	414698	183800	72.1	68.7	71.0	74.3	75.8	60.3	79.1	65.5	71.9	74.6	67.5		71.0	55.4	**54.6**	
S16	414756	183789	27.0		24.5	20.8	24.9	20.7	26.6	24.5	25.0	23.4	29.1	17.9	24.0	18.7	-	
S17	419438	186765	21.9	15.4	12.5	14.9	16.5	16.8	15.4	12.3	34.7	11.2	20.9	18.6	17.6	13.7	-	
S18	414552	183885	27.3	25.6	23.7	26.9	26.0	21.7	21.5	18.3	32.8	25.6	21.4	10.2	23.4	18.3	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S19	414654	183834	39.4	34.3	22.6	35.8	37.0		33.0	27.1	41.7	37.9	36.5		34.5	26.9	-	
S20	415547	183552		40.4	38.8	36.5	37.9	38.8	33.0	36.2	36.2	29.9	38.4	24.6	-	-	-	Triplicate Site with S20, S21 and S22 - Annual data provided for S22 only
S21	415547	183552		32.6	39.3	34.5	31.3	37.2	38.4	37.3	37.1	33.5	39.2		-	-	-	Triplicate Site with S20, S21 and S22 - Annual data provided for S22 only
S22	415547	183552		42.6	38.6	36.8	32.6	36.6	39.3	35.1	32.1	32.6	39.6	23.9	35.3	27.5	-	Triplicate Site with S20, S21 and S22 - Annual data provided for S22 only
S23	415555	183495	37.3	26.0	30.8	32.4	31.5	32.2	29.3	27.5	31.6	27.9	39.1	33.0	31.6	24.6	-	
S24	415532	183666			31.0	29.5	26.3	28.7	29.8	24.8	31.0	26.0	37.7		29.4	22.9	-	
S25	411973	189625	22.3	14.9	15.0	11.4	14.0	8.7	13.5	10.1	15.9	15.2	23.3	13.6	14.8	11.6	-	
S26	417399	187354		29.4	20.8	18.5	21.6	19.1	22.7	19.8	24.0	26.5	30.1	20.1	23.0	17.9	-	
S27	415290	183790	21.2	15.3	19.4	14.1	15.0	11.8	16.0	12.6	11.1	20.0	25.1	12.2	-	-	-	Triplicate Site with S2, S27 and S28 - Annual data provided for S28 only
S28	415290	183790	21.0	21.0	19.9	13.9	15.2	11.9	15.6	13.3	16.2	16.9	11.0	15.8	16.2	12.6	-	Triplicate Site with S2, S27 and S28 - Annual data provided for S28 only
S29	414708	183806	22.6	42.8	52.1	43.8	50.9	41.9	47.8	38.3	35.1	35.7	44.3	25.8	40.1	31.3	-	
S30	414757	183783	73.5		54.8	54.8	66.7	62.7	67.3	60.6	70.3	67.4	57.3		63.5	49.6	**27.5**	
S31	418427	186275	21.2	14.1	12.9	12.7	14.1	9.3	11.5	9.2	16.4	15.7	21.5	12.9	14.3	11.1	-	
S32	415667	187458					31.2	23.2		27.7	33.0	17.4	38.9	15.1	26.6	20.9	-	
S33	415591	187367	26.0	32.0	28.5	28.3	28.8	27.4	28.4	26.2	32.5	24.8	40.1	33.3	29.7	23.2	-	
S34	415721	187414	35.5				29.0	26.6		28.0	33.6	32.0	39.8		32.1	23.5	-	
S35	420030	192367	20.9	10.9	19.7			16.7	19.8	15.5	18.8	18.6	20.6	14.1	17.6	13.7	-	
S36	419987	192409	19.4	18.0	17.7	15.0	16.4	15.0	18.9	11.4	15.3	19.5	22.7	11.7	16.8	13.1	-	
S37	420037	192479	24.6	21.2	32.5	31.5	31.3	23.6	24.9	24.7	31.1	31.1	39.5	26.7	28.6	22.3	-	
S38	420078	192450	18.8	16.1	15.1	12.5	11.9	12.4	13.4	11.5	11.6	11.6	14.9	12.0	13.5	10.5	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S39	415712	183817	28.5	21.3	27.2	31.4	34.2	23.5	27.1	18.7	35.6	34.3	41.2		29.4	22.9	-	
S40	414880	180586	22.6		18.9	17.5	15.6	15.2	16.6	15.0	16.6	19.9	23.2	12.9	17.6	13.8	-	
S41	414409	180473	21.7	11.4	19.3	20.8	19.7	19.3	16.5	12.2	19.6	18.4	24.1		18.5	14.4	-	
S42	419050	185658	41.4	47.3	42.0	44.7	47.1	45.8	29.1	46.4	18.0	31.0			39.3	30.6	-	
S43	416318	184402	15.5	10.9	9.8	8.5	7.0	5.8	7.1	5.2	10.4	11.1	16.4	7.1	9.6	7.5	-	
S44	416318	184402	14.6	7.6	8.6	7.3	8.1	5.2	7.0	6.4	10.3	8.3	17.7	9.1	9.2	7.2	-	
S45	416318	184402	16.1		10.0	7.8	7.2	6.1	6.4	5.3	10.1	11.5	17.9	10.4	9.9	7.7	-	

☒ **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.**

☒ **Swindon 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 40µg/m^3 are shown in **bold**.

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Swindon During 2024

Swindon has not identified any new sources relating to air quality within the reporting year of 2024. The air quality in Swindon continues to respond to Swindon's rapid growth alongside the greening of the national vehicle fleet and efforts to reduce national and local emissions.

Additional Air Quality Works Undertaken by Swindon During 2024

Swindon has not completed any additional works within the reporting year of 2024

QA/QC of Diffusion Tube Monitoring

Swindon uses Socotec UK Ltd Environmental Chemistry laboratory in Didcot for the supply and analysis of diffusion tubes made up as 50% TEA in Acetone across its network. Socotec UK Ltd are accredited by UKAS for such work, and a copy of their current accreditation may be found here: https://www.ukas.com/wp-content/uploads/schedule_uploads/00002/1252Testing-Multiple.pdf

In the AIR PT inter-comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes; Socotec holds the highest rank of Satisfactory, and the national bias calculation scheme notes the laboratory as having Good precision.

Exposure of the diffusion tubes was completed according to the 2024 Diffusion Tube Monitoring Calendar.

A number of monthly diffusion tube results were rejected in 2024 as clearly anomalous, and a further number of diffusion tubes were absent on collection, or damaged:

- S1 January; missing on collection.
- S9 January; missing on collection.
- S11 January; missing on collection.
- S20, 21, 22 triplicate; all missing on collection.
- S24 January; erroneous result rejected (72.2 µg/m^3).
- S26 January; erroneous result rejected (6.6 µg/m$^{3)}$.
- S32 January; missing on collection.
- S13 February; erroneous result rejected (4.9 µg/m^3).
- S14 February; erroneous result rejected (<0.5 µg/m^3).
- S16 February; erroneous result rejected (5.6 µg/m^3).
- S24 February; erroneous result rejected (7.8 µg/m^3).
- S30 February; erroneous result rejected (31.3 µg/m^3).
- S32 February; missing on collection.
- S34 February; missing on collection.
- S40 February; erroneous result rejected (5.4 µg/m^3).
- S45 February; erroneous result rejected (1.8 µg/m^3).
- S32 March; missing on collection.
- S34 March; missing on collection.
- S7 April; missing on collection.
- S32 April; missing on collection.
- S35 April; missing on collection.
- S35 May; erroneous result rejected (<0.5 µg/m^3).
- S19 June; erroneous result rejected (265.8 µg/m^3).
- S32 July; missing on collection.
- S34 July; missing on collection.
- S1 November; missing on collection.
- S42 November; missing on collection.
- S1 December; missing on collection.
- S4 December; erroneous result rejected (8.3 µg/m^3).
- S14 December; missing on collection.

- S15 December; erroneous result rejected (25.1 µg/m^3).
- S19 December; erroneous result rejected (133.5 µg/m^3). Tube noted as smoky/sooty black.
- S21 December; erroneous result rejected in 1 of triplicate set (36 µg/m^3).
- S24 December; missing on collection.
- S30 December; erroneous result rejected (94.6 µg/m^3). Tube noted as smoky/sooty black.
- S34 December; missing on collection.
- S39 December; erroneous result rejected (9.2 µg/m^3).
- S41 December; erroneous result rejected (6.0 µg/m^3).
- S42 December; missing on collection.

Diffusion Tube Annualisation

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

Sites S32 and S34 required annualization, as less than 75% data capture was achieved at these sites. Annualisation results for these sites are highlighted above in Table C.1.

It is noted that sites S1 and S24 both managed only 9 months data capture, of the 12. However, these sites were not automatically selected by the Diffusion Tube Data Processing Tool (v5.3) for annualization. It is assumed that the tool uses days or weeks of data capture rather than calendar months to calculate the 75% floor above which annualization is not required. Several monitoring periods in the year are 5 weeks long, and most span across calendar month boundaries; and any 9 'monitoring months' may represent greater than 75% of the total monitoring days in the monitoring year, and so not trigger the need to annualise the data.

Site ID	Annualisation Factor (Bristol St Pauls UKA00494)	Annualisation Factor (Swindon Walcot UKA00650)	Annualisation Factor <Site 3 Name>	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
S32	1.0288	0.9835			1.0061	26.6	26.8
S34	0.9667	0.9146			0.9407	32.1	30.2

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.

Swindon have applied a **national** bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by Swindon over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	06/22	0.78
2020	National	03/21	0.77

Table C.3 – Local Bias Adjustment Calculation (rejected)

A Local bias adjustment factor was calculated; using a triplicate set adjacent to the DEFRA UKA00650 AURN node. Results are reported below for completeness, but the overall precision of this local factor was judged as poor (CV>10%), and so is rejected for bias adjustment purposes. The National combined bias adjustment factor highlighted in Table C2 was used instead, as it uses an average of national co-location studies with (only) good precision.

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	11				
Bias Factor A	0.81 (0.74-0.89)				
Bias Factor B	24% (12%-36%)				
Diffusion Tube Mean (µg/m^3)	9.6				
Mean CV (Precision)	8.7%				
Automatic Mean (µg/m^3)	7.7				
Data Capture	97%				
Adjusted Tube Mean (µg/m^3)	8 (7-9)				

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.

Table C.4 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
S15	1.3	1.4	52.4	8.8	54.6	Predicted concentration at Receptor above AQS objective.
S30	1.4	17.1	47.3	8.8	27.5	

QA/QC of Automatic Monitoring

Swindon presents only automatic data gleaned from the DEFRA managed AURN node at Swindon Walcot. Defra manages all parts of the data gathering exercise in accordance with appropriate standards.

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

Only DEFRA automatic monitoring results are presented in this report, which is managed by them, and so no correction factor adjustments are required.

Automatic Monitoring Annualisation

All automatic monitoring locations within Swindon (DEFRA UKA00650) recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

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.

No automatic NO_2 monitoring locations within Swindon required distance correction during 2024.

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

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

Maps of both automatic and non-automatic monitoring stations are available at https://maps.swindon.gov.uk/sbcatmycouncil.aspx ; please select the [My Maps] tab, and the [Planning] and [Air Quality Monitoring Stations] layers.

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[2]

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

[2] 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

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