Sheffield City Council

2025 Air Quality Annual Status Report (ASR)

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

Date: June 2025

Information	Sheffield City Council Details
Local authority officer	Andrew Jameson
Department	City Futures
Address	Howden House, 1 Union Street, Sheffield S1 2SH
Telephone	0114 2734567
E-mail	Andrew.jameson@sheffield.gov.uk
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1.1	17/06/25	Draft report feedback from Clean Air Plan and Public Health teams	A Cosgrove & S Hird
1.2	14/07/25	Management Approval Process	W Stewart & G Fell
1.3	26/9/25	Accessible edits after DEFRA approval	N Holdsworth

Local responsibilities and commitment

This ASR was prepared by the City Futures Department of Sheffield City Council with the support and agreement of the following officers and departments:

- Air Quality team
- Public Health team
- City Sustainability and City Transport

This ASR has been approved by:

[redacted]

Wil Stewart

Director of Investment, Climate Change and Planning

Sheffield City Council

This ASR has also been signed off by Greg Fell, Strategic Director of Public Health and Integrated Commissioning at Sheffield City Council.

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

Sheffield City Council, Howden House, 1 Union Street, Sheffield S1 2SH

Tel: [redacted]

Email: [redacted]

Executive summary: Air Quality in our area

Air Quality in Sheffield

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.

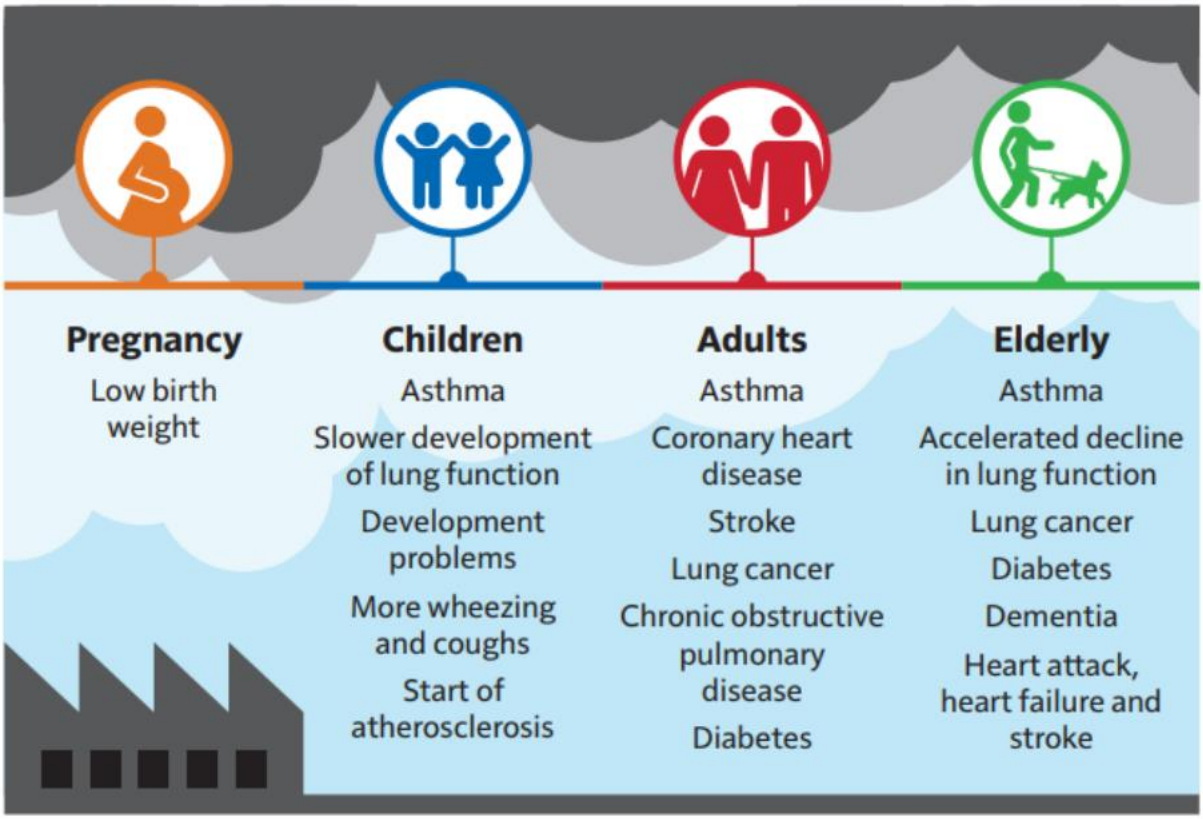
With reference to the Chief Medical Officer's Annual Report for 2024 and Sheffield City Council's Fair and Healthy Sheffield Plan 2024, Sheffield City Council outlines it's plans to deliver on 8 key building blocks, which are foundations for a healthier future (see figure ES.1).

Figure ES 1 - Foundations for a healthier future for people in Sheffield

Source: Fair and Healthy Sheffield Plan: Sheffield City Council, 2024.

Air pollution improvement cross cuts a number of the eight building blocks and is acknowledged as important both locally and nationally because exposure continues to affect people's health throughout their lives, including before birth, in the very young, through to older adults (see Figure ES.2).

Figure ES 2 - Health impacts of Air Pollution



Source; Chief Medical Officer's Annual Report 2022; Air Pollution, December 2022

Exposure to air pollution, indoors and outdoors, over a long period of time, reduces people's life expectancy. There is clear evidence that air pollution contributes to the initiation and development of cardiovascular and respiratory diseases and can cause lung cancer. There is growing evidence of the links between exposure to air pollution and a wider range of health effects, such as intra-uterine impacts, adverse birth outcomes, poor early life organ development, diabetes, reduced cognitive performance, and increased dementia risk. Recent research has suggested that long-term exposure to raised concentrations of outdoor air pollution may increase susceptibility to more severe health outcomes.

Table ES 2 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 2 - 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.

In 2010, Sheffield City Council, as part of their duties under Local Air Quality Management (LAQM), declared a districtwide Air Quality Management Area (AQMA) for failure to meet short-term (hourly) and long-term (annual) Air Quality Limit Values for Nitrogen Dioxide (NO_2) gas. At that time, in accordance with LAQM, the council also declared a districtwide AQMA for breach of short-term (24 Hourly mean) Particulate Matter PM_{10} limits. Data for 2023 indicates that the Sheffield AQMA is still in breach of Air Quality Limit Values for Nitrogen Dioxide (NO_2) gas. In order to meet duties under LAQM, achieve compliance with limits and safeguard health, Sheffield City Council approved an Air Quality Action Plan (AQAP) in 2015 to try and reduce air pollution in order to comply in the shortest possible timeframe, though it is noted that there is further work to be done to achieve this, ensuring it meets local needs and also complement the our Clean Air Plan.

Specific to the Clean Air Plan, in addition to the LAQM Regime, the UK was in breach of EU health-based July 2017 Limit Values for Nitrogen Dioxide (NO_2). The Government named the Sheffield and Rotherham area as one of 28 areas in England where their model indicated concentrations of Nitrogen Dioxide (NO_2) exceeded statutory annual average limits and were projected to continue to do so beyond the following three to four years. In particular, the Government's new National Air Quality Plan (NAQP) identified a small number of corridors in the Sheffield and Rotherham area which were predicted to still be breaching the statutory annual average concentration limit of 40µg/m^3 for NO_2 by 2021, under a 'Business as Usual' forecast scenario. DEFRA's NAQP suggests potential breaches of the 40µg/m^3 limit on the A630 – A57 Parkway (from M1 J33 to City Centre)

and sections of the A61 Inner Relief Road. Therefore, the Government mandated Sheffield City Council via a Ministerial Directive to produce a local Clean Air Plan (CAP) on how to achieve compliance across the Sheffield local authority area. Following HM Government's guidance, Sheffield City Council developed the CAP using modelling receptors for 4m from the kerbside to determine the most appropriate measures for achieving compliance within the shortest time frame, the result of which was introduction of a Class C Clean Air Zone (CAZ) with additional measures. Following adoption of the CAP by Sheffield City Council members in 2018 and final approval from His Majesties Government (HMG) in 2022, the CAZ launched on 27 February 2023. The boundary of the CAZ can be seen in Figure ES.3 and details on the CAZ are available from the website.

Figure ES.3– Map of Sheffield City Clean Air Zone Boundary.

** Note the local Clean Air Plan area covers the Local Authority area.*

It must be noted that the criteria for compliance under the EU regime differs from those associated with the regime known as Local Air Quality Management (LAQM), which accounts for differentiation between what is defined as compliant and subsequent plans.

To meet the need for these two regimes, in 2017, Sheffield City Council also developed and adopted a Clean Air Strategy, which set out the council's goals and actions in order to meet the needs of both areas and act as a bridging policy for the two. Therefore, there are three key policy documents currently governing Air Quality Action within the Sheffield district:

- Sheffield City Council Air Quality Strategy (2017)
- Sheffield Air Quality Action Plan (2015)
- Sheffield City Council Clean Air Plan:
    - Clean Air Zone (CAZ) Class C
    - Early introduction of the bus gate on Arundel Gate with associated anti-idling measures
    - Financial assistance schemes to upgrade to cleaner vehicles

Whilst these policy documents remain relevant, and the final local CAP approved by HM Government in 2022 is regarded as meeting our legal obligations in accordance with advice from DEFRA, it is acknowledged that there is a need to update the Strategy and Action Plan to reflect local need and work to complement results of the CAZ. Sheffield City Council have therefore started the process to develop a refreshed Air Quality Strategy and Action Plan, the delivery of which will align with the legislative need for a refreshed plan by the 5-year deadline of December 2027.

Sheffield's own local air quality monitoring suggests that concentrations prior to the pandemic were gradually coming down (see dotted red line on Figure ES.4) except for 2019. In 2020, pandemic measures resulted in districtwide reductions of pollution concentrations and, whilst the percentage of monitoring sites exceeding the 40µg/m^3 threshold for NO_2 fell, it did not reach zero, as shown in Figure ES.5. This demonstrates that, even with wide-reaching pandemic measures, compliance was not achieved. In 2021 and 2022, as would be expected, there was an increase in number of sites exceeding the 40µg/m^3 threshold, attributed to the return to societal norms. In 2023, monitoring data saw districtwide reductions and aligns with the expected trend that was occurring pre-pandemic. Large wholesale reduction in 2023 was indicative that improvement may have occurred due to districtwide conditions, though some key areas saw greater reduction than others. In 2024, we observe continued reduction at key locations. Only observed increases in concentrations within the district occurred at monitoring within suburban locations or inside the train station, both of which are less influenced by the impact of CAP measures. Locations along primary transport routes or closer to the CAZ on average have seen a

continued reduction. This continued improvement could be attributed to continued cleaning up of the transport fleet, reflecting the transport data and modelling associated with the CAP work.

Specifically, in 2022, there were eight locations where concentrations exceeded the annual NO_2 objective at the nearest valid receptor and six locations likely to exceed the hourly NO_2 objective. Whereas in 2023, there were only two exceedances of the annual NO_2 objective at valid receptors and two sites likely exceeding the hourly objective. In 2024, continued reduction now means that there is only one site exceeding the annual NO_2 objective at a valid receptor and no sites likely exceeding the hourly objective. Though it must also be noted that some sites do remain above the AQO, but these are outside of assessment against legal threshold. One key site, which is out of LAQM process due to being on private land, is the train station, where concentrations remain well above the annual objectives and within 10% of the threshold that a site is likely exceeding the hourly objective.

The only site meeting LAQM requirements exceeding the Annual NO_2 Objectives at receptor is at Fitzalan Square.

Looking at the data for the last 8 years, including the pandemic period, trends would suggest that 2024 is reflective of post-pandemic norms and, as such, can be used as the appropriate year for Impact Assessment validation.

Using 2024 data, projecting forward using data from our monitoring locations, it is suggested that NO_2 concentrations at some locations will continue to be problematic beyond 2024.

Figure ES.4 – Annual NO_2 concentrations (µg/m^3) over last eight years

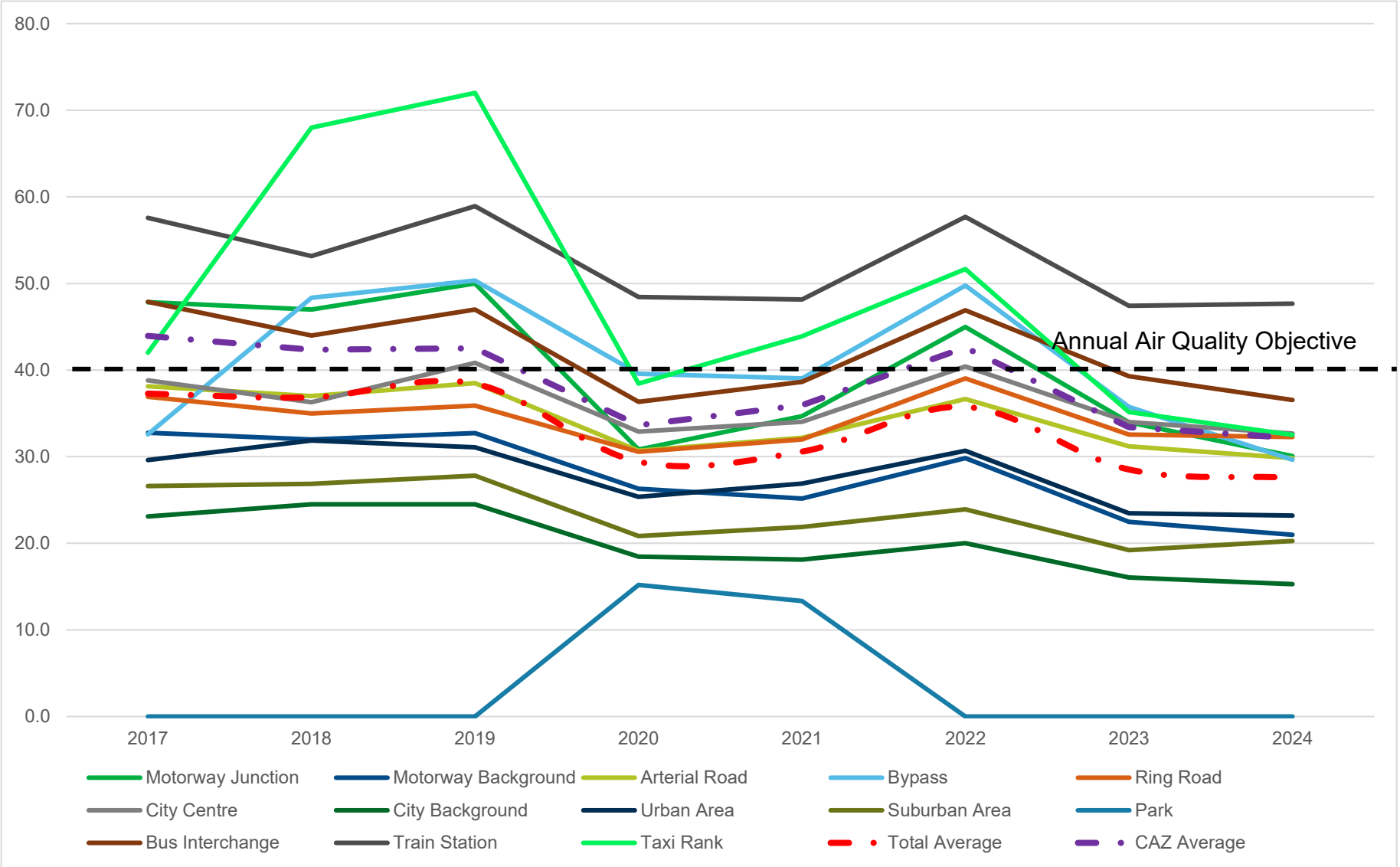
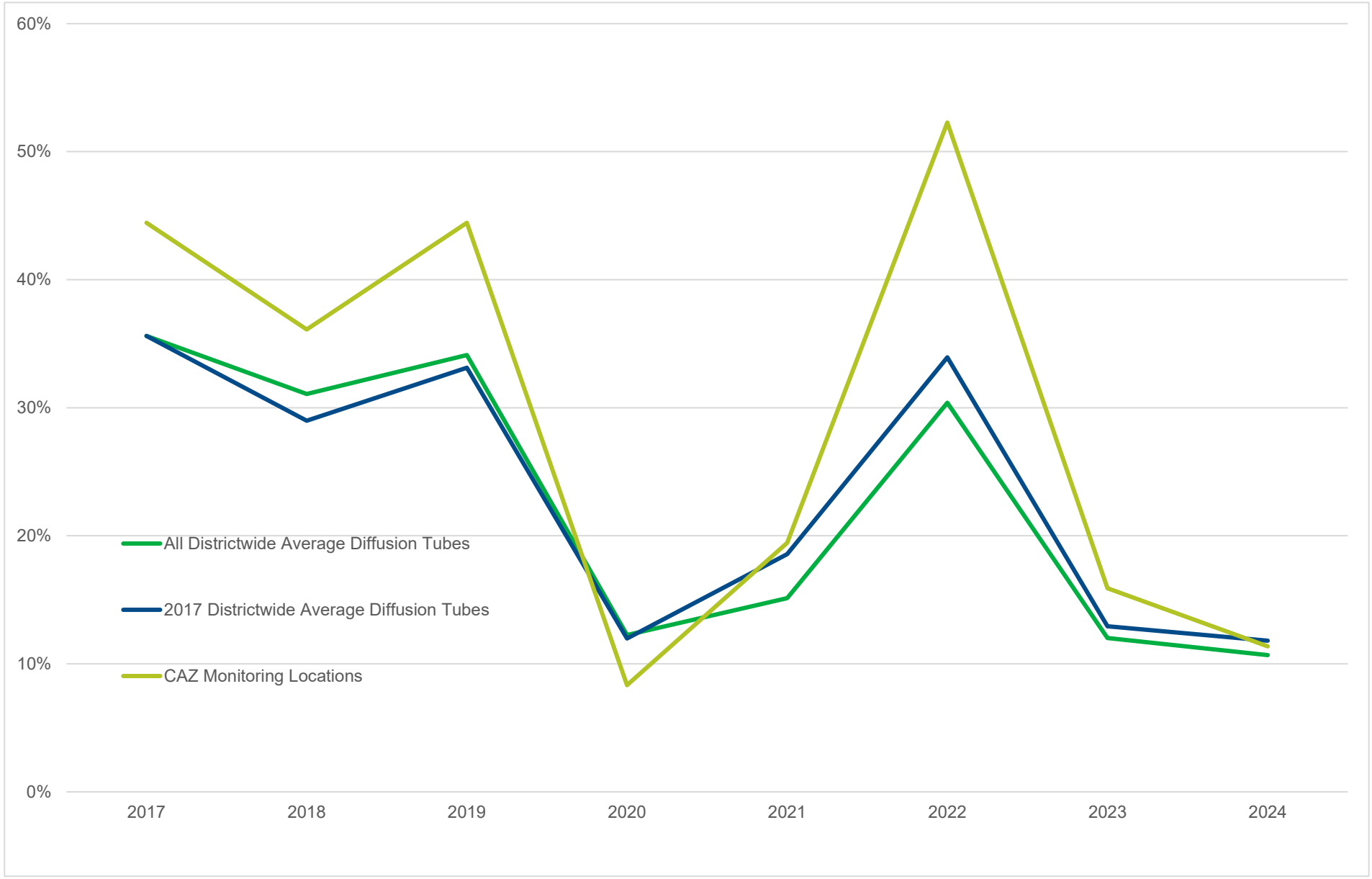


Figure ES.5 – Percentage of monitoring sites exceeding annual NO_2 concentrations over last eight years



In terms of the standards set by the EU for fine Particulate Matter (PM_{10} and $PM_{2.5}$) dust pollution, all our monitoring stations are indicating that we now comply, and trends shown in Figures ES.6 and ES.7 show that PM_{10} and $PM_{2.5}$ concentrations were increasing between 2017 and 2018, but saw slight reductions since that time, including during and post pandemic. In 2022, concentrations for both PM_{10} and $PM_{2.5}$ increased, though levels remain below the objective and 1 - 4µg/m^3 below pre-pandemic levels. In 2023, we saw reduction at all but 1 site for both PM_{10} and $PM_{2.5}$. This fluctuation in PM concentrations continue to occur in 2024, with two different sites seeing increase, but all the others reducing. The increase for particulates occurred at the Wicker and Fir Vale sites, though the increases were slight and concentrations remained well below objectives.

The 2022 concentration increase, coupled the with the slowing of reduction, continues to demonstrate the fragility of current compliance and as such, targeted intervention measures should focus on reductions in all urban sources to limit higher levels. Although the Sheffield district complied with standards, and trends have shown reductions between 2018 and 2024, it must also be noted there is no safe limit for Particulate Matter, which is why inclusion of measures to target these pollutants in the next Action Plan is important.

Figure ES.6 – Annual PM_{10} concentrations ($\mu g/m^3$) over the last eight years

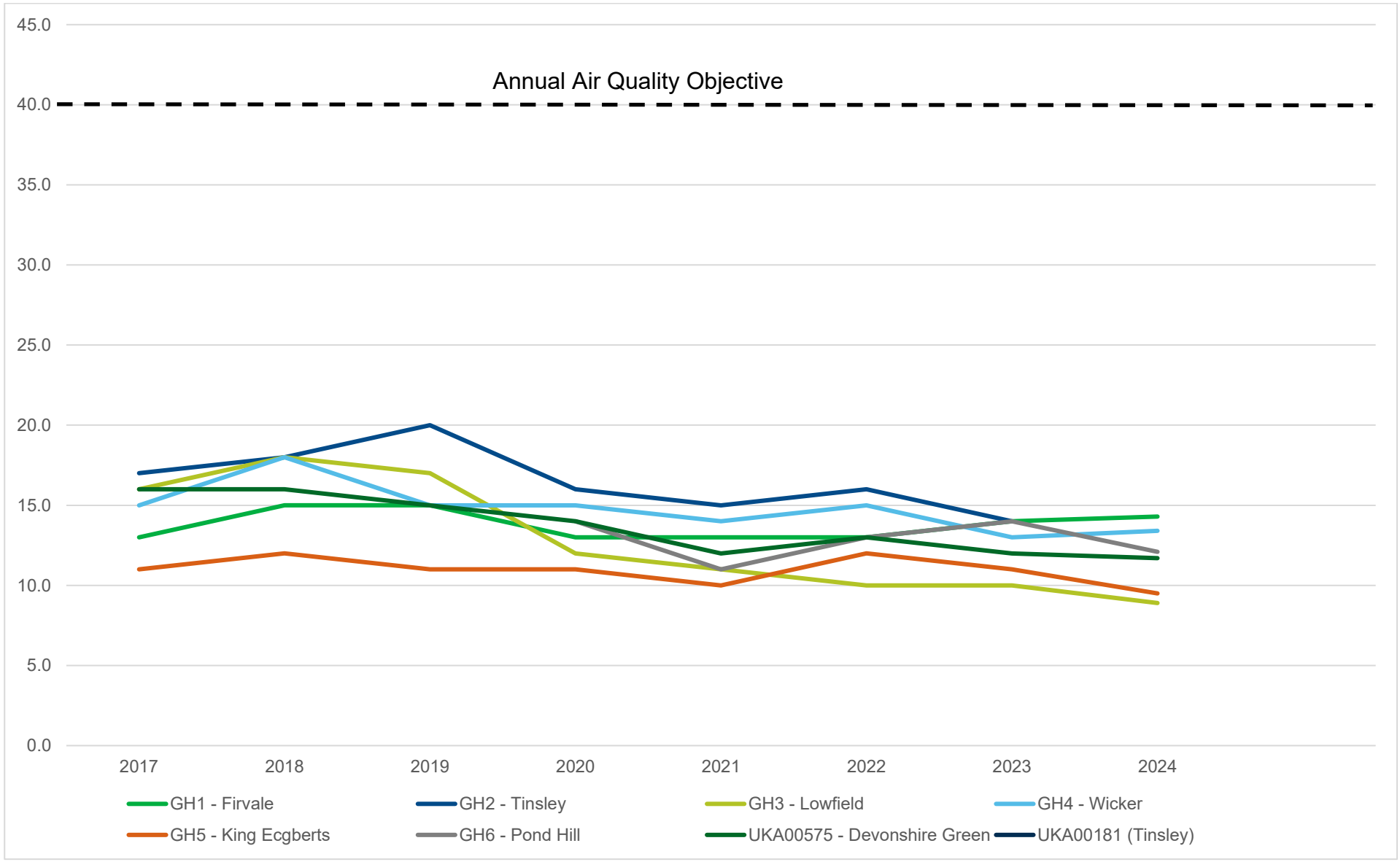
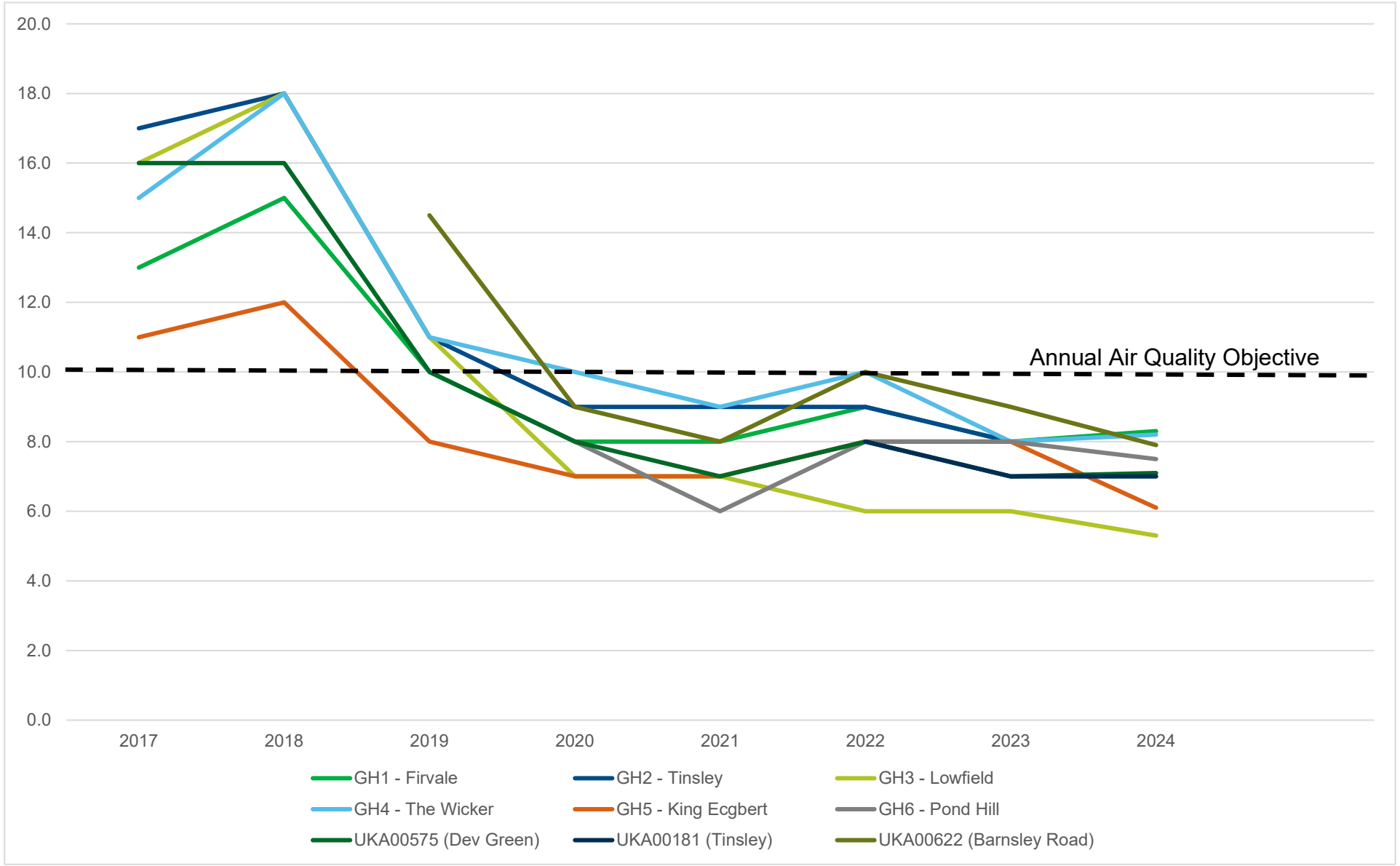


Figure ES.7 – $PM_{2.5}$ concentrations (µg/m^3) over the last eight years



Sheffield City Council also monitors SO_2 at one of our real-time monitoring stations, GH3 at Lowfield School. Since 2019, there has been a communication fault with the device and as such, there is no SO_2 data available for 20244, though it must be noted that, prior to the fault, concentrations were well within compliance and there has been no change in circumstances within the locality, which would change this status.

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 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 that is of most harmful to human health. The Air Quality Strategy 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 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 in Sheffield and most of the Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by vehicle emissions.

Sheffield City Council currently has two key policy documents designed to bring about compliance with NO_2 objectives. Firstly, the 2015 Action Plan still has relevance in delivering widespread district improvement, though it is acknowledged that this document needs updating. The second document is the Council's local Clean Air Plan, adopted in 2022, which in accordance with DEFRA's advice, constitutes meeting the requirement of a plan updated within the last five years.

Sheffield City Council realise that for the success of future air quality strategy and delivery, Public Health and messaging are key to deliver positive outcomes, especially towards emerging emission areas such as model shift, indoor air pollution and domestic heating. Therefore, development and delivery of our next iteration of the strategy will be underpinned by this approach, created in partnership between public health and air quality officers, with Sheffield business and residents at the heart.

Sheffield City Council has taken forward a few direct measures during the current reporting year of 2023 in pursuit of improving local air quality:

- Clean Air Plan targeted feasibility study of five areas where concentrations exceed national annual average NO_2 objectives:
    - Arundel Gate
    - Waingate
    - Sheaf Street
    - Attercliffe Road (nr Bodmin Street)
    - Meadowhall Road (nr Jenkin Road)
- Set up a Zero Emission Bus funding plan to deliver outcomes of the targeted feasibility studies, specifically to reduce bus emission impacts at Waingate & Arundel Gate.
- Recruitment of an Air Quality Officer support for delivery of new Strategy & Action Plan
- Continued delivery of our Clean Air investment plan supported by CAZ income and other associated active travel measures, such as School Streets.
- Continued administration of our CAZ financial assistance grant schemes to help owners of older vehicles to upgrade to cleaner replacement vehicles. Noting that with the exception of bus grant funds, the main grant schemes closed on the 31 May with the aim that all live application will be paid-out by the 31 August 2025.

Conclusions and priorities

Data for 2024 indicates that the Sheffield AQMA is still in breach of National Air Quality Limit Values for Nitrogen Dioxide (NO_2) gas. In terms of the standards set by the EU for fine Particulate Matter (PM_{10} and $PM_{2.5}$) dust pollution, all our monitoring stations are indicating that the Sheffield City district now complies with the standards.

Sheffield's own local air quality monitoring suggests that concentrations prior to the pandemic were gradually coming down (see dotted red line Figure ES.2) except for 2019. In 2020, there were large reductions observed as a result of COVID-19 pandemic control measures across all sectors, with largest improvements being observed during the period March to July when control measures were strictest. In 2021, concentrations increased 3

to 12% for NO_2 at key roadside locations, though some pandemic measures remained for part of the year and, as such, it was expected that the data increased further with a full year of 'business as usual' conditions. In 2022, further increases were observed across all sectors of between 11 to 23% on the previous year. In 2023, Sheffield City Council monitoring observed concentration reductions of 1% to 60%, which is between 1 and 37µg/m^3 at our monitoring locations between 2022 and 2023 with the average reductions for the district being 7µg/m^3 (20%). This reduction was also observed in 2024, with concentration reductions on average of 3% to 11% (1 to 2 µg/m^3) Concentrations have reduced across the district, and levels in 2024 are lower than levels observed in 2020. These reductions are not just isolated to within or in close proximity to the CAZ, and continued improvement at roadside monitoring locations, is indicative of the impact of the CAZ one and a half years on.

We are satisfied that 2024 concentrations are reflective of post-pandemic norms and as such can be used as the appropriate year for Impact Assessment validation.

Sheffield City Council has taken forward measures during the current reporting year of 2024 in pursuit of improving local air quality.

Sheffield City Council's air quality priorities for the coming year are to:

- Develop/update the council's Air Quality Strategy to reflect new National requirements and meet local future needs, setting out the district's Air Quality ambition for years to come
- Continue to evaluate the impact of the Clean Air Plan and determine further complimentary measures to bring about compliance at the few remaining locations.

In 2023, Sheffield City Council fully implemented its Clean Air Plan measures to achieve NO_2 reduction in the shortest possible time. Following review of current policy documentation, it is accepted that both the Air Quality Strategy and Action Plan both require updating, though it is also noted the need to understand the real-world impact of the local Clean Air Plan (CAP) measures (including the CAZ) to ensure Action Plan measures meet future needs. As such, given that the Action Plan has key dependencies linked to understanding of the CAP, the council plan to prioritise the development an overarching strategy in 2025 to set out our ambition. The council will also begin development of the Action Plan by setting up working groups and starting relevant stakeholder engagement following completion of the strategy, though it must be noted that timescale for creation and finalisation of the Action Plan has the key dependency of concluding the evaluation of the CAP measures, which may elongate the process, but

are programmed in to achieve the deadline of December 2027, in line with review of plans every five years.

How to get Involved

Alongside our priority policies is the cross-cutting theme of raising awareness and behaviour change:

- Clean Air Plan Communications Plan: Part of the National Clean Air Plan process to raise awareness of current concentrations and progress made through the Clean Air Plan process.
- Community groups diffusion tube network, providing local residents the ability to observe pollution concentrations within their localities.
- Some additional measures which have been implemented over the last few years and are ongoing, include:
  - The South Yorkshire Care4air campaign,
  - and ECO Stars Fleet Recognition Scheme.

The engagement with fleet operators through the ECO Stars Fleet Recognition Scheme is recognised nationally, and many other local authorities in England and Scotland have followed suit.

- Behaviour change: We will work with colleagues in Transport, Public Health and beyond, to ensure that public transport, walking and cycling are accessible and easy options.

If you wish to find out more information on air quality, please use the following websites:
https://www.sheffield.gov.uk/pollution-nuisance/air-quality

https://uk-air.DEFRA.gov.uk/

or contact the council on air.quality@sheffield.gov.uk

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1 Local Air Quality Management

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

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

2 Actions to improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by Sheffield City Council can be found in Table 0.1. The table presents a description of the 3 AQMAs that are currently designated within Sheffield.

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

- NO_2 annual mean
- PM_{10} 24-hour mean
- NO_2 hourly mean.

Table 0.1 – 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
Sheffield AQMA	10 March 2010	NO_2 Annual Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	Yes	59	49.3	0	Clean Air Plan Adopted Dec 2022 & Air Quality Action Plan Adopted 2015	Air Quality Action Plan 2015 and Sheffield & Rotherham Clean Air Plan Full Business Case
Sheffield AQMA	10 March 2010	NO_2 Hourly Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	Yes	55	35*[1]	0	Clean Air Plan Adopted Dec 2022 & Air Quality Action Plan Adopted 2015	Air Quality Action Plan 2015 and Sheffield & Rotherham Clean Air Plan Full Business Case
Sheffield AQMA	10 March 2010	PM_{10} 24 Hour Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	Yes	8	1	6	Air Quality Action Plan Adopted 2015	Air Quality Action Plan 2015

*[1] *Concentrations observed at Arundel Gate Interchange above 60µg/m^3 at diffusion tube monitoring location, which is indicative of hourly objective exceedance*

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

☒ **Sheffield City Council confirm that all current AQAPs have been submitted to DEFRA.**

2.2 Progress and impact of measures to address Air Quality in Sheffield

DEFRA's appraisal of last year's ASR concluded that:

"The Action Plan for the AQMA was published in 2015. DEFRA recommends that Action Plans are updated every five years to ensure measures are appropriate to reduce pollutant concentrations. It is recognised that the Council published their Clean Air Plan in 2022."

Compliance has now been achieved for six years with regards to the daily mean PM_{10} objective, and SCC should therefore begin to revoke the AQMA designation for this objective."

Sheffield City Council currently has two key policy documents designed to bring about compliance with NO_2 objectives. Firstly, the 2015 Action Plan still has relevance in delivering widespread district improvement, though it is acknowledged that this document is in need of updating. The second document is the Council's Clean Air Plan, adopted in 2022, which in accordance with DEFRA's advice, constitutes meeting the requirement of a plan updated within the last five years. For the purposes of this report, we will include progress on both Action Plan and Clean Air Plan measures.

Sheffield City Council realise that for the success of future air quality strategy and delivery, Public Health and messaging are key to deliver positive outcomes, especially towards emerging emission areas such as model shift, indoor air pollution and domestic heating. Therefore, development and delivery of our next iteration of the strategy will be underpinned by this approach, created in partnership between public health and air quality officers, with Sheffield business and residents at the heart.

Sheffield City 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 0.2. Ten measures are included, detailing the type of measures and the progress Sheffield City Council have made during the reporting year of 2024. Any barriers restricting the implementation of the measure are detailed.

In addition to the measures contained within our CAP and AQAP, Sheffield City Council undertook a number of other measures to work towards AQ improvements. These were:

- Recruitment of AQ resource, to facilitate delivery of policy and schemes
- Targeted feasibility study on areas contained within the CAP, which are exceeding national objective.
- Developed plan for delivery of AQ strategy and Action Plan, with the target of December 2027, which aligns with five years of the CAP.

More detail on these measures can be found in the respective Plans:

- Sheffield City Council Air Quality Action Plan 2015 – designed to tackle exceedance of NO_2 and PM_{10} objective under LAQM.
- Sheffield City Council Clean Air Plan – Full Business Case 2022 – designed to tackle exceedance of NO_2 under national approach.

In recent times, key completed measures are:

- Implementation of the Class C CAZ, targeting emissions from HGV's, buses, coaches, LGV's and taxis,
- Delivery of the trial Bus Gate on Arundel Gate northbound, restricting access to improve flow and reduce emissions along the link.
- Launch of financial support to enable upgrade of older vehicles to cleaner replacements
- Recruitment of AQ resource, to facilitate delivery of policy and schemes
- Targeted feasibility study on areas contained within the CAP, which are exceeding national objective.

Sheffield City Council expects the following measures to be completed over the course of the next reporting year:

- Development of a new Clean Air Strategy,
- Agree and commence the next steps from the Targeted Feasibility Study to be agreed with Government.

Sheffield City Council's priorities for the coming year are:

- To develop a new Clean Air Strategy; that will replace the Strategy adopted in 2017. This new strategy will set out the ambition and aims of the district for continued improvement of air quality for the district and outline commitments to work with national Government to achieve the new $PM_{2.5}$ targets. The strategy will

also be a policy document, which aligns both the Clean Air Plan and any future Action Plan to ensure continuity across all work areas.

- To continue to assess the impact of the CAZ; and develop further measures, where needed, in alignment with national AQ approach.

Sheffield City Council worked to implement these measures in partnership with the following stakeholders during 2023:

- Joint Air Quality Unit
- DEFRA
- Internal Council departments
- Residents and businesses
- Key anchor institutions
- Combined aauthority
- National Highways
- Environment Agency

The principal challenges and barriers to implementation that Sheffield City Council anticipates facing are:

- Development of the Clean Air Strategy
    - The key challenges for development of the strategy will centre around availability of officer time and success of engagement with key stakeholders.
    - There will need to be an agreement with stakeholders on the ambition and aspirations that council wish to set within the strategy, such as pollutant concentration objectives.
    - The strategy will need to compliment existing strategies or those in development, such as the Climate Emergency.
- Assessment of CAP
    - The key challenges to the success of the CAP measures relates to public behaviour change responses, the speed at which the fleet across the CAP area renews in response to the CAZ, performance abatement technology for tailpipe emissions and the impact of local background chemistry as emissions reduce.
    - The other challenge relating to the CAP will centre around how compliance is assessed and for the authority to provide communication to key stakeholders

that is clear and does not negatively impact either the CAP process or the LAQM process.

Whilst the measures stated above and in Table 0.2 will help to contribute towards compliance, Sheffield City Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of the NO_2 AQMA.

Table 0.2 – 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
CAP 1	Class C Clean Air Zone	Promoting Low Emission Transport	Low Emission Zone (LEZ)	2023	Ongoing	Sheffield CC						> 20% (including 7% from do minimum)	All buses to be best in class Tackle 50% of worst polluting Taxis Tackle 15% of Goods vehicles	Clean Air Zone soft launch Feb 2023, with full implementation completed June 2023	Delivery is ongoing and measure against national AQ assessment process (JAQU)
CAP 2	Bus gate on Arundel Gate	Traffic Management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high vehicle occupancy lane	2023	Ongoing	Sheffield CC						> 20% (including 7% from do minimum)	Number of vehicles accessing area to be reduced	Launched March 2023, enforcement started in June 2023	Delivery is ongoing and measure against national AQ assessment process (JAQU)
CAP 3	Bus anti-idling measure at Arundel Gate Interchange	Traffic Management	Anti-idling enforcement	2023	Ongoing	Sheffield CC						> 20% (including 7% from do minimum)	Number of vehicles idling to be reduced	Launched 2023	Delivery is ongoing and measure against national AQ assessment process (JAQU)
AQAP 1	Assess Feasibility for a Low Emission Zone Implement Recommendation	Policy Guidance and Development Control	Low Emissions Strategy Regional Groups Co-ordinating programmes to develop area wide strategies to reduce emissions and improve air quality Sustainable Procurement Guidance	Nov. 2013	Dec. 2015 onwards	Sheffield CC						> 20% (including 7% from do minimum)	All Buses to be best in class Tackle 50% of worst polluting Taxis Tackle 15% of goods vehicles	Voluntary Bus Agreement established Commitment Statement and policy position endorsed	Lack of sufficient funding to support
AQAP 2	Develop Infrastructure for Refuelling Low Emission Vehicles	Alternatives to private vehicle use Promoting Low Emission Transport	Bus based Park & Ride Car clubs Rail based Park & Ride Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging Other	Jul-12	Dec. 2015 onwards	Tesco; Meadowhall Bus Interchange; Meadowhall Bus Interchange; Nunnery Square; ITM Power Advanced Manufacturing Park off M1 J33						> 5%	Increased use of Park & Ride Increased number of EV vehicles & recharging Public Health Outcome Framework	Successful £225k bid to Government (DfT) for the installation of further rapid charge points across the region Successful £487,500 bid to OLEV to install 10 rapid chargers	2 fast and 1 rapid charger units installed

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
AQAP 3	Promote Smarter Travel Choices	Promoting Low Emission Transport Public Information	Low Emission Zone (LEZ) Priority parking for LEV's Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging Public Vehicle Procurement - prioritising uptake of low emission vehicles Taxi emission incentives Taxi Licensing conditions	Jul-15	September 2017 onwards	Sheffield CC						> 5% To reflect Clean Air Zone criteria	Increased number of low emissions Buses & Taxis, EV vehicles & recharging Increased number of people cycling and walking Public Health Outcome Framework Ongoing	Sheffield Bus Agreement - 5 year investment plan with annual renewal launched in October 2012 Successful £225k bid to Government (DfT) for the installation of further rapid charge points across the region Bike Boost / Walk Boost / Bus Boost schemes aimed at commuters	Review and update of Sheffield Bus Agreement imminent. Charge points installed. Ongoing
AQAP 4	Improve Engine Performance of Commercial Diesel Vehicles	Vehicle Fleet Efficiency	Driver training and ECO driving aids Fleet efficiency and recognition schemes Promoting Low Emission Public Transport Testing Vehicle Emissions Vehicle retrofitting programmes Other	2013	2015 onwards	Sheffield CC's Transport Services / ECO Stars Fleet Recognition Scheme						< 10%	Number of hybrid vehicles purchased; telematics units fitted; eco driving training completed	6 diesel hybrid mini buses & 18 hybrid vehicles purchased; at least 120 telematics units fitted; 120 drivers Eco driving trained	Ongoing

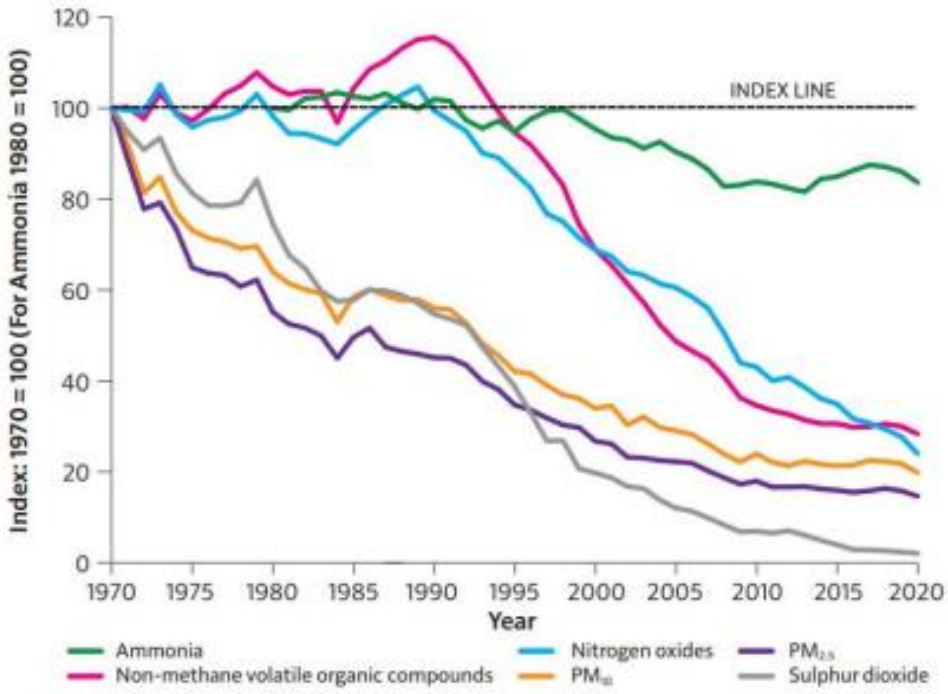
Measure no.	Measure title	Category	Classification	Year measure introduced in AQAP	Estimated / actual completion date	Organisations involved	Funding source	DEFRA AQ grant funding	Funding status	Estimated cost of measure	Measure status	Reduction in pollutant / emission from measure	Key performance indicator	Progress to date	Comments / barriers to implementation
AQAP 5	Mitigate the impact of the M1 Motorway (particularly in the Tinsley Area)	Traffic Management Promoting Travel Alternatives	Strategic highway improvements, re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane Encourage / facilitate home-working Personalised Travel Planning Promote use of rail and inland waterways OTHER	2014	2017 Ongoing	Highways England						Neutral Reduce vehicles emissions on to local residential areas	Construction of Smart Motorway All Lane Running Construction of Barrier at M1 J34S On Slip	Completed In consideration – Feasibility Study undertaken	Commissioned, fully operational from March 2017 M1 Junction 34 Air and Noise Mitigation Options Study Phase 2 Report produced
AQAP 6	Develop Policies to Support better Air Quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance Low Emissions Strategy Other policy Regional Groups Co-ordinating programmes to develop area wide Strategies to reduce emissions and improve air quality Sustainable Procurement Guidance	Nov. 2015	Dec. 2018 onwards	Sheffield CC's Planning & Development Services						> 15%	All buses to be best in class Tackle 50% of worst polluting Taxis	Voluntary Bus Agreement established Commitment Statement and Policy Statement endorsed	Implementation is ongoing
AQAP 7	Control Industrial Emissions	Environmental Permits	Measures to reduce pollution through IPPC permits going beyond BAT	Jan-14	Ongoing	Sheffield CC's Environmental Protection Service as well as Environment Agency						Up to 5%	Number of sites inspected and or receiving penalty	Permits are issued in accordance with the Secretary of State's guidance	Implementation is ongoing

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

Figure 2.1 is taken from the most recent Chief Medical Officer's Annual Report 2022 on Air Quality and shows that most pollutants have seen reductions over the last 20 years for all pollutants, but progress has slowed within the last decade.

Figure 2.1 – National annual emission trends



Note: The figure shows trends in annual emissions of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxides, ammonia, non-methane volatile organic compounds, and sulphur dioxide, 1970 to 2020, expressed as a percentage change from the base year of 1970 (for ammonia the base year is 1980).

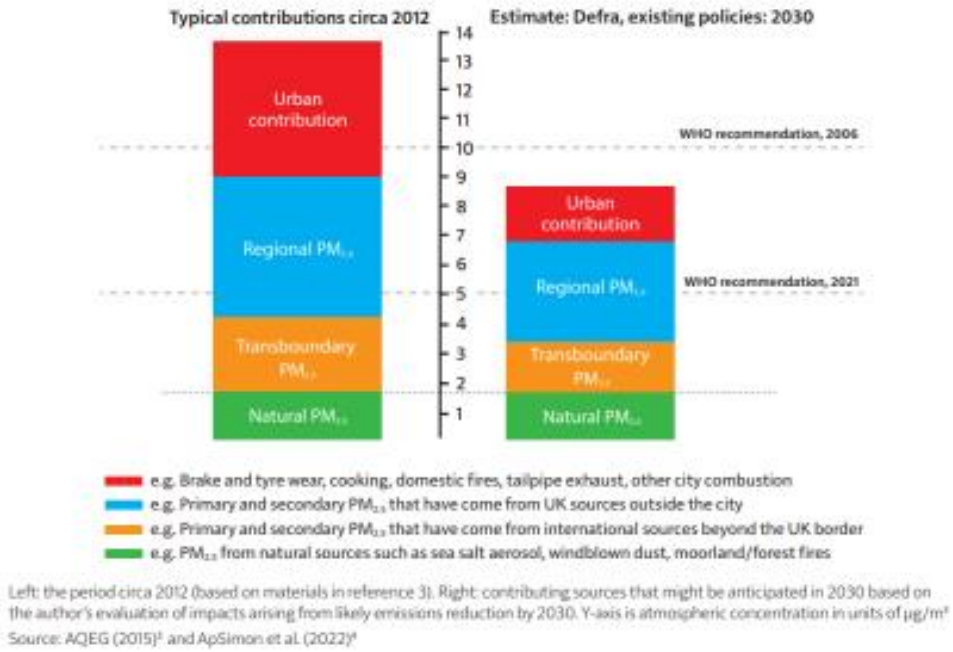
Source: Ricardo Energy & Environment. Defra (2022)[7]

Whilst current $PM_{2.5}$ objectives are the responsibility of His Majesty's Government, national government policy requires local authority to assist with $PM_{2.5}$ emission reduction. The Air

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

Quality Expert Group provide estimates on current source contribution of $PM_{2.5}$ within a locality, of which the local authority can influence primarily urban contribution (figure 2.2).

Figure 2.2 – Estimated $PM_{2.5}$ Emission contribution

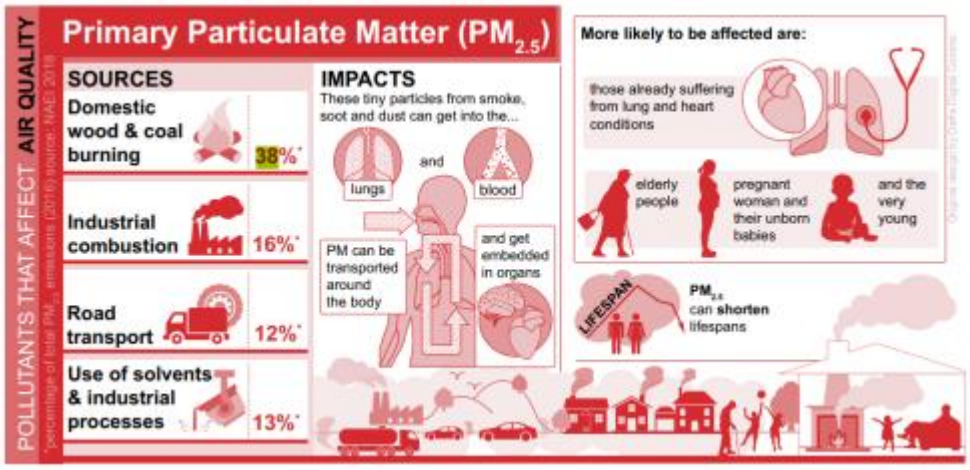


Left: the period circa 2012 (based on materials in reference 3). Right: contributing sources that might be anticipated in 2030 based on the author's evaluation of impacts arising from likely emissions reduction by 2030. Y-axis is atmospheric concentration in units of µg/m³

Source: AQEG (2015)[3] and ApSimon et al. (2022)[4]

In accordance with the National Air Quality Strategy, emissions improvement for $PM_{2.5}$ is not just isolated to road transport and focus should also be given to industrial activity and large-scale agricultural activities, as well as domestic heating as illustrated in Figure 2.3 taken from the National Clean Air Strategy 2019.

Figure 2.3 – Sources of $PM_{2.5}$ emissions

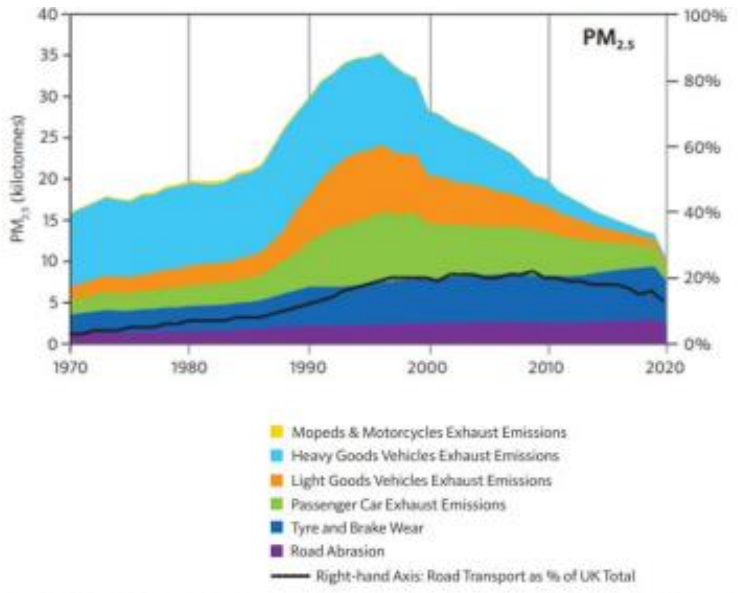


Within the Sheffield locality, primary sources of $PM_{2.5}$ emissions from the area are likely to be from road, industry and domestic heating[2]. Figures 2.4 and 2.5 taken from the Chief Medical Officer's Annual Report 2022 for Air Quality shows the estimated primary sources for the industrial and transport sector.

Within the Sheffield district, industrial pollution is regulated through the permitting process by the Environment Agency and local authority Environmental Health. As part of the permitting system, industrial businesses are regularly inspected to ensure compliance and, prior to the award of new permits, future emission impact is a key consideration.

With regards to transport emissions, focus has remained on control of tail-pipe emissions and the recently introduced CAZ targets the HGV, bus, coach, taxi and LGV sectors, though it is noted from Figure 2.3 that further work within the domestic fleet and to create a transport environment to reduce non-tailpipe emissions will be key to future plans in order to meet $PM_{2.5}$ reduction targets.

Figure 2.4 – $PM_{2.5}$ emissions from road vehicle sources since 1970



Note: The dashed black line indicates the contribution of road transport to the overall emissions on the right-hand axis.
Source: National Atmospheric Emissions Inventory[1] analysed by Air Quality Consultants Ltd

[2] Emissions of air pollutants in the UK – Particulate matter (PM10 and PM2.5) - GOV.UK (www.gov.uk)

Figure 2.5 – Total UK emissions of SO_2 from industrial sectors reported in the NAEI

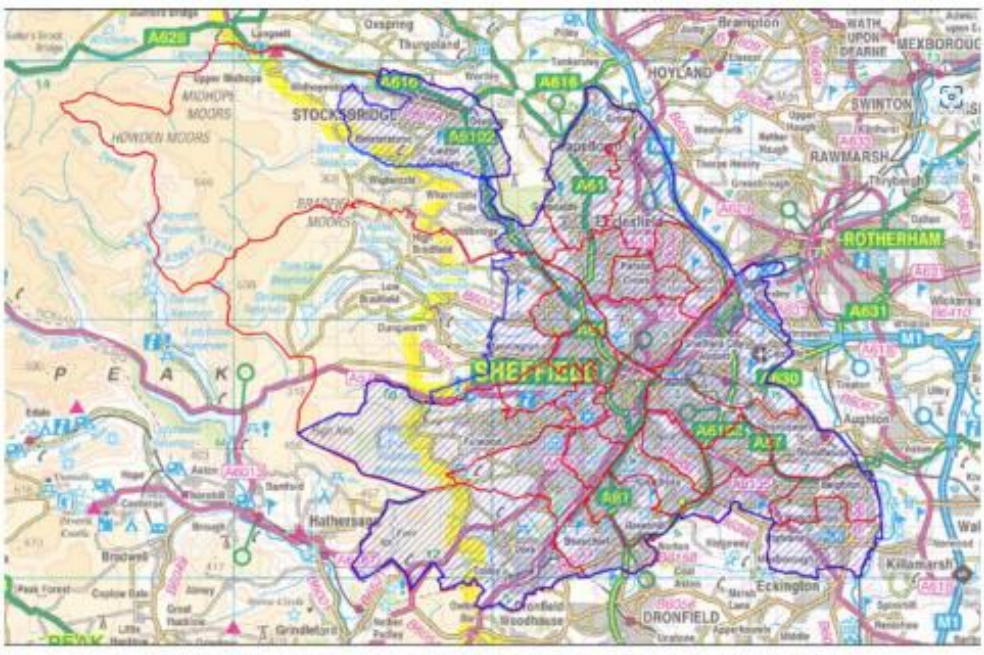
Note: The air pollution emissions will also depend on the age of the appliance, how it is maintained and used and the fuel burned (for example, dry or wet wood).

The following definitions were used: *Solid fuel open fire*: wood burned in an open fire. *Non-Defra-exempt stove*: wood in a conventional stove. *Defra-exempt/Ecodesign stove*: wood in an advanced/ecolabelled stove. *Pellet fired boiler*: wood in pellet stoves and boilers. *Oil fired boiler*: fuel oil in a medium (>50KWth <1MWth) boiler. *Gas fired boiler*: natural gas in a small (≤50KWth) boiler.

Source: Emission factors taken from EMEP 2019 Guidebook[1] (1A4 small combustion tables). Adapted from the Clean Air Strategy[2] with updated data

Whilst our preference would be for residents to select the lowest emitting form of heating, to ensure best practice for the use of wood burning stoves within our highest populated areas, the urban area of Sheffield is a smoke control and use of non-compliant fuels and stoves are prohibited. The boundary of the smoke control area is shown within Figure 2.7.

Figure 2.6 – Sheffield City Council smoke control area



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*** Please note: Smoke control areas are within the blue line**

Smoke control is a reactive service delivered by the council Environmental Protection Team. The team undertake investigation and where substantiated, primarily educate residents and businesses on impacts of burning and better solutions.

In 2024, the council were in receipt of a total of 398 complaints in total for burning and smoke.

Figure 2.7 – Sheffield City Council smoke complaints since 2015

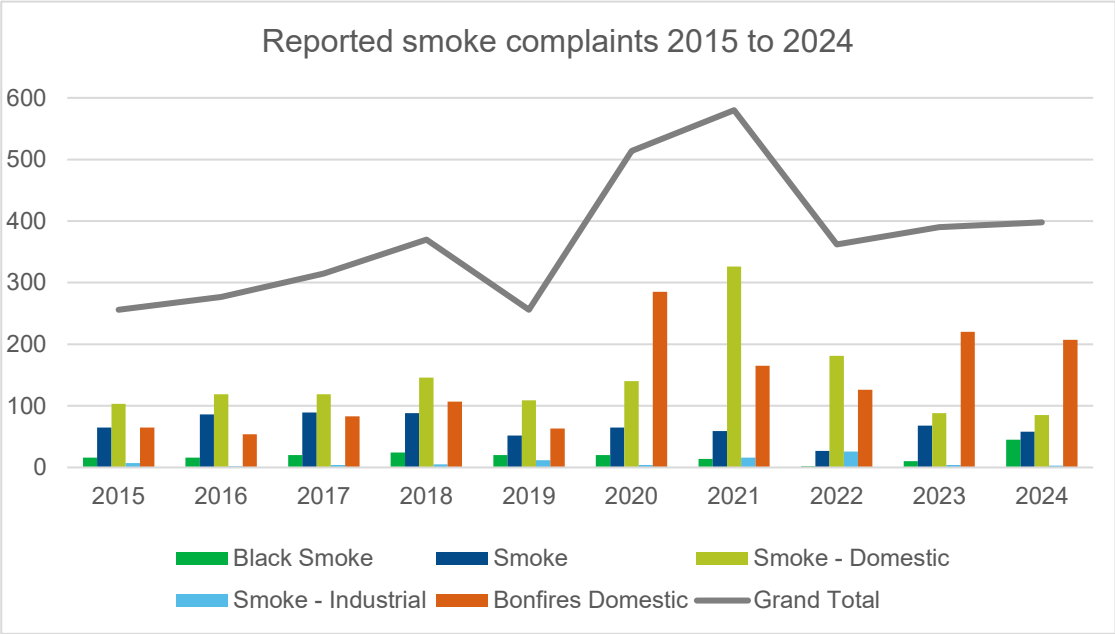


Figure 2.7 shows the number and type of complaints about smoke received from Environmental Protection between 2015 and 2024. The number of burning complaints have increased over the nine-year period with a noticeable spike in domestic burning and bonfire complaints over the COVID19 and lockdown period (2020-2021). The types of burning under which complaints have been categorised is likely to depend on the description given by the complainant and how the complaint was logged. The number of complaints regarding industrial smoke is low however smoke, black smoke, bonfires – domestic and smoke-domestic have collectively increased over time and could be grouped together for the purposes of considering smoke complaints. A large number of the complaints in 2024 gave details regarding construction burning and therefore the domestic category could be impacted.

There have been no Financial Penalty Notices issued for smoke to date.

As part of the new Clean Air Strategy, smoke complaints are likely to be a key metric, along with others, when determining success, and as such Environmental Protection will

be a key stakeholder in delivery and data clarity will be important so the council target and resource appropriately.

With reference to the Public Health Outcomes Frameworks, specifically D1 - Fraction of mortality attributable to particulate air pollution, using the new method of calculation, Sheffield City Council's Fraction of Mortality attributable to particulate air pollution in 2023 is estimated to be 5.4%, which is now above the England average of 5.2% (previously Sheffield was below the national average in 2022). Sheffield remains slightly higher than the Yorkshire & Humber regional average of 5.1% and slightly higher than the South Yorkshire average of 5.38%.

Sheffield City Council is taking the following measures to address $PM_{2.5}$ and recognises that various sources of pollution contribute to $PM_{2.5}$ emissions mobile ones, particularly diesel vehicles / engines, and therefore will maintain its current ongoing mitigation actions in addition to the following measures, referenced earlier, to reduce their emissions:

- Develop a new Clean Air Strategy (as stated earlier) for Sheffield, with the inclusion of local $PM_{2.5}$ targets, which will be designed to complement the new National Air Quality Strategy,
- Upon completion of the strategy, develop a new five year Action Plan for Sheffield, which will include a focus on the inclusion of measures that target the of reduction of $PM_{2.5}$ concentrations in addition to more traditional transport-led NO_2 measures.
- Sheffield City Council's Environmental Protection continues to enforce within our Smoke Control Areas by undertaking investigation and education works in a re-active method to address local resident complaints.
- Sheffield City Council work with industry which is largely regulated using IPPC (Integrated Pollution Prevention and Control) legislation and businesses, to help them make the most of technological improvements to reduce emissions and to ensure that they meet their legal obligations.

3 Air Quality monitoring data and comparison with air quality objectives and national compliance

This section sets out the monitoring undertaken within 2024 by Sheffield City 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

Sheffield City Council undertook automatic (continuous) monitoring at five sites during 2024 along with 3 DEFRA monitoring sites within the Sheffield City Council area. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The Sheffield (airviro.com) page presents automatic monitoring results for Sheffield City Council, with automatic monitoring results also available through the UK-Air website Data Selector - DEFRA, UK .

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

Sheffield City Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 235 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 in Appendix D and online at Diffusion Tubes . Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.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, 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.

Sheffield's own local air quality monitoring suggests that concentrations prior to the pandemic were gradually coming down (see dotted red line Figure 3.1) with the exception of 2019. In 2020, there were large reductions observed because of COVID-19 pandemic control measures across all sectors within the district, with largest improvements being observed during the period March to July when control measures were strictest. In 2021, concentrations increased by 11 to12% for NO_2 at key roadside locations compared with the previous year. In 2022, further increases were observed across all sectors of between 11 and 23% on the previous year, though in 2023, we then observed wholesale reductions of 1to 60%, between 1 and 37µg/m^3, which indicated impacts from weather. In 2024, Sheffield City Council monitoring observed further concentration reductions at a lot of our sites, but not all and not to the extent of 2022 to 2023. These reductions were between 1 and 21%, which is between 1 and 4µg/m^3 at our monitoring locations, and reductions were predominantly at sites targeting transport links within the city, motorways and our urban

area. Concentration increases were isolated to surburban and train station monitoring locations, though these increases were on 1 to 5% in severity (0.2 to 4µg/m^3). The reductions, coupled with CAP transport data along primary transport routes and increases at areas less influenced by CAP measures are indicative that our road transport focused plans are having an impact on concentrations.

Concentrations have reduced across the district, and levels in 2024 are better than levels observed in 2020. These reductions are not just isolated to within or close proximity to the CAZ, so the positive influence in improving the vehicle fleet is being felt across the city.

As well as 2024 concentrations being better than pandemic levels (2020), the number of monitoring sites above the UK target limit fell and there were less sites in exceedance in 2024 than there were in 2020 and 2023 as shown in figure 3.2. It must be noted that CAP exceeding locations are slightly higher than 2020, but this is can be accounted for in the increase in CAP monitors since 2020. In 2020, the percentage of monitoring sites exceeding the 40µg/m^3 threshold for NO_2 fell, but did not reach zero. This demonstrates that, even with wide-reaching pandemic measures, compliance was not achieved in 2020. In 2021, as would be expected, there was an increase in the number of sites exceeding the 40µg/m^3 threshold, attributed to the return to societal norms. Furthermore, the NO_2 - concentrations doubled in 2022 on the previous year and was reflective of pre-pandemic numbers. Whilst in 2024 we have seen reductions resulting in a fall in concentrations below 2020 levels and continued improvement on 2023, which can only be a positive, there are sites remaining in exceedance. The annual NO_2 exceedance sites remain in close proximity to the primary road network and concentrations are attributable to transport emissions.

During the pandemic, average hourly figures for NO_2 also fell at both real-time monitors and passive sites, and no sites indicated exceedance of the hourly objective. Since 2020, growing concentrations had resulted in an increase in the number of sites exceeding the indicative threshold of 60µg/m^3 for exceedance of short-term NO_2 objectives up to and including 2022. Building on reduction from 2023, in 2024 concentrations have continued to fall, in part due to CAP measures, and as a result, in 2024 we do not have any sites likely to exceed the hourly objective.

With regards to NO_2 improvement measures, continued evaluation of the impact from the CAZ will be key in determining the measures required in the next iteration of the council's action plan and, as such, completion of the CAZ evaluation is seen as a key dependency for construction of the Action Plan.

Figure 3.1 – Annual NO_2 concentrations (µg/m^3) over last eight years

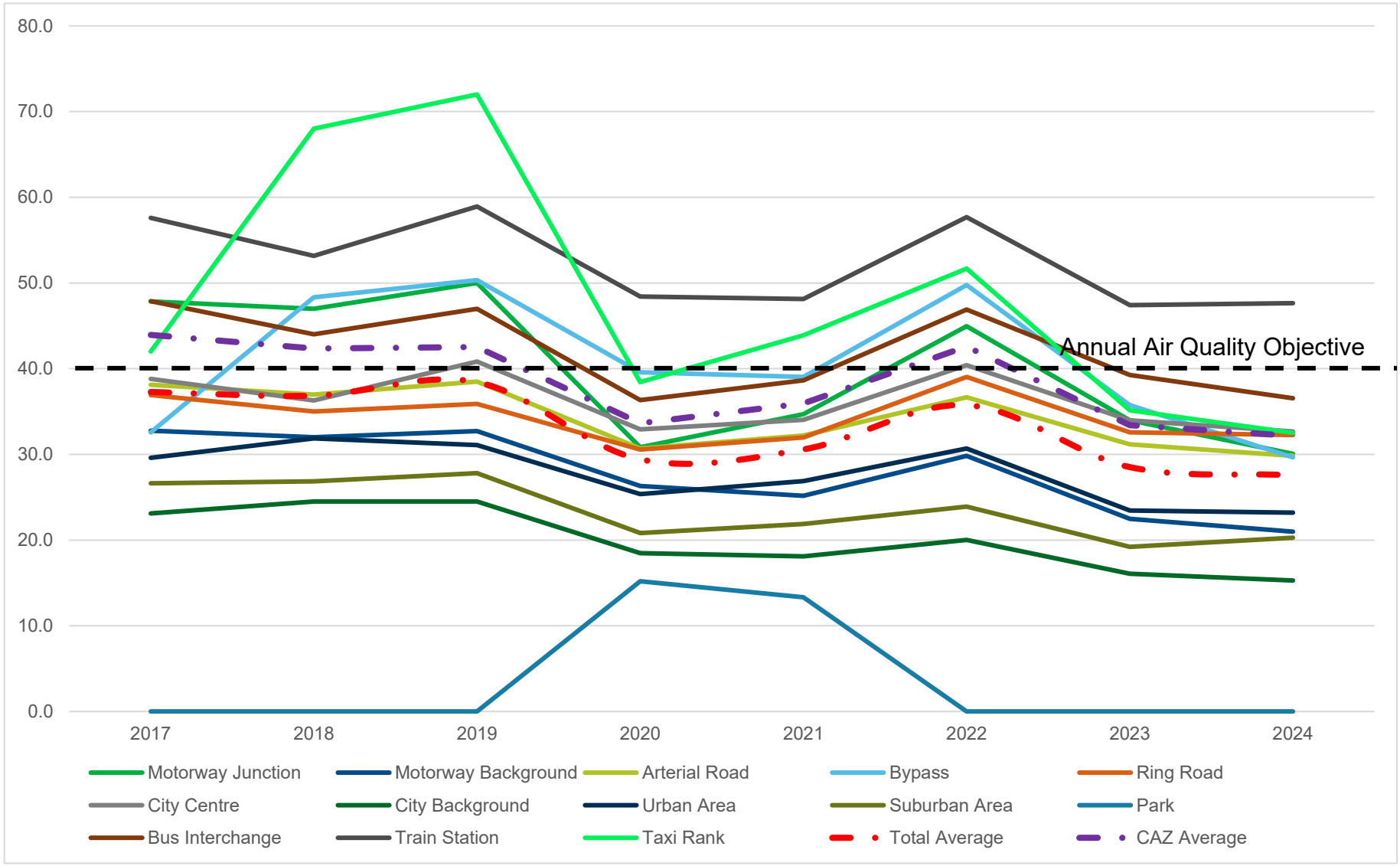


Figure 3.2 – Percentage of monitoring sites exceeding annual NO_2 concentrations over last eight years

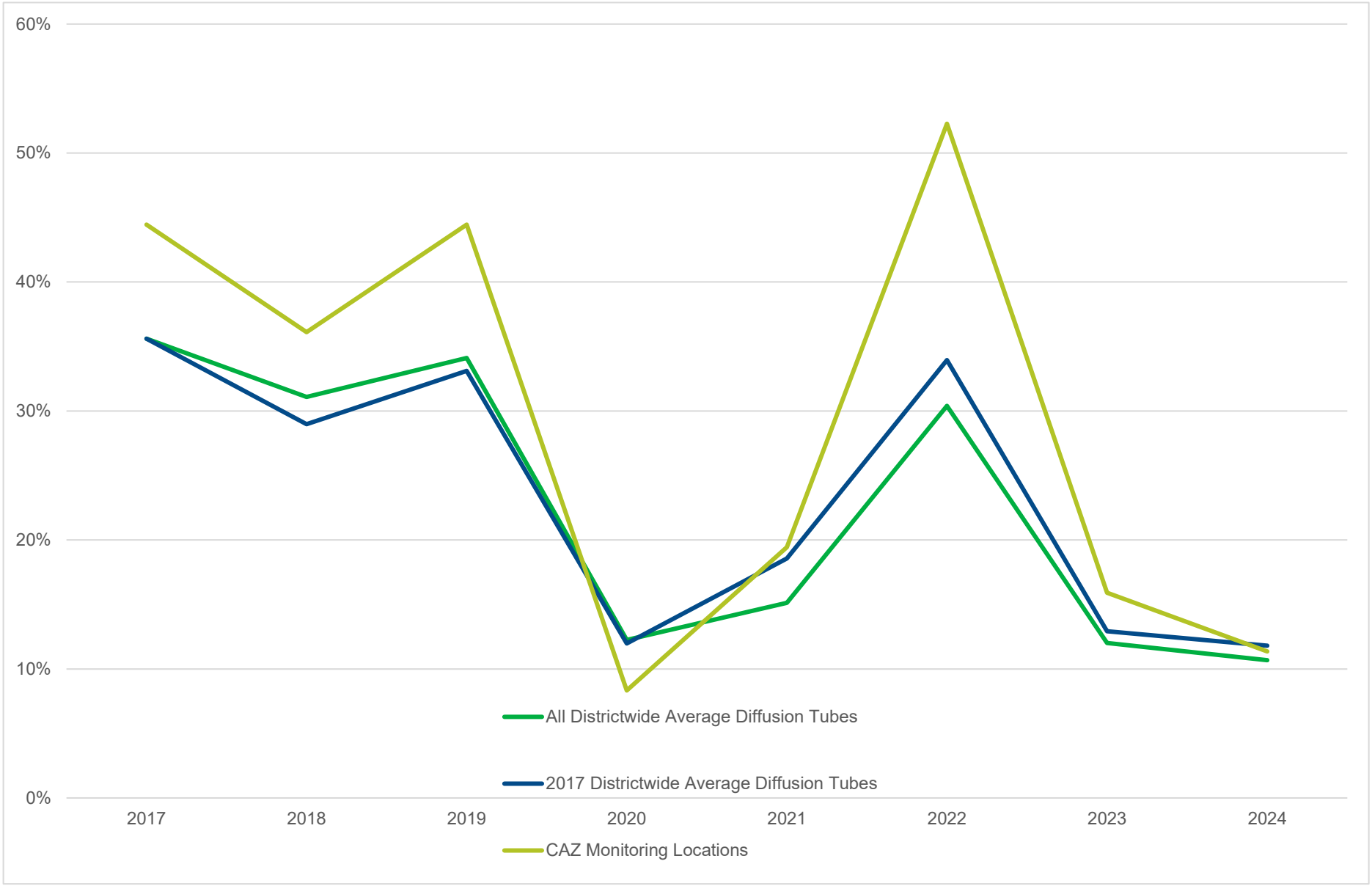
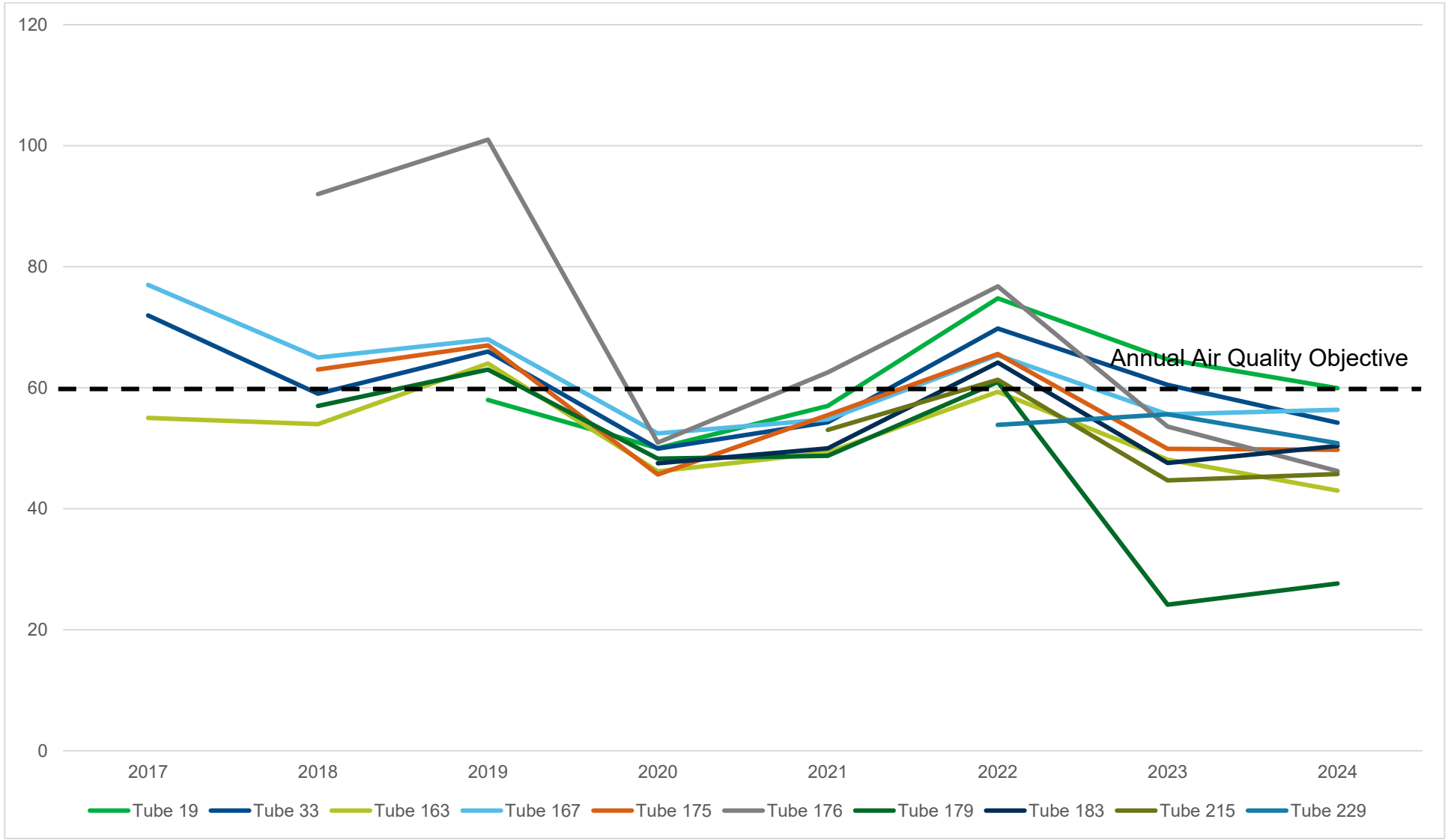


Figure 3.3 – Passive monitoring annual NO_2 concentrations (µg/m^3) exceeding 60µg/m^3 over last eight years



3.2.2 Particulate Matter (PM_{10})

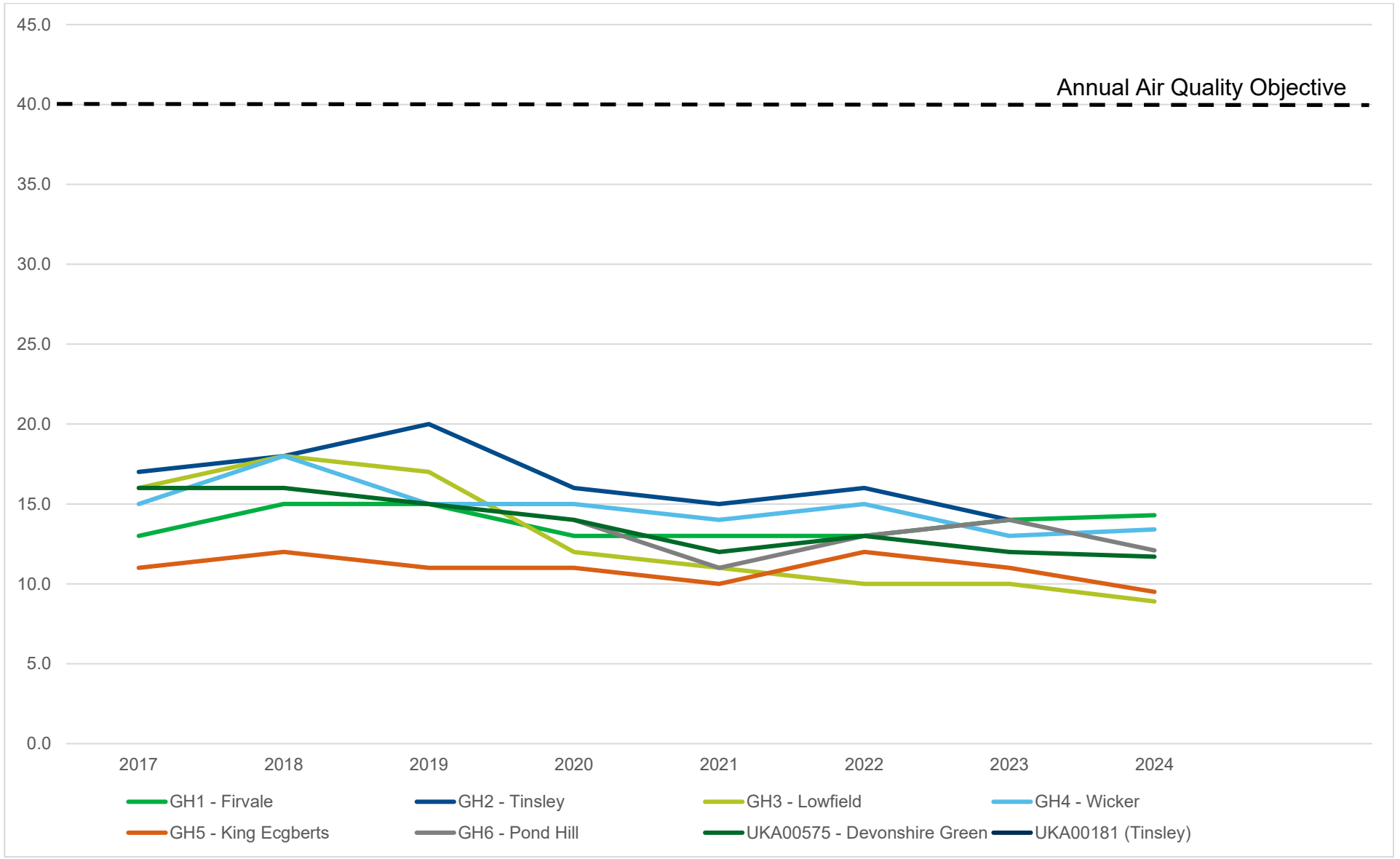
Table A.6 in Appendix A: Monitoring results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

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.

In terms of the standards set by the EU for PM_{10} dust pollution, all our monitoring stations are indicating that we comply for both long- and short-term objectives, with trends shown in Figure 3.4 indicating that PM_{10} concentrations were increasing between 2017 and 2018, but saw slight reductions since that time, including during the pandemic period (2020-21). In 2022, concentrations for PM_{10} increased at all but one location, though levels remain below the UK limit and 1 to 4µg/m^3 below pre-pandemic levels. In 2023, we saw reduction at all but one site for PM_{10}. This fluctuation in PM concentrations continue to occur in 2024, with two different sites seeing an increase, but all the others reducing. The increase for particulates occurred at the Wicker and Fir Vale sites, though the increases were slight and concentrations remained well below objectives.

Although the Sheffield district complied with standards and trends have shown reduction between 2018 and 2024, it must also be noted there is no safe limit for Particulate Matter, which is why inclusion of measures to target pollutants in next Action Plan is important.

Figure 3.4 – Annual PM_{10} Concentrations (µg/m^3) over last 8 years



3.2.3 Particulate Matter ($PM_{2.5}$)

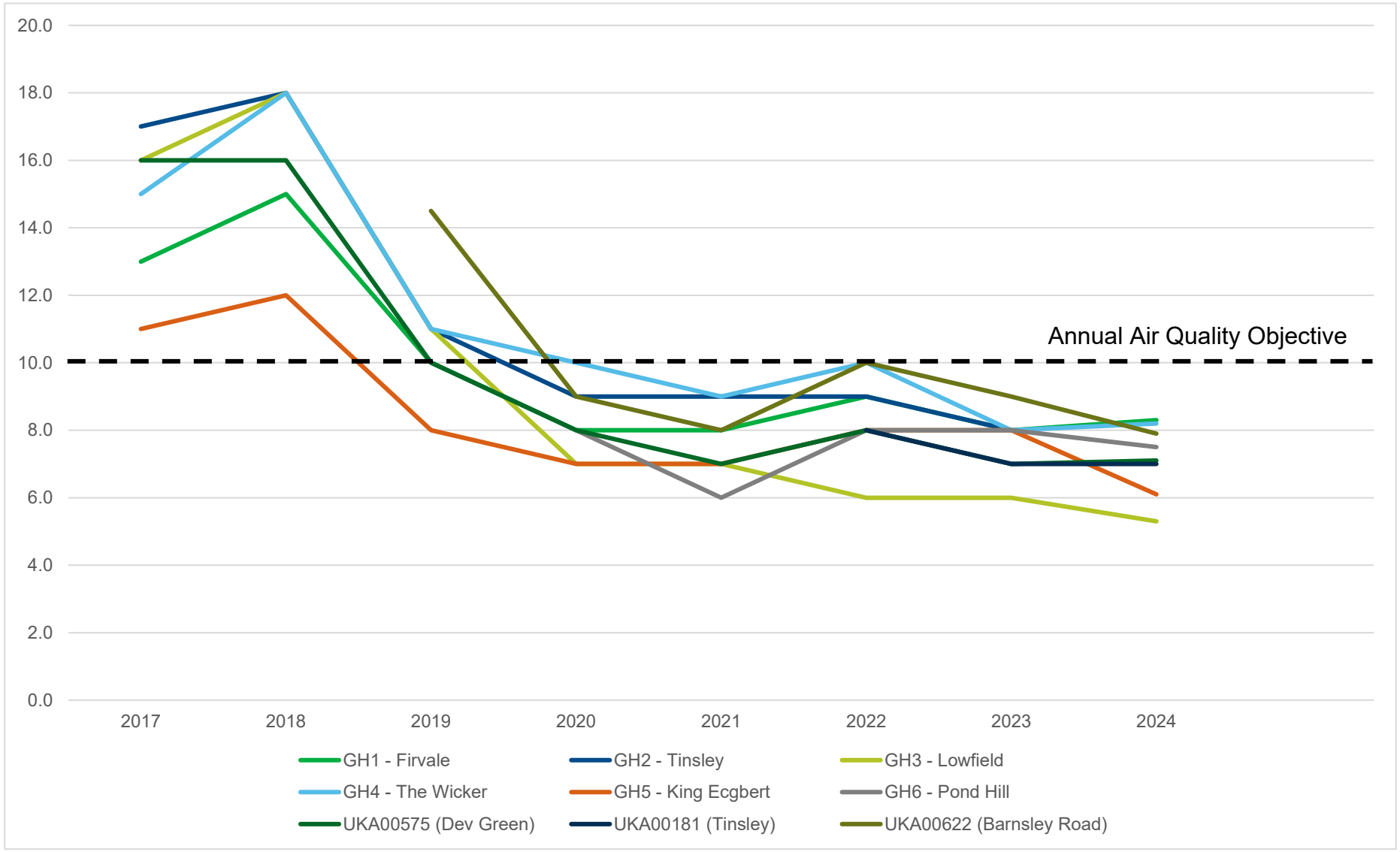
Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

In terms of the standards set by the EU for $PM_{2.5}$ dust pollution, all our monitoring stations are indicating that we comply. Trends shown in Figure 3.5 show that $PM_{2.5}$ concentrations were increasing between 2017 and 2018, but saw slight reductions since that time, including during the pandemic period (2020-21). In 2022, concentrations for $PM_{2.5}$ increased at all but one location, though levels remain below the UK limit and 1 to 4µg/m3 below pre-pandemic levels. In 2023, we saw reduction at all but one site for both $PM_{2.5}$, which mirrored the PM_{10} observations. This fluctuation in PM concentrations continue to occur in 2024, with two different sites seeing increase, but all the others reducing. The increase for particulates occurred at the the Wicker and Fir Vale sites, though the increases were slight and concentrations remained well below objectives.

Given that the cost of living issue discussed in the ASR 2022 was still present in 2023 and 2024, but concentrations reduced, this corroborates the hypothesis that the increase in 2022 likely occurred due to external influence rather than an increase in localised solid fuel burning.

Although the Sheffield district complied with standards, and trends have shown reduction between 2018 and 2024, it must also be noted there is no safe limit for Particulate Matter, and increases in 2022 the fragility of current compliance, which is why inclusion of measures to target pollutants in next Action Plan is important.

Figure 3.5 – Annual $PM_{2.5}$ concentrations (µg/m^3) over last eight years



3.2.4 Sulphur Dioxide (SO_2)

Sheffield City Council monitors SO_2 at one of our real-time monitoring stations, GH3 at Lowfield School. Since 2019, there has been a communication fault with the device, which we have been working with our service providers to resolve. As such, there are no SO_2 data available for 2023, though it must be noted that, prior to the fault, concentrations were well within compliance and there has been no change in circumstances within the locality, which would change this status. Given the compliance status and difficulties to resolve issues, as part of a continued monitoring review programme, the SO_2 monitor removal is under consideration.

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)
GH1	Firvale School	Urban Background	436990	390218	NO2, PM2.5, PM10	YES	SCC City Wide	Chemiluminescence, FIDAS	0	10m	2.5
GH2	Tinsley Infant School	Industrial	440077	390794	NO2, PM2.5, PM10	YES	SCC City Wide	Chemiluminescence, FIDAS	0	80m M1	2.5
GH3	Lowfield School	Roadside	435181	385366	NO2, PM2.5, PM10	YES	SCC City Wide	Chemiluminescence, FIDAS	0	6m	2.5
GH4	Wicker	Urban Background	435959	388021	NO2, PM2.5, PM10	YES	SCC City Wide	Chemiluminescence, FIDAS	5	42m	2.5
GH5	King Ecgbert School	Urban Background	430977	380760	NO2, PM2.5, PM10	YES	SCC City Wide	Chemiluminescence, FIDAS	10	65m	2.5
GH6	Pond Hill	Urban Centre	435704	387286	NO2, PM10, PM2.5	YES	SCC City Wide	Chemiluminescence, FIDAS	N/A	5.5m	2.5
UKA00181	Sheffield Tinsley (DEFRA)	Industrial	440238	390588	NO2, PM10, PM2.5	YES	SCC City Wide	Chemiluminescence, FIDAS	70	100m M1	3
UKA00575	Sheffield Devonshire Green (DEFRA)	Urban Centre	434816	386990	NO2, PM10, PM2.5, O3, Benzene	YES	SCC City Wide	Chemiluminescence, FIDAS, UV Absorption, pumped tube	30	20m	3

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)
UKA00622	Sheffield Barnsley Road (DEFRA)	Roadside	436276	389930	NO2. PM2.5	YES	SCC City Wide	Chemiluminescence, BAM	10	5m	2

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)
1	Warren lane SCC CW	Roadside	436063	397474	NO2	Yes - SCC City Wide	10.0	5.0	No	2m
2	7 Bawtry Gate SCC CW	Urban Background	439994	390866	NO2	Yes - SCC City Wide	5.0	20.0	No	2m
3	47 Bawtry Road SCC CW	Roadside	440045	390884	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
4	109 Bawtry Road SCC CW	Roadside	440177	390770	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
5	Suffolk Road SCC CW	Roadside	435749	386727	NO2	Yes - SCC City Wide		2.0	No	2m
6	Attercliffe Road SCC CW	Roadside	438880	389931	NO2	Yes - SCC City Wide		3.0	No	2m

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)
7	Pure Gym, St Mary's Road SCC CW	Roadside	435729	386513	NO2	Yes - SCC City Wide		4.0	No	2m
9	Upwell Street SCC CW	Kerbside	437703	390079	NO2	Yes - SCC City Wide	1.8	0.8	No	2m
10	Greenland Road 1 (Bus stop) SCC CW	Roadside	439355	388385	NO2	Yes - SCC City Wide		2.5	No	2m
11	Loxley New Road SCC CW	Roadside	432643	389427	NO2	Yes - SCC City Wide	0.0	3.0	No	2m
12	Greenland Road 2 (Robson) SCC CW	Roadside	439312	388591	NO2	Yes - SCC City Wide	50.0	2.5	No	2m
13	Bowden Wood Close SCC CW	Roadside	439051	386743	NO2	Yes - SCC City Wide	20.0	2.0	No	2m
14	Parkway Broad Street SCC CW	Kerbside	436141	387521	NO2	Yes - SCC City Wide	4.0	0.8	No	2m
16	Derek Dooley Lampost 94 SCC CW	Kerbside	435639	388155	NO2	Yes - SCC City Wide		0.8	No	2m
17	Duke Street SCC CW	Roadside	436109	387458	NO2	Yes - SCC City Wide	1.0	3.0	No	2m
18	Waingate SCC CW	Urban Centre	435744	387619	NO2	Yes - SCC City Wide		1.5	No	2m
19	Fitzalan Square SCC CW	Urban Centre	435714	387476	NO2	Yes - SCC City Wide	4.0	1.0	No	2m
21	Arundel Gate, Gallery SCC CW	Roadside	435546	387052	NO2	Yes - SCC City Wide		1.0	No	2m
22	Fielding Road SCC CW	Roadside	433346	390814	NO2	Yes - SCC City Wide	2.0	2.0	No	2m

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)
23	Arundel Gate/Surrey Street SCC CW	Roadside	435608	387100	NO2	Yes - SCC City Wide		4.0	No	2m
24	University Roundabout SCC CW	Roadside	434435	387394	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
25	Netherthorpe School SCC CW	Roadside	434646	387836	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
26	Upper Hanover Street SCC CW	Roadside	434403	386966	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
27	Shoreham Street SCC CW	Roadside	435554	386638	NO2	Yes - SCC City Wide	3.0	2.0	No	2m
28	St Mary's Road/Charlotte Road SCC CW	Roadside	435313	386367	NO2	Yes - SCC City Wide		5.0	No	2m
29	Chesterfield Road/Woodseats SCC CW	Roadside	434814	383335	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
30	Queens Road/Edmund Road SCC CW	Roadside	435499	385690	NO2	Yes - SCC City Wide		3.0	No	2m
31	Abbeydale Rd/Carter Knowle SCC CW	Roadside	434324	384311	NO2	Yes - SCC City Wide	5.0	3.0	No	2m
32	Ecclesall Road SCC CW	Roadside	434299	386275	NO2	Yes - SCC City Wide		3.0	No	2m
33	Arundel Gate Interchange SCC CW	Roadside	435602	387292	NO2	Yes - SCC City Wide		1.0	No	2m
34	Pond Street Interchange SCC CW	Kerbside	435700	387256	NO2	Yes - SCC City Wide		0.8	No	2m
35	Meadowhall Interchange SCC CW	Roadside	439116	391193	NO2	Yes - SCC City Wide		2.0	No	2m

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)
36	ACE 1 Wicker SCC CW	Urban Centre	435950	387996	NO2	Yes - SCC City Wide	15.0	43.0	Yes	3m
37	ACE 2 Wicker SCC CW	Urban Centre	435951	387997	NO2	Yes - SCC City Wide	15.0	43.0	Yes	3m
38	Arundel Gate, Stoddart Building SCC CW	Roadside	435463	386972	NO2	Yes - SCC City Wide		4.0	No	2m
39	Attercliffe Road, Arooj SCC CW	Roadside	437104	388329	NO2	Yes - SCC City Wide		2.0	No	2m
40	98 Bawtry Road SCC CW	Roadside	440116	390800	NO2	Yes - SCC City Wide	4.0	1.0	No	2m
42	Parkway Layby 2 SCC CW	Roadside	437766	387454	NO2	Yes - SCC City Wide		2.0	No	2m
43	Bernard Rd SCC CW	Roadside	436646	387756	NO2	Yes - SCC City Wide		1.0	No	2m
45	Derek Dooley Lamp post 93 SCC CW	Roadside	435789	388072	NO2	Yes - SCC City Wide		1.0	No	2m
53	Coldwell Lane/Sandygate Road LTP Gradko	Suburban	431193	386795	NO2	Yes - SCC City Wide	10.0	2.0	No	2m
55	Manchester Road/Sale Hill LTP Gradko	Roadside	433013	386750	NO2	Yes - SCC City Wide	10.0	3.0	No	2m
56	Whitham Road/Crookes LTP Gradko	Roadside	433327	386862	NO2	Yes - SCC City Wide	6.0	1.0	No	2m
57	Whitham Road/Moor Oaks LTP Gradko	Roadside	433514	387033	NO2	Yes - SCC City Wide	5.0	1.7	No	2m
59	Western Bank/Clarkson Street LTP Gradko	Roadside	434048	387229	NO2	Yes - SCC City Wide	5.0	2.0	No	2m

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)
60	Brook Hill/Favell Road LTP Gradko	Roadside	434352	387348	NO2	Yes - SCC City Wide		3.0	No	2m
61	DEFRA Barnsley Road (Socotec 2) SCC CW	Roadside	436276	389927	NO2	Yes - SCC City Wide	20.0	4.0	Yes	2m
63	DEFRA Barnsley Road (Socotec 3) SCC CW	Roadside	436277	389928	NO2	Yes - SCC City Wide	20.0	4.0	Yes	2m
64	DEFRA Tinsley monitor (Tube 1) Socotec	Industrial	440233	390587	NO2	Yes - SCC City Wide	70.0	100.0	Yes	3m
65	DEFRA Tinsley monitor (Tube 2) Socotec	Industrial	440234	390588	NO2	Yes - SCC City Wide	70.0	100.0	Yes	3m
66	DEFRA Tinsley monitor (Tube 3) Socotec	Industrial	440235	390589	NO2	Yes - SCC City Wide	70.0	100.0	Yes	3m
67	Glossop Road/Westbourne Road LTP Gradko	Roadside	433429	386728	NO2	Yes - SCC City Wide	4.0	1.7	No	2m
68	Glossop Road/Clarkehouse Road LTP Gradko	Roadside	433936	386893	NO2	Yes - SCC City Wide		3.0	No	2m
69	West Street/Regent Street LTP Gradko	Roadside	434574	387155	NO2	Yes - SCC City Wide	2.5	2.0	No	2m
70	West Street/Leopold Street LTP Gradko	Roadside	435255	387349	NO2	Yes - SCC City Wide		2.0	No	2m
71	Queens Road - G Casino LTP Gradko	Kerbside	435807	386350	NO2	Yes - SCC City Wide		0.8	No	2m
72	Queens Road - Asda LTP Gradko	Roadside	435697	385892	NO2	Yes - SCC City Wide		3.0	No	2m
73	463 Queens Road LTP Gradko	Kerbside	435490	385660	NO2	Yes - SCC City Wide	2.0	0.7	No	2m

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74	London Road -Sark Road LTP Gradko	Roadside	435182	385241	NO2	Yes - SCC City Wide		1.0	No	2m
75	London Road -Ponsfords LTP Gradko	Roadside	435161	384986	NO2	Yes - SCC City Wide		1.5	No	2m
76	Chesterfield Road - Meersbrook Park LTP Gradko	Roadside	434965	384613	NO2	Yes - SCC City Wide	1.0	2.5	No	2m
77	513 Chesterfield Road LTP Gradko	Roadside	434679	383718	NO2	Yes - SCC City Wide		2.5	No	2m
78	Chesterfield Road - Olivet Road LTP Gradko	Roadside	434857	382968	NO2	Yes - SCC City Wide	2.5	2.0	No	2m
79	Chesterfield road -Charles Ashmore LTP Gradko	Roadside	434906	381857	NO2	Yes - SCC City Wide	15.0	2.0	No	2m
80	Meadowhead Road LTP Gradko	Roadside	435135	381355	NO2	Yes - SCC City Wide	6.0	1.0	No	2m
81	Lowfield School GH3-1 Socotec	Urban Centre	435238	385397	NO2	Yes - SCC City Wide	0.0	7.0	Yes	3m
82	Lowfield School GH3-2 Socotec	Urban Centre	435239	385398	NO2	Yes - SCC City Wide	0.0	7.0	Yes	3m
83	Lowfield School GH3-3 Socotec	Urban Centre	435240	385399	NO2	Yes - SCC City Wide	0.0	7.0	Yes	3m
84	Tinsley GH2-1 CoLo	Industrial	440084	390760	NO2	Yes - SCC City Wide	4.0	15.0	Yes	3m
85	Tinsley GH2-2 CoLo	Industrial	440085	390761	NO2	Yes - SCC City Wide	4.0	15.0	Yes	3m
86	Tinsley GH2-3 CoLo	Industrial	440086	390762	NO2	Yes - SCC City Wide	4.0	15.0	Yes	3m

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87	Sheffield Devonshire Green AUN CoLo	Urban Centre	434803	386947	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m
88	Sheffield Devonshire Green AUN CoLo	Urban Centre	434804	386948	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m
89	Sheffield Devonshire Green AUN CoLo	Urban Centre	434805	386949	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m
90	Attercliffe Common (Terry Street) LSTF	Roadside	438582	389616	NO2	Yes - SCC City Wide		2.5	No	2m
91	Attercliffe Road (Bodmin Street) LSTF	Roadside	437928	388800	NO2	Yes - SCC City Wide	2.0	1.6	No	2m
92	Attercliffe Road (Staniforth Road) LSTF	Kerbside	437690	388529	NO2	Yes - SCC City Wide		0.8	No	2m
93	Attercliffe Road (Tesco) LSTF	Roadside	436350	388234	NO2	Yes - SCC City Wide		3.0	No	2m
94	Savile Street East (Gripple) LSTF	Roadside	437019	388826	NO2	Yes - SCC City Wide		3.0	No	2m
95	Brightside Lane (Stevenson Road) LSTF	Roadside	437461	389311	NO2	Yes - SCC City Wide		3.0	No	2m
96	Brightside Lane (Forgemaster) LSTF	Roadside	438393	390232	NO2	Yes - SCC City Wide		3.0	No	2m
97	Brightside Lane (Jenkin Road) LSTF	Roadside	438610	390614	NO2	Yes - SCC City Wide	6.5	2.5	No	2m
98	Meadowhall Road (M1 34N) LSTF	Roadside	439167	391698	NO2	Yes - SCC City Wide		1.5	No	2m
99	Sheffield Road (M1 34S) LSTF	Roadside	439717	390826	NO2	Yes - SCC City Wide		3.0	No	2m

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102	Beeley Wood Road A61 Hills	Kerbside	433250	391115	NO2	Yes - SCC City Wide	12.0	0.8	No	2m
103	Winster Road A61 Hills	Roadside	433455	390473	NO2	Yes - SCC City Wide	4.5	1.0	No	2m
109	163 Handsworth Road/ Parkway R/A Comm	Roadside	440295	386935	NO2	Yes - SCC City Wide	2.6	2.5	No	2m
110	12 Town Street Comm	Roadside	439960	390954	NO2	Yes - SCC City Wide	2.6	4.3	No	2m
111	10 Siemens Close Comm	Roadside	440036	390822	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
112	Greasebro Road Comm	Roadside	439932	390714	NO2	Yes - SCC City Wide	14.0	5.6	No	2m
113	342 Sheffield Rd Comm	Roadside	440014	391178	NO2	Yes - SCC City Wide	0.0	4.0	No	2m
115	53 Newburn Drive Comm	Roadside	440046	390737	NO2	Yes - SCC City Wide	0.0	4.0	No	2m
116	30 Siemens Close Comm	Roadside	439994	390810	NO2	Yes - SCC City Wide	0.0	5.0	No	2m
117	Wicker Comm	Roadside	435909	388070	NO2	Yes - SCC City Wide	0.0	1.4	No	2m
118	Ladys Bridge Comm	Roadside	435736	387820	NO2	Yes - SCC City Wide	1.0	3.0	No	2m
119	Gibraltar Street Comm	Roadside	435239	387899	NO2	Yes - SCC City Wide	0.0	3.0	No	2m
120	Penistone Road Comm	Roadside	434806	388216	NO2	Yes - SCC City Wide		1.0	No	2m

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121	73 Burngreave Road Comm	Roadside	435843	388814	NO2	Yes - SCC City Wide	2.0	2.0	No	2m
122	Darnall Post Office Comm	Roadside	439377	387792	NO2	Yes - SCC City Wide	0.0	7.0	No	2m
124	584 Staniforth Rd Comm	Roadside	438997	387923	NO2	Yes - SCC City Wide	0.0	3.5	No	2m
125	Don Valley Leeds Road Comm	Roadside	438121	388922	NO2	Yes - SCC City Wide		1.8	No	2m
126	Waverley Cottages Comm	Roadside	440559	387357	NO2	Yes - SCC City Wide	4.0	1.0	No	2m
128	Stocksbridge Lidl Comm	Roadside	427261	398422	NO2	Yes - SCC City Wide		1.0	No	2m
130	Deepcar Carr Road Comm	Roadside	428818	397977	NO2	Yes - SCC City Wide	1.0	1.0	No	2m
131	Derbyshire La Comm	Roadside	435338	382923	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
132	146 Abbeydale Road South Comm	Roadside	432766	382318	NO2	Yes - SCC City Wide	18.0	2.1	No	2m
134	Barkers Pool Taxi Rank Comm	Kerbside	435283	387222	NO2	Yes - SCC City Wide		0.6	No	2m
136	Totley All Saints School Comm	Suburban	430881	379724	NO2	Yes - SCC City Wide	30.0	15.0	No	2m
138	Opposite 150 Abbeydale Road South Comm	Roadside	434885	385286	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
139	35 Montgomery Road Comm	Suburban	434372	385218	NO2	Yes - SCC City Wide	0.0	14.0	No	2m

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140	Zeds Nether Edge Road Comm	Roadside	434200	384869	NO2	Yes - SCC City Wide	0.0	3.5	No	2m
141	Clifford School Psalter Lane Comm	Urban Background	433650	385574	NO2	Yes - SCC City Wide	1.0	2.0	No	2m
142	Hunters Bar Juniors Comm	Urban Background	433378	385701	NO2	Yes - SCC City Wide	0.0	6.0	No	2m
143	136 Psalter Lane Comm	Kerbside	433521	385439	NO2	Yes - SCC City Wide	14.6	0.0	No	2m
144	Cemetery Rd, Sharrowhead R/about Comm	Urban Background	434128	385719	NO2	Yes - SCC City Wide	0.0	4.0	No	2m
145	981 Abbeydale Road Comm	Roadside	433640	383391	NO2	Yes - SCC City Wide	3.5	1.0	No	2m
146	La Scala Comm	Roadside	433601	383337	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
147	102 Archer Road Comm	Roadside	434188	383548	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
148	Chippendale Comm	Roadside	434123	383874	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
149	879 Abbeydale Road Comm	Roadside	434143	383915	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
150	Books on the Park, 749 Ecclesall Rd/Marmion Rd Comm	Roadside	432964	385619	NO2	Yes - SCC City Wide	0.0	6.0	No	2m
151	Unique Hair, 828 Ecclesall Rd/Greystones Rd Comm	Roadside	432828	385402	NO2	Yes - SCC City Wide	0.0	4.5	No	2m

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152	Midgeleys Greengrocer, 946 Ecclesall Rd/Psalter La Comm	Roadside	432822	384990	NO2	Yes - SCC City Wide	0.0	4.5	No	2m
153	Ecclesall Fisheries, 97 Ecclesall Rd South Comm	Roadside	432651	384491	NO2	Yes - SCC City Wide	0.0	2.5	No	2m
154	Knowle La/Ecclesall Rd South Bus Terminus Comm	Roadside	432428	384276	NO2	Yes - SCC City Wide		0.8	No	2m
155	Ecclesall Junior School - Ringinglow Rd Comm	Roadside	432241	384593	NO2	Yes - SCC City Wide	1.5	0.5	No	2m
156	High Storrs School Comm	Roadside	431908	384518	NO2	Yes - SCC City Wide		2.0	No	2m
157	Silverdale School Comm	Urban Background	431538	383992	NO2	Yes - SCC City Wide	0.0	10.0	No	2m
158	Huntley Road Ecclesall Infants Comm	Urban Background	432055	384648	NO2	Yes - SCC City Wide	0.0	3.0	No	2m
159	265 Abbeydale Road Comm	Urban Background	434821	385142	NO2	Yes - SCC City Wide	0.0	5.5	No	2m
160	Butterworth Cycles Comm	Urban Background	434522	384654	NO2	Yes - SCC City Wide	0.0	3.5	No	2m
161	Woodseats School Bus stop Comm	Roadside	434797	383255	NO2	Yes - SCC City Wide	0.0	2.5	No	2m
162	Woodseats School traffic lights Comm	Roadside	434814	383252	NO2	Yes - SCC City Wide	4.0	1.5	No	2m
163	Midland Station Opposite WH Smith Comm	Other	435810	386918	NO2	Yes - SCC City Wide		20.0	No	2m
164	Midland Station Platform 1A South Comm	Other	435841	386872	NO2	Yes - SCC City Wide		8.5	No	2m

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165	Midland Station Platform 1B Comm	Other	435849	387031	NO2	Yes - SCC City Wide		10.0	No	2m
166	Midland Station Footbridge Comm	Other	435867	386955	NO2	Yes - SCC City Wide		30.0	No	2m
167	Midland Station Platform 3A/2B North Comm	Other	435873	387004	NO2	Yes - SCC City Wide		4.0	No	2m
168	Midland Station Platform 2A Comm	Other	435871	386905	NO2	Yes - SCC City Wide		7.0	No	2m
169	Midland Station Platform 5A Comm	Other	435880	386888	NO2	Yes - SCC City Wide		9.0	No	2m
170	Midland Station Platform 5B Waiting room Comm	Other	435883	386956	NO2	Yes - SCC City Wide		11.0	No	2m
172	Midland Station Platform 6B Comm	Other	435916	386973	NO2	Yes - SCC City Wide		9.0	No	2m
174	Midland Station Platform 8A Comm	Other	435919	386934	NO2	Yes - SCC City Wide		4.0	No	2m
175	Sheaf Street station side crossing Comm	Kerbside	435812	387005	NO2	Yes - SCC City Wide		1.0	No	2m
176	Station Taxi Rank 1 Comm	Other	435818	386889	NO2	Yes - SCC City Wide		3.0	No	2m
178	Orphanage Rd/Barnsley Rd Comm	Roadside	435797	389600	NO2	Yes - SCC City Wide	5.0	4.0	No	2m
180	Owler La/Firth Park Rd Comm	Roadside	436595	390242	NO2	Yes - SCC City Wide	5.0	2.0	No	2m
181	Rutland Road BG Comm	Roadside	435537	389218	NO2	Yes - SCC City Wide		1.5	No	2m

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182	Astrea Academy, Andover Street Comm	Urban Background	435450	388650	NO2	Yes - SCC City Wide	2.0	2.0	No	2m
183	Herries Rd/Barnsley Rd Comm	Kerbside	436499	390182	NO2	Yes - SCC City Wide		0.7	No	2m
184	Meersbrook Bank School Comm	Roadside	434741	384237	NO2	Yes - SCC City Wide	0.0	1.5	No	2m
185	Valley Rd/Chesterfield Rd Jc Comm	Roadside	434989	384691	NO2	Yes - SCC City Wide	5.0	2.0	No	2m
186	Ann's Grove School Comm	Urban Background	435489	385101	NO2	Yes - SCC City Wide	0.0	4.0	No	2m
187	9 Ripley Street Comm	Roadside	433350	389387	NO2	Yes - SCC City Wide	0.0	2.0	No	2m
188	South Rd/Walkley Rd Comm	Roadside	433147	388796	NO2	Yes - SCC City Wide	5.0	2.0	No	2m
189	Morley Street/Rivelin Bank Road Comm	Roadside	432768	389097	NO2	Yes - SCC City Wide	6.0	1.0	No	2m
190	Hollins Lane Comm	Roadside	432271	388570	NO2	Yes - SCC City Wide	20.0	1.0	No	2m
191	South Road/Highton Street Comm	Roadside	433238	388666	NO2	Yes - SCC City Wide	15.0	2.0	No	2m
192	Hunter's Bar School potting area North Comm	Urban Background	433266	385705	NO2	Yes - SCC City Wide	5.0	5.0	No	2m
193	Hunter's Bar School potting area West Comm	Urban Background	433251	385695	NO2	Yes - SCC City Wide	5.0	5.0	No	2m
194	Hunter's Bar School playground South Comm	Urban Background	433267	385684	NO2	Yes - SCC City Wide	5.0	10.0	No	2m

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199	Arts Tower Entrance, Bolsover Street Comm	Kerbside	434173	387484	NO2	Yes - SCC City Wide		1.0	No	2m
200	Crookes Valley Road/Crookesmoor Road Comm	Roadside	433750	387724	NO2	Yes - SCC City Wide	1.5	1.0	No	2m
201	Springvale Road/Commonside Comm	Roadside	433486	387994	NO2	Yes - SCC City Wide		1.8	No	2m
202	Asda Walkley Comm	Roadside	433236	388668	NO2	Yes - SCC City Wide		1.5	No	2m
203	Ped. Crossing Toyne Street Jc Comm	Kerbside	432822	387795	NO2	Yes - SCC City Wide	4.0	1.0	No	2m
206	Rutland Road Comm	Roadside	435334	389097	NO2	Yes - SCC City Wide		2.5	No	2m
208	Longley Avenue West Comm	Roadside	434720	390560	NO2	Yes - SCC City Wide		2.0	No	2m
209	Shirecliffe Road Comm	Roadside	435304	389577	NO2	Yes - SCC City Wide		5.8	No	2m
210	Ebeneezer St/A61 SCC CW	Roadside	435018	387999	NO2	Yes - SCC City Wide	3.0	1.5	No	2m
212	Blast Lane/Parkway SCC CW	Urban Centre	436146	387608	NO2	Yes - SCC City Wide	10.0	5.0	No	2m
213	Matilda St SCC CW	Roadside	435578	386555	NO2	Yes - SCC City Wide	0.5	1.5	No	2m
214	Arley St/St Mary's Gate SCC CW	Roadside	435023	386344	NO2	Yes - SCC City Wide	50.0	3.0	No	2m
215	Sheaf St station side lamp post Comm	Roadside	435763	386944	NO2	Yes - SCC City Wide		5.0	No	2m

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)
216	Handsworth Rd/Richmond Rd bus stop Comm	Roadside	440913	386218	NO2	Yes - SCC City Wide	9.5	1.5	No	2m
217	Halfway School Comm	Roadside	443572	381395	NO2	Yes - SCC City Wide	3.0	1.5	No	2m
218	Toll House Burngreave Comm	Roadside	435650	389350	NO2	Yes - SCC City Wide	15.0	2.0	No	2m
219	Sheaf Street opposite station (low) Comm	Roadside	435770	386979	NO2	Yes - SCC City Wide		3.0	No	2m
220	Hangingwater Road LTP Gradko	Roadside	431740	385914	NO2	Yes - SCC City Wide	4.5	1.5	No	2m
221	Norfolk Park Road LTP Gradko	Roadside	435967	386210	NO2	Yes - SCC City Wide		2.0	No	2m
222	Cemetery Road SCC CW	Roadside	434676	386171	NO2	Yes - SCC City Wide		1.5	No	2m
223	Bramall Lane SCC CW	Roadside	435233	385961	NO2	Yes - SCC City Wide		2.0	No	2m
224	Burngreave Rd/Brunswick Rd SCC CW	Roadside	436092	388590	NO2	Yes - SCC City Wide	7.4	2.0	No	2m
225	Crookesmoor Rd/Northumberland Rd LTP Gradko	Roadside	433473	387456	NO2	Yes - SCC City Wide		1.5	No	2m
226	Sheaf Street Blade (high) Comm	Roadside	435755	386938	NO2	Yes - SCC City Wide		4.0	No	2m
227	Sheaf St opposite station (high) Comm	Roadside	435770	386979	NO2	Yes - SCC City Wide		3.0	No	2m
228	Sheaf Street lamp post 37 Comm	Roadside	435881	387162	NO2	Yes - SCC City Wide		3.0	No	2m

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)
229	Sheaf Street lamp post 38 Comm	Roadside	435898	387153	NO2	Yes - SCC City Wide		2.5	No	2m
230	Station background Comm	Roadside	435805	386906	NO2	Yes - SCC City Wide		8.0	No	2m
231	DEFRA Barnsley Road (Socotec 1) SCC CW	Roadside	436276	389927	NO2	Yes - SCC City Wide	20.0	4.0	Yes	2m
232	Lowfield School GH3-1 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide	0.0	7.0	Yes	2m
233	Lowfield School GH3-2 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide	0.0	7.0	Yes	3m
234	Lowfield School GH3-3 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide	0.0	7.0	Yes	3m
236	DEFRA Barnsley Road monitor (Tube 1) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide	20.0	4.0	Yes	3m
237	DEFRA Barnsley Road monitor (Tube 2) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide	20.0	4.0	Yes	2m
238	DEFRA Barnsley Road monitor (Tube 3) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide	20.0	4.0	Yes	2m
239	GH2-1 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide	4.0	15.0	Yes	2m
240	GH2-2 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide	4.0	15.0	Yes	3m
241	GH2-3 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide	4.0	15.0	Yes	3m
242	AURN-1 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m

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)
243	AURN-2 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m
244	AURN-3 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide	30.0	20.0	Yes	3m
245	Clarkehouse/Broomgrove Lane Comm	Roadside	433646	386577	NO2	Yes - SCC City Wide	0.0	1.7	No	3m
246	Clarkehouse/Ash Grove Comm	Roadside	433588	386528	NO2	Yes - SCC City Wide	12.0	2.3	No	2m
247	Newbould Lane Comm	Roadside	433603	386625	NO2	Yes - SCC City Wide	4.0	2.4	No	2m
248	Parkway Inbound (Subway) SCC CW	Roadside	437213	387656	NO2	Yes - SCC City Wide	0.0	12.0	No	2m
249	Abbeyfield House Comm	Urban Background	435772	389421	NO2	Yes - SCC City Wide	0.0	40.0	No	2m
250	Station staff car park (1) rail side Comm	Other	435861	387066	NO2	Yes - SCC City Wide		14.5	No	2m
251	Station staff car park (2) road side Comm	Other	435849	387067	NO2	Yes - SCC City Wide		5.5	No	2m
252	453 Abbey Lane Comm	Roadside	432629	382249	NO2	Yes - SCC City Wide	13.0	1.6	No	2m
253	444 Abbey Lane Comm	Roadside	432775	382231	NO2	Yes - SCC City Wide	15.0	2.2	No	2m
254	Spital Hill lamppost 25 outside Tesco Express	Roadside	436066	388285	NO2	Yes - SCC City Wide		7.0	No	2m

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
GH1	436990	390218	Urban Background	88	88	23	21	18	15	17
GH2	440077	390794	Urban Industrial	0	0	23	27	28	27	
GH3	435181	385366	Roadside	88	88	22	27	27	25	21
GH4	435959	388021	Urban Background	100	100	26	26	26	26	24
GH5	430977	380760	Urban Background	100	100	8	11	7	6	7
GH6	435704	387286	Urban Centre	94	94	30	38	33	31	28
UKA00575 (Dev Green)	434816	386990	Urban Background	63	63	18	20	18	16	16
UKA00181 (Tinsley)	440238	390588	Urban Industrial	99	99	22	23	24	20	18
UKA00622 (Barnsley Road)	436275	389926	Roadside	97	97	32	35	34	34	31

☒ **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
1	436063	397474	Roadside	92.5	92.5	21.7	20.8	24.0	19.0	17.6
2	439994	390866	Urban Background	100.0	100.0	30.6	31.3	35.0	29.7	30.0
3	440045	390884	Roadside	100.0	100.0	34.9	36.2	**46.3**	36.9	34.8
4	440177	390770	Roadside	100.0	100.0	28.2	28.1	33.8	27.2	24.6
5	435749	386727	Roadside	90.6	90.6	33.8	34.9	**44.5**	34.4	34.9
6	438880	389931	Roadside	100.0	100.0	34.0	33.5	**43.5**	35.2	33.2
7	435729	386513	Roadside	90.6	90.6	32.9	34.1	39.7	32.0	31.8
9	437703	390079	Kerbside	100.0	100.0	32.9	33.6	35.3	34.6	32.8
10	439355	388385	Roadside	100.0	100.0	24.5	26.3	33.1	29.9	25.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
11	432643	389427	Roadside	90.6	90.6	27.5	29.8	33.2	29.9	29.8
12	439312	388591	Roadside	100.0	100.0	33.1	32.2	**42.3**	32.6	30.8
13	439051	386743	Roadside	100.0	100.0	26.8	24.1	31.2	23.7	24.0
14	436141	387521	Kerbside	84.9	84.9	30.5	31.8	38.0	30.9	30.3
16	435639	388155	Kerbside	100.0	100.0	35.3	38.1	**46.2**	37.3	34.7
17	436109	387458	Roadside	100.0	100.0	36.0	36.9	**43.5**	37.1	35.6
18	435744	387619	Urban Centre	100.0	100.0	**42.3**	**44.3**	**54.9**	**47.0**	**45.2**
19	435714	387476	Urban Centre	90.6	90.6	**50.0**	**57.0**	**74.8**	**64.7**	**59.9**
21	435546	387052	Roadside	81.1	81.1	37.0	37.7	**47.5**	34.9	31.4
22	433346	390814	Roadside	90.6	90.6	28.7	28.2	32.8	27.4	26.5
23	435608	387100	Roadside	90.6	90.6	30.3	34.1	40.0	32.7	36.3
24	434435	387394	Roadside	100.0	100.0	29.7	31.8	**41.5**	35.7	36.7
25	434646	387836	Roadside	100.0	100.0	26.8	24.7	32.9	24.4	23.1

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
26	434403	386966	Roadside	100.0	100.0	31.6	33.2	**41.3**	25.5	24.5
27	435554	386638	Roadside	83.0	83.0	36.7	39.0	**44.0**	33.7	29.8
28	435313	386367	Roadside	100.0	100.0	28.1	31.4	32.7	28.6	26.5
29	434814	383335	Roadside	100.0	100.0	25.9	28.9	27.9	27.5	26.1
30	435499	385690	Roadside	90.6	90.6	31.0	34.6	35.5	31.8	30.0
31	434324	384311	Roadside	100.0	100.0	30.8	31.7	38.9	31.7	29.2
32	434299	386275	Roadside	92.5	92.5	28.8	30.3	31.2	23.5	22.9
33	435602	387292	Roadside	100.0	100.0	**49.9**	**54.3**	**69.8**	**60.5**	**54.2**
34	435700	387256	Kerbside	83.0	83.0	36.5	39.3	**49.4**	38.4	39.4
35	439116	391193	Roadside	100.0	100.0	31.8	32.5	35.7	33.8	31.1
36	435950	387996	Urban Centre	100.0	100.0	23.6	23.5	26.6	21.5	21.5
37	435951	387997	Urban Centre	100.0	100.0	23.1	23.2	24.2	19.8	21.7
38	435463	386972	Roadside	100.0	100.0	38.9	**41.7**	**50.8**	39.2	35.6

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
39	437104	388329	Roadside	90.6	90.6	33.6	33.7	38.0	30.8	29.5
40	440116	390800	Roadside	90.6	90.6	33.4	35.1	39.8	30.2	30.3
42	437766	387454	Roadside	83.0	83.0	**47.8**	**47.6**	**59.8**	**46.1**	**44.3**
43	436646	387756	Roadside	100.0	100.0	39.3	**41.3**	**41.5**	38.8	35.9
45	435789	388072	Roadside	100.0	100.0	28.3	29.6	35.7	27.3	26.8
53	431193	386795	Suburban	100.0	100.0	14.6	13.9	15.7	13.1	12.3
55	433013	386750	Roadside	100.0	100.0	27.7	29.3	34.6	27.4	25.7
56	433327	386862	Roadside	100.0	100.0	34.7	38.2	**44.6**	35.1	30.3
57	433514	387033	Roadside	100.0	100.0	30.1	33.6	38.2	29.3	26.3
59	434048	387229	Roadside	90.6	90.6	37.2	**41.2**	**45.9**	37.7	34.3
60	434352	387348	Roadside	83.0	83.0	26.1	28.3	31.9	24.2	23.7
61	436276	389927	Roadside	90.6	90.6	32.1	34.1	28.6	32.4	31.0
63	436277	389928	Roadside	90.6	90.6	31.7	33.4	28.9	32.6	31.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
64	440233	390587	Industrial	83.0	83.0	26.6	23.6	24.5	19.4	18.0
65	440234	390588	Industrial	90.6	90.6	24.6	23.3	27.0	19.6	18.6
66	440235	390589	Industrial	92.5	92.5	26.2	23.2	26.6	20.7	16.8
67	433429	386728	Roadside	100.0	100.0	27.8	31.6	36.1	27.6	26.7
68	433936	386893	Roadside	67.9	67.9	24.5	25.2	28.4	23.1	21.9
69	434574	387155	Roadside	100.0	100.0	26.7	28.7	32.4	27.3	25.1
70	435255	387349	Roadside	92.5	92.5	23.8	23.8	27.7	21.0	19.2
71	435807	386350	Kerbside	90.6	90.6	37.8	38.1	**41.8**	33.5	34.6
72	435697	385892	Roadside	90.6	90.6	31.6	34.9	35.6	30.0	30.8
73	435490	385660	Kerbside	100.0	100.0	**42.3**	**43.9**	**50.6**	**41.1**	**42.0**
74	435182	385241	Roadside	75.0	75.0	34.0	39.0	**42.4**	35.4	33.4
75	435161	384986	Roadside	100.0	100.0	37.8	**43.2**	**47.6**	**40.9**	39.6
76	434965	384613	Roadside	92.5	92.5	32.1	37.4	**40.3**	31.9	32.7

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
77	434679	383718	Roadside	84.9	84.9	23.9	25.8	27.3	22.9	21.9
78	434857	382968	Roadside	100.0	100.0	30.0	37.0	**41.5**	34.3	32.9
79	434906	381857	Roadside	100.0	100.0	24.0	26.2	30.0	22.8	23.5
80	435135	381355	Roadside	83.0	83.0	20.6	21.8	24.1	17.6	17.4
81	435238	385397	Urban Centre	92.5	92.5				23.9	21.4
82	435239	385398	Urban Centre	84.9	84.9	25.0	25.4	30.2	23.6	21.2
83	435240	385399	Urban Centre	100.0	100.0	24.4	25.1	29.6	24.3	22.4
84	440084	390760	Industrial	100.0	100.0	24.8	25.3	29.5	21.7	19.0
85	440085	390761	Industrial	100.0	100.0	24.3	24.9	30.3	21.5	20.3
86	440086	390762	Industrial	100.0	100.0	24.6	23.8	28.7	22.1	18.7
87	434803	386947	Urban Centre	90.6	90.6	18.4	18.1	21.6	15.8	15.2
88	434804	386948	Urban Centre	92.5	92.5	17.4	18.4	21.5	15.8	14.6
89	434805	386949	Urban Centre	100.0	100.0	18.0	18.2	20.9	16.2	15.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
90	438582	389616	Roadside	92.5	92.5	30.7	31.3	36.6	29.4	30.5
91	437928	388800	Roadside	92.5	92.5	37.7	**44.4**	**56.3**	**44.9**	**43.7**
92	437690	388529	Kerbside	100.0	100.0	37.7	39.1	**48.8**	37.8	35.0
93	436350	388234	Roadside	92.5	92.5	33.6	35.4	**42.0**	32.5	30.4
94	437019	388826	Roadside	92.5	92.5	26.4	26.4	31.6	24.1	22.5
95	437461	389311	Roadside	100.0	100.0	34.8	35.8	**40.5**	32.6	33.2
96	438393	390232	Roadside	100.0	100.0	35.6	34.7	**44.0**	35.0	32.2
97	438610	390614	Roadside	92.5	92.5	**44.0**	**45.7**	**58.6**	**48.8**	**43.2**
98	439167	391698	Roadside	92.5	92.5	**40.0**	**42.1**	**52.7**	39.5	34.9
99	439717	390826	Roadside	84.9	84.9	30.8	34.7	**44.5**	34.0	30.1
102	433250	391115	Kerbside	92.5	92.5	29.4	31.5	32.8	25.9	25.4
103	433455	390473	Roadside	100.0	100.0	**40.3**	**42.8**	**51.3**	38.2	35.0
109	440295	386935	Roadside	90.6	90.6	35.3	33.8	39.5	31.7	30.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
110	439960	390954	Roadside	100.0	100.0	30.6	29.9	35.6	27.1	24.9
111	440036	390822	Roadside	100.0	100.0	26.0	24.6	29.4	23.3	22.0
112	439932	390714	Roadside	84.9	84.9	25.8	24.9	27.9	20.7	20.3
113	440014	391178	Roadside	100.0	100.0	25.0	23.5	29.1	21.2	21.4
115	440046	390737	Roadside	100.0	100.0	32.7	29.5	**42.0**	31.3	28.8
116	439994	390810	Roadside	100.0	100.0	30.2	27.4	36.4	24.4	24.0
117	435909	388070	Roadside	100.0	100.0	31.2	30.8	**40.1**	32.2	28.5
118	435736	387820	Roadside	90.6	90.6	27.5	26.8	32.3	25.1	25.7
119	435239	387899	Roadside	75.0	75.0	22.9	21.8	25.2	20.1	18.6
120	434806	388216	Roadside	100.0	100.0	36.1	36.9	**46.4**	35.7	36.0
121	435843	388814	Roadside	100.0	100.0	33.9	37.0	**44.5**	38.4	37.0
122	439377	387792	Roadside	84.9	84.9	25.8	25.0	28.2	20.9	25.2
124	438997	387923	Roadside	100.0	100.0	28.3	28.0	31.3	26.1	25.3

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
125	438121	388922	Roadside	100.0	100.0	22.6	22.6	24.7	19.9	17.4
126	440559	387357	Roadside	100.0	100.0	26.0	25.8	28.4	23.1	22.6
128	427261	398422	Roadside	92.5	92.5	25.6	26.0	27.9	21.6	20.7
130	428818	397977	Roadside	100.0	100.0	24.6	25.3	25.6	19.5	18.2
131	435338	382923	Roadside	90.6	90.6	14.5	14.7	15.9	12.0	12.2
132	432766	382318	Roadside	100.0	43.4	21.7	21.4	20.4	23.6	23.2
134	435283	387222	Kerbside	90.6	90.6	23.0	21.9	26.5	19.9	20.4
136	430881	379724	Suburban	75.0	25.0	7.6	8.6	9.2	7.4	6.5
138	434885	385286	Roadside	100.0	43.4	27.8	34.5	33.3	27.7	25.2
139	434372	385218	Suburban	100.0	100.0	15.0	16.2	16.6	13.6	13.0
140	434200	384869	Roadside	100.0	100.0	13.8	15.5	15.5	12.3	11.1
141	433650	385574	Urban Background	100.0	100.0	13.3	15.7	14.2	13.1	12.9
142	433378	385701	Urban Background	83.0	83.0	18.9	21.7	21.1	16.9	20.3

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
143	433521	385439	Kerbside	100.0	100.0	23.9	23.9	27.9	21.5	16.6
144	434128	385719	Urban Background	100.0	100.0	22.2	22.5	24.5	19.2	16.9
145	433640	383391	Roadside	100.0	100.0	29.8	32.7	32.4	22.2	19.8
146	433601	383337	Roadside	92.5	92.5	29.1	31.9	35.4	29.0	28.6
147	434188	383548	Roadside	100.0	100.0	21.5	20.5	21.9	17.5	17.2
148	434123	383874	Roadside	90.6	90.6	29.1	32.9	34.2	27.0	27.8
149	434143	383915	Roadside	83.0	83.0	27.7	31.2	31.6	26.3	26.2
150	432964	385619	Roadside	100.0	100.0	22.9	23.5	25.2	20.8	20.2
151	432828	385402	Roadside	100.0	100.0	22.6	22.2	27.2	20.3	20.2
152	432822	384990	Roadside	100.0	100.0	20.1	22.5	22.7	18.9	18.6
153	432651	384491	Roadside	100.0	100.0	30.8	32.8	39.3	32.6	28.4
154	432428	384276	Roadside	100.0	100.0	27.0	28.4	32.8	24.5	21.6
155	432241	384593	Roadside	100.0	100.0	18.9	19.1	19.0	15.8	15.3

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
156	431908	384518	Roadside	100.0	100.0	13.7	13.5	14.8	11.6	11.7
157	431538	383992	Urban Background	90.6	90.6	9.8	9.8	9.2	8.1	7.5
158	432055	384648	Urban Background	100.0	100.0	10.2	9.5	9.7	7.7	7.8
159	434821	385142	Urban Background	100.0	100.0	23.9	26.0	31.4	24.4	22.9
160	434522	384654	Urban Background	92.5	92.5	30.8	33.4	**40.7**	33.0	30.9
161	434797	383255	Roadside	83.0	83.0	26.3	27.0	33.1	21.0	24.4
162	434814	383252	Roadside	83.0	83.0	25.8	27.7	32.7	25.5	26.8
163	435810	386918	Other	92.5	92.5	**46.2**	**49.3**	**59.3**	**48.1**	**43.0**
164	435841	386872	Other	100.0	100.0	37.7	39.0	**44.7**	38.1	36.6
165	435849	387031	Other	100.0	100.0	**45.7**	**43.6**	**53.4**	**44.1**	**46.7**
166	435867	386955	Other	100.0	100.0	**48.7**	**48.4**	**59.9**	**48.0**	**49.5**
167	435873	387004	Other	100.0	100.0	**52.5**	**54.8**	**65.4**	**55.6**	**56.4**
168	435871	386905	Other	100.0	100.0	**55.1**	**50.5**	**59.6**	**50.0**	**53.7**

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
169	435880	386888	Other	100.0	100.0	**47.0**	**44.5**	**50.4**	**42.6**	**43.2**
170	435883	386956	Other	100.0	100.0	38.2	**48.6**	**58.4**	**51.3**	**50.5**
172	435916	386973	Other	100.0	100.0	**48.9**	**44.2**	**53.5**	**47.4**	**47.7**
174	435919	386934	Other	100.0	100.0	**51.5**	**47.4**	**56.0**	**46.4**	**47.1**
175	435812	387005	Kerbside	83.0	83.0	**45.7**	**55.5**	**65.6**	**49.9**	**49.8**
176	435818	386889	Other	100.0	100.0	**50.9**	**62.5**	**76.8**	**53.6**	**46.2**
178	435797	389600	Roadside	100.0	100.0	38.0	37.4	**50.5**	38.8	35.1
180	436595	390242	Roadside	92.5	92.5	39.3	37.4	**49.7**	35.5	34.7
181	435537	389218	Roadside	100.0	100.0	37.5	38.3	**46.8**	34.8	37.1
182	435450	388650	Urban Background	92.5	92.5	19.0	18.1	17.8	13.4	12.5
183	436499	390182	Kerbside	83.0	83.0	**47.5**	**50.0**	**64.2**	**47.6**	**50.4**
184	434741	384237	Roadside	90.6	90.6	13.8	15.0	16.9	13.1	14.4
185	434989	384691	Roadside	100.0	100.0	31.3	36.3	37.9	32.1	33.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
186	435489	385101	Urban Background	75.0	75.0	27.4	29.0	30.1	28.1	28.1
187	433350	389387	Roadside	83.0	83.0	26.6	27.3	28.6	24.6	24.6
188	433147	388796	Roadside	67.9	67.9	30.4	30.9	36.7	30.4	28.7
189	432768	389097	Roadside	100.0	100.0	22.9	22.4	27.3	20.9	19.8
190	432271	388570	Roadside	84.9	84.9	22.1	22.0	25.0	21.5	19.1
191	433238	388666	Roadside	90.6	90.6	18.9	19.0	22.0	17.8	15.6
192	433266	385705	Urban Background	83.0	83.0	15.2	16.4	19.1	13.8	14.7
193	433251	385695	Urban Background	83.0	83.0	19.9	18.7	23.7	16.9	17.1
194	433267	385684	Urban Background	83.0	83.0	15.9	15.8	18.4	13.6	14.8
199	434173	387484	Kerbside	83.0	83.0	25.9	29.6	35.9	24.5	23.7
200	433750	387724	Roadside	100.0	100.0	30.2	33.6	36.8	-	27.3
201	433486	387994	Roadside	66.0	66.0	19.0	20.8	24.2	18.8	17.0
202	433236	388668	Roadside	43.4	43.4	22.4	24.5	28.7	22.0	19.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
203	432822	387795	Kerbside	90.6	90.6	20.5	23.5	24.5	20.2	16.5
206	435334	389097	Roadside	81.1	81.1	38.8	37.6	**44.6**	35.2	35.2
208	434720	390560	Roadside	100.0	100.0	13.8	13.7	14.2	11.5	11.5
209	435304	389577	Roadside	83.0	83.0	21.1	22.7	24.8	21.0	19.6
210	435018	387999	Roadside	100.0	100.0		23.8	29.0	22.7	20.4
212	436146	387608	Urban Centre	100.0	100.0		36.0	36.5	32.0	29.7
213	435578	386555	Roadside	90.6	90.6		26.9	36.0	25.5	26.8
214	435023	386344	Roadside	90.6	90.6		36.2	39.1	31.4	32.3
215	435763	386944	Roadside	75.0	75.0		**53.0**	**61.3**	**44.7**	**45.8**
216	440913	386218	Roadside	100.0	100.0		31.3	34.9	26.6	24.0
217	443572	381395	Roadside	100.0	100.0		32.4	37.7	25.8	27.3
218	435650	389350	Roadside	100.0	100.0		30.5	37.5	27.3	28.9
219	435770	386979	Roadside	100.0	100.0			**46.9**	38.1	37.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
220	431740	385914	Roadside	100.0	100.0			20.7	17.9	16.6
221	435967	386210	Roadside	92.5	92.5			34.2	31.8	31.4
222	434676	386171	Roadside	100.0	100.0			23.8	18.2	18.2
223	435233	385961	Roadside	100.0	100.0			33.0	24.9	22.6
224	436092	388590	Roadside	92.5	92.5			**52.4**	39.7	37.1
225	433473	387456	Roadside	84.9	84.9			17.2	15.8	14.9
226	435755	386938	Roadside	100.0	25.0			**53.3**	**43.6**	37.2
227	435770	386979	Roadside	100.0	25.0			-	37.6	32.7
228	435881	387162	Roadside	84.9	84.9			-	**48.3**	**40.6**
229	435898	387153	Roadside	84.9	84.9			**51.7**	**55.6**	**50.8**
230	435805	386906	Roadside	92.5	92.5			-	32.0	30.9
231	436276	389927	Roadside	100.0	100.0			36.0	31.1	29.7
232	435238	385397	Urban Centre	92.5	92.5			31.4	25.5	24.3

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
233	435238	385397	Urban Centre	83.0	83.0			32.1	25.6	24.1
234	435238	385397	Urban Centre	92.5	92.5			31.6	25.6	23.5
236	436276	389927	Roadside	90.6	90.6			36.2	31.9	31.1
237	436276	389927	Roadside	100.0	100.0			38.7	32.4	31.0
238	436276	389927	Roadside	100.0	100.0			38.5	32.9	30.7
239	440084	390760	Industrial	84.9	84.9			32.7	23.4	22.1
240	440084	390760	Industrial	84.9	84.9			32.7	23.5	22.4
241	440084	390760	Industrial	84.9	84.9			31.4	24.7	21.1
242	434803	386947	Urban Centre	100.0	100.0			20.1	16.2	15.5
243	434803	386947	Urban Centre	100.0	100.0			19.8	16.7	15.3
244	434803	386947	Urban Centre	92.5	92.5			20.2	16.3	15.7
245	433646	386577	Roadside	81.1	81.1			28.0	22.4	20.9
246	433588	386528	Roadside	83.0	83.0			28.5	23.1	24.5

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
247	433603	386625	Roadside	100.0	100.0			28.2	21.6	19.7
248	437213	387656	Roadside	100.0	100.0				20.2	20.7
249	435772	389421	Urban Background	81.1	81.1				13.9	13.0
250	435861	387066	Other	88.9	66.0					**47.4**
251	435849	387067	Other	100.0	75.0					37.3
252	432629	382249	Roadside	100.0	43.4					31.7
253	432775	382231	Roadside	100.0	43.4					28.5
254	436066	388285	Roadside	100.0	100.0				24.1	27.7

☒ **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 at real-time monitors

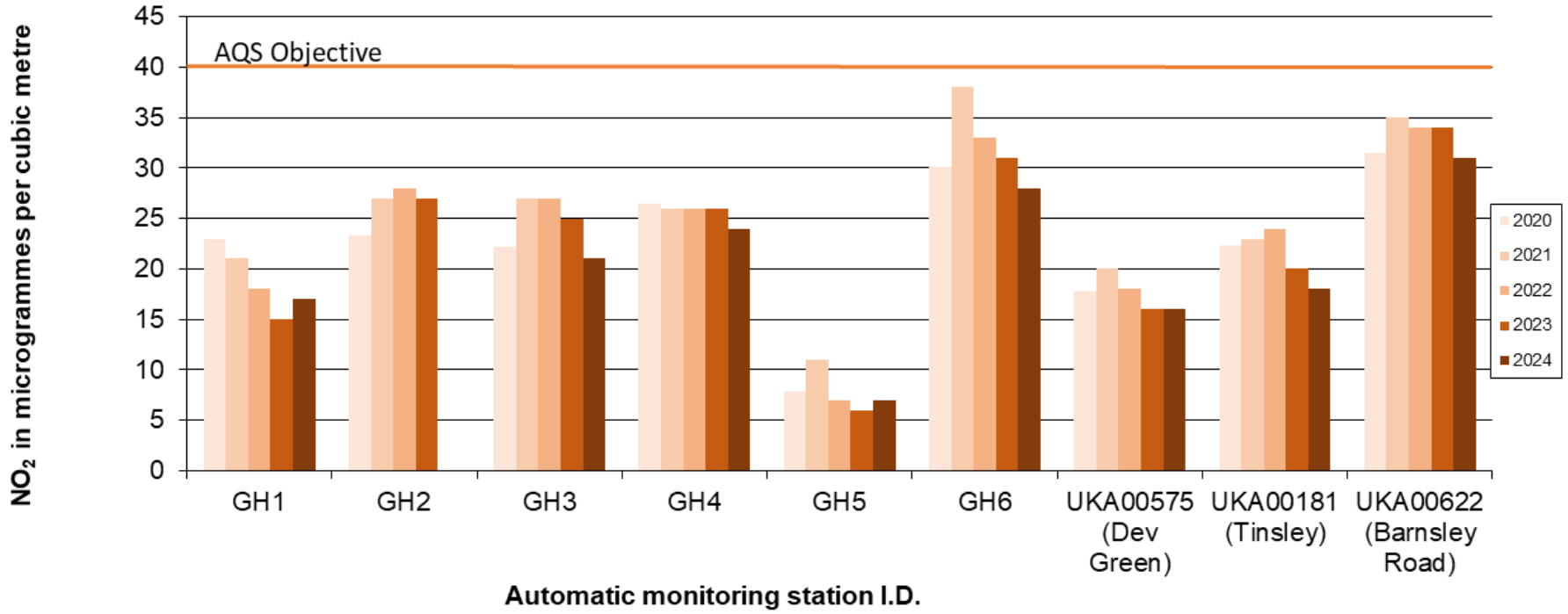


Table A.5 – 1-Hour mean NO_2 monitoring results, number of 1-hour means > 200µg/m^3

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
GH1	436990	390218	Urban Background	88	88	0	0	0	0	0
GH2	440077	390794	Urban Industrial	0	0	0	0	0	0 (77)	0
GH3	435181	385366	Roadside	88	88	2	1	0	0 (84)	0
GH4	435959	388021	Urban Background	100	100	1	0	0	0	0
GH5	430977	380760	Urban Background	100	100	2	0	0	0	0
GH6	435704	387286	Urban Centre	94	94	**3 (65)**	0	0	0	0
UKA00575 (Dev Green)	434816	386990	Urban Background	63	63	0	**0 (80)**	**0**	**0**	0 (63)
UKA00181 (Tinsley)	440238	390588	Urban Industrial	99	99	0	0	0(102)	0	0
UKA00622 (Barnsley Road)	436275	389926	Roadside	97	97	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%).

Figure A.2 – Trends in number of NO_2 1-hour means > 200µg/m^3

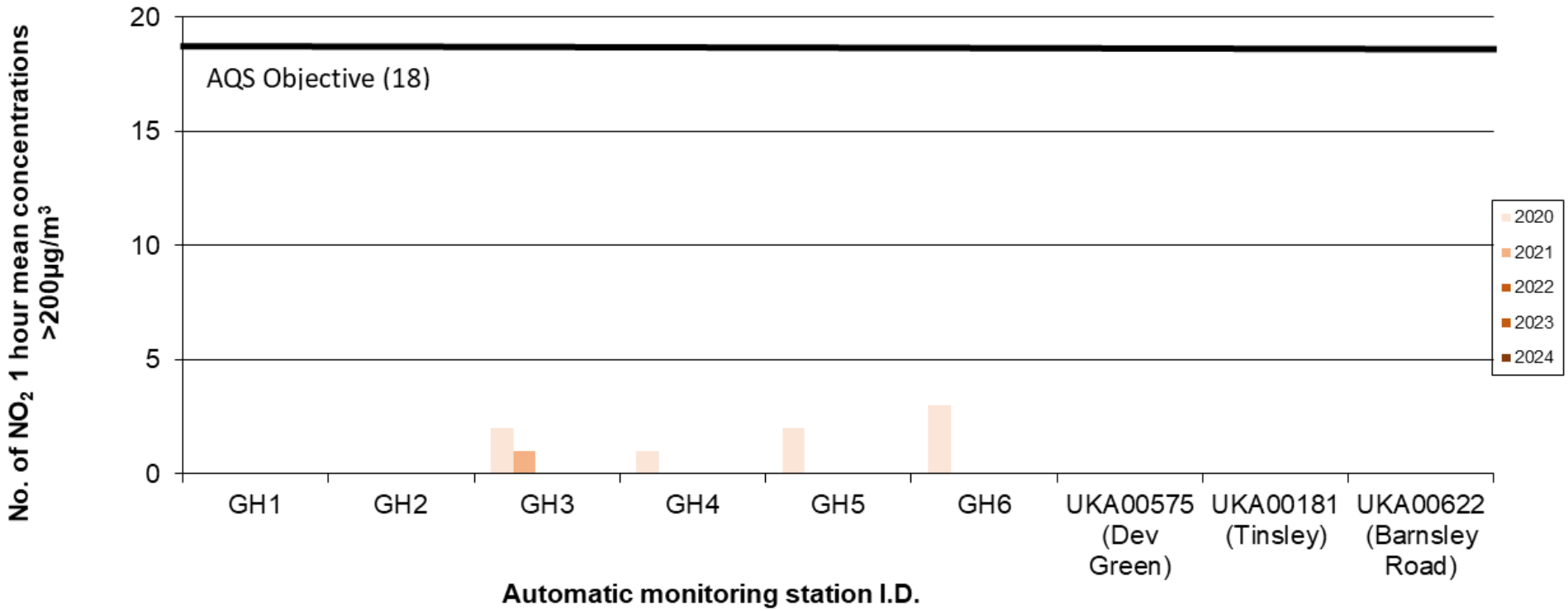


Table A.6 – Annual mean PM_{10} monitoring results (µg/m³)

Site ID	X OS grid ref (easting)	Y OS grid ref (northing)	Site type	Valid data capture for monitoring period (%) (1)	Valid data capture 2024 (%) (2)	2020	2021	2022	2023	2024
GH1	436990	390218	Urban Background	60	60	15	13	13	14	14
GH2	440077	390794	Urban Industrial	0	0	16	15	16	14	
GH3	435181	385366	Urban Background	100	100	12	11	10	10	9
GH4	435959	388021	Urban Background	71	71	15	14	15	13	14
GH5	430977	380760	Urban Background	97	97	11	10	12	11	10
GH6	435704	387286	Urban Centre	42	42	14	11	13	14	12
UKA00575 (Dev Green)	434816	386990	Urban Background	100	100	14	12	13	12	12
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	100	-	-	17	14	13

☒ **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/m³.

Exceedances of the PM_{10} annual mean objective of 40µg/m³ are shown in **bold**.

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

(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.3 – Trends in annual Mean PM_{10} concentrations

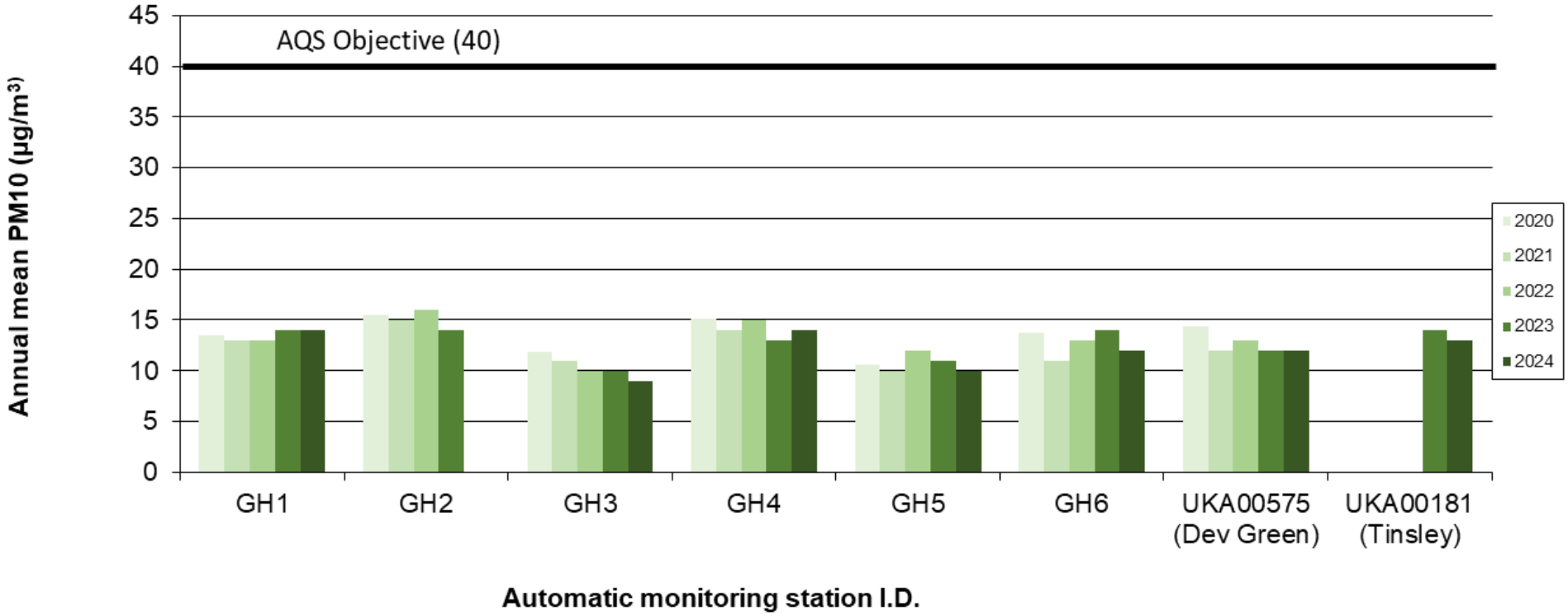


Table A.7 – 24-hour mean PM_{10} monitoring results, number of PM_{10} 24-hour means > 50µg/m^3

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
GH1	436990	390218	Urban Background	60	60	0 (29)	1	0	1	4 (27)
GH2	440077	390794	Urban Industrial	0	0	2 (30)	1 (27)	0	0	
GH3	435181	385366	Urban Background	100	100	2	1	0	0	0
GH4	435959	388021	Urban Background	71	71	6	2	0	1	1 (25)
GH5	430977	380760	Urban Background	97	97	2	1	0	0	0
GH6	435704	387286	Urban Centre	42	42	4 (21)	2	1	6	0 (24)
UKA00575 (Dev Green)	434816	386990	Urban Background	100	100	5	6	5	1	2
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	100	-	-	0	0	1

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%).

Figure A.4 – Trends in number of 24-hour mean PM_{10} results > 50µg/m³

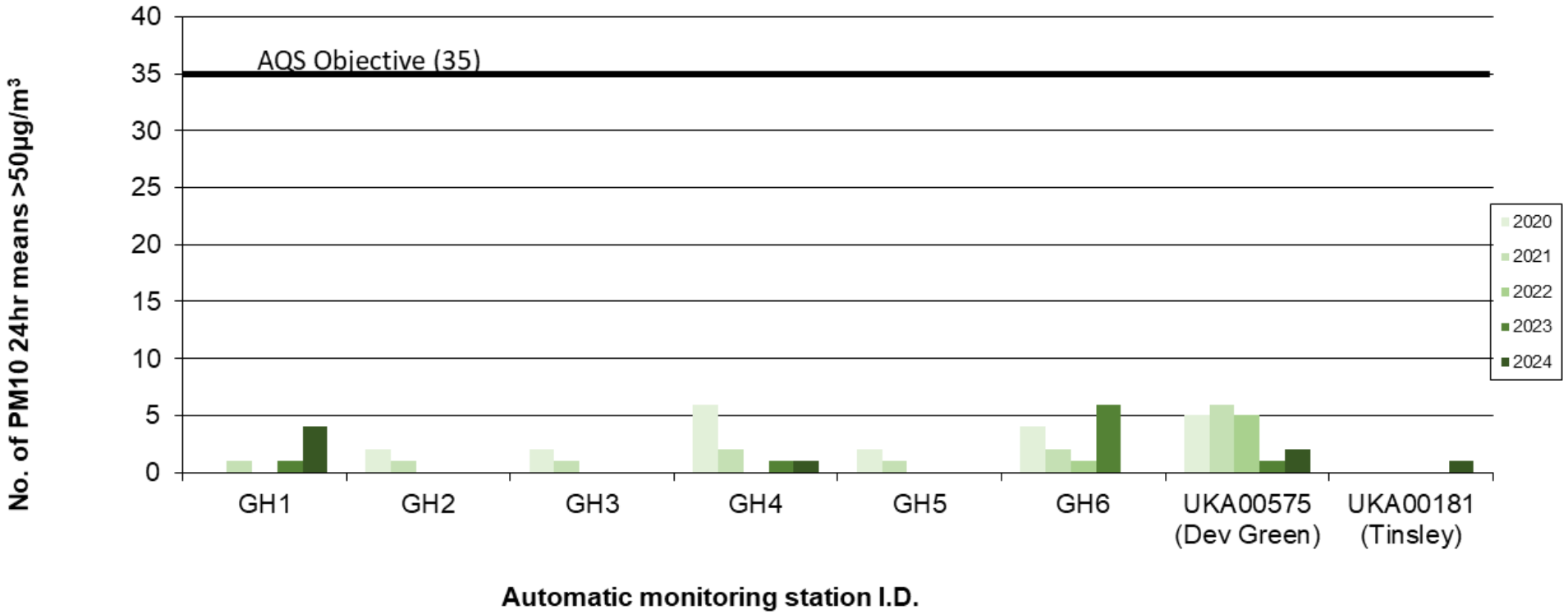


Table A.8 – Annual mean $PM_{2.5}$ monitoring results (µg/m^3)

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
GH1	436990	390218	Urban Background	60	60	8	8	9	8	8
GH2	440077	390794	Urban Industrial	0	0	9	9	9	8	
GH3	435181	385366	Urban Background	100	100	7	7	6	6	5
GH4	435959	388021	Urban Background	71	71	10	9	10	8	8
GH5	430977	380760	Urban Background	97	97	7	7	8	8	6
GH6	435704	387286	Urban Centre	42	42	8	6	8	8	8
UKA00575 (Dev Green)	434816	386990	Urban Background	92	92	8	7	8	7	7
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	100	-	-	8	7	7
UKA00622 (Barnsley Road)	436275	389926	Roadside	100	100	9	8	10	9	8

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

Notes:

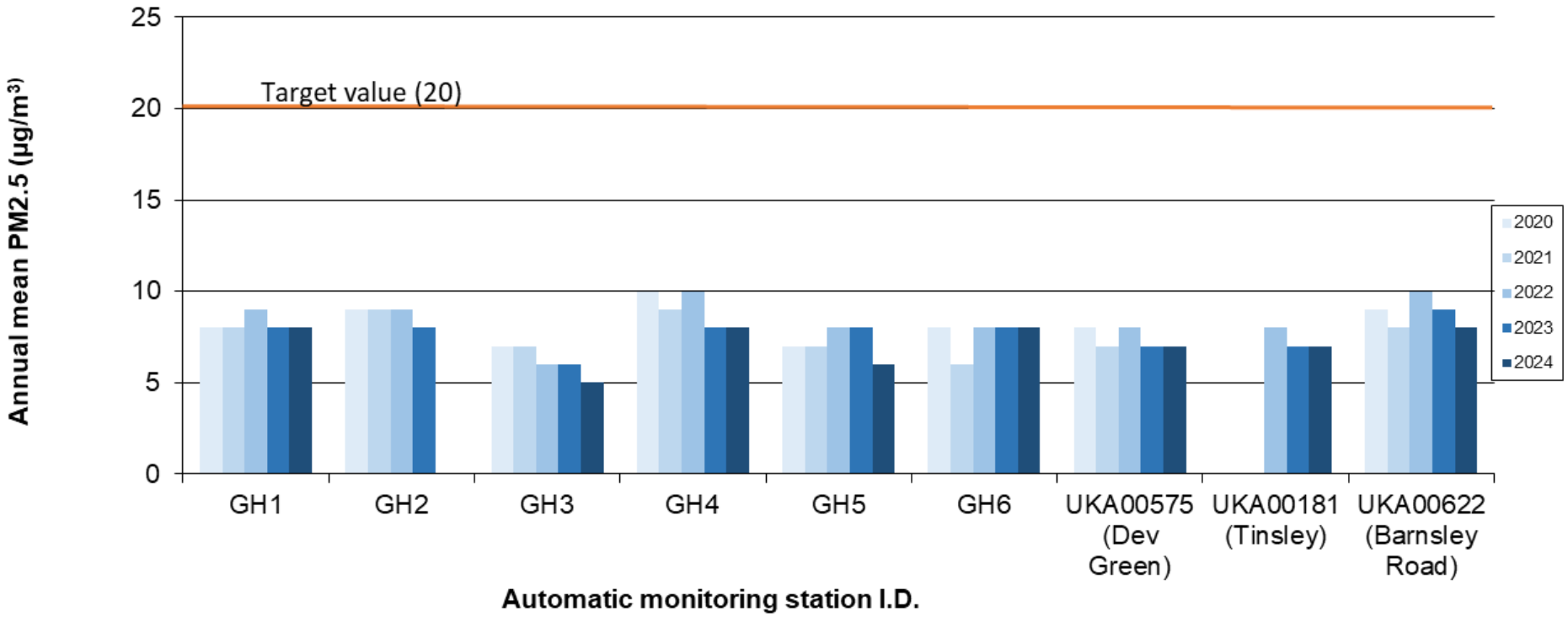
The annual mean concentrations are presented as µg/m^3.

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%).

Figure A.5 – Trends in annual mean $PM_{2.5}$ concentrations



Appendix B: Full monthly diffusion tube results for 2024

Table B.1 – NO_2 2024 diffusion tube results (µg/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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
1	436063	397474		23.2	20.3	18.7	22.6	15.8	17.1	20.6	18.1	29.5	26.2	18.5	21.0	17.6		
2	439994	390866	43.7	45.5	34.3	28.7	31.0	33.2	32.6	31.1	33.4	34.5	44.7	36.2	35.7	30.0		
3	440045	390884	54.5	56.9	41.1	36.7	39.0	39.7	41.7	33.3	40.7	34.5	43.8	35.7	41.5	34.8		
4	440177	390770	41.1	34.6	30.9	25.4	19.7	25.5	21.4	22.5	26.7	28.5	41.0	34.6	29.3	24.6		
5	435749	386727	49.9	46.6	43.5	38.9	42.7	33.0	37.3	32.3	49.0		43.0	41.3	41.6	34.9		
6	438880	389931	49.9	34.1	40.9	36.4	34.5	40.6	37.1	34.9	46.3	34.9	47.6	37.6	39.6	33.2		
7	435729	386513	44.3	44.7	40.8	30.9		30.8	36.1	29.2	44.0	39.2	36.0	39.8	37.8	31.8		
9	437703	390079	44.4	40.1	43.8	38.2	40.3	30.9	33.0	29.1	43.7	42.2	45.6	36.9	39.0	32.8		
10	439355	388385	41.1	43.9	39.1	26.7	28.7	21.9	27.1	26.3	29.5	31.8	18.1	34.9	30.8	25.8		
11	432643	389427	37.1	32.8	38.8	37.4	39.9	32.8	29.6	27.0	49.2	30.8	34.6		35.5	29.8		
12	439312	388591	49.8	42.4	38.3	37.0	38.9	32.3	35.8	31.0	49.9	33.8	16.7	34.2	36.7	30.8		
13	439051	386743	31.3	34.6	31.3	23.8	27.2	24.8	27.8	24.8	27.1	32.3	30.8	27.1	28.6	24.0		
14	436141	387521		48.7	38.6		32.7	27.4	23.6	31.2	37.2	41.2	43.6	36.1	36.0	30.3		
16	435639	388155	44.9	35.7	40.5	43.2	38.5	38.9	35.4	37.3	45.8	38.5	52.8	44.3	41.3	34.7		
17	436109	387458	35.9	47.8	45.2	41.5	38.8	38.2	42.7	40.9	42.9	45.6	50.3	39.4	42.4	35.6		
18	435744	387619	65.9	67.5	58.2	52.2	48.2	43.9	54.2	53.9	46.1	48.7	58.9	48.4	53.8	**45.2**		
19	435714	387476	74.3		75.6	68.9	60.3	70.5	71.8	61.7	73.3	79.9	82.7	65.6	71.3	**59.9**	**45.9**	
21	435546	387052	42.4	?14.2	42.3	37.0	37.7	33.1	25.7	40.3	38.4	36.8	39.7	?14	37.3	31.4		
22	433346	390814	43.4	35.9	37.5	28.9	27.9	26.1	24.1	24.4	30.0		41.1	27.1	31.5	26.5		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
23	435608	387100	52.4	33.9	43.3	38.1	44.4	28.5	37.3	30.5	47.8	45.4	73.6	?15.1	43.2	36.3		
24	434435	387394	45.4	46.2	49.2	42.2	37.9	40.5	42.7	40.2	47.0	43.1	46.7	43.8	43.7	36.7	30.8	
25	434646	387836	18.7	33.8	31.6	26.1	26.5	22.8	25.1	25.4	22.7	35.7	34.9	26.4	27.5	23.1		
26	434403	386966	39.2	23.2	31.4	26.5	31.8	27.9	27.8	25.4	33.7	22.9	33.2	27.2	29.2	24.5		
27	435554	386638	24.2	44.3	38.2		38.0	36.4	36.8	33.7	42.1	27.9	32.8		35.4	29.8		
28	435313	386367	40.5	31.7	34.2	31.4	35.5	28.1	24.9	26.7	43.0	34.4	24.7	23.6	31.6	26.5		
29	434814	383335		36.4	33.7	33.4	33.0	26.7	24.5	20.6	32.5	36.6	36.1	28.7	31.1	26.1		
30	435499	385690	49.2	39.2	39.2	32.3		26.9	21.1	28.2	38.1	35.9	43.5	38.8	35.7	30.0		
31	434324	384311	44.9	39.5	38.0	32.5	33.8	36.8	32.1	34.2	41.6	20.4	30.4	32.8	34.8	29.2		
32	434299	386275	38.3	23.0	31.2		25.0	24.1	22.5	21.8	30.9	31.8	31.7	19.5	27.3	22.9		
33	435602	387292	79.4	56.6	79.3	61.7	65.1	69.1	34.2	71.6	65.0	55.9	75.6	60.9	64.5	**54.2**		
34	435700	387256	54.8		44.9	43.1	67.0		33.0	27.8	39.8	43.5	42.8	72.0	46.9	39.4		
35	439116	391193	44.0	45.3	42.5	38.1	34.2	29.9	33.5	34.3	35.2	30.9	35.4	40.6	37.0	31.1		
36	435950	387996	35.1	33.0	26.9	19.7	20.0	18.2	22.3	19.3	24.5	27.2	34.4	26.8	25.6	21.5		
37	435951	387997	32.3	31.8	27.4	22.7	21.5	19.5	21.2	17.6	34.2	25.5	29.6	26.3	25.8	21.7		
38	435463	386972	56.3	46.4	47.7	44.6	42.2	40.6	37.9	39.8	49.6	27.7	46.4	29.1	42.4	35.6		
39	437104	388329	38.7	43.6	39.3	33.8	31.4	30.9	28.5		31.4	30.0	38.5	40.5	35.1	29.5		
40	440116	390800	38.9	43.9	35.9	30.3	26.8	30.7	35.7	31.4	35.1	41.1	47.5		36.1	30.3		
42	437766	387454		51.7	52.3	52.1	57.9	56.0	52.5	51.0	61.6	61.8	30.1		52.7	**44.3**		
43	436646	387756	49.0	32.4	50.3	42.4	44.0	39.8	44.7	42.7	49.7	42.3	32.2	43.5	42.8	35.9		
45	435789	388072	42.5	36.4	38.1	31.2	31.1	24.5	27.5	25.5	35.2	37.4	28.1	24.9	31.9	26.8		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
53	431193	386795	13.5	16.1	15.0	12.9	13.0	12.0	12.5	12.8	12.4	15.8	15.1	12.4	13.6	12.3		
55	433013	386750	26.0	34.7	31.6	23.7	29.1	28.1	28.4	24.7	26.7	30.5	32.6	26.5	28.6	25.7		
56	433327	386862	33.7	39.3	43.3	34.1	29.8	33.4	30.2	27.3	29.1	40.5	30.7	33.0	33.7	30.3		
57	433514	387033	26.8	32.7	34.0	29.1	29.8	25.6	29.5	24.1	26.3	33.0	34.6	24.5	29.2	26.3		
59	434048	387229	34.4	48.0	42.6	36.2	36.7	35.2	38.2	31.2	31.6	41.9	42.6		38.1	34.3		
60	434352	387348	28.0	31.0	28.0	25.4	24.7	23.9	25.2	22.9	27.3			27.4	26.4	23.7		
61	436276	389927	48.0	44.0	38.0	38.6	37.0	31.1	29.6		37.6	33.7	38.3	30.7	37.0	31.0		
63	436277	389928	45.7	46.7	39.8	38.0	38.3	26.9	32.8	33.1	35.8		40.9	38.6	37.9	31.8		
64	440233	390587	33.2	28.8	22.5	19.8	18.1	17.9	14.6	14.7	20.2	24.2			21.4	18.0		
65	440234	390588	31.3	29.8	21.4	19.8	17.7	17.2	18.2		20.9	24.4	28.8	14.3	22.2	18.6		
66	440235	390589		32.2	23.4	15.2	18.0	17.6	16.4	14.2	20.0	21.4	25.0	17.0	20.0	16.8		
67	433429	386728	30.0	34.3	31.4	22.2	28.3	26.3	28.1	25.3	30.7	34.3	36.3	29.3	29.7	26.7		
68	433936	386893		30.9	20.7		19.5	18.9	21.6	19.5	24.4	27.3			22.9	21.9		
69	434574	387155	29.3	31.4	30.5	27.9	29.3	21.6	23.2	21.9	34.3	26.0	32.0	27.5	27.9	25.1		
70	435255	387349	24.0	16.8	21.6		19.5	18.4	18.8	19.3	23.0	23.0	26.3	23.7	21.3	19.2		
71	435807	386350	45.9		39.7	41.0	38.5	27.8	32.7	30.6	49.9	35.0	43.5	38.3	38.4	34.6		
72	435697	385892	39.1	36.1	36.9	35.5	31.6	28.5	30.1	28.5	39.1		36.2	34.6	34.2	30.8		
73	435490	385660	49.9	53.0	53.0	39.1	43.1	43.0	47.9	41.4	46.7	50.1	48.7	44.6	46.7	**42.0**	34.5	
74	435182	385241		40.7		39.1	33.6	28.7	33.4	34.2	41.8		44.1	37.9	37.1	33.4		
75	435161	384986	42.3	51.6	38.7	36.3	43.2	41.5	45.2	40.6	47.8	47.2	51.3	42.3	44.0	39.6		
76	434965	384613		42.2	39.0	36.4	37.0	31.3	34.9	31.5	40.3	31.9	39.2	35.4	36.3	32.7		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
77	434679	383718		28.4	25.4	24.3	23.6	23.8	22.9	23.2	25.1	23.1		23.5	24.3	21.9		
78	434857	382968	35.8	43.7	40.5	32.2	34.6	35.3	36.4	31.4	33.7	39.2	43.1	33.1	36.6	32.9		
79	434906	381857	28.8	30.6	23.8	23.9	24.2	27.9	26.2	20.0	22.5	26.8	33.6	25.1	26.1	23.5		
80	435135	381355			19.7	16.0	16.4	18.0	19.7	17.2	16.2	23.1	23.8	22.8	19.3	17.4		
81	435238	385397	29.1	35.8	33.8	23.4	23.4	21.5	17.0	24.7	27.5	14.7		29.9	25.5	21.4		
82	435239	385398	28.9	34.8	31.2	22.8	24.4	20.8		20.6		30.8	33.8	30.0	27.8	21.2		
83	435240	385399	30.1	35.5	32.4	21.8	24.7	21.0	18.2	24.2	29.9	20.5	36.2	25.9	26.7	22.4		
84	440084	390760	29.8	32.7	26.5	21.7	18.6	21.5	14.7	15.1	21.3	16.6	26.7	26.7	22.7	19.0		
85	440085	390761	28.5	33.0	26.0	21.8	19.2	19.8	18.8	22.5	23.1	25.9	30.4	21.1	24.2	20.3		
86	440086	390762	29.9	28.0	22.5	20.0	18.6	19.5	22.2	22.4	22.7	13.0	30.6	18.3	22.3	18.7		
87	434803	386947	22.4	22.5	22.8	14.5	15.5	13.9	13.8	12.5	19.2		23.0	19.2	18.1	15.2		
88	434804	386948	21.4	16.2	21.3	15.6	15.4	13.7	15.4	9.8		22.6	22.0	17.8	17.4	14.6		
89	434805	386949	21.7	22.3	21.1	17.2	15.7	12.2	14.2	12.8	20.2	23.0	21.1	19.1	18.4	15.4		
90	438582	389616	47.2	41.0	32.2	38.4	31.0	31.7	34.5	29.5	45.6	33.2		34.6	36.3	30.5		
91	437928	388800	57.7	64.5	57.3	51.0	54.1	46.7		42.8	57.4	43.4	57.7	40.0	52.1	**43.7**	39.8	
92	437690	388529	54.1	40.7	49.9	40.6	42.1	33.5	26.9	37.2	41.8	39.1	50.7	43.6	41.7	35.0		
93	436350	388234	38.6	49.3	39.2	37.3	30.9	27.5	34.6	33.2	32.6	40.5		33.8	36.1	30.4		
94	437019	388826		35.7	33.1	28.0	23.0	20.9	24.3	21.8	26.9	29.5	29.2	21.7	26.7	22.5		
95	437461	389311	37.4	45.3	45.4	43.2	40.3	36.4	36.9	34.9	46.5	35.9	35.4	36.4	39.5	33.2		
96	438393	390232	51.7	51.5	37.8	35.2	34.6	37.5	36.2	34.3	29.5	40.5	31.1	40.5	38.4	32.2		
97	438610	390614	58.6	66.2	46.5	54.3	51.5	53.5	52.9	50.8	52.0	47.1		31.7	51.4	**43.2**	35.2	

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
98	439167	391698		49.1	42.9	52.3	36.1	35.6	33.5	38.4	45.5	38.4	46.6	38.3	41.5	34.9		
99	439717	390826		45.7	38.3		29.8	30.5	35.2	34.5	33.6	34.3	44.2	31.8	35.8	30.1		
102	433250	391115		32.8	35.8	29.8	30.2	21.4	25.2	20.5	32.2	34.0	40.2	30.5	30.2	25.4		
103	433455	390473	40.3	54.0	50.8	44.7	47.0	39.9	38.4	43.3	45.0	33.6	19.8	42.9	41.6	35.0		
109	440295	386935	46.7		33.8	38.7	32.6	32.8	34.2	30.8	44.8	36.7	30.1	31.7	35.7	30.0		
110	439960	390954	34.4	39.0	23.7	27.0	24.6	23.5	28.8	27.8	28.3	34.2	28.1	36.2	29.6	24.9		
111	440036	390822	33.3	29.7	25.8	20.2	22.9	23.9	24.3	20.0	24.8	28.6	32.4	28.5	26.2	22.0		
112	439932	390714		33.0	30.8	23.1	25.4		16.4	20.0	27.8	25.5	24.6	14.6	24.1	20.3		
113	440014	391178	31.9	32.7	28.6	22.0	22.1	19.5	16.3	22.7	23.6	25.0	35.4	26.1	25.5	21.4		
115	440046	390737	38.7	43.5	31.5	28.8	29.2	36.6	37.6	42.2	28.3	32.2	29.0	34.3	34.3	28.8		
116	439994	390810	35.7	35.8	27.8	26.5	24.9	26.1	24.6	20.6	23.8	26.7	39.9	30.6	28.6	24.0		
117	435909	388070	39.6	46.9	33.1	17.9	35.4	32.8	29.6	27.0	31.1	36.1	43.4	33.9	33.9	28.5		
118	435736	387820	38.3	39.3	33.6	25.8	27.2	22.4	27.1	26.3	30.5	35.0	31.2		30.6	25.7		
119	435239	387899		28.2	23.3		20.4	16.0	15.9	18.1	22.3	25.9	28.8		22.1	18.6		
120	434806	388216	40.1	52.7	44.8	39.8	38.5	38.1	39.9	38.0	41.5	48.0	53.7	39.7	42.9	36.0		
121	435843	388814	47.1	52.1	50.1	45.8	43.9	37.8	43.0	33.7	39.5	48.5	42.8	44.6	44.1	37.0	33.7	
122	439377	387792	32.8	30.5		27.3	28.4	34.6	29.4	26.4	36.7	33.2		20.8	30.0	25.2		
124	438997	387923	36.0	37.3	33.0	28.1	27.8	26.4	18.6	24.9	27.9	34.5	37.3	30.2	30.2	25.3		
125	438121	388922	26.0	24.4	22.6	16.9	19.3	18.1	15.8	14.1	22.9	24.9	18.8	24.7	20.7	17.4		
126	440559	387357	28.6	28.0	23.5	23.6	34.7	25.0	23.5	22.5	30.8	21.7	31.6	28.8	26.9	22.6		
128	427261	398422	27.5	26.7	28.1	21.5	27.5	20.6	22.3	18.5	32.6	29.4		15.9	24.6	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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
130	428818	397977	30.3	25.1	22.6	19.3	19.8	19.2	19.0	18.5	22.7	21.7	16.0	26.4	21.7	18.2		
131	435338	382923	20.5	11.3	16.9	12.5	15.7	10.3	12.3	9.6	9.3	15.4	26.5		14.6	12.2		
132	432766	382318								26.8	26.8	26.1	27.8	34.3	28.4	23.2		
134	435283	387222	31.7	26.9	23.3	20.3	19.6	16.2	16.8		26.1	25.7	31.8	28.4	24.3	20.4		
136	430881	379724									8.5	3.6		11.6	7.9	6.5		
138	434885	385286								27.4	27.4	35.4	32.9	31.3	30.9	25.2		
139	434372	385218	21.5	21.6	18.8	13.1	11.7	10.1	12.5	11.6	15.6	13.8	18.9	16.9	15.5	13.0		
140	434200	384869	14.8	18.5	17.2	11.5	13.9	9.3	11.6	9.8	14.9	9.9	8.5	18.9	13.2	11.1		
141	433650	385574	17.2	34.0	14.6	10.3	11.9	9.7	10.3	10.0	14.6	20.5	25.5	5.6	15.4	12.9		
142	433378	385701	38.4	21.2	20.1	25.0	29.2	23.5	23.5	23.5			24.1	13.1	24.2	20.3		
143	433521	385439	25.7	24.6	21.5	15.4	20.2	15.9	15.9	15.1	24.5	21.2	24.0	13.0	19.8	16.6		
144	434128	385719	28.1	16.9	21.8	19.0	18.0	16.7	16.7	16.7	24.0	25.4	20.2	17.7	20.1	16.9		
145	433640	383391	26.0	30.9	29.7	23.0	25.7	20.6	25.9	21.5	22.3	21.0	15.8	21.0	23.6	19.8		
146	433601	383337	40.6	39.0	37.5	30.5	34.2	37.4		30.1	35.7	30.2	31.9	26.9	34.0	28.6		
147	434188	383548	23.2	26.2	21.2	18.2	18.6	17.1	16.7	7.5	25.1	20.8	26.7	24.8	20.5	17.2		
148	434123	383874	41.8	30.8	35.8	32.7	35.7	28.6	34.5		38.5	16.2	34.5	34.4	33.0	27.8		
149	434143	383915	39.2	36.9	34.8	25.8			31.3	23.3	30.5	29.8	30.1	30.7	31.2	26.2		
150	432964	385619	29.5	34.0	32.4	23.1	23.5	19.6	20.4	20.6	19.6	24.6	25.2	15.9	24.0	20.2		
151	432828	385402	27.3	28.9	25.2	22.8	22.5	22.1	21.0	20.0	25.1	26.6	18.9	28.0	24.0	20.2		
152	432822	384990	27.0	28.0	23.9	25.3	21.8	21.4	19.9	19.4	18.1	22.8	27.9	9.9	22.1	18.6		
153	432651	384491	32.6	42.7	40.3	32.9	36.8	28.8	34.0	30.8	32.3	36.4	29.9	27.9	33.8	28.4		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
154	432428	384276	28.6	36.6	29.0	18.9	26.3	25.6	25.2	23.0	18.5	26.1	27.0	23.3	25.7	21.6		
155	432241	384593	20.5	26.9	22.7	14.9	18.9	16.4	17.0	15.5	13.0	22.2	23.4	6.6	18.2	15.3		
156	431908	384518	13.2	18.5	17.7	12.9	13.5	9.9		8.5	12.3	14.2	19.7	12.3	13.9	11.7		
157	431538	383992	11.3	12.1	12.6	8.5		6.0	7.6	6.0	6.7	11.7	10.7	5.3	9.0	7.5		
158	432055	384648	12.7	10.6	11.4	7.8	8.5	6.5	7.3	6.5	6.2	14.6	11.4	7.7	9.3	7.8		
159	434821	385142	33.9	37.0	32.1	21.4	24.4	23.1	24.8	23.8	31.8	27.0	32.8	15.5	27.3	22.9		
160	434522	384654	40.0	46.8	39.2	37.2	32.9	31.8	34.6	34.3	38.0	40.1		29.2	36.7	30.9		
161	434797	383255	36.9	30.7	31.0	28.7	22.9		24.2	23.7	31.7	26.2	34.8		29.1	24.4		
162	434814	383252	34.5	37.2		28.2	29.5	26.6	28.7	28.0	33.7	30.9	41.9		31.9	26.8		
163	435810	386918	51.8	53.6	50.0	55.6	59.1	51.0	40.6	45.2	58.7	49.0		48.5	51.2	**43.0**		
164	435841	386872	50.9	44.6	47.3	47.7	50.1	41.5	37.8	39.1	56.6	36.9	43.5	26.2	43.5	36.6		
165	435849	387031	58.1	58.5	58.8	57.9	51.8	54.2	57.5	54.8	53.2	52.2	57.9	52.9	55.7	**46.7**		
166	435867	386955	62.3	60.6	54.4	61.7	66.8	69.3	62.4	59.2	62.8	46.9	59.2	42.2	59.0	**49.5**		
167	435873	387004	62.6	66.5	72.6	63.0	70.0	72.4	65.8	68.3	73.3	60.0	66.9	63.8	67.1	**56.4**		
168	435871	386905	69.7	66.3	63.4	74.7	63.7	69.1	48.8	65.8	74.8	54.3	55.6	60.9	63.9	**53.7**		
169	435880	386888	58.7	46.3	50.1	57.8	60.5	54.0	50.9	41.9	65.2	38.8	41.0	52.6	51.5	**43.2**		
170	435883	386956	65.7	60.9	63.1	65.3	66.8	63.4	61.4	59.4	60.1	45.3	55.7	55.0	60.2	**50.5**		
172	435916	386973	56.3	72.4	58.7	60.3	54.5	58.1	50.6	57.3	52.5	50.8	55.8	54.0	56.8	**47.7**		
174	435919	386934	60.8	37.4	52.8	63.9	61.3	63.7	57.0	56.8	56.2	50.2	54.0	58.3	56.0	**47.1**		
175	435812	387005	63.5	67.9	59.9	61.9	62.9	48.5	56.2	46.2	75.3			50.0	59.2	**49.8**		
176	435818	386889	49.6	53.7	57.8	58.6	55.2	53.0	54.6	47.9	65.9	52.3	55.7	56.1	55.0	**46.2**		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
178	435797	389600	49.9	49.8	48.2	44.8	44.4	38.1	16.9	39.1	42.9	45.2	47.3	35.5	41.8	35.1		
180	436595	390242	47.7	52.7	45.8	40.7	38.7	37.5	39.0	40.0	44.9	43.5		23.6	41.3	34.7		
181	435537	389218	51.3	48.5	47.1	40.8	42.2	33.9	40.5	37.1	50.4	44.9	54.4	39.2	44.2	37.1		
182	435450	388650			14.0		15.8	10.7	9.7	11.1	17.9	19.1	18.1	17.0	14.8	12.5		
183	436499	390182	58.9	64.9	74.0	59.7	69.8	55.1	52.2			61.3	62.9	40.9	60.0	**50.4**		
184	434741	384237	23.3	20.2	16.6	15.1	11.9	12.4	9.8	19.1	19.1	17.6	23.2		17.1	14.4		
185	434989	384691	47.6	41.2	35.2	36.7	38.5	30.9	30.5	38.4	52.3	39.5	42.4	38.9	39.3	33.0		
186	435489	385101	42.2	45.7	34.2	32.3	29.3		26.4		39.5	19.4		32.4	33.5	28.1		
187	433350	389387	29.6	36.3	32.8	28.6	31.1	20.7	22.2	22.2	34.0			35.8	29.3	24.6		
188	433147	388796	42.3	46.1	40.3	32.9	31.0	33.2				21.9		35.5	35.4	28.7		
189	432768	389097	29.2	23.6	27.1	20.2	21.6	22.8	24.4	18.7	20.9	22.8	23.9	27.2	23.5	19.8		
190	432271	388570	27.6	26.7		9.8	26.0	25.3	26.2	23.3		17.5	22.2	22.6	22.7	19.1		
191	433238	388666	22.3	27.9	23.8	20.1	17.7	15.4	17.3	15.6	14.4		14.9	15.4	18.6	15.6		
192	433266	385705	21.8	22.8	15.3	15.3	15.6	11.9			16.5	16.3	20.5	19.1	17.5	14.7		
193	433251	385695	25.1	22.3	19.3	19.3	17.9	17.7			19.3	22.0	14.6	25.7	20.3	17.1		
194	433267	385684	19.9	23.0	15.3	15.3	15.4	13.8			18.0	16.1	19.3	20.2	17.6	14.8		
199	434173	387484			27.1	31.8	28.7	24.5	26.3	24.1	35.6	34.8	24.0	25.8	28.3	23.7		
200	433750	387724	25.1	48.7	35.1	32.8	31.7	27.2	28.0	23.4	36.3	42.4	33.1	25.6	32.5	27.3		
201	433486	387994			21.0		17.1	13.0	14.3		22.6	24.5	25.7	21.0	19.9	17.0		
202	433236	388668		19.5		22.5						46.8	18.1	24.0	26.2	19.0		
203	432822	387795	18.2	29.9	15.2	20.4	18.9	15.3	16.7	16.8	24.7	24.9	14.5		19.6	16.5		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
206	435334	389097	41.6	46.0	46.7	39.9		43.6	42.8	41.2	47.9		31.8	38.0	42.0	35.2		
208	434720	390560	19.6	15.8	15.9	10.5	14.2	11.7	12.3	11.1	18.6	14.3	11.3	8.9	13.7	11.5		
209	435304	389577	25.7	20.1		22.5	27.1	17.7	20.4	12.9	30.8	27.8	28.4		23.3	19.6		
210	435018	387999	31.2	20.9	24.8	25.1	19.2	19.5	21.4	15.7	24.7	28.8	33.5	27.0	24.3	20.4		
212	436146	387608	46.6	36.4	39.8	34.0	33.7	30.0	31.2	32.5	45.0	39.7	19.4	35.6	35.3	29.7		
213	435578	386555	40.2		27.8	30.7	32.3	26.7	27.4	24.2	36.4	33.7	42.7	29.0	31.9	26.8		
214	435023	386344	47.7	40.4	37.2	38.8	43.7	30.1	33.0		52.9	35.6	27.7	36.4	38.5	32.3		
215	435763	386944	63.8	69.2	51.0	50.9	52.4	45.1		39.4	63.7			54.8	54.5	**45.8**		
216	440913	386218	29.1	30.9	31.2	28.4	27.5	24.3	24.0	22.7	30.2	33.1	36.9	24.3	28.6	24.0		
217	443572	381395	39.5	36.7	32.2	29.4	31.5	27.6	29.6	26.3	35.5	31.0	39.7	31.3	32.5	27.3		
218	435650	389350	41.4	44.6	39.9	34.4	35.7	27.9	32.6	26.8	40.8	37.6	28.3	22.6	34.4	28.9		
219	435770	386979	52.6	57.0	48.6	41.5	37.7	40.3	37.9	39.3	52.8	47.1	35.8	43.6	44.5	37.4		
220	431740	385914	19.2	21.2	19.8	16.9	17.8	16.0	15.1	14.9	18.1	19.0	24.0	19.2	18.4	16.6		
221	435967	386210		38.6	32.9	33.9	37.1	35.9	36.3	35.3	36.4	31.2	33.0	32.5	34.8	31.4		
222	434676	386171	26.9	27.5	23.7	17.9	21.0	16.4	19.8	15.9	24.8	20.6	22.6	23.3	21.7	18.2		
223	435233	385961	32.2	34.4	31.8	24.5	27.7	20.4	28.0	21.0	30.8	29.7	12.7	29.1	26.9	22.6		
224	436092	388590	36.6	51.2	50.1	41.3	47.2	47.2	48.2	37.6	51.3	33.1		41.7	44.1	37.1	29.6	
225	433473	387456		20.5	20.3		15.4	11.3	12.2	11.2	16.4	18.3	22.4	18.0	16.6	14.9		
226	435755	386938	52.1	58.2	56.2										55.5	37.2		
227	435770	386979	47.9	52.8	45.9										48.9	32.7		
228	435881	387162		60.7	49.0	49.8	43.0		46.2	45.3	54.3	39.4	61.6	34.2	48.4	**40.6**		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
229	435898	387153		69.1	67.3	66.2	54.6	54.1	62.8	60.5		68.1	61.7	40.7	60.5	**50.8**		
230	435805	386906	43.4	42.6		27.1	37.3	29.3	36.2	32.3	32.4	39.1	46.9	38.4	36.8	30.9		
231	436276	389927	43.2	44.8	40.0	34.1	36.6	30.0	33.5	31.3	40.0	26.0	30.4	33.7	35.3	29.7		
232	435238	385397		34.1	31.6	21.3	24.1	21.1	24.3	24.0	25.9	30.8	35.7	23.5	27.0	24.3		
233	435238	385397		32.6	28.8	21.8	24.4	21.1	24.4	23.9	28.1	30.9	32.1		26.8	24.1		
234	435238	385397		33.7	25.9	22.3	23.0	20.8	23.6	22.3	27.5	30.7	34.4	23.1	26.1	23.5		
236	436276	389927	39.3	42.6	40.3	32.2	34.0	29.3	28.7	28.7	30.8	34.6	39.1		34.5	31.1		
237	436276	389927	42.2	43.0	40.2	35.5	34.5	29.3	31.1	24.6	31.9	34.2	37.9	29.0	34.4	31.0		
238	436276	389927	41.9	42.5	36.7	31.0	33.4	28.1	30.4	26.1	32.2	35.0	36.3	36.1	34.1	30.7		
239	440084	390760		30.4	25.7	19.1	19.6		22.4	22.2	21.4	26.0	33.3	25.8	24.6	22.1		
240	440084	390760		28.6	25.5	21.5	19.9		22.0	24.0	23.0	26.1	33.0	24.9	24.9	22.4		
241	440084	390760		28.0	26.3	21.4	20.8		21.4	22.2	17.2	24.9	29.6	22.5	23.4	21.1		
242	434803	386947	21.1	18.5	21.0	14.0	16.5	12.8	13.3	12.6	17.6	20.4	21.1	17.7	17.2	15.5		
243	434803	386947	22.6	19.5	20.1	15.2	15.9	12.8	14.1	11.2	15.7	20.4	21.3	14.9	17.0	15.3		
244	434803	386947	18.7	22.9	21.1	14.3	14.6	11.8	12.8	13.1		19.8	25.0	17.3	17.4	15.7		
245	433646	386577	27.6	29.7	25.6	21.0	26.7	22.0	22.8	19.6	31.7		22.2		24.9	20.9		
246	433588	386528	29.5	33.4	29.6	45.1	28.9	24.2	21.7	20.1	33.4			25.9	29.2	24.5		
247	433603	386625	21.5	28.5	28.4	21.6	25.4	20.7	19.1	17.6	28.2	22.6	23.7	24.1	23.5	19.7		
248	437213	387656	32.9	31.8	27.3	21.6	19.5	16.1	18.9	21.2	22.7	26.4	28.7	28.2	24.6	20.7		
249	435772	389421	20.2		25.0	12.0	12.9	11.5	14.0	13.8	6.6		23.1	15.9	15.5	13.0		
250	435861	387066				60.4	44.4	46.6	51.2	51.3	47.8		42.2	54.1	49.8	**47.4**		

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 (0.84 or 0.9)	Annual mean: distance corrected to nearest exposure	Comment
251	435849	387067				42.4	42.4	42.3	40.0	43.3	46.4	48.6	47.8	46.6	44.4	37.3		
252	432629	382249								39.2	39.2	45.1	37.4	32.8	38.7	31.7		
253	432775	382231								32.1	32.1	36.4	39.2	34.2	34.8	28.5		
254	436066	388285	31.8	36.2	29.9	23.2	28.8	22.7	26.3	22.4	35.9	71.3	38.9	27.6	32.9	27.7		

☒ **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.**

☐ **<Local Authority> 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 Sheffield City Council during 2024

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

Additional Air Quality works undertaken by Sheffield City Council during 2024

Sheffield City Council has not completed any additional works within the reporting year of 2024.

QA/QC of diffusion tube monitoring

Supply was undertaken by both Socotec and Gradko during 2024. The preparation method for all the tubes was 50% TEA in acetone. The tubes were exposed using the 2024 Diffusion Tube Monitoring Calendar.

Latest results for Socotec and Gradko in the AIR NO2 PT, rounds AR062, AR063, AR065 and AR066 show performance as averaging 100% of results as satisfactory for the period January to October 2024.

Adjustments to the raw results for annualisation and distance, where necessary, were undertaken in the DTDPT spreadsheet and the results of these calculations can be seen in the tables above. As the DTDPT only caters for a single tube supplier the bias calculations were conducted prior to the values being uploaded to the spreadsheet. The calculations are included below.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. Annualisation was required at 12 non-automatic monitoring sites and this was undertaken in the Diffusion Tube Data Processing Tool; the results are provided in Table C.1.

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

Site ID	Annualisation factor Sheffield Barnsley Road	Annualisation factor Barnsley Gawber	Annualisation factor Sheffield Tinsley	Average annualisation factor	Raw data annual mean	Annualised annual mean
68	1.0342	1.0611	1.1018	1.0657	20.6	21.9
132	1.0380	0.9415	0.9405	0.9733	23.8	23.2
136	1.0202	0.9700	0.9513	0.9805	6.6	6.5
138	1.0380	0.9415	0.9405	0.9733	25.9	25.2
188	0.9494	0.9781	0.9713	0.9662	29.7	28.7
201	1.0279	0.9936	1.0250	1.0155	16.7	17.0
202	0.9186	0.8349	0.8394	0.8643	22.0	19.0
226	0.8015	0.7909	0.8008	0.7977	46.6	37.2
227	0.8015	0.7909	0.8008	0.7977	41.0	32.7
250	1.1227	1.1528	1.1288	1.1348	41.8	47.4
252	1.0380	0.9415	0.9405	0.9733	32.5	31.7
253	1.0380	0.9415	0.9405	0.9733	29.2	28.5

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 (0.84 on SOCOTEC tubes and 0.90 on Gradko tubes (**all Gradko tubes have the word 'Gradko' in their site name**)) 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.

Sheffield City Council have applied a local bias adjustment factor of 0.84 on SOCOTEC tubes and 0.90 on Gradko tubes to the 2024 monitoring data. A summary of bias adjustment factors used by Sheffield City Council over the past five years is presented in Table C.2.

Table C.2 – Bias adjustment factor

Monitoring year	Local or national	Adjustment factor
2024	Local	0.84 (SOCOTEC Tubes) 0.90 (Gradko Tubes)
2023	Local	0.79 (SOCOTEC Tubes) 0.86 (Gradko Tubes)
2022	Local	0.99 (SYAQS Tubes) 0.89 (Gradko Tubes) 0.88 (SOCOTEC Tubes)
2021	Local	0.93 (SYAQS Tubes)
2020	Local	0.93 (SYAQS Tubes)

Table C.3 – Local bias adjustment calculation

	Local bias adjustment input 1 Barnsley Rd Gradko	Local bias adjustment Input 2 Barnsley Rd SOCOTEC	Local bias adjustment input 3 Tinsley SOCOTEC
Periods used to calculate bias	12	12	12
Bias factor A	0.9 (0.86 – 0.94)	0.85 (0.78 – 0.92)	0.83 (0.75 – 0.92)
Bias factor B	11% (6% - 16%)	18% (8% - 28%)	21% (9% - 33%)
Diffusion tube mean (µg/m^3)	34.0	36.0	21.0
Mean CV (precision)	5%	7%	7%
Automatic mean (µg/m^3)	31.0	31.0	18.0
Data capture	97%	97%	99%
Adjusted tube mean (µg/m^3)	31 (29 – 32)	31 (28 – 34)	18 (16 – 20)

Notes:

A single local bias adjustment factor (0.90) has been used to bias adjust the 2024 Gradko diffusion tube results. **NOTE:- All Gradko tubes have the word 'Gradko' in their site name.**

A combined local bias adjustment factor of 0.84 has been used to bias adjust the 2024 SOCOTEC diffusion tube results.

As previously recommended by the LAQM helpdesk the data has been adjusted using the above Bias Adjustment Factors before entering into the DTDPT and then a single bias

adjustment factor of 1 has been used in the spreadsheet: the monthly data contained in this report is unadjusted.

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 $\mu g/m^3$)

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
18	1.5		45.2	19.9	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
19	1.0	5.0	59.9	16.7	**45.9**	*Predicted concentration at Receptor above AQS objective.*
23	4.0		36.3	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
24	3.0	8.0	36.7	13.29973	30.8	
33	1.0		54.2	16.74525	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
34	0.8		39.4	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
42	2.0		44.3	12.4	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
73	0.7	2.7	42.0	12.2	34.5	

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
75	1.5		39.6	12.9	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
91	1.6	3.6	43.7	22.0	*39.8*	*Predicted concentration at Receptor within 10% the AQS objective.*
97	2.5	9.0	43.2	18.2	35.2	
120	1.0		36.0	16.2	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
121	2.0	4.0	37.0	16.5	33.7	

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
163	20.0		43.0	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
164	8.5		36.6	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
165	10.0		46.7	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
166	30.0		49.5	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
167	4.0		56.4	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
168	7.0		53.7	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
169	9.0		43.2	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
170	11.0		50.5	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
172	9.0		47.7	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
174	4.0		47.1	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
175	1.0		49.8	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
176	3.0		46.2	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
181	1.5		37.1	16.5	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
183	0.7		50.4	13.5	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
215	5.0		45.8	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
219	3.0		37.4	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
224	2.0	9.4	37.1	16.5	29.6	
226	4.0		37.2	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
228	3.0		40.6	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
229	2.5		50.8	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

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
250	14.5		47.4	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*
251	5.5		37.3	16.7	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road*

QA/QC of automatic monitoring

QA/QC is carried out in-house utilising the Council's Airviro modelling and data collection software. Calibrations are carried out monthly and ratification is carried out as results are uploaded. Service visits were carried out at 6 monthly intervals unless urgent attention was required, in which case a call out to the Service and Maintenance provider would be issued.

Live data is available for the Sheffield City Council monitoring stations at the AirViro website.

Data for the three DEFRA monitoring sites can be found on DEFRA's website.

PM_{10} and $PM_{2.5}$ monitoring adjustment

The type of monitors utilised within Sheffield City Council do not require the application of a correction factor for PM_{10}. The $PM_{2.5}$ data has had a correction factor applied as detailed in LAQM.TG22 Chapter 7.

Automatic monitoring annualisation

Annualisation was required at the DEFRA Devonshire Green UKA00575 site for NO_2 and SCC GH1, GH4 and GH6 sites for both PM10 and PM2.5 as data capture was below 75% for 2024.

Table C.5 – Automatic NO_2 annualisation summary (concentrations presented in $\mu g/m^3$

Background site	Annual data capture (%)	Annual mean (A_m)	UKA00575 Devonshire Green	
			Period mean (P_m)	Ratio (A_m / P_m)
UKA00622 Barnsley Rd	97	31.0	30.0	1.033
UKA00353 Barnsley Gawber	97	11.1	11.0	1.004
UKA00181 Tinsley	100	17.5	17.9	0.977
Average (R_a)			1.004	
Raw Data Annual Mean (M)			15.41	
Annualised Annual Mean (M x R_a)			15.49	

Table C.6 – Automatic PM_{10} annualisation summary (concentrations presented in µg/m³)

Background site	Annual data capture (%)	Annual mean (A_m)	GH1		GH4		GH6	
			Period mean (P_m)	Ratio (A_m / P_m)	Period mean (P_m)	Ratio (A_m / P_m)	Period mean (P_m)	Ratio (A_m / P_m)
UKA00575 Sheffield Devonshire Green	100	11.7	11.9	0.986	11.4	1.026	11.5	1.022
UKA00181 Tinsley	100	13.0	13.1	0.990	12.8	1.018	12.8	1.015
GH3	100	8.9	9.0	0.985	8.6	1.033	8.7	1.028
Average (R_a)			0.987		1.026		1.021	
Raw data annual mean (M)			14.5		13.4		12.1	
Annualised annual mean (M x R_a)			14.3		13.7		12.4	

Table C.7 – Automatic $PM_{2.5}$ annualisation summary (concentrations presented in µg/m³)

Background site	Annual data capture (%)	Annual mean (A_m)	GH1		GH4		GH6	
			Period mean (P_m)	Ratio (A_m / P_m)	Period mean (P_m)	Ratio (A_m / P_m)	Period mean (P_m)	Ratio (A_m / P_m)
UKA00575 Sheffield Devonshire Green	100	7.5	7.8	0.962	7.3	1.023	7.5	1.000
UKA00181 Tinsley	100	7.4	7.7	0.960	7.2	1.031	7.4	1.003
GH3	100	5.6	5.8	0.960	5.4	1.031	5.6	1.000
Average (R_a)			0.961		1.029		1.001	
Raw data annual mean (M)			9.2		8.4		7.9	
Annualised annual mean (M x R_a)			8.8		8.6		7.9	

NOTE – Annualised annual mean results have not been corrected for slope (Method 11).

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 Sheffield City Council required distance correction during 2022.

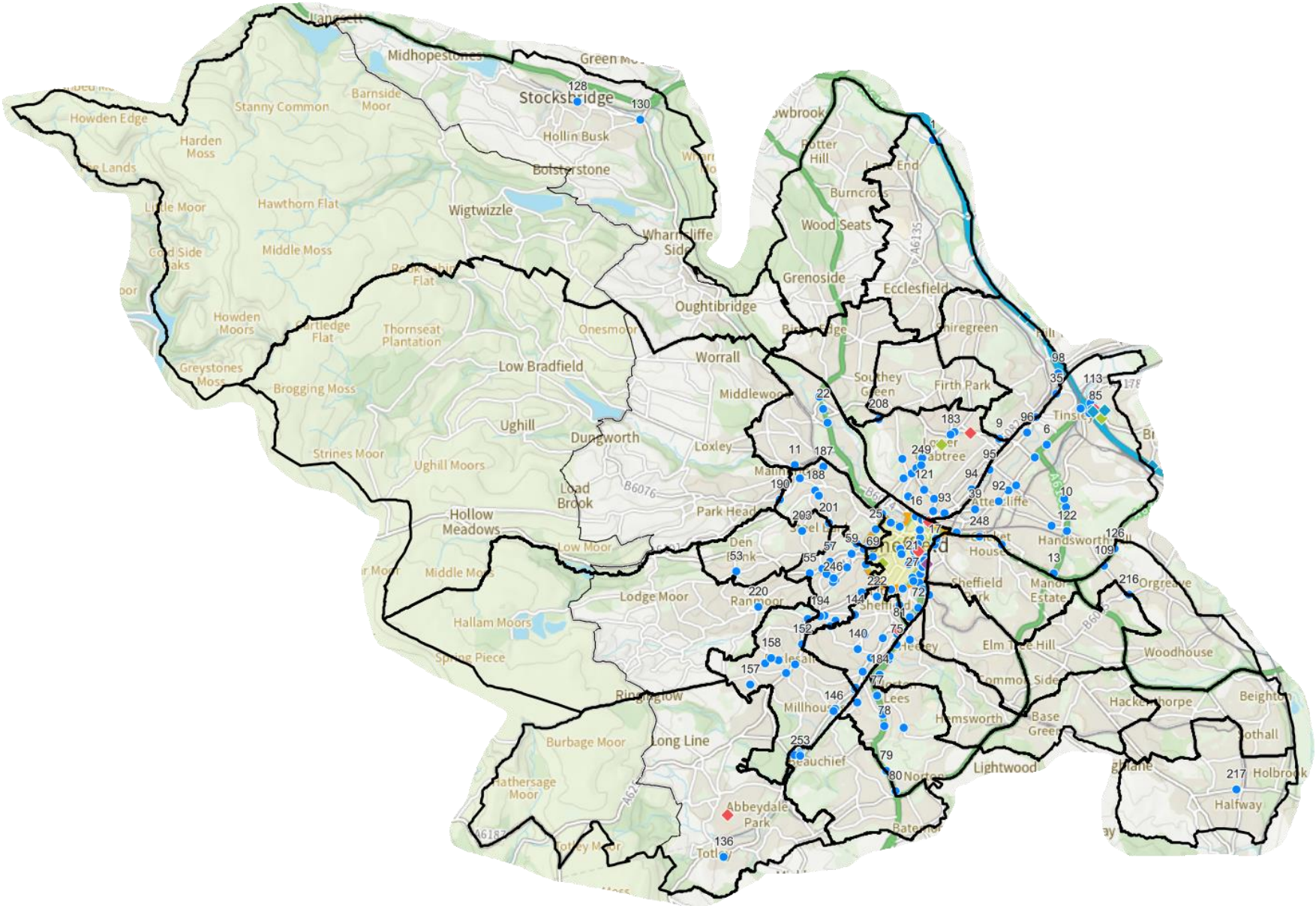
Appendix D: Map(s) of monitoring locations by ward, including graphed trends

The below figures show the locations of monitoring in the wards of Sheffield. The location details are also listed at table A.2. Average ward concentration trends have been calculated and displayed in graph format to illustrate current conditions in each ward locality.

Key to maps

Symbol	Symbol description	Symbol meaning
	Royal blue circle	Current diffusion tube monitoring location
	Red diamond	SCC owned and managed real time monitor
	Blue diamond	National highways owned and managed real time monitor
	Green diamond	DEFRA owned and managed real time monitor
	Purple diamond	East Midlands Railway owned and managed real time monitor
	Yellow shading over map	Area covered by Clean Air Zone

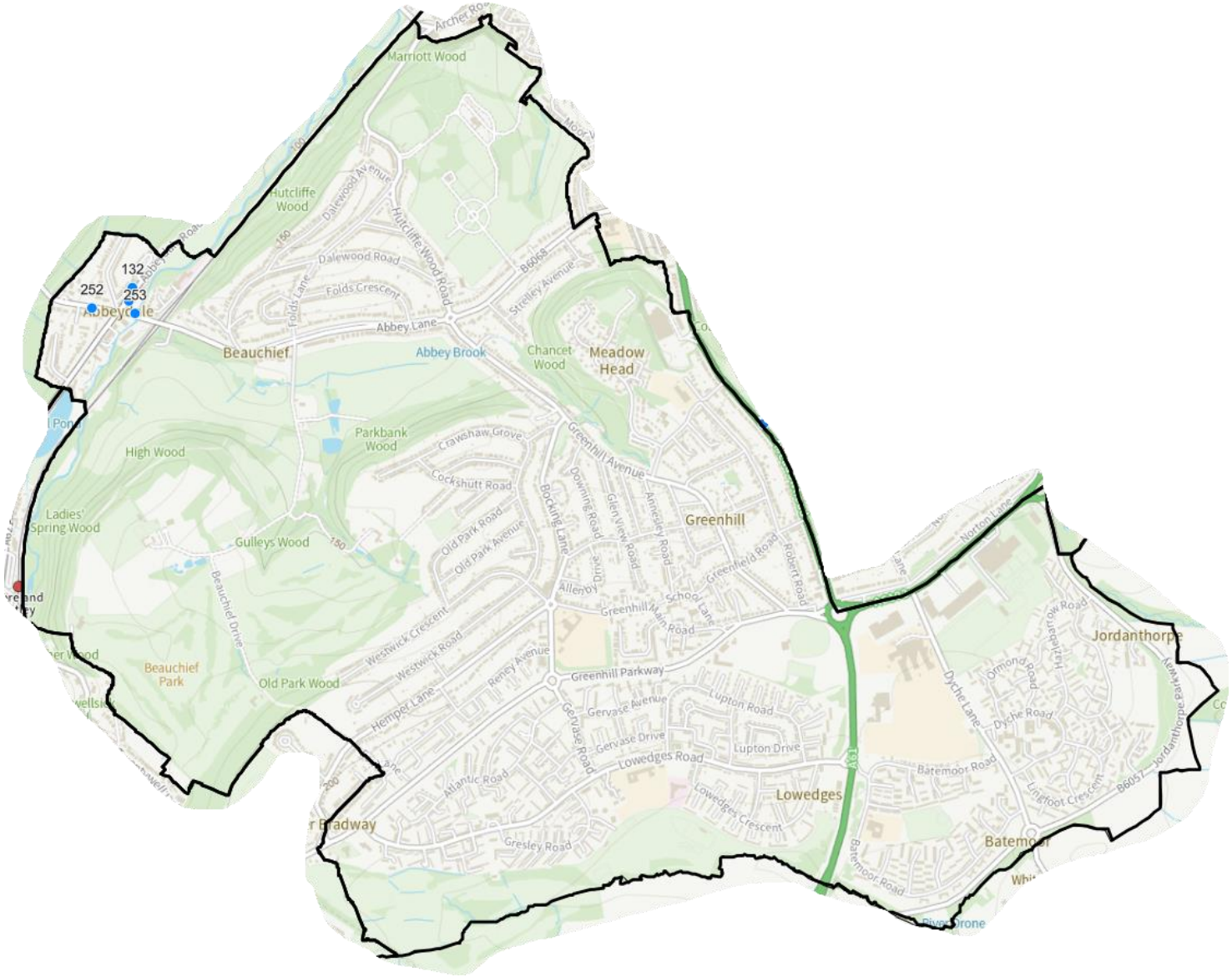
Figure D.1 – Overview map of districtwide monitoring



It must be noted that we do not currently monitor in the following wards (though historic data may exist and can be found on the website):

- Beighton ward
- Birley ward
- Firth Park ward
- Richmond ward
- Southey ward
- Stannington ward
- West Ecclesfield ward

Figure D.2 – Map of monitoring locations and trends in the Beauchief & Greenhill ward



Beauchief & Greenhill ward average of annual NO_2 concentrations ($\mu g/m^3$)

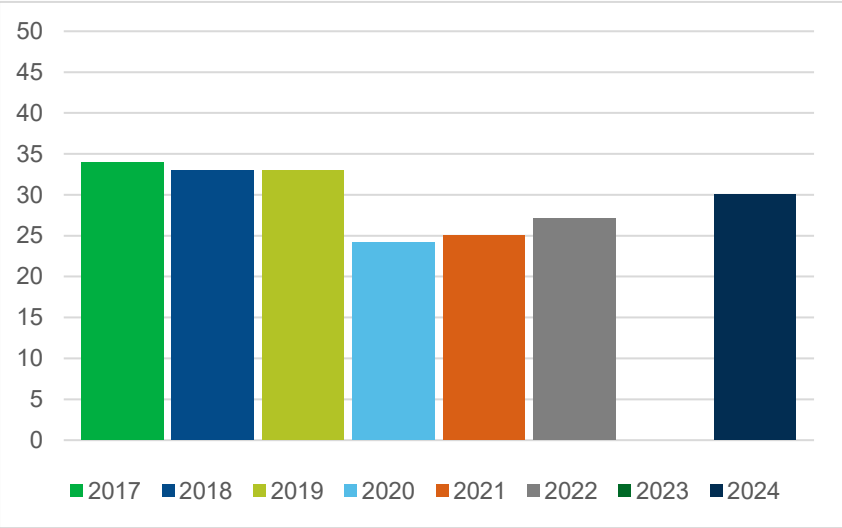
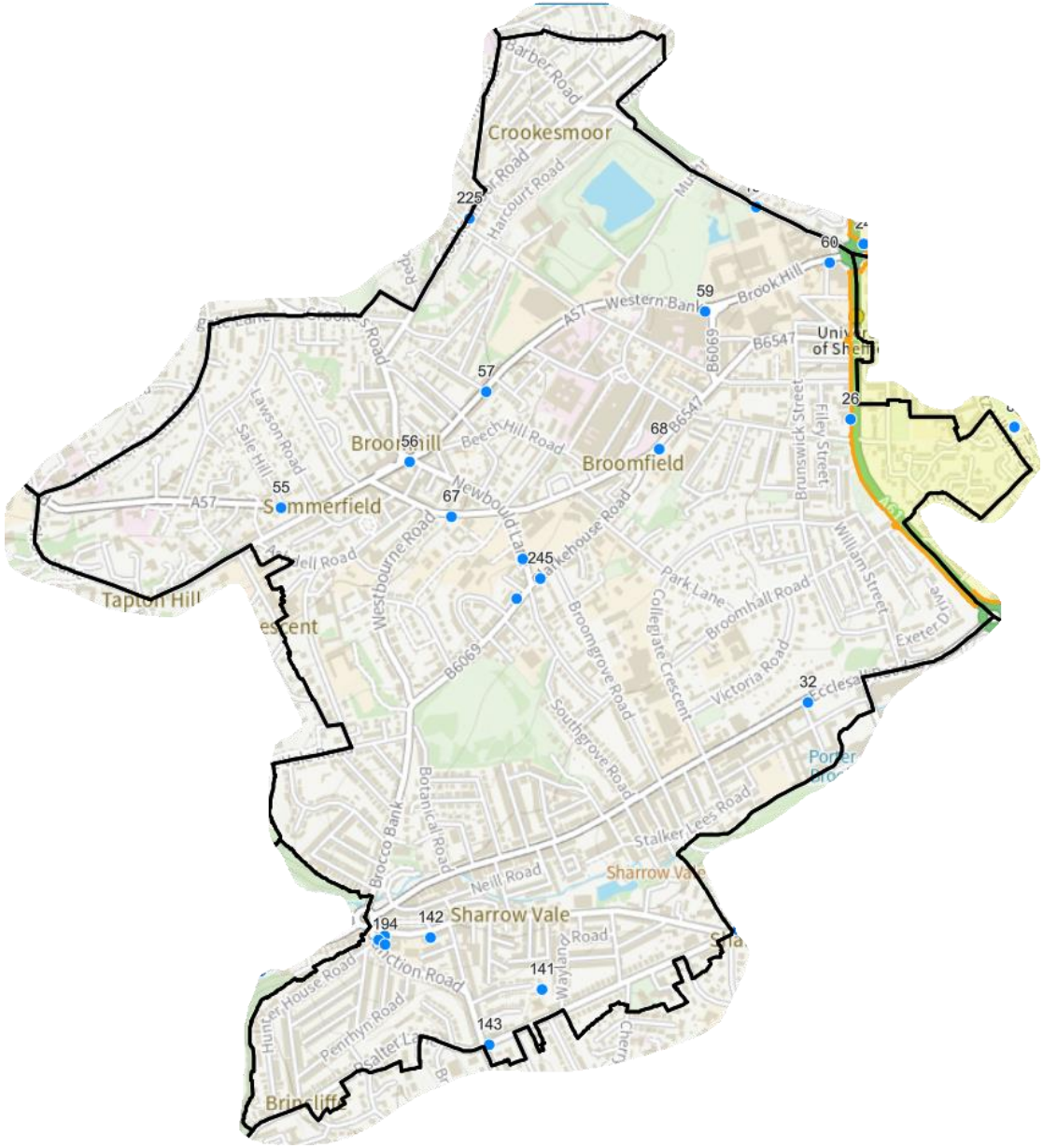


Figure D.3 – Map of monitoring locations and trends in the Broomhill & Sharrow Vale ward



Broomhill & Sharrow Vale ward average of annual NO_2 concentrations ($\mu g/m^3$)

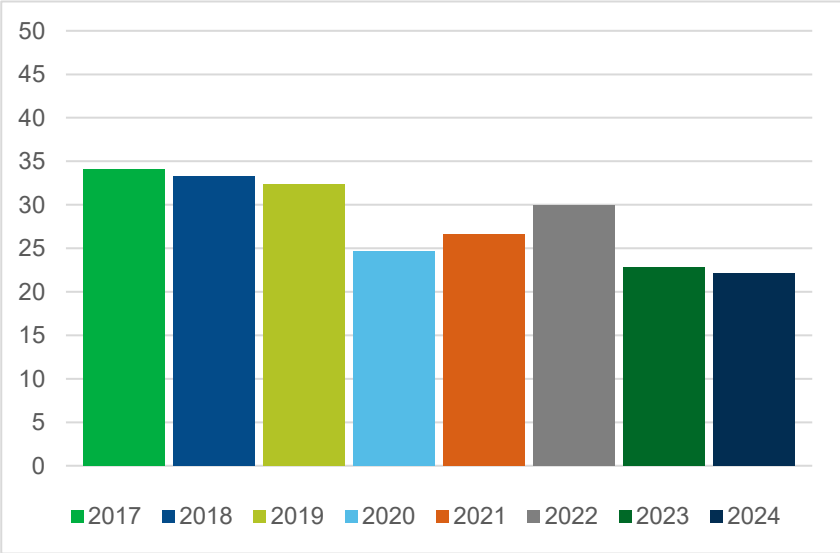
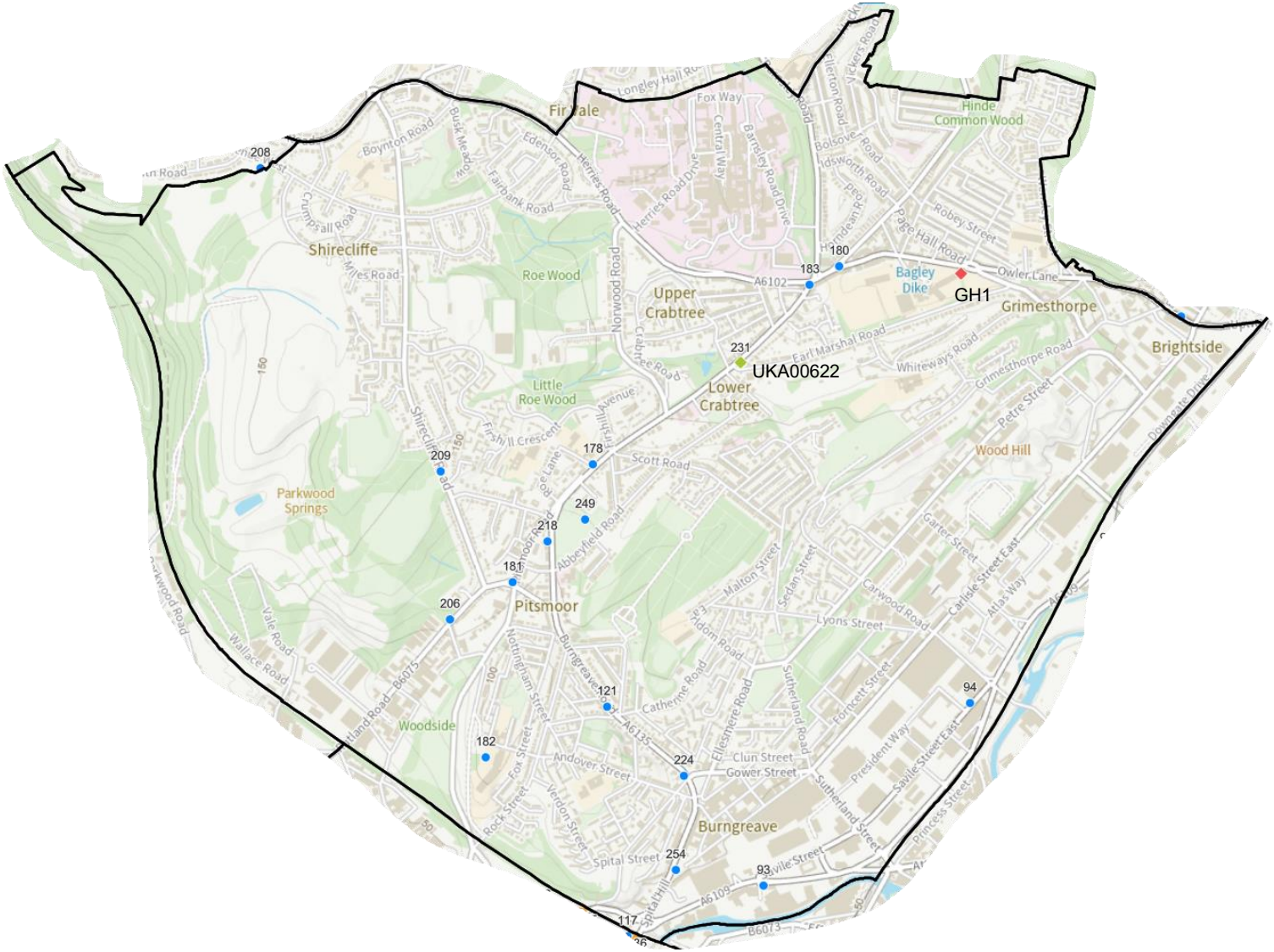
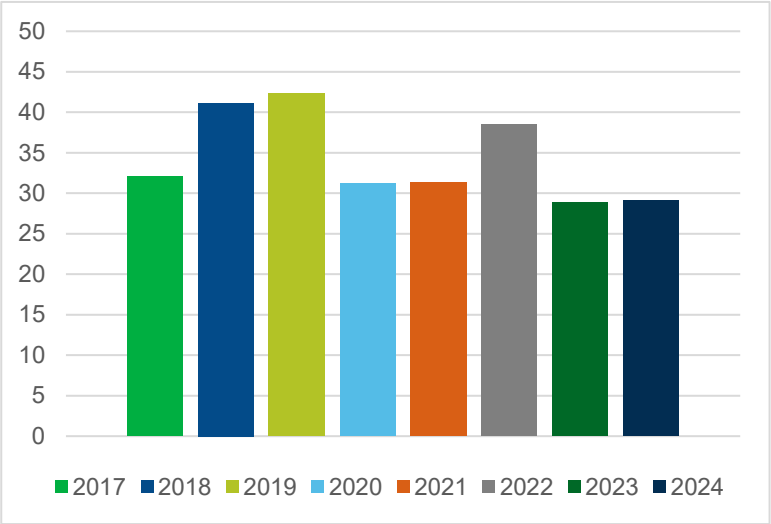


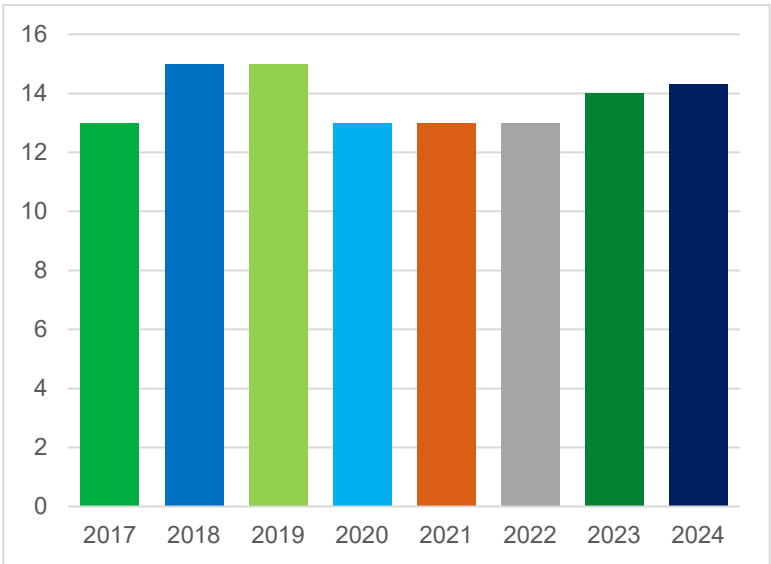
Figure D.4 – Map of monitoring locations and trends in the Burngreave ward



Burngreave ward average of annual NO_2 concentrations ($\mu g/m^3$)



Burngreave ward average of annual PM_{10} concentrations ($\mu g/m^3$)



Burngreave ward average of annual $PM_{2.5}$ concentrations ($\mu g/m^3$)

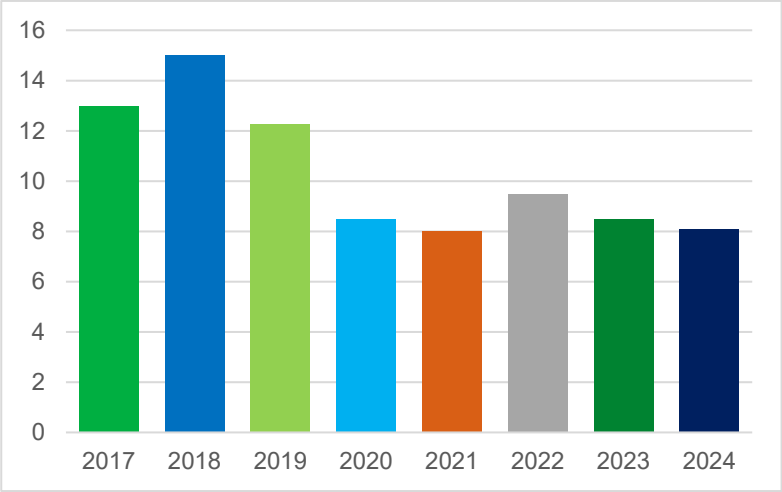
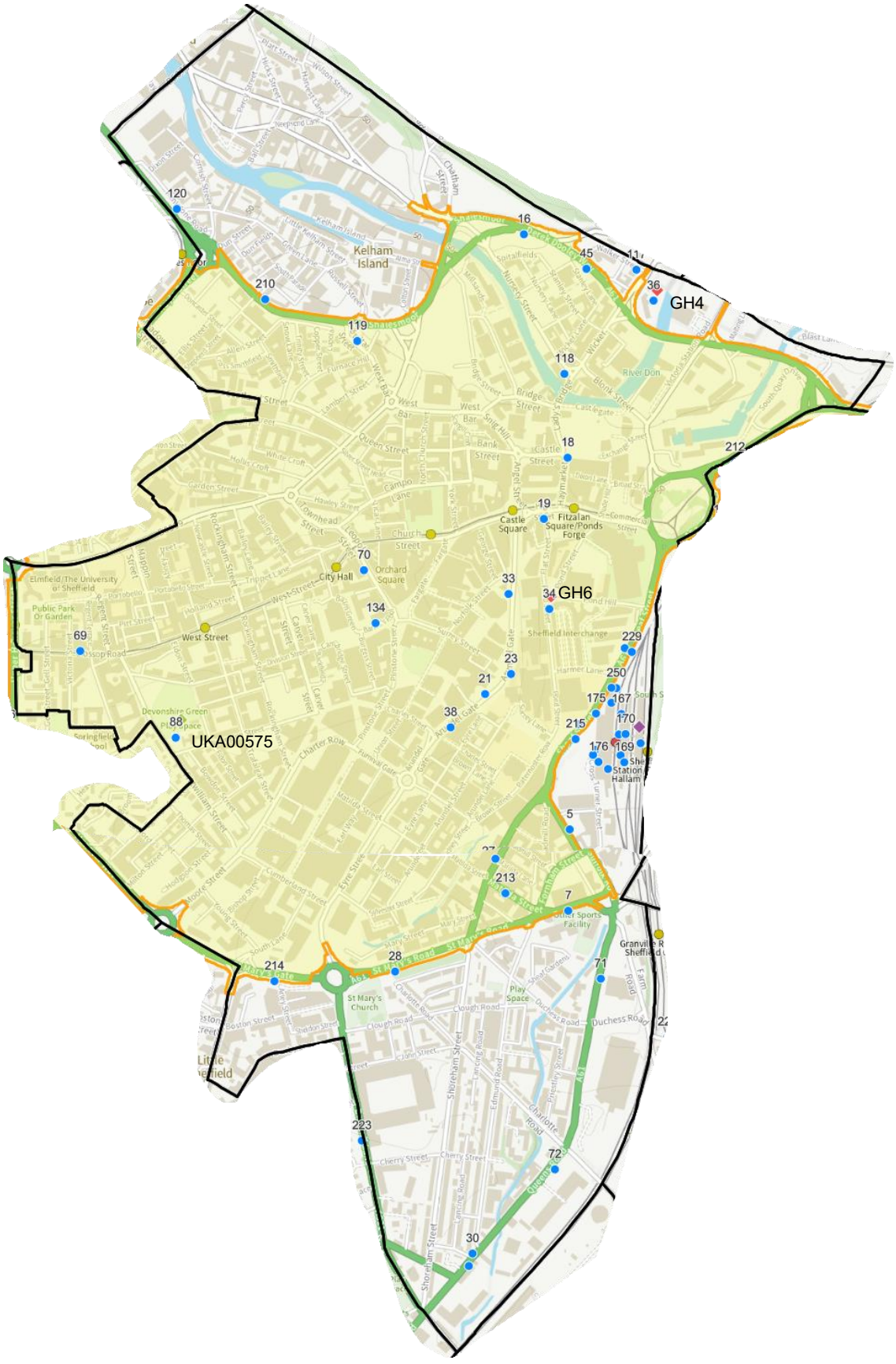
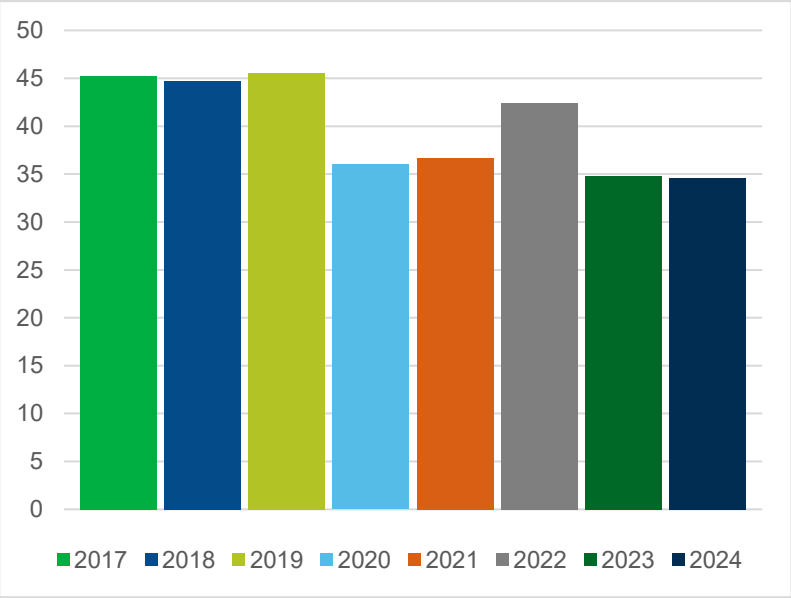


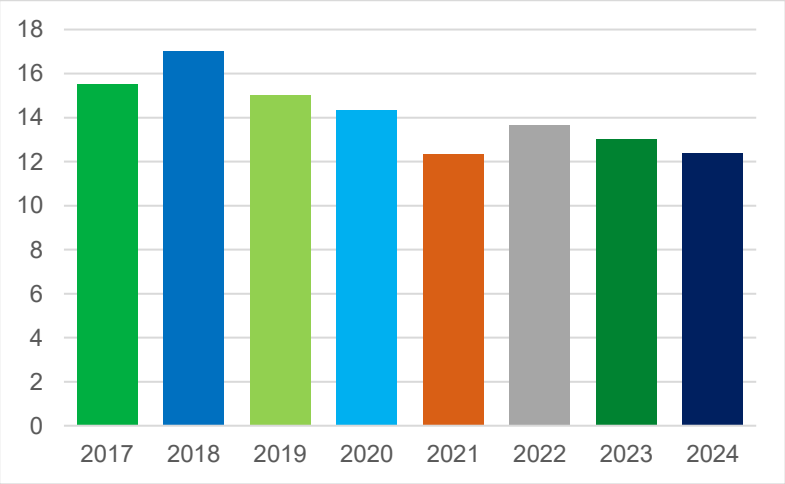
Figure D.5 – Map of monitoring locations and trends in the City ward



City ward average of annual NO_2 concentrations ($\mu g/m^3$)



City ward average of annual PM_{10} concentrations ($\mu g/m^3$)



City ward average of annual $PM_{2.5}$ concentrations ($\mu g/m^3$)

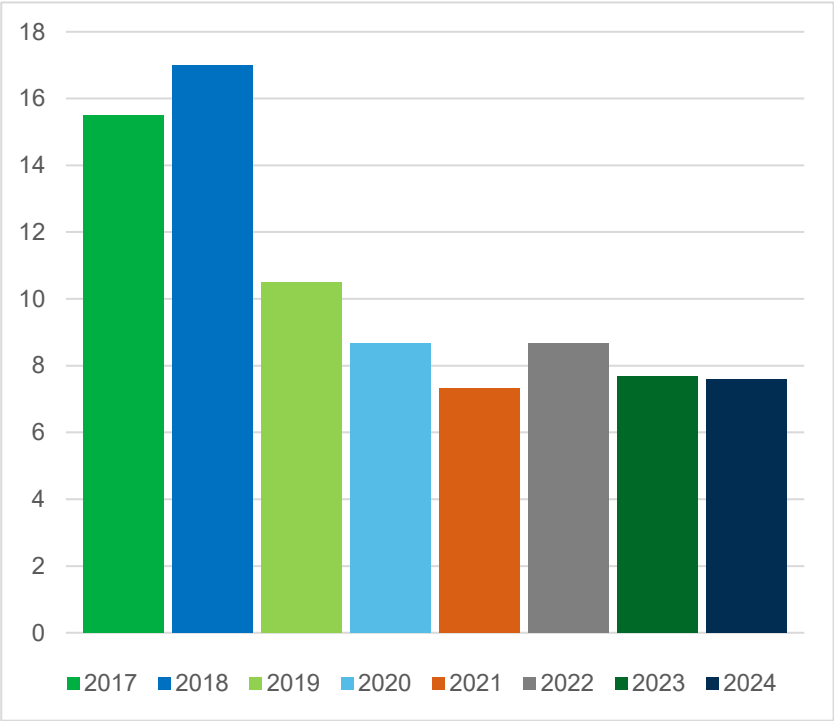
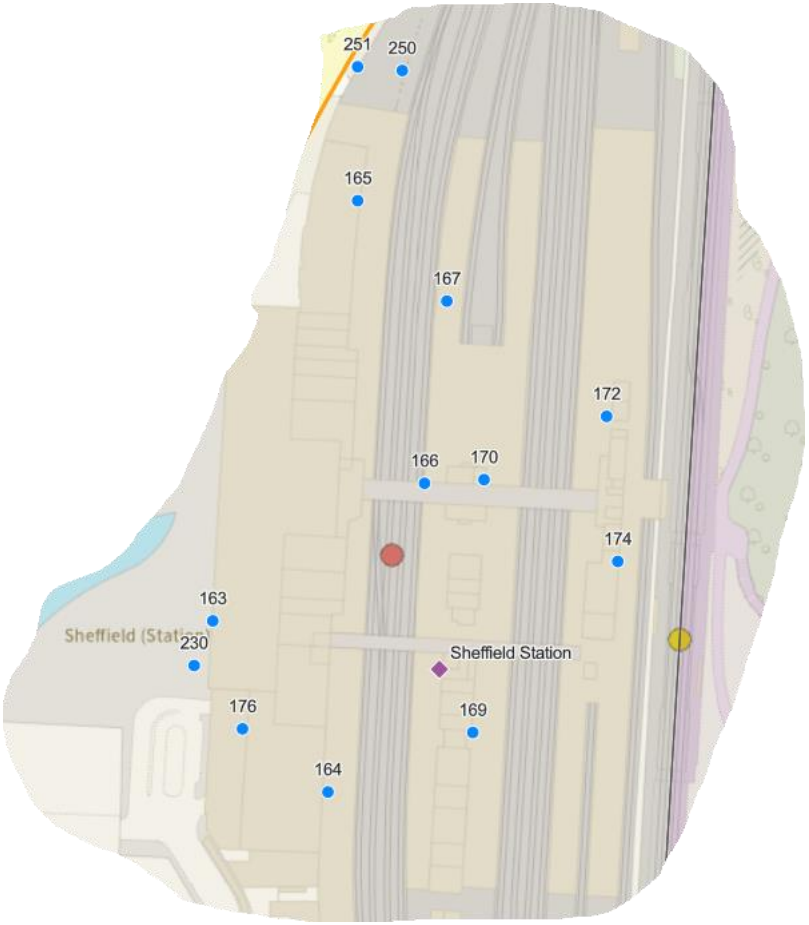


Figure D.6 – Map of monitoring locations and trends at the Sheffield train station



Sheffield train station average of annual NO_2 concentrations ($\mu g/m^3$)

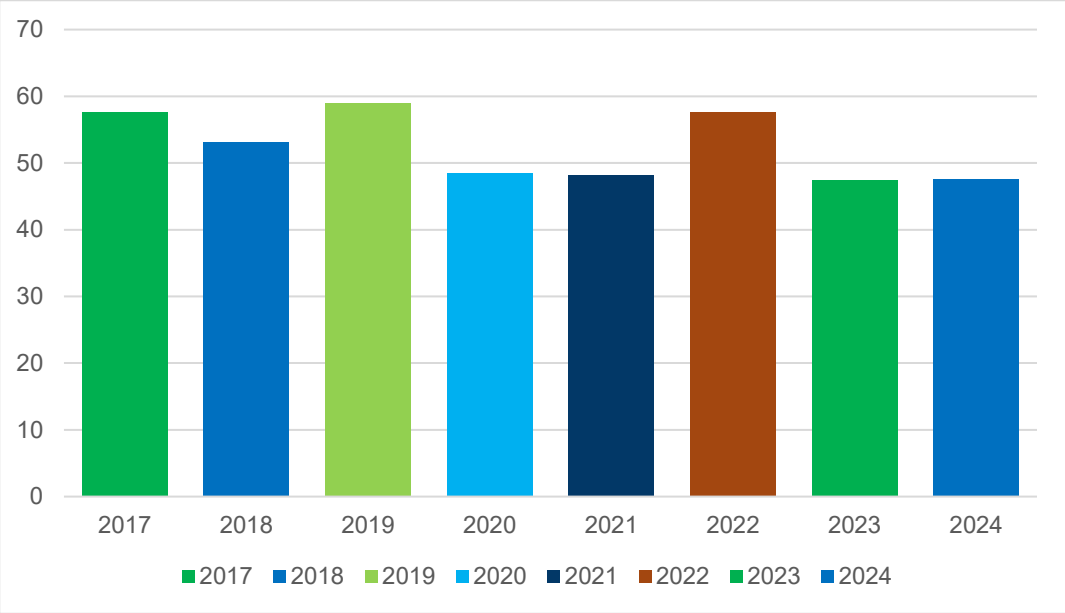
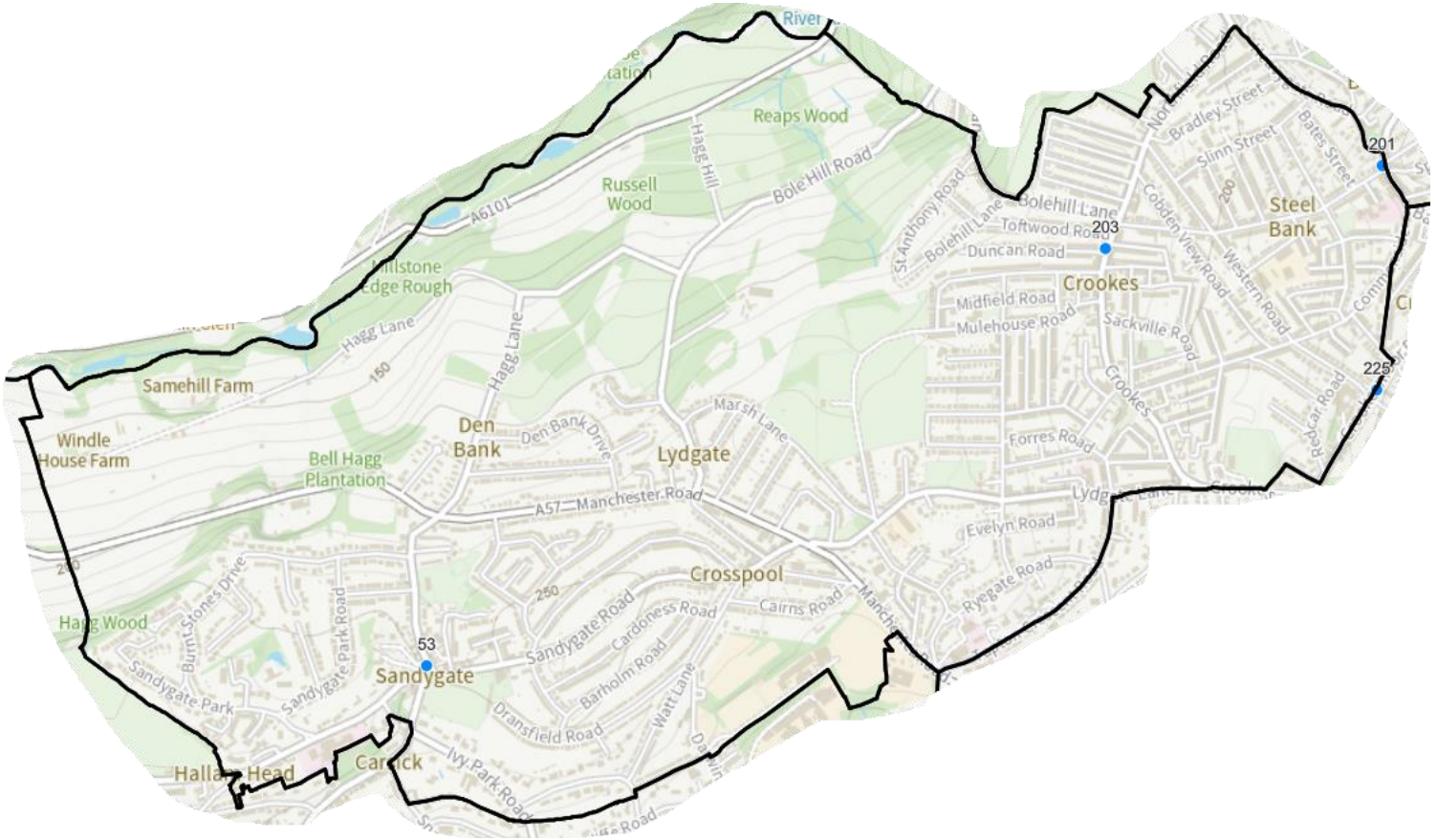


Figure D.7 – Map of monitoring locations and trends in the Crooke & Crosspool ward



Crookes & Crosspool ward average of annual NO_2 concentrations ($\mu g/m^3$)

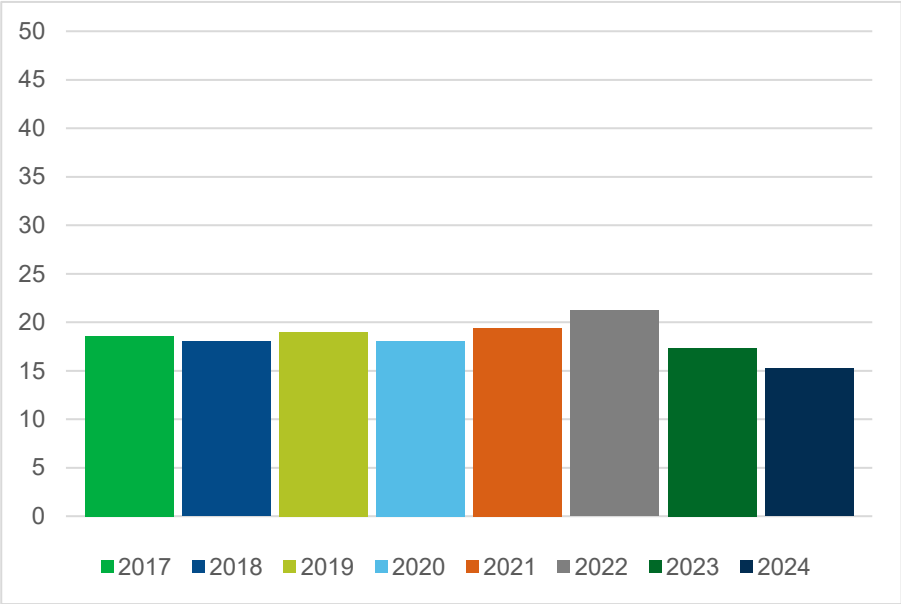
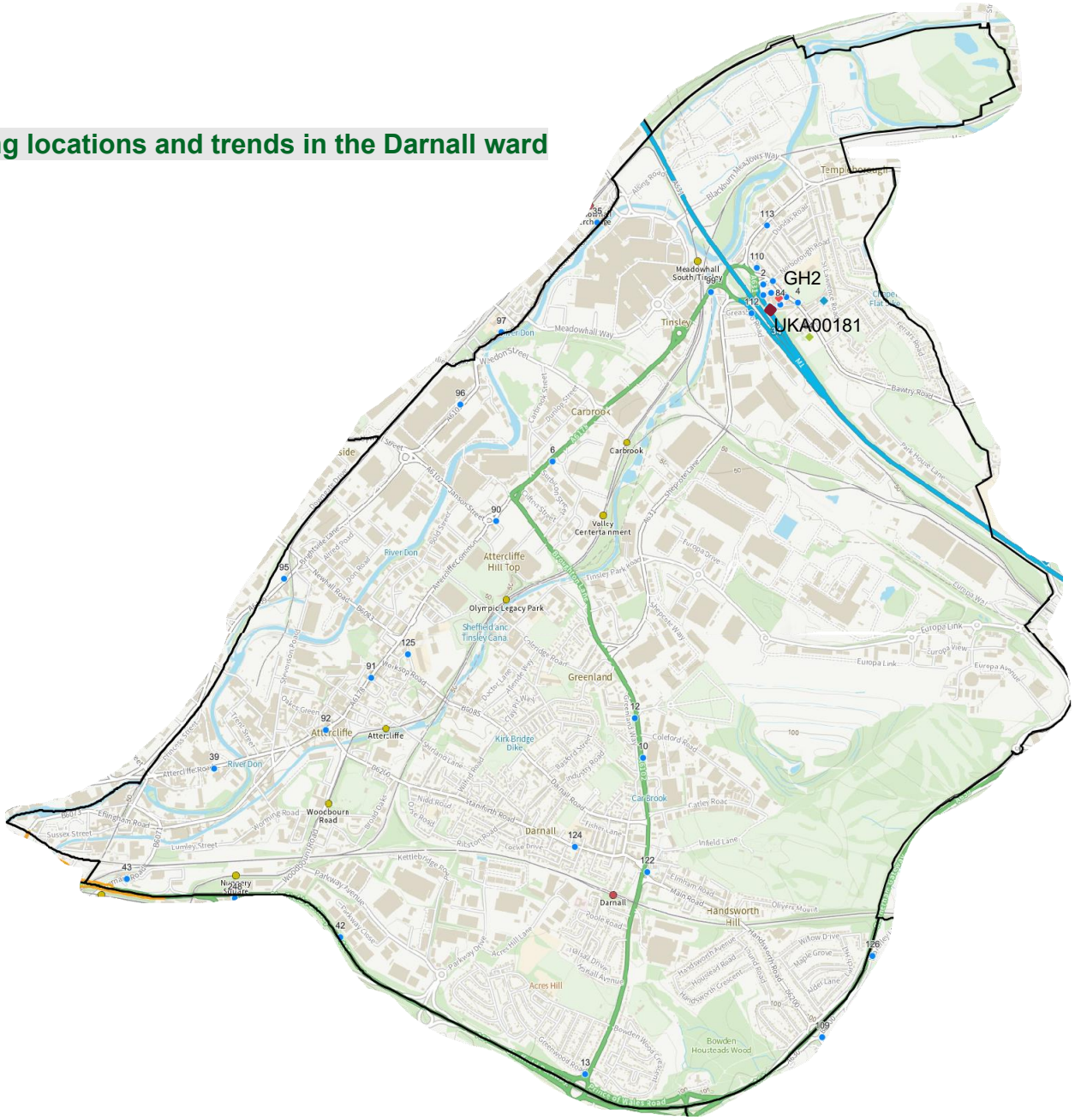
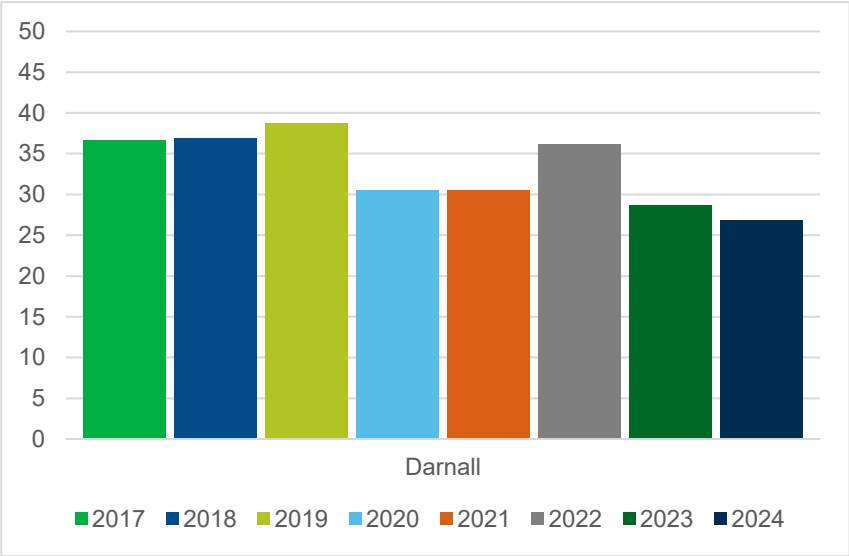


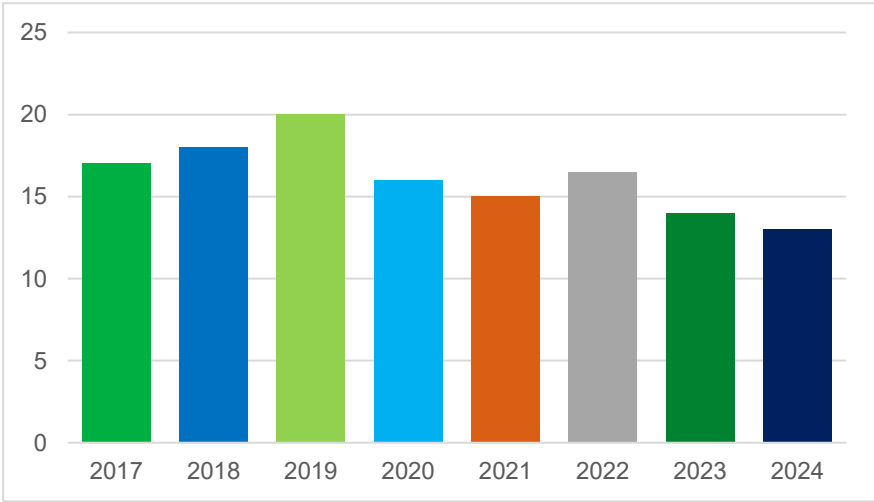
Figure D.8 – Map of monitoring locations and trends in the Darnall ward



Darnall ward average of annual NO_2 concentrations ($\mu g/m^3$)



Darnall ward average of annual PM_{10} concentrations ($\mu g/m^3$)



Darnall ward average of annual $PM_{2.5}$ concentrations ($\mu g/m^3$)

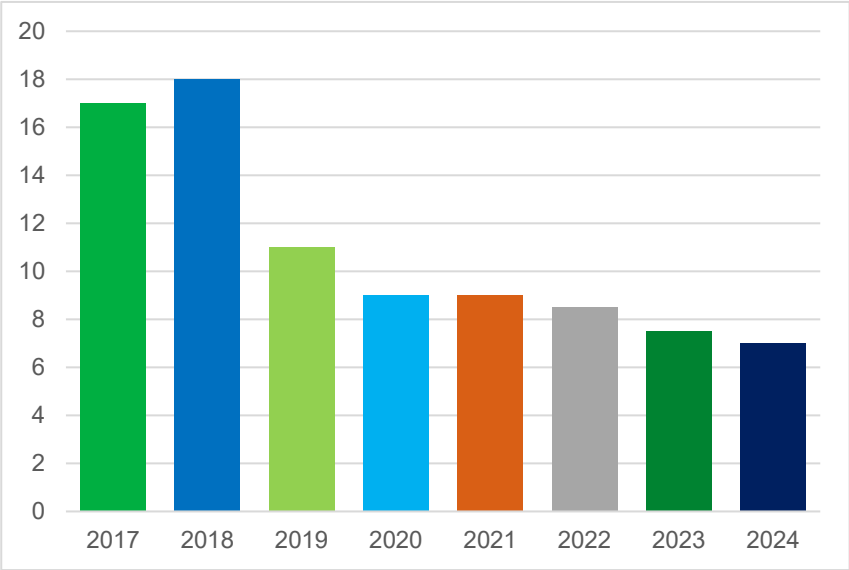
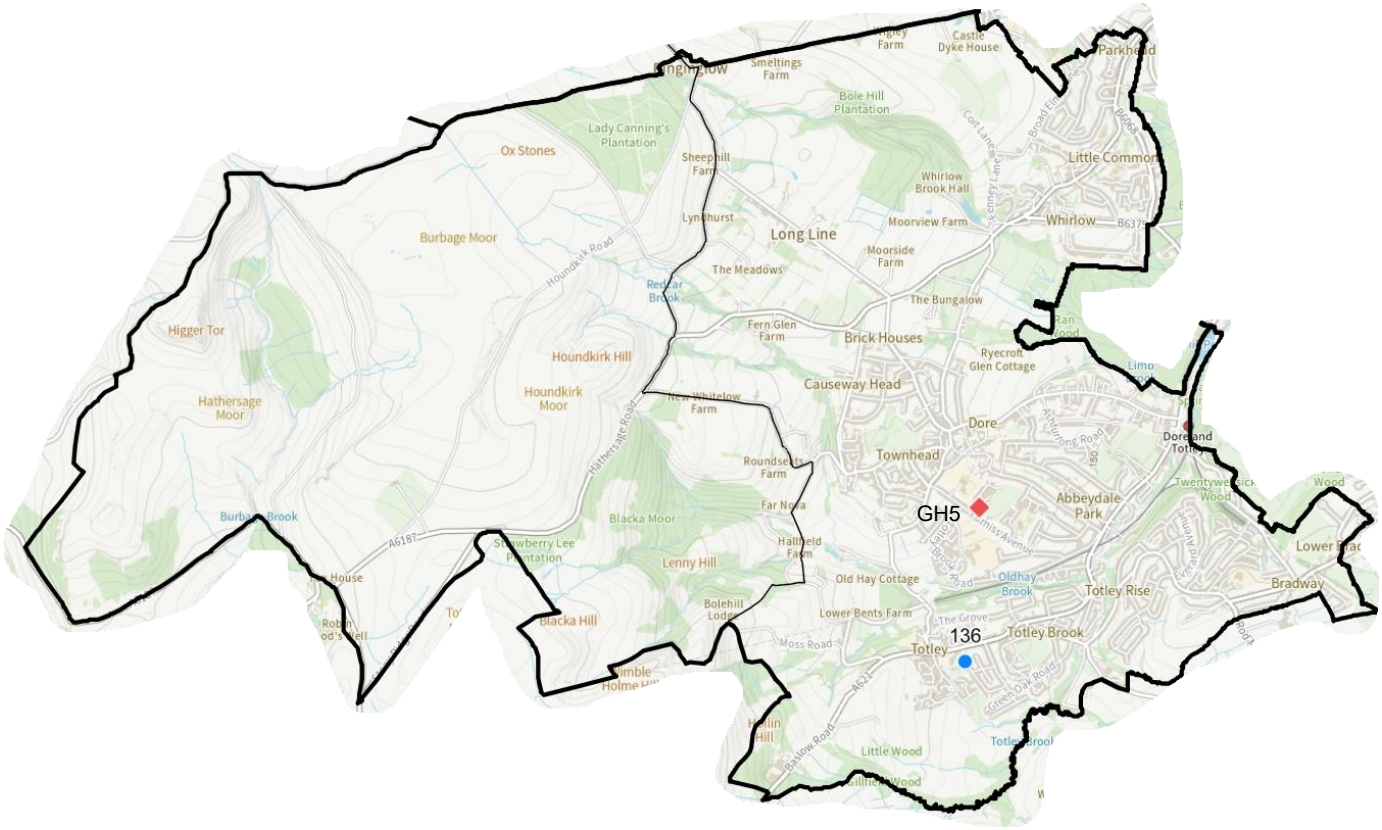
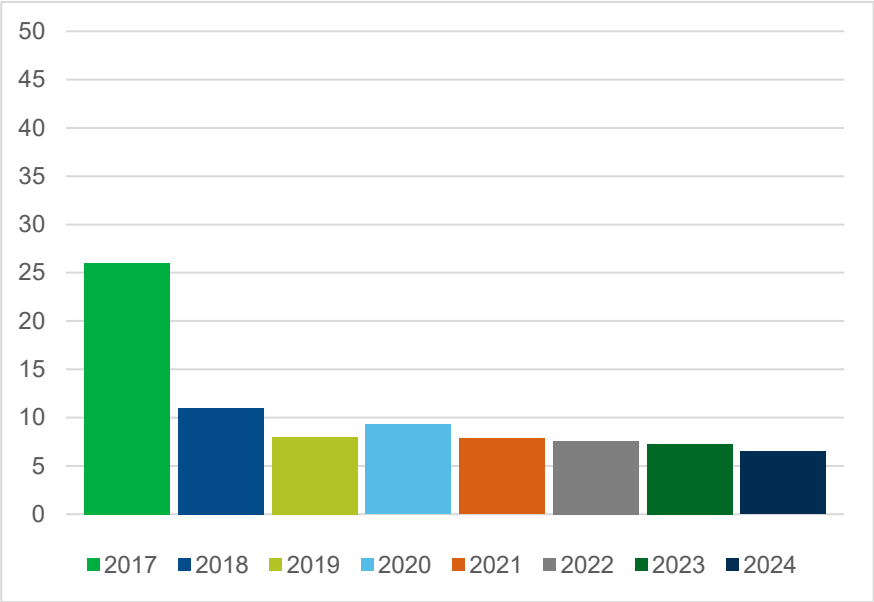


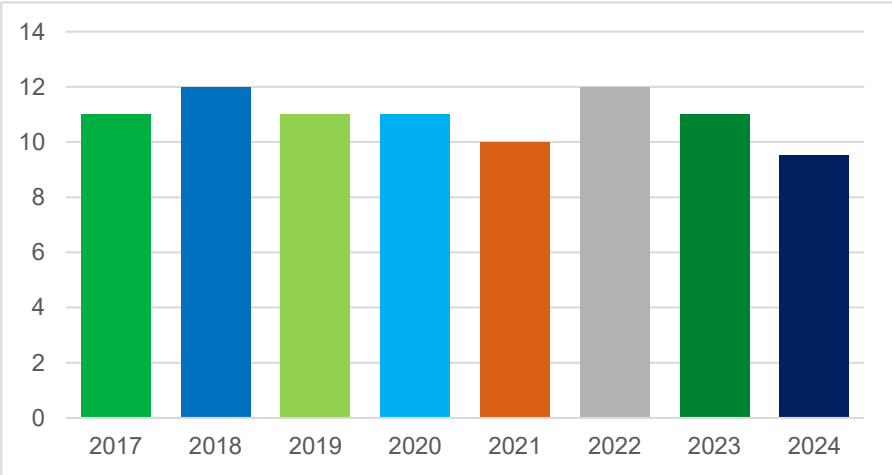
Figure D.9 – Map of monitoring locations and trends in the Dore & Totley ward



Dore & Totley ward average of annual NO_2 concentrations ($\mu g/m^3$)



Dore & Totley ward average of annual PM_{10} concentrations ($\mu g/m^3$)



Dore & Totley ward average of annual $PM_{2.5}$ concentrations ($\mu g/m^3$)

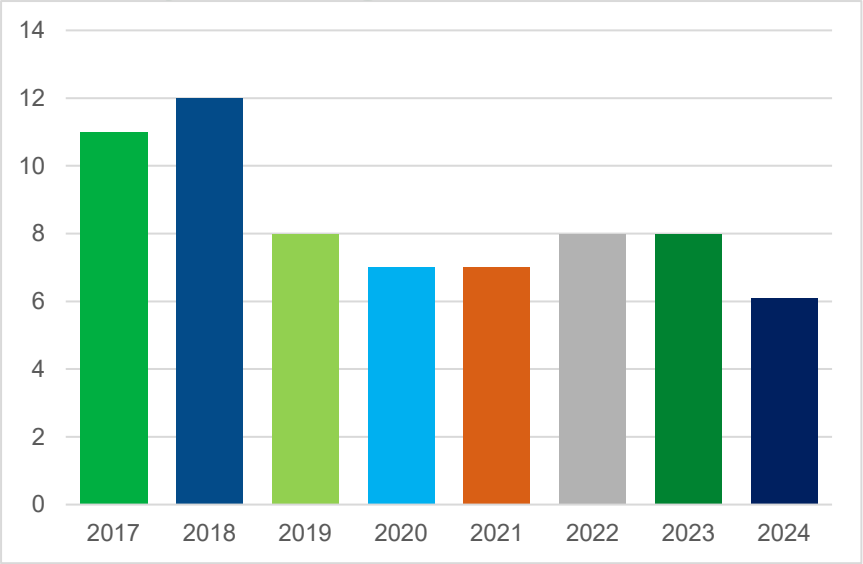
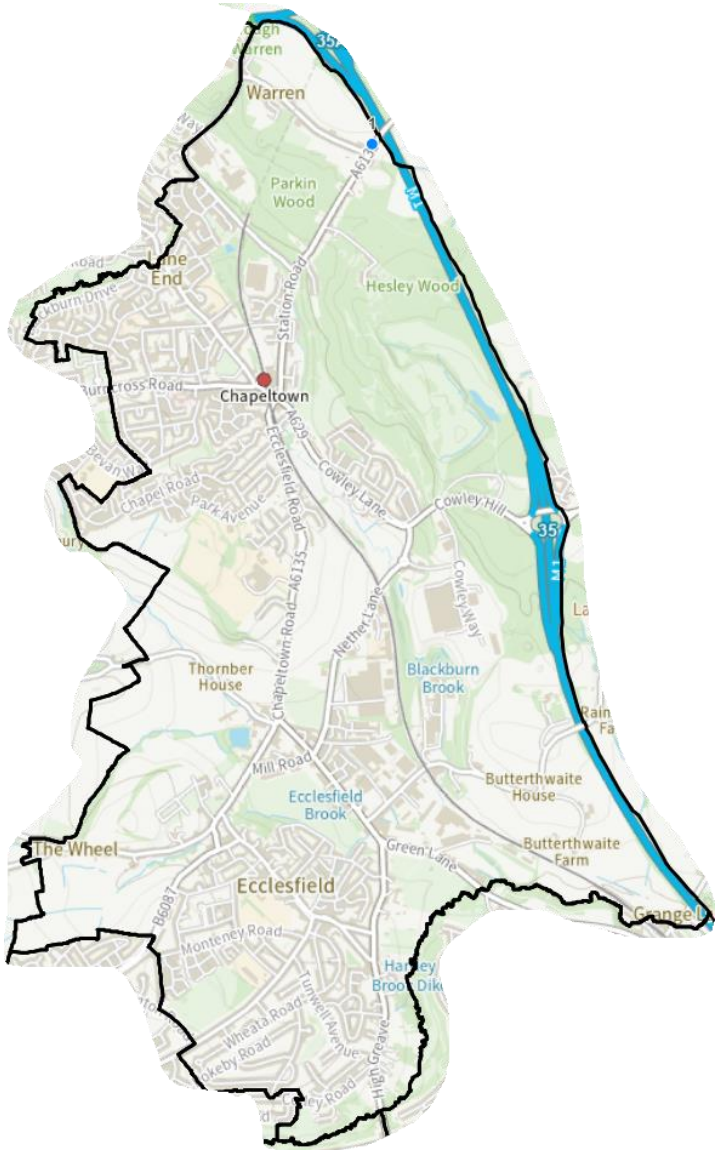


Figure D.10 – Map of monitoring locations and trends in the East Ecclesfield ward



East Ecclesfield ward average of annual NO_2 concentrations ($\mu g/m^3$)

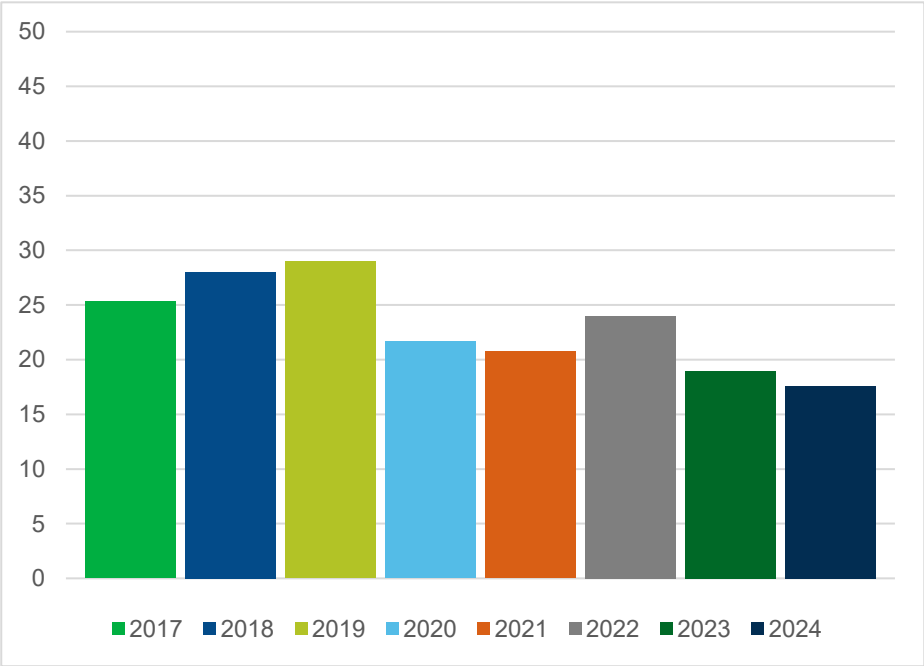
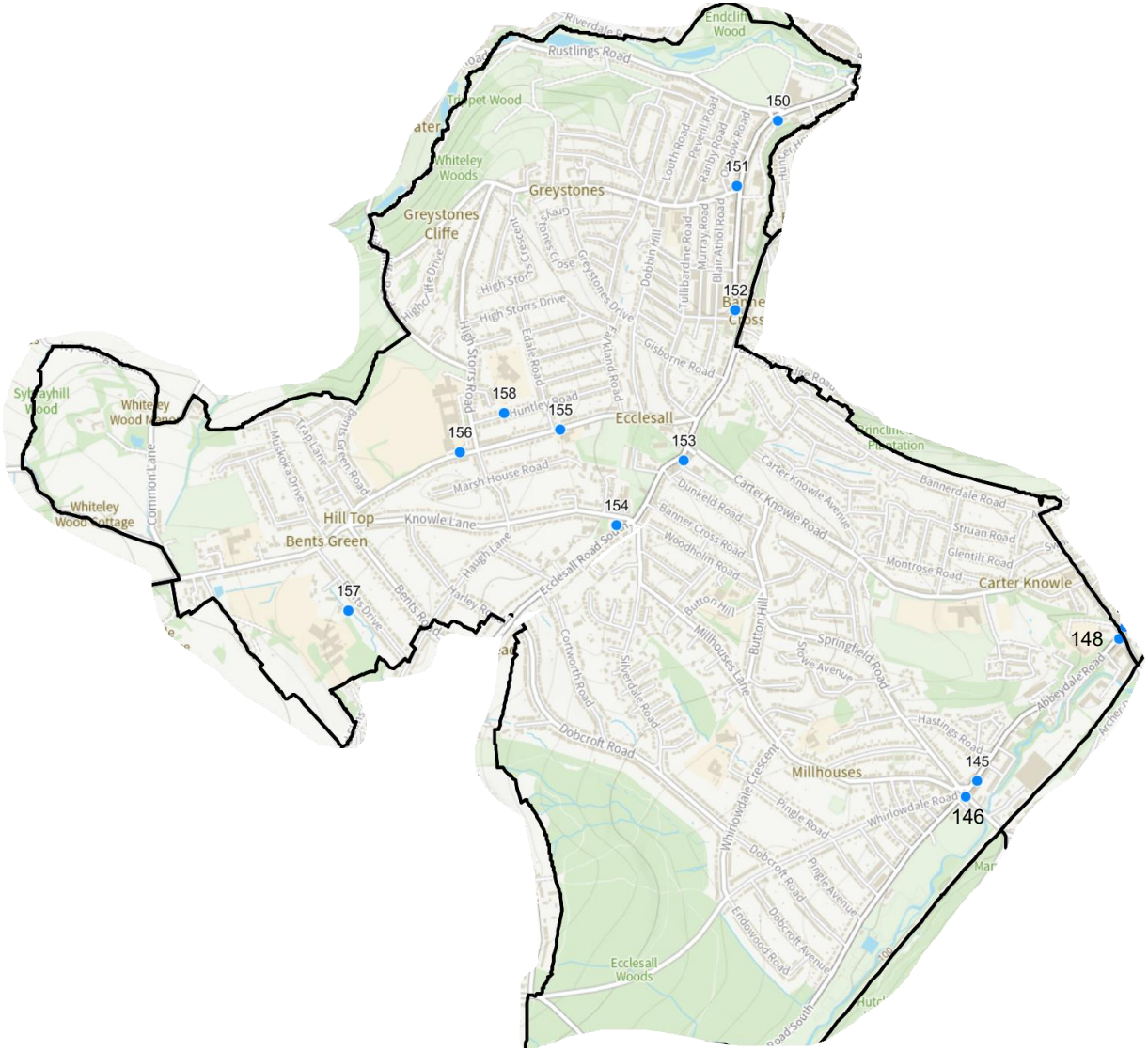


Figure D.11 – Map of monitoring locations and trends in the Ecclesall ward



Ecclesall ward average of annual NO_2 concentrations ($\mu g/m^3$)

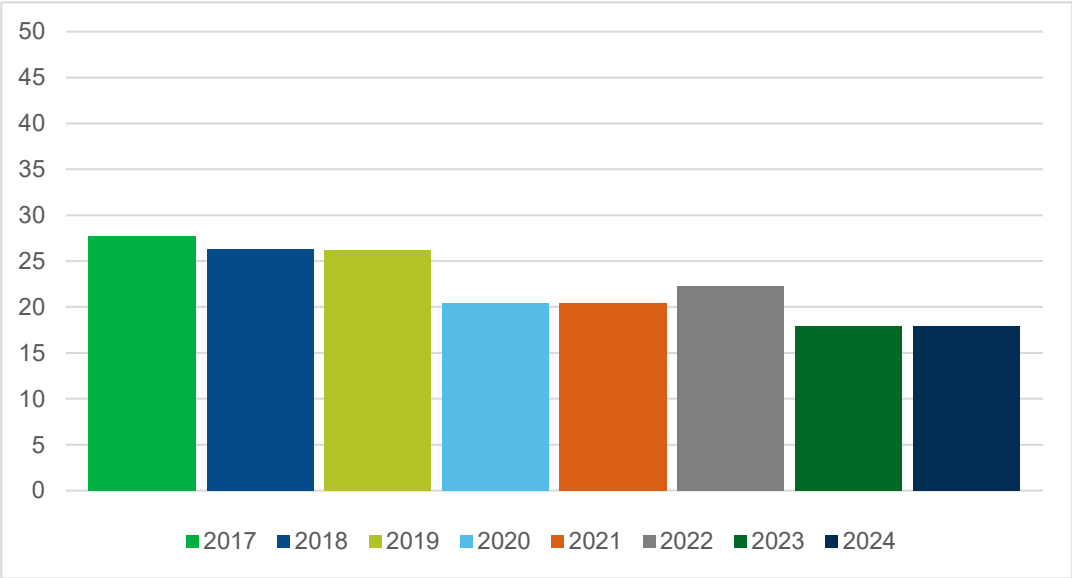
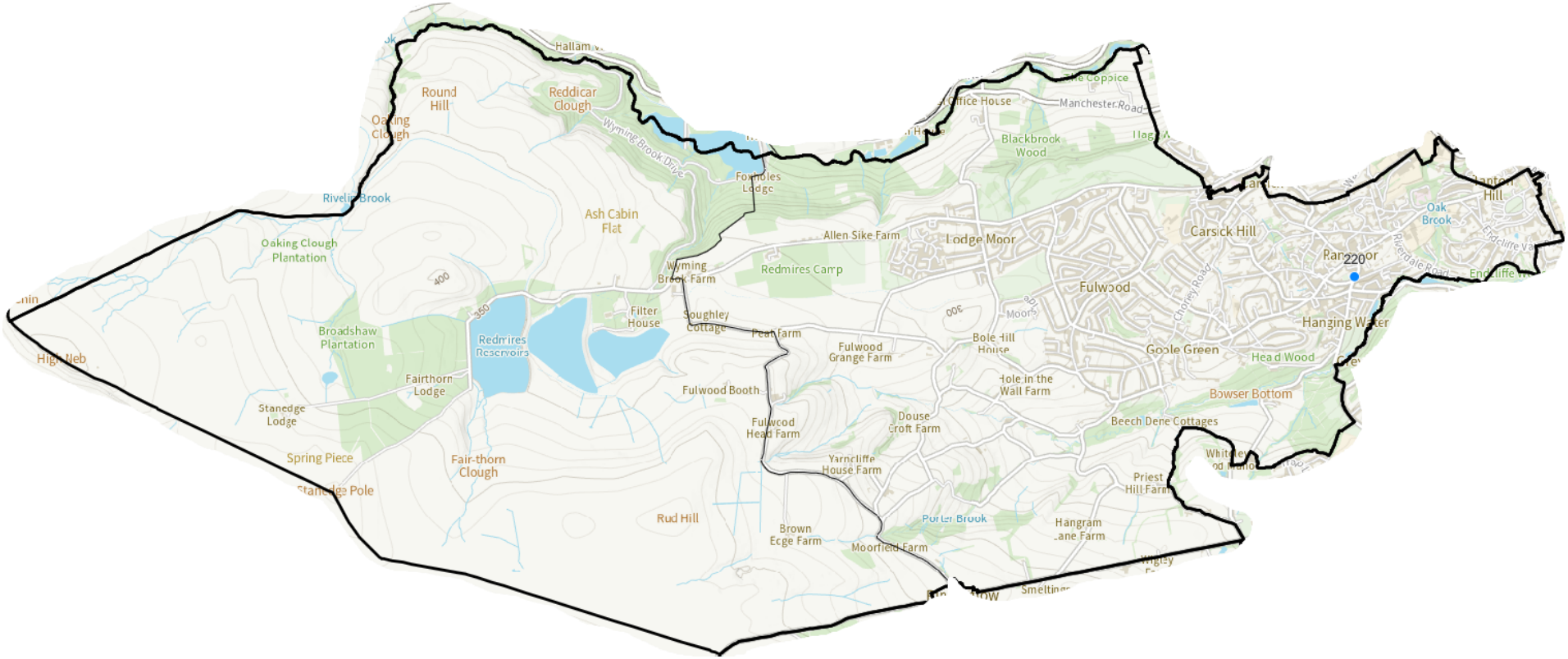


Figure D.12 – Map of monitoring locations and trends in the Fulwood ward



Fulwood ward average of annual NO_2 concentrations ($\mu g/m^3$)

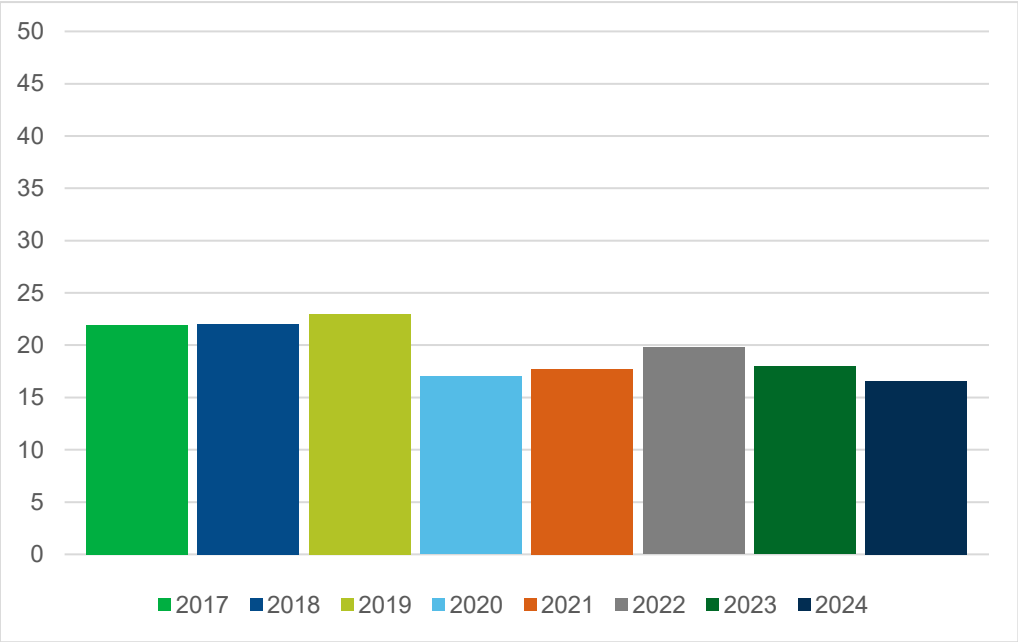
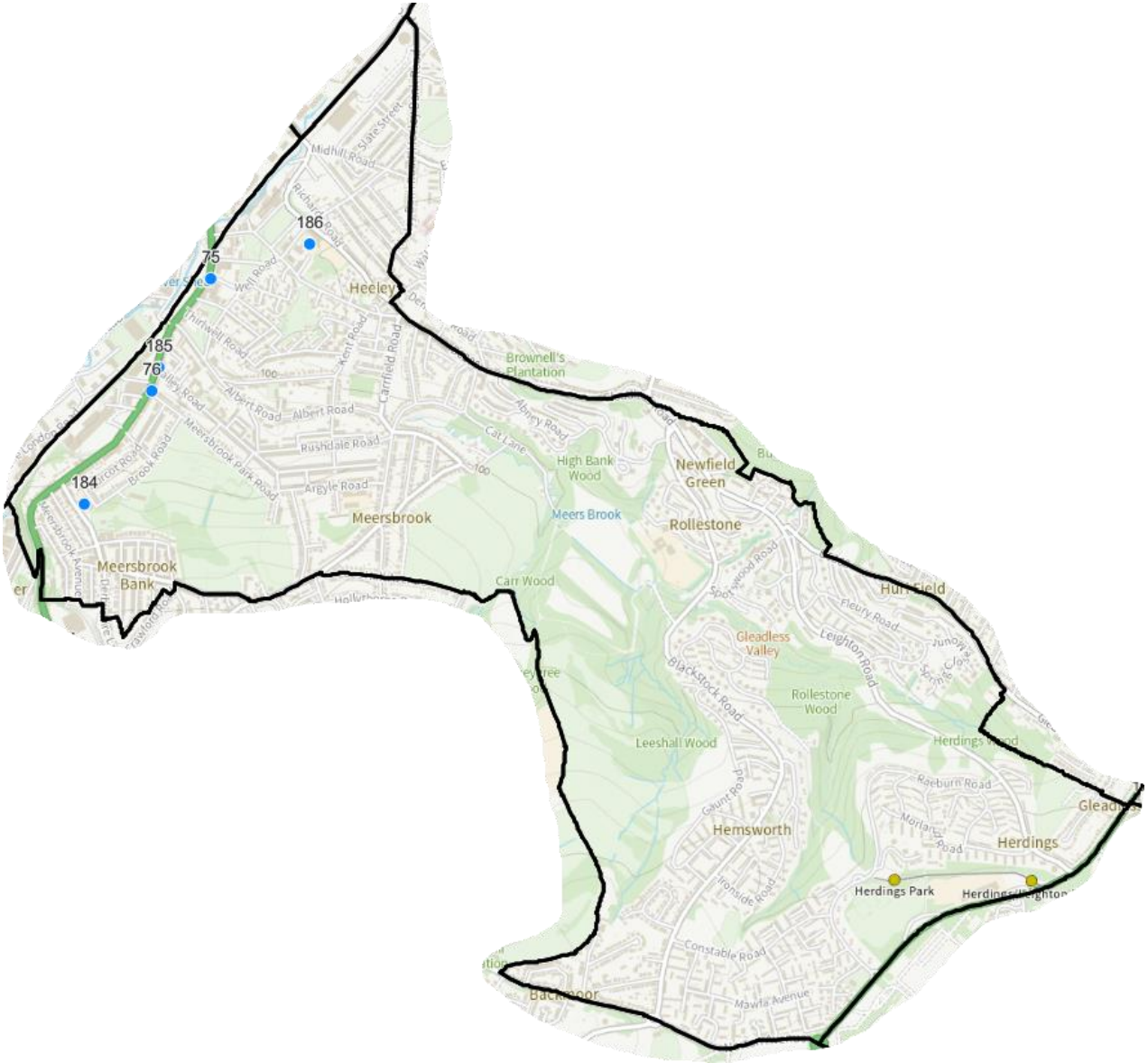


Figure D.13 – Map of monitoring locations and trends in the Gleadless Valley ward



Gleadless Valley ward average of annual NO_2 concentrations ($\mu g/m^3$)

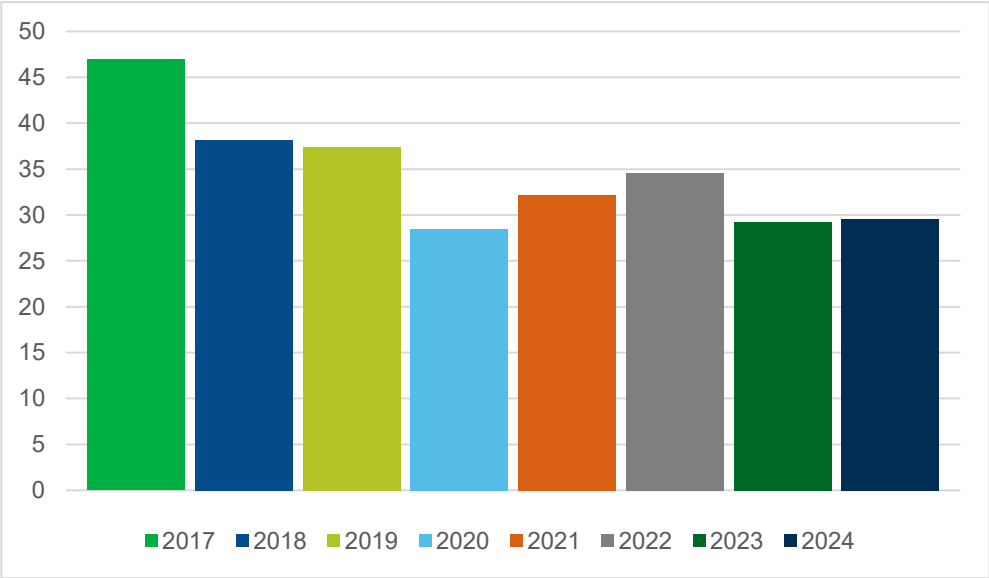


Figure D.14 – Map of monitoring locations and trends in the Graves Park ward

Graves Park ward average of annual NO_2 concentrations ($\mu g/m^3$)

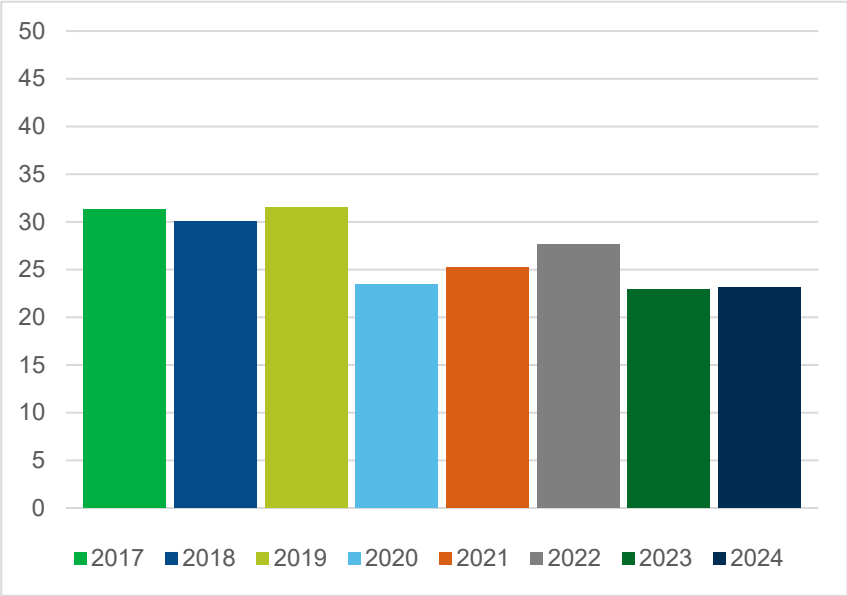
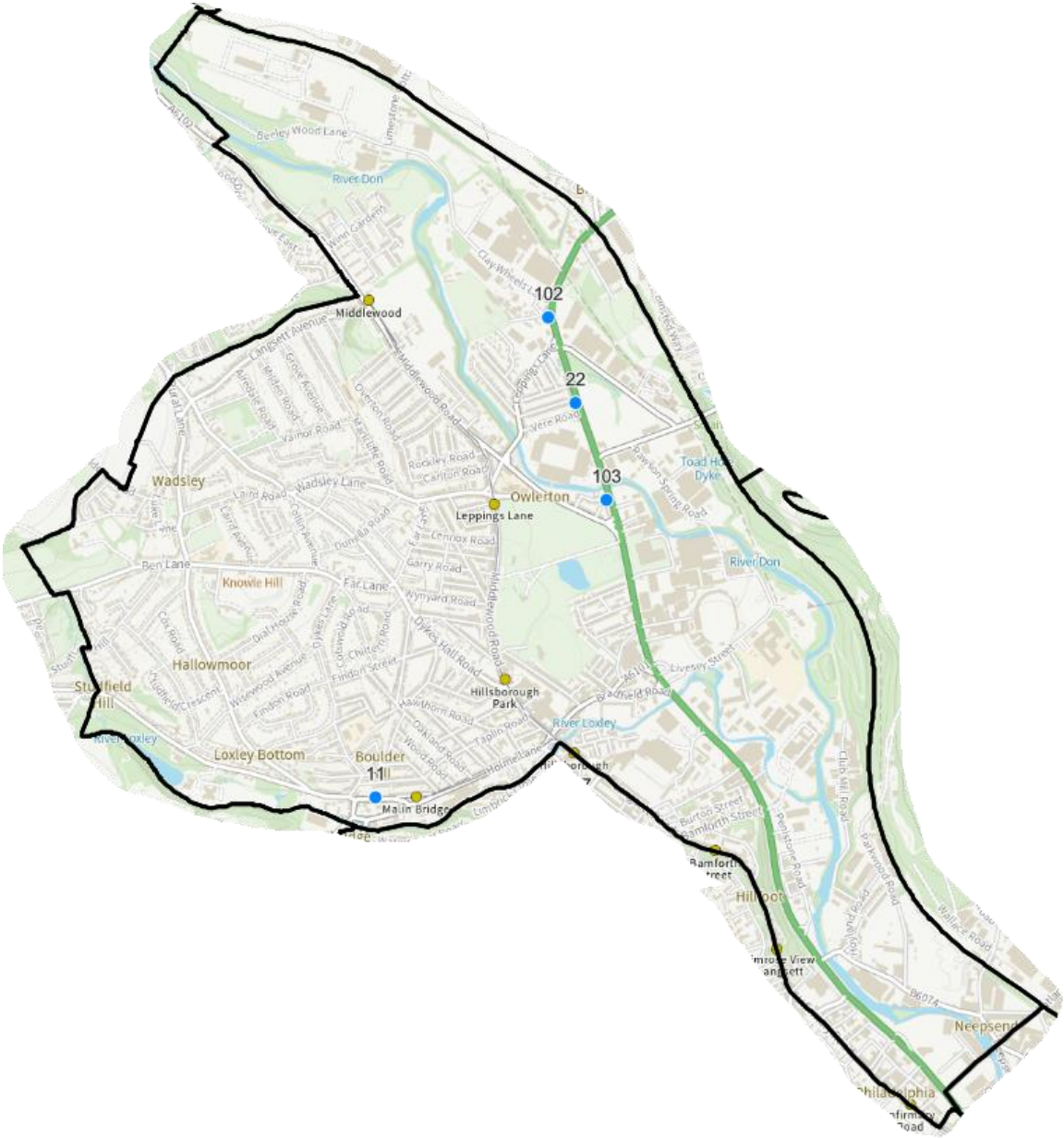


Figure D.15 – Map of monitoring locations and trends in the Hillsborough ward



Hillsborough ward average of annual NO_2 concentrations ($\mu g/m^3$)

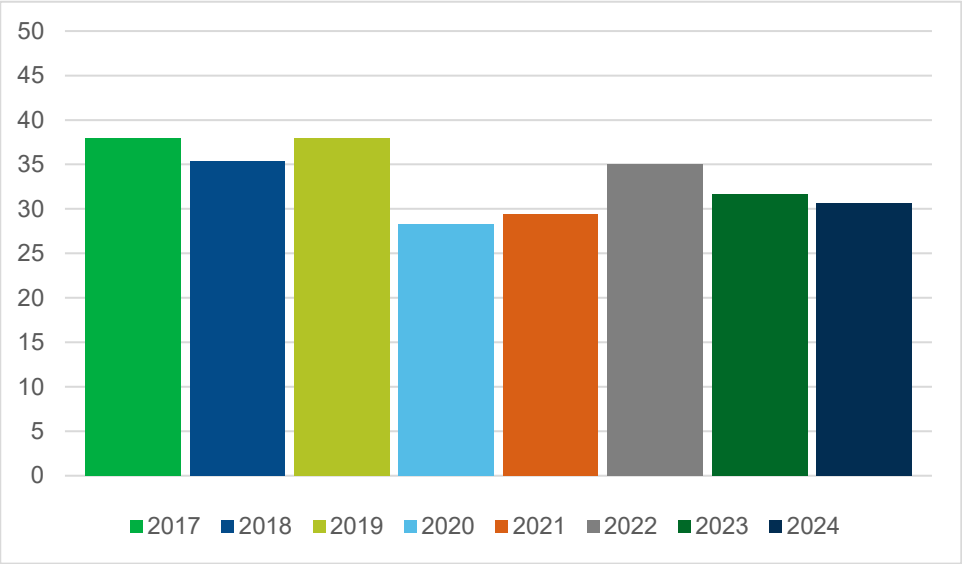
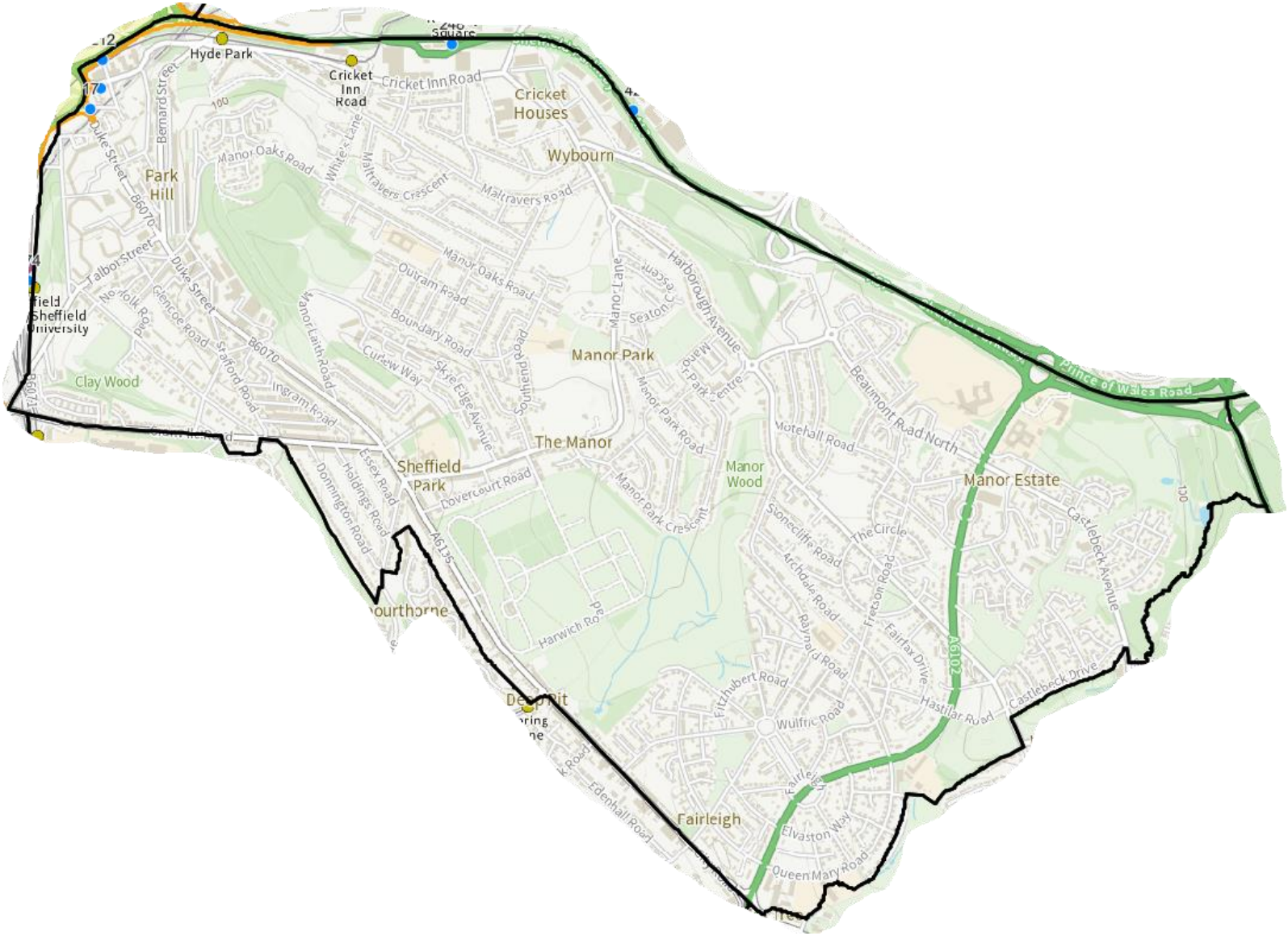


Figure D.16 – Map of monitoring locations and trends in the Manor Castle ward



Manor Castle ward average of annual NO_2 concentrations ($\mu g/m^3$)

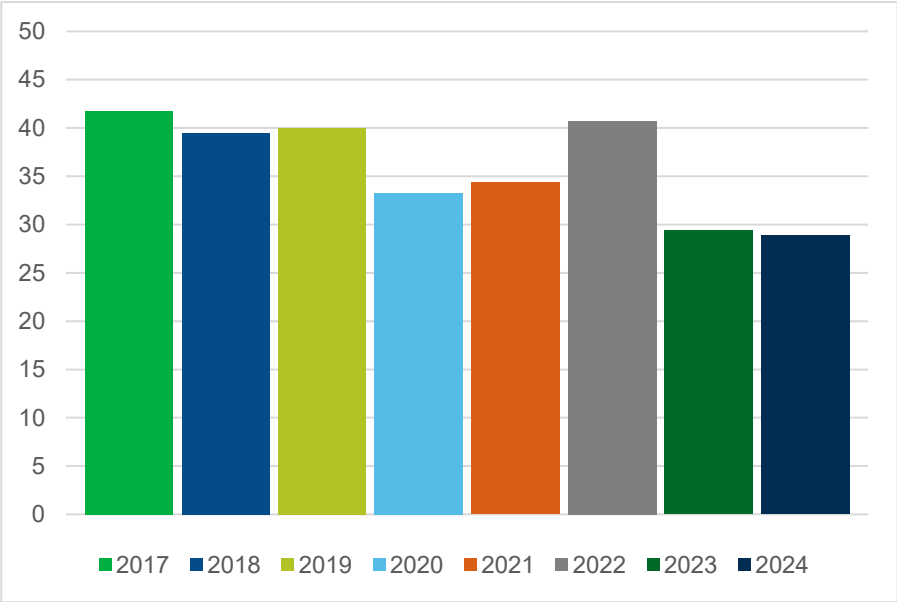
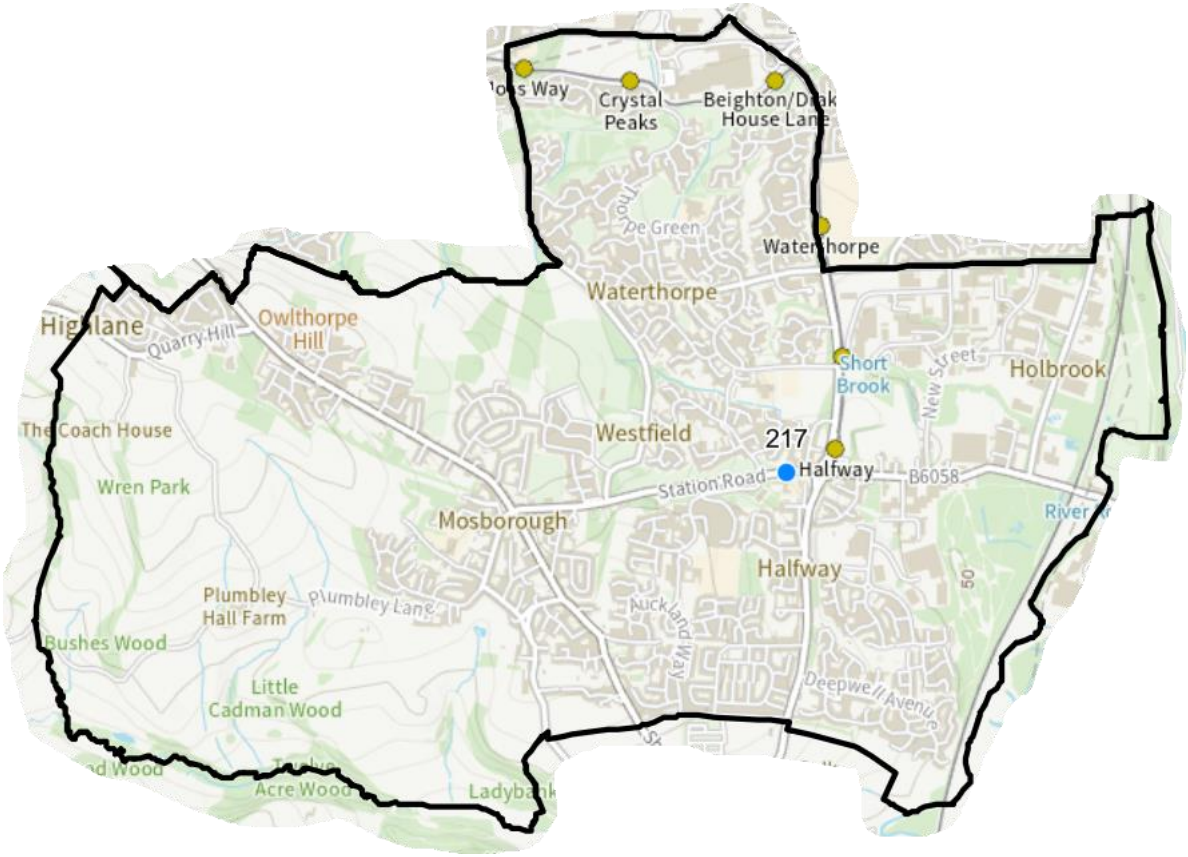


Figure D.17 – Map of monitoring locations and trends in the Mosborough ward



Mosborough ward average of annual NO_2 concentrations ($\mu g/m^3$)

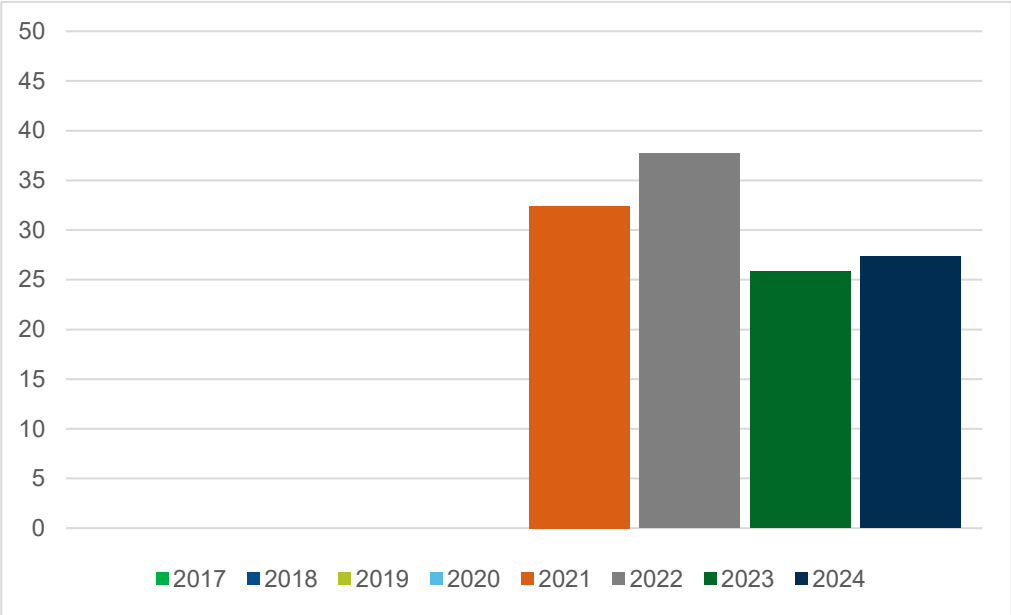
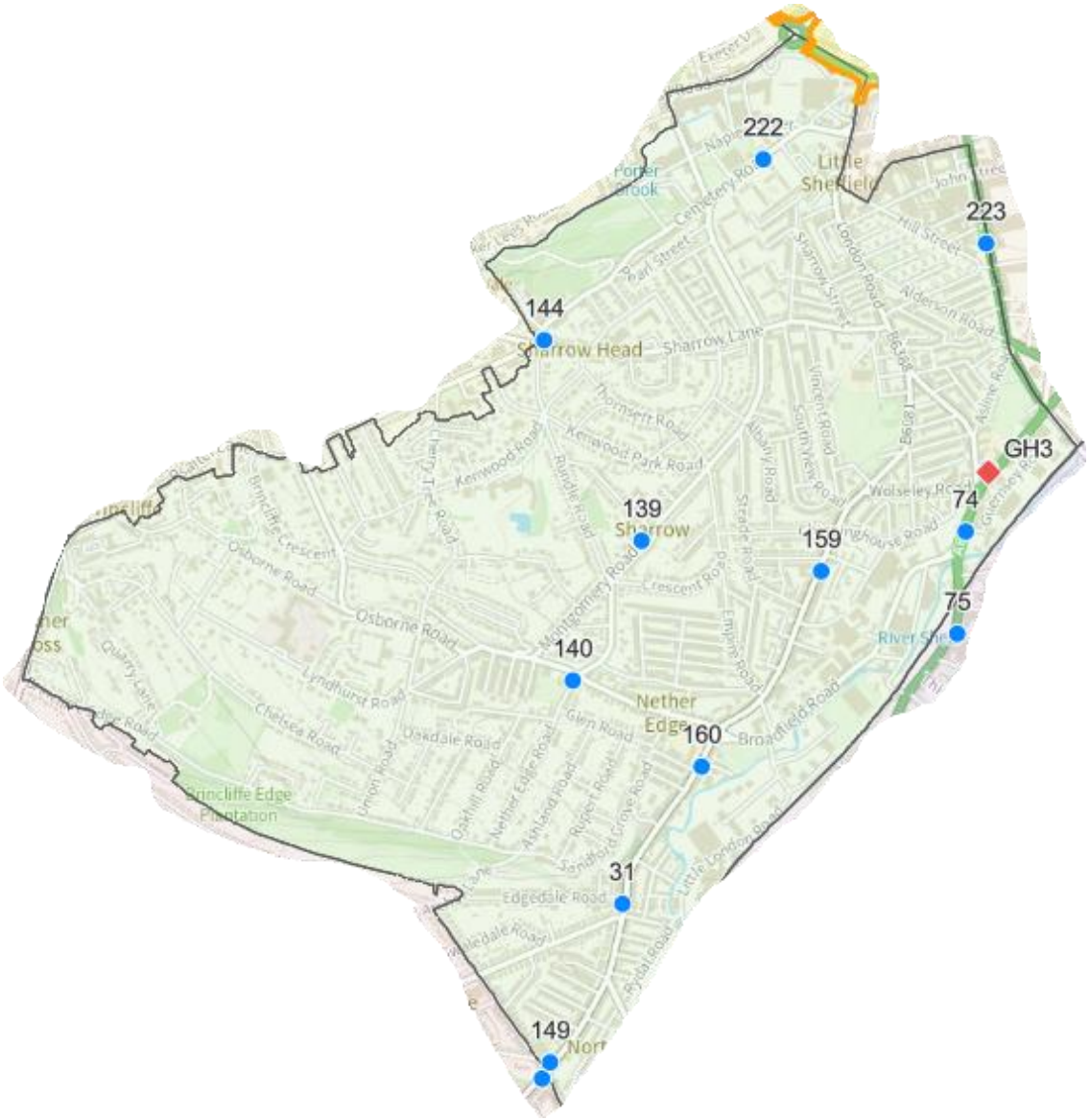
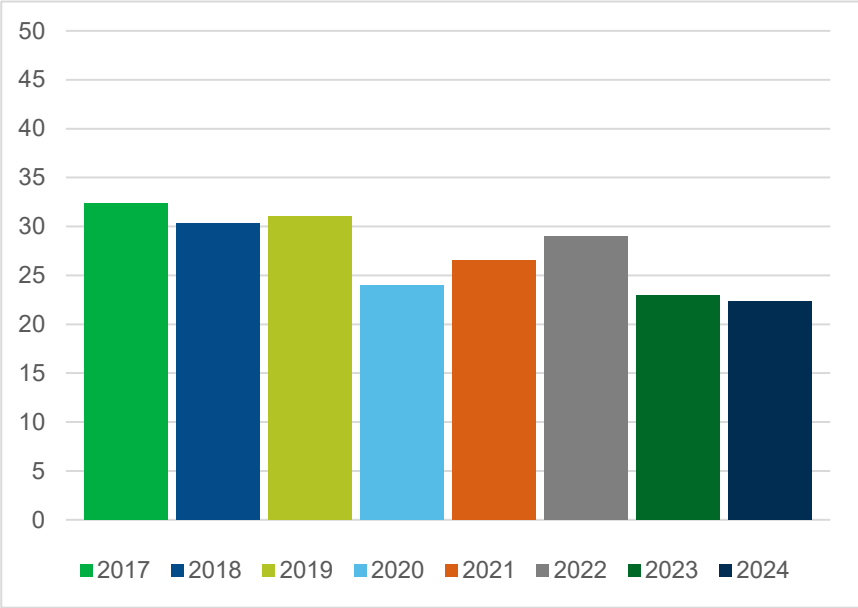


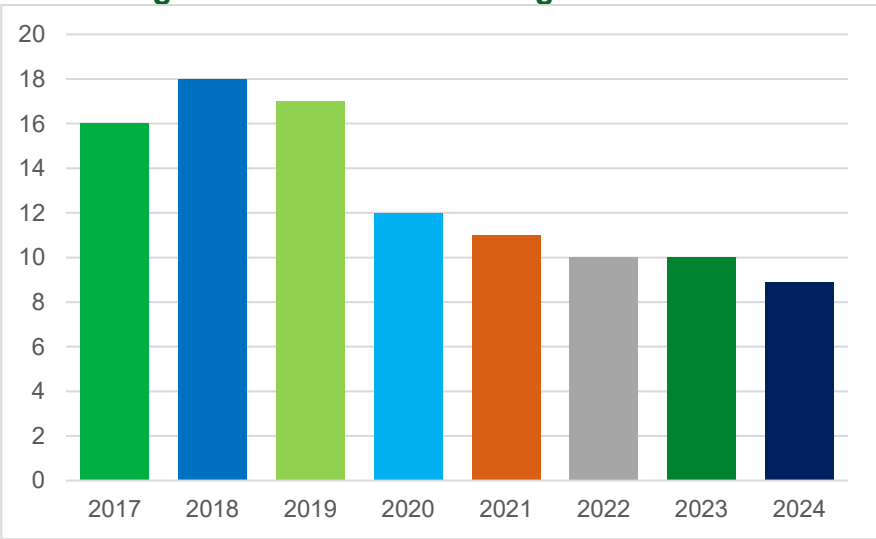
Figure D.18 – Map of monitoring locations and trends in the Nether Edge & Sharrow ward



Nether Edge & Sharrow ward average of annual NO_2 concentrations ($\mu g/m^3$)



Nether Edge & Sharrow ward average of annual PM_{10} concentrations ($\mu g/m^3$)



Nether Edge & Sharrow ward average of annual $PM_{2.5}$ concentrations (µg/m^3)

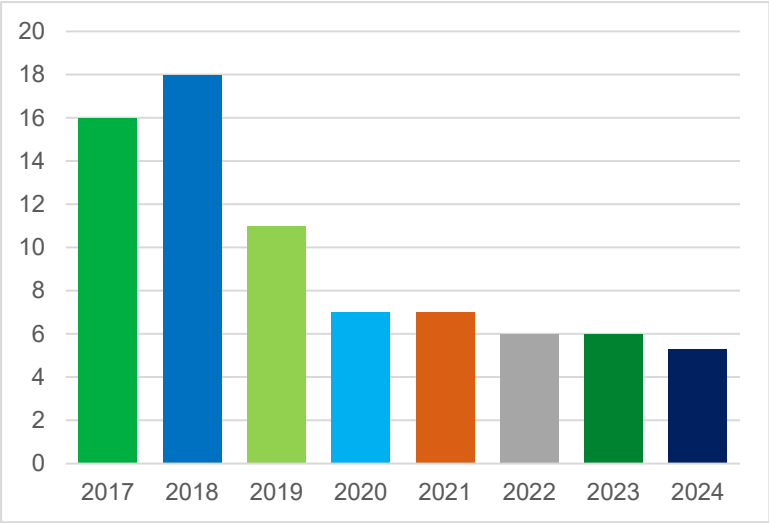
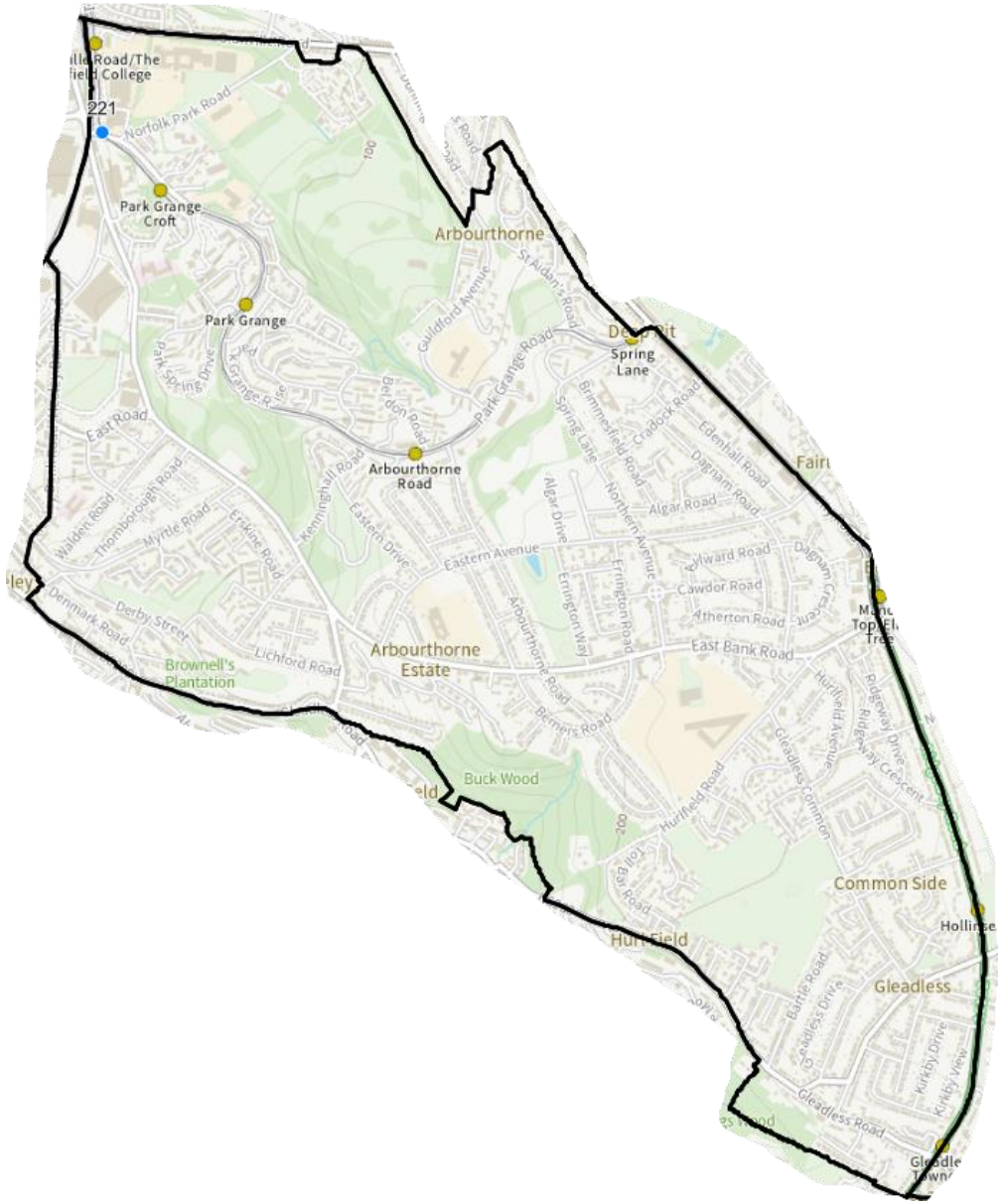


Figure D.19 – Map of monitoring locations and trends in the Park & Arbourthorne ward



Park & Arbourthorne ward average of annual NO_2 concentrations ($\mu g/m^3$)

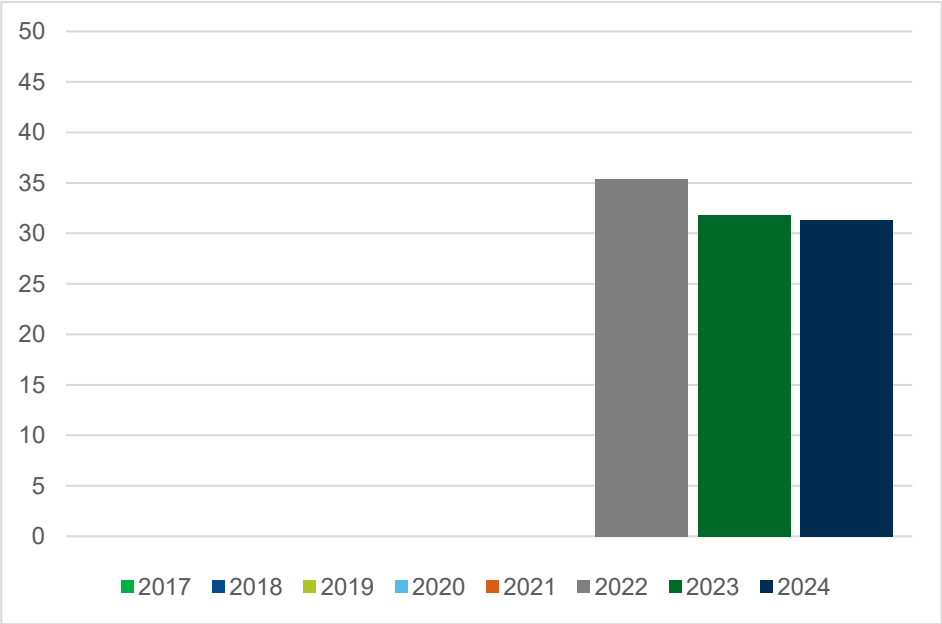
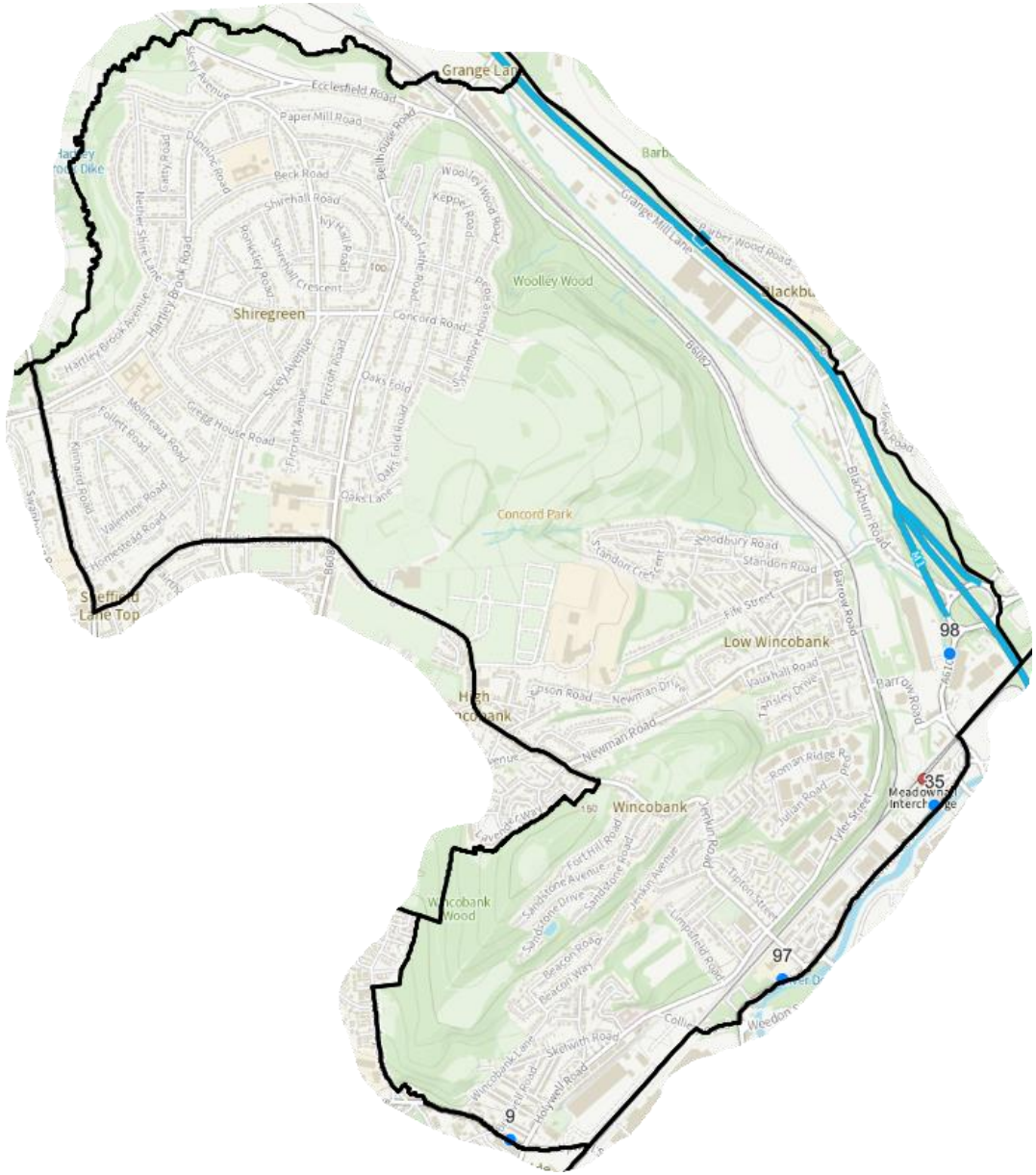


Figure D.20 – Map of monitoring locations and trends in the Shiregreen & Brightside ward



Shiregreen & Brightside ward average of annual NO_2 concentrations ($\mu g/m^3$)

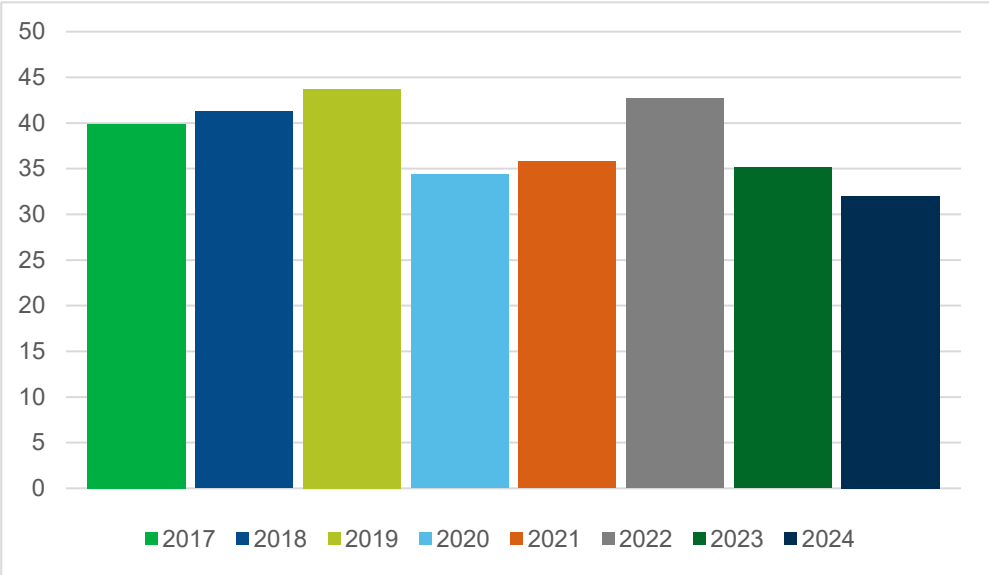


Figure D.21 – Map of monitoring locations and trends in the Stocksbridge & Upper Don ward

Stocksbridge & Upper Don ward average of annual NO_2 concentrations ($\mu g/m^3$)

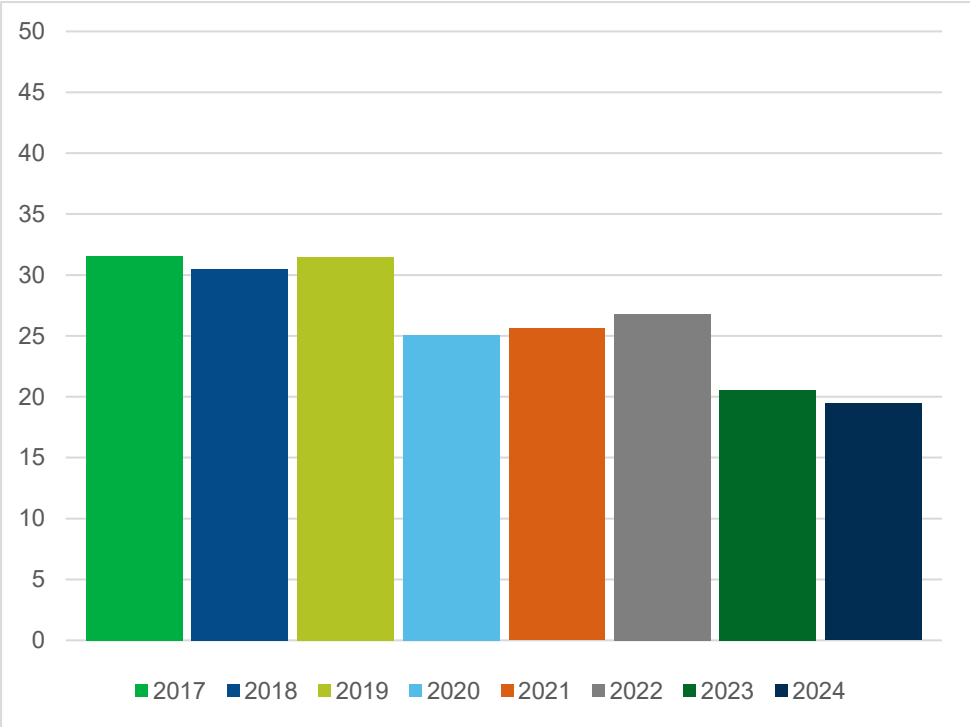
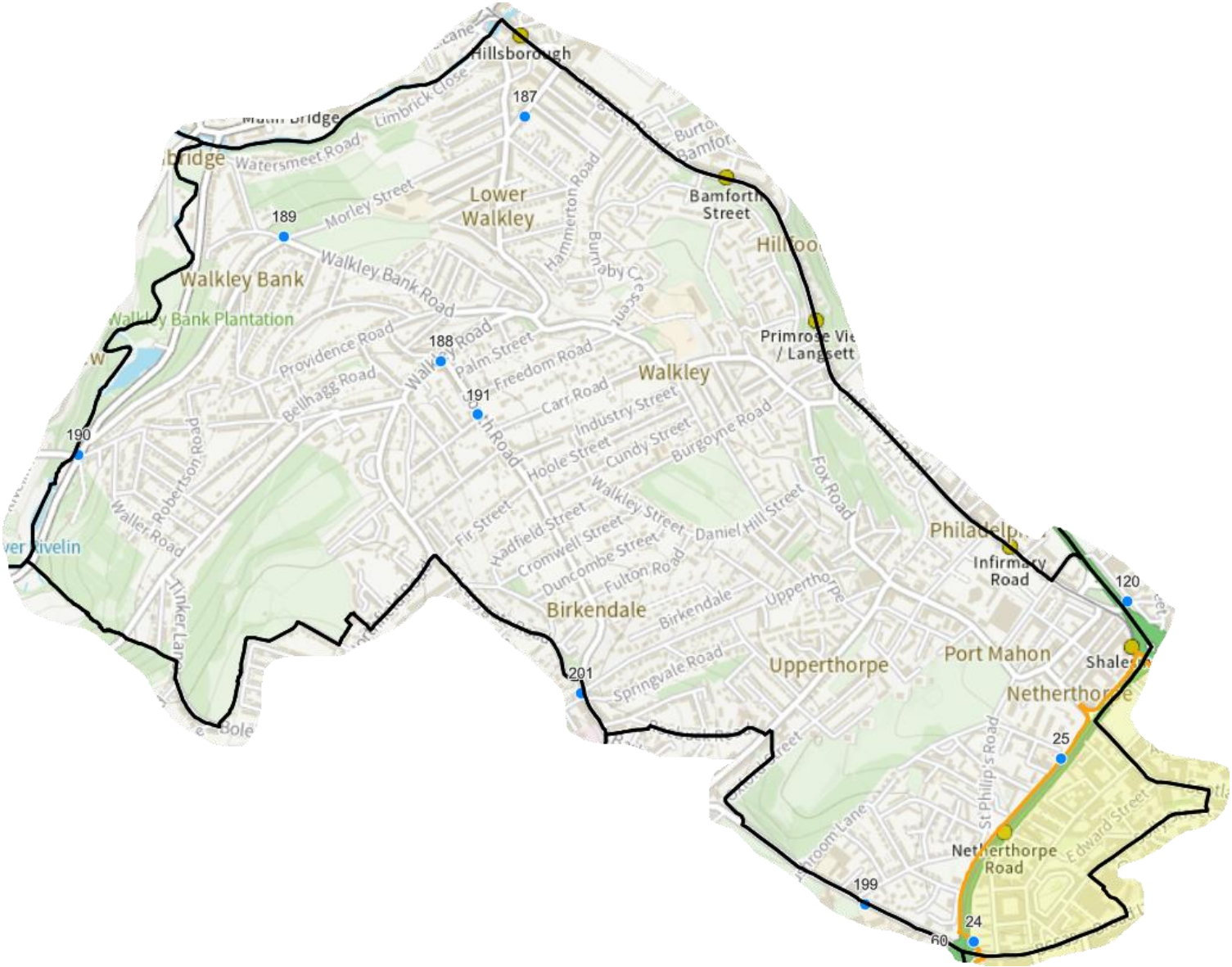


Figure D.22 – Map of monitoring locations and trends in the Walkley ward



Walkley ward average of annual NO_2 concentrations ($\mu g/m^3$)

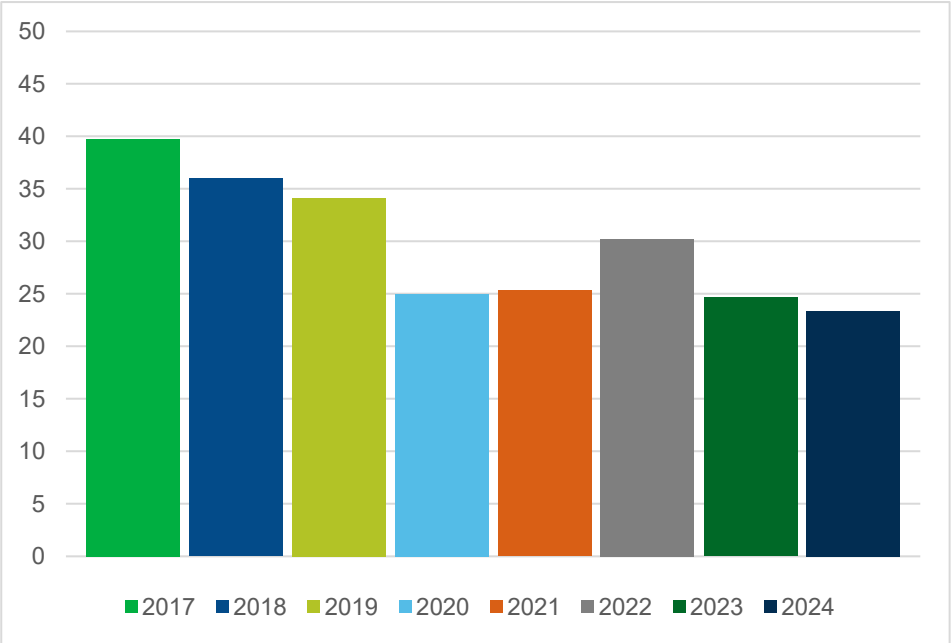
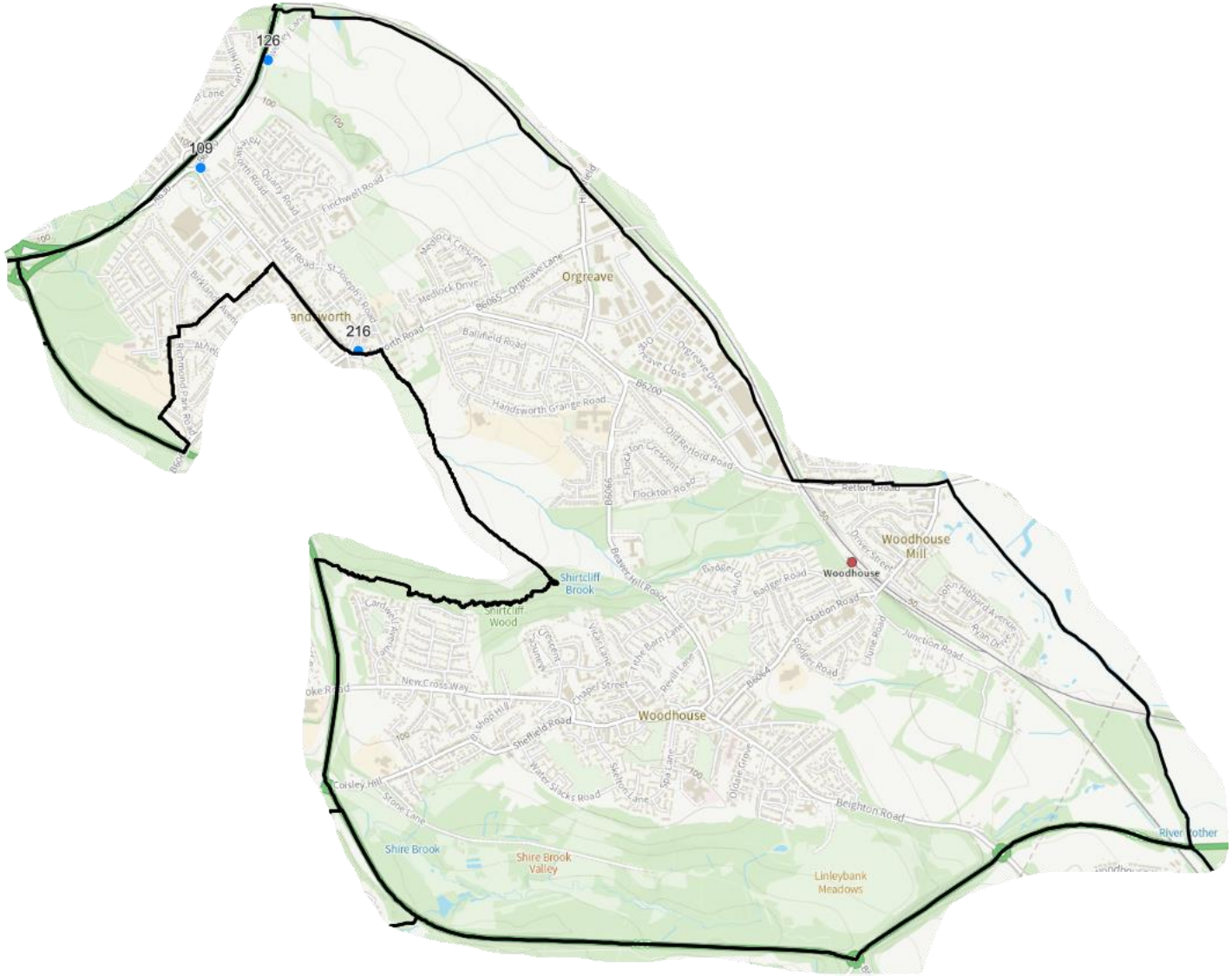
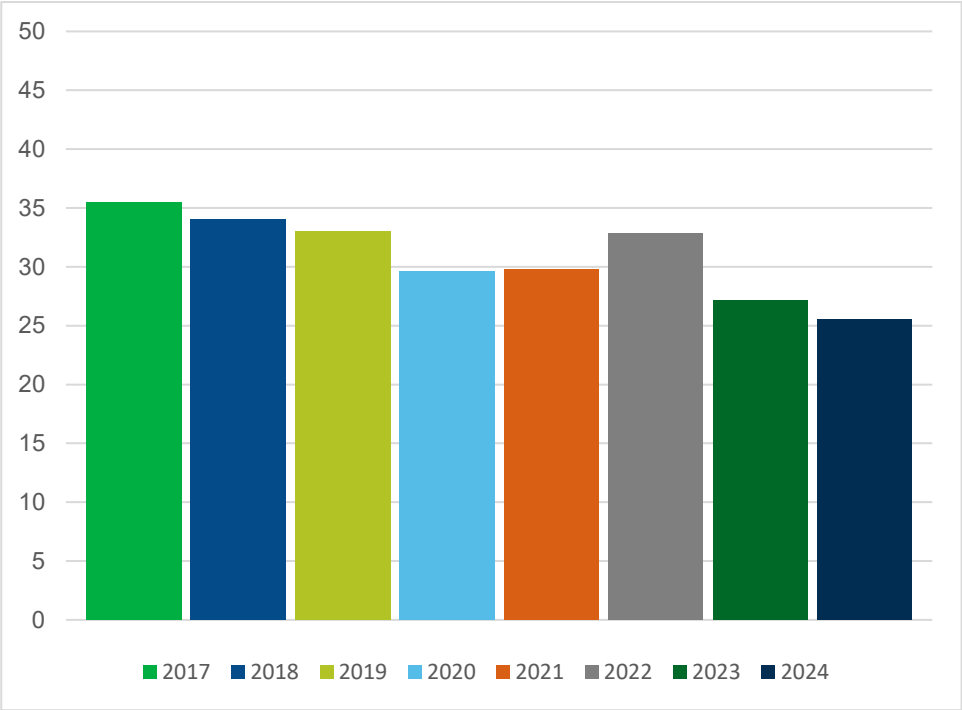


Figure D.23 – Map of monitoring and trends in the Woodhouse wards



Woodhouse ward average of annual NO_2 concentrations ($\mu g/m^3$)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[3]

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

[3] 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.