2023 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 2023

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1.1	30/08/23	Draft Report construction	A Jameson & A Swift
1.2	03/10/23	Requested amendments by DEFRA from ratification process	A Jameson

Executive Summary: Air Quality in Our Area

Air Quality in Sheffield

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas[1,2].

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

With reference to the Chief Medical Officer's Annual Report 2022[5] on Air pollution, outdoor exposure continues to affects people's health throughout their lives, including before birth, in the very young, through to older adults (see Figure ES.1). 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. Evidence of 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 continues to build, with varying strengths of evidence. Recent research has suggested that long-term exposure to raised concentrations of outdoor air pollution may increase susceptibility to more severe health outcomes, including the risk of hospitalisation due to COVID-19.

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[1] Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

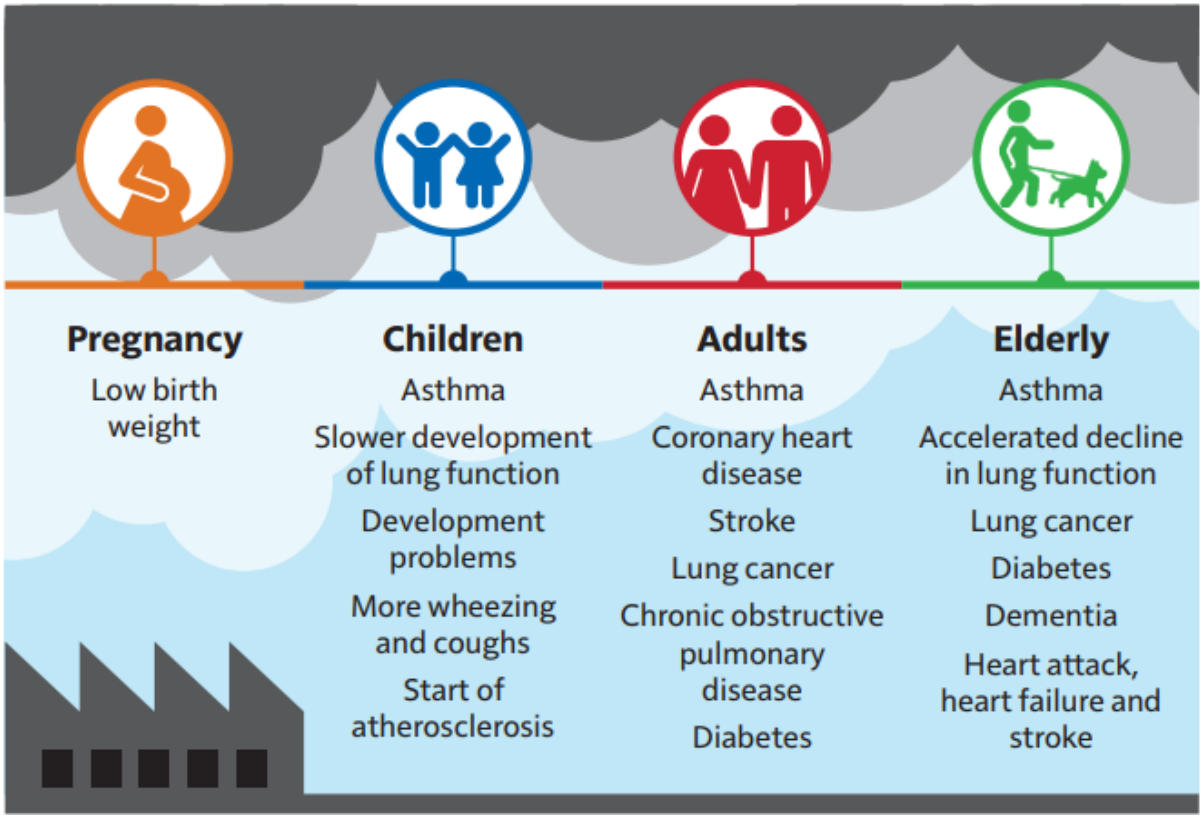
[2] Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

[3] Defra. Air quality appraisal: damage cost guidance, January 2023

[4] Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

[5]Chief Medical Officer's Annual Report 2022; Air Pollution, December 2022

Figure ES.1 – Health impacts of Air Pollution



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

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 2022 indicates that the Sheffield AQMA is still in breach of Air Quality Limit Values for Nitrogen Dioxide (NO_2) gas.

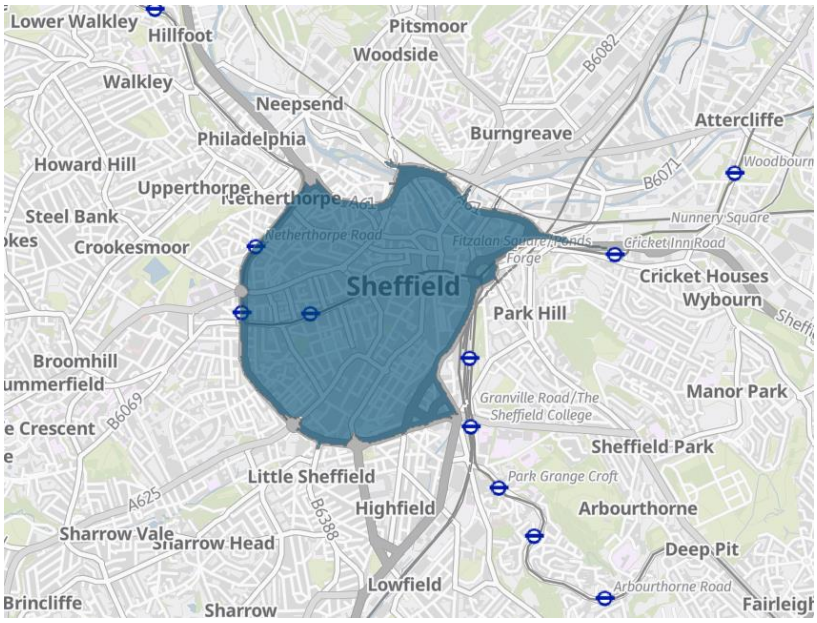
In order to meet duties under LAQM, achieve compliance with limits and safeguard health, Sheffield City Council approved an Air Quality Action Plan (AQAP) in 2015 to try and reduce air pollution in order to comply in the shortest possible timeframe, though it is noted that there is further work to be done to achieve this, ensuring it meets local needs and also compliment the recently introduced Clean Air Zone (CAZ). As such, Sheffield City Council are proposing to develop a new 5-year plan, which will be stakeholder and evidence lead to reflect the needs and desires of locals and a CAZ city.

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 Sheffield (and Rotherham) as one of 28 areas in England where their model indicated concentrations of Nitrogen Dioxide (NO_2) exceed statutory limits and were projected to continue to do so beyond the following 3-4 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 are 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, government mandated Sheffield City Council to produce a Clean Air Plan (CAP) on how to achieve compliance. Sheffield City Council developed the CAP through the use of modelling receptors for 4m do determine the most appropriate measures for achieving compliance within the shortest timeframe, the result of which was introduction of a Class C Clean Air Zone (CAZ) with additional measures. Following approval from His Majesties Government (HMG), the CAZ launched 27 February 2023. The boundary of the CAZ can be seen in Figure ES.2 and details on the CAZ are available from the website on the following hyperlink;

https://www.sheffield.gov.uk/campaigns/clean-air-zone-sheffield

Figure ES.2 – Map of Sheffield City Clean Air Zone Boundary



It must be noted that the criteria for compliance under the EU Regime differs from those associated with 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 2 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 2.

Therefore, there are 3 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 plus additional measures)

Whilst these policy documents remain relevant, it is acknowledge that there is a need to update the Strategy and Action Plan to reflect local need and work to compliment results of the CAZ and as such, it is proposed that both documentation are refreshed.

Sheffield's own local air quality monitoring suggests that concentrations prior to the pandemic were gradually coming down (see red line Figure ES.3) with the exception for 2019. In 2020, pandemic measures resulted in districtwide reductions of pollution concentrations and whilst the percentage of monitoring sites exceeding the 40µg/m3 threshold for NO_2 fell, it did not reach zero, as shown in Figure ES.4. This demonstrates that even with wide reaching pandemic measures, compliance was not achieved. In 2021, as would be expected, there was an increase in number of sites exceeding the 40µg/m3 threshold, attributed to the return to societal norms. Furthermore, this doubled in 2022 on the previous year and was reflective of pre-pandemic numbers.

Looking at the data for the last 5 years, including the pandemic period, trends would suggest that 2022 is reflective of post pandemic norms and as such we are satisfied that 2022 is reflective of post pandemic norms and can be used as the appropriate year for Impact Assessment validation.

Using 2022 data, projecting forward using data from our monitoring locations, it is suggested that NO_2 concentrations at many locations will continue to be problematic up to and beyond 2023, under a 'Business as Usual' forecast scenario.

Figure ES.3 – NO_2 Concentrations over last 6 years

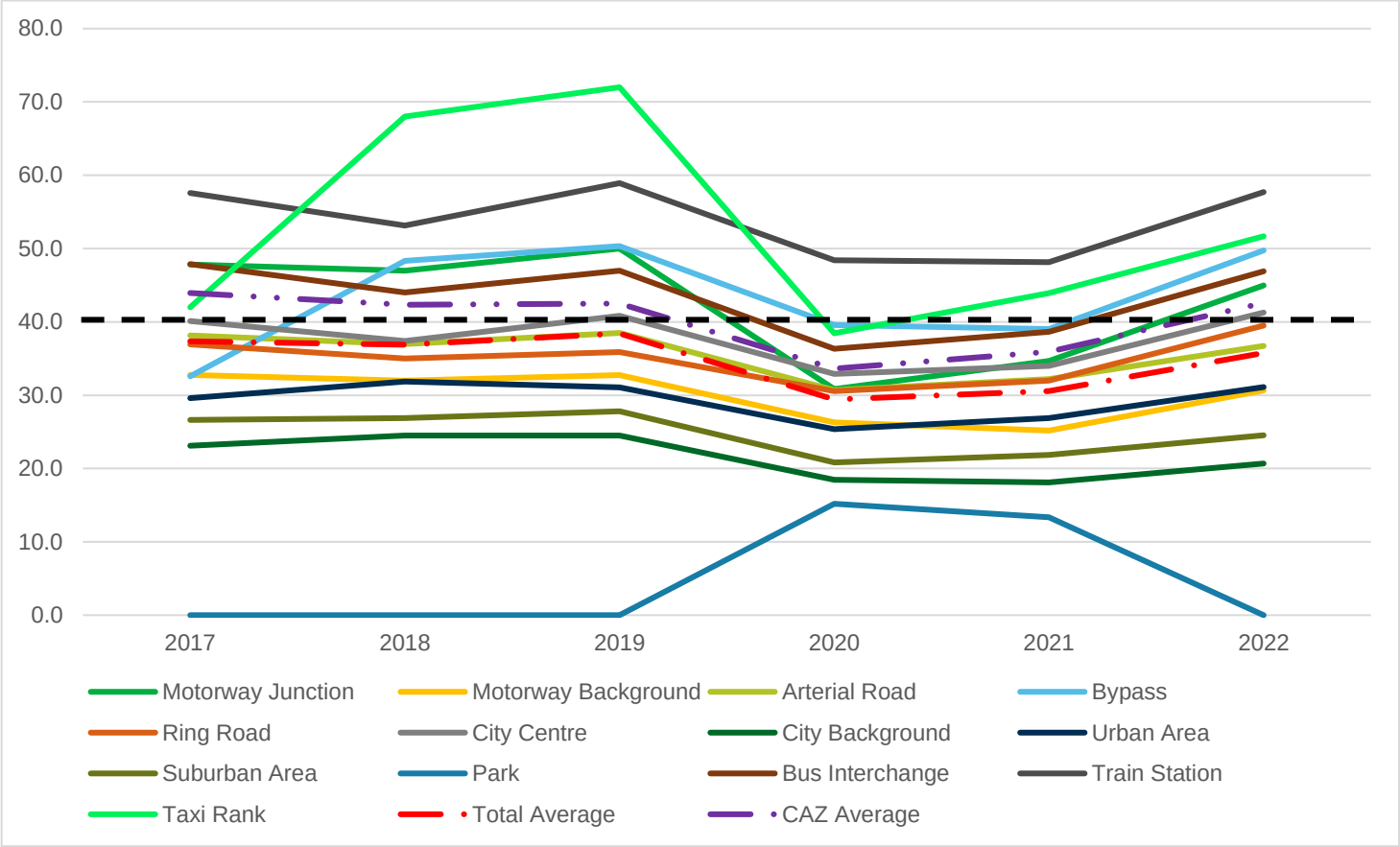
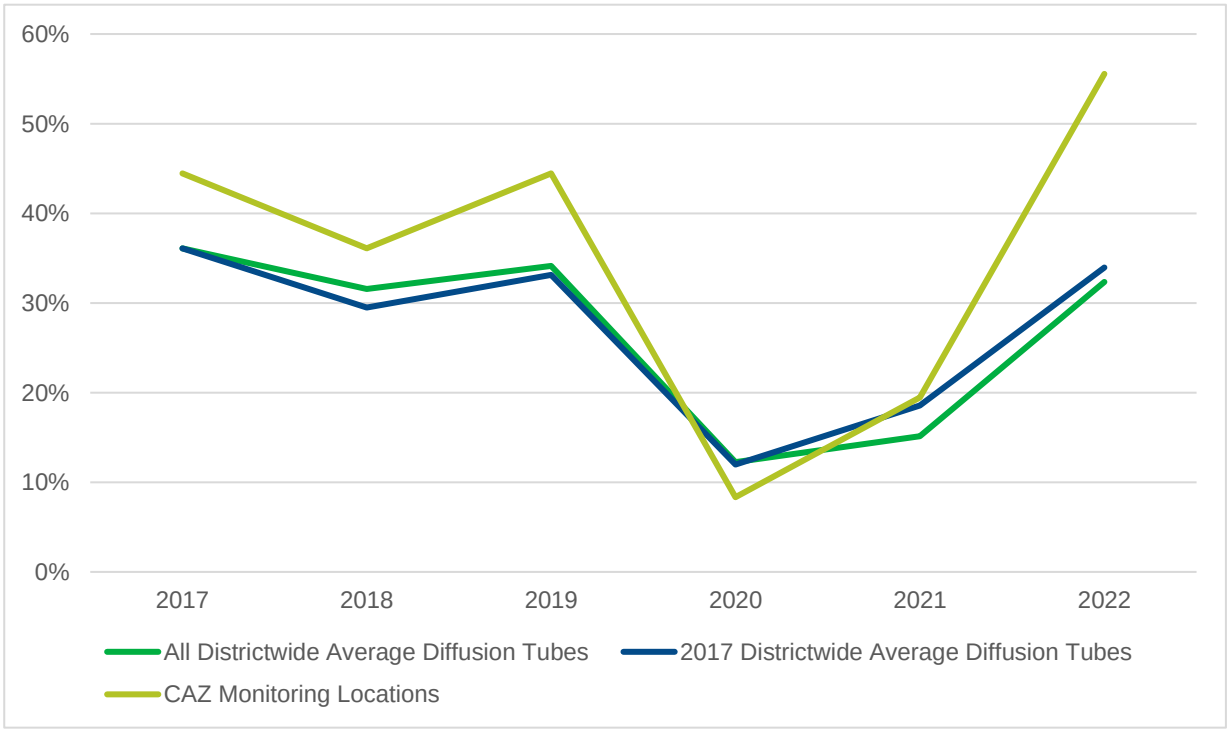


Figure ES.4 – Number of monitoring sites exceeding Annual NO_2 Concentrations over last 6 years



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 comply, and trends shown in Figures ES.5 and ES.6 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.

The observed increases in PM for 2022 paralleled weather data, specifically wind speed rather than increases in key polluter sectors. It would suggest that increases are not necessary linked to change is a specific polluter behaviour and as a result of lower wind speeds as a result of the lack of turbidity affecting dispersal of particulate rather than it being as a result of focused activity such as domestic heating. Therefore, with this in mind, targeted intervention measures should focus on reductions in all urban contributions to limit higher levels when wind speeds are at there lowest.

Although the Sheffield district complied with standards and trends have shown reduction between 2018 and 2021, it must also be noted there is no safe limit for Particulate and increases in 2022 are of concern, which is why inclusion of measures to target pollutants in next Action Plan is important.

Figure ES.5 – PM_{10} Concentrations over last 6 years

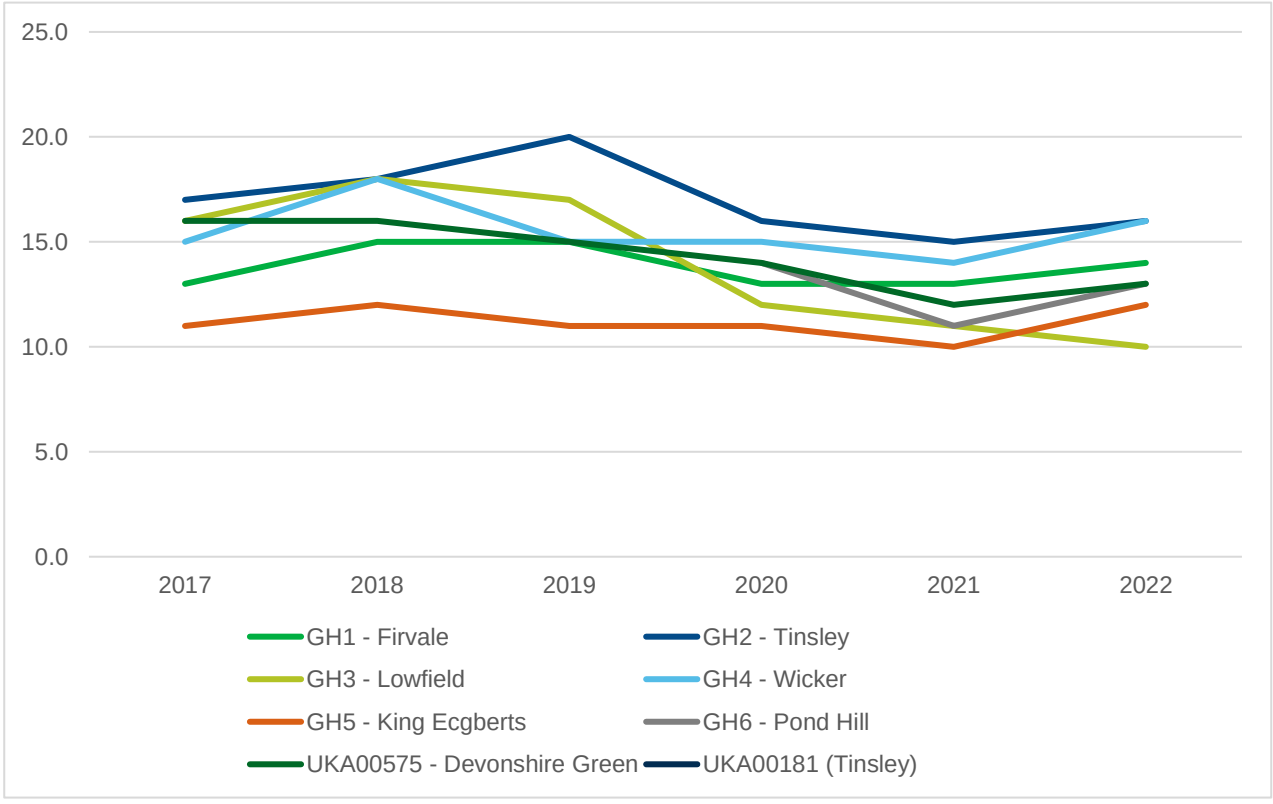
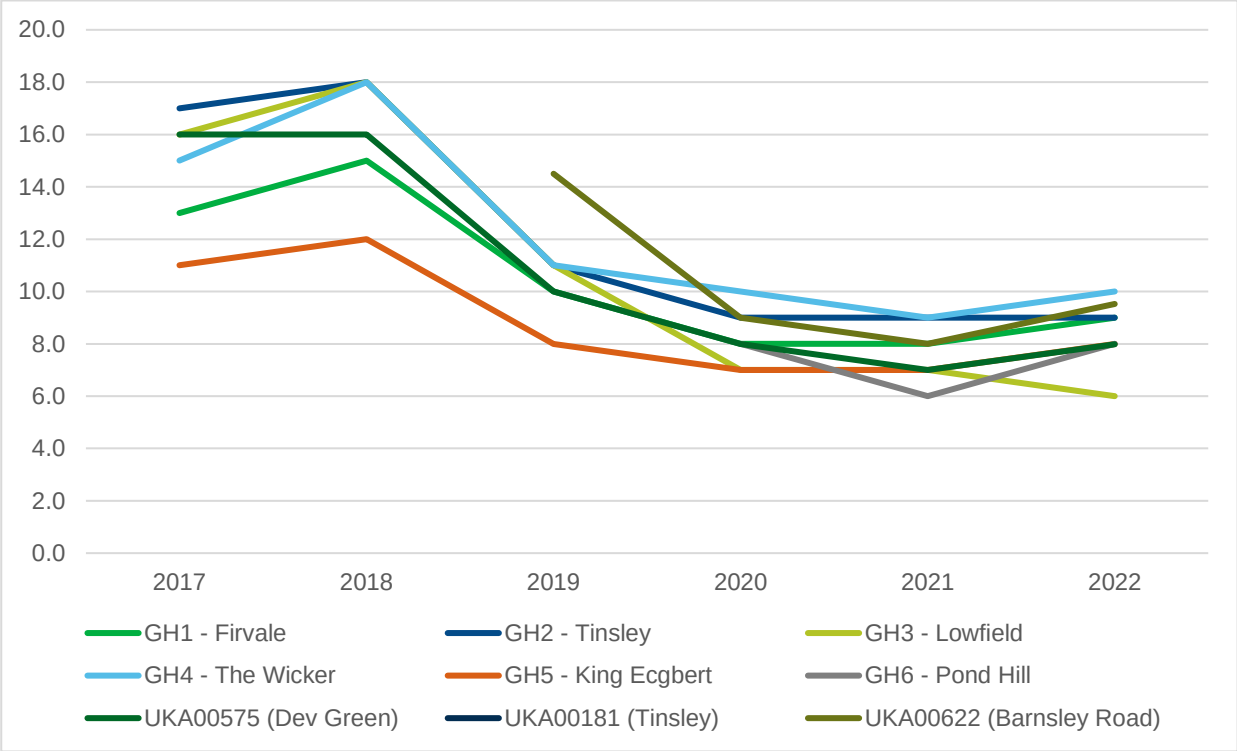


Figure ES.6 – $PM_{2.5}$ Concentrations over last 6 years



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[5] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term $PM_{2.5}$ targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce $PM_{2.5}$ in their areas. The Road to Zero[6] details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

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

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

The 2017 Sheffield Clean Air Strategy set out the case for action, with goals to reduce exposure to harmful pollutants and included the councils approach to reduce exhaust emissions from road transport through a number of schemes and mechanisms; which was extremely important given that the issues around NO_2 within our AQMA and National Compliance with the Air Quality Regulations 2010 (EU Compliance Regime) are as a result of elevated concentrations heavily influenced by transport emissions.

In 2022, Sheffield City Council undertook review of the Clean Air Strategy and Action Plan to determine future needs within the City, the conclusion of which highlighted that there was a need to refresh the documentation to reflect changing need and start a new 5 year cycle.

From the review, the following key measures and actions were successfully implemented from the Air Quality Strategy (2017) & Action Plan (2015);

- Feasibility of a CAZ
    - *Study was concluded and included in council's Clean Air Plan. The result of the study was the implementation of the Class C CAZ, which opened 27 February 2023*
- Improve Bus Fleet
    - *Achieved through CAZ and Clean Bus Fund Technology programme delivery*
        - *It must be noted that the impact of improvement measure is currently under review nationally to understand real-world impacts of retro-fits and as such, anticipated improvements should be treat with caution until conclusion of the study.*
- Work with Taxi Operators to ensure right standards
    - *Achieved through CAZ and new licensing policy delivery*
- Consider specific ULEV car schemes to support low-income families change
    - *Progress limited to Council Salary Sacrifice. Further works expected in future iteration of AQ policy documents*
- Roll out Anti-idling Zones around Schools and other sensitive locations
    - *Anti-idling scheme delivered around schools*
- Provide support to HGV's/Freight through use of ECO-Stars Scheme
    - *South Yorkshire scheme delivered during policy period.*

It is not possible to quantify the individual impact of each of the Actions we have already implemented. Overall however, it is quite clear that although air quality in Sheffield is gradually improving, it has not sufficiently improved to achieve compliance and this is a

significant issue for the Council, one which impacts upon our citizens' health and well-being and the City's overall prosperity.

The progress made, in implementing the actions include:

1. Increasing the uptake of Ultra Low Emission Vehicles (ULEVs) is a priority for the City and a unique Local Sustainable Transport Fund (LSTF) funded scheme supporting SMEs to switch to electric vehicles has been launched. OLEV funding is also being utilised for the installation of rapid charging points across South Yorkshire.
2. Sheffield City Council successfully secured funding under the FCEV (Fuel Cell Electric Vehicle) Support Scheme to support the deployment of 5 Renault Symbio hydrogen vans into our Council Transport Services fleet. These are being fuelled at ITM Power Ltd., the energy storage and clean fuel Company, which launched its first public access hydrogen refuelling station (M1 Wind Hydrogen Refuelling station) at the Advanced Manufacturing Park off M1 J33, funded by Innovate UK.
3. Improving the city's bus fleet by reducing their emissions via retrofitting or replacement. Clean Bus Technology Funding 2017 and 2018 has been secured to retrofit approx. 130 buses.
4. The roll out of anti-idling zones across the city and the introduction of anti-idling zones at all schools across the city.
5. Consultation and work with the city's taxi operators on standards and investment are ongoing as well as engagement with taxi drivers.
6. The Sheffield Clean Air Strategy has a Clean Air Vision that wants air in Sheffield to be safe for all to breathe, regardless of where people live, work or visit. It has identified key principles that will be followed to improve air quality in Sheffield, including focusing on the biggest causes of air pollution and improve them as quickly as possible.

Conclusions and Priorities

Data for 2022 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 complies with the standards.

Sheffield's own local air quality monitoring suggests that concentrations prior to the pandemic were gradually coming down (see red line Figure ES.2) with the exception for 2019. In 2020 there were large reductions observed as a result of COVID-19 pandemic control measures across all sectors within the district, with largest improvements being observed during the period March – July when control measures were strictest. In 2021, concentrations increased between 3 to 12% increases in concentrations 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 increase further with a full year of 'business as usual' conditions. In 2022, further increases were observed across all sectors of between 11-23% on the previous year. Whilst concentrations have increased year on year since 2020, observed concentrations are 0.6 - 5.0µg/m^3 lower than pre-pandemic levels. Though concentrations are lower than pre-pandemic levels, number of monitoring sites above the objective have not fallen.

We are satisfied that 2022 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 several measures during the current reporting year of 2022 in pursuit of improving local air quality. Sheffield City Council's priorities for the coming year are; Directorate Priority;

- Develop / Update the council's Air Quality Strategy to reflect National requirements and meet local future needs, setting out the districts Air Quality ambition for the next 5 years
- Deliver the Class C Clean Air Zone and additional measures
- Begin construction of a new 5-year Air Quality Action Plan, which compliments the council's Clean Air Plan

In 2023, Sheffield City Council will conclude delivery its Clean Air Plan. 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 Clean Air Plan measures (CAZ) to ensure Action Plan measures meet future needs.

As such, given that the Action Plan has key dependencies linked to understanding of the CAZ, the council plan to prioritise the development an overarching strategy in 2023 to set out our ambition for the next 5 years.

The council will also begin development of the Action Plan by setting up working groups and starting relevant stakeholder engagement in 2023, 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 CAZ, which may elongate the process.

Local Engagement and How to get Involved

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

- Raising awareness: The Government funded 'Air Aware Sheffield' Air Quality campaign, which started in October 2014 and concluded in 2018 after securing additional funding from the Air Quality Grant Scheme 2016-17, continued to help the Council raise awareness around this key issue, and to engage and encourage everyone to do their bit, including private Car drivers.

Following the successful bid for the Air Quality Grant Scheme 2017-18 by Doncaster Metropolitan Borough Council as lead authority representing all four South Yorkshire authorities, a Fuelling Change campaign with the key aim of encouraging the uptake of low emission vehicles and alternative fuels amongst South Yorkshire drivers, especially car drivers was launched in 2018.

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 get information for 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

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

This ASR has been approved by:

Tom Finnegan-Smith

Head of Strategic Transport, Sustainability and Infrastructure

This ASR has 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:

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Figures

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1 Local Air Quality Management

This report provides an overview of air quality in Sheffield City Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by 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 2.1. The table presents a description of the 3 AQMAs that are currently designated within Sheffield. Appendix D: Map(s) of Monitoring Locations and AQMAs 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.

Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at:-

https://uk-air.defra.gov.uk/aqma/details?aqma_ref=51

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Sheffield AQMA	2010	NO2 Annual Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	YES	59	63		Air Quality Action Plan (AQAP) 2015	https://bit.ly/2ITZ9gb
Sheffield AQMA	2010	NO2 Hourly Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	YES	55	35		Air Quality Action Plan (AQAP) 2015	https://bit.ly/2ITZ9gb
Sheffield AQMA	2010	PM10 24 Hour Mean	The whole of the Urban area of the City of Sheffield; excluding the Peak Park area	YES	8	6		Air Quality Action Plan (AQAP) 2015	https://bit.ly/2ITZ9gb

☒ **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 City Council

Sheffield City Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 7 measures are included within Table 2.2, with the type of measure and the progress Sheffield City Council have made during the reporting year of 2022 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in our respective 2015 Action Plan and the 2017 Sheffield City Council Air Quality Strategy, both of which are available on the council's website on the following link;

https://www.sheffield.gov.uk/pollution-nuisance/air-quality

Key completed measures are;

- Development of the Class C Clean Air Zone – Launched 27 February 2023
- Delivery of EV Charge infrastructure & Commercial Vehicle Trials Scheme
- Reviewed policy documentation

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

- Implementation of the Class C Clean Air Zone
- Implementation of the Bus Only scheme on Arundel Gate
- Undertake Anti-idling measures on Arundel Gate
- Delivery of Financial Assistance Scheme to support fleet replacement
- Develop a new Sheffield Air Quality Strategy and Action Plan

Sheffield City Council's priorities for the coming year are to implement the Clean Air Zone and develop new policy which reflects the needs of the city in the future.

Sheffield City Council worked to implement these measures in partnership with the following stakeholders during 2022:

- Internal Council Departments
- Residents and businesses

- Key Anchor Institutions
- Combined Authority
- National Highways
- Environment Agency

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

- Implementation of the CAZ;
    - *The key challenge to success of the CAZ relates to the speed at which the fleet renews, performance abatement technology for tailpipe emissions and impact of local background chemistry as emissions reduce.*
    - *The other challenge relating to the CAZ 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 CAZ process or the LAQM process*
- 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 other key challenge be to develop a strategy that compliments existing strategies or those in development, such as the Climate Emergency*
- Development of the Air Quality Action Plan
    - *The key challenges for development of the strategy will centre around availability of officer time and success of engagement with key stakeholders*
    - *Unlike the strategy, which will set out the council's ambitions and aspirations, the action plan will contain the relevant measures that target pollution reduction. Therefore, the council will need to understand the real-world impact of the CAZ to ensure the measures are complimentary and address any issues which may arise. It is for this reason that evaluation of the CAZ is seen as a key dependency for the delivery of the council's Action Plan and likely elongate the process.*

- *The other key challenge around creation of a plan centres around funding and resource in part to develop, but post adoption, to implement measures to deliver solutions*

Whilst the measures stated above and in Table 2.2 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 districtwide AQMA's for NO_2 long-term / short-term and PM_{10} 24=hourly objectives.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	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
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
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

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
4	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
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
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

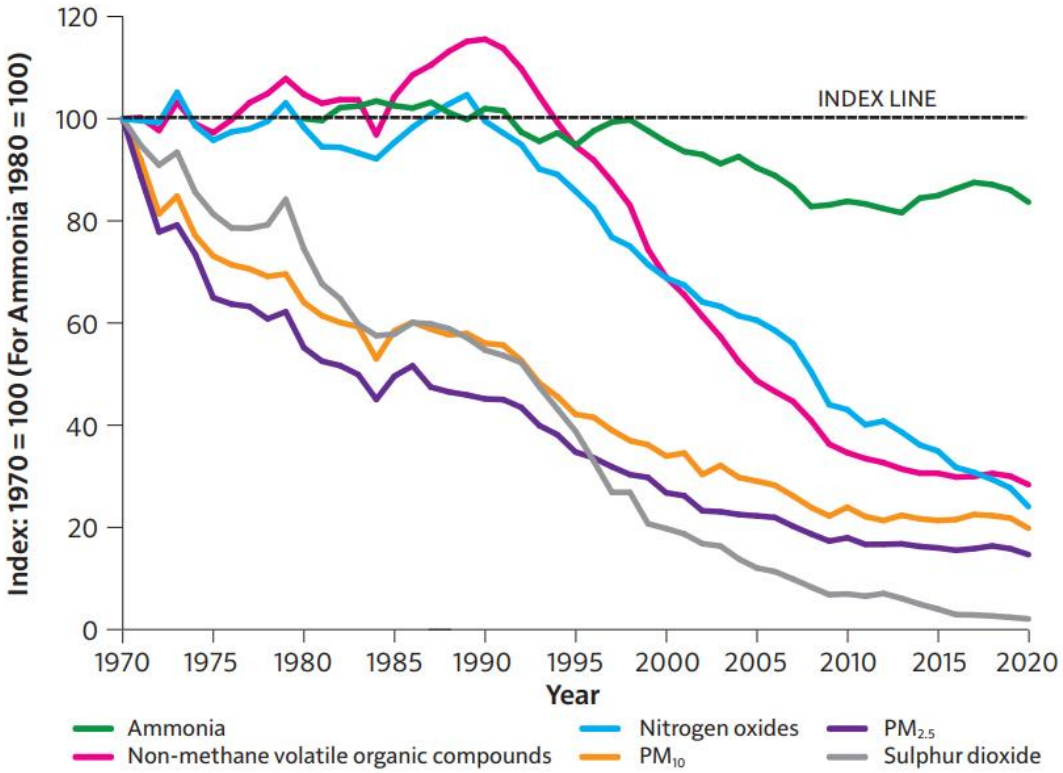
Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
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), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Figure 2.1 is taken from the 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 within progress has slowed within the last decade

Figure 2.1 – National Annual Emission trends



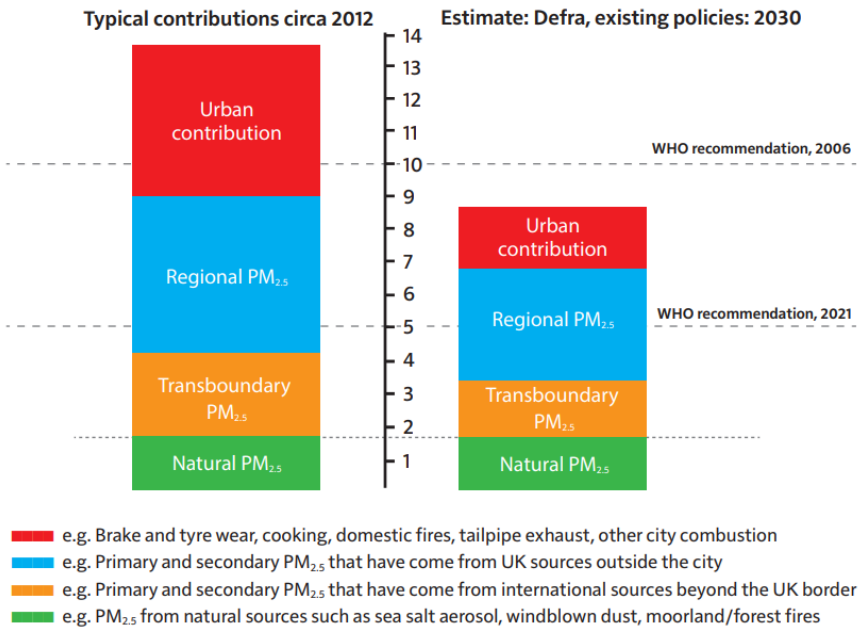
Note: The figure shows trends in annual emissions of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxides, ammonia, non-methane volatile organic compounds, and sulphur dioxide, 1970 to 2020, expressed as a percentage change from the base year of 1970 (for ammonia the base year is 1980).

Source: Ricardo Energy & Environment. Defra (2022)[2]

Whilst current $PM_{2.5}$ objectives are the responsibility of His Majesties Government, National government policy requires local authority to assist with $PM_{2.5}$ emission reduction. The Air Quality Expert Group provide estimate on current source contribution of $PM_{2.5}$

within a local, of which the local authority can influence primarily urban contribution (figure 2.2)

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

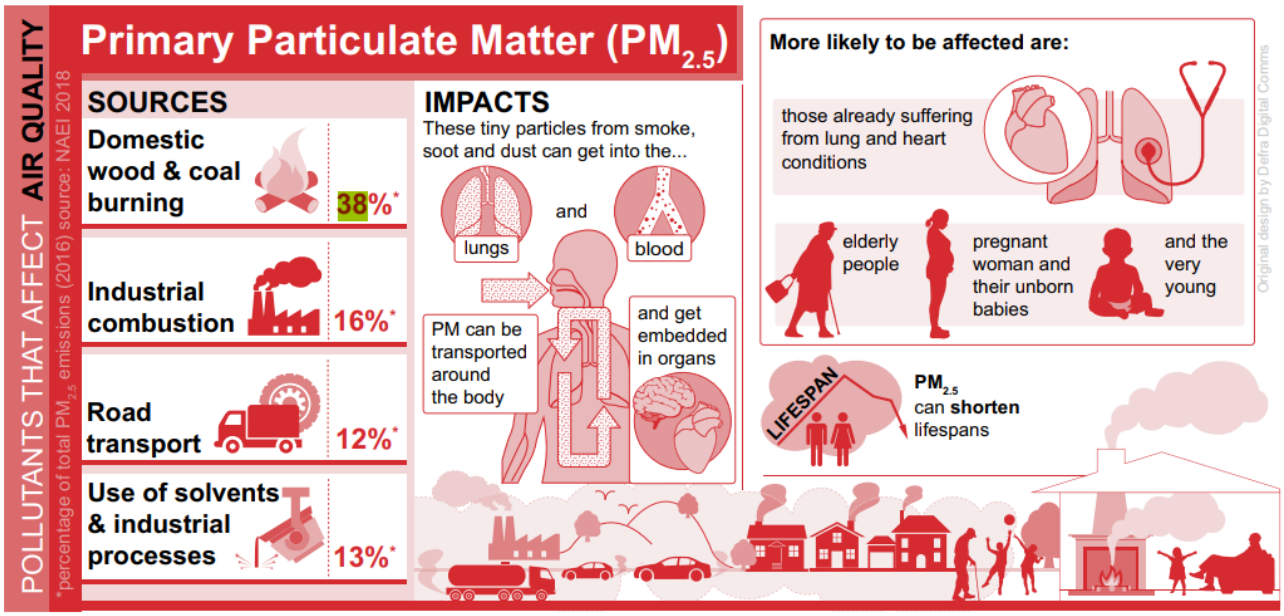


Left: the period circa 2012 (based on materials in reference 3). Right: contributing sources that might be anticipated in 2030 based on the author's evaluation of impacts arising from likely emissions reduction by 2030. Y-axis is atmospheric concentration in units of µg/m³

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

In accordance with the National Air Quality Strategy, emission 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 2.4 – Sources of $PM_{2.5}$ emissions

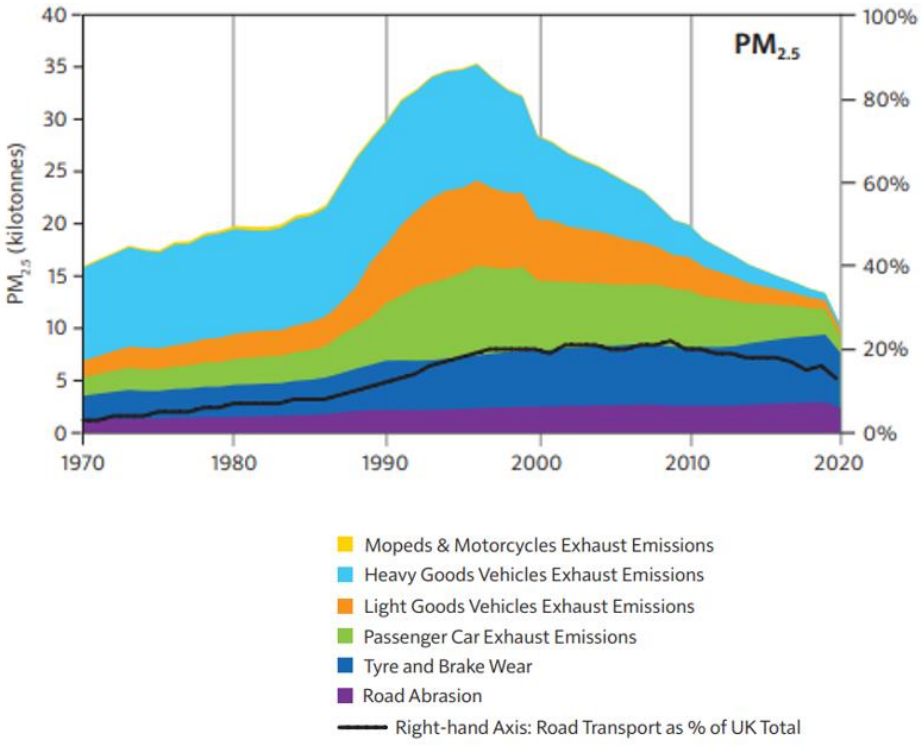


Within the Sheffield locality, primary sources of $PM_{2.5}$ emissions from the area are likely to be from road, industry and domestic heating. Figures 2.4 and 2.5 taken from the Chief Medical Officer's Annual Report 2022 for Air Quality shows the estimated primary sources for the industrial and transport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

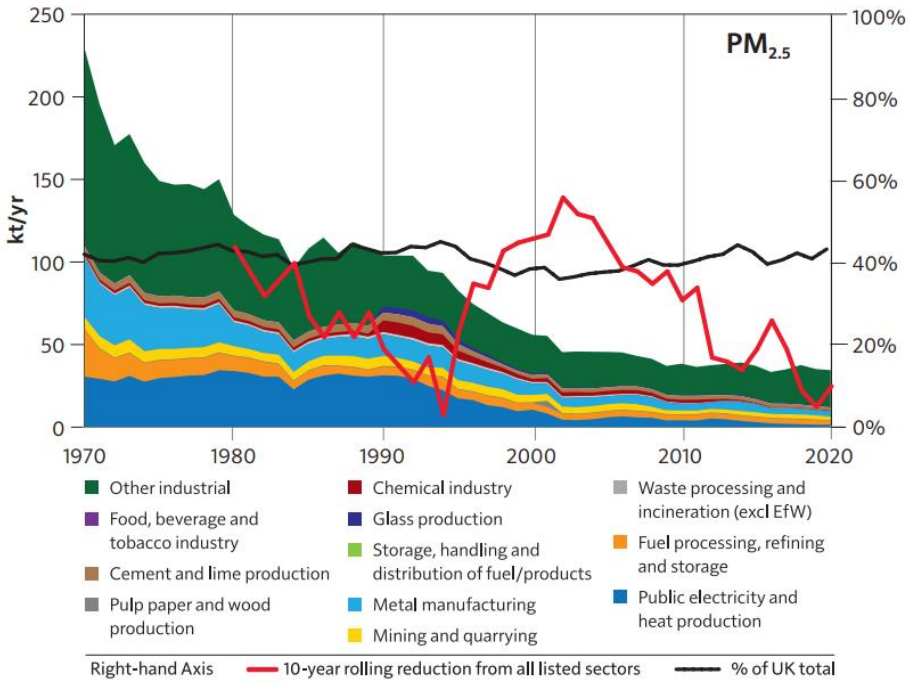
With regards to transport emissions, focus has remained on control of tail-pipe emissions and the recently introduced CAZ targets the HGV, Bus, Taxi and LGV sectors, though it is noted from figure 2.3 that further work within the domestic fleet and to create a transport environment to reduce none-tailpipe 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[7] analysed by Air Quality Consultants Ltd

Figure 2.5 – Total UK emissions of SO2 from industrial sectors reported in the NAEI

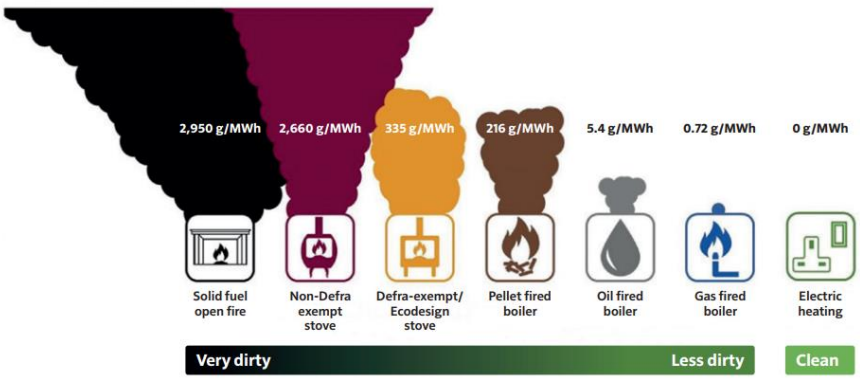


Notes: Also showing the contribution of these sectors to the total reported UK emissions (black dashed line). Red line shows the % change over the preceding 10 years.

Source: National Atmospheric Emissions Inventory[10]

Domestic heating was estimated to account for 38% of $PM_{2.5}$ emissions in the Clean Air Strategy 2019, though this figure has large uncertainty due to the lack of data on the number of homes currently heated, the type of appliance, fuel used and frequency of use. As such, whilst it is difficult to estimate the impact to outdoor concentrations within the Sheffield district, it is important to note that type of appliance within a property will hugely influence indoor exposure and outdoor contribution (see figure 2.6).

Figure 2.6 – The relative PM2.5 emissions from domestic heating methods



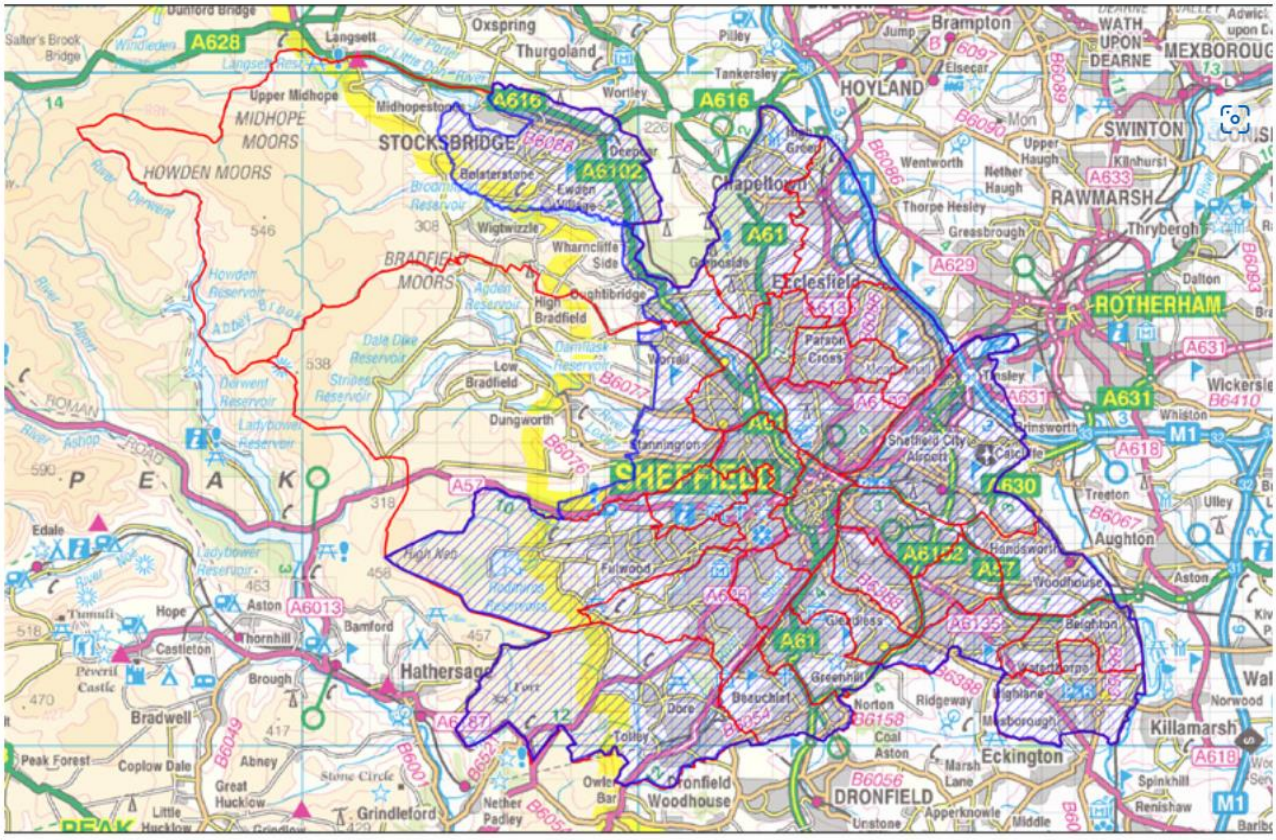
Note: The air pollution emissions will also depend on the age of the appliance, how it is maintained and used and the fuel burned (for example, dry or wet wood).

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[12] (1A4 small combustion tables). Adapted from the Clean Air Strategy[13] with updated data

Whilst our preference would be for residents to select the lowest emitting form of heating , in order to ensure best practice for the use of wood burning stoves within out highest populated areas, the urban area of Sheffield is a smoke control and as such use of none-compliant fuels and stoves are prohibited. The boundary of the smoke control area is shown within figure 2.7

Figure 2.7 – Sheffield City Council Smoke Control Area



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

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 2021 is estimated to be 5.2%, which is below the England average of 5.5%. Though it must be noted that this is now higher than the Yorkshire & Humber regional average of 5.0% and remains higher the South Yorkshire average of 5.1%.

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 including stationary and

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 emission:

- Develop a new Clean Air Strategy as stated earlier, for Sheffield, with the inclusion of local $PM_{2.5}$ ambitions, which will be designed to complement the new National Air Quality Strategy
- Develop a new 5-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 lead 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 2022 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 2018 and 2022 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 6 sites during 2021 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 https://bit.ly/3QGB7YT page presents automatic monitoring results for Sheffield City Council, with automatic monitoring results also available through the UK-Air website.

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

3.1.2 Non-Automatic Monitoring Sites

Sheffield City Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 235 sites during 2022. 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 greater a detailed map that provides access to data is available on the council's website on the following link;

https://www.sheffield.gov.uk/pollution-nuisance/air-quality

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 2022 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 red line Figure 3.1) with the exception for 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 – July when control measures were strictest. In 2021, concentrations increased between 11 to 12% increases in concentrations for NO_2 at key roadside locations on the previous year. In 2022, further increases were observed across all sectors of between 11-23% on the previous year. Whilst concentrations have increased year on year since 2020, observed concentrations are 0.6 - 5.0µg/m^3 lower than pre-pandemic levels. Though concentrations are lower than pre-pandemic levels, number of monitoring sites above the objective have not fallen. In 2020, the percentage of monitoring sites exceeding the 40µg/m3 threshold for NO_2 fell, but did not reach zero, as shown in Figure 3.2. This demonstrates that even with wide reaching pandemic measures, compliance was not achieved. In 2021, as would be expected, there was an increase in

number of sites exceeding the 40µg/m3 threshold, attributed to the return to societal norms. Furthermore, this doubled in 2022 on the previous year and was reflective of pre-pandemic numbers. 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, hourly objectives also fell at both real-time monitors and passive sites. Since 2020, growing concentrations has 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. This increase is displayed in Figure 3.3 and has resulted in 10 sites anticipated to exceed the Hourly NO_2 objective in 2022. The sites predicted to exceed the Hourly objective are primarily centred around the eastern side of the city centre and at the train station. The source of the elevated concentrations are as a result of transport emissions, in close proximity to roads and key transport hubs, though it must be noted that 4 of the 10 sites are within the curtilage of the train station.

With regards to NO_2 improvement measures, 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 – NO_2 Concentrations over last 6 years

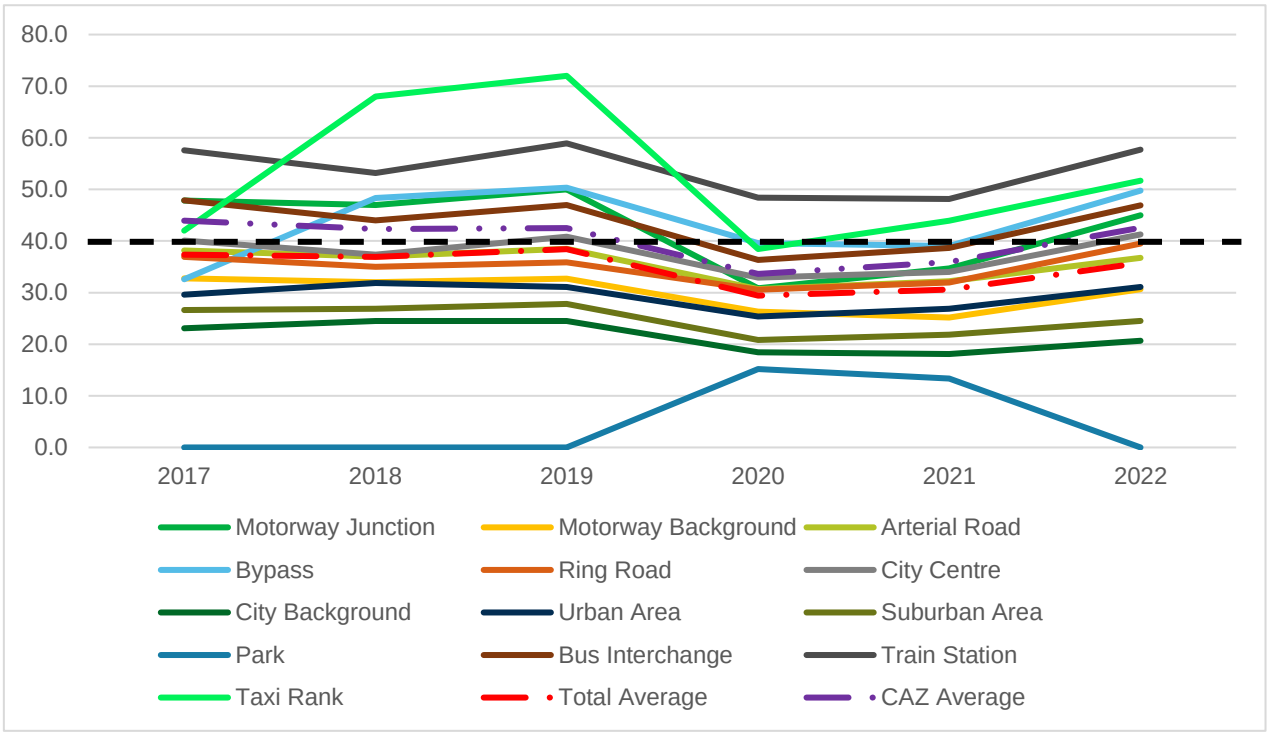


Figure 3.2 – Number of monitoring sites exceeding Annual NO_2 Concentrations over last 6 years

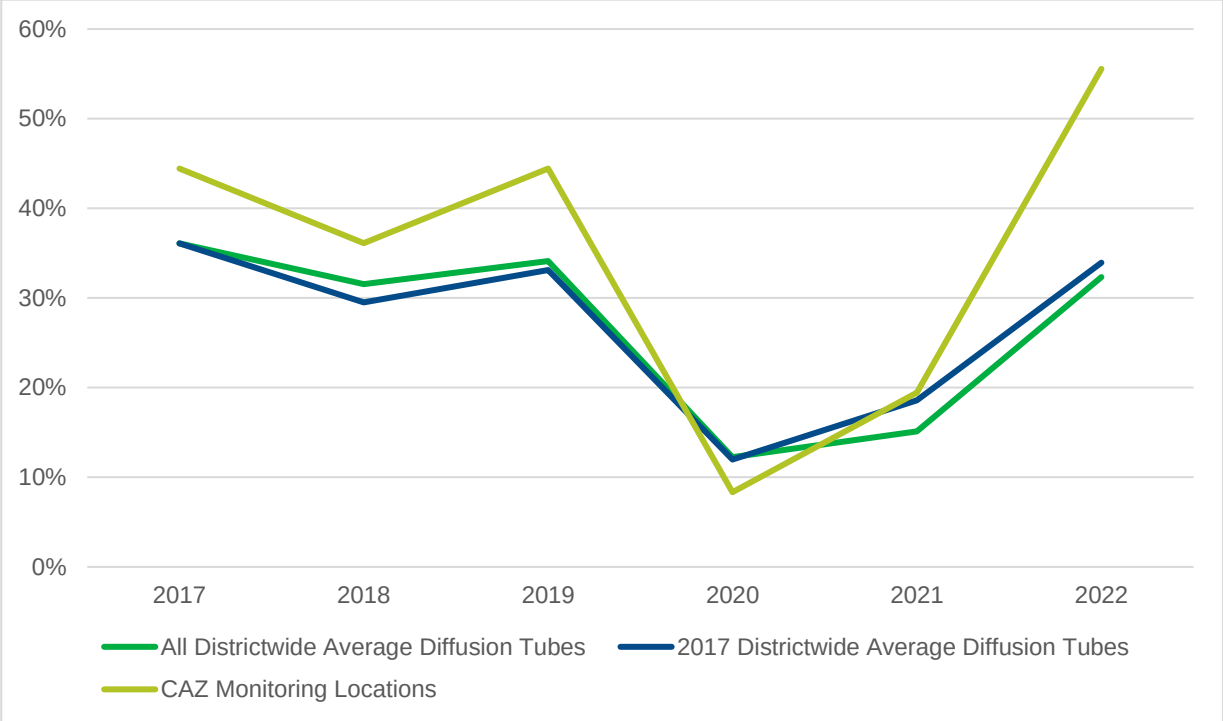
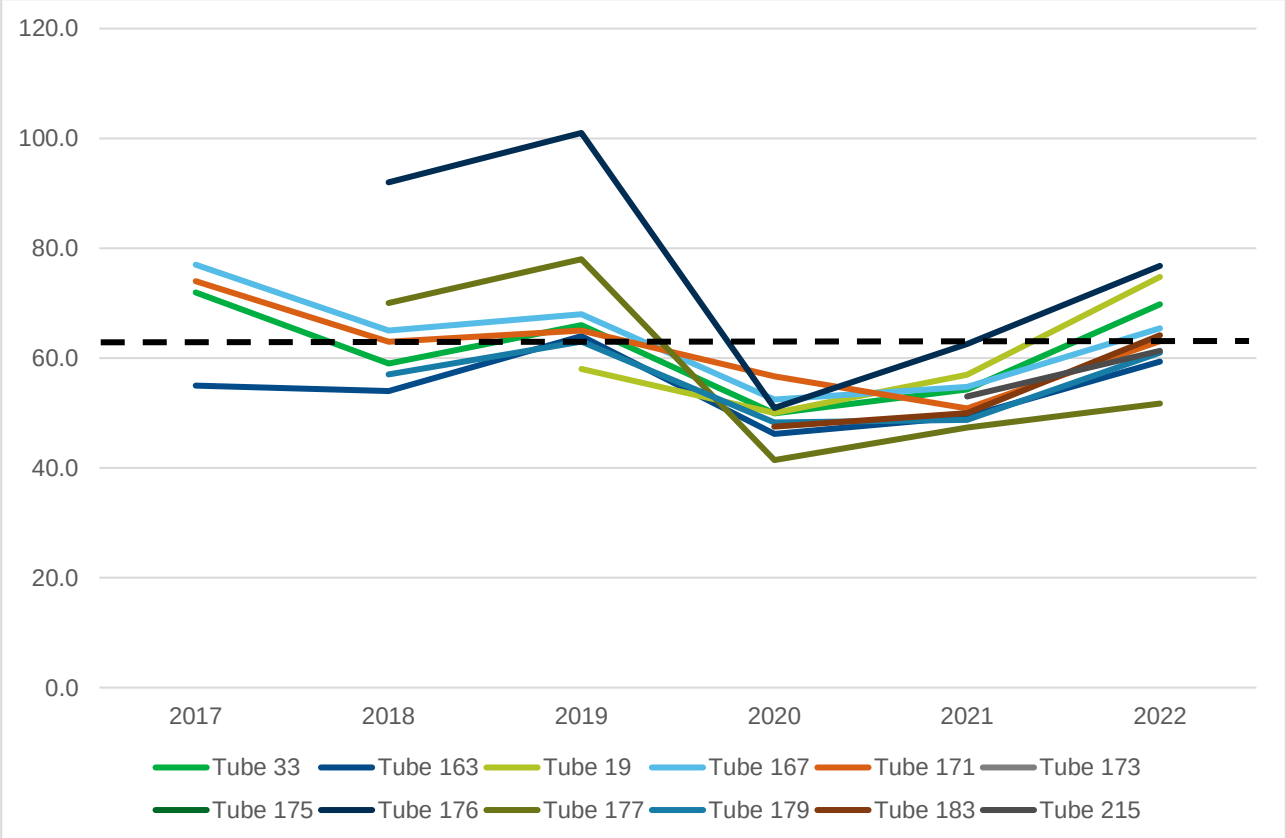


Figure 3.3 – Passive Monitoring Annual NO_2 Concentrations exceeding 60µg/m^3 over last 6 years



3.2.2 Particulate Matter (PM_{10})

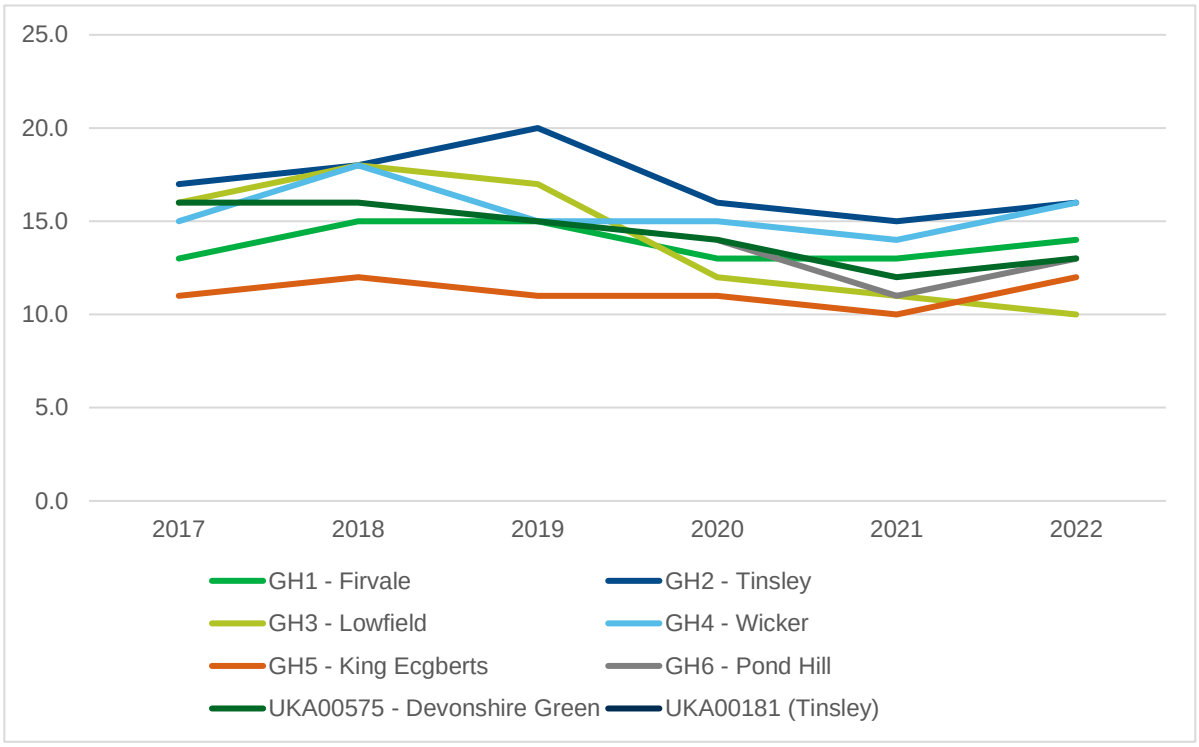
Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

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 1 location, though levels remain below the objective and 1 - 4µg/m^3 below pre-pandemic levels. The only site where reduction has been observed was at a roadside location just outside the city centre. All the other sites, including background locations have seen increases, which would suggest that increases are not necessary linked to a return to transport norms and may be as a result of external particulate or as a result of increase in other sectors such as domestic burning.

Although the Sheffield district complied with standards and trends have shown reduction between 2018 and 2021, it must also be noted there is no safe limit for Particulate and increases in 2022 are of concern, which is why inclusion of measures to target pollutants in next Action Plan is important.

Figure 3.4 – PM_{10} Concentrations over last 6 years

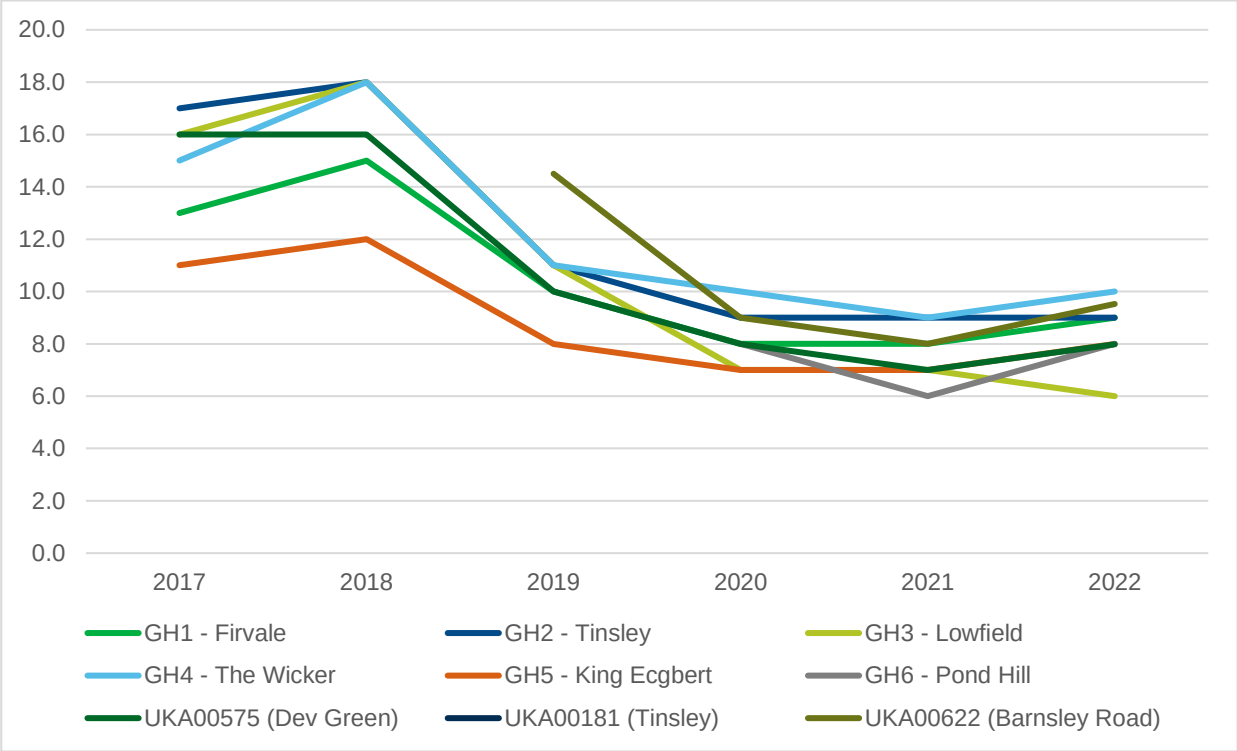


3.2.3 Particulate Matter ($PM_{2.5}$)

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 and 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 1 location, though levels remain below the objective and 1 - 4µg/m^3 below pre-pandemic levels. This is also reflected in concentrations observed within PM_{10}.

Figure 3.5 – $PM_{2.5}$ Concentrations over last 6 years



In addition to pollutant levels, Sheffield City Council also collect weather data, which can be compared against emissions over previous years. Figure 3.6 and 3.7 compare monthly $PM_{2.5}$ data and associated weather influences over the last 3 years. Whilst this comparison is for $PM_{2.5}$, PM_{10} monthly data trends parallel those of $PM_{2.5}$.

Particulate data commonly follows seasons peaks and troughs, but as observed in figures 3.6 and 3.7 summer months can also have spikes. Season variation in PM data is reflective of temperature trends as shown in figure 3.7, which can be explained due to the influence on heating and transport choices, but it must be also noted that the climate for winter months are conducive for elevated levels. Spikes and troughs observed outside of common seasonal variation, which can be seen in figure 3.6 clearly follow wind speeds, specifically with spikes occurring when wind speeds are lower and troughs resulting from higher wind speeds. This is most apparent with the March 2022 result.

Figure 3.6 – Average Monthly $PM_{2.5}$ Concentrations (µg/m^3) against Average Monthly Wind Speed (m/s)

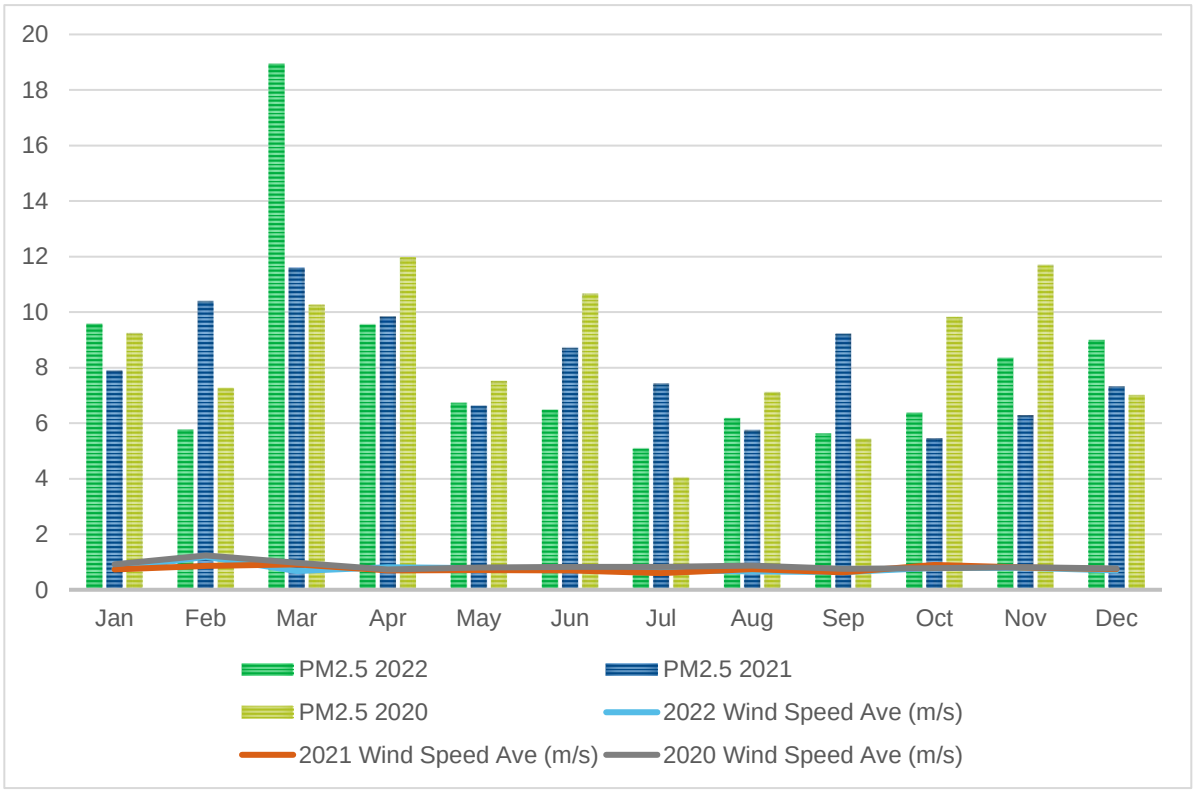
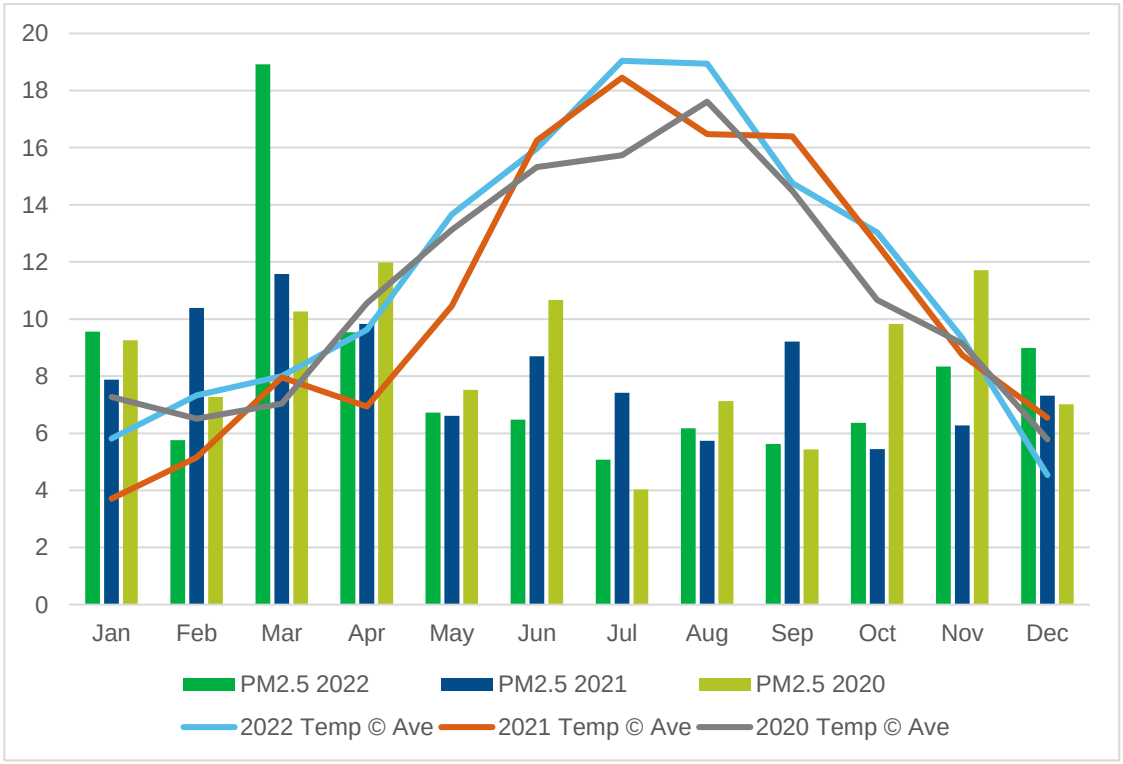


Figure 3.7 – Average Monthly $PM_{2.5}$ Concentrations (µg/m^3) against Average Monthly Temperature (°c)

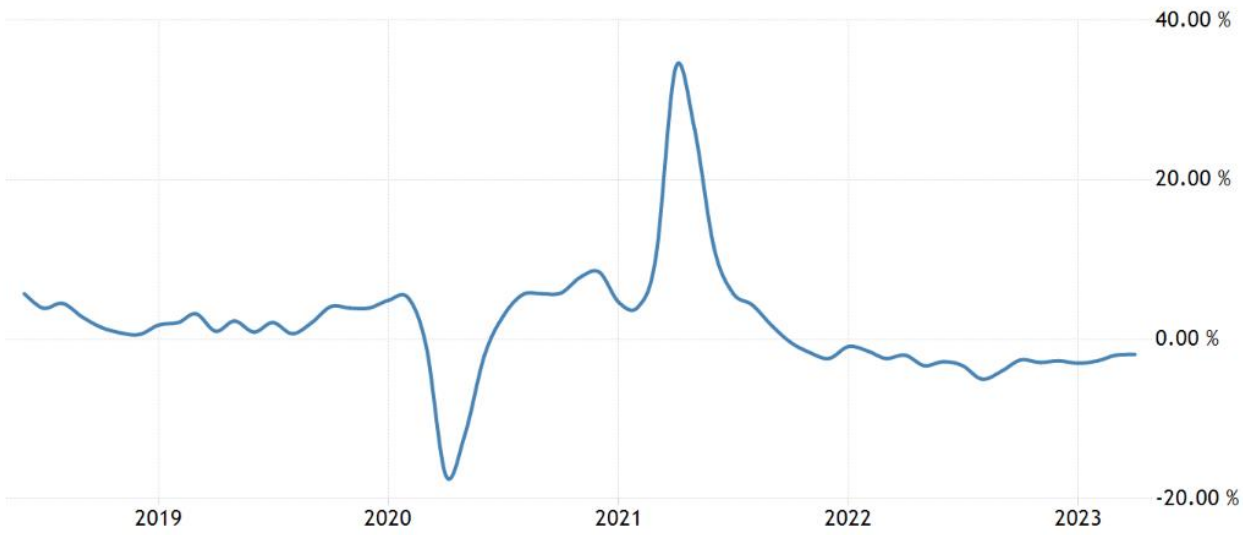


Specific to why 2022 PM levels did not reflect previous trend of continued improvement, questions may be asked around the impact of increased fuel and energy costs or other behaviour changes within the locality.

Firstly, post-pandemic transport has increased over the period, though this has been the case for the last 2 years since 2020 and has resulted in increases in concentrations within 2021 and 22 for NO_x but were not reflected in PM data.

Furthermore, using the UK industrial productivity index as indicative of industrial output, figure 3.8 shows that there was significant growth in 2021 following pandemic period, but this growth has not been reflected in 2022 and as such if local trends reflect the national index, one expects emissions from industry to be a constant or less rather than increasing in 2022.

Figure 3.8 – Office for National Statistics – Industrial Productivity Index for last 5 years



With regards to the domestic energy market, there has been discussion around the impact of current increasing energy costs and a rise in domestic wood and coal burning. Figure 3.9 and 3.10 taken from the Ofgems retail price index for energy suppliers shows that the greatest increase in fuel cost occurred at its greatest between 28 March 2022 and 28 October 2022, which is after the highest peak Particulate period observed, which was March 2022. When comparing figure 3.5 and 3.6 to those of 3.9 and 3.10, the link between rise in fuel costs and increased particulate in 2022 with Sheffield appears to be limited.

Figure 3.9 – Ofgem – Retail Price comparison by tariff type; Domestic GB

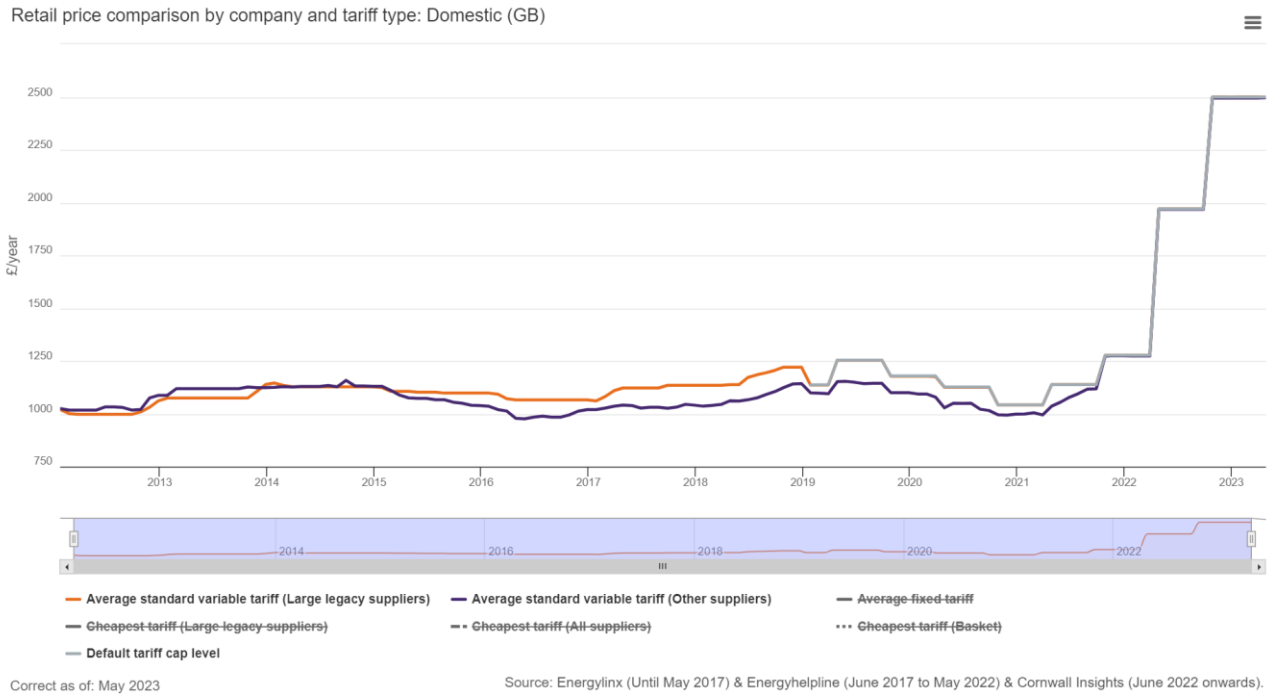
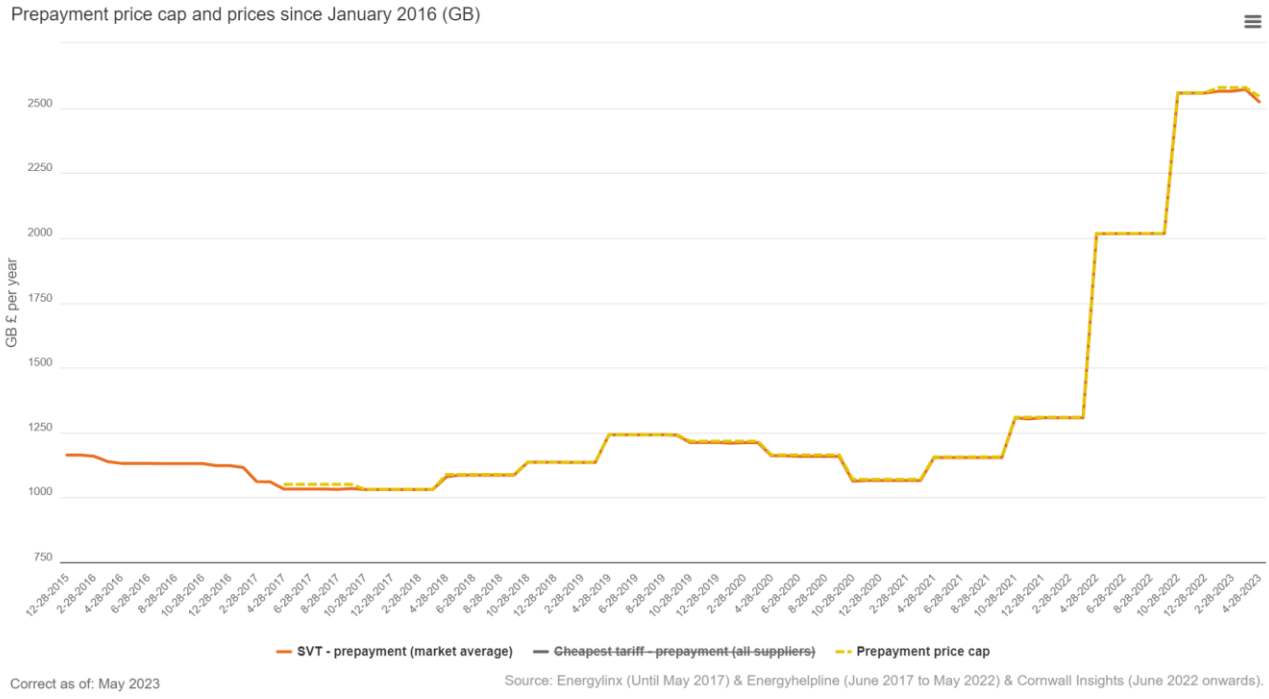


Figure 3.10 – Ofgem – Pre-payment Price; Domestic GB



Given the information presented above and that the only site where reduction has been observed was at a roadside location just outside the city centre with all the other sites, including background locations have seen increases, it would suggest that increases are not necessary linked to change is a specific polluter sector and as a result of lower wind

speeds as a result of the lack of turbidity affecting dispersal of particulate rather than it being as a result of focused activity such as domestic heating. Therefore, with this in mind, targeted intervention measures should focus on reductions in all urban contributions to limit higher levels when wind speeds are at there lowest.

Although the Sheffield district complied with standards and trends have shown reduction between 2018 and 2021, it must also be noted there is no safe limit for Particulate and increases in 2022 are of concern, which is why inclusion of measures to target pollutants in next Action Plan is important.

3.2.4 Sulphur Dioxide (SO_2)

Sheffield City Council monitor 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 is no SO_2 data available for 2022, 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.

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?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	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, SO2	YES – SCC City Wide	Chemiluminescence, FIDAS, UV Fluorescence	0	6m	2.5
GH4	Wicker	Urban Background	435959	388021	NO2, PM2.5, PM10, O3	YES – SCC City Wide	Chemiluminescence, FIDAS, UV Absorption	5	42m	2.5
GH5	King Ecgbert School	Urban Background	430977	380760	NO2, PM2.5, PM10, O3	YES – SCC City Wide	Chemiluminescence, FIDAS, UV Absorption	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?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	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) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable

Table A.2 – 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 AQMA	10.0	5.0	No	2m
2	7 Bawtry Gate SCC CW	Urban Background	439994	390866	NO2	Yes - SCC City Wide AQMA	5.0	20.0	No	2m
3	47 Bawtry Road SCC CW	Roadside	440045	390884	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
4	109 Bawtry Road SCC CW	Roadside	440177	390770	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
5	Suffolk Road SCC CW	Roadside	435749	386727	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
6	Attercliffe Road SCC CW	Roadside	438880	389931	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
7	Pure Gym, St Mary's Road SCC CW	Roadside	435729	386513	NO2	Yes - SCC City Wide AQMA		4.0	No	2m
8	Parkway Layby 1 SCC CW	Roadside	437164	387687	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
9	Upwell Street SCC CW	Kerbside	437703	390079	NO2	Yes - SCC City Wide AQMA	1.8	0.8	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)
10	Greenland Road 1 (Bus stop) SCC CW	Roadside	439355	388385	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
11	Loxley New Road SCC CW	Roadside	432643	389427	NO2	Yes - SCC City Wide AQMA	0.0	3.0	No	2m
12	Greenland Road 2 (Robson) SCC CW	Roadside	439312	388591	NO2	Yes - SCC City Wide AQMA	50.0	2.5	No	2m
13	Bowden Wood Close SCC CW	Roadside	439051	386743	NO2	Yes - SCC City Wide AQMA	20.0	2.0	No	2m
14	Parkway Broad Street SCC CW	Kerbside	436141	387521	NO2	Yes - SCC City Wide AQMA	4.0	0.8	No	2m
16	Derek Dooley Lampost 94 (Tube 1) SCC CW	Kerbside	435639	388155	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
17	Duke Street SCC CW	Roadside	436109	387458	NO2	Yes - SCC City Wide AQMA	1.0	3.0	No	2m
18	Waingate SCC CW	Urban Centre	435744	387619	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
19	Fitzalan Square SCC CW	Urban Centre	435714	387476	NO2	Yes - SCC City Wide AQMA	4.0	1.0	No	2m
20	STOPPED 06/22 Fargate SCC CW	Urban Centre	435357	387243	NO2	Yes - SCC City Wide AQMA		15.0	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)
21	Arundel Gate, Gallery SCC CW	Roadside	435546	387052	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
22	Fielding Road SCC CW	Roadside	433346	390814	NO2	Yes - SCC City Wide AQMA	2.0	2.0	No	2m
23	Arundel Gate/Surrey Street SCC CW	Roadside	435608	387100	NO2	Yes - SCC City Wide AQMA		4.0	No	2m
24	University Roundabout SCC CW	Roadside	434435	387394	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
25	Netherthorpe School SCC CW	Roadside	434646	387836	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
26	Upper Hanover Street SCC CW	Roadside	434403	386966	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
27	Shoreham Street SCC CW	Roadside	435554	386638	NO2	Yes - SCC City Wide AQMA	3.0	2.0	No	2m
28	St Mary's Road/Charlotte Road SCC CW	Roadside	435313	386367	NO2	Yes - SCC City Wide AQMA		5.0	No	2m
29	Chesterfield Road/Woodseats SCC CW	Roadside	434814	383335	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
30	Queens Road/Edmund Road SCC CW	Roadside	435499	385690	NO2	Yes - SCC City Wide AQMA		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)
31	Abbeydale Rd/Carter Knowle SCC CW	Roadside	434324	384311	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
32	Ecclesall Road SCC CW	Roadside	434299	386275	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
33	Arundel Gate Interchange SCC CW	Roadside	435602	387292	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
34	Pond Street Interchange SCC CW	Kerbside	435700	387256	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
35	Meadowhall Interchange SCC CW	Roadside	439116	391193	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
36	ACE 1 Wicker SCC CW	Urban Centre	435950	387996	NO2	Yes - SCC City Wide AQMA	15.0	43.0	Yes	2m
37	STOPPED 07/22 ACE 2 Wicker SCC CW	Urban Centre	435951	387997	NO2	Yes - SCC City Wide AQMA	15.0	43.0	Yes	2m
38	Arundel Gate, Stoddart Building SCC CW	Roadside	435463	386972	NO2	Yes - SCC City Wide AQMA		4.0	No	2m
39	Attercliffe Road, Arooj SCC CW	Roadside	437104	388329	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
40	98 Bawtry Road SCC CW	Roadside	440116	390800	NO2	Yes - SCC City Wide AQMA	4.0	1.0	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)
42	Parkway Layby 2 SCC CW	Roadside	437766	387454	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
43	Bernard Rd SCC CW	Roadside	436646	387756	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
45	Derek Dooley Lamp post 93 triplicate (Tube 1) SCC CW	Roadside	435789	388072	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
46	STOPPED 06/22 Derek Dooley Lamp post 93 triplicate (Tube 2) SCC CW	Roadside	435790	388073	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
47	STOPPED 06/22 Derek Dooley Lamp post opp. 94 triplicate (Tube 2) SCC CW	Kerbside	435640	388156	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
48	STOPPED 06/22 Derek Dooley Lamp post opp. 94 triplicate (Tube 3) SCC CW	Kerbside	435641	388157	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
49	Bridgehouses Duplicate (Tube 1) SCC CW	Roadside	435435	388020	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
50	STOPPED 06/22 Bridgehouses Duplicate (Tube 2) SCC CW	Roadside	435436	388021	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
53	Coldwell Lane/Sandygate Road LTP	Suburban	431193	386795	NO2	Yes - SCC City Wide AQMA	10.0	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)
54	DEFRA Barnsley Road monitor (Tube 1)	Roadside	436275	389926	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
55	Manchester Road/Sale Hill LTP	Roadside	433013	386750	NO2	Yes - SCC City Wide AQMA	10.0	3.0	No	2m
56	Whitham Road/Crookes LTP	Roadside	433327	386862	NO2	Yes - SCC City Wide AQMA	6.0	1.0	No	2m
57	Whitham Road/Moor Oaks LTP	Roadside	433514	387033	NO2	Yes - SCC City Wide AQMA	5.0	1.7	No	2m
58	STOPPED 06/22 Western Bank/Northumberland Road LTP	Roadside	433752	387230	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
59	Western Bank/Clarkson Street LTP	Roadside	434048	387229	NO2	Yes - SCC City Wide AQMA	5.0	2.0	No	2m
60	Brook Hill/Favell Road LTP	Roadside	434352	387348	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
61	DEFRA Barnsley Road (Socotec 2) SCC CW	Roadside	436276	389927	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
62	STOPPED Crimicar Road/Brookhouse Hill LTP	Roadside	430407	385397	NO2	Yes - SCC City Wide AQMA	10.0	2.0	No	2m
63	DEFRA Barnsley Road (Socotec 3) SCC CW	Roadside	436277	389928	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	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)
64	DEFRA Tinsley monitor (Tube 1) Socotec	Industrial	440233	390587	NO2	Yes - SCC City Wide AQMA	70.0	100.0	Yes	2m
65	DEFRA Tinsley monitor (Tube 2) Socotec	Industrial	440234	390588	NO2	Yes - SCC City Wide AQMA	70.0	100.0	Yes	2m
66	DEFRA Tinsley monitor (Tube 3) Socotec	Industrial	440235	390589	NO2	Yes - SCC City Wide AQMA	70.0	100.0	Yes	2m
67	Glossop Road/Westbourne Road LTP	Roadside	433429	386728	NO2	Yes - SCC City Wide AQMA	4.0	1.7	No	2m
68	Glossop Road/Clarkehouse Road LTP	Roadside	433936	386893	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
69	West Street/Regent Street LTP	Roadside	434574	387155	NO2	Yes - SCC City Wide AQMA	2.5	2.0	No	2m
70	West Street/Leopold Street LTP	Roadside	435255	387349	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
71	Queens Road - G Casino LTP	Kerbside	435807	386350	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
72	Queens Road - Asda LTP	Roadside	435697	385892	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
73	463 Queens Road LTP	Kerbside	435490	385660	NO2	Yes - SCC City Wide AQMA	2.0	0.7	No	2m

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74	London Road -Sark Road LTP	Roadside	435182	385241	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
75	London Road -Ponsfords LTP	Roadside	435161	384986	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
76	Chesterfield Road - Meersbrook Park LTP	Roadside	434965	384613	NO2	Yes - SCC City Wide AQMA	1.0	2.5	No	2m
77	513 Chesterfield Road LTP	Roadside	434679	383718	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
78	Chesterfield Road - Olivet Road LTP	Roadside	434857	382968	NO2	Yes - SCC City Wide AQMA	2.5	2.0	No	2m
79	Chesterfield road - Charles Ashmore LTP	Roadside	434906	381857	NO2	Yes - SCC City Wide AQMA	15.0	2.0	No	2m
80	Meadowhead Road LTP	Roadside	435135	381355	NO2	Yes - SCC City Wide AQMA	6.0	1.0	No	2m
82	Lowfield School GH3-2 Socotec	Urban Centre	435239	385398	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	2m
83	Lowfield School GH3-3 Socotec	Urban Centre	435240	385399	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	2m
84	Tinsley GH2-1 CoLo	Industrial	440084	390760	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	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)
85	Tinsley GH2-2 CoLo	Industrial	440085	390761	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	2m
86	Tinsley GH2-3 CoLo	Industrial	440086	390762	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	2m
87	Sheffield Devonshire Green AUN CoLo	Urban Centre	434803	386947	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	2m
88	Sheffield Devonshire Green AUN CoLo	Urban Centre	434804	386948	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	2m
89	Sheffield Devonshire Green AUN CoLo	Urban Centre	434805	386949	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	2m
90	Attercliffe Common (Terry Street) LSTF	Roadside	438582	389616	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
91	Attercliffe Road (Bodmin Street) LSTF	Roadside	437928	388800	NO2	Yes - SCC City Wide AQMA	2.0	1.6	No	2m
92	Attercliffe Road (Staniforth Road) LSTF	Kerbside	437690	388529	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
93	Attercliffe Road (Tesco) LSTF	Roadside	436350	388234	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
94	Savile Street East (Gripple) LSTF	Roadside	437019	388826	NO2	Yes - SCC City Wide AQMA		3.0	No	2m

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95	Brightside Lane (Stevenson Road) LSTF	Roadside	437461	389311	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
96	Brightside Lane (Forgemaster) LSTF	Roadside	438393	390232	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
97	Brightside Lane (Jenkin Road) LSTF	Roadside	438610	390614	NO2	Yes - SCC City Wide AQMA	6.5	2.5	No	2m
98	Meadowhall Road (M1 34N) LSTF	Roadside	439167	391698	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
99	Sheffield Road (M1 34S) LSTF	Roadside	439717	390826	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
100	Chesterfield Road South/Lowedges Road A61(S)	Roadside	435182	380648	NO2	Yes - SCC City Wide AQMA	5.0	3.0	No	2m
101	STOPPED 06/22 Bochum Parkway/Norton Lane A61(S)	Roadside	435750	381591	NO2	Yes - SCC City Wide AQMA	8.5	1.6	No	2m
102	Beeley Wood Road A61 Hills	Kerbside	433250	391115	NO2	Yes - SCC City Wide AQMA	12.0	0.8	No	2m
103	Winster Road A61 Hills	Roadside	433455	390473	NO2	Yes - SCC City Wide AQMA	4.5	1.0	No	2m
104	STOPPED 09/22 Owlerton Green A61 Hills	Roadside	433630	389834	NO2	Yes - SCC City Wide AQMA		2.0	No	2m

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105	STOPPED 06/22 Hillsborough Barracks A61 Hills	Roadside	433857	389595	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
106	STOPPED 09/22 Bamforth Street A61 Hills	Roadside	433991	389394	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
107	STOPPED 09/22 Neepsend Lane A61 Hills	Roadside	434213	388870	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
108	STOPPED 06/22 181 Handsworth Road Comm	Roadside	440459	386731	NO2	Yes - SCC City Wide AQMA	0.0	10.0	No	2m
109	163 Handsworth Road/ Parkway R/A Comm	Roadside	440213	387006	NO2	Yes - SCC City Wide AQMA	3.0	2.0	No	2m
110	12 Town Street Comm	Roadside	439943	390948	NO2	Yes - SCC City Wide AQMA	2.5	1.5	No	2m
111	10 Siemens Close Comm	Roadside	440036	390822	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
112	Greasebro Road Comm	Roadside	439813	390743	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
113	342 Sheffield Rd Comm	Roadside	440014	391178	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m
115	53 Newburn Drive Comm	Roadside	440046	390737	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m

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116	30 Siemens Close Comm	Roadside	439994	390810	NO2	Yes - SCC City Wide AQMA	0.0	5.0	No	2m
117	Wicker Comm	Roadside	435909	388070	NO2	Yes - SCC City Wide AQMA	0.0	1.4	No	2m
118	Ladys Bridge Comm	Roadside	435736	387820	NO2	Yes - SCC City Wide AQMA	1.0	3.0	No	2m
119	Gibraltar Street Comm	Roadside	435239	387899	NO2	Yes - SCC City Wide AQMA	0.0	3.0	No	2m
120	Penistone Road Comm	Roadside	434806	388216	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
121	73 Burngreave Road Comm	Roadside	435843	388814	NO2	Yes - SCC City Wide AQMA	2.0	2.0	No	2m
122	Darnall Post Office Comm	Roadside	439377	387792	NO2	Yes - SCC City Wide AQMA	0.0	7.0	No	2m
123	STOPPED 06/22 Well Being, Main Road Comm	Roadside	439298	387855	NO2	Yes - SCC City Wide AQMA	0.0	2.5	No	2m
124	584 Staniforth Rd Comm	Roadside	438997	387923	NO2	Yes - SCC City Wide AQMA	0.0	3.5	No	2m
125	Don Valley Leeds Road Comm	Roadside	438121	388922	NO2	Yes - SCC City Wide AQMA		1.8	No	2m

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126	Waverley Cottages Comm	Roadside	440559	387357	NO2	Yes - SCC City Wide AQMA	4.0	1.0	No	2m
128	Stocksbridge Lidl Comm	Roadside	427261	398422	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
130	Deepcar Carr Road Comm	Roadside	428818	397977	NO2	Yes - SCC City Wide AQMA	1.0	1.0	No	2m
131	Derbyshire La Comm	Roadside	435338	382923	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
132	146 Abbeydale Road Comm	Roadside	434868	385276	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
133	150 Abbeydale Road Comm	Roadside	434862	385269	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
134	Barkers Pool Taxi Rank Comm	Kerbside	435283	387222	NO2	Yes - SCC City Wide AQMA		0.6	No	2m
135	Pingle Rd/Whirlowdale Cres Comm	Roadside	432870	383387	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m
136	Totley All Saints School Comm	Suburban	430881	379724	NO2	Yes - SCC City Wide AQMA	30.0	15.0	No	2m
137	STOPPED 08/22 Oakholme Road Comm	Suburban	433104	386380	NO2	Yes - SCC City Wide AQMA	15.0	1.5	No	2m

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138	Opposite 150 Abbeydale Road Comm	Roadside	434885	385286	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
139	35 Montgomery Road Comm	Suburban	434372	385218	NO2	Yes - SCC City Wide AQMA	0.0	14.0	No	2m
140	Zeds Nether Edge Road Comm	Roadside	434200	384869	NO2	Yes - SCC City Wide AQMA	0.0	3.5	No	2m
141	Clifford School Psalter Lane Comm	Urban Background	433650	385574	NO2	Yes - SCC City Wide AQMA	1.0	2.0	No	2m
142	Hunters Bar Juniors Comm	Urban Background	433378	385701	NO2	Yes - SCC City Wide AQMA	0.0	6.0	No	2m
143	7 Psalter Lane Comm	Urban Background	434069	385673	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m
144	Cemetery Rd, Sharrowhead R/about Comm	Urban Background	434128	385719	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m
145	981 Abbeydale Road Comm	Roadside	433640	383391	NO2	Yes - SCC City Wide AQMA	3.5	1.0	No	2m
146	La Scala Comm	Roadside	433601	383337	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
147	102 Archer Road Comm	Roadside	434188	383548	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m

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148	Chippendale Comm	Roadside	434123	383874	NO2	Yes - SCC City Wide AQMA	0.0	2.0	No	2m
149	879 Abbeydale Road Comm	Roadside	434143	383915	NO2	Yes - SCC City Wide AQMA	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 AQMA	0.0	6.0	No	2m
151	Unique Hair, 828 Ecclesall Rd/Greystones Rd Comm	Roadside	432828	385402	NO2	Yes - SCC City Wide AQMA	0.0	4.5	No	2m
152	Midgeleys Greengrocer, 946 Ecclesall Rd/Psalter La Comm	Roadside	432822	384990	NO2	Yes - SCC City Wide AQMA	0.0	4.5	No	2m
153	Ecclesall Fisheries, 97 Ecclesall Rd South Comm	Roadside	432651	384491	NO2	Yes - SCC City Wide AQMA	0.0	2.5	No	2m
154	Knowle La/Ecclesall Rd South Bus Terminus Comm	Roadside	432428	384276	NO2	Yes - SCC City Wide AQMA		0.8	No	2m
155	Ecclesall Junior School - Ringinglow Rd Comm	Roadside	432241	384593	NO2	Yes - SCC City Wide AQMA	1.5	0.5	No	2m
156	High Storrs School Comm	Roadside	431908	384518	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
157	Silverdale School Comm	Urban Background	431538	383992	NO2	Yes - SCC City Wide AQMA	0.0	10.0	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)
158	Huntley Road Ecclesall Infants Comm	Urban Background	432055	384648	NO2	Yes - SCC City Wide AQMA	0.0	3.0	No	2m
159	265 Abbeydale Road Comm	Urban Background	434821	385142	NO2	Yes - SCC City Wide AQMA	0.0	5.5	No	2m
160	Butterworth Cycles Comm	Urban Background	434522	384654	NO2	Yes - SCC City Wide AQMA	0.0	3.5	No	2m
161	Woodseats School Bus stop Comm	Roadside	434797	383255	NO2	Yes - SCC City Wide AQMA	0.0	2.5	No	2m
162	Woodseats School traffic lights Comm	Roadside	434814	383252	NO2	Yes - SCC City Wide AQMA	4.0	1.5	No	2m
163	Midland Station Opposite WH Smith Comm	Other	435810	386918	NO2	Yes - SCC City Wide AQMA		20.0	No	2m
164	Midland Station Platform 1A South Comm	Other	435841	386872	NO2	Yes - SCC City Wide AQMA		8.5	No	2m
165	Midland Station Platform 1B Comm	Other	435849	387031	NO2	Yes - SCC City Wide AQMA		10.0	No	2m
166	Midland Station Footbridge Comm	Other	435867	386955	NO2	Yes - SCC City Wide AQMA		30.0	No	2m
167	Midland Station Platform 3A/2B North Comm	Other	435873	387004	NO2	Yes - SCC City Wide AQMA		4.0	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)
168	Midland Station Platform 2A Comm	Other	435871	386905	NO2	Yes - SCC City Wide AQMA		7.0	No	2m
169	Midland Station Platform 5A Comm	Other	435880	386888	NO2	Yes - SCC City Wide AQMA		9.0	No	2m
170	Midland Station Platform 5B Waiting room Comm	Other	435883	386956	NO2	Yes - SCC City Wide AQMA		11.0	No	2m
171	STOPPED 11/22 Midland Station Platform 6A Info stand Comm	Other	435909	386912	NO2	Yes - SCC City Wide AQMA		3.5	No	2m
172	Midland Station Platform 6B Comm	Other	435916	386973	NO2	Yes - SCC City Wide AQMA		9.0	No	2m
173	Midland Station Platform 8 South Comm	Other	435921	386968	NO2	Yes - SCC City Wide AQMA		4.0	No	2m
174	Midland Station Platform 8A Comm	Other	435919	386934	NO2	Yes - SCC City Wide AQMA		4.0	No	2m
175	Sheaf Street station side crossing Comm	Kerbside	435812	387005	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
176	Station Taxi Rank 1 Comm	Other	435818	386889	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
177	STOPPED 09/22 Station Taxi Rank 2 Comm	Other	435814	386872	NO2	Yes - SCC City Wide AQMA		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)
178	Orphanage Rd/Barnsley Rd Comm	Roadside	435797	389600	NO2	Yes - SCC City Wide AQMA	5.0	4.0	No	2m
179	Spital Hill Comm	Roadside	436069	388328	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
180	Owler La/Firth Park Rd Comm	Roadside	436595	390242	NO2	Yes - SCC City Wide AQMA	5.0	2.0	No	2m
181	Rutland Road BG Comm	Roadside	435537	389218	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
182	Astrea Academy, Andover Street Comm	Urban Background	435450	388650	NO2	Yes - SCC City Wide AQMA	2.0	2.0	No	2m
183	Herries Rd/Barnsley Rd Comm	Kerbside	436499	390182	NO2	Yes - SCC City Wide AQMA		0.7	No	2m
184	Meersbrook Bank School Comm	Roadside	434741	384237	NO2	Yes - SCC City Wide AQMA	0.0	1.5	No	2m
185	Valley Rd/Chesterfield Rd Jc Comm	Roadside	434989	384691	NO2	Yes - SCC City Wide AQMA	5.0	2.0	No	2m
186	Ann's Grove School Comm	Urban Background	435489	385101	NO2	Yes - SCC City Wide AQMA	0.0	4.0	No	2m
187	9 Ripley Street Comm	Roadside	433350	389387	NO2	Yes - SCC City Wide AQMA	0.0	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)
188	South Rd/Walkley Rd Comm	Roadside	433147	388796	NO2	Yes - SCC City Wide AQMA	5.0	2.0	No	2m
189	Morley Street/Rivelin Bank Road Comm	Roadside	432768	389097	NO2	Yes - SCC City Wide AQMA	6.0	1.0	No	2m
190	Hollins Lane Comm	Roadside	432271	388570	NO2	Yes - SCC City Wide AQMA	20.0	1.0	No	2m
191	South Road/Highton Street Comm	Roadside	433238	388666	NO2	Yes - SCC City Wide AQMA	15.0	2.0	No	2m
192	Hunter's Bar School potting area North Comm	Urban Background	433266	385705	NO2	Yes - SCC City Wide AQMA	5.0	5.0	No	2m
193	Hunter's Bar School potting area West Comm	Urban Background	433251	385695	NO2	Yes - SCC City Wide AQMA	5.0	5.0	No	2m
194	Hunter's Bar School playground South Comm	Urban Background	433267	385684	NO2	Yes - SCC City Wide AQMA	5.0	10.0	No	2m
199	Arts Tower Entrance, Bolsover Street Comm	Kerbside	434173	387484	NO2	Yes - SCC City Wide AQMA		1.0	No	2m
200	Crookes Valley Road/Crookesmoor Road Comm	Roadside	433750	387724	NO2	Yes - SCC City Wide AQMA	1.5	1.0	No	2m
201	Springvale Road/Commonside Comm	Roadside	433486	387994	NO2	Yes - SCC City Wide AQMA		1.8	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)
202	Asda Walkley Comm	Roadside	433236	388668	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
203	Ped. Crossing Toyne Street Jc Comm	Kerbside	432822	387795	NO2	Yes - SCC City Wide AQMA	4.0	1.0	No	2m
206	Rutland Road Comm	Roadside	435334	389097	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
208	Longley Avenue West Comm	Roadside	434720	390560	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
209	Shirecliffe Road Comm	Roadside	435304	389577	NO2	Yes - SCC City Wide AQMA		5.8	No	2m
210	Ebeneezer St/A61 Duplicate SCC CW	Roadside	435018	387999	NO2	Yes - SCC City Wide AQMA	3.0	1.5	No	2m
211	STOPPED 06/22 Ebeneezer St/A61 Duplicate SCC CW	Roadside	435018	387999	NO2	Yes - SCC City Wide AQMA	3.0	1.5	No	2m
212	Blast Lane/Parkway SCC CW	Urban Centre	436146	387608	NO2	Yes - SCC City Wide AQMA	10.0	5.0	No	2m
213	Matilda St SCC CW	Roadside	435578	386555	NO2	Yes - SCC City Wide AQMA	0.5	1.5	No	2m
214	Arley St/St Mary's Gate SCC CW	Roadside	435023	386344	NO2	Yes - SCC City Wide AQMA	50.0	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)
215	Sheaf St station side lamp post Comm	Roadside	435763	386944	NO2	Yes - SCC City Wide AQMA		5.0	No	2m
216	Handsworth Rd/Richmond Rd bus stop Comm	Roadside	440913	386218	NO2	Yes - SCC City Wide AQMA	9.5	1.5	No	2m
217	Halfway School Comm	Roadside	443572	381395	NO2	Yes - SCC City Wide AQMA	3.0	1.5	No	2m
218	Toll House Burngreave Comm	Roadside	435650	389350	NO2	Yes - SCC City Wide AQMA	15.0	2.0	No	2m
219	Sheaf Street opposite station (low) Comm	Roadside	435770	386979	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
220	Hangingwater Road LTP	Roadside	431740	385914	NO2	Yes - SCC City Wide AQMA	4.5	1.5	No	2m
221	Norfolk Park Road LTP	Roadside	435967	386210	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
222	Cemetery Road SCC CW	Roadside	434676	386171	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
223	Bramall Lane SCC CW	Roadside	435233	385961	NO2	Yes - SCC City Wide AQMA		2.0	No	2m
224	Burngreave Rd/Brunswick Rd SCC CW	Roadside	436092	388590	NO2	Yes - SCC City Wide AQMA	7.4	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)
225	Crookesmoor Rd/Northumberland Rd LTP	Roadside	433473	387456	NO2	Yes - SCC City Wide AQMA		1.5	No	2m
226	Sheaf Street Blade (high) Comm	Roadside	435755	386938	NO2	Yes - SCC City Wide AQMA		4.0	No	3m
227	Sheaf St opposite station (high) Comm	Roadside	435770	386979	NO2	Yes - SCC City Wide AQMA		3.0	No	3m
228	Sheaf Street lamp post 37 Comm	Roadside	435881	387162	NO2	Yes - SCC City Wide AQMA		3.0	No	2m
229	Sheaf Street lamp post 38 Comm	Roadside	435898	387153	NO2	Yes - SCC City Wide AQMA		2.5	No	2m
230	Station background Comm	Roadside	435805	386906	NO2	Yes - SCC City Wide AQMA		8.0	No	2m
231	DEFRA Barnsley Road (Socotec 1) SCC CW	Roadside	436276	389927	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
232	Lowfield School GH3-1 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	2m
233	Lowfield School GH3-2 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	2m
234	Lowfield School GH3-3 (Gradko) LTP	Urban Centre	435238	385397	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	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)
81, 235	Lowfield School GH3-1 (Socotec) SCC CW	Urban Centre	435238	385397	NO2	Yes - SCC City Wide AQMA	0.0	7.0	Yes	2m
236	DEFRA Barnsley Road monitor (Tube 1) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
237	DEFRA Barnsley Road monitor (Tube 2) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
238	DEFRA Barnsley Road monitor (Tube 3) Gradko	Roadside	436276	389927	NO2	Yes - SCC City Wide AQMA	20.0	4.0	Yes	2m
239	GH2-1 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	2m
240	GH2-2 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	2m
241	GH2-3 Tinsley Gradko	Industrial	440084	390760	NO2	Yes - SCC City Wide AQMA	4.0	15.0	Yes	2m
242	AURN-1 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	2m
243	AURN-2 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	2m
244	AURN-3 Devonshire Green Gradko	Urban Centre	434803	386947	NO2	Yes - SCC City Wide AQMA	30.0	20.0	Yes	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)
245	Clarkehouse/Broomgrove Lane	Roadside	433646	386577	NO2	Yes - SCC City Wide AQMA	0.0	1.7	No	2m
246	Clarkehouse/Ash Grove	Roadside	433588	386528	NO2	Yes - SCC City Wide AQMA	12.0	2.3	No	2m
247	Newbould Lane	Roadside	433603	386625	NO2	Yes - SCC City Wide AQMA	4.0	2.4	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 2022 (%) [2]	2018	2019	2020	2021	2022
GH1	436990	390218	Urban Background	78	78	19	30	23	21	18
GH2	440077	390794	Urban Industrial	99	99	37	31	23	27	28
GH3	435181	385366	Roadside	100	100	32	31	22	27	27
GH4	435959	388021	Urban Background	100	100	34	32	26	26	26
GH5	430977	380760	Urban Background	99	99	26	11	8	11	7
GH6	435704	387286	Urban Centre	97	97	-	-	30	38	33
UKA00575 (Dev Green)	434816	386990	Urban Background	99	99	23	26	18	20	18
UKA00181 (Tinsley)	440238	390588	Urban Industrial	69	69	27	27	22	23	24
UKA00622 (Barnsley Road)	436275	389926	Roadside	94	94	37	38	32	35	34

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

☒ **Reported concentrations are those at the location of the monitoring site (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**.

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 2022 (%) [2]	2018	2019	2020	2021	2022
1	436063	397474	Roadside	92.30769231	92.3	28.0	29.0	21.7	20.8	24.0
2	439994	390866	Urban Background	100	100.0	35.0	39.0	30.6	31.3	35.0
3	440045	390884	Roadside	92.30769231	92.3	**41.0**	**44.0**	34.9	36.2	**46.3**
4	440177	390770	Roadside	100	100.0	33.0	35.0	28.2	28.1	33.8
5	435749	386727	Roadside	100	100.0			33.8	34.9	**44.5**
6	438880	389931	Roadside	100	100.0	39.0	**40.0**	34.0	33.5	**43.5**
7	435729	386513	Roadside	100	100.0			32.9	34.1	39.7
8	437164	387687	Roadside	92.30769231	92.3	**55.0**	**58.0**	**44.1**	**45.5**	**58.3**
9	437703	390079	Kerbside	100	100.0	35.0	38.0	32.9	33.6	35.3
10	439355	388385	Roadside	73.07692308	73.1		31.0	24.5	26.3	33.1
11	432643	389427	Roadside	100	100.0	31.0	34.0	27.5	29.8	33.2
12	439312	388591	Roadside	75	75.0		**40.0**	33.1	32.2	**42.3**

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 2022 (%) (2)	2018	2019	2020	2021	2022
13	439051	386743	Roadside	100	100.0	31.0	34.0	26.8	24.1	31.2
14	436141	387521	Kerbside	100	100.0	37.0	38.0	30.5	31.8	38.0
16	435639	388155	Kerbside	100	100.0		**44.0**	35.3	38.1	**46.2**
17	436109	387458	Roadside	100	100.0	**42.0**	**42.0**	36.0	36.9	**43.5**
18	435744	387619	Urban Centre	100	100.0	**40.0**	**47.0**	**42.3**	**44.3**	**54.9**
19	435714	387476	Urban Centre	100	100.0	**45.0**	**58.0**	**50.0**	**57.0**	**74.8**
20	435357	387243	Urban Centre	50	50.0	30.0	30.0	20.9	20.3	24.5
21	435546	387052	Roadside	92.30769231	92.3		**45.0**	37.0	37.7	**47.5**
22	433346	390814	Roadside	100	100.0	36.0	37.0	28.7	28.2	32.8
23	435608	387100	Roadside	92.30769231	92.3		39.0	30.3	34.1	40.0
24	434435	387394	Roadside	100	100.0	39.0	**40.0**	29.7	31.8	**41.5**
25	434646	387836	Roadside	92.30769231	92.3	34.0	35.0	26.8	24.7	32.9
26	434403	386966	Roadside	100	100.0	38.0	**40.0**	31.6	33.2	**41.3**
27	435554	386638	Roadside	82.69230769	82.7	**46.0**	**47.0**	36.7	39.0	**44.0**

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 2022 (%) [2]	2018	2019	2020	2021	2022
28	435313	386367	Roadside	92.30769231	92.3			28.1	31.4	32.7
29	434814	383335	Roadside	100	100.0	35.0	36.0	25.9	28.9	27.9
30	435499	385690	Roadside	100	100.0	39.0	**41.0**	31.0	34.6	35.5
31	434324	384311	Roadside	92.30769231	92.3	38.0	38.0	30.8	31.7	38.9
32	434299	386275	Roadside	100	100.0	38.0	**40.0**	28.8	30.3	31.2
33	435602	387292	Roadside	84.61538462	84.6	**59.0**	**66.0**	**49.9**	**54.3**	**69.8**
34	435700	387256	Kerbside	90.38461538	90.4	**45.0**	**50.0**	36.5	39.3	**49.4**
35	439116	391193	Roadside	100	100.0	38.0	37.0	31.8	32.5	35.7
36	435950	387996	Urban Centre	100	100.0	28.0	29.0	23.6	23.5	26.6
37	435951	387997	Urban Centre	65.38461538	65.4	29.0	28.0	23.1	23.2	24.2
38	435463	386972	Roadside	100	100.0		**48.0**	38.9	**41.7**	**50.8**
39	437104	388329	Roadside	100	100.0		**45.0**	33.6	33.7	38.0
40	440116	390800	Roadside	90.38461538	90.4	**41.0**	**43.0**	33.4	35.1	39.8
42	437766	387454	Roadside	92.30769231	92.3	**59.0**	**59.0**	**47.8**	**47.6**	**59.8**

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 2022 (%) [2]	2018	2019	2020	2021	2022
43	436646	387756	Roadside	67.30769231	67.3			39.3	**41.3**	**41.5**
45	435789	388072	Roadside	100	100.0		31.0	28.3	29.6	35.7
46	435790	388073	Roadside	50	50.0		33.0	26.1	29.1	30.7
47	435640	388156	Kerbside	50	50.0		**42.0**	37.8	39.6	**47.3**
48	435641	388157	Kerbside	50	50.0		**40.0**	37.5	38.4	**45.8**
49	435435	388020	Roadside	82.69230769	82.7		36.0	32.4	31.5	**41.9**
50	435436	388021	Roadside	40.38461538	40.4		37.0	34.3	32.3	37.4
53	431193	386795	Suburban	100	100.0	18.0	19.0	14.6	13.9	15.7
54	436275	389926	Roadside	32.69230769	32.7			31.4	30.6	30.2
55	433013	386750	Roadside	100	100.0	34.0	34.0	27.7	29.3	34.6
56	433327	386862	Roadside	100	100.0	**42.0**	**44.0**	34.7	38.2	**44.6**
57	433514	387033	Roadside	100	100.0	36.0	38.0	30.1	33.6	38.2
58	433752	387230	Roadside	59.61538462	59.6	29.0	33.0	24.8	27.4	28.3
59	434048	387229	Roadside	100	100.0	**44.0**	**42.0**	37.2	**41.2**	**45.9**

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 2022 (%) [2]	2018	2019	2020	2021	2022
60	434352	387348	Roadside	100	100.0	31.0	32.0	26.1	28.3	31.9
61	436276	389927	Roadside	32.69230769	32.7			32.1	34.1	28.6
62	430407	385397	Roadside	50	50.0	22.0	23.0	17.0	17.7	18.4
63	436277	389928	Roadside	32.69230769	32.7			31.7	33.4	28.9
64	440233	390587	Industrial	67.30769231	67.3			26.6	23.6	24.5
65	440234	390588	Industrial	75	75.0			24.6	23.3	27.0
66	440235	390589	Industrial	75	75.0			26.2	23.2	26.6
67	433429	386728	Roadside	100	100.0	35.0	34.0	27.8	31.6	36.1
68	433936	386893	Roadside	100	100.0	30.0	29.0	24.5	25.2	28.4
69	434574	387155	Roadside	100	100.0	35.0	37.0	26.7	28.7	32.4
70	435255	387349	Roadside	100	100.0	**40.0**	**42.0**	23.8	23.8	27.7
71	435807	386350	Kerbside	90.38461538	90.4	**45.0**	**44.0**	37.8	38.1	**41.8**
72	435697	385892	Roadside	100	100.0	**40.0**	37.0	31.6	34.9	35.6
73	435490	385660	Kerbside	92.30769231	92.3	**50.0**	**51.0**	**42.3**	**43.9**	**50.6**

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 2022 (%) [2]	2018	2019	2020	2021	2022
74	435182	385241	Roadside	92.30769231	92.3	**45.0**	**42.0**	34.0	39.0	**42.4**
75	435161	384986	Roadside	75	75.0	**46.0**	**48.0**	37.8	**43.2**	**47.6**
76	434965	384613	Roadside	100	100.0	**45.0**	**41.0**	32.1	37.4	**40.3**
77	434679	383718	Roadside	76.92307692	76.9	32.0	31.0	23.9	25.8	27.3
78	434857	382968	Roadside	92.30769231	92.3	**40.0**	**41.0**	30.0	37.0	**41.5**
79	434906	381857	Roadside	100	100.0	33.0	31.0	24.0	26.2	30.0
80	435135	381355	Roadside	92.30769231	92.3	28.0	27.0	20.6	21.8	24.1
82	435239	385398	Urban Centre	90.38461538	90.4	30.0	31.0	25.0	25.4	30.2
83	435240	385399	Urban Centre	90.38461538	90.4	29.0	30.0	24.4	25.1	29.6
84	440084	390760	Industrial	92.30769231	92.3	32.0	33.0	24.8	25.3	29.5
85	440085	390761	Industrial	100	100.0	32.0	33.0	24.3	24.9	30.3
86	440086	390762	Industrial	100	100.0	31.0	33.0	24.6	23.8	28.7
87	434803	386947	Urban Centre	90.38461538	90.4	25.0	27.0	18.4	18.1	21.6
88	434804	386948	Urban Centre	90.38461538	90.4	23.0	27.0	17.4	18.4	21.5

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 2022 (%) [2]	2018	2019	2020	2021	2022
89	434805	386949	Urban Centre	80.76923077	80.8	24.0	26.0	18.0	18.2	20.9
90	438582	389616	Roadside	100	100.0	**41.0**	**41.0**	30.7	31.3	36.6
91	437928	388800	Roadside	100	100.0	**42.0**	**48.0**	37.7	**44.4**	**56.3**
92	437690	388529	Kerbside	90.38461538	90.4	**41.0**	**48.0**	37.7	39.1	**48.8**
93	436350	388234	Roadside	100	100.0	37.0	**42.0**	33.6	35.4	**42.0**
94	437019	388826	Roadside	100	100.0	31.0	34.0	26.4	26.4	31.6
95	437461	389311	Roadside	92.30769231	92.3	**41.0**	**43.0**	34.8	35.8	**40.5**
96	438393	390232	Roadside	92.30769231	92.3	**44.0**	**45.0**	35.6	34.7	**44.0**
97	438610	390614	Roadside	100	100.0	**49.0**	**56.0**	**44.0**	**45.7**	**58.6**
98	439167	391698	Roadside	100	100.0	**53.0**	**54.0**	**40.0**	**42.1**	**52.7**
99	439717	390826	Roadside	67.30769231	67.3	**47.0**	**50.0**	30.8	34.7	**44.5**
100	435182	380648	Roadside	100	100.0	33.0	33.0	24.2	25.0	27.1
101	435750	381591	Roadside	50	50.0	25.0	27.0	19.1	20.1	21.0
102	433250	391115	Kerbside	100	100.0	35.0	38.0	29.4	31.5	32.8

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 2022 (%) [2]	2018	2019	2020	2021	2022
103	433455	390473	Roadside	92.30769231	92.3	**47.0**	**51.0**	**40.3**	**42.8**	**51.3**
104	433630	389834	Roadside	73.07692308	73.1	34.0	37.0	27.7	29.7	30.2
105	433857	389595	Roadside	50	50.0	28.0	29.0	22.3	23.4	25.5
106	433991	389394	Roadside	73.07692308	73.1	33.0	36.0	28.9	28.6	30.4
107	434213	388870	Roadside	73.07692308	73.1	29.0	33.0	26.2	26.6	27.1
108	440459	386731	Roadside	50	50.0	34.0	34.0	27.5	28.2	29.0
109	440213	387006	Roadside	82.69230769	82.7			35.3	33.8	39.5
110	439943	390948	Roadside	100	100.0	35.0	37.0	30.6	29.9	35.6
111	440036	390822	Roadside	100	100.0	31.0	35.0	26.0	24.6	29.4
112	439813	390743	Roadside	65.38461538	65.4	29.0	31.0	25.8	24.9	27.9
113	440014	391178	Roadside	100	100.0	30.0	33.0	25.0	23.5	29.1
115	440046	390737	Roadside	100	100.0	**40.0**	**40.0**	32.7	29.5	**42.0**
116	439994	390810	Roadside	100	100.0	36.0	**44.0**	30.2	27.4	36.4
117	435909	388070	Roadside	92.30769231	92.3	**40.0**	39.0	31.2	30.8	**40.1**

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 2022 (%) [2]	2018	2019	2020	2021	2022
118	435736	387820	Roadside	82.69230769	82.7	36.0	35.0	27.5	26.8	32.3
119	435239	387899	Roadside	84.61538462	84.6	27.0	32.0	22.9	21.8	25.2
120	434806	388216	Roadside	100	100.0	**42.0**	**46.0**	36.1	36.9	**46.4**
121	435843	388814	Roadside	100	100.0	**40.0**	39.0	33.9	37.0	**44.5**
122	439377	387792	Roadside	100	100.0	29.0	33.0	25.8	25.0	28.2
123	439298	387855	Roadside	32.69230769	32.7	34.0	37.0	30.2	30.4	39.6
124	438997	387923	Roadside	100	100.0	32.0	35.0	28.3	28.0	31.3
125	438121	388922	Roadside	92.30769231	92.3	28.0	29.0	22.6	22.6	24.7
126	440559	387357	Roadside	100	100.0		32.0	26.0	25.8	28.4
128	427261	398422	Roadside	92.30769231	92.3	31.0	31.0	25.6	26.0	27.9
130	428818	397977	Roadside	100	100.0	30.0	32.0	24.6	25.3	25.6
131	435338	382923	Roadside	80.76923077	80.8	18.0	18.0	14.5	14.7	15.9
132	434868	385276	Roadside	75	75.0	34.0	36.0	21.7	21.4	20.4
133	434862	385269	Roadside	75	75.0	20.0	21.0	16.1	22.9	28.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
134	435283	387222	Kerbside	100	100.0	**42.0**	37.0	23.0	21.9	26.5
135	432870	383387	Roadside	65.38461538	65.4	17.0	16.0	18.9	11.7	9.9
136	430881	379724	Suburban	82.69230769	82.7			7.6	8.6	9.2
137	433104	386380	Suburban	7.692307692	7.7			11.6	12.4	-
138	434885	385286	Roadside	65.38461538	65.4			27.8	34.5	33.3
139	434372	385218	Suburban	92.30769231	92.3	19.0	20.0	15.0	16.2	16.6
140	434200	384869	Roadside	92.30769231	92.3	18.0	19.0	13.8	15.5	15.5
141	433650	385574	Urban Background	75	75.0	18.0	18.0	13.3	15.7	14.2
142	433378	385701	Urban Background	92.30769231	92.3	25.0	26.0	18.9	21.7	21.1
143	434069	385673	Urban Background	48.07692308	48.1	32.0	32.0	23.9	23.9	27.9
144	434128	385719	Urban Background	32.69230769	32.7	28.0	31.0	22.2	22.5	24.5
145	433640	383391	Roadside	75	75.0	35.0	36.0	29.8	32.7	32.4
146	433601	383337	Roadside	82.69230769	82.7	36.0	37.0	29.1	31.9	35.4
147	434188	383548	Roadside	73.07692308	73.1	26.0	27.0	21.5	20.5	21.9

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 2022 (%) [2]	2018	2019	2020	2021	2022
148	434123	383874	Roadside	90.38461538	90.4	35.0	37.0	29.1	32.9	34.2
149	434143	383915	Roadside	90.38461538	90.4	35.0	35.0	27.7	31.2	31.6
150	432964	385619	Roadside	92.30769231	92.3	29.0	29.0	22.9	23.5	25.2
151	432828	385402	Roadside	92.30769231	92.3	29.0	30.0	22.6	22.2	27.2
152	432822	384990	Roadside	92.30769231	92.3	29.0	28.0	20.1	22.5	22.7
153	432651	384491	Roadside	92.30769231	92.3	**43.0**	**42.0**	30.8	32.8	39.3
154	432428	384276	Roadside	92.30769231	92.3	34.0	35.0	27.0	28.4	32.8
155	432241	384593	Roadside	92.30769231	92.3	26.0	25.0	18.9	19.1	19.0
156	431908	384518	Roadside	92.30769231	92.3	19.0	19.0	13.7	13.5	14.8
157	431538	383992	Urban Background	92.30769231	92.3	14.0	13.0	9.8	9.8	9.2
158	432055	384648	Urban Background	92.30769231	92.3	14.0	14.0	10.2	9.5	9.7
159	434821	385142	Urban Background	100	100.0	31.0	32.0	23.9	26.0	31.4
160	434522	384654	Urban Background	100	100.0	39.0	39.0	30.8	33.4	**40.7**
161	434797	383255	Roadside	82.69230769	82.7	30.0	35.0	26.3	27.0	33.1

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 2022 (%) [2]	2018	2019	2020	2021	2022
162	434814	383252	Roadside	90.38461538	90.4	34.0	37.0	25.8	27.7	32.7
163	435810	386918	Other	100	100.0	**54.0**	**64.0**	**46.2**	**49.3**	**59.3**
164	435841	386872	Other	92.30769231	92.3	**43.0**	**47.0**	37.7	39.0	**44.7**
165	435849	387031	Other	100	100.0	**48.0**	**53.0**	**45.7**	**43.6**	**53.4**
166	435867	386955	Other	100	100.0	**51.0**	**57.0**	**48.7**	**48.4**	**59.9**
167	435873	387004	Other	100	100.0	**65.0**	**68.0**	**52.5**	**54.8**	**65.4**
168	435871	386905	Other	100	100.0	**52.0**	**59.0**	**55.1**	**50.5**	**59.6**
169	435880	386888	Other	100	100.0	**47.0**	**51.0**	**47.0**	**44.5**	**50.4**
170	435883	386956	Other	92.30769231	92.3	**52.0**	**58.0**	38.2	**48.6**	**58.4**
171	435909	386912	Other	82.69230769	82.7	**63.0**	**65.0**	**56.7**	**50.8**	**63.1**
172	435916	386973	Other	100	100.0	**50.0**	**57.0**	**48.9**	**44.2**	**53.5**
173	435921	386968	Other	100	100.0	**51.0**	**62.0**	**55.7**	**49.3**	**60.8**
174	435919	386934	Other	100	100.0	**52.0**	**58.0**	**51.5**	**47.4**	**56.0**
175	435812	387005	Kerbside	100	100.0	**63.0**	**67.0**	**45.7**	**55.5**	**65.6**

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 2022 (%) [2]	2018	2019	2020	2021	2022
176	435818	386889	Other	82.69230769	82.7	**92.0**	**101.0**	**50.9**	**62.5**	**76.8**
177	435814	386872	Other	55.76923077	55.8	**70.0**	**78.0**	**41.4**	**47.3**	**51.7**
178	435797	389600	Roadside	67.30769231	67.3	**48.0**	**47.0**	38.0	37.4	**50.5**
179	436069	388328	Roadside	100	100.0	**57.0**	**63.0**	**48.3**	**48.7**	**61.0**
180	436595	390242	Roadside	100	100.0	**45.0**	**48.0**	39.3	37.4	**49.7**
181	435537	389218	Roadside	100	100.0			37.5	38.3	**46.8**
182	435450	388650	Urban Background	100	100.0			19.0	18.1	17.8
183	436499	390182	Kerbside	100	100.0			**47.5**	**50.0**	**64.2**
184	434741	384237	Roadside	90.38461538	90.4	24.0	20.0	13.8	15.0	16.9
185	434989	384691	Roadside	90.38461538	90.4	**41.0**	**41.0**	31.3	36.3	37.9
186	435489	385101	Urban Background	90.38461538	90.4	35.0	37.0	27.4	29.0	30.1
187	433350	389387	Roadside	73.07692308	73.1	33.0	36.0	26.6	27.3	28.6
188	433147	388796	Roadside	90.38461538	90.4	38.0	**43.0**	30.4	30.9	36.7
189	432768	389097	Roadside	90.38461538	90.4		33.0	22.9	22.4	27.3

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 2022 (%) [2]	2018	2019	2020	2021	2022
190	432271	388570	Roadside	73.07692308	73.1		29.0	22.1	22.0	25.0
191	433238	388666	Roadside	90.38461538	90.4		23.0	18.9	19.0	22.0
192	433266	385705	Urban Background	100	100.0		25.0	15.2	16.4	19.1
193	433251	385695	Urban Background	100	100.0		28.0	19.9	18.7	23.7
194	433267	385684	Urban Background	100	100.0		22.0	15.9	15.8	18.4
199	434173	387484	Kerbside	40.38461538	40.4			25.9	29.6	35.9
200	433750	387724	Roadside	30.76923077	30.8			30.2	33.6	36.8
201	433486	387994	Roadside	32.69230769	32.7			19.0	20.8	24.2
202	433236	388668	Roadside	30.76923077	30.8			22.4	24.5	28.7
203	432822	387795	Kerbside	38.46153846	38.5			20.5	23.5	24.5
206	435334	389097	Roadside	100	100.0			38.8	37.6	**44.6**
208	434720	390560	Roadside	100	100.0			13.8	13.7	14.2
209	435304	389577	Roadside	100	100.0			21.1	22.7	24.8
210	435018	387999	Roadside	100	100.0				23.8	29.0

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 2022 (%) (2)	2018	2019	2020	2021	2022
211	435018	387999	Roadside	50	50.0				26.4	25.1
212	436146	387608	Urban Centre	92.30769231	92.3				36.0	36.5
213	435578	386555	Roadside	75	75.0				26.9	36.0
214	435023	386344	Roadside	100	100.0				36.2	39.1
215	435763	386944	Roadside	100	100.0				**53.0**	**61.3**
216	440913	386218	Roadside	65.38461538	65.4				31.3	34.9
217	443572	381395	Roadside	100	100.0				32.4	37.7
218	435650	389350	Roadside	100	100.0				30.5	37.5
219	435770	386979	Roadside	34.61538462	34.6					**46.9**
220	431740	385914	Roadside	50	50.0					20.7
221	435967	386210	Roadside	25	25.0					34.2
222	434676	386171	Roadside	50	50.0					23.8
223	435233	385961	Roadside	50	50.0					33.0
224	436092	388590	Roadside	32.69230769	32.7					**52.4**

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 2022 (%) [2]	2018	2019	2020	2021	2022
225	433473	387456	Roadside	50	50.0					17.2
226	435755	386938	Roadside	26.92307692	26.9					**53.3**
227	435770	386979	Roadside	17.30769231	17.3					**-**
228	435881	387162	Roadside	17.30769231	17.3					**-**
229	435898	387153	Roadside	26.92307692	26.9					**51.7**
230	435805	386906	Roadside	19.23076923	19.2					**-**
231	436276	389927	Roadside	34.61538462	34.6					36.0
232	435238	385397	Urban Centre	57.69230769	57.7					31.4
233	435238	385397	Urban Centre	57.69230769	57.7					32.1
234	435238	385397	Urban Centre	57.69230769	57.7					31.6
81, 235	435238	385397	Urban Centre	100	100.0					29.5
236	436276	389927	Roadside	50	50.0					36.2
237	436276	389927	Roadside	17.30769231	17.3					38.7
238	436276	389927	Roadside	17.30769231	17.3					38.5

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 2022 (%) [2]	2018	2019	2020	2021	2022
239	440084	390760	Industrial	50	50.0					32.7
240	440084	390760	Industrial	50	50.0					32.7
241	440084	390760	Industrial	50	50.0					31.4
242	434803	386947	Urban Centre	82.69230769	82.7					20.1
243	434803	386947	Urban Centre	50	50.0					19.8
244	434803	386947	Urban Centre	50	50.0					20.2
245	433646	386577	Roadside	100	100.0					28.0
246	433588	386528	Roadside	100	100.0					28.5
247	433603	386625	Roadside	100	100.0					28.2

☒ **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 for real-time monitors

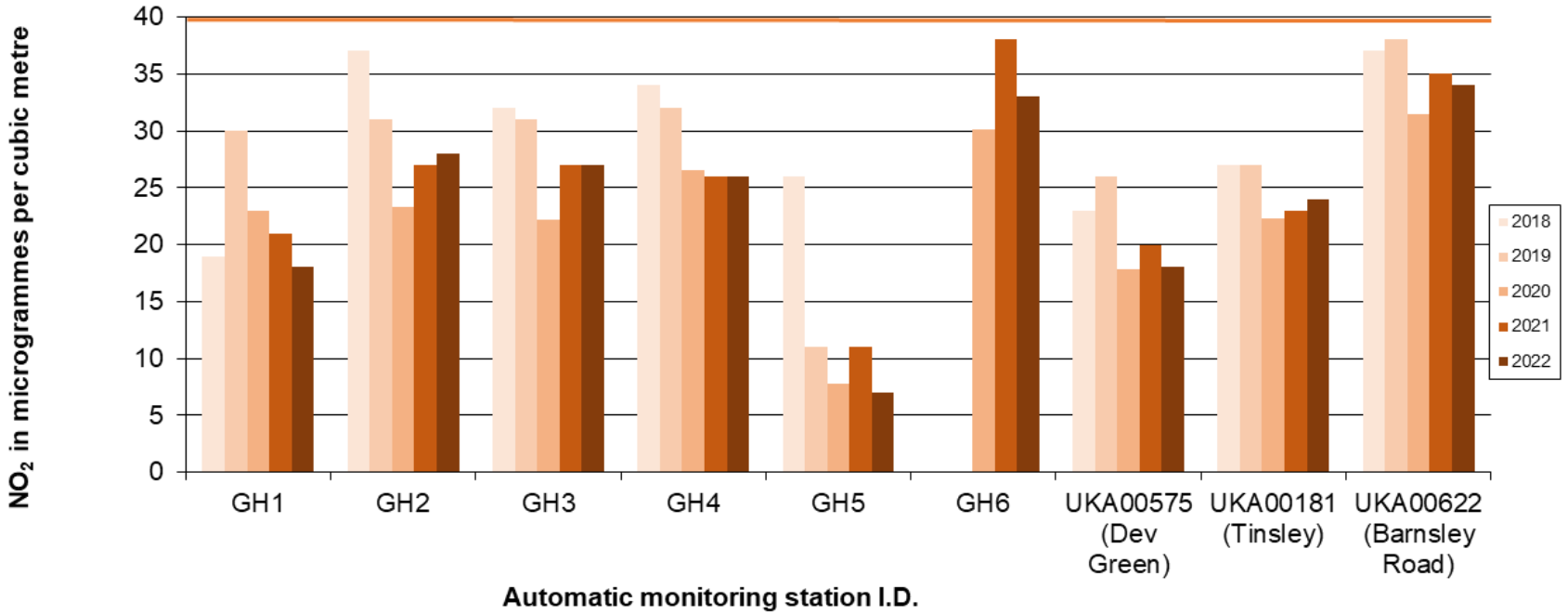


Figure A.2 – Trends in Annual Mean NO2 Concentrations for Diffusion Tubes 1-10

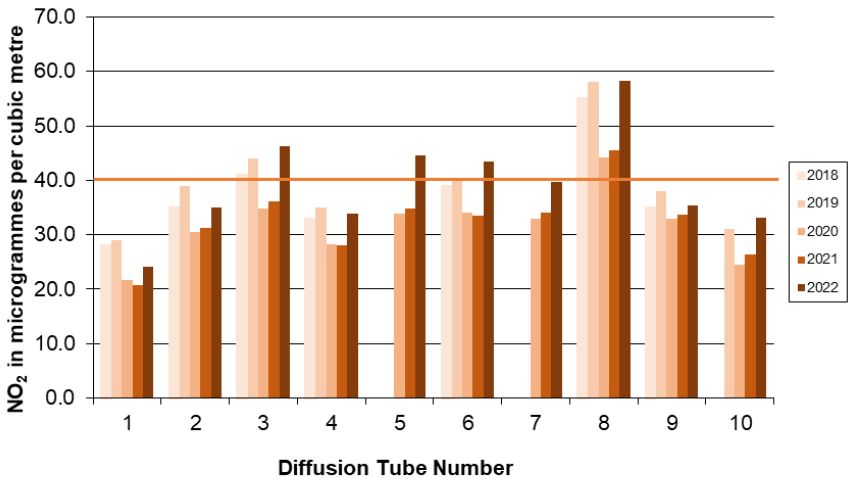


Figure A.2 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 11-20

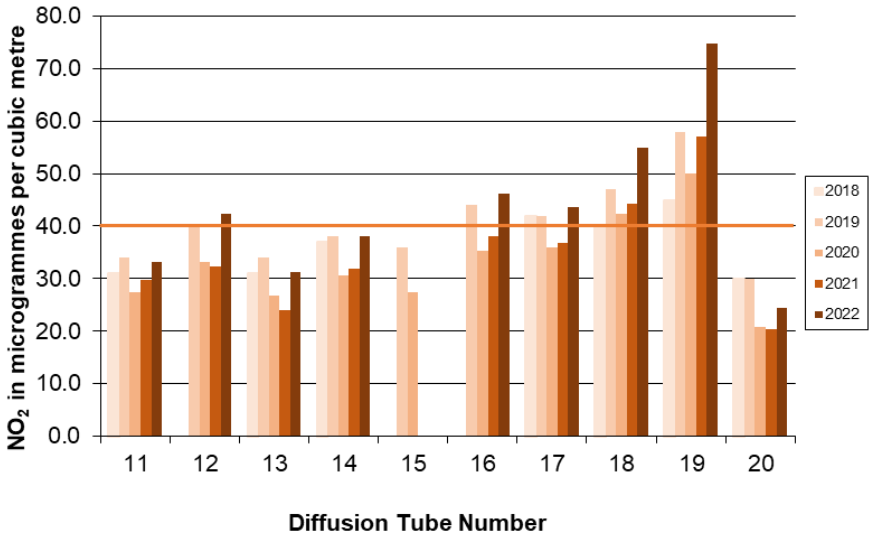


Figure A.3 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 21-30

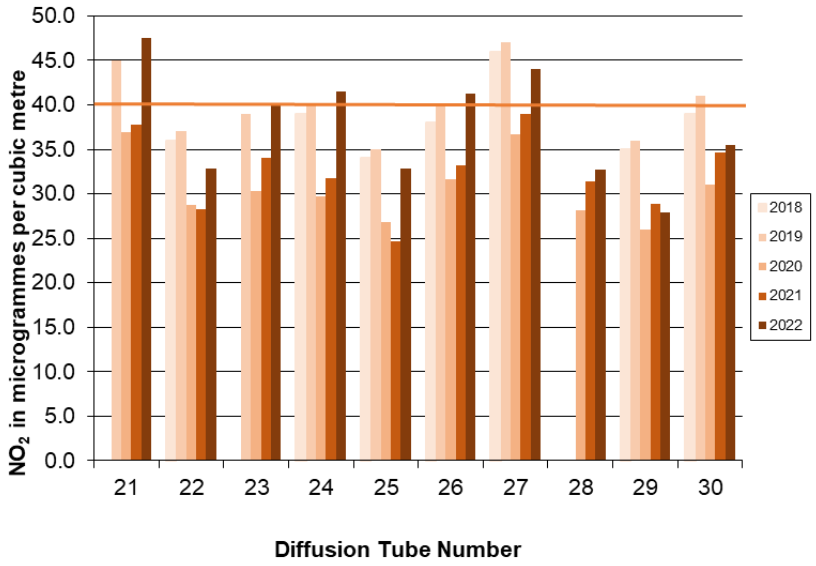


Figure A.4 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 31-40

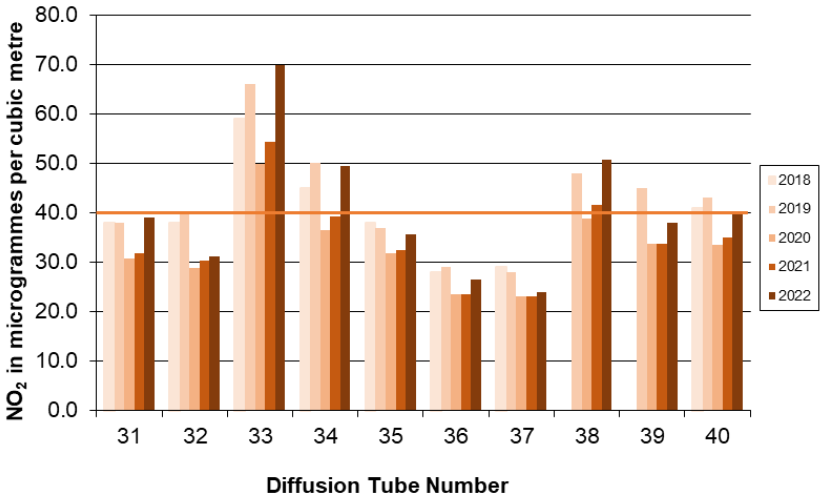


Figure A.5 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 41-50

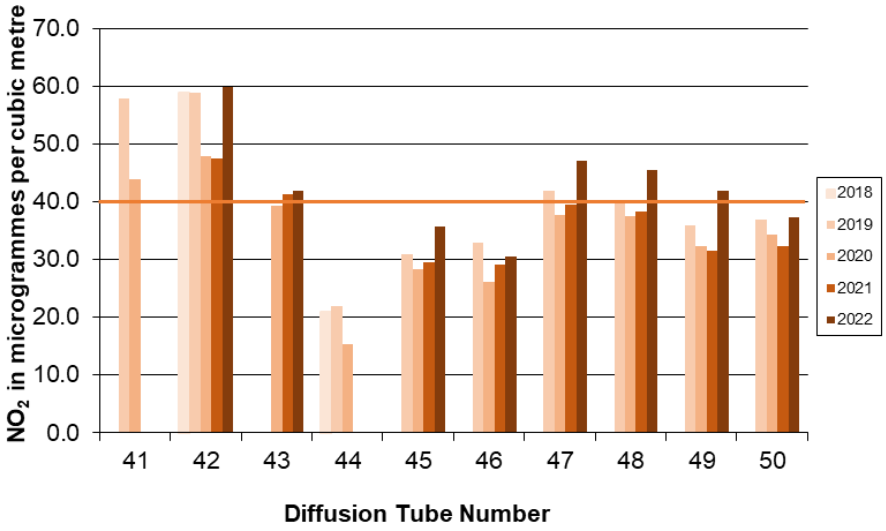


Figure A.6 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 51-60

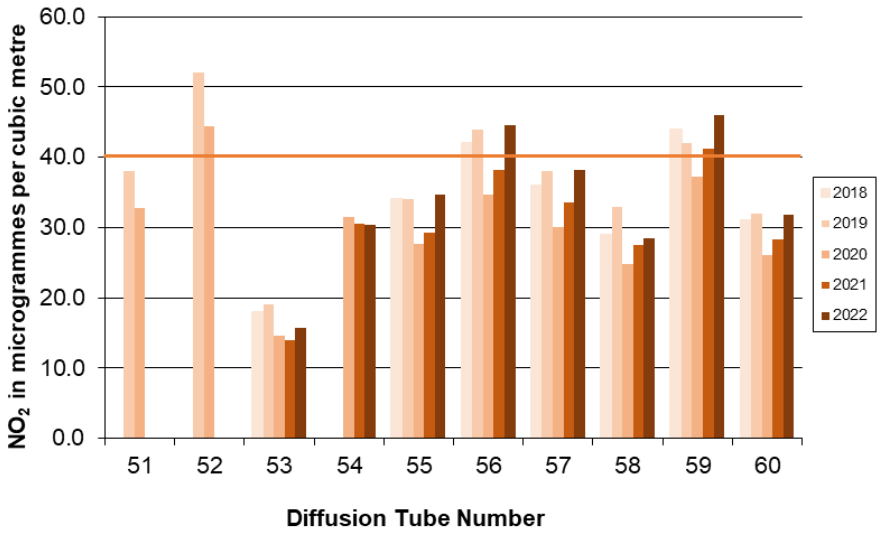


Figure A.7 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 61-70

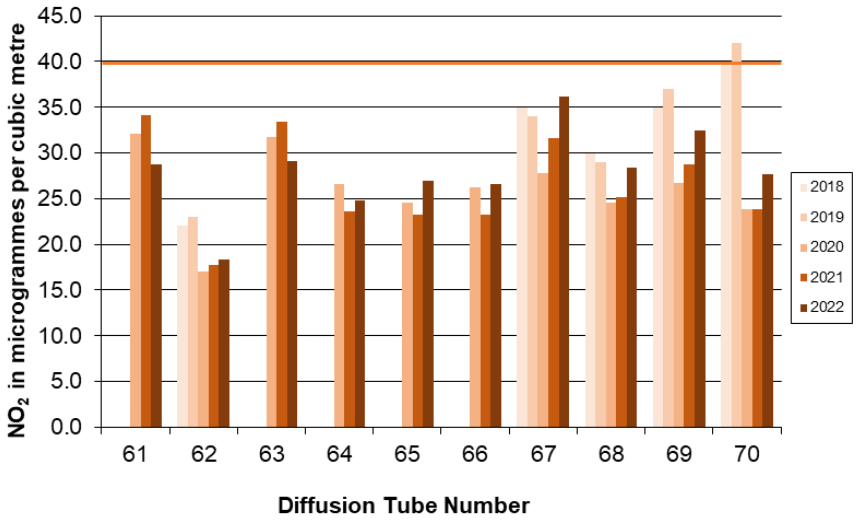


Figure A.8 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 71-80

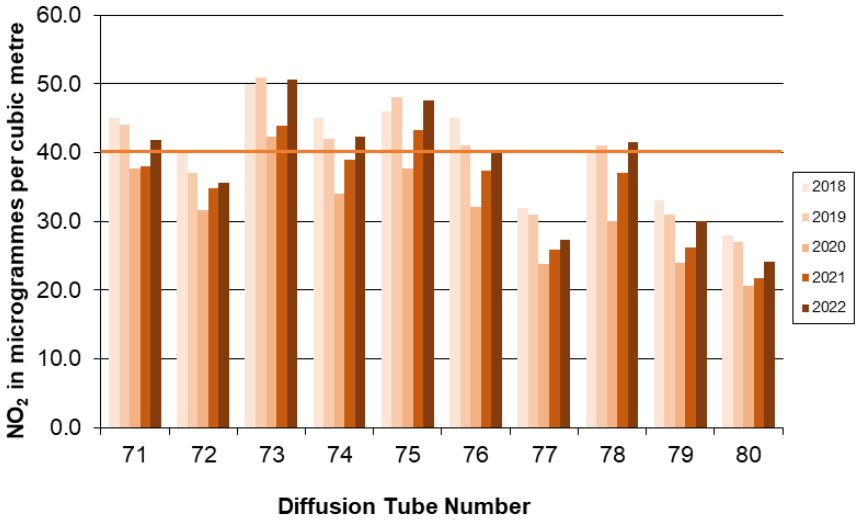


Figure A.9 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 81-90

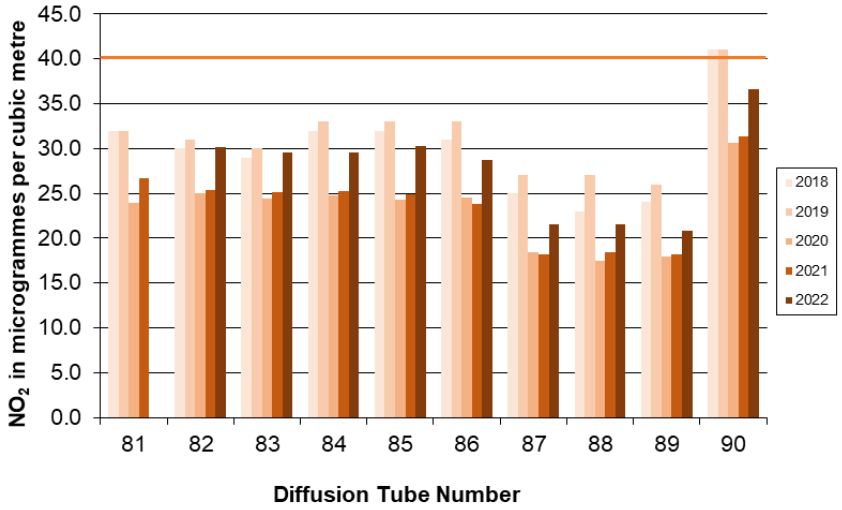


Figure A.10 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 91-100

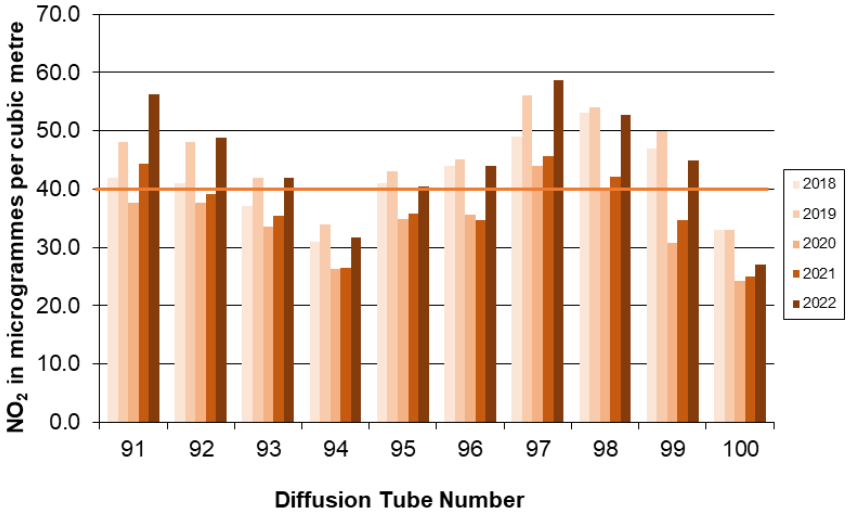


Figure A.11 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 101-110

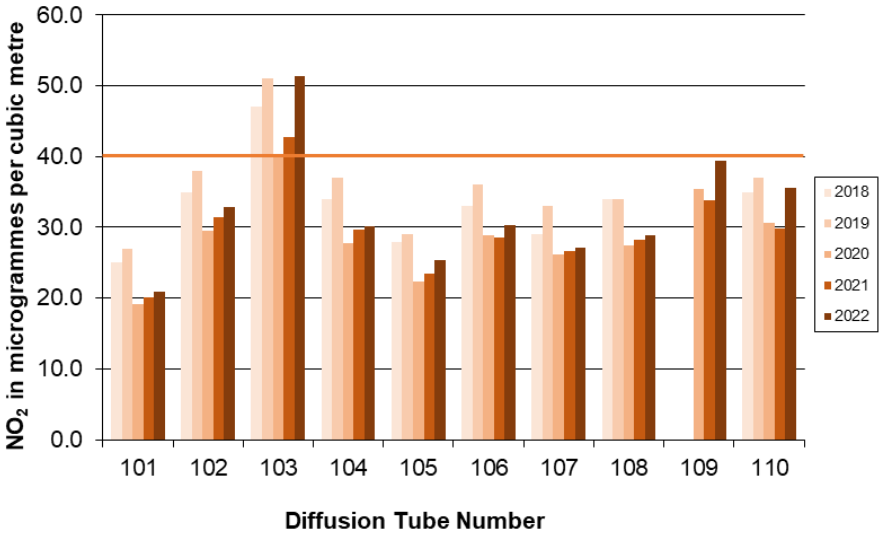


Figure A.12 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 111-120

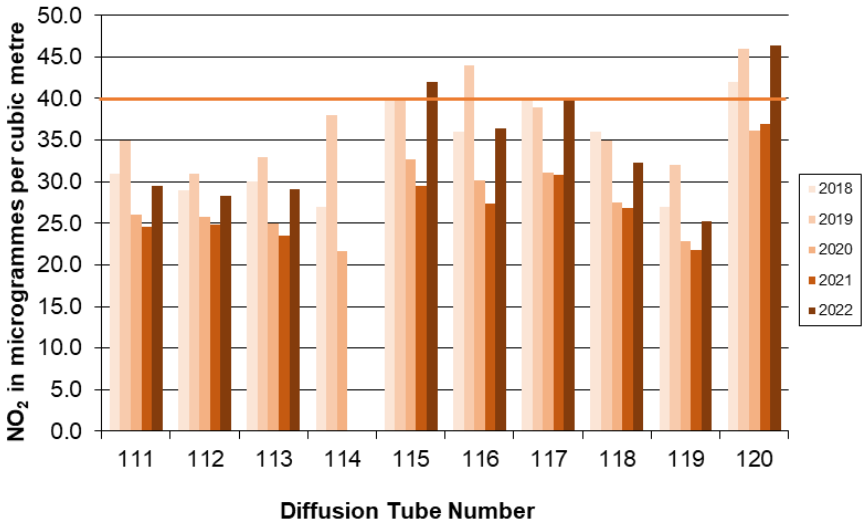


Figure A.13 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 121-130

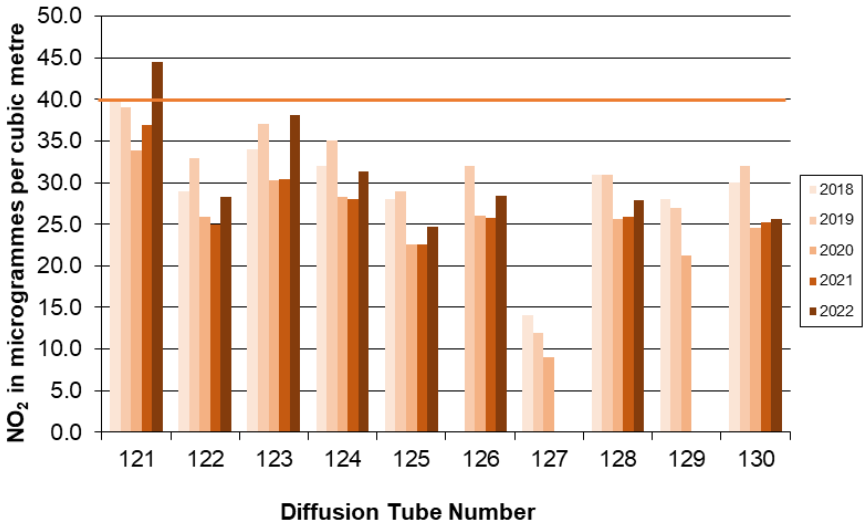


Figure A.14 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 131-140

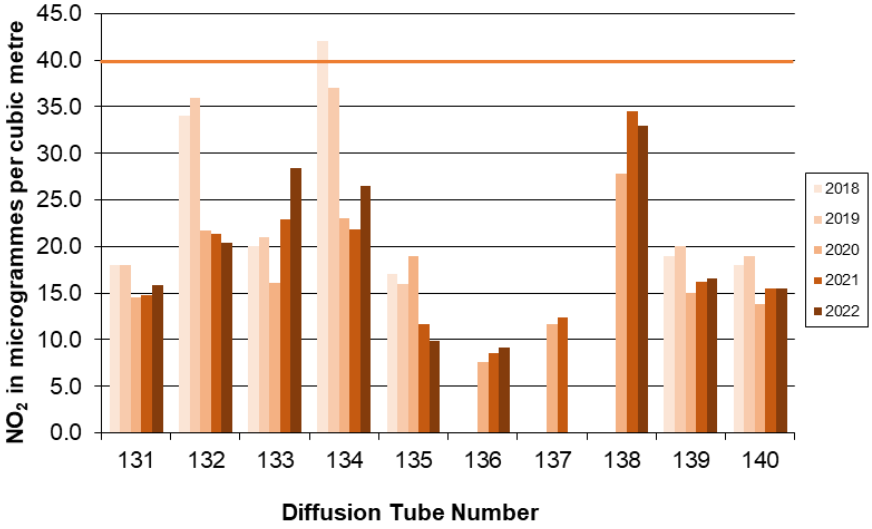


Figure A.15 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 141-150

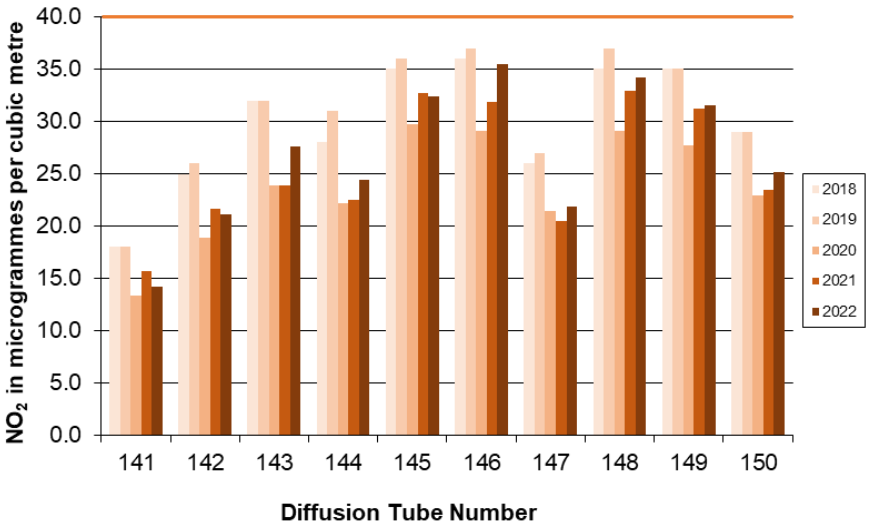


Figure A.16 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 151-160

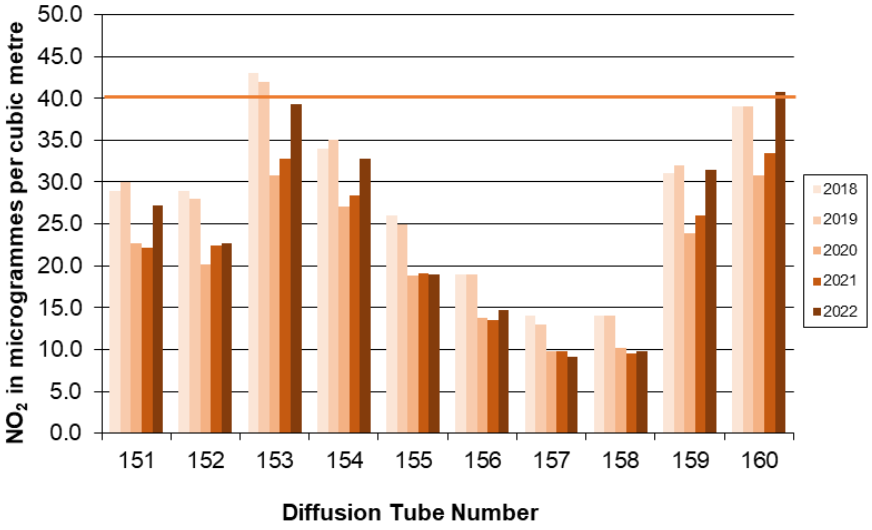


Figure A.17 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 161-170

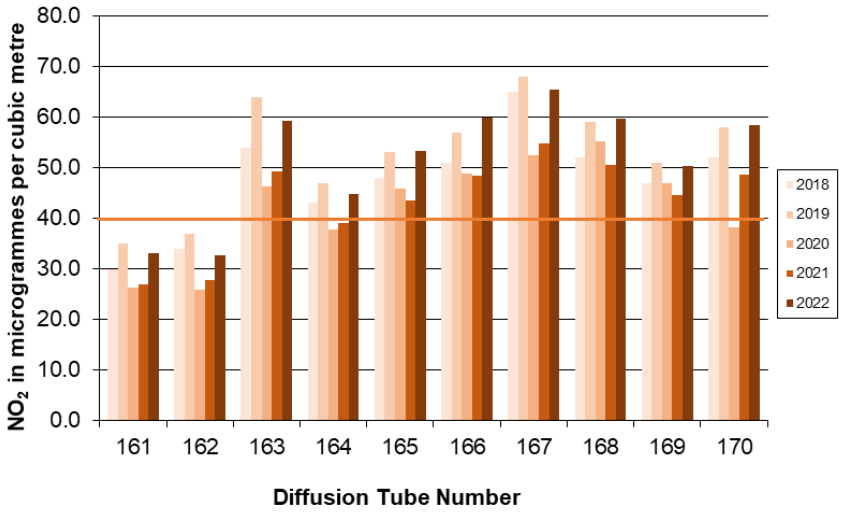


Figure A.18 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 171-180

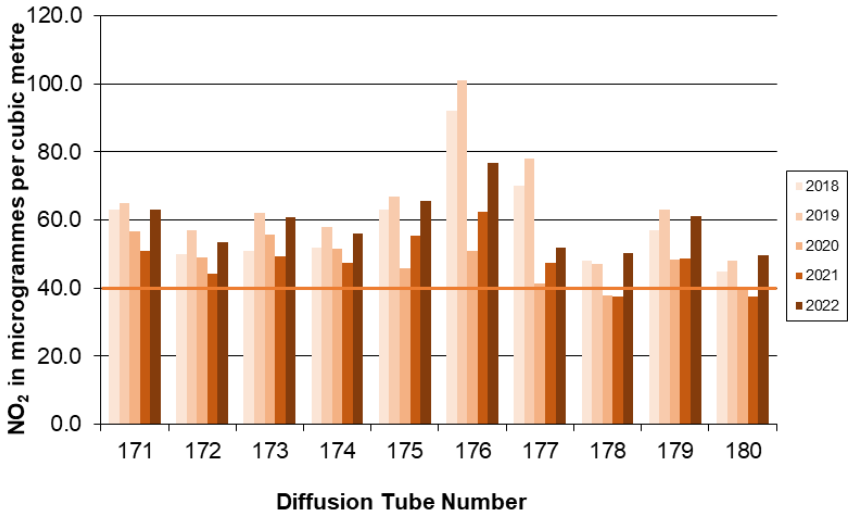


Figure A.19 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 181-190

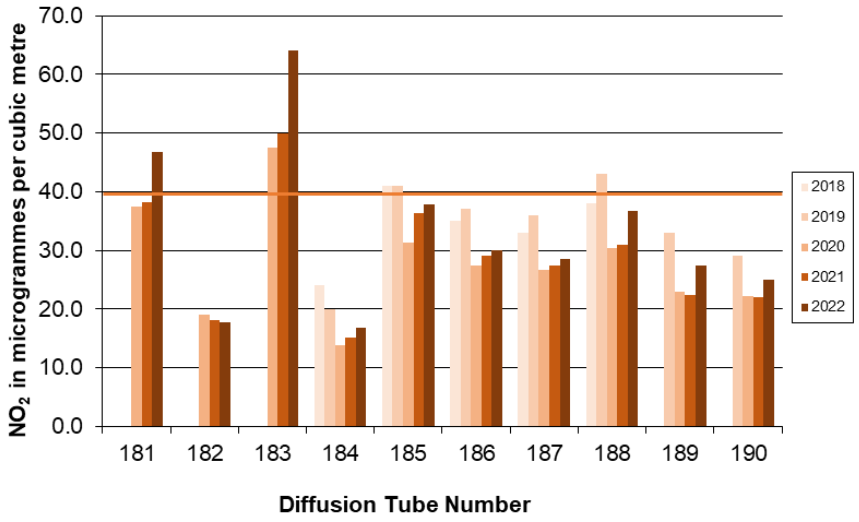


Figure A.20 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 191-200

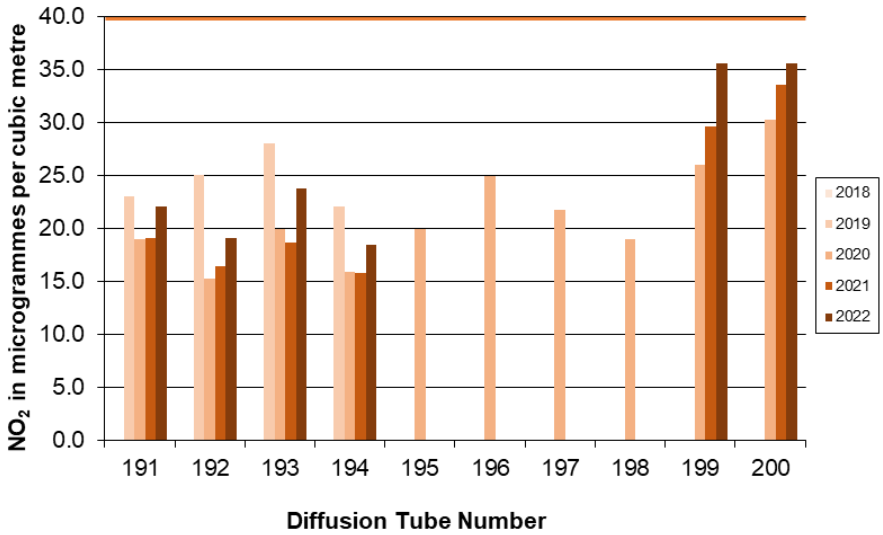


Figure A.21 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 201-210

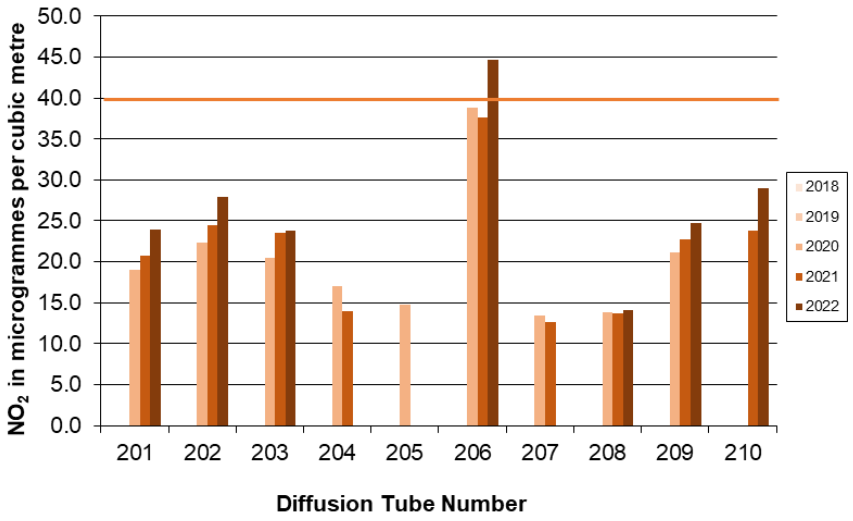


Figure A.22 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 211-220

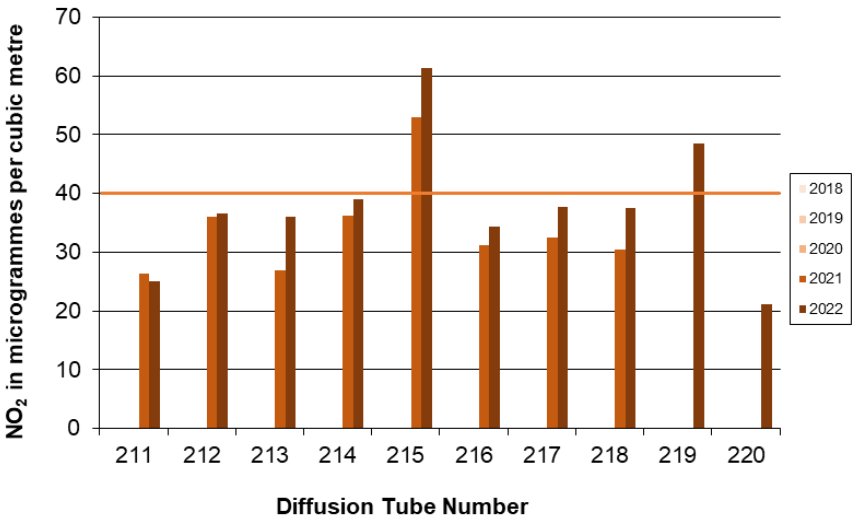


Figure A.23 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 221-230

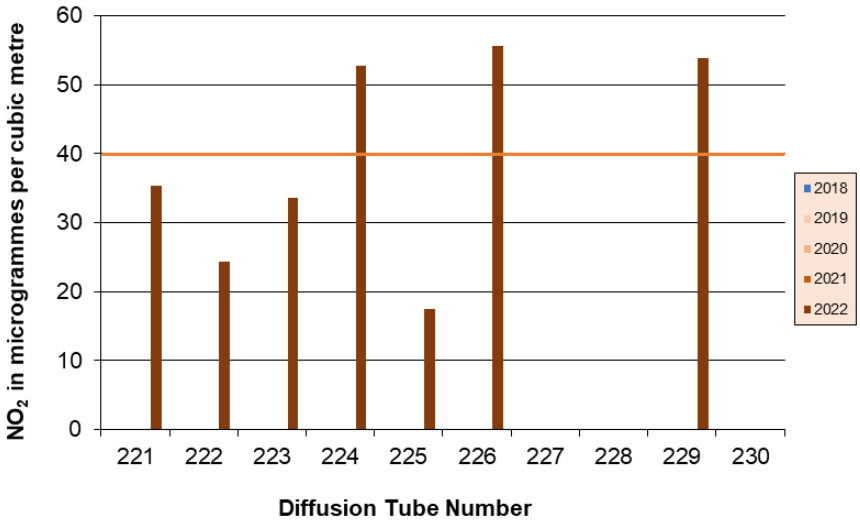


Figure A.24 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 231-240

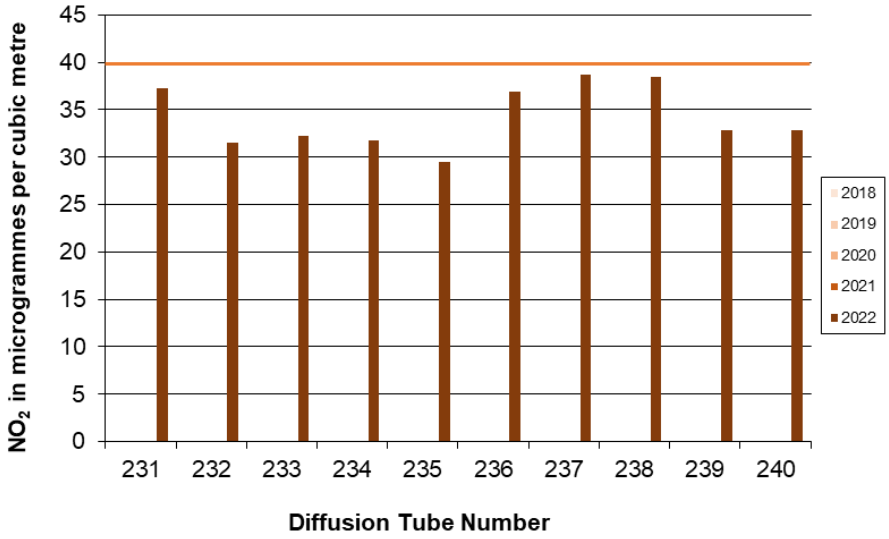


Figure A.25 – Trends in Annual Mean NO_2 Concentrations for Diffusion Tubes 241-247

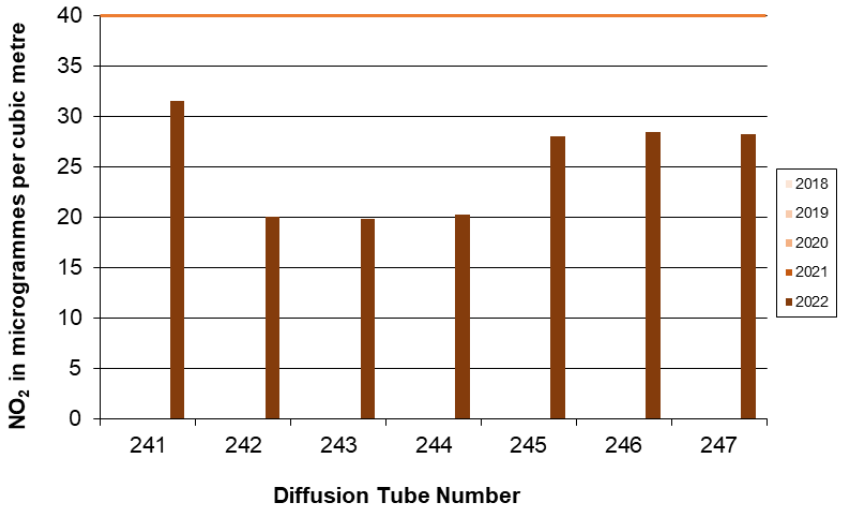


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
GH1	436990	390218	Urban Background	78	78	0 (71)	0	0	0	0
GH2	440077	390794	Urban Industrial	99	99	0 (123)	0	0	0	0
GH3	435181	385366	Roadside	100	100	**0 (95)**	0	2	1	0
GH4	435959	388021	Urban Background	100	100	**0 (96)**	0	1	0	0
GH5	430977	380760	Urban Background	99	99	**0 (62)**	0	2	0	0
GH6	435704	387286	Urban Centre	97	97	**-**	**-**	**3 (65)**	0	0
UKA00575 (Dev Green)	434816	386990	Urban Background	99	99	0	**0 (98)**	0	**0 (80)**	**0**
UKA00181 (Tinsley)	440238	390588	Urban Industrial	69	69	0	0	0	0	0(102)
UKA00622 (Barnsley Road)	436275	389926	Roadside	94	94	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

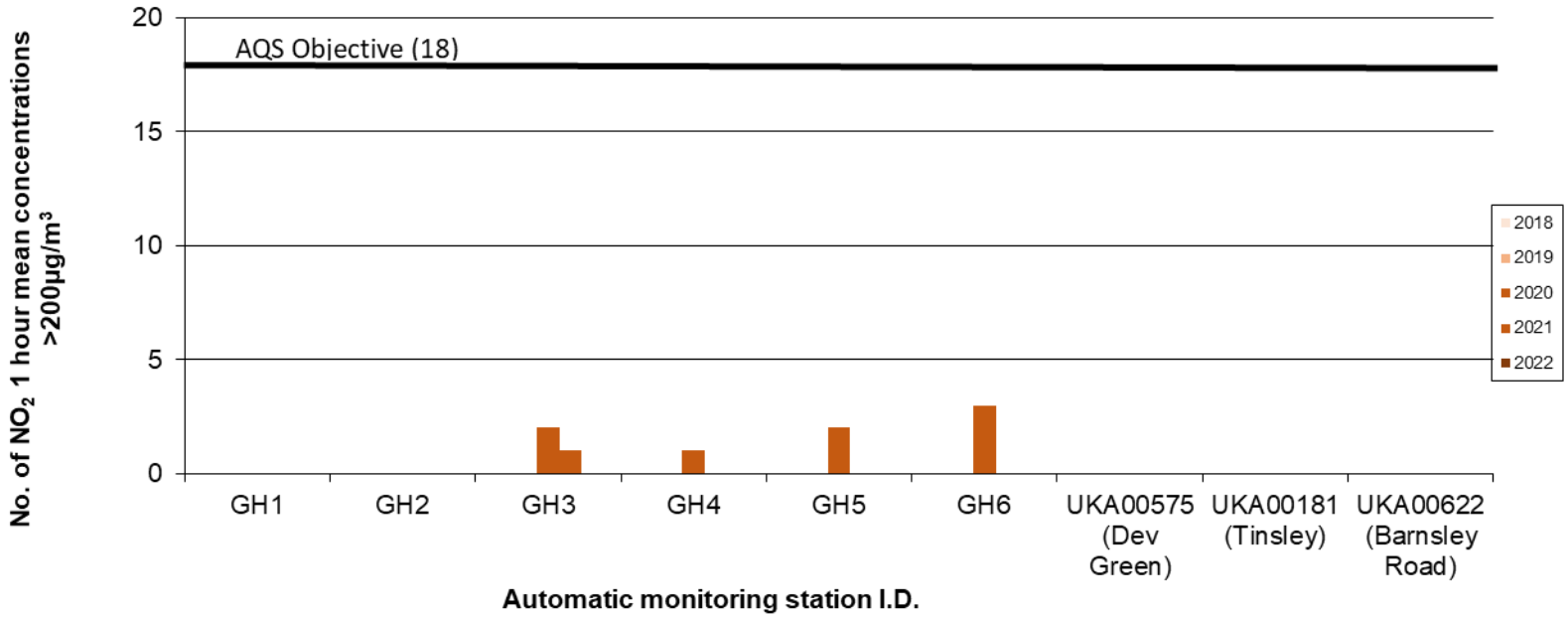


Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
GH1	436990	390218	Urban Background	94	94	15	15	13	13	14
GH2	440077	390794	Urban Industrial	92	92	18	20	16	15	16
GH3	435181	385366	Urban Background	100	100	18	17	12	11	10
GH4	435959	388021	Urban Background	70	70	18	15	15	14	15
GH5	430977	380760	Urban Background	100	100	12	11	11	10	12
GH6	435704	387286	Urban Centre	78	78	-	-	14	11	13
UKA00575 (Dev Green)	434816	386990	Urban Background	98	98	16	15	14	12	13
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	64	-	-	-	-	17

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

Notes:

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

Exceedances of the PM_{10} annual mean objective of $40\mu g/m^3$ are shown in **bold**.

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

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

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

Figure A.3 – Trends in Annual Mean PM_{10} Concentrations

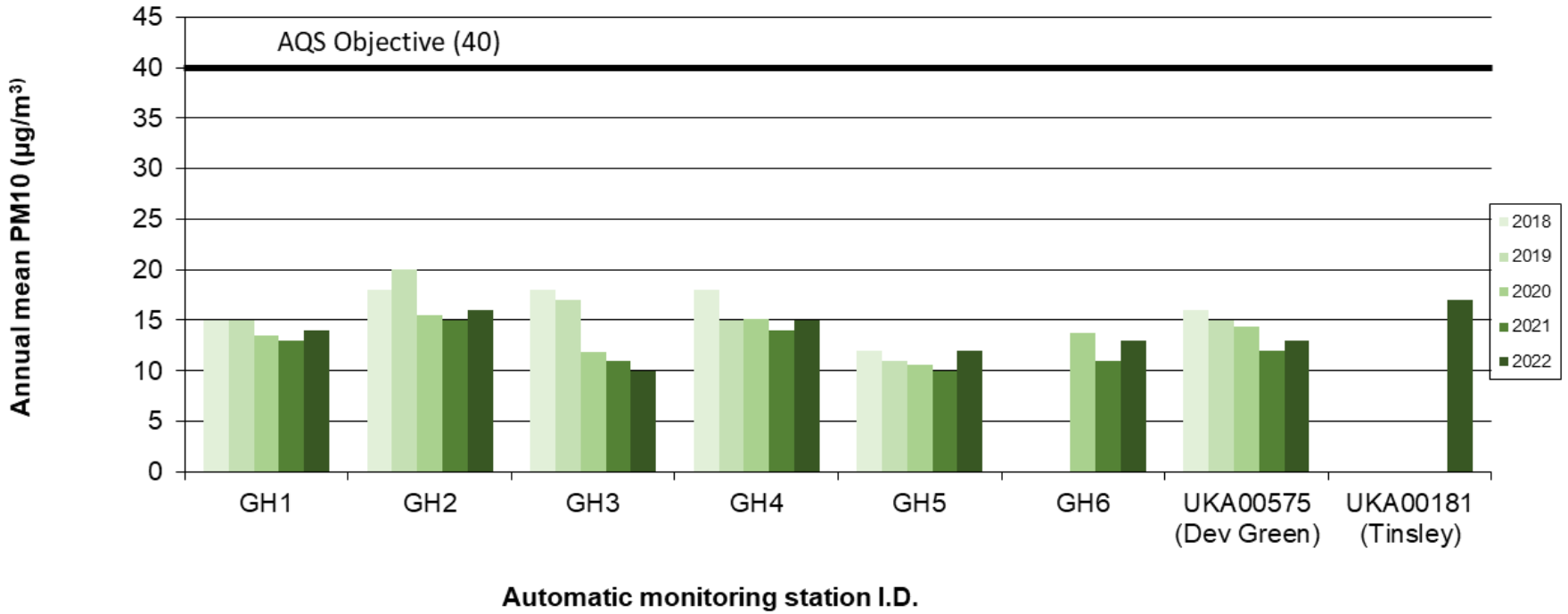


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
GH1	436990	390218	Urban Background	94	94	2(28)	**6 (28)**	0 (29)	1	0
GH2	440077	390794	Urban Industrial	92	92	4	**0 (25)**	2 (30)	1 (27)	0
GH3	435181	385366	Urban Background	100	100	7	14	2	1	0
GH4	435959	388021	Urban Background	70	70	5	**2 (28)**	6	2	0
GH5	430977	380760	Urban Background	100	100	2	**3 (21)**	2	1	0
GH6	435704	387286	Urban Centre	78	78	-	-	4 (21)	2	1
UKA00575 (Dev Green)	434816	386990	Urban Background	98	98	3	7	5	6	5
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	64	-	-	-	-	0

Notes:

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

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

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

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

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

Figure A.4 – Trends in Number of 24-Hour Mean PM_{10} Results > 50µg/m³

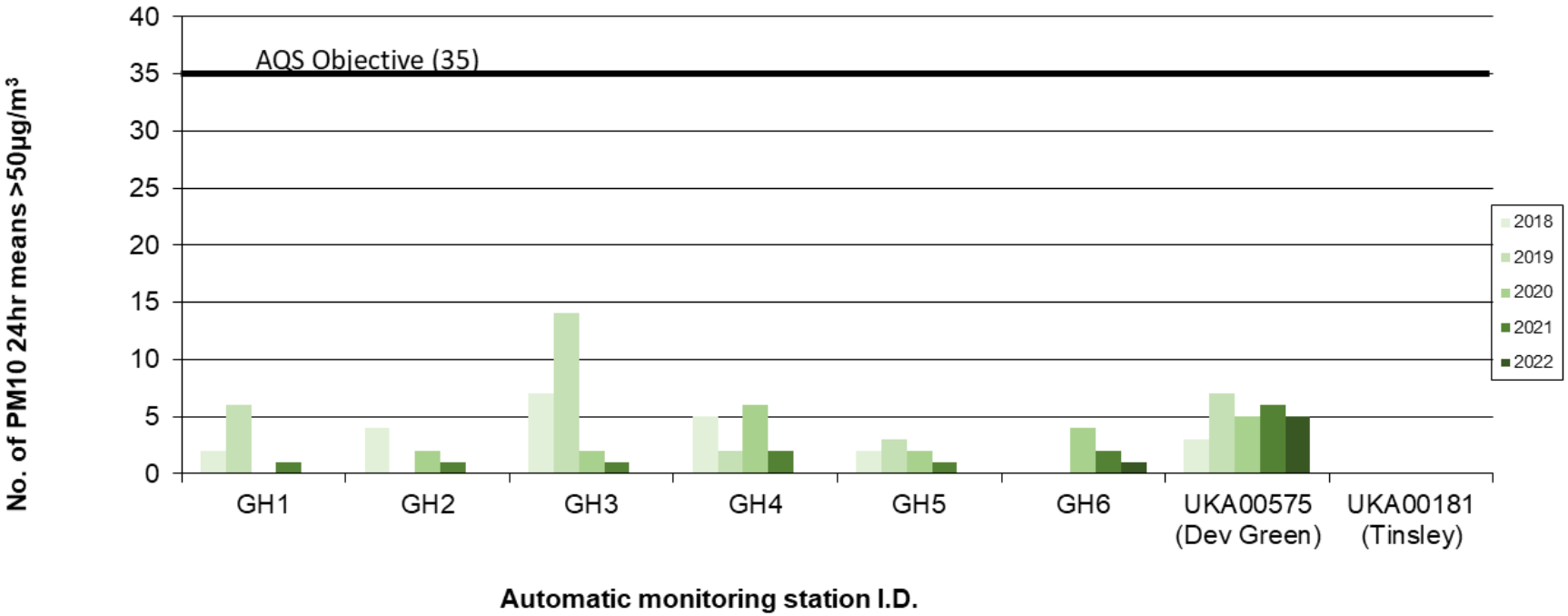


Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
GH1	436990	390218	Urban Background	94	94	11	10	8	8	9
GH2	440077	390794	Urban Industrial	92	92	10	11	9	9	9
GH3	435181	385366	Urban Background	100	100	11	11	7	7	6
GH4	435959	388021	Urban Background	71	71	11	11	10	9	10
GH5	430977	380760	Urban Background	100	100	8	8	7	7	8
GH6	435704	387286	Urban Centre	87	87	-	-	8	6	8
UKA00575 (Dev Green)	434816	386990	Urban Background	98	98	12	10	8	7	8
UKA00181 (Tinsley)	440238	390588	Urban Industrial	100	64	-	-	-	-	8
UKA00622 (Barnsley Road)	436275	389926	Roadside	94	94	14	14.5	9	8	10

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

Notes:

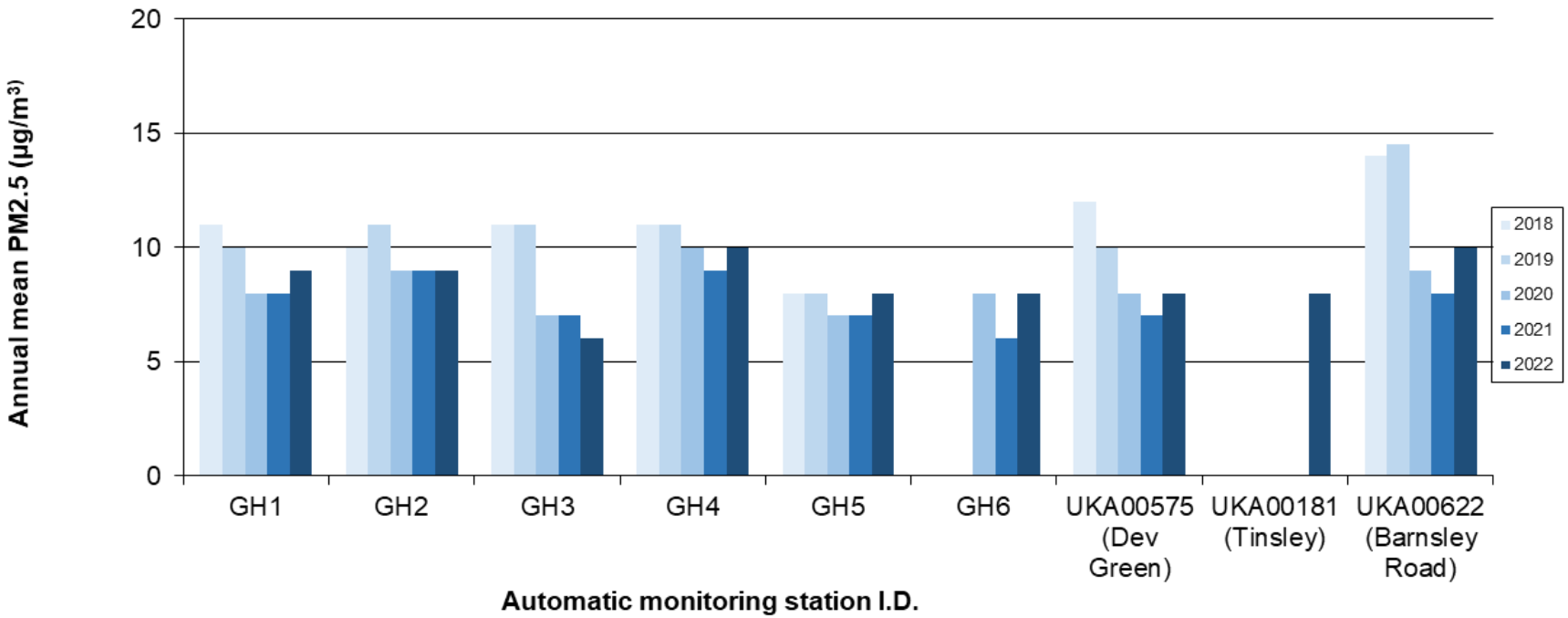
The annual mean concentrations are presented as $\mu g/m^3$.

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

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

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

Figure A.5 – Trends in Annual Mean $PM_{2.5}$ Concentrations



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Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO_2 2022 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	436063	397474	24.0	19.4	29.6	29.6	20.0	16.0	19.2	27.4	24.7	29.7		24.5	24.0	24.0	-	
2	439994	390866	44.0	35.3	19.5	19.5	35.0	39.0	36.3	37.7	39.0	40.3	33.2	41.5	35.0	35.0	-	
3	440045	390884	59.7	40.5	32.8	32.8	44.9	44.8	44.5	47.7	48.3	53.0		60.8	46.3	**46.3**	37.3	
4	440177	390770	50.3	34.7	22.4	22.4	32.0	32.6	30.3	31.0	33.7	41.1	38.9	36.5	33.8	33.8	-	
5	435749	386727	43.0	36.8	38.1	38.1	43.6	42.1	47.6	49.9	47.2	40.7	55.2	52.1	44.5	**44.5**	-	
6	438880	389931	51.7	46.0	42.7	42.7	43.2	40.9	41.8	47.7	36.6	40.8	43.3	44.9	43.5	**43.5**	-	
7	435729	386513	49.5	38.0	39.4	39.4	38.6	37.2	39.9	43.1	44.5	42.2	41.4	23.5	39.7	39.7	-	
8	437164	387687	53.1		48.7	48.7	65.0	60.1	62.7	70.2	63.0	60.7	61.1	47.9	58.3	**58.3**	-	
9	437703	390079	33.0	28.2	27.7	27.7	33.7	32.8	34.0	49.7	45.7	41.4	24.4	45.1	35.3	35.3	-	
10	439355	388385	36.9	28.3				26.5	33.9	38.2	36.5	17.8	33.0	47.1	33.1	33.1	-	
11	432643	389427	28.6	24.3	30.4	30.4	36.4	34.5	36.6	47.4	41.0	32.0	22.7	34.6	33.2	33.2	-	
12	439312	388591	47.5	32.1			38.2	36.6	37.8	44.8	47.9	43.2		52.6	42.3	**42.3**	-	
13	439051	386743	33.0	32.0	25.7	25.7	28.8	28.8	30.4	32.0	33.3	35.5	34.6	34.4	31.2	31.2	-	
14	436141	387521	42.3	36.8	30.1	30.1	37.5	36.7	36.0	37.1	39.4	42.8	43.5	43.3	38.0	38.0	32.1	
16	435639	388155	54.0	37.3	31.1	31.1	48.4	47.9	49.4	56.4	52.6	45.2	50.2	50.9	46.2	**46.2**	-	
17	436109	387458	50.0	42.0	38.7	38.7	46.0	46.3	45.8	45.5	40.1	48.2	46.7	34.3	43.5	**43.5**	**41.6**	
18	435744	387619	58.6	51.3	42.0	42.0	54.8	58.8	55.6	52.6	57.4	71.3	64.6	49.3	54.9	**54.9**	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
19	435714	387476	72.9	65.4	61.0	61.0	78.0	84.1	86.0	77.1	73.5	81.8	72.5	83.9	74.8	**74.8**	**56.3**	
20	435357	387243	25.4	22.7	32.1	32.1	20.9	16.6							25.0	24.5	-	
21	435546	387052	47.6	47.6	30.7	30.7	50.6	48.3	52.8	51.6	52.5	60.4		50.0	47.5	**47.5**	-	
22	433346	390814	43.6	32.2	29.4	29.4	30.8	29.2	32.5	32.6	34.6	46.1	34.2	19.5	32.8	32.8	-	
23	435608	387100	39.9	28.2	36.8	36.8	37.5	32.9	40.8	47.6	52.9	40.7		45.4	40.0	40.0	-	
24	434435	387394	45.4	40.2	25.7	25.7	41.7	41.2	41.4	39.3	42.8	54.7	53.4	47.0	41.5	**41.5**	34.6	
25	434646	387836	36.2		28.4	28.4	33.0	31.0	30.2	33.5	34.6	39.7	30.5	36.1	32.9	32.9	-	
26	434403	386966	36.7	30.8	43.1	43.1	39.5	38.8	45.2	46.8	48.2	40.3	42.9	40.4	41.3	**41.3**	34.4	
27	435554	386638	51.1	38.0	38.9	38.9		49.7	44.3		48.9	47.4	42.1	41.0	44.0	**44.0**	38.4	
28	435313	386367	33.6	30.0	31.3	31.3	33.8	30.0	33.3		38.5	27.4	27.1	43.0	32.7	32.7	-	
29	434814	383335	30.4	23.0	18.8	18.8	30.0	25.1	27.7	37.5	33.0	27.8	30.9	31.4	27.9	27.9	-	
30	435499	385690	39.9	32.7	28.6	28.6	37.0	29.0	38.2	42.2	42.5	37.2	40.8	29.0	35.5	35.5	-	
31	434324	384311	39.3	39.3	26.8	26.8	41.1	42.9	41.7	43.0	41.6	42.1		43.9	38.9	38.9	31.8	
32	434299	386275	41.6	31.2	26.5	26.5	31.1	28.5	32.7	32.3	36.7	34.2	20.9	32.1	31.2	31.2	-	
33	435602	387292		65.6	49.0	49.0	71.0		80.6	75.8	72.2	80.9	68.2	85.4	69.8	**69.8**	-	
34	435700	387256	49.9	44.8	37.9	37.9		81.8	44.5	51.2	51.9	51.6	42.4	49.2	49.4	**49.4**	-	
35	439116	391193	41.7	34.1	26.1	26.1	34.5	35.7	37.3	42.7	43.6	38.2	31.4	36.5	35.7	35.7	-	
36	435950	387996	36.1	23.9	22.7	22.7	22.8	23.8	21.5	23.7	25.8	32.6	26.9	36.6	26.6	26.6	-	
37	435951	387997	33.6	23.3	20.9	20.9	21.9	23.1	20.6	22.2					23.3	24.2	-	
38	435463	386972	51.8	39.2	40.0	40.0	44.7	48.8	54.3	58.5	60.4	52.1	63.2	57.0	50.8	**50.8**	-	
39	437104	388329	49.0	40.0	35.0	35.0	39.3	35.8	37.0	34.5	36.7	47.7	38.5	26.9	38.0	38.0	-	

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40	440116	390800	51.6	37.8	33.9	33.9		39.6	38.8	41.7	42.1	42.5	50.0	26.0	39.8	39.8	33.6	
42	437766	387454	62.8		47.1	47.1	63.3	63.5	55.9	66.0	69.9	65.0	63.3	54.3	59.8	**59.8**	-	
43	436646	387756	52.2	42.0	38.6	38.6			46.2		52.1	45.0		53.7	46.0	**41.5**	-	
45	435789	388072	40.4	27.9	35.3	35.3	33.1	30.1	31.5	35.9	38.1	39.0	39.0	42.4	35.7	35.7	-	
46	435790	388073	38.8	28.5	31.3	31.3	29.7	28.4							31.3	30.7	-	
47	435640	388156	58.7	42.0	44.2	44.2	50.3	49.6							48.2	**47.3**	-	
48	435641	388157	50.1	38.2	48.4	48.4	49.6	45.0							46.6	**45.8**	-	
49	435435	388020	48.1	36.1	35.5	35.5		42.2	38.6		45.4	39.0	49.0	50.1	41.9	**41.9**	-	
50	435436	388021	55.4	36.4	35.9	35.9		38.6							40.5	37.4	-	
53	431193	386795	16.0	14.3	14.0	14.0	14.0	12.8	14.0	15.2	14.0	19.0	20.5	21.0	15.7	15.7	-	
54	436275	389926	43.0	35.2	32.0	32.0									35.5	30.2	-	
55	433013	386750	38.0	30.1	40.0	40.0	30.0	29.5	33.4	36.5	34.0	35.0	34.9	34.0	34.6	34.6	-	
56	433327	386862	45.0	39.4	41.0	41.0	40.0	40.2	40.1	37.5	38.0	55.0	65.3	53.0	44.6	**44.6**	31.4	
57	433514	387033	40.0	33.7	46.0	46.0	31.0	31.8	33.6	33.1	35.0	45.0	41.8	42.0	38.2	38.2	30.8	
58	433752	387230	41.0	29.7	33.0	33.0	28.0	25.0						23.0	30.4	28.3	-	
59	434048	387229	44.0	37.7	49.0	49.0	42.0	38.6	41.7	41.8	46.0	54.0	55.3	52.0	45.9	**45.9**	36.6	
60	434352	387348	41.0	26.1	37.0	37.0	28.0	24.4	28.6	32.4	30.0	32.0	31.1	35.0	31.9	31.9	-	
61	436276	389927	40.0	32.8	31.0	31.0									33.7	28.6	-	
62	430407	385397	22.0	15.6	22.0	22.0	15.0	16.1							18.8	18.4	-	
63	436277	389928	49.0	31.2	28.0	28.0									34.0	28.9	-	
64	440233	390587	43.0	27.2	13.0	13.0				41.1	23.1	24.0		36.0	27.5	24.5	-	

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65	440234	390588	38.0	27.8	13.0	13.0			22.8	42.4	23.9	32.0		30.0	27.0	27.0	-	
66	440235	390589	39.0	27.9	12.0	12.0				41.0	22.0	26.0	28.7	31.0	26.6	26.6	-	
67	433429	386728	44.0	35.4	49.0	49.0	29.0	26.2	29.3	34.2	34.0	35.0	35.3	33.0	36.1	36.1	29.2	
68	433936	386893	33.0	32.7	37.0	37.0	23.0	18.8	21.3	25.1	24.0	27.0	30.0	32.0	28.4	28.4	-	
69	434574	387155	35.0	28.0	43.0	43.0	27.0	10.8	28.4	34.4	37.0	33.0	32.6	37.0	32.4	32.4	-	
70	435255	387349	35.0	27.0	29.0	29.0	21.0	22.6	23.1	25.4	24.0	28.0	34.2	34.0	27.7	27.7	-	
71	435807	386350	43.0	32.4	49.0	49.0	37.0	29.5	35.1	42.4	50.0		42.5	50.0	41.8	**41.8**	-	
72	435697	385892	48.0	33.7	38.0	38.0	29.0	26.9	31.2	38.0	37.0	34.0	30.8	43.0	35.6	35.6	-	
73	435490	385660	52.0	41.5	55.0	55.0	47.0	46.5	49.8	52.1	53.0	50.1		55.0	50.6	**50.6**	**41.1**	
74	435182	385241	45.0	34.6	49.0	49.0	33.0	34.9	38.0		45.0	42.2	48.4	47.0	42.4	**42.4**	-	
75	435161	384986	50.0	46.8			43.0	42.5	44.8	48.1		49.2	50.0	54.0	47.6	**47.6**	-	
76	434965	384613	42.0	30.7	42.0	42.0	36.0	31.4	38.2	44.8	45.0	45.0	46.2	40.0	40.3	**40.3**	38.1	
77	434679	383718	31.0	16.3	32.0	32.0	19.0	19.6				30.5	35.5	30.0	27.3	27.3	-	
78	434857	382968	47.0	34.6	51.0	51.0	33.0	35.6		39.3	30.0	42.9	43.6	49.0	41.5	**41.5**	35.7	
79	434906	381857	40.0	29.1	32.0	32.0	23.0	22.9	25.0	25.2	30.0	28.2	36.6	36.0	30.0	30.0	-	
80	435135	381355	31.0	23.7	27.0	27.0	17.0	20.2		19.7	21.0	24.9	25.8	28.0	24.1	24.1	-	
81	435238	385397	36.0	25.5	29.0	29.0	25.0	23.2	24.8	27.8	29.0	33.7	31.7		-	**-**	-	Duplicate Site with 81 and 235 - Annual data provided for 235 only
82	435239	385398	32.0	29.0	36.0	36.0	25.0	23.8	26.3	27.5	30.0	33.9	32.3		30.2	30.2	-	
83	435240	385399	35.0	26.0	32.0	32.0	23.0	24.7	26.9	28.2	28.0	32.7	36.6		29.6	29.6	-	
84	440084	390760	40.0	31.0	25.0	25.3	25.6	28.8	26.0	27.0	30.0	36.0		30.0	29.5	29.5	-	
85	440085	390761	40.0	34.4	27.0	25.6	24.3	27.5	26.0	26.0	26.0	32.0	37.4	37.0	30.3	30.3	-	

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86	440086	390762	38.0	31.5	25.0	26.0	27.2	28.1	27.0	26.0	27.0	32.1	20.7	36.0	28.7	28.7	-	
87	434803	386947	29.0	17.9	29.0		15.9	14.7	17.0	18.0	20.0	23.5	27.1	25.0	21.6	21.6	-	
88	434804	386948	27.0	16.9	28.0		13.5	14.7	17.0	19.0	23.0	23.5	24.0	30.0	21.5	21.5	-	
89	434805	386949	27.0	18.1	29.0		17.2	15.5	18.0	18.0	21.0	20.0	24.8		20.9	20.9	-	
90	438582	389616	52.0	35.6	32.0	32.0	33.7	32.5	35.0	35.1	33.6	37.7	31.3	48.3	36.6	36.6	-	
91	437928	388800	59.0	47.0	51.0	51.0	56.4	54.4	58.9	63.1	59.3	56.5	46.3	72.9	56.3	**56.3**	**50.3**	
92	437690	388529	58.0	40.1	50.0	50.0		45.7	43.4	50.4	50.2	49.8	44.0	55.2	48.8	**48.8**	-	
93	436350	388234	60.0	44.7	31.0	31.0	37.7	39.4	36.1	40.2	40.3	51.8	39.2	52.0	42.0	**42.0**	-	
94	437019	388826	40.0	28.0	32.0	32.0	25.8	25.2	24.8	29.1	31.6	36.9	33.1	40.8	31.6	31.6	-	
95	437461	389311	53.0	41.1	37.0	37.0	38.0	37.9	35.9	42.8	41.4	43.5		37.8	40.5	**40.5**	-	
96	438393	390232	60.0	38.7	40.0	40.0	43.2		43.3	40.4	40.6	49.4	45.1	43.6	44.0	**44.0**	-	
97	438610	390614	75.0	56.2	44.0	44.0	59.8	56.6	63.9	63.4	63.4	67.4	54.4	55.4	58.6	**58.6**	**46.1**	
98	439167	391698	53.0	36.1	54.0	54.0	44.1	48.0	55.8	58.5	63.3	59.3	40.9	64.9	52.7	**52.7**	-	
99	439717	390826					42.7	42.2	41.3	42.6	42.6	43.7	44.3	41.3	42.6	**44.5**	-	
100	435182	380648	28.0	20.0	33.0	33.0	26.1	23.1	28.5	31.7	25.0	25.0	23.0	29.0	27.1	27.1	-	
101	435750	381591	24.0	22.0	20.0	20.0	22.1	20.5							21.4	21.0	-	
102	433250	391115	41.0	26.1	24.0	24.0	31.3	34.1	34.9	35.3	38.0	42.0	32.1	31.0	32.8	32.8	-	
103	433455	390473	59.0	39.7	40.0	40.0	49.1	54.8	53.8	49.9	49.0	60.0		69.0	51.3	**51.3**	37.6	
104	433630	389834	37.0	24.1	32.0	32.0	28.5	25.1	28.0	31.1	34.0				30.2	30.2	-	
105	433857	389595	35.0	22.7	28.0	28.0	21.1	21.1							26.0	25.5	-	
106	433991	389394	37.0	27.9	31.0	31.0	27.6	28.7	30.1	26.9	33.0				30.4	30.4	-	

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107	434213	388870	42.0	25.1	20.0	20.0	26.2	25.0	24.8	30.6	30.0				27.1	27.1	-	
108	440459	386731	40.6	29.7	26.0	26.0	27.6	27.6							29.6	29.0	-	
109	440213	387006	43.6	40.7			37.5	38.2	38.5	40.1	37.0	36.0	37.0	46.0	39.5	39.5	34.2	
110	439943	390948	46.0	40.0	30.0	30.0	29.8	30.3	30.4	33.8	33.0	44.0	39.6	40.0	35.6	35.6	-	
111	440036	390822	39.0	34.0	24.0	24.0	21.1	29.5	26.6	29.0	33.0	34.0	27.1	32.0	29.4	29.4	-	
112	439813	390743	40.0	28.0	31.0	31.0			24.4		32.0		27.6	38.0	31.5	27.9	-	
113	440014	391178	36.0	28.0	28.0	28.0	23.7	26.3	25.8	27.2	28.0	30.0	34.0	34.0	29.1	29.1	-	
115	440046	390737	42.0	39.0	31.0	31.0	44.2	47.7	43.8	41.1	40.0	47.0	52.0	45.0	42.0	**42.0**	-	
116	439994	390810	48.0	37.0	30.0	30.0	33.2	35.5	35.0	33.6	32.0	40.0	45.0	38.0	36.4	36.4	-	
117	435909	388070	49.0	33.0	33.0	33.0	33.7	37.8	42.0		41.0	48.5	43.6	47.0	40.1	**40.1**	-	
118	435736	387820	43.0	26.0			28.5	24.8	27.5	29.5	31.3	37.2	37.3	38.0	32.3	32.3	-	
119	435239	387899			27.0	27.0	23.1	21.6	21.8	24.0	29.3	27.9	16.3	34.0	25.2	25.2	-	
120	434806	388216	60.0	43.0	43.0	43.0	42.8	45.6	44.1	43.2	46.6	52.8	52.7	40.0	46.4	**46.4**	-	
121	435843	388814	49.4	38.7	37.0	37.0	49.1	48.5	47.3	46.4	45.0	52.0	34.0	49.6	44.5	**44.5**	**40.1**	
122	439377	387792	34.8	26.7	24.0	24.0	26.9	25.5	27.6	32.2	32.0	28.0	25.0	32.0	28.2	28.2	-	
123	439298	387855	42.8	32.7			33.8	32.7							35.5	39.6	-	
124	438997	387923	44.2	28.1	30.0	30.0	26.4	27.5	28.5	29.8	36.0	32.0	30.0	33.0	31.3	31.3	-	
125	438121	388922	38.4	29.1	18.0	18.0	20.7		18.6	21.7	23.0	20.0	29.0	35.0	24.7	24.7	-	
126	440559	387357	43.0	31.0	25.0	25.0	31.6	30.2	26.3	28.1	28.0	19.0	22.0	32.0	28.4	28.4	-	
128	427261	398422	31.0	26.0	27.0	27.0	25.0		26.3	28.8	31.0	29.0	26.0	30.0	27.9	27.9	-	
130	428818	397977	35.0	26.0	18.0	18.0	24.2	23.8	24.1	26.5	22.0	29.0	30.0	31.0	25.6	25.6	-	

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131	435338	382923	17.0	11.0	32.0			13.4	10.6	16.9	16.0	14.0	8.0	20.0	15.9	15.9	-	
132	434868	385276	24.0	21.0	13.0	13.0	13.0	14.8	16.0	30.0		39.0			20.4	20.4	-	
133	434862	385269	42.0	34.0	25.0	25.0	25.0	34.4	35.0	16.0		19.0			28.4	28.4	-	
134	435283	387222	40.0	22.0	28.0	28.0	22.0	19.1	22.0	25.0	28.0	26.0	28.0	30.0	26.5	26.5	-	
135	432870	383387	13.0	16.0	7.0	7.0	7.0	7.5	10.0	9.0					9.6	9.9	-	
136	430881	379724	15.0	6.0	10.0	10.0	7.0	6.6	7.1	9.0		9.0	12.0		9.2	9.2	-	
137	433104	386380	18.0												-	-	-	
138	434885	385286	44.0	35.0	24.0	24.0	24.0	33.5	38.0	34.0					32.1	33.3	-	
139	434372	385218		14.0	17.0	17.0	12.4	13.1	13.0	16.0	20.0	16.0	22.0	22.0	16.6	16.6	-	
140	434200	384869		11.0	19.0	19.0	11.8	11.8	12.0	16.0	18.0	16.0	15.0	21.0	15.5	15.5	-	
141	433650	385574		15.0	17.0	17.0	13.2	11.4	11.0	13.0	18.0			12.0	14.2	14.2	-	
142	433378	385701		21.0	26.0	26.0	18.5	16.6	18.0	23.0	28.0	17.0	23.0	15.0	21.1	21.1	-	
143	434069	385673		26.0				12.9	27.0	37.0	10.0	30.0			23.8	27.9	-	
144	434128	385719		25.0						25.0	8.0	33.0			22.8	24.5	-	
145	433640	383391	36.0	43.0	32.0	32.0	31.7	31.7	31.7			31.0	22.2		32.4	32.4	-	
146	433601	383337	34.0		28.0	28.0	32.5	32.5	32.5	41.0	41.0	40.0	44.8		35.4	35.4	-	
147	434188	383548	23.0	32.0			15.8	15.8	15.8	22.0	22.0	22.0	28.3		21.9	21.9	-	
148	434123	383874	37.0	43.0	33.0	33.0	28.1	28.1	28.1	37.0	37.0	36.0	35.8		34.2	34.2	-	
149	434143	383915	39.0	41.0	28.0	28.0	19.9	19.9	19.9	36.0	36.0	40.0	39.6		31.6	31.6	-	
150	432964	385619	27.2	25.0	21.0	21.0	22.6	26.9	22.7	27.6	25.3	31.5		25.9	25.2	25.2	-	
151	432828	385402	28.0	25.0	27.0	27.0	24.2	25.7	27.5	28.3	30.6	25.3		30.5	27.2	27.2	-	

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
152	432822	384990	27.4	22.0	20.0	20.0	23.9	23.7	25.1	25.5	28.3	22.3		11.7	22.7	22.7	-	
153	432651	384491	34.4	30.0	36.0	36.0	36.7	39.7	38.7	50.6	46.2	43.5		40.6	39.3	39.3	-	
154	432428	384276	33.3	31.0	25.0	25.0	34.1	35.4	36.6	34.0	29.6	37.1		40.1	32.8	32.8	-	
155	432241	384593	20.6	19.0	19.0	19.0	18.2	21.1	17.7	18.5	17.4	16.6		21.5	19.0	19.0	-	
156	431908	384518	15.9	13.0	17.0	17.0	11.1	13.2	12.6	13.3	15.3	16.4		17.7	14.8	14.8	-	
157	431538	383992	11.5	9.0	10.0	10.0	8.7	7.9	7.3	8.0	8.3	11.1		9.4	9.2	9.2	-	
158	432055	384648	11.9	10.0	9.0	9.0	7.5	7.3	7.1	8.3	8.7	12.1		16.1	9.7	9.7	-	
159	434821	385142	32.0	23.0	31.0	31.0	29.1	28.9	27.3	31.0	31.0	38.8	41.0	33.0	31.4	31.4	-	
160	434522	384654	39.0	35.0	39.0	39.0	41.3	38.8	38.2	44.0	44.0	44.4	51.0	35.0	40.7	**40.7**	-	
161	434797	383255	34.0	31.0	30.0		29.7	33.8		32.0	32.0	31.0	40.0	37.0	33.1	33.1	-	
162	434814	383252	34.0	30.0	34.0		28.2	29.4	32.6	37.0	37.0	40.0	22.0	36.0	32.7	32.7	-	
163	435810	386918	61.4	47.0	62.0	62.0	69.5	59.6	56.7	71.1	69.8	55.3	41.2	56.4	59.3	**59.3**	-	
164	435841	386872	48.7	36.0	47.0	47.0	47.8		44.1	53.5	50.5	34.8	40.9	41.6	44.7	**44.7**	-	
165	435849	387031	49.7	47.0	54.0	54.0	61.0	52.2	53.1	56.8	57.1	56.4	47.9	51.2	53.4	**53.4**	-	
166	435867	386955	61.8	55.0	60.0	60.0	71.2	66.7	61.3	73.0	57.9	52.6	51.5	47.4	59.9	**59.9**	-	
167	435873	387004	67.6	59.0	56.0	56.0	77.8	81.7	70.1	70.2	72.4	68.4	66.0	39.5	65.4	**65.4**	-	
168	435871	386905	61.1	43.0	62.0	62.0	73.5	67.9	57.2	72.4	67.1	50.0	52.3	46.7	59.6	**59.6**	-	
169	435880	386888	57.5	40.0	52.0	52.0	56.0	52.4	49.7	64.0	52.1	45.3	38.4	45.2	50.4	**50.4**	-	
170	435883	386956	56.4	58.0	46.0	46.0	73.8	71.9		69.3	62.5	59.2	47.1	52.2	58.4	**58.4**	-	
171	435909	386912	61.1	59.0	58.0	58.0	72.0	64.9	62.4	65.4	72.0	58.2			63.1	**63.1**	-	
172	435916	386973	53.5	54.0	49.0	49.0	64.6	59.7	55.4	53.6	53.4	56.3	46.5	46.7	53.5	**53.5**	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
173	435921	386968	66.4	62.0	53.0	53.0	73.2	66.6	62.1	59.5	62.5	56.3	57.7	57.0	60.8	**60.8**	-	
174	435919	386934	58.4	57.0	54.0	54.0	63.3	61.9	56.0	61.2	62.6	46.8	49.3	48.0	56.0	**56.0**	-	
175	435812	387005	72.0	56.0	62.0	62.0	62.0	53.6	64.6	83.0	71.0	66.0	61.0	74.0	65.6	**65.6**	-	
176	435818	386889	86.0		73.0	73.0		64.6	73.0	90.0	80.0	76.0	70.0	82.0	76.8	**76.8**	-	
177	435814	386872	57.0		57.0	57.0		51.0	57.6	25.0	65.0				52.8	**51.7**	-	
178	435797	389600	50.0				51.9	49.3	46.5	51.6	50.6	54.4		41.7	49.5	**50.5**	**42.3**	
179	436069	388328	69.0	49.0	58.0	58.0	63.7	64.7	66.5	56.3	67.6	59.7	51.3	67.8	61.0	**61.0**	-	
180	436595	390242	57.0	43.0	47.0	47.0	43.0	49.1	49.0	54.2	50.2	53.7	57.5	45.6	49.7	**49.7**	**40.0**	
181	435537	389218	52.0	37.0	43.0	43.0	41.4	41.2	44.4	53.5	48.9	44.2	57.0	56.2	46.8	**46.8**	-	
182	435450	388650	26.0	15.0	20.0	20.0	12.1	13.0	12.9	15.9	18.2	22.7	18.3	19.1	17.8	17.8	-	
183	436499	390182	63.0	51.0	63.0	63.0	59.1	59.5	61.6	78.8	67.9	70.9	63.7	68.4	64.2	**64.2**	-	
184	434741	384237	23.0	14.0	21.0		13.5	12.9	12.3	18.0	18.0	16.0	23.0	13.8	16.9	16.9	-	
185	434989	384691	40.0	25.0	44.0		39.9	33.5	36.5	48.4	48.4	41.0	24.0	36.2	37.9	37.9	30.8	
186	435489	385101	35.0	27.0	31.0		30.6	29.3	31.1	38.0	38.0	36.4	14.0	20.8	30.1	30.1	-	
187	433350	389387	32.1	26.0			23.2	24.7	29.8	34.4	27.0	39.2	21.0		28.6	28.6	-	
188	433147	388796	37.2	30.0	33.0	33.0	33.9	34.3	40.0	40.4	38.3	48.9	35.0		36.7	36.7	29.1	
189	432768	389097	33.4	24.0	25.0	25.0	20.1	23.9	23.1	26.5	29.2	30.6	40.0		27.3	27.3	-	
190	432271	388570	27.3	24.0	21.0	21.0			30.3	29.6	26.3	28.9	17.0		25.0	25.0	-	
191	433238	388666	26.6	20.0	18.0	18.0	18.6	19.8	23.1	24.7	21.1	23.6	29.0		22.0	22.0	-	
192	433266	385705	25.0	18.0	20.0	20.0	17.1	16.5	17.4	18.9	18.9	18.7	18.7	19.9	19.1	19.1	-	
193	433251	385695	28.0	21.0	26.0	26.0	21.3	22.3	22.0	22.6	22.6	25.5	25.5	21.6	23.7	23.7	-	

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
194	433267	385684	23.0	16.0	20.0	20.0	13.8	14.6	16.2	18.0	18.0	20.4	20.4	20.3	18.4	18.4	-	
199	434173	387484	26.0	26.0						40.0	49.0	41.8			36.6	35.9	-	
200	433750	387724	27.0	27.0					34.8	50.0					34.7	36.8	33.0	
201	433486	387994	22.0	22.0							30.0	28.4			25.6	24.2	-	
202	433236	388668	25.0	25.0						27.0	38.0				28.8	28.7	-	
203	432822	387795	19.0	19.0					16.9	27.0	34.0				23.2	24.5	-	
206	435334	389097	46.0	39.0	38.0	38.0	48.0	48.2	48.7	45.5	51.0	48.0	58.0	27.0	44.6	**44.6**	-	
208	434720	390560	18.0	15.0	14.0	14.0	10.9	11.3	10.2	10.4	13.0	17.0	19.0	17.0	14.2	14.2	-	
209	435304	389577	32.0	23.0	28.0	28.0	19.6	24.4	21.1	25.0	31.0	28.0	26.0	11.0	24.8	24.8	-	
210	435018	387999	43.7	24.5	26.4	26.4	25.7	21.5	24.0	28.8	30.0	36.0	34.0	27.5	29.0	29.0	-	
211	435018	387999	40.8	22.5	22.3	22.3	23.7	21.8							25.5	25.1	-	
212	436146	387608	47.2	34.0	19.3	19.3	41.4	35.6	33.5	39.6	43.0	43.0		45.6	36.5	36.5	30.4	
213	435578	386555	44.5	24.9			34.1	30.3		35.1	39.0	38.0	39.0	38.8	36.0	36.0	-	
214	435023	386344	45.7	23.9	25.2	25.2	45.0	31.8	38.9	51.1	50.0	41.0	42.0	49.0	39.1	39.1	-	
215	435763	386944	74.0	68.0	57.0	57.0	61.0	59.4	56.4	70.0	68.0	64.0	56.0	45.0	61.3	**61.3**	-	
216	440913	386218	39.0	30.9			27.2	26.5	31.7	35.2	37.0			37.0	33.1	34.9	-	
217	443572	381395	42.0	31.0	40.0	40.0	33.6	35.5	39.1	47.1	34.0	36.0	40.0	34.0	37.7	37.7	32.8	
218	435650	389350	39.0	31.0	38.0	38.0	32.8	31.2	32.8	37.9	34.0	44.0	49.0	42.5	37.5	37.5	27.6	
219	435770	386979									62.0	61.0	44.0	49.0	54.0	**46.9**	-	
220	431740	385914							18.8	20.5	20.0	23.0	24.1	23.0	21.5	20.7	-	
221	435967	386210									43.0		39.7	39.0	40.6	34.2	-	

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
222	434676	386171							19.0	26.0	26.4	24.0	28.0	25.0	24.7	23.8	-	
223	435233	385961							28.0	30.0	36.4	35.0	37.0	39.0	34.2	33.0	-	
224	436092	388590							52.0	54.0	49.0			53.0	52.0	**52.4**	39.9	
225	433473	387456							13.0	16.0	16.0	20.0	22.1	20.0	17.9	17.2	-	
226	435755	386938										57.0	65.0	71.0	64.3	**53.3**	-	
227	435770	386979											54.0	39.0	-	**-**	-	
228	435881	387162											47.0	41.0	-	**-**	-	
229	435898	387153										68.0	71.0	48.0	62.3	**51.7**	-	
230	435805	386906										46.0		35.0	-	**-**	-	
231	436276	389927									41.0	45.0	37.0	43.0	41.5	36.0	25.1	
232	435238	385397					25.0	23.2	24.8	27.8	28.7	30.0	36.0		27.9	31.4	-	
233	435238	385397					25.0	23.8	26.3	27.5	30.0	32.5	35.0		28.6	32.1	-	
234	435238	385397					23.0	24.7	26.9	28.2	28.0	33.3	33.0		28.1	31.6	-	
235	435238	385397							25.4	30.1	28.5	34.0	32.0	38.0	29.5	29.5	-	Duplicate Site with 81 and 235 - Annual data provided for 235 only
236	436276	389927	46.0	35.1	45.8	41.8						40.5	43.0		42.0	36.2	25.2	
237	436276	389927										40.5	37.0		38.7	38.7	26.5	
238	436276	389927										40.0	37.0		38.5	38.5	-	
239	440084	390760					26.7	29.2	24.9	24.3		34.7	33.0		28.8	32.7	-	
240	440084	390760					25.9	26.3	26.3	25.6		33.4	35.0		28.7	32.7	-	
241	440084	390760					25.6	26.9	22.3	25.6		33.5	32.0		27.7	31.4	-	
242	434803	386947	25.2	17.1	30.3	20.7	15.1	13.5	15.4	16.5		21.1	26.0		20.1	20.1	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
243	434803	386947					14.1	12.7	15.9	17.1		22.6	22.0		17.4	19.8	-	
244	434803	386947					15.0	13.4	16.0	15.9		22.3	24.0		17.8	20.2	-	
245	433646	386577	34.0	22.0	27.0	27.0	23.5	20.0	23.0	27.8	27.8	31.9	38.3	34.0	28.0	28.0	-	
246	433588	386528	35.0	26.0	25.0	25.0	26.0	29.3	29.4	34.8	34.3	22.8	29.3	25.0	28.5	28.5	-	
247	433603	386625	36.0	28.0	29.0	29.0	31.0	24.0	24.8	26.4	25.3	23.0	33.0	29.0	28.2	28.2	-	

☒ **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.**

☒ **Sheffield City Council confirm that all 2022 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 2022

Sheffield City Council has not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by Sheffield City Council During 2022

Sheffield City Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

South Yorkshire Air Quality Samplers (SYAQS) were the sole supplier of diffusion tubes for the first 4 months of 2022 before ceasing trading. Supply was then undertaken by Socotec and Gradko for the remainder of the year. The preparation method for all the tubes was 50% TEA in acetone. The tubes were exposed using the 2022 Diffusion Tube Monitoring Calendar.

As SYAQS was running down prior to ceasing trading no WASP/Air PT analysis was undertaken. Latest results for Socotec and Gradko show performance as averaging 100% of results as satisfactory for the 1st and 2nd quarter testing during 2022. No results for the rest of 2022 were available at the time of writing.

Adjustments to the raw results for bias, annualisation and distance, where necessary, were undertaken in the DTDPT spreadsheet and the results of these calculations can be seen in the tables above

Diffusion Tube Annualisation

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

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

Site ID	Annualisation Factor DEFRA Barnsley Road	Annualisation Factor DEFRA Dev Green	Annualisation Factor DEFRA Barnsley Gawber	Annualisation Factor SCC GH3 Lowfield	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
20	0.9065	1.0004	1.0033	1.0176	0.9819	25.0	24.5
37	0.9660	1.0723	1.0608	1.0564	1.0388	23.3	24.2
43	0.8895	0.9002	0.8806	0.9355	0.9015	46.0	41.5
46	0.9065	1.0004	1.0033	1.0176	0.9819	31.3	30.7
47	0.9065	1.0004	1.0033	1.0176	0.9819	48.2	47.3
48	0.9065	1.0004	1.0033	1.0176	0.9819	46.6	45.8
50	0.8658	0.9266	0.9322	0.9701	0.9237	40.5	37.4
54	0.8098	0.8382	0.8450	0.9053	0.8496	35.5	30.2
58	0.8844	0.9467	0.9273	0.9656	0.9310	30.4	28.3
61	0.8098	0.8382	0.8450	0.9053	0.8496	33.7	28.6
62	0.9065	1.0004	1.0033	1.0176	0.9819	18.8	18.4
63	0.8098	0.8382	0.8450	0.9053	0.8496	34.0	28.9
64	0.8745	0.8894	0.8692	0.9250	0.8895	27.5	24.5
99	1.0205	1.0896	1.0155	1.0535	1.0448	42.6	44.5
101	0.9065	1.0004	1.0033	1.0176	0.9819	21.4	21.0
105	0.9065	1.0004	1.0033	1.0176	0.9819	26.0	25.5
108	0.9065	1.0004	1.0033	1.0176	0.9819	29.6	29.0
112	0.8763	0.8946	0.8485	0.9282	0.8869	31.5	27.9

Site ID	Annualisation Factor DEFRA Barnsley Road	Annualisation Factor DEFRA Dev Green	Annualisation Factor DEFRA Barnsley Gawber	Annualisation Factor SCC GH3 Lowfield	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
123	0.9641	1.1811	1.1898	1.1264	1.1153	35.5	39.6
135	0.9660	1.0723	1.0608	1.0564	1.0388	9.6	9.9
138	0.9660	1.0723	1.0608	1.0564	1.0388	32.1	33.3
143	1.1018	1.2346	1.1922	1.1598	1.1721	23.8	27.9
144	1.0298	1.1152	1.0791	1.0910	1.0787	22.8	24.5
177	0.9421	0.9972	0.9843	0.9960	0.9799	52.8	51.7
178	0.9795	1.0555	1.0256	1.0240	1.0212	49.5	50.5
199	0.9292	1.0000	0.9940	1.0083	0.9829	36.6	35.9
200	0.9720	1.1109	1.0938	1.0699	1.0617	34.7	36.8
201	0.8945	0.9495	0.9552	0.9829	0.9455	25.6	24.2
202	0.9195	1.0384	1.0165	1.0153	0.9974	28.8	28.7
203	0.9842	1.1092	1.0784	1.0603	1.0580	23.2	24.5
211	0.9065	1.0004	1.0033	1.0176	0.9819	25.5	25.1
216	0.9889	1.1149	1.0672	1.0563	1.0568	33.1	34.9
219	0.8960	0.8698	0.7988	0.9085	0.8683	54.0	46.9
220	0.9772	0.9844	0.9069	0.9830	0.9629	21.5	20.7
221	0.8731	0.8608	0.7582	0.8816	0.8434	40.6	34.2
222	0.9772	0.9844	0.9069	0.9830	0.9629	24.7	23.8
223	0.9772	0.9844	0.9069	0.9830	0.9629	34.2	33.0
224	1.0149	1.0557	0.9676	0.9943	1.0081	52.0	52.4
225	0.9772	0.9844	0.9069	0.9830	0.9629	17.9	17.2
226	0.8627	0.8204	0.7521	0.8802	0.8288	64.3	53.3
229	0.8627	0.8204	0.7521	0.8802	0.8288	62.3	51.7
231	0.8960	0.8698	0.7988	0.9085	0.8683	41.5	36.0
232	1.0743	1.1827	1.1132	1.1249	1.1238	27.9	31.4

Site ID	Annualisation Factor DEFRA Barnsley Road	Annualisation Factor DEFRA Dev Green	Annualisation Factor DEFRA Barnsley Gawber	Annualisation Factor SCC GH3 Lowfield	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
233	1.0743	1.1827	1.1132	1.1249	1.1238	28.6	32.1
234	1.0743	1.1827	1.1132	1.1249	1.1238	28.1	31.6
236	0.8428	0.8499	0.8329	0.9243	0.8625	42.0	36.2
239	1.0805	1.1961	1.1289	1.1423	1.1370	28.8	32.7
240	1.0805	1.1961	1.1289	1.1423	1.1370	28.7	32.7
241	1.0805	1.1961	1.1289	1.1423	1.1370	27.7	31.4
243	1.0805	1.1961	1.1289	1.1423	1.1370	17.4	19.8
244	1.0805	1.1961	1.1289	1.1423	1.1370	17.8	20.2

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Sheffield City Council have applied local bias adjustment factors (see explanation in table C.2) of 0.99, 0.89 and 0.88 to the 2022 monitoring data. Data from the Sheffield City Council GH2 Tinsley School site was used for calculating the Bias Adjustment Factor as there was insufficient data at the AURN UKA00181 Tinsley site and missing diffusion tubes at the AURN UKA00575 Devonshire Green and AURN UKA00622 Barnsley Road sites. 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

Due to changes in diffusion tube suppliers during 2022, and as advised by the LAQM Helpdesk, two Local Bias Adjustment Factors have been used for each tube; 0.99 for the

first 4 months for all the tubes supplied by South Yorkshire Air Quality Samplers then 0.89 for Socotec supplied tubes and 0.88 for Gradko supplied tubes for the remainder of the year.

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local		0.99,0.89,0.88
2021	Local		0.93
2020	Local		0.93
2019	Local		0.98
2018	Local		0.97

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	4	7	7		
Bias Factor A	0.99 (0.77 – 1.39)	0.89 (0.84 – 0.93)	0.88 (0.86 – 0.91)		
Bias Factor B	1% (-28% - -29%)	13% (7% - 19%)	13% (10% - 16%)		
Diffusion Tube Mean (µg/m^3)	31.0	29.0	30.0		
Mean CV (Precision)	4%	5%	4%		
Automatic Mean (µg/m^3)	30.0	26	26.0		
Data Capture	99%	99%	99%		
Adjusted Tube Mean (µg/m^3)	30 (24 – 43)	26 (24 – 27)	26 (26 – 27)		

Notes:

Due to changes in diffusion tube suppliers during 2022 the Local Bias adjustment Input 1 is for South Yorkshire Air Quality Samplers, Input 2 is for Socotec and Input 3 is for Gradko.

As recommended by the LAQM Helpdesk (ref:-) the data has been adjusted using the above Bias Adjustment Factors before entering into the Diffusion Tube Data Processing Tool and then a single bias adjustment factor of 1 has been used in the spreadsheet.

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 – 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
3	3.0	8.0	46.3	10.8	*37.3*	*Predicted concentration at Receptor within 10% the AQS objective.*
5	2.0		44.5	17.8	-	*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*
6	3.0		43.5	20.9	-	*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*
7	4.0		39.7	17.82081	-	*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*

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
						Exposure and Distance to Kerb of Nearest Road
8	2.5		58.3	20.72381	-	*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*
12	2.5	52.5	42.3	16.9	-	*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*
14	0.8	4.8	38.0	21.1	32.1	
16	0.8		46.2	21.1	-	*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*
17	3.0	4.0	43.5	17.8	**41.6**	*Predicted concentration at Receptor above AQS objective.*
18	1.5		54.9	21.1	-	*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*

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
						Exposure and Distance to Kerb of Nearest Road
19	1.0	5.0	74.8	17.8	**56.3**	*Predicted concentration at Receptor above AQS objective.*
21	1.0		47.5	17.8	-	*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*
23	4.0		40.0	17.8	-	*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*
24	3.0	8.0	41.5	14.1	34.6	
26	3.0	8.0	41.3	14.1	34.4	
27	2.0	5.0	44.0	17.8	*38.4*	*Predicted concentration at Receptor within 10% the AQS objective.*
31	3.0	8.0	38.9	10.9	31.8	

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
33	1.0		69.8	17.8	-	*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		49.4	17.8	-	*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*
38	4.0		50.8	15.3	-	*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*
39	2.0		38.0	20.7	-	*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*
40	1.0	5.0	39.8	20.7	33.6	
42	2.0		59.8	13.2	-	*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*

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
43	1.0		42.0	20.7	-	*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*
47	0.8		47.1	21.1	-	*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*
48	0.8		45.6	21.1	-	*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*
49	2.0		41.9	17.1	-	*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*
50	2.0		37.3	17.1	-	*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*
56	1.0	7.0	44.6	10.8	31.4	

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
57	1.7	6.7	38.2	14.1	30.8	
59	2.0	7.0	45.9	14.1	*36.6*	*Predicted concentration at Receptor within 10% the AQS objective.*
67	1.7	5.7	36.1	10.8	29.2	
71	0.8		41.8	14.7	-	*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*
73	0.7	2.7	50.6	12.9	**41.1**	*Predicted concentration at Receptor above AQS objective.*
74	1.0		42.4	13.8	-	*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*
75	1.5		47.6	13.8	-	*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
76	2.5	3.5	40.3	13.8	*38.1*	*Predicted concentration at Receptor within 10% the AQS objective.*
78	2.0	4.5	41.5	10.7	35.7	
90	2.5		36.6	20.9	-	*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	56.3	23.0	**50.3**	*Predicted concentration at Receptor above AQS objective.*
92	0.8		48.8	23.0	-	*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*
93	3.0		42.0	21.1	-	*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*
95	3.0		40.5	26.8	-	*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*

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
						Exposure and Distance to Kerb of Nearest Road
96	3.0		44.0	20.0	-	*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*
97	2.5	9.0	58.6	19.1	**46.1**	*Predicted concentration at Receptor above AQS objective.*
98	1.5		52.7	15.9	-	*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*
99	3.0		45.0	20.7	-	*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*
103	1.0	5.5	51.3	11.5	*37.6*	*Predicted concentration at Receptor within 10% the AQS objective.*
109	2.0	5.0	39.5	15.2	34.2	

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
120	1.0		46.4	17.1	-	*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	44.5	17.5	**40.1**	*Predicted concentration at Receptor above AQS objective.*
163	20.0		59.3	17.8	-	*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		44.7	17.8	-	*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		53.4	17.8	-	*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		59.9	17.8	-	*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		65.4	17.8	-	*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		59.6	17.8	-	*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		50.4	17.8	-	*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		58.4	17.8	-	*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*
171	3.5		63.1	17.8	-	*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*
172	9.0		53.5	17.8	-	*Warning: Receptor to kerb must be between 0.1m and 50m to calculate concentration. Please check distances and update STEP 2 - Diffusion*

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
						Tube Inputs tab Columns Distance to Relevant Exposure and Distance to Kerb of Nearest Road
173	4.0		60.8	17.8	-	*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		56.0	17.8	-	*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		65.6	17.8	-	*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		76.8	17.8	-	*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*
177	3.0		51.7	17.8	-	*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
178	4.0	9.0	50.3	14.3	**42.2**	*Predicted concentration at Receptor above AQS objective.*
179	2.0		61.0	21.1	-	*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*
180	2.0	7.0	49.7	16.6	**40.0**	*Predicted concentration at Receptor above AQS objective.*
181	1.5		46.8	17.5	-	*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		64.2	14.3	-	*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*
185	2.0	7.0	37.9	13.8	30.8	
188	2.0	7.0	36.7	10.7	29.1	

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
206	2.5		44.6	15.9	-	*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*
212	5.0	15.0	36.5	21.1	31.4	
214	3.0	53.0	39.1	17.8	-	*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		61.3	17.8	-	*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*
217	1.5	4.5	37.7	10.9	31.2	
218	2.0	17.0	37.5	17.5	27.5	
219	3.0		48.5	17.8	-	*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*

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
						Exposure and Distance to Kerb of Nearest Road
224	2.0	9.4	52.7	17.5	*39.9*	*Predicted concentration at Receptor within 10% the AQS objective.*
226	4.0		55.6	17.8	-	*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		53.9	17.8	-	*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*
231	4.0	24.0	37.3	14.3	25.8	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*
236	4.0	24.0	36.9	14.3	25.6	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*
237	4.0	24.0	38.7	14.3	26.5	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*
238	4.0	24.0	38.5	14.3	26.4	*Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.*

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 on the following website:- https://bit.ly/3BF6yuY

Data for the 3 DEFRA monitoring sites can be found on the following website:-

Latest measured levels based on data provided by the Environment Agency - Defra, UK

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

The type of PM_{10}/$PM_{2.5}$ monitors utilised within Sheffield City Council do not required the application of a correction factor.

Automatic Monitoring Annualisation

Annualisation was required at the DEFRA Shefield Tinsley UKA00181 site as data capture was 69% for 2022.

Site ID	Annualisation Factor DEFRA Barnsley Road	Annualisation Factor DEFRA Barnsley Gawber	Annualisation Factor DEFRA Dev Green	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
UKA00181 (Tinsley)	1.0132	1.0875	1.0588	1.0532	23.18	24.42	

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, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No automatic NO_2 monitoring locations within Sheffield City Council required distance correction during 2022.

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

Figure D.1 – Map of AQMA boundary for long-term / short-term NO_2 and 24-hourly PM_{10} objectives

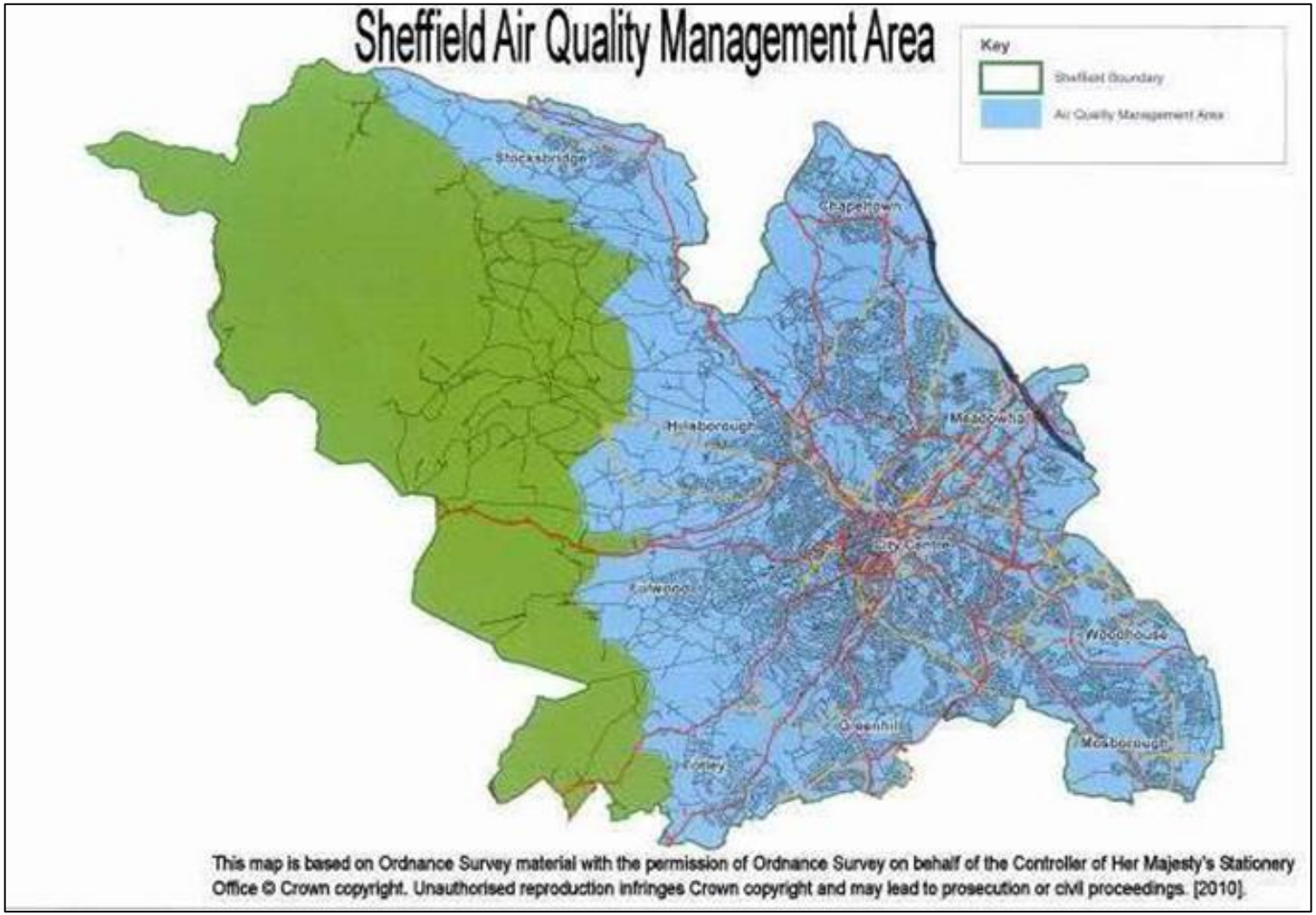


Figure D.2 – Overview Map of Continuous Monitoring Sites across Sheffield

Figure D.3 – Continuous Monitoring Sites North of Sheffield Centre

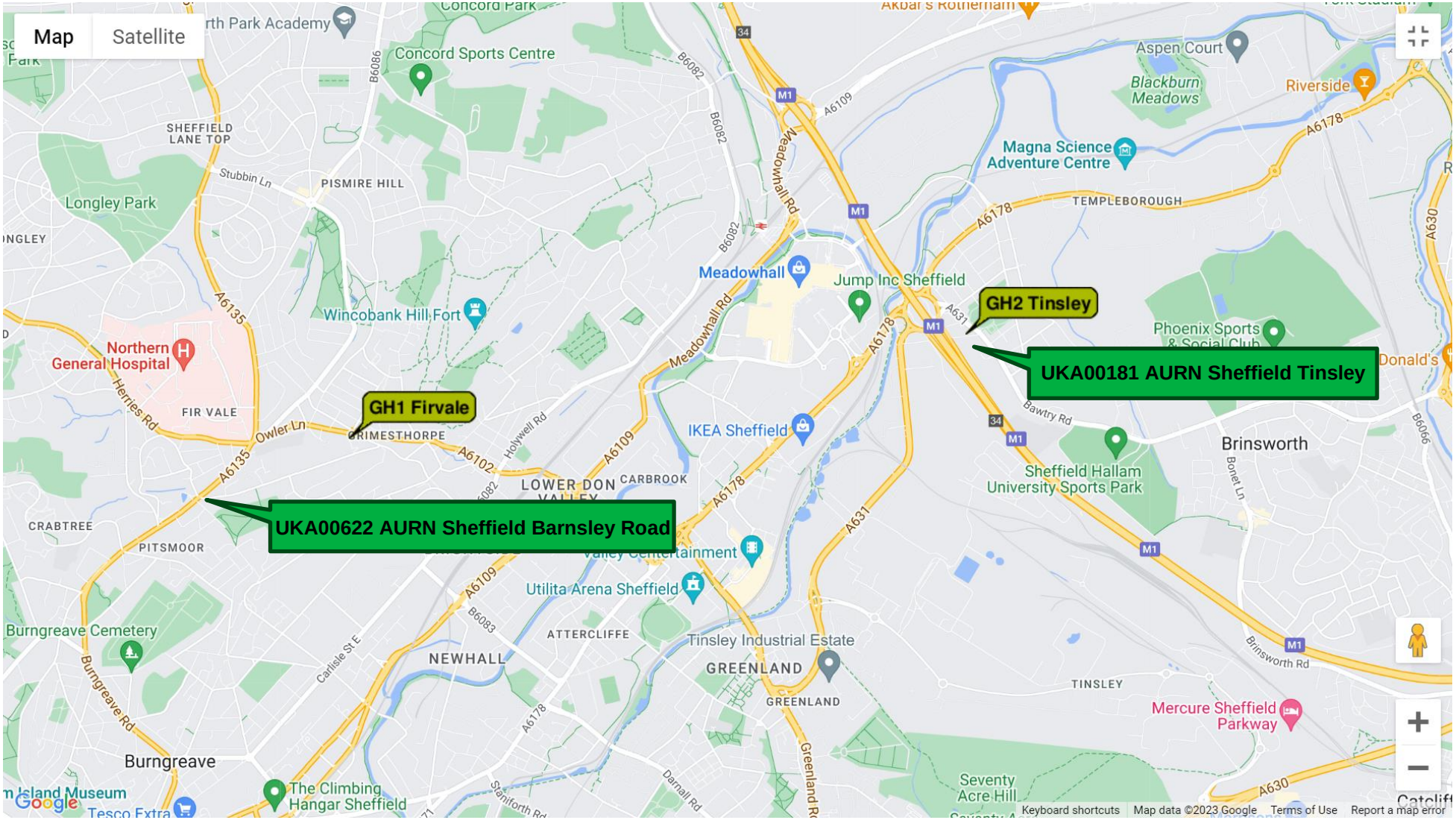


Figure D.4 – Continuous Monitoring Sites in Sheffield Centre

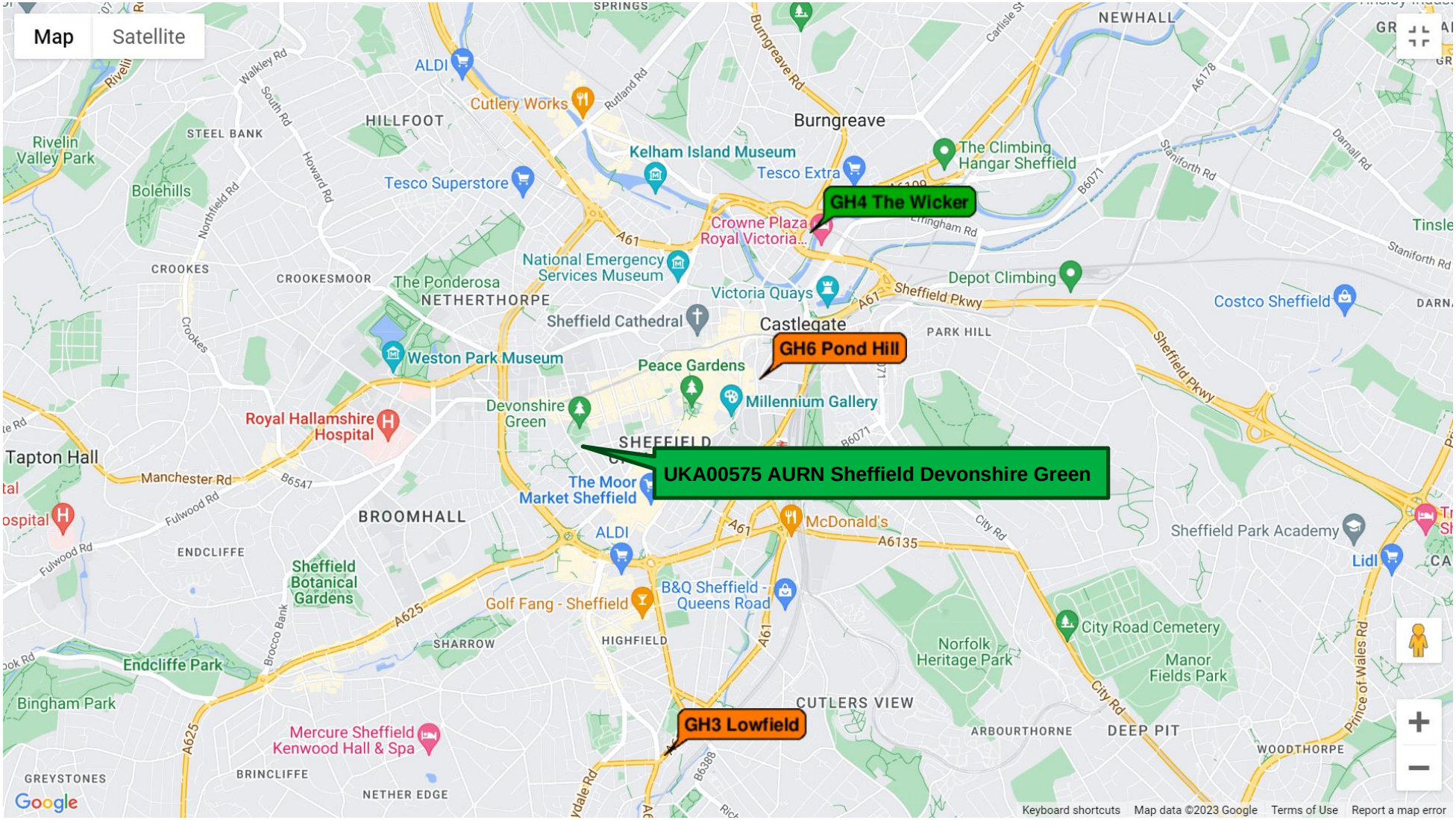


Figure D.6 – Continuous Monitoring Sites South of Sheffield Centre

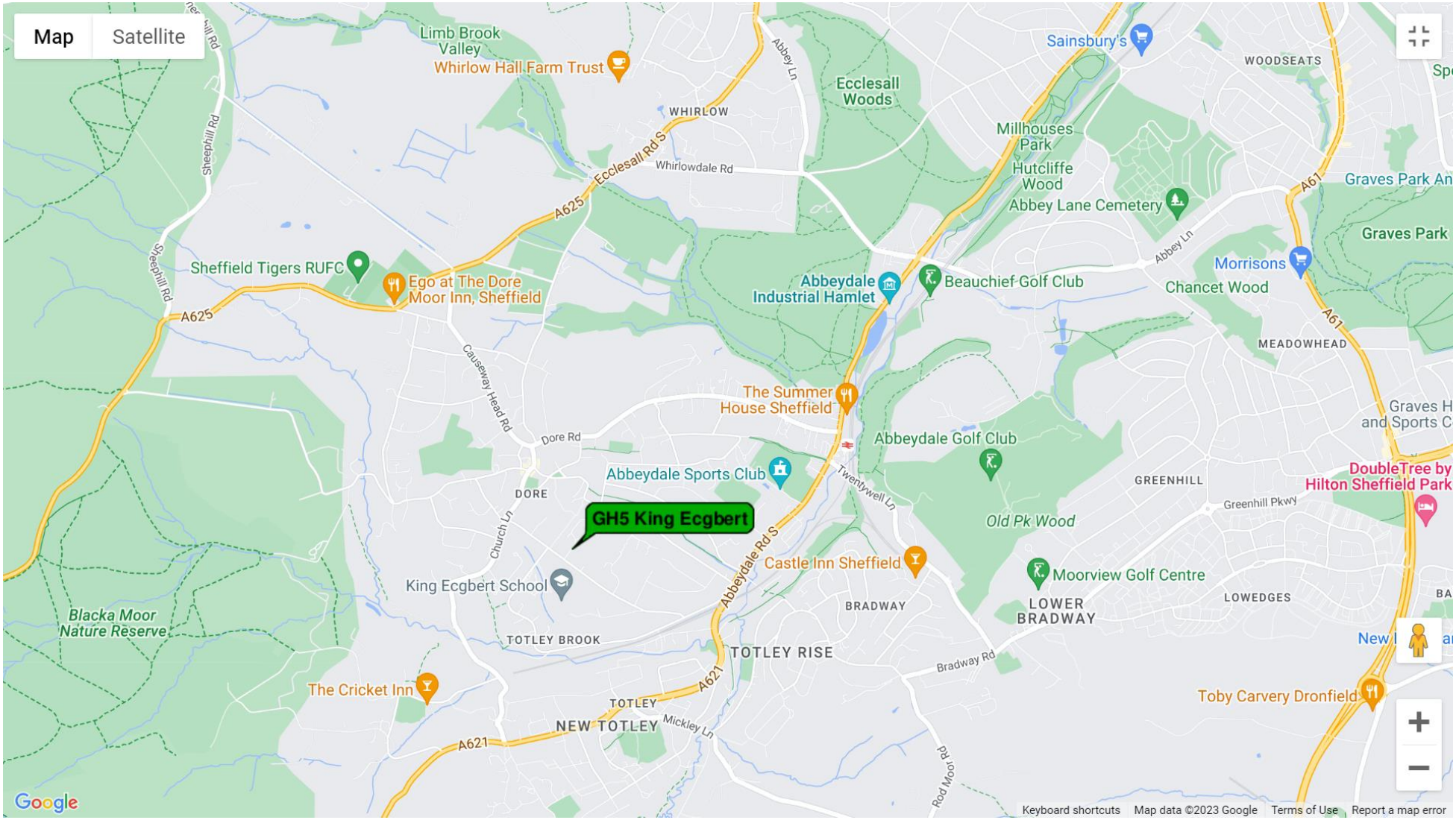


Figure D.7 – Overview Map of Current and historic Non-Automatic Monitoring Site within Sheffield District

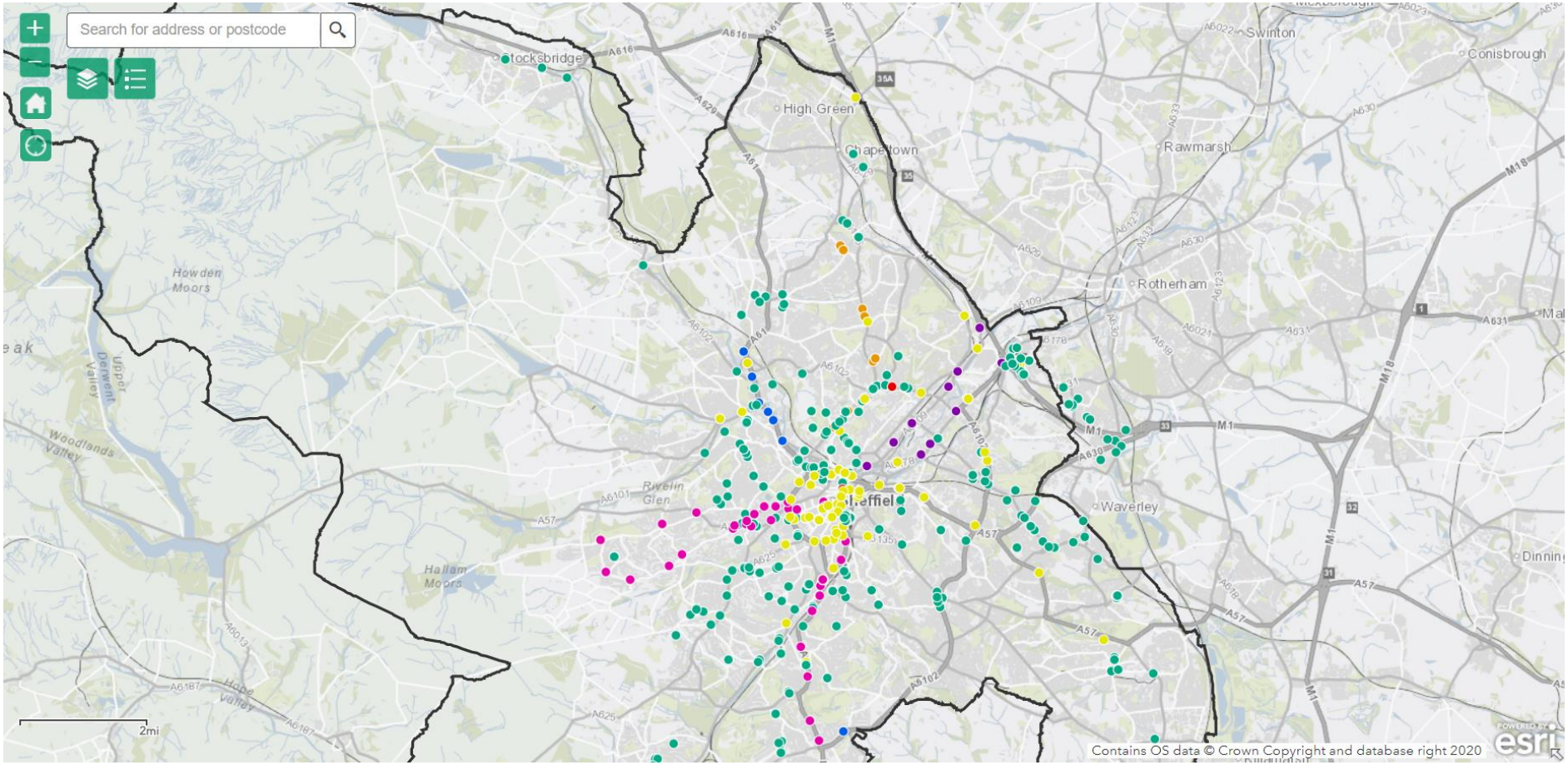


Figure D.8 – Map of current Non-Automatic Monitoring sites in Stocksbridge, High Green, Chapeltown and Ecclesfield

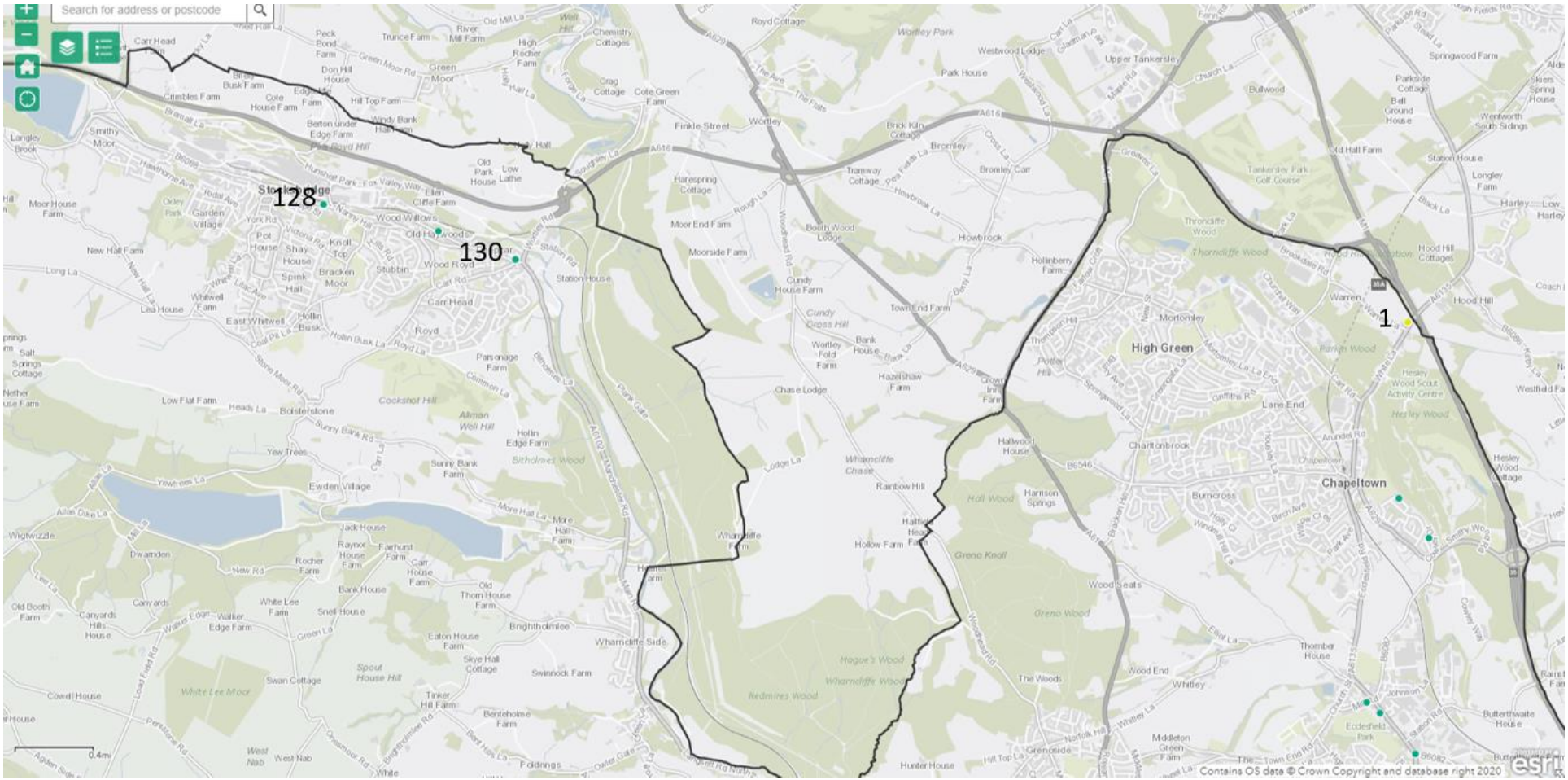


Figure D.9 – Map of current Non-Automatic Monitoring sites in Tinsley

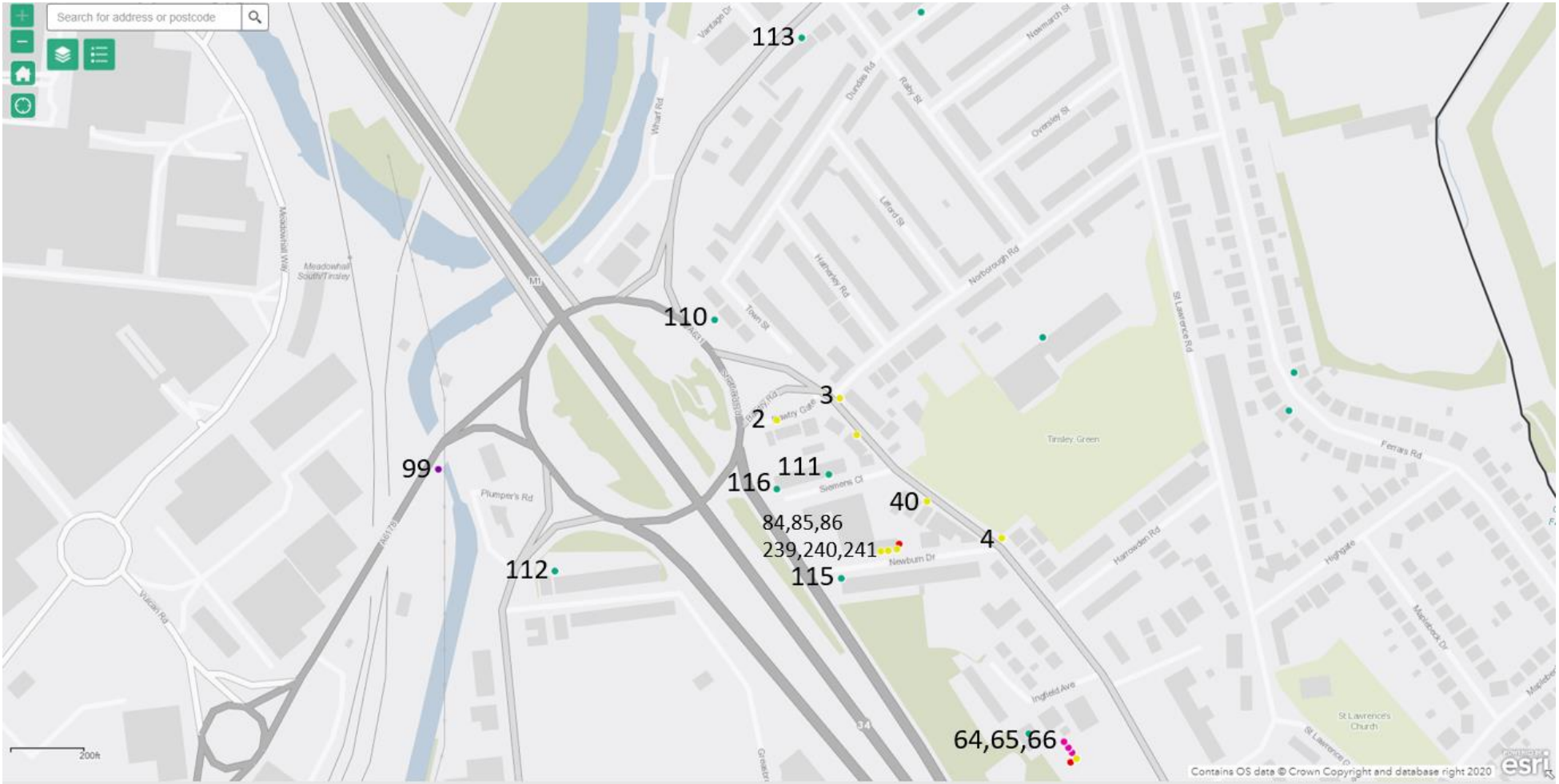


Figure D.10 – Map of current Non-Automatic Monitoring sites in Wincobank, Carbrook and Fir Vale

Figure D.11 – Map of current Non-Automatic Monitoring sites in Lower Walkley and Hillsborough

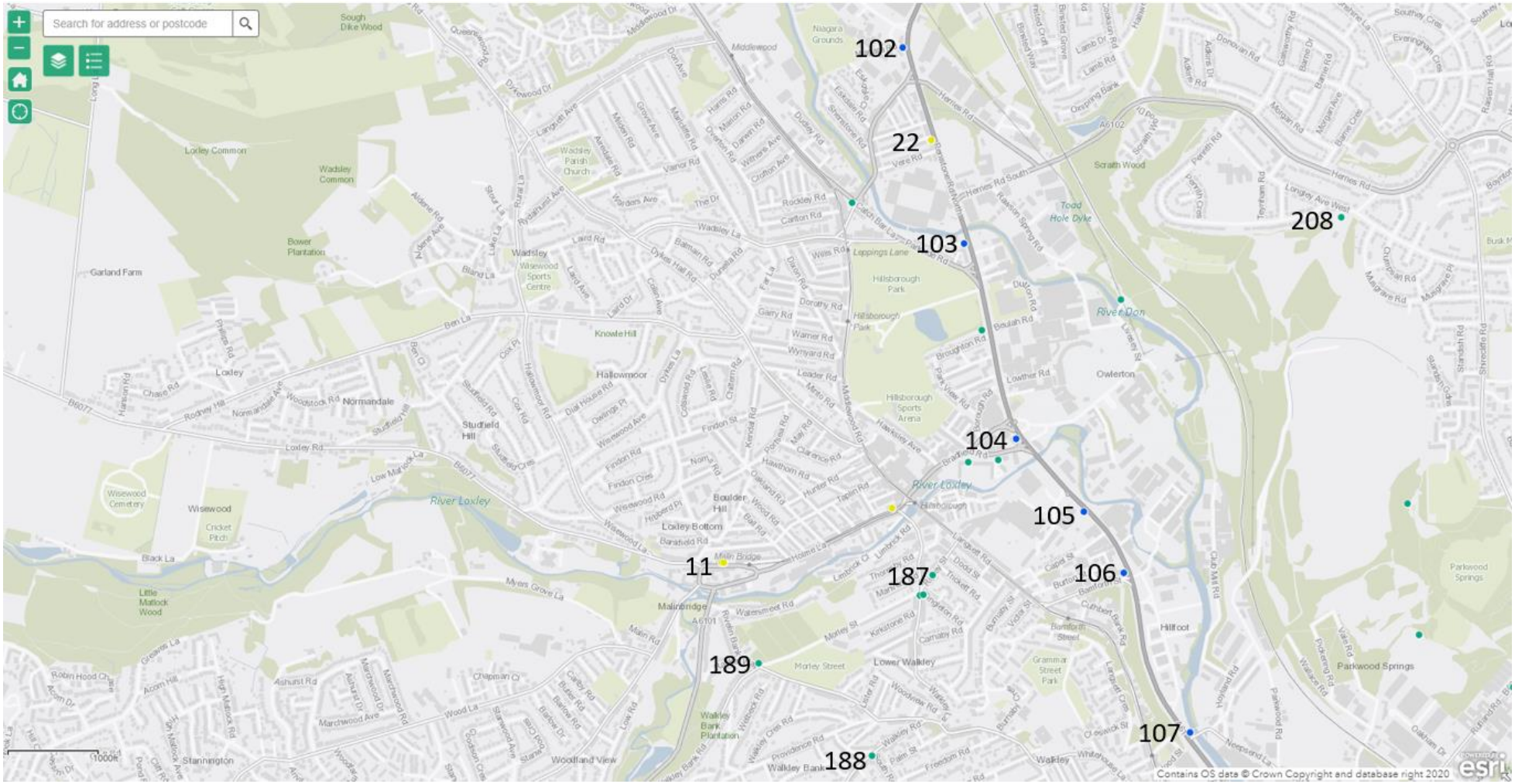


Figure D.12 – Map of current Non-Automatic Monitoring sites in Burngreave, Attercliffe and Sheffield Centre North

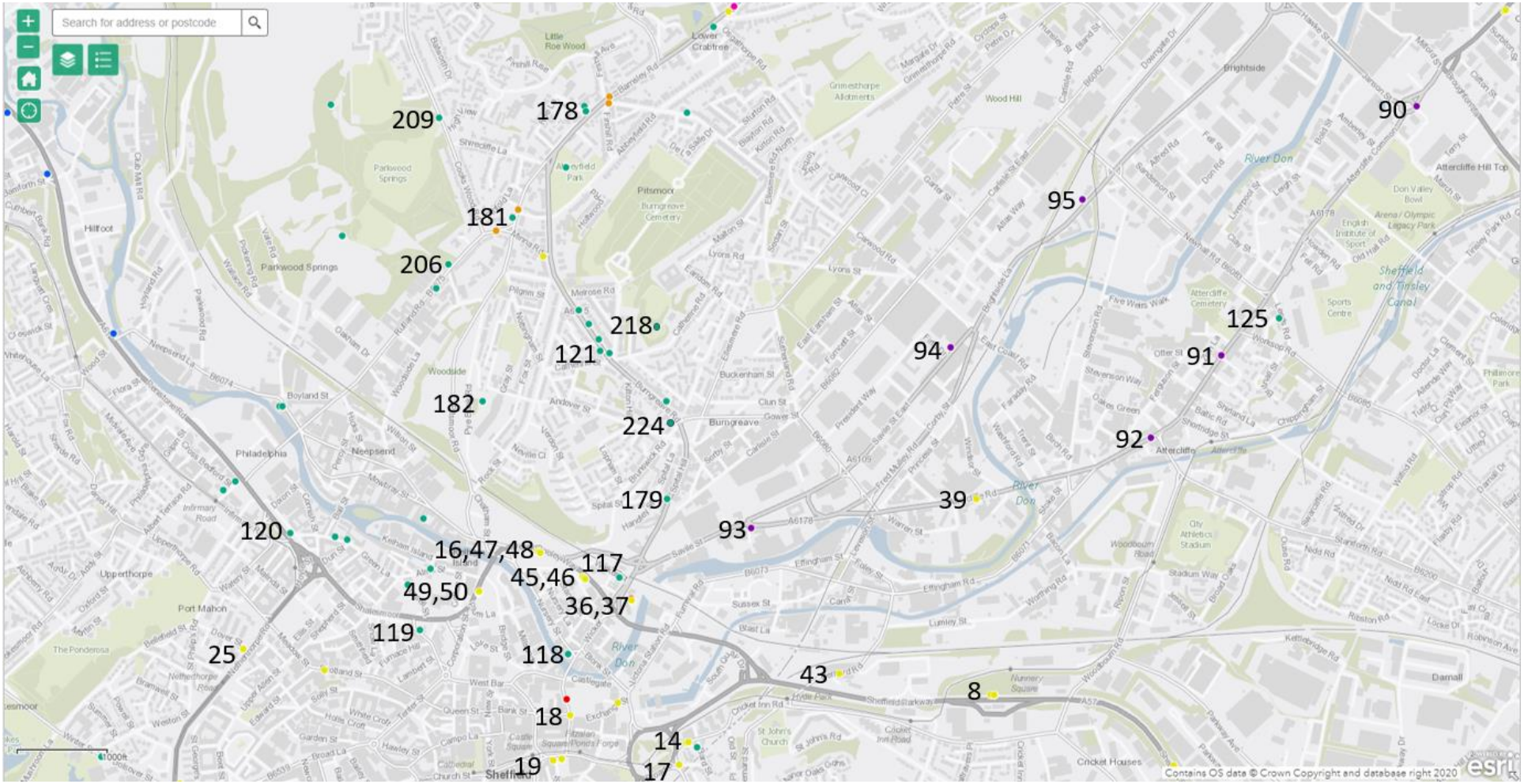


Figure D.12 – Map of current Non-Automatic Monitoring sites in Walkley, Howard Hill and Crookesmoor

Figure D.13 – Map of current Non-Automatic Monitoring sites in Summerfield, Sharrow Vale and Ranmoor

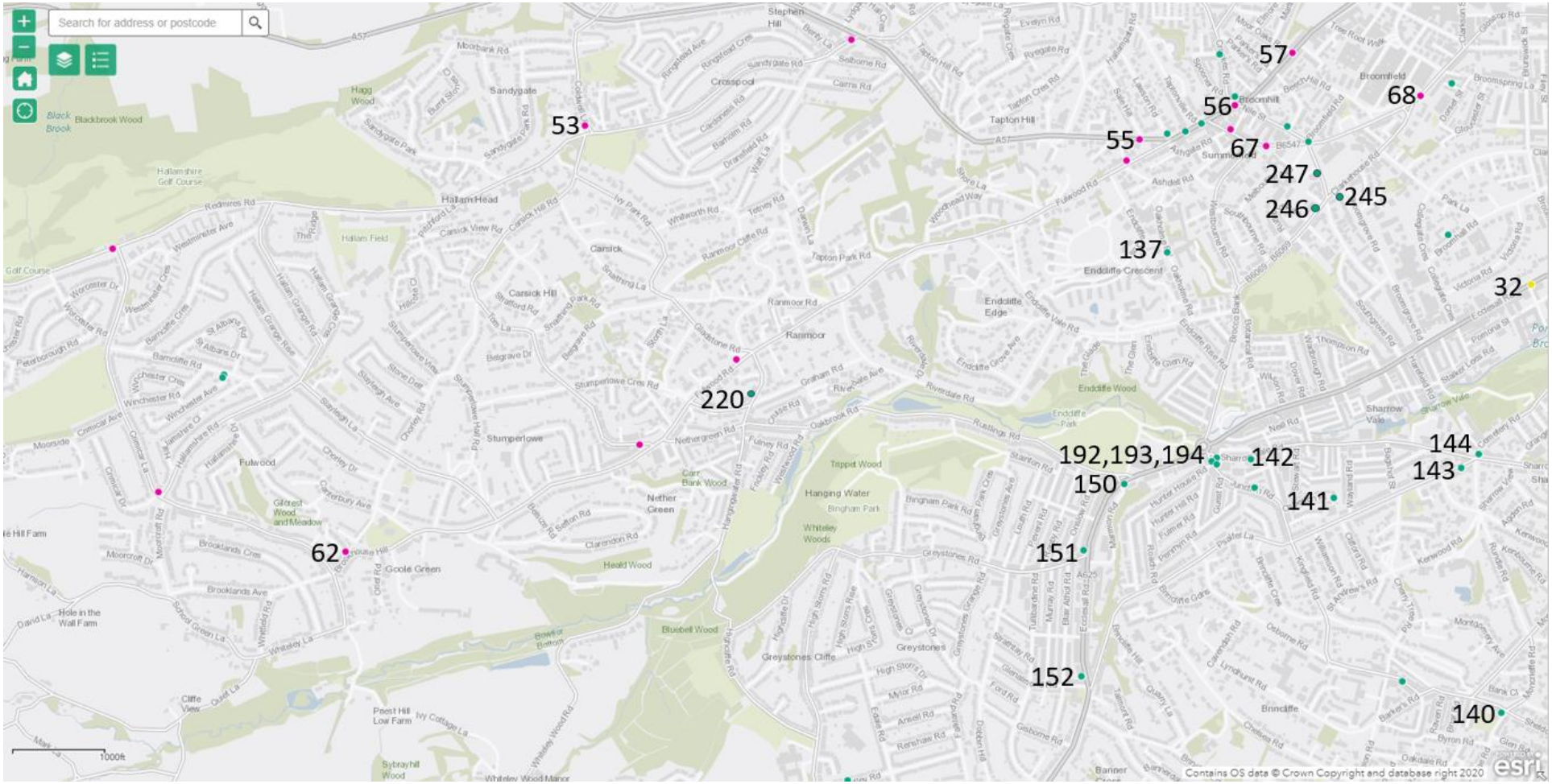


Figure D.14 – Map of current Non-Automatic Monitoring sites in Norton Hammer, and Meersbrook

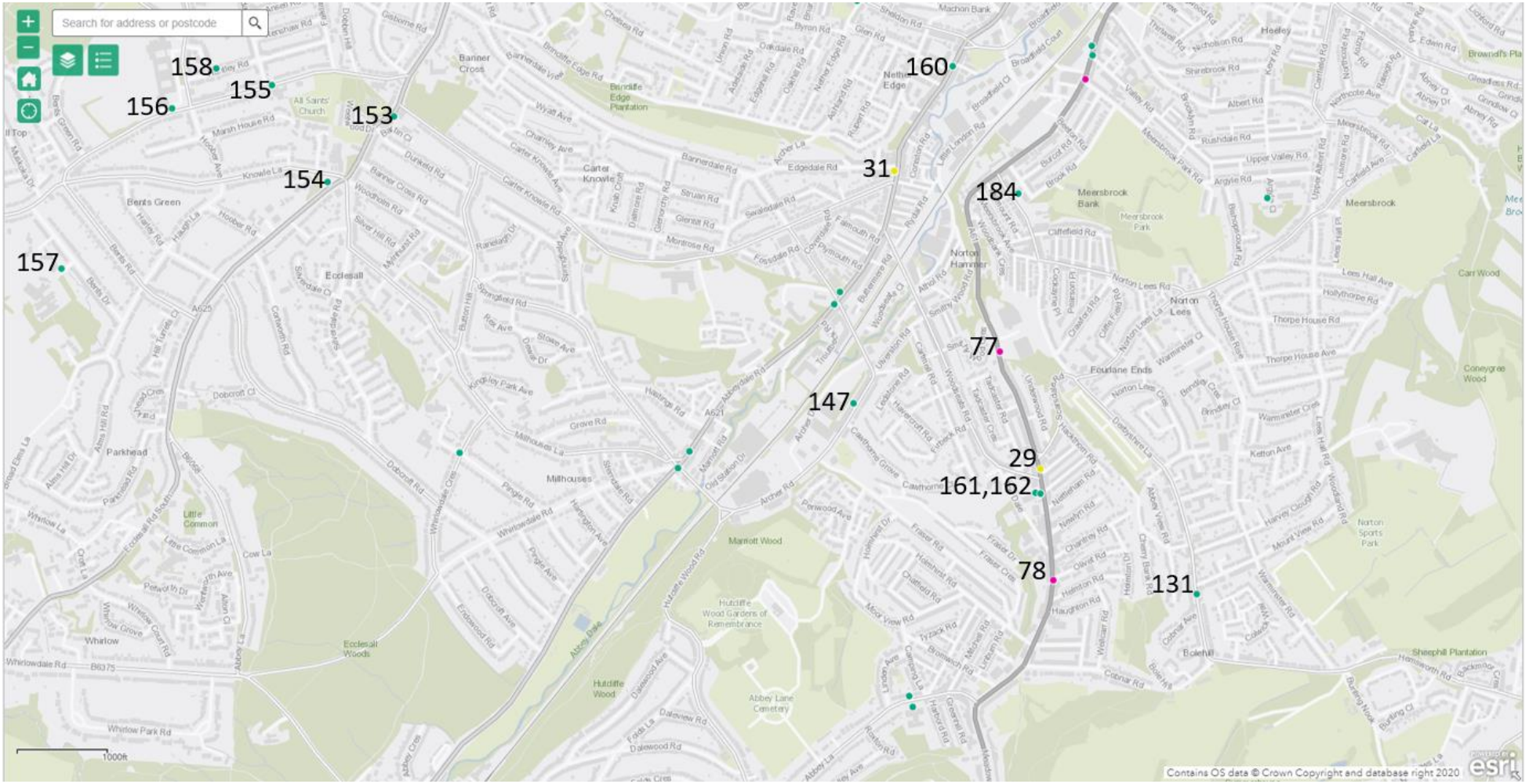


Figure D.15 – Map of current Non-Automatic Monitoring sites in Meadow Head

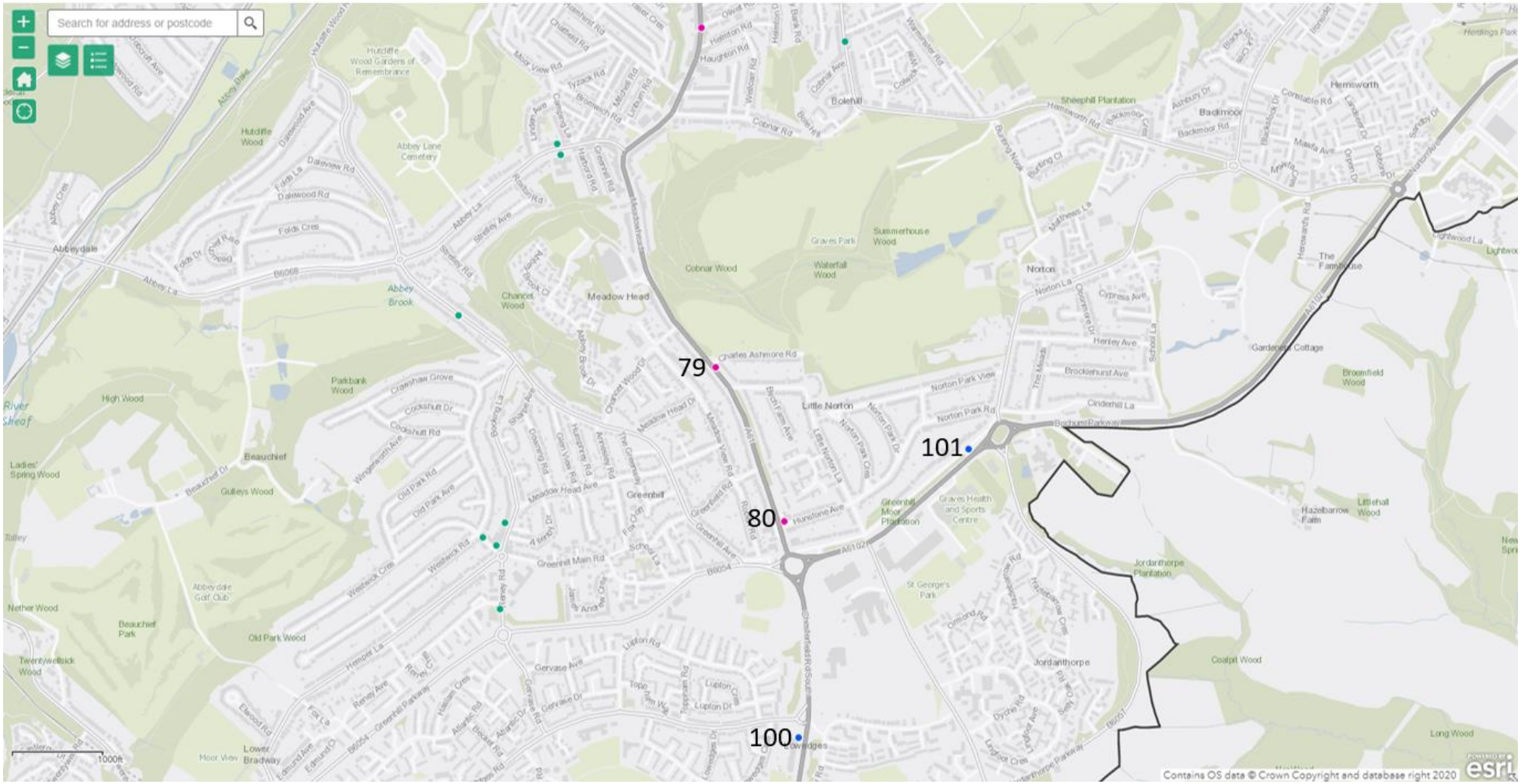


Figure D.15 – Map of current Non-Automatic Monitoring sites in Broomfield, Lowfield and Sheffield Centre South

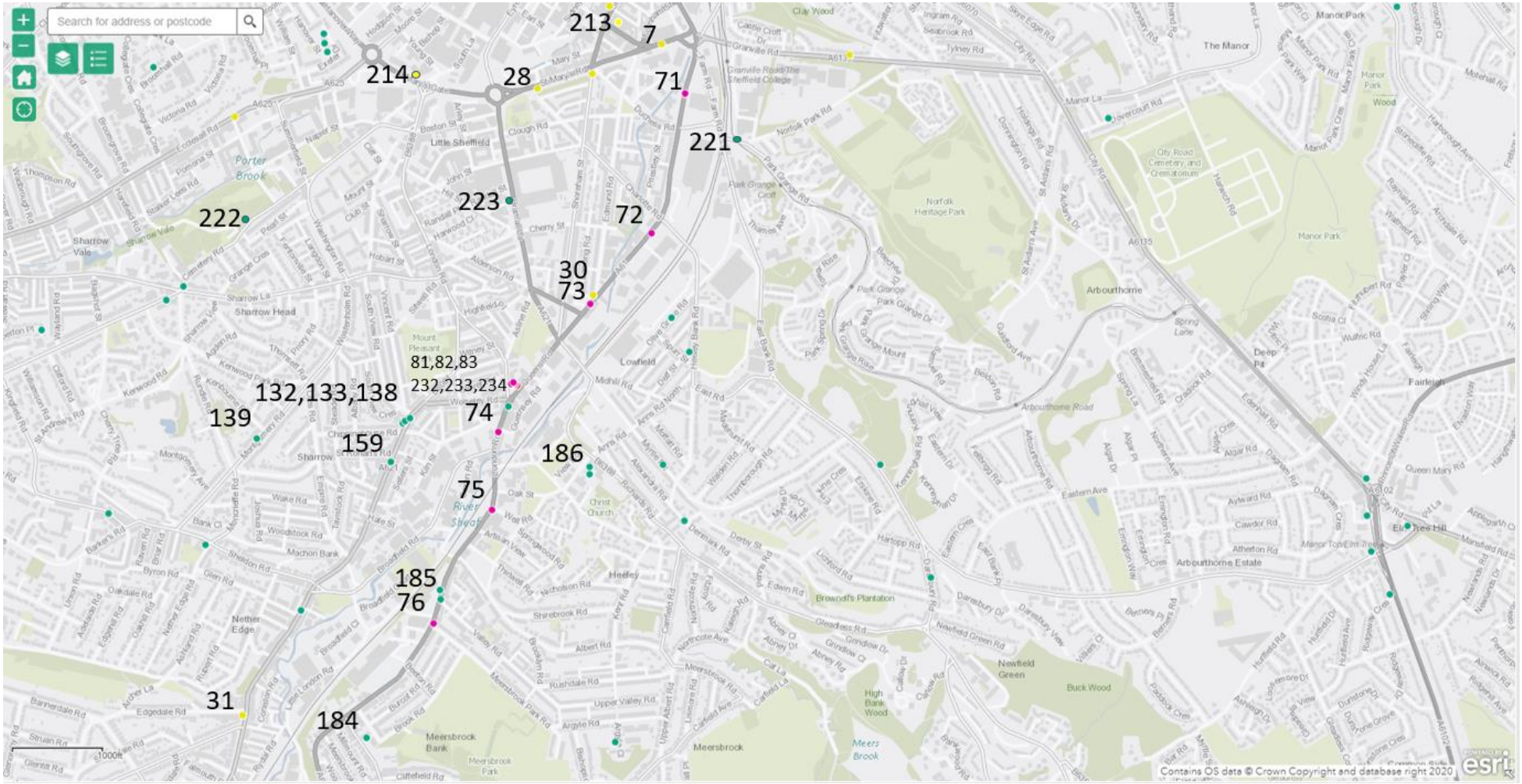


Figure D.16 – Map of current Non-Automatic Monitoring sites in Sheffield Centre

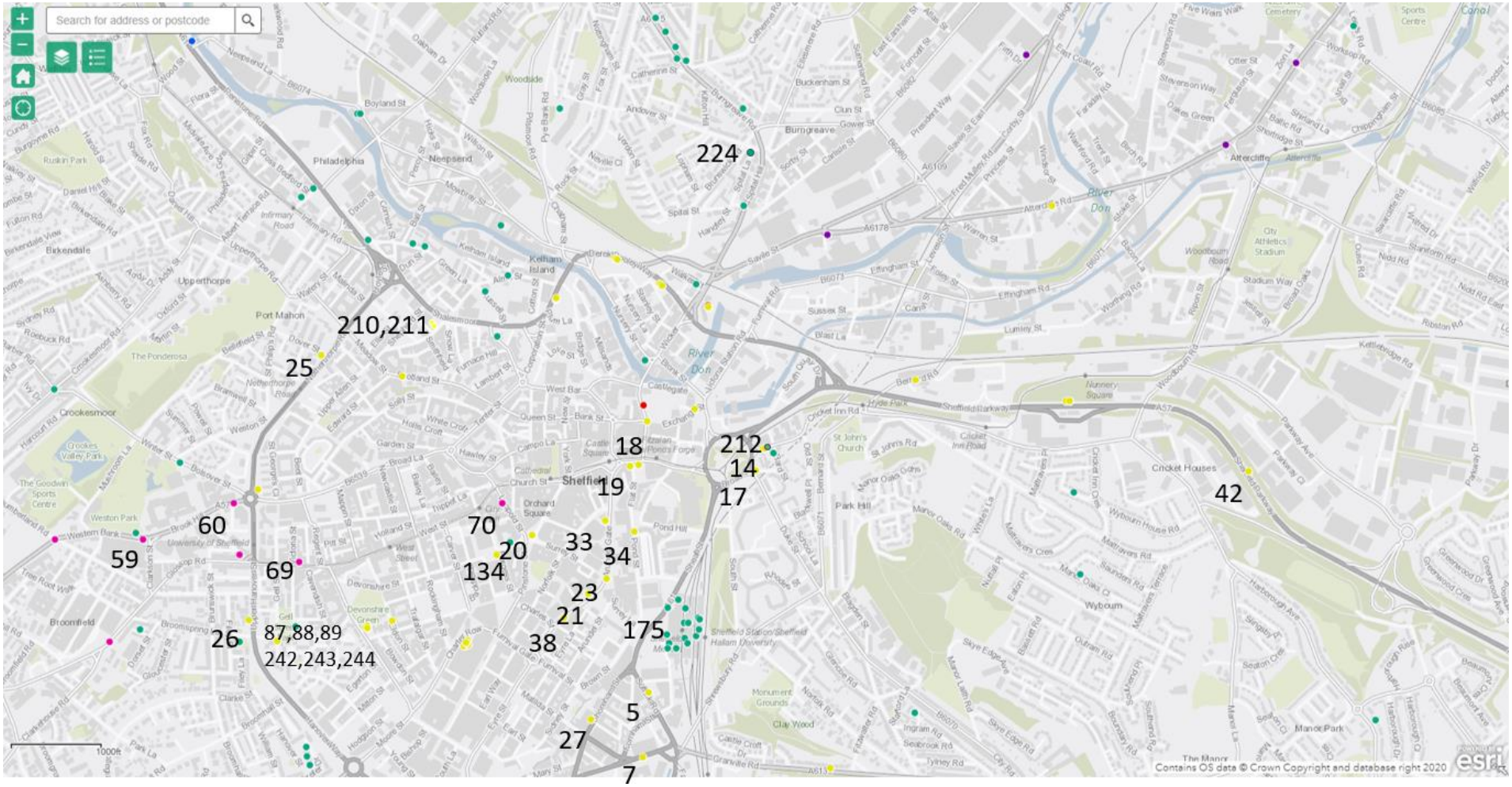


Figure D.17 – Map of current Non-Automatic Monitoring sites in Darnall and Handsworth

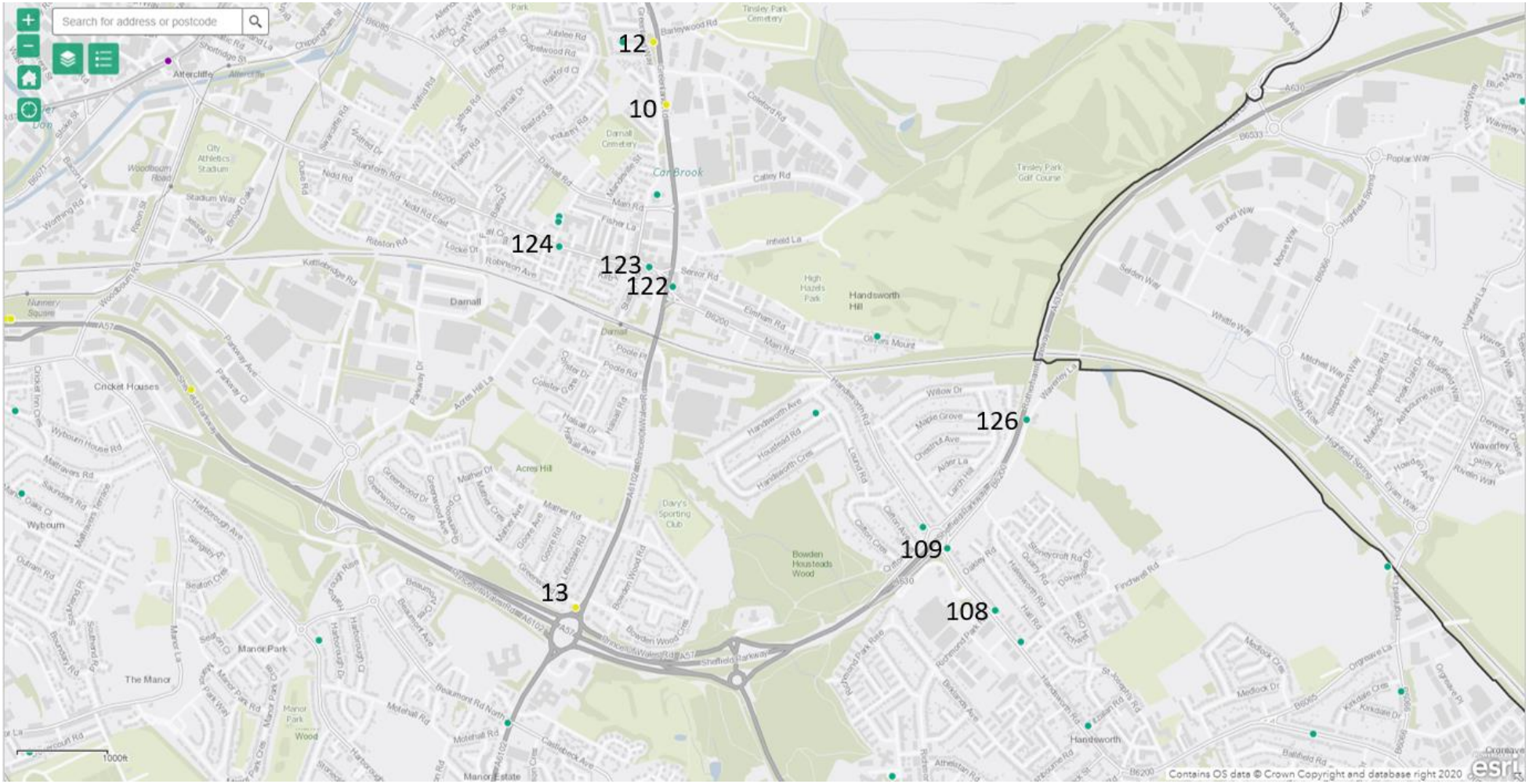


Figure D.18 – Map of current Non-Automatic Monitoring sites in Dore and Totley

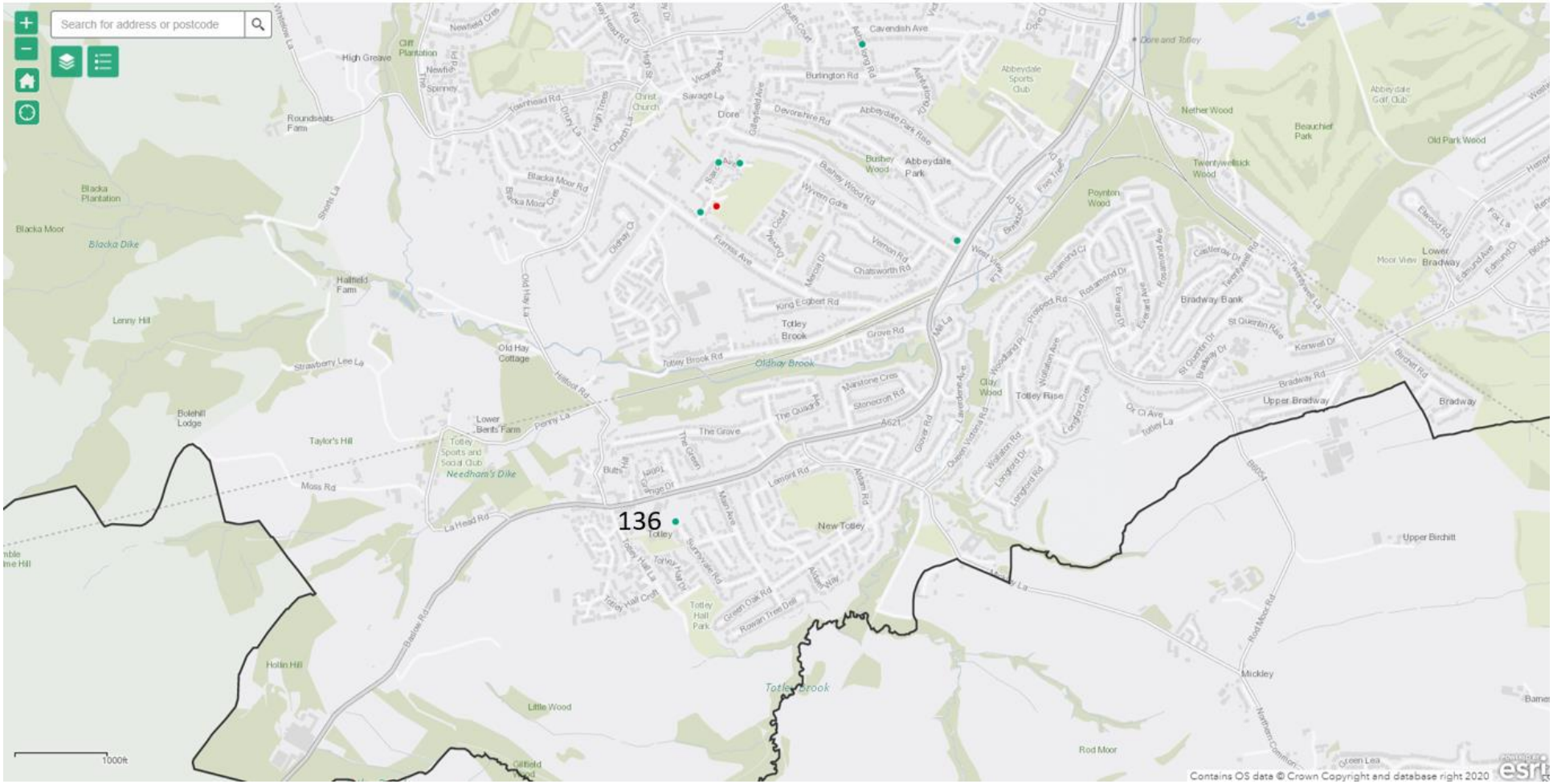


Figure D.19 – Map of current Non-Automatic Monitoring sites in Bents Green, Ecclesall and Norton Hammer

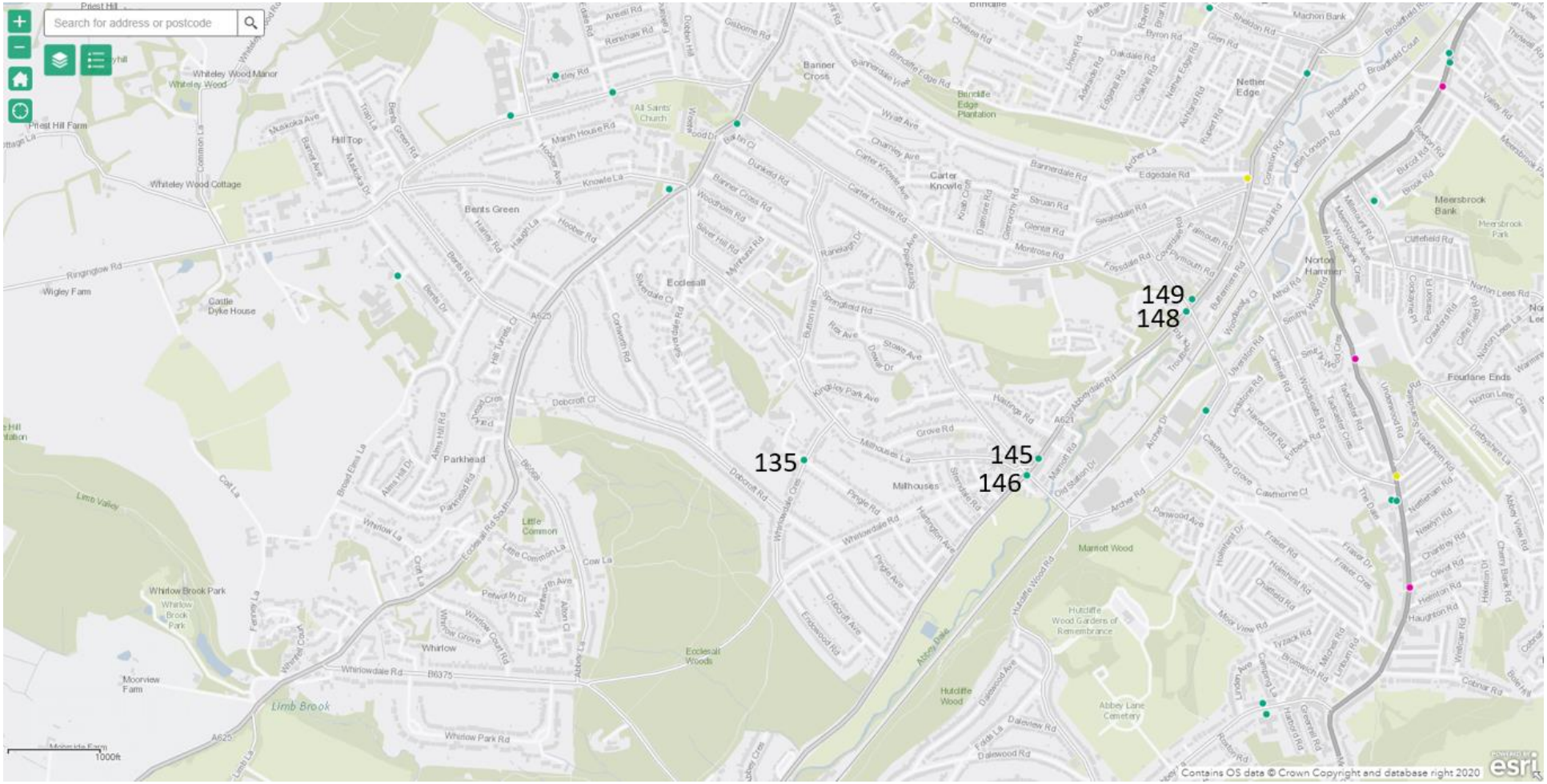


Figure D.20 – Map of current Non-Automatic Monitoring sites around and in Sheffield Midland Railway Station

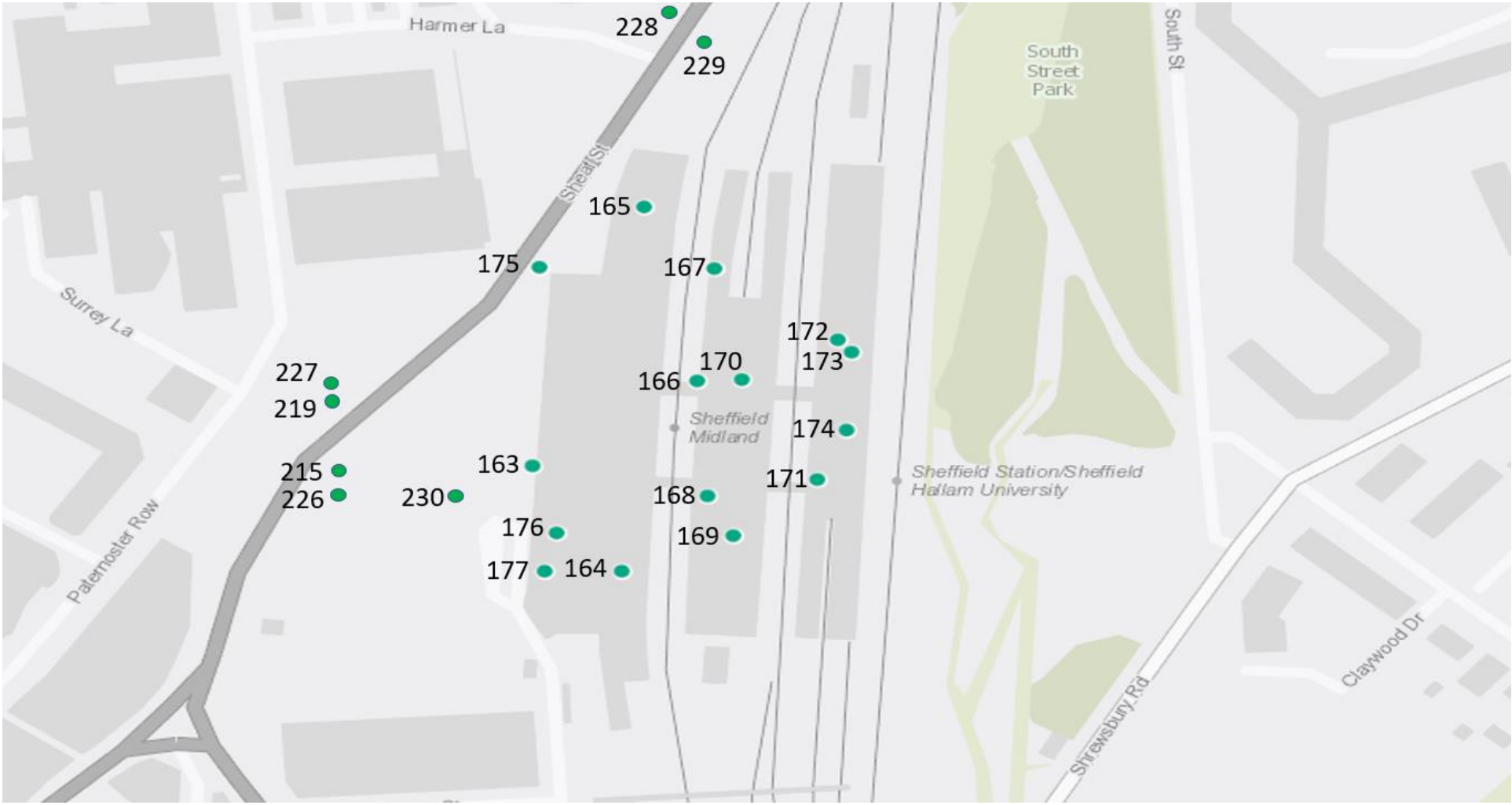
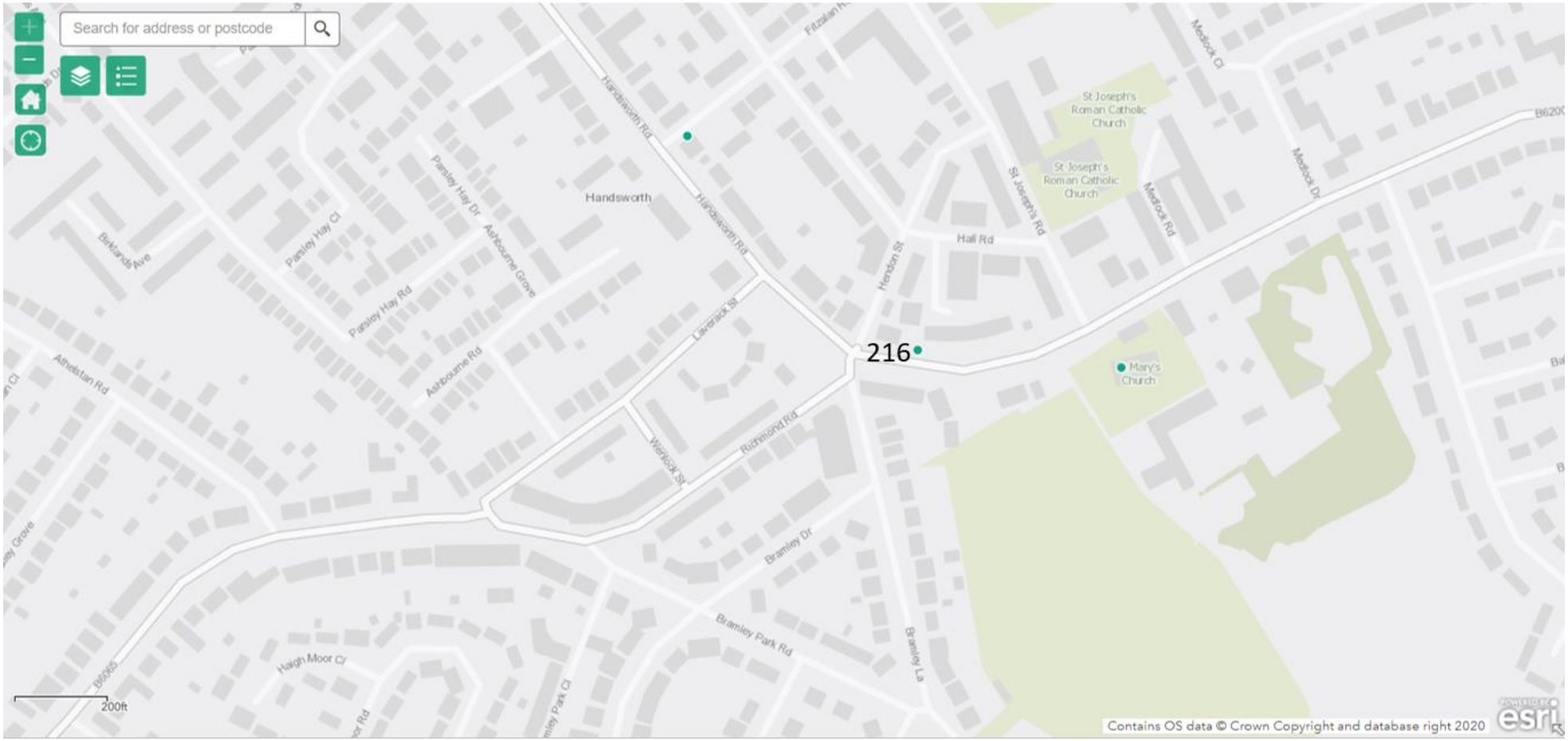


Figure D.21 – Map of current Non-Automatic Monitoring sites in Halfway

Figure D.22 – Map of current Non-Automatic Monitoring sites in Handsworth



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

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

[7] 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
EU	European Union
FDMS	Filter Dynamics Measurement System
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.

<Add additional references here>