



Sheffield City Council



2018 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

June 2018

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|-------------------------|---|
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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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{4,5}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion⁶.

Sheffield is still in breach of National and EU Air Quality Limit Values for Nitrogen Dioxide (NO₂) gas and approved an Air Quality Action Plan ([AQAP](#)) 2015, to try and reduce air pollution in order to comply by 2015. The AQAP relates to our Air Quality Management Area ([AQMA](#)), which is the urban area of Sheffield. A key contributor is road traffic, in particular diesel vehicles, where engine technology is not performing as expected in urban areas like Sheffield.

NO₂ monitoring shows that while levels are gradually coming down, they still breach National and EU limit values at several locations – see Table 1 below and Appendix A: Monitoring Results Table A.3 – Annual Mean NO₂ Monitoring Results.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

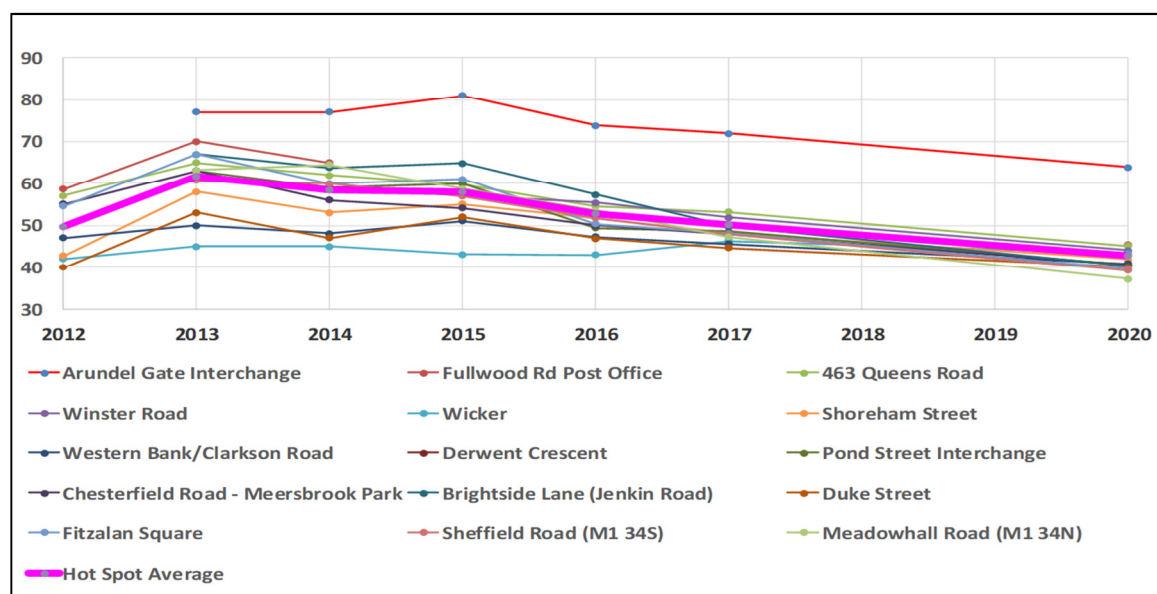
³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

⁴ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

⁵ Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

⁶ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Figure 1 – Sheffield Air Quality Sites in Breach of Limit Values – Recent Trend



In terms of the standards set by the EU for fine Particulate Matter (PM₁₀ and PM_{2.5}) dust pollution, all our monitoring stations are indicating that we are in compliance, although there is no safe limit for this pollutant.

In 2009 Sheffield setup an Air Quality Action Plan Steering and a Working Group, involving key strategic partners, such as Highways Agency (now Highways England), Environment Agency, NHS Sheffield, Council Service representatives and identified champions, who are responsible for facilitating the progress and implementation of the action plan.

In 2013 Sheffield undertook a Low Emission Zone ([LEZ](#)) Feasibility Study, which confirmed that road transport is the most-significant overall single contributor to Sheffield's NO₂ emissions and that around a 30% NO_x reduction would be required to meet the prescribed Health Based EU Limit Values.

The LEZ Study also confirmed that Diesel fuel, which was declared a Class 1 Carcinogen by the World Health Organisation (WHO) in 2012, is more polluting than Petrol.

In 2014 Sheffield established its' Government funded '[Air Aware Sheffield](#)' Air Quality campaign, to help raise awareness around this key issue, and to engage and encourage everyone to do their bit, including private Car drivers.

In December 2017 Sheffield presented its' [Clean Air Strategy](#), which “sets out a compelling vision for the future, the scale of the challenge we face and the specific actions – both short and long term – that we will take to improve air quality.”

Actions to Improve Air Quality

Seven key actions to improve air quality were approved in the [AQAP](#) 2015 for Sheffield, as follows:

Action 1: Assess Feasibility for a Low Emission Zone

Action 2: Develop Infrastructure for Refuelling Low Emission Vehicles

Action 3: Promote Smarter Travel Choices

Action 4: Improve Engine Performance of Commercial Diesel Vehicles

Action 5: Mitigate the Impact of the M1 motorway (particularly in the Tinsley Area)

Action 6: Develop Policies to Support Better Air Quality

Action 7: Control Industrial Emissions

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 though 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. The Government's Green Bus Fund (Phase 1 & 2) have helped Stagecoach to introduce 40 new low emission hybrid buses into their fleet and these have been prioritised for deployment on the most polluted routes in Sheffield.
2. Investment through the [Sheffield Bus Agreement \(SBA\)](#), a 5 years investment plan launched in October 2012, in partnership with South Yorkshire Passenger Transport Executive (SYPTe) and the South Yorkshire bus operators, has resulted in the introduction of a total of 45 new Euro V single deck buses on Sheffield's streets. Unfortunately however, their NOx performance has not been as expected.
3. The [Government's Clean Vehicle Technology Fund](#) enabled First South Yorkshire to retrofit 41 buses with Thermo Management Technology in order

to reduce emissions on key bus routes in Sheffield (x78 / 75) and enabled 175 SY Ambulance Rapid Response Vehicles to be fitted with Solar Roof Panels.

4. The [Government's Clean Bus Technology Fund](#) (CBTF) 2015 enabled First South Yorkshire to retrofit 25 buses with an EminoX SCRT with eFan system in order to reduce emissions on key bus routes in Sheffield (51 / 52).
5. The [OLEV Low Emission Bus Scheme 2015](#) bid resulted in the introduction of 44 Hybrid Buses on the Sheffield 1 / 1a route.
6. 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.
7. The Council has conditioned the installation of over 60 electric charging points through its Development Control policies.
8. 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.
9. 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

The Government has named Sheffield (and Rotherham) as one of 28 areas in England which contains locations where the annual average concentrations of Nitrogen Dioxide (NO₂) exceed statutory limits and are projected to continue to do so over and beyond the next 3-4 years. This means that we will need to tackle vehicle

emissions in order to become compliant with the European health based limits for this air pollutant in the 'shortest possible time'.

The Government is not prescribing the way in which we must reduce vehicle emissions. Therefore the type of measures that we may have to introduce in Sheffield, in order to improve air quality in the 'shortest possible time', is being considered through a Local Feasibility Study, funded by Government.

The Local Feasibility Study will determine if a Clean Air Zone (CAZ) is required in Sheffield, where it would cover and whether or not it would need to involve 'charging' certain vehicle types.

We have therefore, developed a Sheffield [Clean Air Strategy](#) (CAS) which acknowledges the [National Air Quality Plan 2017](#) and reference the recommendations from the DEFRA funded 2013 [Sheffield Low Emission Zone Feasibility Study](#) (which indicated that in the short term, diesel vehicles and in particular Buses, Taxis and Goods Vehicles need to be retrofitted or be a minimum Euro VI / 6 standard and in the longer term, we need a shift away from diesel fuel to alternative low emission fuels such as electric, hydrogen, gas / biogas, hybrid).

Our [Clean Air Strategy](#) is also aligned with our new [Transport Vision](#) for Sheffield, which is principally focused upon ensuring that the transport system supports economic growth, and the additional journeys associated with planned employment and housing growth, whilst also considering matters of health, and environmental sustainability, in particular reducing air pollution to a point well below European health based limits.

As the Sheffield Clean Air Strategy has now been endorsed we are seeking to update our [Air Quality Action Plan \(AQAP\)](#) to reflect this and subsequently, the findings of the Local Feasibility Study.

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, continues to help the Council raise

awareness around this key issue, and to engage and encourage everyone to do their bit, including private Car drivers.

We have recently secured additional funding from the Air Quality Grant Scheme 2016-17 in order to continue this campaign in 2017 / 2018.

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 will be launched later in the year, 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.

Some additional measures which have been implemented over the last few years 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.

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1 Local Air Quality Management

This report provides an overview of air quality in Sheffield during 2017. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 pursuit of the objectives. 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 can be found in Table E.1 in Appendix E.

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 must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Sheffield City Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at:-

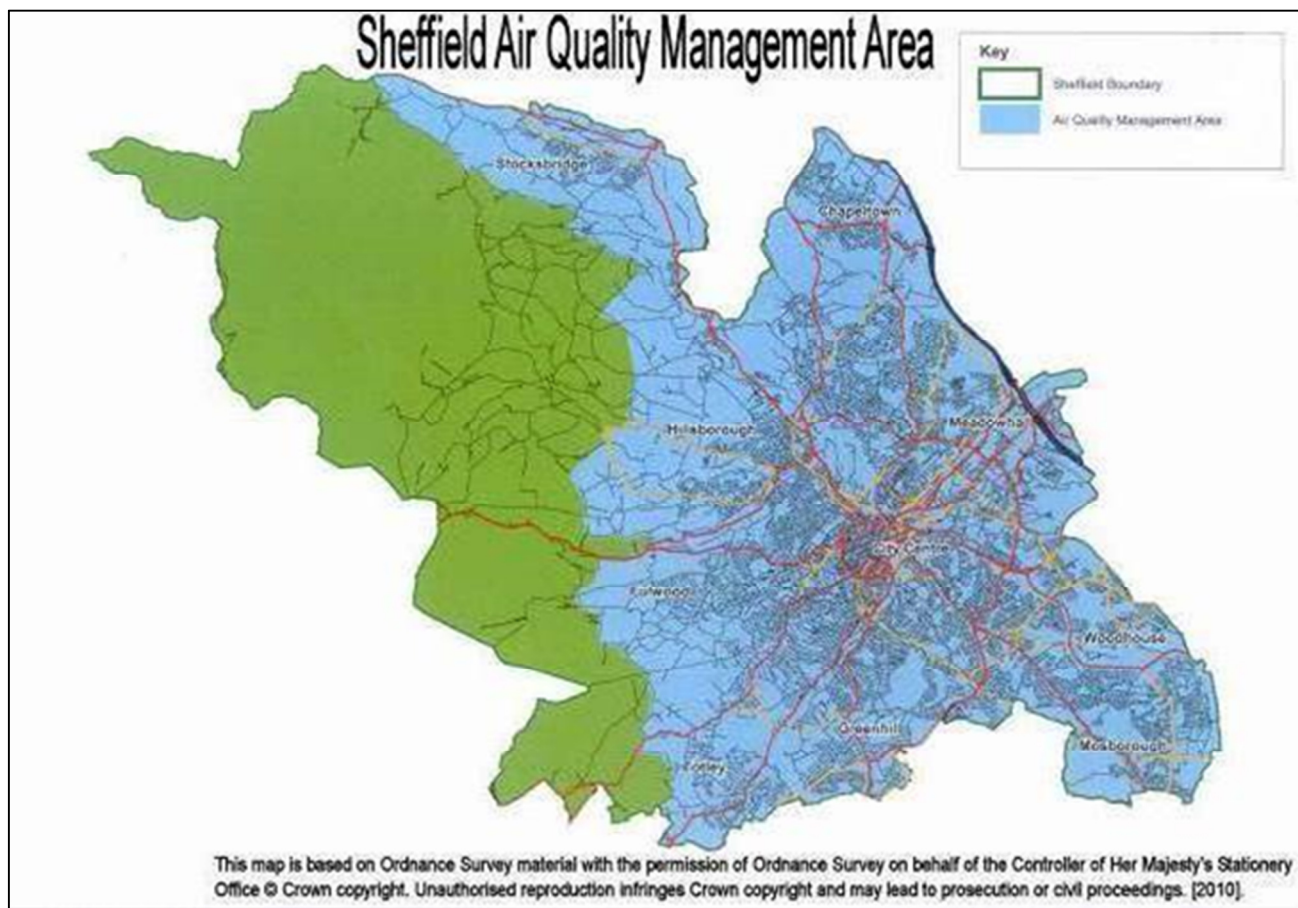
https://uk-air.defra.gov.uk/aqma/details?aqma_ref=51.

Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

Table 2.1 – Declared Air Quality Management Areas

| AQMA Name | Date of Declaration | Pollutants and Air Quality Objectives | City / Town | One Line Description | Is air quality in the AQMA influenced by roads controlled by Highways England? | Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure) | | Action Plan | | |
|----------------|---------------------|---------------------------------------|-------------|--|--|---|-----------------------|-------------------------------------|---------------------|---|
| | | | | | | At Declaration | Now | Name | Date of Publication | Link |
| Sheffield AQMA | 01/12/2006 | NO ₂ Annual Mean | Sheffield | The whole of the Urban area of the City of Sheffield; excluding the Peak Park area | YES | 59 µg/m ⁻³ | 77 µg/m ⁻³ | Air Quality Action Plan (AQAP) 2015 | 2015 | https://bit.ly/2ITZ9gb |
| Sheffield AQMA | 08/03/2010 | NO ₂ Hourly Mean | Sheffield | The whole of the Urban area of the City of Sheffield; excluding the Peak Park area | YES | 55 µg/m ⁻³ | 43 µg/m ⁻³ | Air Quality Action Plan (AQAP) 2015 | 2015 | https://bit.ly/2ITZ9gb |
| Sheffield AQMA | 01/12/2006 | PM ₁₀ 24 Hour Mean | Sheffield | The whole of the Urban area of the City of Sheffield; excluding the Peak Park area | YES | 8 exceedances | 0 exceedances | Air Quality Action Plan (AQAP) 2015 | 2015 | https://bit.ly/2ITZ9gb |

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



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

Defra's appraisal of last year's ASR concluded "that there is no significant improvement to air quality within the AQMA and that further work is still required, in order to achieve the air quality objectives. That the Council should, reconsider the prioritisation of measures that can significantly impact emissions reductions to achieve the air quality objectives. That it may be beneficial to review the level of further emissions required to achieve the reductions, to inform the development of measures in the Action Plan.

The Council should explore whether the Action Plan can be integrated with the Local Transport Plan as it may provide an incentive to co-ordinate action across the South Yorkshire transport region. It is noted that traffic is the major air quality problem in Sheffield"

Sheffield City Council has taken forward a number of direct measures during the current reporting year of 2016 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in their respective Action Plans. Key completed measures are:

- The [Government's Clean Bus Technology Fund](#) (CBTF) 2015 enabled First South Yorkshire to retrofit 25 buses with an Eminox SCRT with eFan system in order to reduce emissions on key bus routes in Sheffield (51 / 52).
- The [OLEV Low Emission Bus Scheme 2015](#) bid resulted in the introduction of 44 Hybrid Buses on the Sheffield 1 / 1a route.
- The Council was successful in bidding for £234k 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, thereby replacing the highly polluting diesel fuel. These will be fuelled at ITM Power, 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.
- The Council continues to work closely with Highways England, who recently implemented Smart Motorway All Lane Running on the M1 (J28 – J35), in order to ensure that outstanding air quality issues in Sheffield, particularly in the Tinsley area, are resolved.

The scheme is implementing a maximum mandatory 60mph speed limit between Junctions 28 to 35a (weekday peak periods only) to mitigate air quality impacts, however much more needs to be done.

- Completed the DEFRA funded Phase 2 [AirAware](#) Campaign and successfully secured further Air Quality Grant funding in order to continue this campaign (Phase 3) in 2017 / 2018.
- Sheffield continues to benefit from the [Government's Clean Vehicle Technology Fund 2014](#) which enabled First South Yorkshire to retrofit 41 buses with Thermo Management Technology in order to reduce emissions on key bus routes in

Sheffield (x78 / 75) and enabled 175 SY Ambulance Rapid Response Vehicles to be fitted with Solar Roof Panels.

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

- Tackling Buses and Taxis emissions by updating the Sheffield Bus Agreement (SBA) and Taxi Licensing policy to specify a minimum Euro VI / Euro 6 standard or better (using low emission vehicles, for example, hybrid, gas, electric or hydrogen).
- Complete the DEFRA funded Phase 3 [AirAware](#) campaign, identify other potential funding sources in order to implement the recommendations from the 2013 Sheffield LEZ Feasibility Study.
- The development of a Clean Air Strategy (CAS) for Sheffield which will acknowledge the National Air Quality Plan and reference the recommendations from the DEFRA funded 2013 [Sheffield Low Emission Zone Feasibility Study](#) (which indicated that in the short term, diesel vehicles and in particular Buses, Taxis and Goods Vehicles need to be retrofitted or be a minimum Euro VI / 6 standard and in the longer term, require a shift away from diesel fuel to alternative low emission fuels such as electric, hydrogen, gas / biogas, hybrid).

Sheffield's priorities for the coming year are to carry out the Local Feasibility Study, which aims to deliver legal compliance in the shortest possible time, whilst maximising the health and wellbeing benefits to people in Sheffield (and Rotherham). Also, to ensure that the Clean Air Strategy is implemented and seek to update our AQAP, as well as ensure a minimum standard for the majority of Buses and Taxis is Euro VI / 6 or better (using low emission vehicles, for example, petrol hybrid, gas, electric or hydrogen).

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

- Not having adequate funding to support proposed vehicle retro-fits / replacement and modal shift programmes, compounded by not having sufficient personnel resources to bid competitively for Government's fund, and match funding to suit.

- Securing partnership and collaborative working with some key stakeholders including Bus and Taxi operators remains a challenge. Being private concerns, the absence of adequate funding support could impact on their willingness to implement several pollution reduction measures.
- Reducing pollution emissions at Sheffield Midland Train Station, a location with the highest concentration of monitored NO₂ in Sheffield due mainly to emissions from the diesel trains and idling diesel hackney taxis.
- Enabling and encouraging vehicle owners to switch away from diesel.

Progress on the following measures has been slower than expected largely due to: lack of funding to deliver the measures.

Sheffield City Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in Sheffield's urban area AQMA when fully implemented.

Whilst the measures stated above and in Table 2.2 will significantly 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 Sheffield's urban area AQMA.

Table 2.2 – Progress on Measures to Improve Air Quality

| Measure No. | Measure | EU Category | EU Classification | Organisations involved and Funding Source | Planning Phase | Implementation Phase | Key Performance Indicator | Reduction in Pollutant / Emission from Measure | Progress to Date | Estimated / Actual Completion 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 | Sheffield | Nov. 2013 | Dec. 2015 onwards | All Buses to be best in class Tackle 50% of worst polluting Taxis Tackle 15% of Goods vehicles | > 20% (including 7% from do minimum) | Voluntary Bus Agreement established Commitment Statement and policy position endorsed | 2020 or later | 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 | Sheffield | Jul 2012 | Dec. 2015 | Increased use of Park & Ride Increased number of EV vehicles & recharging Public Health Outcome Framework | > 5% | Successful £225k bid to Government (DfT) for the installation of further rapid charge points across the region | 2015 | 2 fast and 1 rapid charger units installed |

Sheffield City Council

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

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|---|---|---|--|--|-----------|-----------|--|---|---|---------------|---|
| 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 | Highways England | 2014 | 2017 | Construction of Smart Motorway All Lane Running | Neutral | Completed | End of 2016 | Commissioned, fully operational from March 2017 |
| | | | Encourage / Facilitate home-working Personalised Travel Planning Promote use of rail and inland waterways Other | | | Ongoing | Construction of Barrier at M1 J34S On Slip | Reduce vehicles emissions on to local residential areas | In consideration – Feasibility Study undertaken | 2019 / 20 | 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 | Sheffield CC's Planning & Development Services | Nov. 2015 | Dec. 2018 | All Buses to be best in class Tackle 50% of worst polluting Taxis | > 15% | Voluntary Bus Agreement established Commitment Statement and Policy Statement endorsed | 2020 or later | Implementation is ongoing |

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| | | | | | | | | | | | |
|---|------------------------------|-----------------------|--|---|----------|---------|--|----------|---|---------|---------------------------|
| 7 | Control Industrial Emissions | Environmental Permits | Measures to reduce pollution through IPPC Permits going beyond BAT | Sheffield CC's Environmental Protection Service as well as Environment Agency | Jan 2014 | Ongoing | Number of sites inspected and or receive penalty | Up to 5% | Permits are issued in accordance with the Secretary of State's guidance | Ongoing | Implementation is ongoing |
|---|------------------------------|-----------------------|--|---|----------|---------|--|----------|---|---------|---------------------------|

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), 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.

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, 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 Clean Air Strategy (CAS) as stated earlier, for Sheffield, which will acknowledge the National Air Quality Plan and reference the recommendations from the DEFRA funded 2013 [Sheffield Low Emission Zone Feasibility Study](#) (which indicated that in the short term, diesel vehicles and in particular Buses, Taxis and Goods Vehicles need to be retrofitted or be a minimum Euro VI / 6 standard and in the longer term, require a shift away from diesel fuel to alternative low emission fuels such as electric, hydrogen, gas / biogas, hybrid).
- 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.
- Focusing on buses and taxis: Our priority is to tackle these fleets operating regularly within Sheffield. We aim to do this by updating the Sheffield Bus Agreement (SBA) and Taxi Licensing policy to specify a minimum Euro VI / 6 Standard or better (using low emission vehicles, for example, hybrid, gas, electric or hydrogen) vehicles.
- Promote smarter travel choices: Sheffield City Region has been awarded the full £2.5m Local Sustainable Transport Transition Year Funding recently bided for from the Government, which will be shared across the four South Yorkshire

authorities and will deliver a programme of revenue projects, initiatives and training that supports sustainable transport, in particular there will be a focus on cycling and walking related activity that will help to improve air quality and health.

- Complete the DEFRA funded Phase 3 [AirAware](#) campaign, identify other potential funding sources in order to implement the recommendations from the 2013 Sheffield LEZ Feasibility Study.
- The development of a Clean Air Strategy (CAS) for Sheffield which will acknowledge the National Air Quality Plan and reference the recommendations from the DEFRA funded 2013 [Sheffield Low Emission Zone Feasibility Study](#) (which indicated that in the short term, diesel vehicles and in particular Buses, Taxis and Goods Vehicles need to be retrofitted or be a minimum Euro VI / 6 standard and in the longer term, require a shift away from diesel fuel to alternative low emission fuels such as electric, hydrogen, gas / biogas, hybrid).

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Sheffield City Council undertook automatic (continuous) monitoring at 5 sites during 2016. Table A.1 in Appendix A shows the details of the sites. Sheffield City Council no longer reports on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, as these pollutants are in compliance. National monitoring results are available at <https://uk-air.defra.gov.uk/latest/> .

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 (passive) monitoring of NO₂ at 163 sites during 2016. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D or link: <https://maps.sheffield.gov.uk/LocalViewExt/Sites/DiffusionTubes/>. 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” and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

However, diffusion tubes monitoring – see Table A.3 in Appendix A, showed that last year, 2015, the annual mean of 40µg/m³ was exceeded at 61 locations, including the exceedance of 60µg/m³ at 5 locations. The annual mean of 40µg/m³ in 2016 was exceeded at 58 locations across the city including the exceedance of 60µg/m³ at 1 location, indicating a gradual improvement.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

No exceedances of the air quality objectives were observed.

3.2.3 Particulate Matter (PM_{2.5})

Table A.7 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past 5 years.

At the two locations monitored, the concentrations show a gradual improvement but in the past 2 to 3 years have more or less stabilised at the same levels, 12µg/m³ (at Tinsley Infant School) and 9µg/m³ (at Devonshire Green).

3.2.4 Sulphur Dioxide (SO₂)

Table A.8 in Appendix A compares the ratified continuous monitored SO₂ concentrations for year 2016 with the air quality objectives for SO₂.

No exceedances of the air quality objectives were observed.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

| Site ID | Site Name | Site Type | X OS Grid Ref | Y OS Grid Ref | Pollutants Monitored | In 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 | NO ₂ , PM ₁₀ | YES | Chemiluminescence, TEOM/FIDAS | 0 | 10m | 2.5 |
| GH2 | Tinsley Infant School | Industrial | 440077 | 390794 | NO ₂ , PM ₁₀ , PM _{2.5} | YES | Chemiluminescence, TEOM/FIDAS, | 0 | 80m M1 | 2.5 |
| GH3 | Lowfield School | Roadside | 435181 | 385366 | NO ₂ , PM ₁₀ , SO ₂ | YES | Chemiluminescence, TEOM/FIDAS, UV Fluorescence | 0 | 6m | 2.5 |
| GH4 | Wicker | Urban Background | 435959 | 388021 | NO ₂ , PM ₁₀ , O ₃ | YES | Chemiluminescence, TEOM/FIDAS, UV Absorption | 5 | 42m | 2.5 |
| GH5 | King Ecgbert School | Urban Background | 430977 | 380760 | NO ₂ , PM ₁₀ , O ₃ | YES | Chemiluminescence, TEOM/FIDAS, UV Absorption | 10 | 65m | 2.5 |
| RM1 | Waingate | Roadside | 435750 | 387647 | NO ₂ , PM ₁₀ | YES | Chemiluminescence, TEOM/FIDAS | N/A | 3m | 2 |
| UKA0 0181 | Sheffield Tinsley (DEFRA) | Industrial | 440215 | 390598 | NO ₂ | YES | Chemiluminescence | 70 | 100m M1 | 3 |
| UKA0 0575 | Sheffield Devonshire Green (DEFRA) | Urban Centre | 435158 | 386885 | NO ₂ , PM ₁₀ , PM _{2.5} , O ₃ , Benzene | YES | Chemiluminescence, FDMS TEOM, UV Absorption, pumped tube | 30 | 20m | 3 |

| | | | | | | | | | | |
|--------------|---------------------------------------|----------|--------|--------|-----|-----|-------------------|----|----|---|
| UKA0 0622 | Sheffield Barnsley Road (DEFRA) | Roadside | 436276 | 389930 | NO2 | YES | Chemiluminescence | 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

| Site ID | Site Name | Site Type | X OS Grid Ref | Y OS Grid Ref | Pollutants Monitored | In AQMA? | Distance to Relevant Exposure (m) ⁽¹⁾ | Distance to kerb of nearest road (m) ⁽²⁾ | Tube collocated with a Continuous Analyser? | Height (m) |
|---------|--|------------------|---------------|---------------|----------------------|----------|--|---|---|------------|
| | Warren Lane | Roadside | 436063 | 397474 | NO ₂ | Y | Housing (10m) | 5m | N | 2.5m |
| | 7 Bawtry Gate | Urban Background | 439995 | 390862 | NO ₂ | Y | Housing (5m), | 20m | N | 2.5m |
| | 47 Bawtry Road | Roadside | 440045 | 390884 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | 109 Bawtry Road | Roadside | 440177 | 390770 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Ecclesfield Road Low Wincobank | Roadside | 438778 | 392008 | NO ₂ | Y | Housing (0m) | 2m | N | 2.5m |
| | Attercliffe Road | Roadside | 438880 | 389931 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Hatfield House Lane, Lane Top (Prev Attrcliff Rd duplicate and Fir Vale) | Roadside | 438880 | 389931 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Barnsley Road Fir Vale | Roadside | 436492 | 390149 | NO ₂ | Y | Housing (5m) | 5m | N | 2.5m |
| | Upwell Street | Roadside | 437683 | 390091 | NO ₂ | Y | Housing (0m) | 2m | N | 2.5m |
| | Burngreave Road/Minna Rd | Roadside | 435657 | 389110 | NO ₂ | Y | Housing (5m) | 5m | N | 2.5m |
| | Loxley New Road | Roadside | 432647 | 389427 | NO ₂ | Y | Housing (0m) | 3m | N | 2.5m |
| | Loxley New Road- duplicate | Roadside | 432647 | 389427 | NO ₂ | Y | Housing (0m) | 3m | N | 2.5m |
| | Bowden Wood Close | Roadside | 439051 | 386743 | NO ₂ | Y | Housing (20m) | 2m | N | 2.5m |
| | Parkway Broad Lane | Roadside | 436140 | 387527 | NO ₂ | Y | Housing (5m) | 2m | N | 2.5m |
| | Parkway Broad Lane duplicate | Roadside | 436140 | 387527 | NO ₂ | Y | Housing (5m) | 2m | N | 2.5m |
| | Exchange Street | Urban Centre | 435899 | 387666 | NO ₂ | Y | N/A | 20m | N | 2.5m |

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|--|------------------------------------|------------------|--------|--------|-----------------|---|--------------|------|---|------|
| | Duke Street | Roadside | 436104 | 387458 | NO ₂ | Y | Housing (0m) | 3m | N | 2.5m |
| | Waingate | Urban Centre | 435739 | 387653 | NO ₂ | Y | N/A | 5m | N | 2.5m |
| | Fitzalan Square | Urban Centre | 435718 | 387470 | NO ₂ | Y | N/A | 10m | N | 2.5m |
| | Barkers Pool | Urban Centre | 435238 | 387181 | NO ₂ | Y | N/A | 20m | N | 2.5m |
| | Scotland Street | Urban Background | 434919 | 387768 | NO ₂ | Y | Y (1m) | 3m | N | 2.5m |
| | Eldon St/ Wellington St | Urban Centre | 434885 | 386963 | NO ₂ | Y | Y (1m) | 3m | N | 2.5m |
| | Broomspring Close | Roadside | 434503 | 386893 | NO ₂ | Y | Housing (5m) | 100m | N | 2.5m |
| | University Roundabout | Roadside | 434434 | 387393 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Netherthorpe School | Roadside | 434638 | 387828 | NO ₂ | Y | School (5m) | 3m | N | 2.5m |
| | Upper Hanover Street | Roadside | 434405 | 386966 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Shoreham St | Roadside | 435554 | 386638 | NO ₂ | Y | Y (1m) | 3m | N | 2.5m |
| | St Marys Road | Roadside | 435494 | 386389 | NO ₂ | Y | N/A | 10m | N | 2.5m |
| | Chesterfield Road /Woodseats Road | Roadside | 434814 | 383335 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Queens Road /Edmund Rd | Roadside | 435499 | 385690 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Abbeydale Road /Carter Knowle Road | Roadside | 434324 | 384315 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Ecclesall Road | Roadside | 434312 | 386287 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | AUN | Urban Centre | 435135 | 386891 | NO ₂ | Y | N/A | 20m | Y | 3.5m |
| | AUN | Urban Centre | 435135 | 386891 | NO ₂ | Y | N/A | 20m | Y | 3.5m |
| | AUN | Urban Centre | 435135 | 386891 | NO ₂ | Y | N/A | 20m | Y | 3.5m |
| | ACE | Urban Centre | 435959 | 388004 | NO ₂ | Y | N/A | 50m | Y | 3.5m |
| | ACE | Urban Centre | 435959 | 388004 | NO ₂ | Y | N/A | 50m | Y | 3.5m |
| | Hillbro Corner | Roadside | 433222 | 389608 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | 82 Bawtry Road | Roadside | 440059 | 390854 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | 98 Bawtry Road | Roadside | 440116 | 390800 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |

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|--|------------------------------------|----------|--------|--------|-----------------|---|--------------------------|-----|---|------|
| | Arundel Gate Interchange | Roadside | 435601 | 387255 | NO ₂ | Y | Y (1m) | 2m | N | 2.5m |
| | Pond St Interchange | Roadside | 435701 | 387258 | NO ₂ | Y | Y (1m) | 2m | N | 2.5m |
| | Meadowhall Interchange | Roadside | 439113 | 391196 | NO ₂ | Y | Y (1m) | 2m | N | 2.5m |
| | Redmires Rd /Crimicar Lane | Suburban | 429644 | 386391 | NO ₂ | Y | N | 2m | N | 2.5m |
| | Coldwell Lane /Sandygate Road | Suburban | 431193 | 386798 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Manchester Rd /Sandygate Road | Roadside | 432074 | 387081 | NO ₂ | Y | Housing (0m) | 5m | N | 2.5m |
| | Manchester Rd /Sale Rd | Roadside | 433013 | 386752 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Whitham Road /Crookes | Roadside | 433327 | 386863 | NO ₂ | Y | Housing (2m) | 2m | N | 2.5m |
| | Whitham Road /Moor Oaks | Roadside | 433513 | 387034 | NO ₂ | Y | Housing (2m) | 3m | N | 2.5m |
| | Western Bank /Northumberland Rd | Roadside | 433752 | 387230 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Western Bank /Clarkson Rd | Roadside | 434060 | 387228 | NO ₂ | Y | Children's Hospital (5m) | 3m | N | 2.5m |
| | Brook Hill /Favell Road | Roadside | 434352 | 387349 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Upper Hanover Street/Hounsfield Rd | Roadside | 434373 | 387181 | NO ₂ | Y | N/A | 20m | N | 2.5m |
| | Crimicar Road /Hallamshire Road | Roadside | 429793 | 385594 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Crimicar Rd /Brookhouse Hill | Roadside | 430355 | 385347 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Fulwood Road /Tom Lane | Roadside | 431374 | 385750 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Fulwood Road /Gladstone Road | Roadside | 431691 | 386027 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Fulwood Road /Ashdell Road | Roadside | 432970 | 386681 | NO ₂ | Y | School (5m) | 5m | N | 2.5m |
| | Glossop Road /Peel Road | Roadside | 433319 | 386794 | NO ₂ | Y | Y (1m) | 5m | N | 2.5m |
| | Glossop Road /Westbourne Rd | Roadside | 433429 | 386729 | NO ₂ | Y | Y (1m) | 3m | N | 2.5m |

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|--|--|--------------|--------|--------|-----------------|---|---------------|----|---|------|
| | Glossop Road /Clarkehouse Rd | Roadside | 433904 | 386844 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | West Street /Regent Street | Roadside | 434664 | 387154 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | West Street /Leopold Street. | Roadside | 435248 | 387366 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Queens Road Mecca | Roadside | 435807 | 386350 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Queens Road Netto | Roadside | 435695 | 385894 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | 463 Queens Road | Roadside | 435492 | 385659 | NO ₂ | Y | Housing (2m) | 3m | N | 2.5m |
| | London Road -Sark Road | Roadside | 435182 | 385241 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | London Road -Ponsfords | Roadside | 435163 | 384990 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Chesterfield Road - Meersbrook Park Road | Roadside | 434965 | 384613 | NO ₂ | Y | Housing (2m) | 3m | N | 2.5m |
| | 513 Chesterfield Road | Roadside | 434682 | 383688 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Chesterfield Road - Olivet Road | Roadside | 434860 | 382989 | NO ₂ | Y | Housing (2m) | 3m | N | 2.5m |
| | Chesterfield Road -Charles Ashmore Road | Roadside | 434905 | 381873 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Meadowhead Road | Roadside | 435137 | 381357 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | GH3 | Urban Centre | 435181 | 385366 | NO ₂ | Y | Y (0m) | 3m | Y | 3.5m |
| | GH3 | Urban Centre | 435181 | 385366 | NO ₂ | Y | Y (0m) | 3m | Y | 3.5m |
| | GH3 | Urban Centre | 435181 | 385366 | NO ₂ | Y | Y (0m) | 3m | Y | 3.5m |
| | Attercliffe - Terry Street | Roadside | 438513 | 389542 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Attercliffe - Bodmin Street | Roadsid | 437928 | 388800 | NO ₂ | Y | Y (0m) | 3m | N | 2.5m |
| | Attercliffe - Staniforth Road | Roadside | 437691 | 388527 | NO ₂ | Y | Y (0m) | 3m | N | 2.5m |
| | Attercliffe Road (Tesco) | Roadside | 436350 | 388234 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Savile Street East (Gripple) | Roadside | 437019 | 388825 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Brightside La -Stevenson Rd | Roadside | 437461 | 389311 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Brightside La - Forgemaster | Roadside | 438353 | 390191 | NO ₂ | Y | N/A | 3m | N | 2.5m |

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|--|--|---------------------|--------|--------|-----------------|---|---------------|-----|---|------|
| | Brightside La - (Jenkin Rd | Roadside | 438607 | 390611 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Meadowhall Road (M1 34N) | Roadside | 439167 | 391698 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Sheffield Road (M1 34S) | Roadside | 439717 | 390829 | NO ₂ | Y | N/A | 3m | N | 2.5m |
| | Chesterfield Road South/Lowedges Road | Roadside | 435183 | 380645 | NO ₂ | Y | Housing (5m) | 3m | N | 2.5m |
| | Bochum Parkway /Norton La | Roadside | 435750 | 381590 | NO ₂ | Y | Housing (10m) | 3m | N | 2.5m |
| | Ruth Square | Urban Background | 434556 | 386419 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Broomhall Road | Urban Background | 434655 | 386465 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Hanover Methodist Church | Urban Background | 434600 | 386515 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Springfield School | Urban Background | 434040 | 386935 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Exeter Drive 1 | Urban Background | 434026 | 386436 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Exeter Drive 2 | Urban Background | 434373 | 386894 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Wesleyan Chapel | Urban Background | 432900 | 387301 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Arran Road | Urban Background | 432602 | 387261 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Cross Lane | Urban Background | 432551 | 387502 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Wolfe Road | Urban Background | 433636 | 392357 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Keats Road | Urban Background | 433529 | 392517 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Foxhill medical centre | Urban Background | 433801 | 392479 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Birley Carr Church | Urban Background | 433190 | 392029 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Chaucer School | Urban | 434211 | 392211 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |

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|--|---------------------------|------------------|--------|--------|-----------------|---|------------|-----|---|------|
| | | Background | | | | | | | | |
| | Housing office | Urban Background | 434264 | 392297 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 484 Deerlands Avenue | Urban Background | 434213 | 392544 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Westwick Crescent | Urban Background | 434132 | 381671 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Bocking Lane 1 | Urban Background | 434161 | 381060 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | St Peter's Church | Urban Background | 434152 | 381186 | NO ₂ | Y | N/A | N/A | N | 2.5m |
| | Greenhill Library | Urban Background | 434171 | 381275 | NO ₂ | Y | N/A | N/A | N | 2.5m |
| | Bocking Lane 2 | Urban Background | 433611 | 381070 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Highfields Highfield Lane | Urban Background | 441765 | 386872 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | St Mary's Church | Urban Background | 441045 | 386207 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Fitzallan Road Handsworth | Urban Background | 440761 | 386352 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Anglers Rest | Urban Background | 441812 | 386466 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Handsworth Road 1 | Urban Background | 441393 | 385946 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Handsworth Road 2 | Urban Background | 440139 | 386141 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Shop Front Parkway R/A | Urban Background | 438450 | 387088 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Retford Road | Urban Background | 440550 | 386631 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Prince of Wales Road | Urban Background | 440402 | 386805 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Greenland Junior School 1 | Urban Background | 440380 | 386828 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |

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| | Greenland Junior School 2 | Urban Background | 440203 | 387013 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Greenland Court | Urban Background | 440410 | 386130 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Darnall Medical Centre | Urban Background | 439276 | 387550 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Nursery Handsworth Road | Urban Background | 438995 | 388004 | NO ₂ | Y | Housing 2m | N/A | | 2.5m |
| | Norfolk Arms Finchwell Road | Urban Background | 439000 | 388019 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Handsworth nursery | Urban Background | 439211 | 388591 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Retford Road | Urban Background | 439324 | 388092 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | BT Pole 62 Rotherham Road | Urban Background | 440062 | 387623 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Wicker | Urban Background | 435901 | 388068 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Lady's Bridge | Urban Background | 435792 | 387845 | NO ₂ | Y | Housing 2m | 3m | N | 2.5m |
| | Gibraltar Street | Urban Background | 435214 | 387899 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Penistone Road | Urban Background | 434806 | 388216 | NO ₂ | Y | N/A | 1m | N | 2.5m |
| | King Ecgberts Back of School | Urban Background | 431020 | 380901 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | King Ecgberts Car park | Urban Background | 431094 | 380895 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | King Ecgberts Top of drive | Urban Background | 430962 | 380738 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Tesco Express Abbeydale Road | Urban Background | 431836 | 380676 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Ashfurlong Road | Urban Background | 431492 | 381286 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Burngreave Road 1 | Urban Background | 435773 | 388948 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |

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| | Burngreave Road 2 | Urban Background | 435805 | 388901 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Burngreave Road 3 | Urban Background | 435838 | 388853 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Burngreave Street junction | Urban Background | 435880 | 388835 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Burngreave Road 4 | Urban Background | 435843 | 388814 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Junction Road | Urban Background | 439953 | 390961 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Osbourne Road | Urban Background | 440035 | 390828 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Montgomery Road | Urban Background | 439852 | 390709 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Zeds Nether Edge Road | Urban Background | 440411 | 390874 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Clifford School Psalter Lane | Urban Background | 440199 | 390610 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Town Street | Urban Background | 439953 | 390961 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Siemens Close | Urban Background | 440035 | 390828 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Greasebro Road | Urban Background | 439852 | 390709 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Ferrars Road | Urban Background | 440411 | 390874 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Ingfield Avenue (Dr's Surgery) | Urban Background | 440199 | 390610 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Sheffield Road back | Urban Background | 440111 | 391199 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Ferrars Road | Urban Background | 440400 | 390870 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Sheffield Road front | Urban Background | 440080 | 391250 | NO ₂ | Y | Housing 0m | 4m | N | 2.5m |
| | Junior school building | Urban Background | 440286 | 390541 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |

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| | Junior school field | Urban Background | 440242 | 390513 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 981 Abbeydale Road | Urban Background | 433640 | 383391 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | La Scala, Abbeydale Rd /Archer Rd Jc | Urban Background | 433601 | 383337 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | 102 Archer Rd | Urban Background | 434188 | 383548 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Chippendale, Abbeydale Rd /Archer Rd | Urban Background | 434123 | 383874 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | 879 Abbeydale Rd | Urban Background | 434143 | 383915 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Science Garden | Urban Background | 442626 | 385025 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Millenium Garden | Urban Background | 442627 | 384990 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Top of Car Park | Urban Background | 442602 | 384996 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Top Yard | Urban Background | 442648 | 384970 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Bottom yard | Urban Background | 442613 | 384920 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Hinde House Lane | Urban Background | 437132 | 390985 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Derbyshire Lane | Urban Background | 435338 | 382924 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Winchester Avenue Front | Urban Background | 430001 | 385968 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Winchester Avenue Back | Urban Background | 430008 | 385978 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 127 Olive Grove Rd | Urban Background | 435763 | 385627 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Glossop Row, Oughtibridge | Urban Background | 430725 | 393264 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | 146 Abbeydale Road | Urban Background | 434869 | 385276 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |

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|--|------------------------------------|------------------|--------|--------|-----------------|---|------------|-----|---|------|
| | 150 Abbeydale Road | Urban Background | 434862 | 385269 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Lidl (Tube 2) | Urban Background | 427257 | 398421 | NO ₂ | Y | N/A | 1m | N | 2.5m |
| | PO (Tube 3) | Urban Background | 428189 | 398209 | NO ₂ | Y | Housing 0m | 1m | N | 2.5m |
| | Carr Road (Tube 1) | Urban Background | 428818 | 397977 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | SCT Bedford St /Penistone Road | Urban Background | 434622 | 388387 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Regent Court Floor 7, Hillsborough | Urban Background | 433572 | 389761 | NO ₂ | Y | Housing 0m | N/A | N | 10m |
| | Catchbar Lane Traffic Light | Urban Background | 433087 | 390643 | NO ₂ | Y | Housing 0m | 1m | N | 2.5m |
| | Broughton Rd /Penistone Rd | Urban Background | 433515 | 390188 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Walkley Lane Newsagent Rear | Urban Background | 433320 | 389323 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Walkley Lane Newsagent Front | Urban Background | 433308 | 389319 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Regent Court Driveway | Urban Background | 433505 | 389783 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Manor Oaks Close | Urban Background | 437200 | 387116 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Ridgeway Rd | Urban Background | 438171 | 384707 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Harborough Ave | Urban Background | 438194 | 386634 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Houstead Rd | Urban Background | 439862 | 387360 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Argyle Close | Urban Background | 435574 | 384224 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 749 Ecclesall Rd | Urban Background | 432921 | 385647 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | 828 Ecclesall Rd | Urban Background | 432826 | 385415 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |

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|--|---------------------------------|------------------|--------|--------|-----------------|---|------------|-----|---|------|
| | 946 Ecclesall Rd | Urban Background | 432086 | 385029 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | 97 Ecclesall Rd South | Urban Background | 432651 | 384491 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Ecclesall Rd South Bus Terminus | Urban Background | 432428 | 384276 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Ecclesall Junior School | Urban Background | 432241 | 384592 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | High Storrs School | Urban Background | 431909 | 384517 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Gypsy Queen /Sainsburys | Urban Background | 443528 | 383052 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Waterthorpe Greenway | Urban Background | 442647 | 383139 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Moss Way/Donetsk Way | Urban Background | 442477 | 383103 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Moss Way/Birley Spa Lane | Urban Background | 442554 | 383390 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Moss Grove | Urban Background | 442663 | 383322 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Manchester Rd /Lawson Rd | Urban Background | 433103 | 386770 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Whitham Rd /Crookes Rd | Urban Background | 433325 | 386890 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Newbould La /Glossop Rd | Urban Background | 433530 | 386757 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Weston Park (opp. Hospital) | Urban Background | 434024 | 387250 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Fulwood Rd P.O. | Urban Background | 433762 | 387257 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 102 Mill Rd | Urban Background | 435727 | 394402 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 128 The Common | Urban Background | 435837 | 394317 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Harrods Green Lane | Urban Background | 436127 | 393984 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |

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|--|---------------------------------|------------------|--------|--------|-----------------|---|-------------|-----|---|------|
| | Glenwood Crescent | Urban Background | 435996 | 396046 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | Cowley Drive | Urban Background | 436239 | 395729 | NO ₂ | Y | Housing 2m | N/A | N | 2.5m |
| | 745 City Road | Urban Background | 438062 | 385109 | NO ₂ | Y | Housing 0m | 10m | N | 2.5m |
| | 8 Elm Tree Court | Urban Background | 438230 | 384909 | NO ₂ | Y | Housing 0m | 20m | N | 2.5m |
| | Manor Top | Urban Background | 438111 | 384850 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Manor Clinic | Urban Background | 438097 | 384964 | NO ₂ | Y | Housing 2m | 4m | N | 2.5m |
| | 265 Abbeydale Road | Urban Background | 434822 | 385142 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | Butterworth Cycles | Urban Background | 434523 | 384654 | NO ₂ | Y | Housing 0m | 2m | N | 2.5m |
| | 14 Fir Street | Urban Background | 433335 | 388485 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Gerry's Bakery South Road | Urban Background | 433299 | 388573 | NO ₂ | Y | Housing 0m | N/A | N | 2.5m |
| | Woodseats School | Urban Background | 434804 | 383215 | NO ₂ | Y | School 0m | N/A | N | 2.5m |
| | Woodseats School traffic lights | Urban Background | 434821 | 383224 | NO ₂ | Y | School 2m | 1m | N | 2.5m |
| | Barkers Pool Taxi Rank | Urban Background | 435283 | 387222 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Tinsley Meadows School | Urban Background | 440210 | 390934 | NO ₂ | Y | School (0m) | N/A | N | 2.5m |
| | Silverdale School | Urban Background | 431538 | 383992 | NO ₂ | Y | School (0m) | N/A | N | 2.5m |
| | Huntley Rd Ecclesall Infants | Urban Background | 432055 | 384648 | NO ₂ | Y | School (0m) | N/A | N | 2.5m |
| | Don Valley, Leeds Road | Urban Background | 438121 | 388922 | NO ₂ | Y | School (0m) | 2m | N | 2.5m |
| | Beeley Wood Road | Urban Background | 433251 | 391116 | NO ₂ | Y | Housing 2m | 1m | N | 2.5m |

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|--|---------------------------|------------------|--------|--------|-----------------|---|-------------|---------|-----|------|
| | Winster Road | Urban Background | 433455 | 390475 | NO ₂ | Y | Housing 2m | 1m | N | 2.5m |
| | Owlerton Green | Urban Background | 433610 | 389859 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Hillsborough Barracks | Urban Background | 433860 | 389593 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Bamforth Street | Urban Background | 433911 | 389398 | NO ₂ | Y | N/A | 2m | N | 2.5m |
| | Neepsend Lane | Urban Background | 434210 | 388876 | NO ₂ | Y | N/A | 1m | N | 2.5m |
| | Sheffield Tinsley (DEFRA) | Industrial | 440215 | 390598 | NO ₂ | Y | Housing 70m | 100m M1 | YES | 2.5m |
| | Crookes Rd/Hoole Road | Roadside | 433276 | 387029 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | Newbold Lane/Watson Road | Roadside | 433498 | 386792 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |
| | HSBC S10 3BE | Roadside | 433215 | 386801 | NO ₂ | Y | Housing 2m | 2m | N | 2.5m |

Notes:

- (1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).
 (2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|--------------------------------|------------------|-----------------|---|--|---|-----------|-----------|-----------|-----------|
| | | | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| GH1 | Urban Background | Automatic | 72 | 72 | <u>28</u> | 34 | 25 | 28 | 25 |
| GH2 | Urban Industrial | Automatic | 66 | 66 | 35 | 38 | 41 | 37 | 38 |
| GH3 | Roadside | Automatic | 60 | 60 | <u>33</u> | 38 | 36 | 35 | 38 |
| GH4 | Urban Background | Automatic | 52 | 52 | 37 | 37 | 41 | 33 | 33 |
| GH5 | Urban Background | Automatic | 58 | 58 | 7 | – | – | 8 | 9 |
| Romon | Urban Background | Automatic | – | – | 47 | – | – | – | – |
| Sheffield Centre | Urban Background | Automatic | – | – | 37 | 30 | – | – | – |
| UKA00575 (Dev Green) | Urban Background | Automatic | 98 | 98 | – | – | 29 | 25 | 22 |
| UKA00181 (Tinsley) | Urban Industrial | Automatic | 98 | 98 | 32 | 32 | 32 | 28 | 27 |
| Warren Lane | Roadside | Diffusion Tube | 100 | 100 | 36 | 37 | 32 | 30 | 25 |
| 7 Bawtry Gate | Urban background | Diffusion Tube | 100 | 100 | 49 | 47 | 47 | 40 | 39 |
| 47 Bawtry Road | Roadside | Diffusion Tube | 100 | 100 | 58 | 56 | 55 | 47 | 44 |
| 109 Bawtry Road | Roadside | Diffusion Tube | 100 | 100 | 48 | 49 | 47 | 41 | 38 |
| Ecclesfield Road Low Wincobank | Roadside | Diffusion Tube | 100 | 100 | 49 | 44 | 41 | 39 | 36 |
| Attercliffe Road | Roadside | Diffusion Tube | 100 | 100 | 51 | 51 | 51 | 47 | 42 |
| Hatfield House Lane, Lane Top | Roadside | Diffusion Tube | 100 | 100 | – | 37 | 37 | 33 | 30 |
| Barnsley Rd Fir Vale | Roadside | Diffusion Tube | 76 | 76 | <u>61</u> | 54 | 58 | 53 | 44 |
| Upwell Street | Roadside | Diffusion Tube | 100 | 100 | 46 | 44 | 43 | 42 | 35 |
| Burngreave Road/Minna Road | Roadside | Diffusion Tube | 100 | 100 | 39 | 36 | 37 | 33 | 31 |
| Loxley New Road | Roadside | Diffusion Tube | 100 | 100 | 45 | 40 | 38 | 38 | 32 |

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|------------------------------------|------------------|----------------|-----|-----|------------------|------------------|------------------|------------------|------------------|
| Loxley New Road- duplicate | Roadside | Diffusion Tube | 100 | 100 | 44 | 39 | 37 | 36 | 32 |
| Bowden Wood Close | Roadside | Diffusion Tube | 100 | 100 | 40 | 40 | 38 | 34 | 33 |
| Parkway Broad Lane | Roadside | Diffusion Tube | 92 | 92 | 52 | 47 | 45 | 42 | 39 |
| Parkway Broad Lane duplicate | Roadside | Diffusion Tube | 100 | 100 | 50 | 47 | 47 | 42 | 40 |
| Exchange Street | Urban centre | Diffusion Tube | 100 | 100 | 42 | 40 | 41 | 37 | 34 |
| Duke Street | Roadside | Diffusion Tube | 100 | 100 | 53 | 47 | 52 | 47 | 45 |
| Waingate | Urban centre | Diffusion Tube | 100 | 100 | <u>70</u> | 60 | 54 | 49 | 46 |
| Fitzalan Square | Urban centre | Diffusion Tube | 100 | 100 | <u>67</u> | 60 | <u>61</u> | 50 | 48 |
| Barkers Pool | Urban centre | Diffusion Tube | 76 | 76 | 36 | 32 | 30 | 29 | 30 |
| Granville Road | Roadside | Diffusion Tube | 100 | 100 | - | 35 | 35 | 35 | 33 |
| Fielding Rd | Urban centre | Diffusion Tube | 100 | 100 | 51 | 48 | 46 | 44 | 38 |
| Broomspring Close | Roadside | Diffusion Tube | 100 | 100 | 28 | 27 | 24 | 26 | 22 |
| University Roundabout | Roadside | Diffusion Tube | 100 | 100 | <u>65</u> | <u>61</u> | <u>64</u> | 50 | 43 |
| Netherthorpe School | Roadside | Diffusion Tube | 100 | 100 | 47 | 44 | 42 | 38 | 36 |
| Upper Hanover Street | Roadside | Diffusion Tube | 100 | 100 | 48 | 45 | 43 | 44 | 39 |
| Shoreham St | Roadside | Diffusion Tube | 100 | 100 | 58 | 53 | 55 | 52 | 48 |
| St Marys Road | Roadside | Diffusion Tube | 100 | 100 | 41 | 41 | 38 | 38 | 38 |
| Chesterfield Road /Woodseats Road | Roadside | Diffusion Tube | 100 | 100 | 52 | 48 | 45 | 44 | 37 |
| Queens Road/ Edmund Rd | Roadside | Diffusion Tube | 83 | 83 | 49 | 41 | 41 | 41 | 40 |
| Abbeydale Road /Carter Knowle Road | Roadside | Diffusion Tube | 100 | 100 | 51 | 47 | 44 | 44 | 41 |
| Ecclesall Road | Roadside | Diffusion Tube | 100 | 100 | 54 | 47 | 47 | 43 | 40 |
| Arundel Gate Interchg | Roadside | Diffusion Tube | 100 | 100 | <u>77</u> | <u>77</u> | <u>81</u> | <u>74</u> | <u>72</u> |
| Pond Street Interchg | Roadside | Diffusion Tube | 100 | 100 | <u>63</u> | 59 | 60 | 49 | 49 |
| Meadowhall Interchg | Roadside | Diffusion Tube | 100 | 100 | 46 | 49 | 45 | 42 | 39 |
| ACE | Urban background | Diffusion Tube | 100 | 100 | 37 | 34 | 33 | 33 | 29 |
| ACE | Urban background | Diffusion Tube | 100 | 100 | 38 | 33 | 32 | 32 | 28 |

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|--------------------------------------|----------|----------------|-----|-----|------------------|------------------|-----------|-----------|-----------|
| Hillbro Corner | Roadside | Diffusion Tube | 92 | 92 | 42 | 36 | 34 | 34 | 29 |
| 82 Bawtry Road | Roadside | Diffusion Tube | - | - | 57 | 52 | 50 | 44 | - |
| 98 Bawtry Road | Roadside | Diffusion Tube | 100 | 100 | 56 | 51 | 52 | 49 | 43 |
| Coldwell Lane/Sandygate Road | Suburban | Diffusion Tube | 100 | 100 | 24 | 23 | 23 | 20 | 19 |
| Manchester Road/Sandygate Road | Roadside | Diffusion Tube | 100 | 100 | 27 | 27 | 26 | 23 | 20 |
| Manchester Road/Sale Hill | Roadside | Diffusion Tube | 100 | 100 | 46 | 46 | 43 | 40 | 35 |
| Witham Road/Crookes | Roadside | Diffusion Tube | 100 | 100 | 54 | 56 | 58 | 47 | 46 |
| Witham Road/Moor Oaks | Roadside | Diffusion Tube | 92 | 92 | 50 | 48 | 50 | 42 | 37 |
| Western Bank/Northumberland Road | Roadside | Diffusion Tube | 92 | 92 | 41 | 40 | 42 | 33 | 32 |
| Western Bank/Clarkson Road | Roadside | Diffusion Tube | 92 | 92 | 50 | 48 | 51 | 47 | 46 |
| Brook Hill/Favell Road | Roadside | Diffusion Tube | 83 | 83 | 41 | 42 | 38 | 33 | 30 |
| Upper Hanover Street/Hounsfield Road | Roadside | Diffusion Tube | 100 | 100 | 36 | 34 | 35 | 29 | 29 |
| Crimicar Road/Brookhouse Hill | Roadside | Diffusion Tube | 92 | 92 | 28 | 26 | 26 | 24 | 22 |
| Fulwood Road/Tom Lane | Roadside | Diffusion Tube | 100 | 100 | 25 | 23 | 23 | 20 | 17 |
| Fulwood Road/Gladstone Road | Roadside | Diffusion Tube | 92 | 92 | 31 | 29 | 30 | 26 | 24 |
| Fulwood Road/Ashdell Road | Roadside | Diffusion Tube | 92 | 92 | 32 | 30 | 30 | 26 | 24 |
| Glossop Road/Peel Road | Roadside | Diffusion Tube | 58 | 58 | 33 | 31 | 32 | 26 | 23 |
| Glossop Road/Westbourne Road | Roadside | Diffusion Tube | 92 | 92 | 40 | 38 | 44 | 41 | 36 |
| Glossop Road/Clarkehouse Road | Roadside | Diffusion Tube | 75 | 75 | 36 | 36 | 36 | 33 | 28 |
| West Street/Regent Street | Roadside | Diffusion Tube | 100 | 100 | 47 | 43 | 43 | 37 | 35 |
| West Street/Leopold Street. | Roadside | Diffusion Tube | 67 | 67 | 48 | 47 | 47 | 41 | 42 |
| Queens Road Mecca | Roadside | Diffusion Tube | 92 | 92 | 53 | 52 | 49 | 45 | 43 |
| Queens Road Netto | Roadside | Diffusion Tube | 100 | 100 | 47 | 46 | 45 | 44 | 40 |
| 463 Queens Road | Roadside | Diffusion Tube | 83 | 83 | <u>65</u> | <u>62</u> | 60 | 55 | 53 |
| London Road -Sark Road | Roadside | Diffusion Tube | 100 | 100 | 56 | 54 | 54 | 50 | 44 |
| London Road -Ponsfords | Roadside | Diffusion Tube | 100 | 100 | 57 | 56 | 55 | 49 | 46 |

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|--------------------------------------|------------------|----------------|-----|-----|-----------|-----------|-----------|-----------|-----------|
| Chesterfield Rd - Meersbrook Park Rd | Roadside | Diffusion Tube | 92 | 92 | 63 | 56 | 54 | 50 | 48 |
| 513 Chesterfield Road | Roadside | Diffusion Tube | 100 | 100 | 38 | 37 | 36 | 32 | 33 |
| Chesterfield Road - Olivet road | Roadside | Diffusion Tube | 100 | 100 | 53 | 50 | 50 | 43 | 43 |
| Chesterfield Rd -Charles Ashmore Rd | Roadside | Diffusion Tube | 92 | 92 | 32 | 32 | 37 | 34 | 35 |
| Meadowhead Road | Roadside | Diffusion Tube | 67 | 67 | 32 | 31 | 30 | 28 | 27 |
| GH3 | Urban centre | Diffusion Tube | 100 | 100 | 40 | 39 | 38 | 34 | 35 |
| GH3 | Urban centre | Diffusion Tube | 100 | 100 | 38 | 37 | 39 | 34 | 32 |
| GH3 | Urban centre | Diffusion Tube | 100 | 100 | 37 | 37 | 36 | 31 | 31 |
| Ruth Square | urban background | Diffusion Tube | - | - | 21 | 20 | ⌵ | ⌵ | ⌵ |
| Broomhall Road | urban background | Diffusion Tube | - | - | 22 | 21 | ⌵ | ⌵ | ⌵ |
| Hanover Methodist Church | urban background | Diffusion Tube | - | - | 23 | 23 | ⌵ | ⌵ | ⌵ |
| Springfield School | urban background | Diffusion Tube | - | - | 23 | 23 | ⌵ | ⌵ | ⌵ |
| Exeter Drive 1 | urban background | Diffusion Tube | - | - | 27 | 24 | ⌵ | ⌵ | ⌵ |
| Exeter Drive 2 | urban background | Diffusion Tube | - | - | 27 | 25 | ⌵ | ⌵ | ⌵ |
| Arran Road | urban background | Diffusion Tube | 75 | 75 | 18 | 16 | 13 | 13 | 11 |
| Wolfe Road | urban background | Diffusion Tube | - | - | 17 | ⌵ | ⌵ | ⌵ | ⌵ |
| Keats Road | urban background | Diffusion Tube | - | - | 17 | ⌵ | ⌵ | ⌵ | ⌵ |
| Foxhill medical centre | urban background | Diffusion Tube | - | - | 13 | ⌵ | ⌵ | ⌵ | ⌵ |
| Birley Carr Church | urban background | Diffusion Tube | - | - | 16 | ⌵ | ⌵ | ⌵ | ⌵ |
| Chaucer School | urban background | Diffusion Tube | - | - | 23 | ⌵ | ⌵ | ⌵ | ⌵ |
| Housing office | urban background | Diffusion Tube | - | - | 19 | ⌵ | ⌵ | ⌵ | ⌵ |
| 484 Deerlands Avenue | urban background | Diffusion Tube | - | - | 27 | ⌵ | ⌵ | ⌵ | ⌵ |
| Westwick Crescent | urban background | Diffusion Tube | 100 | 100 | 16 | 15 | 14 | 14 | 12 |
| Bocking Lane 1 | urban background | Diffusion Tube | 100 | 100 | 22 | 20 | 19 | 19 | 17 |
| St Peter's Church | urban background | Diffusion Tube | 100 | 100 | 19 | 18 | 17 | 18 | 15 |
| Greenhill Library | urban background | Diffusion Tube | 100 | 100 | 20 | 18 | 14 | 15 | 13 |

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|--------------------------------|------------------|----------------|-----|-----|-----------|-----------|-----------|-----------|-----------|
| Bocking Lane 2 | urban background | Diffusion Tube | 100 | 100 | 28 | 26 | 25 | 25 | 23 |
| Handsworth Road 1 | urban background | Diffusion Tube | 100 | 100 | 40 | 35 | 38 | 36 | 32 |
| Shop Front Parkway R/A | urban background | Diffusion Tube | 100 | 100 | 43 | 39 | 41 | 37 | 39 |
| Wicker | urban background | Diffusion Tube | 92 | 92 | 45 | 45 | 43 | 43 | 46 |
| Lady's Bridge | urban background | Diffusion Tube | 100 | 100 | 52 | 47 | 47 | 37 | 35 |
| Gibraltar Street | urban background | Diffusion Tube | 83 | 83 | 37 | 38 | 30 | 30 | 27 |
| Penistone Road | urban background | Diffusion Tube | 100 | 100 | 56 | 54 | 52 | 46 | 46 |
| Burngreave Road 1 | urban background | Diffusion Tube | 92 | 92 | 41 | 38 | 37 | 35 | 30 |
| Burngreave Road 2 | urban background | Diffusion Tube | 92 | 92 | 42 | 38 | 37 | 35 | 30 |
| Burngreave Road 3 | urban background | Diffusion Tube | 92 | 92 | 43 | 40 | 38 | 35 | 30 |
| Burngreave Street junction | urban background | Diffusion Tube | 92 | 92 | 33 | 30 | 30 | 28 | 23 |
| Burngreave Road 4 | urban background | Diffusion Tube | 92 | 92 | 51 | 50 | 51 | 49 | 42 |
| Junction Road | urban background | Diffusion Tube | - | - | 26 | 22 | 21 | 21 | 21 |
| Osbourne Road | urban background | Diffusion Tube | - | - | 30 | 29 | 28 | 27 | 27 |
| Montgomery Road | urban background | Diffusion Tube | 92 | 92 | 26 | 23 | 21 | 22 | 21 |
| Zeds Nether Edge Road | urban background | Diffusion Tube | 92 | 92 | 23 | 22 | 19 | 23 | 18 |
| Clifford School Psalter Lane | urban background | Diffusion Tube | 92 | 92 | 24 | 21 | 20 | 22 | 19 |
| Hunters Bar Juniors | urban background | Diffusion Tube | 92 | 92 | 21 | 21 | 29 | 30 | 25 |
| Town Street | urban background | Diffusion Tube | 100 | 100 | 45 | 44 | 46 | 38 | 40 |
| Siemens Close | urban background | Diffusion Tube | 100 | 100 | 40 | 37 | 37 | 32 | 34 |
| Greasebro Road | urban background | Diffusion Tube | 100 | 100 | 39 | 34 | 35 | 31 | 29 |
| Ferrars Road | urban background | Diffusion Tube | 100 | 100 | 32 | 27 | 28 | 26 | 25 |
| Ingfield Avenue (Dr's Surgery) | urban background | Diffusion Tube | 100 | 100 | 35 | 33 | 33 | 27 | 29 |
| Sheffield Road back | urban background | Diffusion Tube | 100 | 100 | 35 | 33 | 31 | 29 | 27 |
| Sheffield Road front | urban background | Diffusion Tube | 100 | 100 | 40 | 36 | 36 | 32 | 30 |
| Junior school building | urban background | Diffusion Tube | 83 | 83 | 43 | 41 | 37 | 30 | 42 |

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|--------------------------------------|------------------|----------------|-----|-----|-----------|-----------|-----------|-----------|-----------|
| Junior school field | urban background | Diffusion Tube | 100 | 100 | 50 | 44 | 46 | 34 | 40 |
| 981 Abbeydale Road | urban background | Diffusion Tube | 92 | 92 | 40 | 37 | 36 | 34 | 31 |
| La Scala, Abbeydale Rd /Archer Rd | urban background | Diffusion Tube | 92 | 92 | 52 | 45 | 47 | 43 | 41 |
| 102 Archer Rd | urban background | Diffusion Tube | 75 | 75 | 35 | 32 | 34 | 32 | 29 |
| Chippendale, Abbeydale Rd /Archer Rd | urban background | Diffusion Tube | 83 | 83 | 48 | 44 | 45 | 41 | 37 |
| 879 Abbeydale Rd | urban background | Diffusion Tube | 83 | 83 | 48 | 43 | 41 | 38 | 36 |
| Science Garden | urban background | Diffusion Tube | - | - | ∓ | ∓ | ∓ | ∓ | |
| Millenium Garden | urban background | Diffusion Tube | - | - | ∓ | ∓ | ∓ | ∓ | |
| Hinde House Lane | urban background | Diffusion Tube | 100 | 100 | 27 | 25 | 23 | 25 | 26 |
| Derbyshire Lane | urban background | Diffusion Tube | 100 | 100 | 25 | 21 | 20 | 22 | 18 |
| Winchester Avenue Front | urban background | Diffusion Tube | - | - | 14 | 12 | 11 | ∓ | ∓ |
| Winchester Avenue Back | urban background | Diffusion Tube | - | - | 18 | 16 | 15 | ∓ | ∓ |
| 127 Olive Grove Rd | urban background | Diffusion Tube | - | - | 28 | ∓ | ∓ | ∓ | ∓ |
| Glossop Row, Oughtibridge | urban background | Diffusion Tube | 92 | 92 | ∓ | ∓ | 18 | 17 | ∓ |
| 146 Abbeydale Road | urban background | Diffusion Tube | 58 | 58 | ∓ | ∓ | 45 | 39 | 39 |
| 150 Abbeydale Road | urban background | Diffusion Tube | 67 | 67 | ∓ | ∓ | 24 | 23 | 23 |
| Lidl (Tube 2) | urban background | Diffusion Tube | 92 | 92 | 35 | 31 | 33 | 32 | 31 |
| PO (Tube 3) | urban background | Diffusion Tube | 92 | 92 | 34 | 33 | 32 | 30 | 29 |
| Carr Road (Tube 1) | urban background | Diffusion Tube | 92 | 92 | 40 | 37 | 34 | 34 | 32 |
| SCT Bedford St/Penistone Road | urban background | Diffusion Tube | 100 | 100 | 37 | 35 | 31 | 30 | 26 |
| Regent Court Floor 7, Hillsborough | urban background | Diffusion Tube | 100 | 100 | 23 | 20 | 18 | 20 | 17 |
| Catchbar Lane Traffic Light | urban background | Diffusion Tube | 100 | 100 | 48 | 44 | 47 | 42 | 40 |
| Broughton Rd /Penistone Road | urban background | Diffusion Tube | 100 | 100 | 40 | 32 | 31 | 34 | 24 |
| Walkley Lane Newsagent Rear | urban background | Diffusion Tube | 100 | 100 | 26 | 25 | 30 | 40 | 34 |
| Walkley Lane Newsagent Front | urban background | Diffusion Tube | 83 | 83 | 31 | 28 | 25 | 25 | 39 |

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|---------------------------------|------------------|----------------|-----|-----|-----------|-----------|-----------|-----------|-----------|
| Regent Court Driveway | urban background | Diffusion Tube | 92 | 92 | 26 | 24 | 23 | 22 | 18 |
| Ridgeway Rd | urban background | Diffusion Tube | 67 | 67 | 28 | 26 | 24 | 29 | 23 |
| Houstead Rd | urban background | Diffusion Tube | - | - | 24 | 21 | 21 | 21 | 21 |
| Darnall Post Office | urban background | Diffusion Tube | 100 | 100 | 36 | 32 | 33 | 31 | 29 |
| Well Being, Main Road | urban background | Diffusion Tube | 100 | 100 | 40 | 39 | 39 | 35 | 33 |
| 584 Staniforth Rd | urban background | Diffusion Tube | 100 | 100 | 39 | 36 | 39 | 36 | 31 |
| Gypsy Queen/Sainsburys | urban background | Diffusion Tube | - | - | 30 | 29 | 21 | 21 | 21 |
| Waterthorpe Greenway | urban background | Diffusion Tube | - | - | 23 | 26 | 21 | 21 | 21 |
| Moss Way/Donetsk Way | urban background | Diffusion Tube | - | - | 47 | 46 | 21 | 21 | 21 |
| Moss Way/Birley Spa Lane | urban background | Diffusion Tube | - | - | 36 | 36 | 21 | 21 | 21 |
| Moss Grove | urban background | Diffusion Tube | - | - | 27 | 28 | 21 | 21 | 21 |
| 102 Mill Rd | urban background | Diffusion Tube | - | - | 32 | 31 | 21 | 21 | 21 |
| 128 The Common | urban background | Diffusion Tube | - | - | 35 | 34 | 21 | 21 | 21 |
| Harrods Green Lane | urban background | Diffusion Tube | - | - | 32 | 32 | 21 | 21 | 21 |
| 749 Ecclesall Rd | urban background | Diffusion Tube | 100 | 100 | 44 | 39 | 36 | 34 | 29 |
| 828 Ecclesall Rd | urban background | Diffusion Tube | 100 | 100 | 39 | 36 | 34 | 34 | 29 |
| 946 Ecclesall Rd | urban background | Diffusion Tube | 100 | 100 | 34 | 29 | 29 | 28 | 31 |
| 97 Ecclesall Rd South | urban background | Diffusion Tube | 92 | 92 | 61 | 57 | 53 | 51 | 44 |
| Ecclesall Rd South Bus Terminus | urban background | Diffusion Tube | 92 | 92 | 52 | 41 | 42 | 35 | 32 |
| Ecclesall Junior School | urban background | Diffusion Tube | 100 | 100 | 33 | 32 | 30 | 29 | 26 |
| High Storrs School | urban background | Diffusion Tube | 100 | 100 | 25 | 24 | 22 | 22 | 18 |
| Manchester Rd/Lawson Rd | urban background | Diffusion Tube | - | - | 51 | 47 | 21 | 21 | 21 |
| Witham Rd/Crookes Rd | urban background | Diffusion Tube | - | - | 55 | 46 | 21 | 21 | 21 |
| Newbould La/Glossop Rd | urban background | Diffusion Tube | - | - | 40 | 36 | 21 | 21 | 21 |
| Weston Park | urban background | Diffusion Tube | - | - | 39 | 37 | 21 | 21 | 21 |
| Fulwood Rd PO | urban background | Diffusion Tube | - | - | 70 | 65 | 21 | 21 | 21 |

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|---------------------------------------|------------------|----------------|-----|-----|-----------|-----------|-----------|-----------|-----------|
| Glenwood Cres | urban background | Diffusion Tube | - | - | 22 | 23 | ± | ± | ± |
| Cowley Drive | urban background | Diffusion Tube | - | - | 17 | 17 | ± | ± | ± |
| 745 City Rd | urban background | Diffusion Tube | 100 | 100 | 30 | 28 | 28 | 27 | 24 |
| 8 Elm Tree Court | urban background | Diffusion Tube | 100 | 100 | 31 | 29 | 30 | 27 | 26 |
| Manor Top | urban background | Diffusion Tube | 100 | 100 | 32 | 29 | 27 | 26 | 21 |
| Manor Clinic | urban background | Diffusion Tube | 100 | 100 | 36 | 35 | 31 | 32 | 26 |
| Tinsley GH2-1 | urban background | Diffusion Tube | 100 | 100 | 41 | 39 | 40 | 34 | 35 |
| Tinsley GH2-2 | urban background | Diffusion Tube | 100 | 100 | 41 | 39 | 38 | 34 | 34 |
| Tinsley GH2-3 | urban background | Diffusion Tube | 100 | 100 | 40 | 40 | 39 | 34 | 33 |
| Devonshire Green AURN-1 | urban background | Diffusion Tube | 92 | 92 | ± | 28 | 27 | 26 | 24 |
| Devonshire Green AURN-2 | urban background | Diffusion Tube | 92 | 92 | ± | 29 | 29 | 25 | 23 |
| Devonshire Green AURN-3 | urban background | Diffusion Tube | 92 | 92 | ± | 29 | 29 | 25 | 22 |
| Attercliffe - Terry Street | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 47 | 41 |
| Attercliffe - Bodmin Street | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 50 | 44 |
| Attercliffe - Staniforth Road | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 44 | 39 |
| Attercliffe Road (Tesco) | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 41 | 38 |
| Savile Street East (Gripple) | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 34 | 29 |
| Brightside La -Stevenson Rd | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 44 | 38 |
| Brightside La - Forgemaster | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 48 | 45 |
| Brightside La - (Jenkin Rd | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 57 | 50 |
| Meadowhall Road (M1 34N) | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 54 | 47 |
| Sheffield Road (M1 34S) | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 52 | 48 |
| Chesterfield Road South/Lowedges Road | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 37 | 34 |
| Bochum Parkway /Norton La | Urban Background | Diffusion Tube | 100 | 100 | ± | ± | ± | 27 | 27 |
| 265 Abbeydale Road | Urban Background | Diffusion Tube | 100 | 100 | ± | 38 | 36 | 36 | 33 |

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|---------------------------------|------------------|----------------|-----|-----|---|----|----|----|----|
| Butterworth Cycles | Urban Background | Diffusion Tube | 92 | 92 | ≡ | 44 | 44 | 42 | 41 |
| 14 Fir Street | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 16 | 15 | 14 |
| Gerry's Bakery, South Road | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 29 | 26 | 25 |
| Woodseats School | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | 34 | 30 |
| Woodseats School traffic lights | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | 39 | 34 |
| Barkers Pool Taxi Rank | Urban Centre | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | 47 | 42 |
| Tinsley Meadows School | Urban Background | Diffusion Tube | 75 | 75 | ≡ | ≡ | ≡ | ≡ | 25 |
| Silverdale School | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | ≡ | 14 |
| Huntley Road Ecclesall Infants | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | ≡ | 14 |
| Don Valley, Leeds Road | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | ≡ | 26 |
| Beeley Wood Road | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 42 | 41 | 38 |
| Winster Road | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 57 | 55 | 52 |
| Owlerton Green | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 42 | 41 | 36 |
| Hillsborough Barracks | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 32 | 33 | 29 |
| Bamforth Street | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 41 | 38 | 34 |
| Neepsend Lane | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | 38 | 36 | 34 |
| DEFRA Barnsley Road | Roadside | Automatic | 97 | 97 | ≡ | ≡ | ≡ | ≡ | 38 |
| DEFRA Tinsley | Urban Background | Diffusion Tube | 100 | 100 | ≡ | ≡ | ≡ | ≡ | 30 |
| Crookes Road/Hoole Road | Roadside | Diffusion Tube | 76 | 76 | ≡ | ≡ | ≡ | ≡ | 36 |
| Newbold Lane/Watson Road | Roadside | Diffusion Tube | 83 | 83 | ≡ | ≡ | ≡ | ≡ | 33 |
| HSBC S10 3BE | Roadside | Diffusion Tube | 83 | 83 | ≡ | ≡ | ≡ | ≡ | 51 |

☒ Diffusion tube data has been bias corrected

☒ Annualisation has been conducted where data capture is <75%

Notes:

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

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(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%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

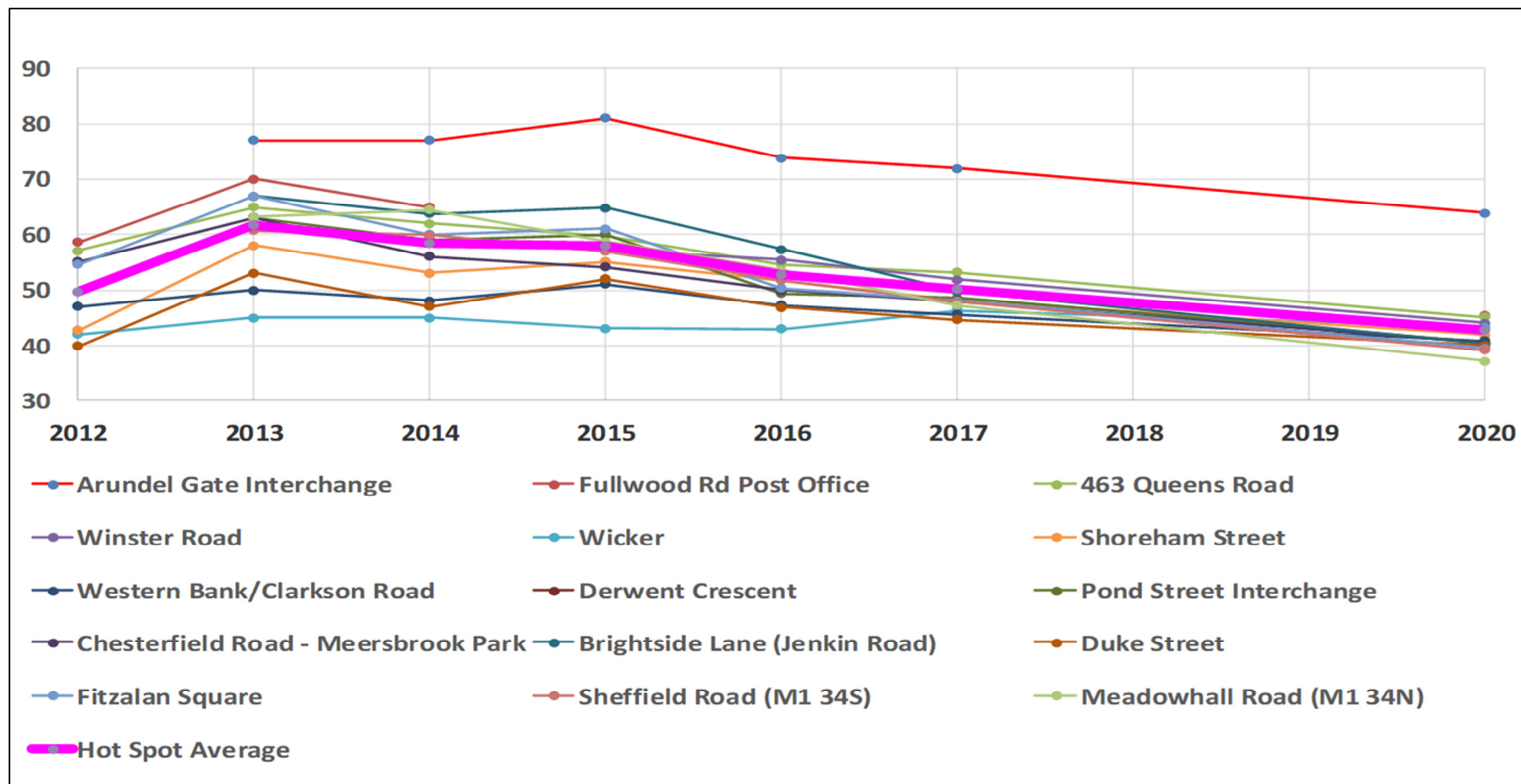


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾ | | | | |
|-------------------------|------------------|-----------------|---|--|--|---------------|---------------|----------------|----------------|
| | | | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| Firvale School | Urban Background | Automatic | 72 | 72 | 0(84) | 1(76) | 0 | 0 (94) | 0 (88) |
| Tinsley Infant School | Urban Industrial | Automatic | 66 | 66 | 0(140) | 1(104) | 0(100) | 0 (105) | 0 (110) |
| Lowfield School | Urban Background | Automatic | 60 | 60 | 12(220) | 4(141) | 0 | 0 (123) | 1 (129) |
| Wicker | Urban Background | Automatic | 52 | 52 | 0(116) | - | 0(99) | 0 (108) | 0 (100) |
| King Egberts | Urban Background | Automatic | 58 | 58 | - | - | 0(41) | 0 (63) | 0 (55) |
| Waingate ⁽⁴⁾ | Roadside | Automatic | - | - | - | - | - | - | - |
| Sheffield Centre | Urban Background | Automatic | - | - | 0(106) | - | - | - | - |
| Devonshire Green | Urban Background | Automatic | 98 | 98 | - | 0(119) | 0(98) | 0 (106) | 0 |
| Sheffield Tinsley | Urban Industrial | Automatic | 98 | 98 | 0(109) | 0(120) | 0(114) | 0 (91) | 0 |
| Barnsley Road | Roadside | Automatic | 97 | 97 | - | - | - | - | 0 |

Notes:

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(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%).

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

(4) Station relocation is in progress

Table A.5 – Annual Mean PM₁₀ Monitoring Results

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|---------------------------------|------------------|---|--|--|------|------|------|-----------|
| | | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| Firvale School | Urban Background | 59 | 59 | 20 | 19 | 17 | 17 | 13 |
| Tinsley Infant School | Urban Industrial | 92 | 92 | 18 | 17 | 18 | 21 | 17 |
| Lowfield School | Urban Background | 92 | 92 | 24 | 25 | 20 | 22 | 16 |
| Wicker | Urban Background | 65 | 65 | 20 | 17 | 18 | 18 | 15 |
| King Egberts | Urban Background | 75 | 75 | - | 17 | 11 | 15 | 11 |
| Waingate ⁽⁴⁾ | Roadside | - | - | 24 | - | - | - | - |
| Sheffield Centre ⁽⁵⁾ | Urban Background | - | - | 24 | - | - | - | - |
| Devonshire Green | Urban Background | 96 | 96 | - | 21 | 18 | 18 | 16 |

☐ Annualisation has been conducted where data capture is <75%

Notes:

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

(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%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Station relocation is in progress

(5) Station now moved to Devonshire Green

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾ | | | | |
|-----------------------|------------------|---|--|---|--------------|--------------|---------------|---------------|
| | | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| Firvale School | Urban Background | 60 | 60 | 9(35) | 2(29) | 0(29) | 3 (31) | 0 (27) |
| Tinsley Infant School | Urban Industrial | 58 | 58 | 4(30) | 1(25) | 0(27) | 1 (33) | 3 (33) |
| Lowfield School | Urban Background | 93 | 93 | 17(41) | 5(38) | 0(34) | 7 (39) | 3 |
| Wicker | Urban Background | 65 | 65 | 7(34) | 0(31) | 0(30) | 2 (32) | 4 (26) |
| King Ecgberts | Urban Background | 77 | 77 | - | 0(26) | 1(18) | 0 (26) | 1 (22) |
| Waingate | Roadside | - | - | 13(43) | - | - | - | - |
| Sheffield Centre | Urban Background | - | - | 12(38) | - | - | - | - |
| Devonshire Green | Urban Background | 96 | 96 | - | 11 | 1(30) | 3 | 4 |

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

(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%).

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

(4) Station relocation is in progress

(5) Station now moved to Devonshire Green

Table A.7 – PM_{2.5} Monitoring Results

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|---------------------------------|--------------|---|--|---|------|------|------|------|
| | | | | 2013 | 2014 | 2015 | 2016 | 2017 |
| Tinsley Infant School | Industrial | 99 | 99 | 10 | 12 | 12 | 12 | 10 |
| Sheffield Centre ⁽⁴⁾ | Urban Centre | - | - | 17 | - | - | - | - |
| Devonshire Green | Urban Centre | 96 | 96 | - | 12 | 9 | 9 | 9 |

☒ Annualisation has been conducted where data capture is <75%

Notes:

(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%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Station now moved to Devonshire Green

Table A.8 – SO₂ Monitoring Results

| Site ID | Site Type | Valid Data Capture for monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2017 (%) ⁽²⁾ | Number of Exceedances 2017 (percentile in bracket) ⁽³⁾ | | |
|-----------------|------------------|---|--|--|--|---|
| | | | | 15-minute Objective (266 µg/m ³) | 1-hour Objective (350 µg/m ³) | 24-hour Objective (125 µg/m ³) |
| Lowfield School | Urban Background | 38 | 38 | 0 (7) | 0 (6) | 0 (4) |

Notes:

Exceedances of the SO₂ objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

(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%).

(3) If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2017

Table B.1 – NO₂ Monthly Diffusion Tube Results – 2017

| Site ID | NO ₂ Mean Concentrations (µg/m ³) | | | | | | | | | | | | Annual Mean | | |
|---|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|--|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (factor) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
| | | | | | | | | | | | | | | | |
| Warren Lane | 27 | 39 | 37 | 22 | 29 | 19 | 19 | 20 | 25 | 25 | 22 | 26 | 25.8 | 25.1 | 25.1 |
| 7 Bawtry Gate | 47 | 42 | 44 | 36 | 37 | 30 | 34 | 47 | 30 | 54 | 38 | 35 | 39.5 | 38.3 | 34.9 |
| 47 Bawtry Road | 63 | 40 | 57 | 42 | 41 | 33 | 37 | 46 | 32 | 58 | 48 | 40 | 44.8 | 43.4 | 39.5 |
| 109 Bawtry Road | 57 | 48 | 45 | 36 | 30 | 27 | 30 | 46 | 26 | 49 | 39 | 37 | 39.2 | 38.0 | 34.5 |
| Ecclesfield Road Low Wincobank | 52 | 46 | 41 | 31 | 38 | 27 | 29 | 37 | 27 | 45 | 36 | 33 | 36.8 | 35.7 | 35.7 |
| Attercliffe Road | 51 | 48 | 45 | 46 | 42 | 35 | 41 | 43 | 34 | 53 | 41 | 40 | 43.3 | 42.0 | 42.0 |
| Hatfield House Lane, Lane Top (Prev Attcliff Rd duplicate and Fir Vale) | 29 | 39 | 39 | 31 | 29 | 24 | 28 | 32 | 22 | 35 | 32 | 28 | 30.7 | 29.7 | 29.7 |
| Barnsley Rd Fir Vale | 54 | 60 | 60 | 42 | nr | nr | 46 | 43 | 35 | nr | 33 | 29 | 44.7 | 43.3 | 39.4 |
| Upwell Street | 46 | 46 | 41 | 36 | 44 | 26 | 36 | 34 | 22 | 39 | 33 | 29 | 36.0 | 34.9 | 34.9 |
| Burngreave Road/Minna Road | 41 | 37 | 34 | 31 | 28 | 22 | 28 | 31 | 24 | 37 | 33 | 30 | 31.3 | 30.4 | 27.7 |
| Loxley New Road | 41 | 38 | 35 | 37 | 40 | 26 | 29 | 29 | 23 | 34 | 31 | 26 | 32.4 | 31.4 | 31.4 |
| Loxley New Road-duplicate | 43 | 41 | 34 | 39 | 40 | 23 | 30 | 28 | 18 | 35 | 31 | 28 | 32.5 | 31.5 | 31.5 |

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|------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|--------------------|--------------------|
| Bowden Wood Close | 52 | 41 | 38 | 34 | 32 | 27 | 27 | 35 | 21 | 35 | 29 | 28 | 33.3 | 32.3 | 32.3 |
| Parkway Broad Lane | 46 | nr | 49 | 38 | 36 | 36 | 29 | 35 | 48 | 24 | 46 | 50 | 39.7 | 38.5 | 38.5 |
| Parkway Broad Lane duplicate | 50 | 46 | 42 | 36 | 41 | 38 | 32 | 31 | 43 | 25 | 45 | 56 | 40.4 | 39.2 | 39.2 |
| Exchange Street | 38 | 45 | 36 | 30 | 33 | 30 | 25 | 27 | 45 | 21 | 39 | 45 | 34.5 | 33.5 | 33.5 |
| Duke Street | 48 | 53 | 49 | 40 | 41 | 51 | 41 | 38 | 52 | 31 | 54 | 48 | 45.5 | 44.1 | 44.1 |
| Waingate | 50 | 57 | 51 | 41 | 43 | 45 | 48 | 40 | 54 | 29 | 53 | 52 | 46.9 | 45.5 | 45.5 |
| Fitzalan Square | 54 | 57 | 50 | 50 | 50 | 51 | 36 | 40 | 54 | 28 | 57 | 56 | 48.6 | 47.1 | 47.1 |
| Barkers Pool | 38 | 35 | nr | 23 | 27 | 21 | nr | 19 | 30 | nr | 35 | 43 | 30.1 | 29.2 | 29.2 |
| Granville Road | 37 | 38 | 34 | 34 | 29 | 31 | 28 | 26 | 43 | 20 | 42 | 45 | 33.9 | 32.9 | 29.9 |
| Fielding Rd | 51 | 54 | 41 | 33 | 38 | 27 | 33 | 37 | 25 | 45 | 37 | 40 | 38.4 | 37.3 | 34.0 |
| Broomspring Close | 25 | 30 | 26 | 18 | 18 | 15 | 13 | 16 | 29 | 14 | 29 | 33 | 22.2 | 21.5 | 19.6 |
| University Roundabout | 59 | 50 | 47 | 41 | 36 | 43 | 34 | 40 | 55 | 26 | 52 | 44 | 43.9 | 42.6 | 38.7 |
| Netherthorpe School | 47 | 42 | 39 | 31 | 32 | 33 | 25 | 28 | 43 | 23 | 45 | 58 | 37.2 | 36.1 | 32.9 |
| Upper Hanover Street | 53 | 45 | 46 | 31 | 42 | 34 | 26 | 29 | 43 | 21 | 52 | 58 | 40.0 | 38.8 | 35.3 |
| Shoreham St | 44 | 59 | 54 | 42 | 43 | 52 | 32 | 41 | 61 | 29 | 66 | 65 | 49.0 | 47.5 | 43.2 |
| St Marys Road | 39 | 46 | 39 | 40 | 35 | 35 | 26 | 31 | 50 | 24 | 47 | 49 | 38.4 | 37.3 | 37.3 |
| Chesterfield Road /Woodseats Road | 46 | 47 | 41 | 37 | 34 | 36 | 25 | 25 | 44 | 24 | 45 | 43 | 37.3 | 36.1 | 32.8 |
| Queens Road/ Edmund Rd | 53 | 47 | 36 | 34 | 32 | 28 | nr | 27 | 42 | nr | 54 | 55 | 40.8 | 39.6 | 39.6 |
| Abbeydale Road /Carter Knowle Road | 46 | 51 | 46 | 42 | 37 | 48 | 33 | 32 | 50 | 22 | 43 | 47 | 41.4 | 40.2 | 36.6 |
| Ecclesall Road | 49 | 51 | 45 | 40 | 37 | 42 | 28 | 28 | 51 | 24 | 46 | 52 | 41.1 | 39.9 | 39.9 |
| Arundel Gate Interchg | 81 | 93 | 76 | 68 | 63 | 74 | 57 | 63 | 87 | 50 | 81 | 88 | 73.4 | <u>71.2</u> | <u>71.2</u> |
| Pond Street Interchg | 64 | 59 | 51 | 44 | 53 | 46 | 36 | 36 | 59 | 31 | 50 | 65 | 49.5 | 48.0 | 48.0 |
| Meadowhall Interchg | 45 | 50 | 44 | 33 | 44 | 30 | 38 | 43 | 34 | 46 | 37 | 39 | 40.3 | 39.0 | 39.0 |
| ACE | 41 | 33 | 33 | 29 | 29 | 22 | 24 | 29 | 20 | 35 | 30 | 32 | 29.8 | 28.9 | 28.9 |

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|---------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| ACE | 32 | 37 | 28 | 29 | 25 | 19 | 22 | 27 | 20 | 36 | 30 | 32 | 28.1 | 27.2 | 27.2 |
| Hillbro Corner | 40 | 35 | 36 | 26 | 33 | 19 | nr | 26 | 18 | 35 | 27 | 31 | 29.6 | 28.7 | 26.1 |
| 82 Bawtry Road | 41 | 34 | 34 | 27 | 25 | 22 | 25 | 31 | 24 | 40 | 35 | 34 | 31.0 | 30.1 | 27.4 |
| 98 Bawtry Road | 63 | 55 | 49 | 36 | 39 | 34 | 18 | 47 | 35 | 56 | 44 | 45 | 43.4 | 42.1 | 38.3 |
| Coldwell Lane /Sandygate Road | 31 | 24 | 21 | 18 | 20 | 14 | 13 | 19 | 19 | 15 | 17 | 19 | 19.2 | 18.6 | 16.9 |
| Manchester Road /Sandygate Road | 36 | 25 | 24 | 16 | 19 | 18 | 15 | 19 | 14 | 17 | 22 | 28 | 21.1 | 20.5 | 20.5 |
| Manchester Road/Sale Hill | 50 | 44 | 38 | 31 | 37 | 30 | 26 | 37 | 27 | nr | 32 | 41 | 35.7 | 34.7 | 31.5 |
| Witham Road/Crookes | 66 | 51 | 56 | 42 | 52 | 41 | 37 | 50 | 42 | 42 | 43 | 48 | 47.5 | 46.1 | 42.0 |
| Witham Rd/Moor Oaks | 53 | 45 | 49 | 33 | 46 | 33 | 26 | 37 | 36 | 34 | 28 | 34 | 37.8 | 36.7 | 33.4 |
| Western Bank /Northumberland Road | 45 | 38 | 40 | 34 | 32 | 30 | 22 | 32 | 24 | 26 | 31 | 38 | 32.7 | 31.7 | 31.7 |
| Western Bank/Clarkson Road | 59 | 54 | 55 | 40 | 52 | 43 | 38 | 52 | 36 | 44 | 42 | 49 | 47.0 | 45.6 | 41.5 |
| Brook Hill/Favell Road | 43 | 34 | 36 | 28 | 36 | 25 | 23 | 30 | 23 | 24 | 32 | 37 | 30.9 | 30.0 | 30.0 |
| Upper Hanover Street/Hounsfield Rd | 43 | 34 | 41 | 26 | 31 | 23 | 19 | 24 | 29 | 22 | 28 | 35 | 29.6 | 28.7 | 28.7 |
| Crimicar Road/Brookhouse Hill | 34 | 27 | 25 | 20 | 24 | 21 | 17 | 23 | 15 | 19 | 22 | 24 | 22.6 | 21.9 | 19.9 |
| Fulwood Road/Tom Lane | 30 | 25 | 23 | 18 | 19 | 14 | 11 | 15 | 8 | 14 | 16 | 23 | 18.0 | 17.5 | 15.9 |
| Fulwood Road/Gladstone Road | 38 | 30 | 27 | 26 | 23 | 21 | 19 | 21 | 23 | 20 | 20 | 28 | 24.7 | 23.9 | 21.8 |
| Fulwood Road/Ashdell Road | 39 | 29 | 32 | 24 | 21 | 18 | 15 | 18 | 21 | nr | nr | 26 | 24.3 | 23.6 | 21.5 |
| Glossop Road/Peel Rd | nr | 29 | nr | 24 | 25 | 21 | 16 | 21 | 22 | 19 | 26 | 31 | 23.4 | 22.7 | 20.6 |
| Glossop Road /Westbourne Road | 50 | 47 | 43 | 40 | 43 | 30 | 26 | 34 | 36 | 28 | 34 | 38 | 37.4 | 36.3 | 33.1 |
| Glossop Road /Clarkehouse Road | nr | nr | 37 | nr | 30 | 27 | 22 | 29 | 27 | 26 | nr | 36 | 29.3 | 28.4 | 28.4 |
| West Street/Regent | 46 | 44 | 48 | 41 | 37 | 28 | 27 | 32 | 31 | 25 | 32 | 37 | 35.7 | 34.6 | 34.6 |

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| Street | | | | | | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| West Street/Leopold Street | 50 | 47 | 55 | 45 | 49 | 40 | 36 | 46 | 37 | 29 | 38 | 48 | 43.3 | 42.0 | 42.0 |
| Queens Road Mecca | 54 | 50 | 50 | 44 | 52 | 30 | nr | 43 | 37 | 32 | 41 | 51 | 44.0 | 42.7 | 42.7 |
| Queens Road Netto | 59 | 45 | 45 | 40 | 46 | 32 | nr | 36 | 35 | 30 | 38 | 47 | 41.2 | 39.9 | 39.9 |
| 463 Queens Road | 71 | 66 | 62 | 54 | 62 | 46 | 46 | 52 | 46 | 40 | 48 | 58 | 54.3 | 52.6 | 47.7 |
| London Road -Sark Rd | 63 | 52 | 51 | 48 | 54 | 36 | 33 | 43 | 36 | 33 | 36 | 50 | 44.6 | 43.2 | 43.2 |
| London Rd -Ponsfords | 56 | 57 | 54 | 48 | 47 | 43 | 36 | 48 | 43 | 39 | 44 | 49 | 47.0 | 45.6 | 45.6 |
| Chesterfield Road - Meersbrook Park Rd | 65 | 55 | 52 | 41 | 55 | 39 | nr | 46 | 45 | 37 | 50 | 52 | 48.8 | 47.4 | 43.1 |
| 513 Chesterfield Road | 62 | 36 | 38 | 30 | 33 | 26 | 24 | 30 | 28 | 28 | 30 | 37 | 33.5 | 32.5 | 32.5 |
| Chesterfield Road - Olivet road | 72 | 49 | 49 | 46 | 47 | 36 | 29 | 43 | 39 | 33 | 36 | 42 | 43.4 | 42.1 | 38.3 |
| Chesterfield Road - Charles Ashmore Rd | 55 | 39 | 42 | 36 | 34 | 29 | 23 | 34 | 30 | 28 | 38 | 41 | 35.8 | 34.7 | 31.5 |
| Meadowhead Road | 40 | 29 | 34 | 28 | 24 | 23 | 22 | 26 | 28 | 22 | 30 | 30 | 28.0 | 27.2 | 24.8 |
| GH3 | 52 | 42 | 37 | 35 | 44 | 24 | 24 | 32 | 29 | 27 | 29 | 53 | 35.7 | 34.6 | 34.6 |
| GH3 | 52 | 33 | 33 | 26 | 37 | 18 | 23 | 27 | 31 | 29 | 38 | 50 | 33.1 | 32.1 | 32.1 |
| GH3 | 45 | 37 | 36 | 31 | 34 | 19 | 21 | 31 | 25 | 25 | 23 | 47 | 31.2 | 30.2 | 30.2 |
| Arran Road | nr | nr | 7 | 12 | 12 | 8 | 10 | 13 | 17 | 8 | 12 | 15 | 11.4 | 11.1 | 11.1 |
| Westwick Crescent | 25 | 17 | 16 | 8 | 11 | 7 | 9 | 10 | 10 | 8 | 12 | 14 | 12.3 | 11.9 | 11.9 |
| Bocking Lane 1 | 32 | 27 | 19 | 14 | 14 | 11 | 11 | 15 | 14 | 15 | 18 | 20 | 17.5 | 17.0 | 15.5 |
| St Peter's Church | 27 | 23 | 12 | 11 | 16 | 10 | 11 | 12 | 10 | 11 | 17 | 18 | 14.8 | 14.4 | 14.4 |
| Greenhill Library | 24 | 20 | 16 | 11 | 13 | 9 | 9 | 11 | 12 | 9 | 13 | 16 | 13.6 | 13.2 | 13.2 |
| Bocking Lane 2 | 28 | 29 | 26 | 21 | 20 | 19 | 18 | 24 | 20 | 21 | 26 | 25 | 23.1 | 22.4 | 22.4 |
| Handsworth Road 1 | 36 | 28 | 37 | 34 | 33 | 23 | 30 | 32 | 22 | 29 | 40 | 44 | 32.3 | 31.4 | 31.4 |
| Shop Front Parkway R/A | 44 | 42 | 46 | 45 | 30 | 28 | 41 | 39 | 35 | 37 | 45 | 50 | 40.2 | 39.0 | 35.5 |
| Wicker | 54 | 52 | 46 | 41 | 39 | 34 | 43 | 50 | 52 | 48 | 58 | 50 | 47.3 | 45.8 | 45.8 |

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| | | | | | | | | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| Lady's Bridge | nr | 45 | 40 | 26 | 29 | 28 | 26 | 35 | 38 | 38 | 44 | 43 | 35.6 | 34.6 | 31.5 |
| Gibraltar Street | nr | nr | 32 | 25 | 24 | 24 | 20 | 24 | 32 | 30 | 34 | 33 | 27.8 | 27.0 | 27.0 |
| Penistone Road | 61 | 55 | 47 | 38 | 41 | 35 | 38 | 44 | 49 | 50 | 56 | 52 | 47.2 | 45.8 | 45.8 |
| Burngreave Road 1 | 38 | 40 | 34 | 29 | 27 | 23 | 25 | 27 | 25 | 43 | 32 | 27 | 30.8 | 29.9 | 27.2 |
| Burngreave Road 2 | 44 | 44 | 30 | 29 | 31 | 22 | 24 | 28 | 23 | 40 | 25 | 27 | 30.6 | 29.7 | 27.0 |
| Burngreave Road 3 | 40 | 46 | 35 | 28 | 33 | 22 | 26 | 27 | 20 | 41 | 28 | 27 | 31.1 | 30.2 | 27.5 |
| Burngreave Street junction | 22 | 36 | 27 | 22 | 16 | 17 | 18 | 21 | 20 | 31 | 26 | 24 | 23.3 | 22.6 | 20.6 |
| Burngreave Road 4 | 51 | 62 | 47 | 45 | 42 | 35 | 34 | 40 | 32 | 51 | 40 | 38 | 43.1 | 41.8 | 38.1 |
| Montgomery Road | 33 | 26 | 18 | nr | 17 | 15 | 15 | 16 | 19 | nr | 25 | 26 | 21.0 | 20.4 | 20.4 |
| Zeds Nether Edge Rd | 30 | 25 | 16 | nr | 17 | 14 | 13 | 13 | 17 | 13 | nr | 24 | 18.2 | 17.7 | 17.7 |
| Clifford School Psalter Lane | 32 | 27 | 20 | nr | 15 | 14 | 15 | 14 | 18 | 15 | 22 | 21 | 19.4 | 18.8 | 17.1 |
| Hunters Bar Juniors | 41 | 26 | 27 | | 25 | 21 | 22 | 21 | 25 | 18 | 30 | 30 | 26.0 | 25.2 | 22.9 |
| Town Street | 46 | 47 | 43 | 47 | 32 | 35 | 36 | 38 | 40 | 37 | 40 | 48 | 40.8 | 39.5 | 39.5 |
| Siemens Close | 38 | 34 | 37 | 40 | 24 | 29 | 30 | 35 | 37 | 33 | 36 | 41 | 34.5 | 33.5 | 33.5 |
| Greasebro Road | 41 | 33 | 30 | 31 | 26 | 26 | 26 | 27 | 28 | 27 | 30 | 34 | 29.9 | 29.0 | 29.0 |
| Ferrars Road | 42 | 27 | 27 | 25 | 21 | 16 | 18 | 24 | 25 | 24 | 27 | 32 | 25.7 | 24.9 | 24.9 |
| Sheffield Road back | 31 | 32 | 28 | 16 | 22 | 23 | 24 | 26 | nr | 30 | 30 | 37 | 27.2 | 26.4 | 26.4 |
| Sheffield Road front | 38 | 30 | 30 | 28 | 24 | 22 | 27 | 33 | 33 | 31 | 30 | 38 | 30.3 | 29.4 | 29.4 |
| Junior school building | 41 | 38 | 41 | 48 | 43 | 40 | 39 | 49 | 46 | 41 | 39 | 52 | 43.1 | 41.8 | 38.0 |
| Junior school field | 44 | 36 | 42 | 45 | 32 | 36 | 34 | 42 | 42 | 45 | 42 | 51 | 40.9 | 39.7 | 36.1 |
| 981 Abbeydale Road | 45 | 33 | 34 | 30 | 35 | 28 | 25 | 27 | 29 | 26 | 36 | 36 | 32.0 | 31.0 | 31.0 |
| La Scala, Abbeydale Rd /Archer Rd | 51 | 39 | 38 | 46 | 46 | 45 | 36 | 36 | 42 | 33 | 47 | 44 | 41.9 | 40.7 | 40.7 |
| 102 Archer Rd | 43 | nr | 24 | 28 | nr | 22 | 23 | 26 | 27 | nr | 37 | 38 | 29.8 | 28.9 | 28.9 |
| Chippendale, Abbeydale Rd /Archer | 49 | 41 | 38 | 41 | 40 | 32 | 30 | nr | 33 | 28 | 46 | 42 | 38.2 | 37.0 | 37.0 |

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| Rd | | | | | | | | | | | | | | | |
|------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| 879 Abbeydale Rd | 48 | 41 | 33 | 37 | 40 | 32 | 29 | 35 | 36 | 25 | 38 | 44 | 36.5 | 35.4 | 35.4 |
| Hinde House Lane | 38 | 34 | 29 | 26 | 21 | 16 | 15 | nr | 23 | 23 | 34 | 36 | 26.8 | 26.0 | 26.0 |
| Derbyshire Lane | 31 | 24 | 17 | 17 | 21 | 10 | 12 | 12 | 19 | 13 | 23 | 21 | 18.3 | 17.8 | 17.8 |
| 146 Abbeydale Road | 51 | 49 | 42 | 38 | 39 | 33 | 27 | 31 | 40 | 34 | 47 | 45 | 39.7 | 38.5 | 38.5 |
| 150 Abbeydale Road | 37 | 30 | 26 | 20 | 22 | 16 | 16 | 18 | 23 | 22 | 28 | 24 | 23.5 | 22.8 | 22.8 |
| Lidl (Tube 2) | 46 | 35 | 34 | 27 | 26 | nr | 24 | 31 | nr | 29 | 37 | 32 | 32.1 | 31.1 | 31.1 |
| PO (Tube 3) | 46 | 34 | 36 | 26 | 19 | 21 | 19 | 26 | 32 | 29 | 41 | 31 | 30.0 | 29.1 | 29.1 |
| Carr Road (Tube 1) | 48 | 33 | 27 | 30 | 23 | 25 | 25 | 30 | 33 | 31 | 44 | 39 | 32.3 | 31.4 | 28.6 |
| SCT Bedford St /Penistone Road | 37 | 27 | 29 | 26 | 30 | 26 | 20 | 19 | 24 | 23 | 29 | 31 | 27.6 | 26.8 | 26.8 |
| Regent Court Floor 7, Hillsborough | 27 | 18 | 20 | 15 | 16 | 12 | 13 | 12 | 18 | 17 | 19 | 20 | 18.1 | 17.5 | 17.5 |
| Catchbar Lane Traffic Light | 47 | 43 | 47 | 45 | nr | 40 | 33 | 33 | 37 | 45 | 40 | 38 | 41.5 | 40.3 | 40.3 |
| Broughton Rd /Penistone Rd | 41 | 30 | 26 | 24 | 34 | 16 | 20 | 16 | 25 | 21 | 25 | 20 | 24.8 | 24.1 | 24.1 |
| Walkley Lane Newsagent Rear | 44 | 41 | 32 | 35 | nr | 29 | 28 | 28 | 34 | 38 | 32 | 45 | 35.9 | 34.8 | 34.8 |
| Walkley Lane Newsagent Front | 40 | 30 | 51 | 41 | 40 | nr | 40 | 34 | 40 | 48 | 36 | 39 | 38.1 | 36.9 | 36.9 |
| Regent Court Driveway | 26 | 25 | 21 | 16 | 21 | 14 | 14 | 14 | 15 | 18 | 21 | 20 | 19.5 | 18.9 | 17.2 |
| Darnall Post Office | 37 | 29 | 31 | 23 | 28 | 24 | 27 | 31 | 29 | 26 | 36 | 39 | 30.0 | 29.1 | 29.1 |
| Well Being, Main Road | 47 | 36 | 37 | 32 | 32 | 24 | 35 | 34 | 29 | 28 | 34 | 38 | 33.8 | 32.8 | 32.8 |
| 584 Staniforth Rd | 43 | 34 | 35 | 31 | 29 | 23 | 29 | 30 | 27 | 28 | 37 | 38 | 32.0 | 31.0 | 31.0 |
| 749 Ecclesall Rd | 49 | 33 | 35 | 32 | 32 | 24 | 24 | 21 | 31 | 24 | 25 | 30 | 30.0 | 29.1 | 29.1 |
| 828 Ecclesall Rd | 45 | 32 | 34 | 26 | 26 | 29 | 22 | 21 | 32 | 23 | 31 | 31 | 29.3 | 28.5 | 28.5 |
| 946 Ecclesall Rd | 44 | 29 | 31 | | | 53 | 21 | 20 | 32 | 24 | 31 | 31 | 31.6 | 30.7 | 30.7 |
| 97 Ecclesall Rd South | 68 | 46 | 54 | 48 | 44 | 38 | 37 | 33 | 47 | 39 | 34 | 55 | 45.3 | 43.9 | 43.9 |

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|---------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| Ecclesall Rd South Bus Terminus | nr | nr | nr | nr | 32 | 35 | 30 | 29 | 38 | 30 | 28 | 36 | 32.3 | 31.3 | 28.5 |
| Ecclesall Junior School | 47 | 27 | 32 | 22 | 26 | 23 | 19 | 19 | 29 | 22 | 24 | 29 | 26.6 | 25.8 | 23.4 |
| High Storrs School | 38 | 24 | 23 | 16 | 14 | 16 | 13 | 9 | 18 | 11 | 13 | 25 | 18.3 | 17.8 | 16.2 |
| 745 City Road | 29 | 30 | 25 | 23 | 24 | 16 | 21 | 23 | 24 | 21 | 29 | 25 | 24.2 | 23.4 | 23.4 |
| 8 Elm Tree Court | 29 | 29 | 28 | 28 | nr | 20 | 22 | 26 | 26 | 27 | 32 | 30 | 27.0 | 26.2 | 26.2 |
| Manor Top | 26 | 20 | 30 | 18 | 26 | 16 | 19 | 17 | 22 | 18 | 26 | 23 | 21.8 | 21.1 | 19.2 |
| Manor Clinic | 39 | 34 | 33 | 24 | 27 | 19 | 22 | 21 | 24 | 22 | 30 | 25 | 26.7 | 25.9 | 23.6 |
| Tinsley GH2-1 | 47 | 37 | 39 | 28 | 25 | 30 | 27 | nr | 38 | 38 | 43 | 43 | 35.9 | 34.8 | 34.8 |
| Tinsley GH2-2 | 41 | 36 | 40 | 28 | 25 | 30 | 25 | nr | 36 | 40 | 43 | 39 | 34.8 | 33.8 | 33.8 |
| Tinsley GH2-3 | 45 | 36 | 40 | 29 | 26 | 32 | 29 | 28 | 34 | 38 | 39 | 31 | 33.9 | 32.9 | 32.9 |
| Devonshire Green AURN-1 | 33 | 35 | 28 | 18 | 20 | 18 | 20 | 19 | 25 | 23 | 29 | 24 | 24.3 | 23.6 | 23.6 |
| Devonshire Green AURN-2 | 38 | 31 | 28 | 19 | 19 | 16 | 19 | 18 | 24 | 22 | 27 | 23 | 23.7 | 23.0 | 23.0 |
| Devonshire Green AURN-3 | 34 | 21 | 27 | 21 | 18 | 18 | 19 | 19 | 23 | 24 | 25 | 25 | 22.8 | 22.1 | 22.1 |
| Attercliffe - Terry St | 44 | 51 | 49 | 45 | 35 | 35 | 27 | 43 | 38 | 38 | 45 | 48 | 41.5 | 40.3 | 40.3 |
| Attercliffe - Bodmin St | 60 | 58 | 57 | 45 | 43 | 43 | 27 | 41 | 41 | 37 | 46 | 41 | 44.9 | 43.6 | 43.6 |
| Attercliffe - Staniforth Road | nr | 52 | 47 | 37 | 38 | 42 | 30 | 40 | 40 | 33 | 39 | 41 | 39.9 | 38.7 | 38.7 |
| Attercliffe Rd (Tesco) | 55 | 46 | 45 | 41 | 31 | 38 | 26 | 35 | 41 | 35 | 42 | 34 | 39.1 | 37.9 | 37.9 |
| Savile Street East (Gripple) | 49 | 36 | 34 | 25 | 29 | 25 | 16 | 26 | 29 | 25 | 29 | 31 | 29.5 | 28.6 | 28.6 |
| Brightside La - Stevenson Road | 44 | 52 | 40 | 34 | 42 | 33 | 28 | 37 | 38 | 35 | nr | 46 | 39.0 | 37.8 | 37.8 |
| Brightside La - Forgemaster | 53 | 56 | 47 | 44 | 36 | 44 | nr | 39 | nr | 39 | 57 | nr | 46.1 | 44.7 | 44.7 |
| Brightside La - (Jenkin Road) | 72 | 65 | 56 | 48 | 37 | 50 | 32 | 46 | 54 | 44 | 59 | 45 | 50.7 | 49.1 | 49.1 |

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|--|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| Meadowhall Road (M1 34N) | 71 | 57 | 49 | 38 | 47 | 41 | 30 | 47 | 59 | 41 | 49 | 50 | 48.3 | 46.8 | 46.8 |
| Sheffield Rd (M1 34S) | 60 | 62 | 45 | 43 | 34 | nr | 32 | 46 | 50 | 52 | 57 | 56 | 48.8 | 47.4 | 47.4 |
| Chesterfield Road South/Lowedges Road | 56 | 41 | 33 | 30 | 37 | 25 | 23 | 36 | 35 | 29 | 33 | 35 | 34.4 | 33.4 | 33.4 |
| Bochum Parkway /Norton La | 51 | 29 | 25 | 23 | 28 | 21 | 21 | 28 | 29 | 27 | 24 | 29 | 27.9 | 27.1 | 24.7 |
| 265 Abbeydale Road | 40 | 38 | 37 | 35 | 32 | 21 | 26 | 32 | 29 | 37 | 39 | 38 | 33.7 | 32.7 | 32.7 |
| Butterworth Cycles | 51 | 46 | 45 | 38 | 50 | 32 | 39 | 39 | nr | 41 | 46 | 35 | 42.0 | 40.7 | 40.7 |
| 14 Fir Street | 25 | 21 | 16 | 11 | 14 | 9 | 8 | 9 | 12 | 12 | 16 | 18 | 14.3 | 13.8 | 13.8 |
| Gerry's Bakery, South Road | 38 | 30 | 28 | 22 | 24 | 19 | 21 | 20 | 24 | 20 | 28 | 27 | 25.1 | 24.3 | 24.3 |
| Woodseats School | 34 | 31 | 29 | nr | 27 | 20 | 28 | 26 | 35 | 38 | 34 | 34 | 30.5 | 29.6 | 29.6 |
| Woodseats School traffic lights | 40 | 37 | 41 | 40 | 33 | 29 | 31 | 34 | 26 | 27 | 47 | 37 | 35.2 | 34.1 | 31.0 |
| Barkers Pool Taxi Rank | 59 | 55 | 43 | 46 | 33 | 31 | 27 | 30 | 35 | 42 | 64 | 51 | 43.0 | 41.7 | 41.7 |
| Tinsley Meadows School | 36 | nr | 26 | 25 | 26 | 20 | 21 | 27 | 26 | nr | 27 | nr | 26.0 | 25.2 | 25.2 |
| Silverdale School | 30 | 20 | 14 | 11 | 10 | 10 | 9 | 7 | 14 | 11 | 13 | 18 | 13.9 | 13.5 | 13.5 |
| Huntley Road Ecclesall Infants | 28 | 18 | 15 | 11 | 11 | 10 | 9 | 8 | 15 | 11 | 14 | 19 | 14.1 | 13.7 | 13.7 |
| Don Valley, Leeds Rd | 32 | 31 | 28 | 28 | 22 | 20 | 21 | 22 | 25 | 23 | 28 | 33 | 26.1 | 25.3 | 25.3 |
| Beeley Wood Road | 62 | 45 | 36 | 32 | 37 | 34 | 29 | 37 | 37 | 38 | 39 | 38 | 38.7 | 37.9 | 37.9 |
| Winster Road | 78 | 56 | 55 | 43 | 51 | 50 | 41 | 56 | 47 | 50 | 55 | 52 | 52.8 | 51.8 | 51.8 |
| Owlerton Green | 48 | 47 | 36 | 35 | 35 | 29 | 27 | 33 | 33 | 32 | 41 | 41 | 36.4 | 35.7 | 35.7 |
| Hillsborough Barracks | 47 | 37 | 28 | 25 | 26 | 23 | 20 | 23 | 26 | 26 | 37 | 41 | 29.9 | 29.3 | 29.3 |
| Bamforth Street | 47 | 47 | 36 | 28 | 39 | 30 | 25 | 32 | 30 | 33 | 33 | 39 | 34.9 | 34.2 | 34.2 |
| Neepsend Lane | 48 | 42 | 36 | 25 | 33 | 27 | 24 | 29 | 30 | 35 | 37 | 47 | 34.4 | 33.7 | 33.7 |
| Sheffield Tinsley (DEFRA) | 41 | 34 | 34 | 27 | 25 | 22 | 25 | 31 | 24 | 40 | 35 | 34 | 31.0 | 30.4 | 30.4 |

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|--------------------------|----|----|----|----|----|----|----|----|----|----|----|----|------|-------------|-------------|
| Crookes Rd/Hoole Rd | 54 | 40 | 37 | nr | 37 | nr | 25 | 23 | 37 | 34 | 43 | nr | 36.7 | 35.9 | 32.6 |
| Newbold Lane/Watson Road | 51 | 33 | nr | 29 | 31 | 36 | 30 | 26 | 33 | 30 | 41 | nr | 34.0 | 33.3 | 30.3 |
| HSBC S10 3BE | 64 | 51 | 59 | 53 | 42 | 53 | 38 | 45 | nr | 59 | 59 | nr | 52.3 | 51.3 | 46.7 |

- ☒ Local bias adjustment factor used
- ☐ National bias adjustment factor used
- ☐ Annualisation has been conducted where data capture is <75%
- ☒ Where applicable, data has been distance corrected for relevant exposure

Notes:

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

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

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

PM Monitoring Adjustment

PM₁₀ data for 2016 for SCC owned TEOMs were corrected to gravimetric equivalent using King's College London Volatile Correction Method (VCM) for PM₁₀ as in Section A1.62 of TG(09).

QA/QC of automatic monitoring

QA/QC is carried out in-house utilising the Council's iAirviro modelling and data collection software. Calibrations are carried out monthly. Auditing was carried out by Ricardo-AEA and Recommendations relating to auditing were then implemented at the next service visits.

QA/QC of diffusion tube monitoring

South Yorkshire Air Quality Samplers (SYAQS) are the sole supplier of diffusion tubes for Sheffield City Council. The preparation method for the tubes was 50% TEA in acetone.

The WASP / AIR PT scheme lists SYAQS performance as averaging 100% of results as satisfactory for 2017, (AIR PT AR018 to AR022).

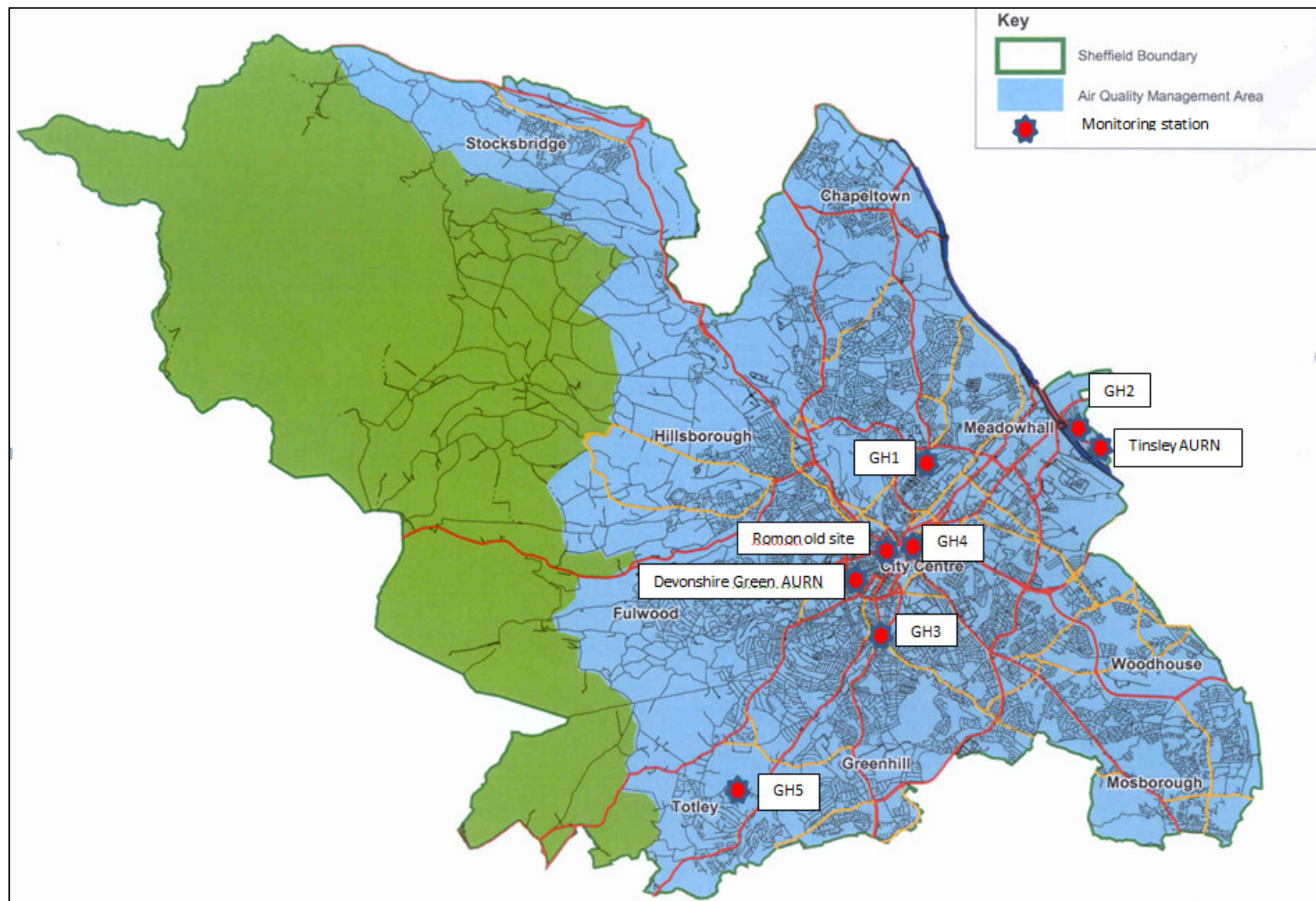
Bias Adjustment Factor from Local Co-location Studies

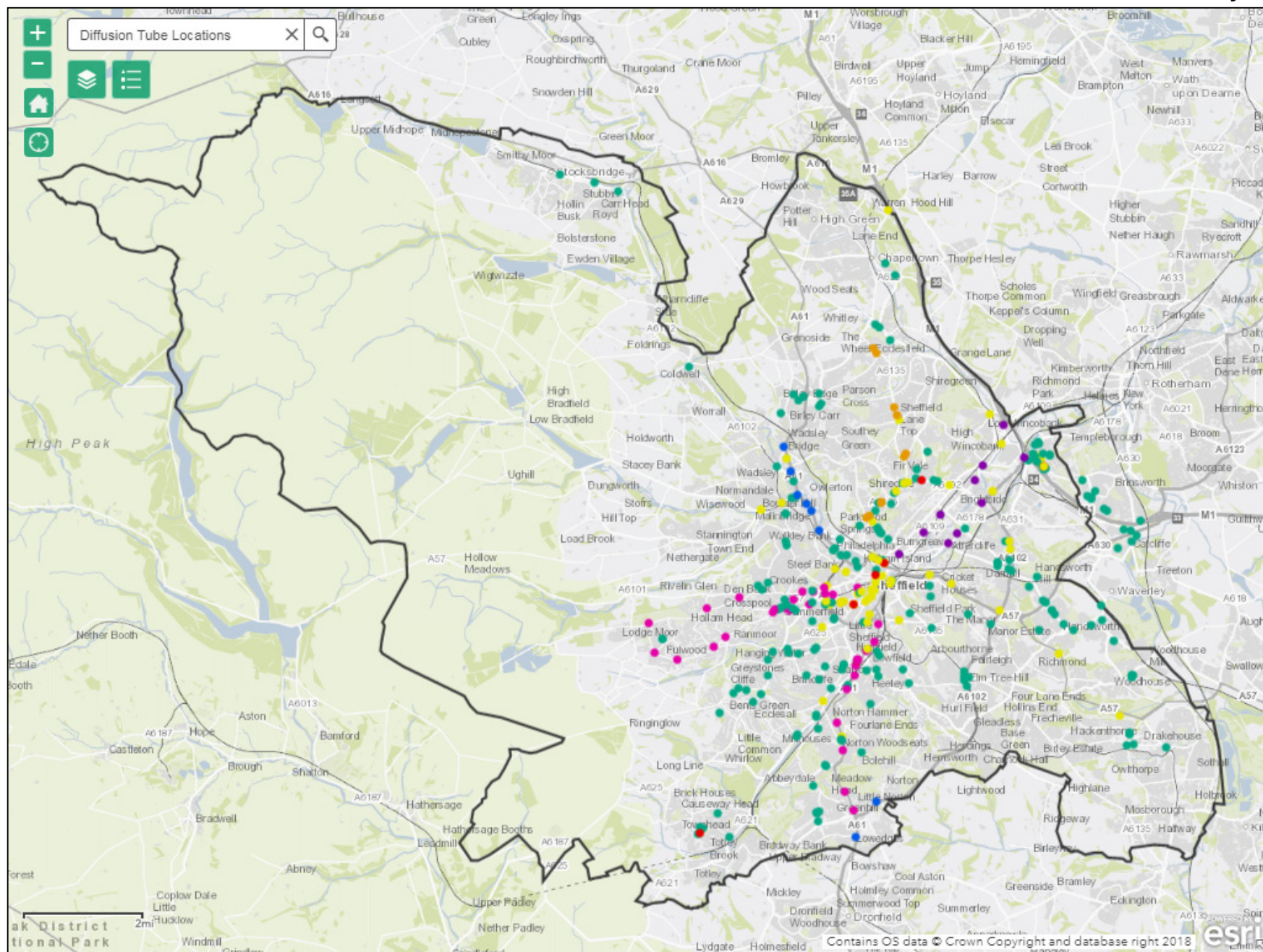
Table C.1 Bias Adjustment Factors

| Year | SY Labs | Gradko |
|------|------------|--------|
| 2005 | 1.0 | 1.11 |
| 2006 | 1.03 | 1.04 |
| 2007 | 1.08 | 1.03 |
| 2008 | 0.98 | 0.93 |
| 2009 | 0.91 | 0.99 |
| 2010 | 0.92 SYAQS | 1.00 |
| 2011 | 0.96 | 0.99 |
| 2012 | 0.91 | - |
| 2013 | 1.02 | - |
| 2014 | 0.94 | - |
| 2015 | 0.99 | - |
| 2016 | 0.95 | - |
| 2017 | 0.98 | - |

Bias adjustment factors were calculated using diffusion tubes co-located on the DEFRA Devonshire Green monitoring station from 2014.

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





Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

| Pollutant | Air Quality Objective ⁷ | |
|--|--|----------------|
| | Concentration | Measured as |
| Nitrogen Dioxide (NO ₂) | 200 µg/m ³ not to be exceeded more than 18 times a year | 1-hour mean |
| | 40 µg/m ³ | Annual mean |
| Particulate Matter (PM ₁₀) | 50 µg/m ³ , not to be exceeded more than 35 times a year | 24-hour mean |
| | 40 µg/m ³ | Annual mean |
| Sulphur Dioxide (SO ₂) | 350 µg/m ³ , not to be exceeded more than 24 times a year | 1-hour mean |
| | 125 µg/m ³ , not to be exceeded more than 3 times a year | 24-hour mean |
| | 266 µg/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/m³).

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 | Air quality Annual Status Report |
| CAZ | Clean Air Zone - an area where targeted action is taken to improve air quality. Clean Air Zones aim to reduce all types of air pollution, including nitrogen dioxide and particulate matter, to improve and protect health. |
| Defra | Department for Environment, Food and Rural Affairs |
| DMRB | Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England |
| 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 (micrometres or microns) 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

1. Environmental equity, air quality, socioeconomic status and respiratory health, 2010
2. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
3. Defra. Abatement cost guidance for valuing changes in air quality, May 2013
4. The Sheffield Bus Agreement (SBA) – a 5 years investment plan launched in October 2012 – <http://www.sypte.co.uk/corporate.aspx?id=3333>
5. Sheffield Clean Air Strategy – <https://bit.ly/2LI4VDp>
6. Sheffield Transport Vision – <https://bit.ly/2FaVTtN>
7. The National Air Quality Plan – <https://bit.ly/2tkxH53>
8. The units are in microgrammes of pollutant per cubic metre of air ($\mu\text{g}/\text{m}^3$).