Rotherham Metropolitan Borough Council

2023 Air Quality Annual Status Report (ASR)

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

Date: June, 2023

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Executive Summary: Air Quality in Our Area

Air Quality in Rotherham

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

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

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan[5] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term $PM_{2.5}$ targets. The 'National Air Quality Strategy', published in 2023, provides more information on local authorities' responsibilities to work towards these new targets and reduce $PM_{2.5}$ in their areas. The Road to Zero[6] details the approach to reduce exhaust emissions from

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

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

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

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

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

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

road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations at roadside influenced by transport emissions.

Clean Air Zone for Sheffield/Rotherham Feasibility Study and Air Quality Plan Business Cases

The Sheffield/Rotherham Local Clean Air Plan, which is approved and mandated by H M Government is being implemented.

Schemes benefitting Air Quality 2022-23

Sheffield Parkway A630 Improvement and Speed Reduction

The Rotherham MBC Transportation team have completed the scheme for the A630 Sheffield Parkway.

The key benefit in terms of air quality (nitrogen dioxide annual mean concentrations) will result from the reduction of the speed limit from 70mph to 50mph. It is predicted that the scheme will also improve road safety and reduce transport carbon dioxide emissions slightly as part of Rotherham Council's Clean Air Zone plans.

There are no LAQM sensitive receptors close enough to the A630 for an exceedance of NAQS standards, however the link was identified by the Government as a road which could breach EU Limit Values in 2017. It is predicted that now the local plan has been implemented, there will be no future exceedences of the EU annual mean nitrogen dioxide objective locations with relevant exposure within 10m of the carriageway.

Rawmarsh Hill AQMA - Bellows Road Clean Air Plan Scheme

This scheme was developed because of legal direction from central Government, and the Council was obliged to deliver the scheme in the shortest possible time.

It is intended to improve bus journey time reliability and addresses an identified need for improved pedestrian and cycle facilities

Highways construction has been completed.

Wortley Road- uphill HGV ban

Rotherham MBC Cabinet approved the progression of the Wortley Road heavy goods vehicle prohibition scheme in March 2021. The legal orders to implement the prohibition are now in place. A reduction of 90% in the number of HGVs travelling uphill was observed in the latest traffic count. The scheme is reducing the impact of road freight on communities in the area.

Conclusions and Priorities

Air quality in Rotherham has improved significantly over the last few years. Remaining areas of exceedence in terms of the nitrogen dioxide annual mean objective will be subject to measures contained within the Sheffield/Rotherham Clean Air Plan. It is predicted that all relevant areas of Rotherham will be compliant with both the National Air Quality Strategy Objectives and EU Limit Values during 2023. As such there is no need to update any action plans. Revocation of remaining AQMAs will be required in subsequent years if predictions are correct.

Local Engagement and How to get Involved

To get involved in local issues see Get involved in local issues – Rotherham Metropolitan Borough Council

Consultations can be found at Consultations – Rotherham Metropolitan Borough Council

Information on active travel and public transport can be found at Active travel and public transport – Rotherham Metropolitan Borough Council

Local Responsibilities and Commitment

This ASR was prepared by the **Regulation and Enforcement Service** of Rotherham MBC with the support and agreement of the Regeneration and Environment Directorate. This ASR has been approved by Lewis Coates, **Service Manager Regulation and Enforcement**

This ASR has not been signed off by our Director of Public Health.

If you have any comments on Rotherham's Air Quality Annual Status Report, please use our contact form

Air Quality – Rotherham Metropolitan Borough Council

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1 Local Air Quality Management

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

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Rotherham MBC and partners to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

Air Quality Management Areas

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

A summary of AQMAs declared by Rotherham can be found in Table 2.1. The table presents a description of the 4 AQMAs that are currently designated within Rotherham. Some of these AQMAs are designated for annual mean and the hourly nitrogen dioxide objectives. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean;
- NO_2 hourly mean;

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
M1 AQMA 2001 amended 2010	Declared 2001, Amended 2010	NO2 Annual Mean	Area 1 covers Brinsworth, Catcliffe and Upper Whiston; Area 2 Meadowbank, Hilltop and Area 3 Blackburn	YES	56	33	Responsibility of Highways England	NA	NA
A629 (Bradgate)AQMA 2004	Declared 2004,	NO2 Annual Mean	Area of Bradgate/A629	NO	54	32	3	AQAP RMBC 2020 -22; Clean Air Plan	https://www.rotherham.gov.uk/pollution/clean-air-rotherham/5
Fitzwilliam Road/A630 AQMA	Declared 2004,	NO2 Annual Mean	Area around Fitzwilliam Road/A630	NO	60	41	0	AQAP RMBC 2020-22; Clean Air Plan	https://www.rotherham.gov.uk/pollution/clean-air-rotherham/5

Parkgate AQMA	Declared 2016	NO2 Annual Mean	Parkgate	NO	49	41	0	AQAP RMBC 2020-22; Clean Air Plan	https://www.rotherham.gov.uk/pollution/clean-air-rotherham/5
Fitzwilliam Road/A630 AQMA	Declared 2016	NO2 1 Hour Mean	Area around Fitzwilliam Road/A630	NO	52	0	0	AQAP RMBC 2020-22; Clean Air Plan	https://www.rotherham.gov.uk/pollution/clean-air-rotherham/5
A629 (Bradgate)AQMA 2004	Declared 2016	NO2 1 Hour Mean	Area of Bradgate/A629	NO	98	0	0	AQAP RMBC 2020-22; Clean Air Plan	https://www.rotherham.gov.uk/pollution/clean-air-rotherham/5

☒ **Rotherham MBC confirms the information on UK-Air regarding their AQMA(s) is up to date**

☒ **Rotherham MBC confirms that all current AQAPs have been submitted to Defra**

Progress and Impact of Measures to address Air Quality in Rotherham

The Council has implemented a number of measures during 2022 in pursuit of improving local air quality in Rotherham. 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 the Local Clean Air Plan Clean Air Rotherham – Rotherham Metropolitan Borough Council. Key completed highway schemes are:

- A629 HGV ban
- Rawmarsh Hill/Bellow Road scheme
- Parkway widening/reduction of speed limit

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

- Bus fleet improvements (retrofit) (CAZ – note subject to approval by DfT)
- Financial support to eligible taxi drivers to upgrade or replace their vehicles (CAZ)
- Financial support to HGV owners to upgrade or replace their vehicles (CAZ)

The impact of the measures completed and in progress is predicted to be widespread compliance with both the EU Limit Value and National Air Quality Strategy objective for nitrogen dioxide annual mean. Rotherham MBC's priorities for the coming year are to carry out monitoring and evaluation of the schemes.

Rotherham MBC worked to implement these measures in partnership with the following stakeholders during 2022:

- Sheffield City Council;
- South Yorkshire Combined Mayoral Authority;

The principal challenge to implementation that Rotherham MBC anticipates facing is the uncertainty surrounding future bus retrofitting as a result of the investigation carried out by the Government's Joint Air Quality Unit (JAQU) showing variable effectiveness of the technology.

Rotherham MBC anticipates that the measures stated above and in Table 2.2 will achieve compliance in all AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	HGV ban A629	Traffic Management	UTC, Congestion management, traffic reduction	2021	2022	RMBC (JAQU)	JAQU funded	NO	Funded	£50k - £100k	Completed	Predicted 11% (NOx)	Compliance with air quality standards in 2022	Complete	
2	Bus fleet improvements (retrofit)	Promoting Low Emission Transport	Low Emission Zone (LEZ)	2020	2023	SCC/RMBC (JAQU)	JAQU funded	NO	Funded	£500k - £1 million	Implementation	Predicted 7% (NOx)	Compliance with air quality standards in 2022	Implementation	Latest evidence from JAQU indicates that the performance of bus retrofits is questionable.
3	Rawmarsh Hill Bus Service Diversion	Traffic Management	UTC, Congestion management, traffic reduction	2017-2019 (OBC/FBC CAZ)	2022	RMBC (JAQU)	JAQU funded	NO	Funded	£500k - £1 million	Completed	Predicted 16% (NOx)	Compliance with air quality standards in 2022	Complete	
4	A630 Parkway speed reduction	Traffic Management	Reduction of speed limits, 20mph zones	2017-2019 (OBC/FBC CAZ)	2022	RMBC (JAQU)	JAQU funded (speed limit, not whole scheme)	NO	Funded	£50k - £100k	Completed	Predicted 7% NOx	Compliance with air quality standards in 2023	Complete	
5	SPD Air Quality (Local Plan)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2019	RMBC	Adopted	NO	Funded	< £10k	Completed	N/A	N/A	Complete	
6	Provision of green infrastructure within new development (Policy CS 19 Green Infrastructure)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2019	RMBC	N/A	NO	Funded	< £10k	Completed	Site specific	N/A	Complete	

8	Financial support to taxi drivers to upgrade or replace their vehicles (CAZ)	Promoting Low Emission Transport	Taxi emission incentives	2017-2020 (OBC/FBC CAZ)	2023	SCC (lead)	JAQU funded	NO	Funded	£50k - £100k	Planning	NA	N/A	Rotherham's licenced taxis are already either Euro 6 diesel and Euro 4 petrol/hydrid	
9	Financial support for HGV fleet operators to retrofit of replace their vehicles	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2017-2020 (OBC/FBC CAZ)	2023	Scc (lead)	JAQU funded	NO	Funded	£50k - £100k	Planning	NA	N/A	Implementation	
10	Increase the number of EV charging points in Rotherham	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2019	RMBC	Developer funded	NO	Not Funded	£10k - 50k	Implementation	1% NOx/annum	N/A	All new developments are required to install EV charging	
11	Communications campaign to encourage switch from diesel private cars to petrol/ULEV	Public Information	Via the Internet	2019	2019	RMBC	JAQU funded	NO	Funded	£10k - 50k	Completed	NA	Change in % diesel vehicles	Complete	

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is some evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. This may be true, but because of the nature of the origin of $PM_{2.5}$ an individual Council's actions will have little bearing on the concentration of $PM_{2.5}$ in its local area.

Rotherham MBC is taking the following measures to address the issue of $PM_{2.5}$: the whole of Rotherham is a smoke control area, all major industrial processes are regulated by either the Local Authority or the Environment Agency, and the Council responds to all nuisance allegations regarding smoke nuisance. As it is estimated that only 6% of total $PM_{2.5}$ concentrations arise from tailpipe emissions from local traffic, there is limited additional action which can be taken by a local authority. Most $PM_{2.5}$ arises from pan-regional sources over which the Council has absolutely no control.

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

This section sets out the monitoring undertaken during 2022 by Rotherham MBC and how the monitored data compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified.

Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Rotherham MBC obtained automatic (continuous) monitoring from 2 sites with sufficient data capture to be reported during 2022. Some of Rotherham's monitoring was affected by power and communications failures lasting several months. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The Air Quality – Rotherham Metropolitan Borough Council page presents provisional automatic monitoring data (indicative) for Rotherham.

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

The Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 96 sites during 2022. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. 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.

Individual Pollutants

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

3.1.3 Nitrogen Dioxide (NO_2)

There is a requirement for local authorities to submit their NO_2 diffusion tube data to the LAQM Portal via the DTDES upload facility. The Council had analysis carried out by 2 different tube suppliers during 2022. The DTDES cannot cope with this so advice was sought from the LAQM helpdesk:

Unfortunately the DTDPT does not allow for 2 bias adjustment factors to be applied across the year. As a work around you will need to apply the bias adjustments to the raw monthly data ahead of entering the data into the STEP 2 tab within the tool. In STEP 3 please put 1 into the field which states "Enter National Bias Adjustment Factor". This will ensure no further bias adjustment is undertaken on the data. Select "National" for the question "Which bias adjustment factor will be used for data processing?" and then proceed to the next step.

This should resolve the issue and allow the correct data to be pulled through.

The above explains why the bias adjustment factor in the tables below is 1.

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, ***only where relevant***.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

No changes to current AQMAs are expected during 2023. It is expected that from 2024, all Rotherham MBC's AQMAs will be revoked. No new AQMAs will be designated during 2023. No major changes are planned to the to the air quality monitoring network, however this is continuously reviewed.

3.1.4 Particulate Matter ($PM_{2.5}$)

Table A.6 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years. This monitoring was carried out with a Met 1 E sampler. An annual mean of 7.5ug/m^3 was measured at St Ann's School, which located close to many industrial sources and on a main route into the town centre.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
Blackburn School	Blackburn School	Urban Background	438703	392816	NO2; PM2.5	YES	Chemiluminescent, TEOM	0	N/A	2.5
St Ann's	St Ann's	Roadside	443347	393983	NO2	YES	Chemiluminescent	0	1	2

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property or other relevant receptor or at the same distance from a road as relevant receptors and representative of relevant exposure).

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT1	A633 ex Rawmarsh Library	Roadside	443699	395439	NO2	YES The Rotherham Borough Council Air Quality Management Area 1 Rawmarsh 2016	0.0	1.8	No	2.7
RDT2	Terrace Road	Roadside	443634	395635	NO2	YES The Rotherham Borough Council Air Quality Management Area 1 Rawmarsh 2016	0.0	1.1	No	2.5
RDT3	73 Rawmarsh Hill	Roadside	443650	395688	NO2	YES The Rotherham Borough Council Air Quality Management Area 1 Rawmarsh 2016	0.0	1.8	No	2.7
RDT4	Westfield Avenue	Roadside	443695	401424	NO2	NO	0.0	1.8	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT5	Warren Vale	Roadside	444245	398064	NO2	NO	0.0	2.6	No	2.5
RDT6	69 Church Street, Swinton	Roadside	444926	399292	NO2	NO	2.0	1.8	No	2.5
RDT7	106 Church Street, Swinton	Roadside	444895	399343	NO2	NO	2.0	1.8	No	2.5
RDT8	Sidney St / Station St	Roadside	445903	399127	NO2	NO	0.0	1.6	No	2.5
RDT9	Wortley Ave / Station St	Roadside	445934	399104	NO2	NO	0.0	1.6	No	2.5
RDT10	Bridge Street, Swinton	Roadside	446304	399227	NO2	NO	0.0	1.6	No	2.5
RDT11	Bridge Street, Swinton	Roadside	446328	399230	NO2	NO	0.0	1.6	No	2.5
RDT12	Cawood Drive off Manvers Way	Roadside	443647	401400	NO2	NO	0.0	1.1	No	2.5
RDT13	Manvers Way - Hummingbird Walk	Urban Background	443531	401446	NO2	NO	0.0	N/A	No	2.5
RDT14	LP 130 Manvers Way	Roadside	442538	401818	NO2	NO	3.0	1.6	No	2.5
RDT15	A633 Manvers Way Holiday Inn	Roadside	443065	401529	NO2	NO	3.0	2.0	No	2.5
RDT16	J35 Thorpe Hesley on slip road	Roadside	436972	395669	NO2	NO	10.0	1.0	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT17	2 Hesley Bar	Roadside	436983	395815	NO2	NO	0.0	1.0	No	2.5
RDT18	243 Wortley Rd. (LP 11)	Roadside	441015	393337	NO2	YES - Wortley Road AQMA NO2	0.0	2.0	No	2.8
RDT19	227 Wortley Rd. LP9 uphill	Roadside	441049	393331	NO2	YES - Wortley Road AQMA NO2	0.0	1.7	No	2.9
RDT20	St. Bedes School	Roadside	440135	393772	NO2	YES - Wortley Road AQMA NO2	0.0	1.4	No	2.9
RDT21	Uphill from 264 Wortley Rd.	Roadside	441096	393321	NO2	YES - Wortley Road AQMA NO2	0.0	1.6	No	3.2
RDT22	Upper Wortley Rd/Droppingwell Lane	Roadside	441133	393322	NO2	NO	0.0	1.7	No	2.9
RDT23	228 Wortley Rd.	Roadside	438259	395065	NO2	YES - Wortley Road AQMA NO2	0.0	1.5	No	2.5
RDT24	Scholes Lane LP 75	Roadside	438259	395067	NO2	NO	0.0	1.7	No	2.5
RDT25	Car Hill Up hill LP55	Roadside	442404	394652	NO2	NO	0.0	1.6	No	2.5
RDT26	Car Hill, Greasbrough /Lowfield Avenue	Roadside	442323	395036	NO2	NO	0.0	1.6	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT27	Blackburn School	Urban Background	438704	392842	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	N/A	No	2.5
RDT28	Kirkstead Road, Blackburn	Roadside	438621	392858	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	1.9	No	2.5
RDT29	106 Whitley View Road	Roadside	439055	392376	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	2.6	No	2.5
RDT30	21 Blackburn Lane(33m to edge of M1; 13m from façade to M1)	Roadside	438845	392596	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	1.5	No	2.5
RDT31	LP 4 Droppingwell Road	Roadside	438876	392533	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	1.5	No	2.5
RDT32	Meadowbank Rd. LP 2	Roadside	439565	392054	NO2	YES Rotherham AQMA 1 - Part 2 (NO2)	0.0	14.0	No	2.5
RDT33	Parkway roundabout LP25 on r'bout	Roadside	441321	388461	NO2	NO	0.0	1.5	No	2.5
RDT34	Highfield Spring opposite Sanderson	Roadside	441447	388267	NO2	NO	0.0	1.5	No	2.5
RDT35	Highfield Spring LP 7	Roadside	441695	388096	NO2	NO	0.0	1.5	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT36	Waverley New Community - Tideswell Walk/Stephenson Way	Urban Background	441641	387494	NO2	NO	0.0	N/A	No	2.5
RDT37	Highfield Spring entrance to Waverley	Roadside	441448	387581	NO2	NO	0.0	1.5	No	2.5
RDT38	LP 43A Doncaster Rd. Thrybergh	Roadside	446158	394699	NO2	NO	2.0	1.2	No	2.5
RDT39	9 Bentley St. Bramley	Roadside	449387	392148	NO2	NO	0.0	1.5	No	2.5
RDT40	4 Westerton Dr. Bramley	Roadside	449628	391724	NO2	NO	0.0	1.3	No	2.5
RDT41	102 Main St. Bramley	Roadside	448919	392327	NO2	NO	2.0	3.1	No	2.5
RDT42	Bawtry Rd Hellaby	Roadside	450102	392077	NO2	NO	3.0	2.3	No	2.5
RDT43	Muglet Lane, Maltby (dis)	Roadside	453470	392138	NO2	NO	0.0	3.5	No	2.5
RDT44	Airmount Close	Roadside	447281	391632	NO2	NO	0.0	10.0	No	2.5
RDT45	A631 489 West Bawtry Rd	Roadside	444375	390165	NO2	NO	0.0	1.1	No	2.5
RDT46	Catcliffe J&I	Urban Background	442681	388729	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	N/A	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT47	Main Street Catcliffe	Roadside	442587	388594	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.6	No	2.5
RDT48	Brinsworth Howarth School	Urban Background	442501	389132	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	N/A	No	2.5
RDT49	Brinsworth Howarth School Gate	Roadside	442628	389111	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	9.0	No	2.5
RDT50	New Brinsworth Road	Roadside	442623	388976	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	2.5	No	2.5
RDT51	Nickleby Court	Urban background	441950	388850	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.0	No	2.5
RDT52	Grange Farm Close	Roadside	442866	389161	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.2	No	2.5
RDT53	47 Derwent Cres	Roadside	441765	389248	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.9	No	2.5
RDT54	Broadway	Roadside	441868	389466	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.8	No	2.5
RDT55	169 Bawtry Rd	Roadside	441283	390309	NO2	NO	0.0	2.8	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT56	A57 roundabout	Roadside	444793	384403	NO2	NO	0.0	10.0	No	2.5
RDT57	A57 Gulliver's site	Roadside	446550	383722	NO2	YES Rotherham AQMA 1 - Part 3 (NO2)	0.0	2.0	No	2.5
RDT58	Wales Primary School	Roadside	447547	382894	NO2	YES Rotherham AQMA 1 - Part 3 (NO2)	0.0	2.0	No	2.5
RDT59	Wales School Road	Roadside	447389	382893	NO2	NO	0.0	2.4	No	2.5
RDT60	Walseker Lane	Rural	448144	381215	NO2	NO	0.0	N/A	No	2.5
RDT61	Dowcarr Lane	Rural	448133	380458	NO2	NO	0.0	N/A	No	2.5
RDT62	479 Bawtry Rd (façade)	Urban Background	444476	390210	NO2	NO	0.0	15.0	No	2.5
RDT63	479 Bawtry Rd	Roadside	444470	390223	NO2	NO	0.0	2.0	No	2.5
RDT64	Serlby Lane, Harthill	Roadside	449726	380358	NO2	NO	0.0	1.1	No	2.5
RDT65	Doctor Lane	Roadside	449444	380469	NO2	NO	0.0	1.3	No	2.5
RDT66	16 Union Street, Harthill	Roadside	449319	381007	NO2	NO	0.0	1.5	No	2.5
RDT67	131 Moorgate Rd.	Roadside	443764	391283	NO2	NO	0.0	1.9	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT68	228 Broom Lane	Roadside	445192	390958	NO2	NO	0.0	1.9	No	2.5
RDT69	3 Broom Avenue	Roadside	444565	391641	NO2	NO	0.0	1.0	No	2.5
RDT70	75 Broom Rd.	Roadside	444565	391641	NO2	NO	0.0	1.0	No	2.5
RDT71	24 Halsbury Road	Roadside	444189	393694	NO2	NO	0.0	1.0	No	2.5
RDT72	Wellgate/ Masonic Hall	Roadside	443072	392668	NO2	NO	0.0	1.0	No	2.5
RDT73	Wellgate/Albion Rd.	Roadside	443145	392615	NO2	NO	0.0	1.0	No	2.5
RDT74	Wellgate /Sherwood Rd.	Roadside	443197	392573	NO2	NO	0.0	1.0	No	2.5
RDT75	Wellgate/Bernard Rd.	Roadside	443334	392466	NO2	NO	0.0	1.0	No	2.5
RDT76	237 Wellgate	Roadside	443495	392407	NO2	NO	0.0	1.0	No	2.5
RDT77	Wellgate/Laureate Court	Roadside	443579	392390	NO2	NO	0.0	1.0	No	2.5
RDT78	Middle Ave. Clifton, across from no 2	Roadside	443861	393185	NO2	NO	0.0	1.0	No	2.5
RDT79	A630, ASDA entrance	Roadside	445234	394161	NO2	NO	0.0	2.0	No	2.5
RDT80	Doncaster Gate apartments	Roadside	443039	392855	NO2	YES Fitzwilliam	0.0	1.0	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
						Road NO2 AQMA				
RDT81	152 Fitzwilliam Rd.	Roadside	443724	393628	NO2	YES Rotherham AQMA 1 - Part1 (NO2)	0.0	1.0	No	2.5
RDT82	St Mary's Drive, Catcliffe	Roadside	442393	388717	NO2	YES Fitzwilliam Road NO2 AQMA	0.0	2.0	No	2.5
RDT83	Near Hatherley Rd. Fitzwilliam Rd	Roadside	443371	393426	NO2	YES Fitzwilliam Road NO2 AQMA	4.0	1.7	No	2.5
RDT84	St. Ann's Fitzwilliam Road	Roadside	443640	393567	NO2	NO	0.0	2.4	No	2.5
RDT85	Dixon Street / Elliott Court, Rotherham	Roadside	443216	393085	NO2	NO	0.0	1.0	No	2.5
RDT86	Drummond Street / Henry Street	Roadside	443070	393115	NO2	NO	0.0	2.0	No	2.5
RDT87	A633 N Forge Way/A633	Roadside	443277	394101	NO2	NO	0.0	1.0		
RDT88	120 Broad Street Parkgate	Roadside	443670	395306	NO2	YES The Rotherham Borough Council Air Quality Management Area 1 Rawmarsh 2016	0.0	0.6	NO	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RDT89	42 Rawmarsh Hill	Roadside	443677	395545	NO2	YES The Rotherham Borough Council Air Quality Management Area 1 Rawmarsh 2016	3.5	1.1	NO	2.5

Notes:

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
Blackburn School	438703	392816	Urban Background	93	93	24.5	23.7	18.5	17.5	18.4
St Ann's	443347	393983	Roadside	98.1	98.1	28.4	24.6	21.3	20.4	27.1

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

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

Notes:

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

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

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

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

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

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

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
RDT1	443699	395439	Roadside	100.0	100.0	42.8	37.2	32.7	33.1	32.4
RDT2	443634	395635	Roadside	93.0	93.0	22.2	21.3	18.3	17	18.8
RDT3	443650	395688	Roadside	100.0	100.0	29	28.2	25.2	24.7	26.2
RDT4	443695	401424	Roadside	100.0	100.0	24.6	22.8	21.2	19	20.9
RDT5	444245	398064	Roadside	100.0	100.0	30.5	32.2	25	25.7	28.6
RDT6	444926	399292	Roadside	84.0	84.0	31.8	33.4	26.5	27.9	27.0
RDT7	444895	399343	Roadside	100.0	100.0	29.8	30.5	26.3	23.4	26.6
RDT8	445903	399127	Roadside	100.0	100.0	23.9	22.6	18.1	16.7	19.5
RDT9	445934	399104	Roadside	100.0	100.0	29.4	27.9	24.2	24.9	24.7
RDT10	446304	399227	Roadside	100.0	100.0	29.2	27.6	22.8	23.1	23.8
RDT11	446328	399230	Roadside	84.0	84.0	31.5	30.4	25.1	24.1	25.2
RDT12	443647	401400	Roadside	100.0	100.0	22.2	21.1	17	16	17.8
RDT13	443531	401446	Urban Background	100.0	100.0	22.7	21.9	17.8	16.6	18.7
RDT14	442538	401818	Roadside	93.0	93.0	29.9	31	23.7	24.7	24.8
RDT15	443065	401529	Roadside	100.0	100.0	26.8	27.3	20.9	21.8	22.0
RDT16	436972	395669	Roadside	100.0	100.0	35.7	36.6	26.5	26.1	26.8
RDT17	436983	395815	Roadside	84.0	84.0	23.5	24	18.3	20.2	19.2
RDT18	441015	393337	Roadside	100.0	100.0	29	38.7	31.8	31.4	19.2
RDT19	441049	393331	Roadside	75.0	75.0	45.5	36.8	25.8	25.3	25.3
RDT20	440135	393772	Roadside	100.0	100.0	29.2	28.5	21.5	21.4	23.7
RDT21	441024	393347	Roadside	84.0	84.0	32.4	29.2	23.4	27.1	32.1
RDT22	439520	394172	Roadside	93.0	93.0	24.8	22.6	18.5	19.5	23.5
RDT23	441133	393322	Roadside	100.0	100.0	34.3	34	25.3	26.3	26.7
RDT24	438259	395065	Roadside	100.0	100.0	24	21.8	17.9	17	22.1
RDT25	442404	394652	Roadside	93.0	93.0	27.5	29.6	22.7	24.1	25.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
RDT26	442323	395036	Roadside	93.0	93.0	34.9	33.2	26.1	23	25.2
RDT27	438704	392842	Urban Background	100.0	100.0	23	22.3	17.1	17.3	27.6
RDT28	438621	392858	Roadside	93.0	93.0	39.9	41.6	31	30.9	26.5
RDT29	439055	392376	Roadside	100.0	100.0	24.2	24.2	20.5	17.8	21.4
RDT30	438845	392596	Roadside	100.0	100.0	34	33.6	24.3	23.2	28.9
RDT31	438876	392533	Roadside	100.0	100.0	35.2	36	24.9	26.1	26.6
RDT32	439565	392054	Roadside	100.0	100.0	29.6	30.3	22.1	20.5	24.6
RDT33	441321	388461	Roadside	100.0	100.0	33.7	31	21.9	21.5	23.9
RDT34	441447	388267	Roadside	100.0	100.0	31.9	32.8	23	23.7	25.1
RDT35	441695	388096	Roadside	100.0	100.0	34.8	32.4	24.9	24.7	25.3
RDT36	441641	387494	Urban Background	100.0	100.0	24.4	22.3	17.4	16.6	17.3
RDT37	441448	387581	Roadside	100.0	100.0	26.1	24.7	19.3	18.3	22.3
RDT38	446158	394699	Roadside	100.0	100.0	31.4	32.2	25.2	26.2	32.0
RDT39	449387	392148	Roadside	100.0	100.0	26.7	24.1	18.1	18.6	20.8
RDT40	449628	391724	Roadside	100.0	100.0	23.9	21.5	17.4	19	21.0
RDT41	448919	392336	Roadside	100.0	100.0	29.4	28.3	22.1	23.3	25.8
RDT42	450102	392077	Roadside	100.0	100.0	36.7	32.3	25.5	28.6	27.8
RDT43	453470	392138	Roadside	dis	dis	26.5	24.6	18.5	21.2	
RDT44	447281	391632	Roadside	100.0	100.0	28.4	25	22.6	23.1	24.8
RDT45	444375	390165	Roadside	100.0	100.0	46.8	47.1	33.8	39.3	26.5
RDT46	442681	388729	Urban Background	84.0	84.0	24.4	23.6	18.3	18.7	22.3
RDT47	442587	388594	Roadside	100.0	100.0	30.9	32.7	22.7	24.6	24.4
RDT48	442491	389132	Urban Background	100.0	100.0	25.7	26.5	20.7	18.9	25.2
RDT49	442617	389111	Roadside	93.0	93.0	31.1	29.6	22.8	23.5	25.0
RDT50	442623	388976	Roadside	84.0	84.0	38.2	35.8	26.4	26.5	27.4
RDT51	441961	388850	Urban background	100.0	100.0				26.2	21.6
RDT52	442866	389161	Roadside	100.0	100.0	33.2	34.6	24.5	23.3	24.5
RDT53	441765	389248	Roadside	84.0	84.0	39.1	36.3	27.9	27.3	29.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
RDT54	441988	389466	Roadside	84.0	84.0	25.5	28.6	27.9	19.4	20.0
RDT55	441283	389500	Roadside	93.0	93.0	39.2	39.3	26.9	29.1	28.4
RDT56	444793	384419	Roadside	100.0	100.0	28.2	27.6	21.5	23.9	23.5
RDT57	444714	384411	Roadside	100.0	100.0	27.7	29.3	21.2	22	24.4
RDT58	447547	382894	Roadside	75.0	75.0	34.4	33.5	24.5	23.9	26.7
RDT59	447389	382893	Roadside	93.0	93.0	38.1	37.5	26.2	27.4	25.9
RDT60	448144	381215	Rural	93.0	93.0	26.1	23.5	17.3	16.6	17.9
RDT61	448133	380458	Rural	100.0	100.0	28.8	25.3	20.4	17.6	19.2
RDT62	444476	390210	Urban Background	100.0	100.0	30.9	34.5	25.1	21.4	26.5
RDT63	444470	390223	Roadside	93.0	93.0	**46.9**	35.9	27.5	33.1	29.6
RDT64	449726	380358	Roadside	84.0	84.0	19.7	18.1	12.8	13.1	15.6
RDT65	449444	380469	Roadside	100.0	100.0	17.9	18.9	13.7	13.9	15.4
RDT66	449318	381007	Roadside	84.0	84.0	23.3	19.9	17.4	18	19.2
RDT67	443764	391283	Roadside	84.0	84.0	28.6	28.8	22.1	23.7	24.4
RDT68	445192	390958	Roadside	93.0	93.0	39.6	37.8	22.1	30.1	31.0
RDT69	444565	391641	Roadside	84.0	84.0	26.1	26.7	29.8	19.5	21.6
RDT70	443969	392041	Roadside	93.0	93.0	24.5	25.2	21.4	20.5	21.0
RDT71	444189	393694	Roadside	93.0	93.0	24.9	25.5	18	18.5	19.4
RDT72	443072	392668	Roadside	100.0	100.0	35.4	36	29.1	32.3	31.5
RDT73	443145	392615	Roadside	100.0	100.0	29.3	29.8	23.6	25	27.0
RDT74	443197	392573	Roadside	93.0	93.0	28.8	28.3	23.6	23.3	25.7
RDT75	443334	392466	Roadside	100.0	100.0	28.6	25.5	21.9	22.5	23.4
RDT76	443495	392407	Roadside	100.0	100.0	38.2	37.9	28.7	28.5	31.5
RDT77	443579	392390	Roadside	100.0	100.0	35.7	33	25	22.5	26.6
RDT78	443861	393185	Roadside	93.0	93.0	25.5	25.9	19.3	17.8	21.4
RDT79	445234	394161	Roadside	93.0	93.0	45.9	45.5	36.6	35.4	38.3
RDT80	443039	392855	Roadside	93.0	93.0	30.6	30.7	22.7	20.9	26.0
RDT81	443724	393628	Roadside	100.0	100.0	39.1	37.5	29.3	28.3	31.7
RDT82	442393	388717	Roadside	100.0	100.0	-	27	23.6	22	21.1
RDT83	443371	393426	Roadside	100.0	100.0	**49.5**	**51.7**	**42.1**	38.3	**43.9**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
RDT84	443640	393567	Roadside	93.0	93.0	39.4	38.2	30.7	28.5	32.3
RDT85	443216	393085	Roadside	100.0	100.0	29.8	29.8	25.1	24.2	26.0
RDT86	443070	393115	Roadside	93.0	93.0	32.3	34.9	24.5	23.7	25.6
RDT87	443277	394101	Roadside	93.0	93.0	34.1	32.5	24.8	25.1	27.2
RDT88	443670	395306	Roadside	93.0	93.0	39.2	37.7	27.8	29.6	30.2
RDT89	443677	395545	Roadside	84.0	84.0	**51.2**	**44.7**	36.9	37.8	**41.2**

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

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

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

Notes:

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

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

Trends in nitrogen dioxide annual mean are presented in this section. All sites are averaged in Figure A.1.4 shows the general trend in monthly mean nitrogen dioxide across Rotherham. The other charts (Figure A.1.1 and Figure A.1.2) show the trends in the 2 AQMAs where monitored levels of nitrogen dioxide annual mean were still greater than 40ug/m^3 at a minimum of one monitored location during 2022.

Figure A.1.1 Rawmarsh AQMA

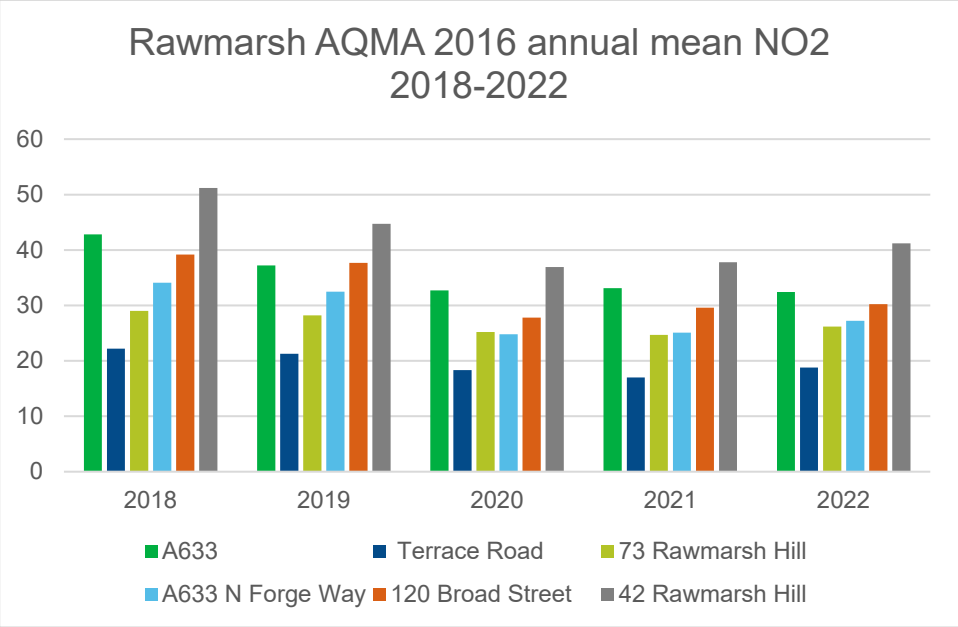


Figure A.1.2 Fitzwilliam Road

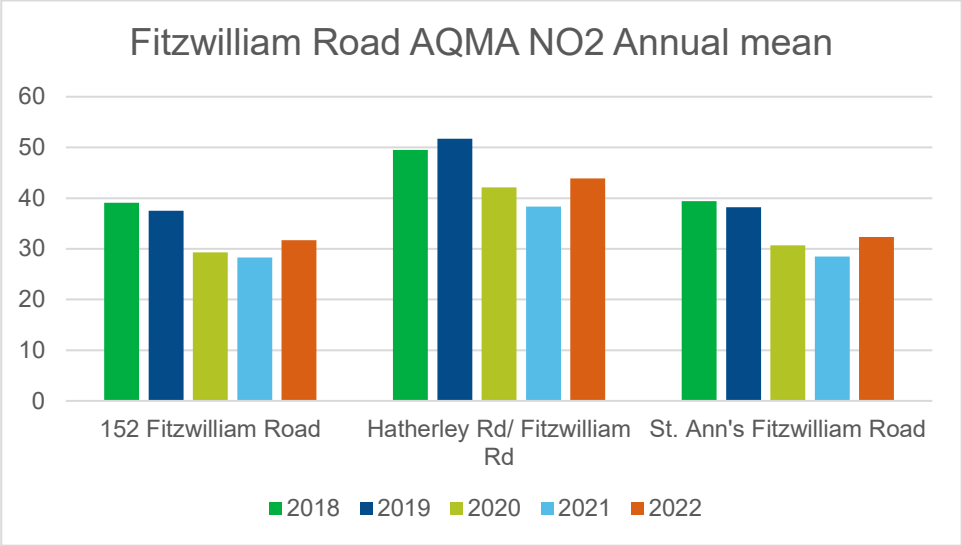


Figure A.1.3 Annual average mean nitrogen dioxide all sites

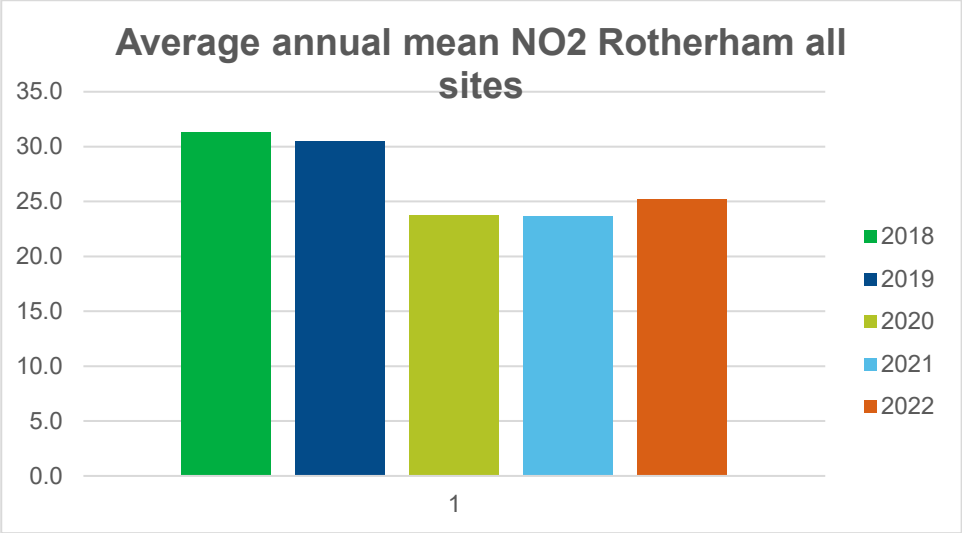


Figure A.1.4 Trend in monthly mean nitrogen dioxide (all sites) 2019-2022

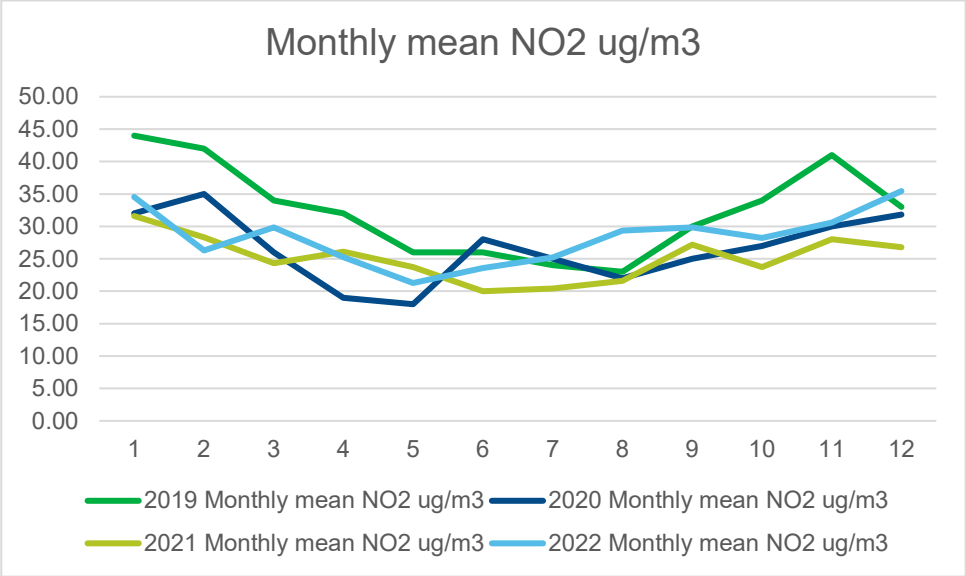


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
Blackburn School	438703	392816	Urban Background	93	93	0	0	0	0	0
St Ann's	443347	393983	Roadside	98.1	98.1	0	0	0	0	0

Notes:

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

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Table A.6 – Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
St Ann's School	443513	393422	Urban Background	100	100					7.8

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

Notes:

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

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2022

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

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
RDT1	443699	395439	45.8	34.2	48.7	12.5	10.0	29.6	27.9	34.7	36.5	34.7	34.7	39.7	32.4	32.4		
RDT2	443634	395635	30.3	19.3	27.3	14.8	14.7	12.0		8.5	18.8	8.5	22.4	30.1	18.8	18.8		
RDT3	443650	395688	39.5	24.8	27.9	25.0	7.3	23.2	22.2	26.5	29.2	26.5	28.3	33.6	26.2	26.2		
RDT4	443695	401424	29.3	23.5	31.4	21.2	6.5	12.8	14.2	20.9	20.7	20.9	24.2	25.0	20.9	20.9		
RDT5	444245	398064	31.3	25.4	38.4	16.6	11.9	28.0	29.4	31.9	31.0	31.9	33.7	33.3	28.6	28.6		
RDT6	444926	399292	38.5		34.5	16.8		26.6	19.2	22.5	29.9	22.5	28.6	31.2	27.0	27.0		
RDT7	444895	399343	37.3	26.3	25.0	18.9	22.7	18.2	25.2	27.3	27.9	27.3	25.5	37.7	26.6	26.6		
RDT8	445903	399127	29.7	23.3	21.2	23.7	13.6	13.1	12.2	15.5	17.7	15.5	20.6	27.4	19.5	19.5		
RDT9	445934	399104	37.8	27.2	24.4	21.0	16.7	17.0	20.3	25.7	25.5	25.7	25.8	29.4	24.7	24.7		
RDT10	446304	399227	34.0	26.8	28.7	21.9	13.9	17.1	18.4	22.2	22.8	22.2	25.7	31.5	23.8	23.8		
RDT11	446328	399230	40.9	27.3	21.6	19.4	17.1	19.2	20.9		26.5		25.7	33.3	25.2	25.2		
RDT12	443647	401400	28.6	19.3	19.2	17.0	9.2	11.8	12.3	15.7	18.4	15.7	23.9	22.5	17.8	17.8		
RDT13	443531	401446	28.5	22.3	24.4	14.6	10.0	12.7	16.6	15.7	18.0	15.7	18.2	27.4	18.7	18.7		
RDT14	442538	401818	36.4	29.0	26.0	15.5	7.9	19.8		21.3	48.3	21.3	19.8	27.4	24.8	24.8		
RDT15	443065	401529	32.8	26.6	24.6	19.9	9.3	16.9	12.6	19.6	23.2	19.6	28.6	30.1	22.0	22.0		
RDT16	436972	395669	47.9	32.5	30.3	20.5	11.3	25.2	22.9	24.5	29.3	24.5	23.7	28.7	26.8	26.8		
RDT17	436983	395815	27.5	22.6	20.0	18.4	9.0		14.1	16.5	17.8	16.5	29.8		19.2	19.2		
RDT18	441015	393337	27.5	22.6	20.0	18.4	9.0		14.1	16.5	17.8	16.5	29.8		19.2	19.2		
RDT19	441049	393331	36.2		34.2	14.2	17.4	16.6	24.2	25.3			32.7	26.7	25.3	25.3		
RDT20	440135	393772	35.5	25.4	32.8	15.4	15.4	16.2	19.2	22.4	30.2	22.4	27.7	22.4	23.7	23.7		
RDT21	441024	393347	53.5	32.0	43.2		17.9	32.2		25.4	23.9	25.4	38.7	29.1	32.1	32.1		
RDT22	439520	394172	33.6	20.4	32.3	19.6	14.1	21.9	36.9	19.7		19.7	21.9	18.9	23.5	23.5		
RDT23	441133	393322	41.6	27.4	40.8	15.9	14.6	14.1	20.1	38.2	22.1	38.2	30.8	16.5	26.7	26.7		
RDT24	438259	395065	31.5	22.1	27.1	28.0	17.9	20.6	14.9	16.1	27.9	16.1	24.1	18.8	22.1	22.1		
RDT25	442404	394652	41.6	27.0	36.1		17.1	17.5	22.5	21.3	28.7	21.3	28.6	22.5	25.8	25.8		
RDT26	442323	395036	29.8	30.8	36.6		17.0	13.8	17.6	23.2	22.5	23.2	32.4	29.9	25.2	25.2		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
RDT27	438704	392842	45.1	39.2	39.6	16.6	9.4	13.9	27.0	29.0	34.7	29.0	21.1	26.3	27.6	27.6		
RDT28	438621	392858	45.1	39.2		16.6	9.4	13.9	27.0	29.0	34.7	29.0	21.1	26.3	26.5	26.5		
RDT29	439055	392376	33.4	29.3	23.5	19.1	24.2	23.2	13.5	15.1	17.7	15.1	23.3	19.5	21.4	21.4		
RDT30	438845	392596	35.4	19.3	29.6	32.1	14.8	28.9	28.1	26.0	30.1	26.0	37.3	39.1	28.9	28.9		
RDT31	438876	392533	38.4	20.4	32.6	28.5	21.7	17.5	24.0	24.6	26.2	24.6	29.0	31.2	26.6	26.6		
RDT32	439565	392054	34.5	29.3	31.0	22.8	27.8	17.8	18.3	21.4	21.0	21.4	25.9	23.5	24.6	24.6		
RDT33	441321	388461	33.9	24.8	32.9	16.1	13.8		19.4	24.1	19.9	24.1	27.2	26.6	23.9	23.9		
RDT34	441447	388267	36.8	25.6	36.8	24.9	11.5	19.0	21.0	24.7	21.1	24.7	26.2	29.2	25.1	25.1		
RDT35	441695	388096	44.1	24.6	34.5	29.1	20.3	9.5	19.7	24.1	23.4	24.1	23.0	26.8	25.3	25.3		
RDT36	441641	387494	29.9	18.2	26.0	12.8	17.9	12.9	10.9	13.5	14.0	13.5	16.4	22.0	17.3	17.3		
RDT37	441448	387581	35.8	20.4	23.3	16.1	32.1	28.3	12.6	16.3	16.6	16.3	25.5	24.4	22.3	22.3		
RDT38	446158	394699	44.9	38.4	31.8	40.3	37.3	12.6	27.8	24.4	36.5	24.4	28.7	37.1	32.0	32.0		
RDT39	449387	392148	28.9	21.2	31.8	16.0	17.7	10.4	11.8	26.1	18.2	26.1	21.2	20.0	20.8	20.8		
RDT40	449628	391724	26.5	23.1	32.9	20.7	19.1	15.8	19.0	16.2	15.4	16.2	20.2	27.3	21.0	21.0		
RDT41	448919	392336	26.8	26.7	38.3	25.9	18.3	26.9	21.6	22.8	22.0	22.8	24.6	32.9	25.8	25.8		
RDT42	450102	392077	46.5	27.0	25.9	23.2	12.5	15.5	29.9	32.6	36.9	32.6	24.5	26.5	27.8	27.8		
RDT43	453470	392138																
RDT44	447281	391632	33.7	21.3	25.3	19.8	26.5	42.2	17.9	20.2	21.8	20.2	20.4	28.2	24.8	24.8		
RDT45	444375	390165	37.4	27.0	26.6	21.4	29.6	30.8	18.0	18.4	21.5	18.4	30.5	38.3	26.5	26.5		
RDT46	442681	388729	26.1	19.7	20.8	16.3	22.8	12.3		36.5	16.4	36.5	15.6		22.3	22.3		
RDT47	442587	388594	32.6	25.9	32.2	22.9	10.8	21.6	23.8	31.7	25.0	31.7	1.7	32.6	24.4	24.4		
RDT48	442491	389132	27.9	25.1	37.9	15.7	16.4	22.6	17.9	44.7	18.3	22.1	24.3	29.8	25.2	25.2		
RDT49	442617	389111		25.1	37.9	15.7	16.4	22.6	17.9	44.7	18.3	22.1	24.3	29.8	25.0	25.0		
RDT50	442623	388976	42.0	33.2	40.2	19.5	10.9	11.9		27.3	29.0		26.1	34.1	27.4	27.4		
RDT51	441961	388850	33.8	21.9	32.7	12.0	15.4	18.5	10.7	23.7	17.3	27.3	20.5	25.3	21.6	21.6		
RDT52	442866	389161	31.4	27.7	33.3	17.0	16.1	20.5	21.5	24.2	20.7	23.7	26.3	31.1	24.5	24.5		
RDT53	441765	389248	41.6	36.0	39.3	28.0	9.1	13.0	26.9		24.4		34.5	39.7	29.3	29.3		
RDT54	441988	389466			30.3	21.4	12.2	22.1	14.5	17.4	15.0	17.4	22.6	27.2	20.0	20.0		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
RDT55	441283	389500	42.1		44.0	21.5	14.8	15.9	24.0	30.5	22.1	30.5	29.8	37.6	28.4	28.4		
RDT56	444793	384419	36.6	19.0	29.0	25.6	11.2	17.9	21.1	25.0	22.4	25.0	21.0	28.6	23.5	23.5		
RDT57	444714	384411	28.4	24.7	37.0	10.8	23.0	18.0	19.7	26.2	25.5	26.2	24.3	29.1	24.4	24.4		
RDT58	447547	382894	42.3	27.3	34.5	17.6	14.6	25.6	21.6				25.7	30.7	26.7	26.7		
RDT59	447389	382893	43.4		30.7	9.7	13.4	10.0	25.9	30.0	29.3	30.0	26.6	36.3	25.9	25.9		
RDT60	448144	381215		27.1	20.7	21.3	22.3	22.4	14.0	13.3	9.6	15.5	9.6	21.6	17.9	17.9		
RDT61	448133	380458	36.1	24.2	19.2	12.8	19.0	17.8	15.6	14.8	14.7	14.8	17.6	24.0	19.2	19.2		
RDT62	444476	390210	37.4	27.0	26.6	21.4	29.6	30.8	18.0	18.4	21.5	18.4	30.5	38.3	26.5	26.5		
RDT63	444470	390223	48.0	40.9	39.0	23.9	15.2	6.9	30.0	31.3	32.6	31.3		26.0	29.6	29.6		
RDT64	449726	380358	19.6		16.5	24.0		9.0	9.0	16.8	10.2	16.8	14.9	19.5	15.6	15.6		
RDT65	449444	380469	25.0	17.9	14.2	11.4	14.5	13.3	9.8	12.4	12.5	12.4	19.7	21.8	15.4	15.4		
RDT66	449318	381007			30.4	13.9	17.2	28.8	11.8	14.1	15.1	14.1	21.2	26.0	19.2	19.2		
RDT67	443764	391283		26.8	31.0	19.5		21.0	20.1	20.7	23.7	25.7	26.1	29.7	24.4	24.4		
RDT68	445192	390958	46.9	33.2	43.9		20.9	21.1	24.6	27.8	34.2	27.7	30.1	30.7	31.0	31.0		
RDT69	444565	391641	36.6	22.5	30.0	16.6	12.3	13.8			20.5	17.4	21.1	25.5	21.6	21.6		
RDT70	443969	392041	32.9	21.4	26.8	18.6		13.3	16.6	18.6	24.8	17.0	18.2	23.0	21.0	21.0		
RDT71	444189	393694	29.3		25.7	16.2	14.3	13.6	12.2	14.1	19.5	15.9	28.7	23.7	19.4	19.4		
RDT72	443072	392668	56.8	30.0	40.7	29.7	16.0	27.7	28.2	28.5	35.3	26.0	28.0	31.3	31.5	31.5		
RDT73	443145	392615	45.1	30.0	35.3	21.6	24.4	19.0	17.6	21.0	30.4	24.1	24.9	30.7	27.0	27.0		
RDT74	443197	392573	38.7	27.8	27.8	20.0		27.3	21.2	19.9	25.8	22.2	23.9	27.6	25.7	25.7		
RDT75	443334	392466	38.8	27.8	31.0	19.4	17.3	16.8	17.0	17.3	25.3	20.6	22.0	27.9	23.4	23.4		
RDT76	443495	392407	55.1	36.4	40.7	26.1	21.1	20.2	24.6	25.6	40.6	30.2	26.0	31.9	31.5	31.5		
RDT77	443579	392390	43.6	35.3	36.4	23.0	19.2	18.2	18.5	20.2	28.0	24.8	21.5	30.1	26.6	26.6		
RDT78	443861	393185	37.5	26.8	27.8	17.6	16.4		14.0	16.9	18.3	17.3	18.5	24.6	21.4	21.4		
RDT79	445234	394161	54.0	52.4	37.5	37.0	19.3		32.1	33.1	38.5	38.7	36.2	42.4	38.3	38.3		
RDT80	443039	392855		32.1	35.3	28.0	12.0	32.0	20.2	21.3	25.4	23.8	26.4	29.7	26.0	26.0		
RDT81	443724	393628	40.8	35.3	38.5	26.3	26.7	30.7	26.1	26.7	36.8	30.5	27.3	34.2	31.7	31.7		
RDT82	442393	388717	23.5	25.7	31.0	20.5	11.6	17.2	17.3	21.5	21.1	18.4	20.4	25.1	21.1	21.1		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
RDT83	443371	393426	53.5	57.8	51.4	31.1	34.5	44.1	39.6	37.1	49.9	42.5	37.5	47.2	43.9	43.9	40.4	
RDT84	443640	393567	42.9		42.8	22.1	24.7	32.2	28.6	28.6	34.3	31.0	31.5	36.6	32.3	32.3		
RDT85	443216	393085	34.4	32.1	31.0	25.5	19.9	23.8	17.7	17.3	26.2	22.0	27.3	35.0	26.0	26.0		
RDT86	443070	393115	38.3		30.0	18.4	27.3	15.0	22.9	24.9	32.3	27.2	19.1	26.1	25.6	25.6		
RDT87	443277	394101	44.1	28.9	34.2	25.8	17.5	20.1	19.4	25.4		24.8	27.9	31.3	27.2	27.2		
RDT88	443670	395306	40.9	34.2	36.4	25.0	20.7	27.9	23.5		25.8	27.7	33.0	37.2	30.2	30.2		
RDT89	443677	395545	59.8	46.0	54.6	34.1	27.5	40.0	35.9	31.5	40.2			42.5	41.2	41.2	38.4	

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

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

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor was selected in the reporting templates as a fix advised by the LAQM, Helpdesk:** Unfortunately the DTDPT does not allow for 2 bias adjustment factors to be applied across the year. As a work around you will need to apply the bias adjustments to the raw monthly data ahead of entering the data into the STEP 2 tab within the tool. In STEP 3 please put 1 into the field which states “Enter National Bias Adjustment Factor”. This will ensure no further bias adjustment is undertaken on the data. Select “National” for the question “Which bias adjustment factor will be used for data processing?” and then proceed to the next step.

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

☒ **We confirm that all available 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources of Air Pollution Identified Within Rotherham During 2023

There are always developments under construction throughout the borough. These are assessed for their air quality impact through the development control process. None have been predicted to have a *significantly adverse* impact on ambient air quality have been identified. A development would need to be very large or have a substantial emission rate close to sensitive receptors to be classed as having a significantly adverse impact. Background levels of nitrogen dioxide are steadily decreasing across the borough.

Additional Air Quality Works Undertaken by Rotherham MBC During 2022-23

Clean Air Zone for Sheffield/Rotherham Feasibility Study and Air Quality Plan Business Cases

The Sheffield/Rotherham Local Clean Air Plan is being implemented.

Schemes benefitting Air Quality 2022-23

Sheffield Parkway A630 Improvement and Speed Reduction

The Rotherham MBC transport team have completed the scheme for the A630 Sheffield Parkway.

The key benefit in terms of air quality (nitrogen dioxide annual mean concentrations) is the reduction of the speed limit from 70mph to 50mph. It is predicted that the scheme will also improve road safety, reduce transport carbon dioxide as part of Rotherham Council's Clean Air Zone plans.

There are no LAQM sensitive receptors close enough to the A630 for an exceedance of NAQS standards, however the link was identified by the Government as a road which breaches EU Limit Values in 2017. It is predicted that now the local plan has been implemented, there will be no future exceedences of the EU annual mean nitrogen dioxide objective locations with relevant exposure within 10m of the carriageway.

Rawmarsh Hill AQMA - Bellows Road Clean Air Plan Scheme

This scheme was developed because of legal direction from central Government, and the Council was obliged to deliver the scheme in the shortest possible time.

It is intended to improve bus journey time reliability and addresses an identified need for improved pedestrian and cycle facilities

Highways construction has been completed.

Wortley Road- uphill HGV ban

Rotherham MBC Cabinet approved the progression of the Wortley Road heavy goods vehicle prohibition scheme in March 2021. The legal orders to implement the prohibition are now in place. A reduction of 90% in the number of HGVs travelling uphill. The scheme is reducing the impact of road freight on communities in the area.

QA/QC of Diffusion Tube Monitoring

Diffusion Tube Preparation Method	2020 Good	2020 Bad	2021 Good	2021 Bad	2022 Good	2022 Bad
Gradko, 50% TEA in Acetone	19	1	16	0	14	0

From April 2022 the Council has used Gradko Environmental for provision and analysis of diffusion tubes. The performance for the laboratory is shown in the above table. The adsorbant technique used was 50% TEA in acetone, which is consistent with previous years. The diffusion tube monitoring has been completed in adherence with the 2022 Diffusion Tube Monitoring Calendar.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within this 2022 ASR have been corrected for bias using two adjustment factors for each of the 2 laboratories used during the calendar year. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of

diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

The Council has applied a 2 local bias adjustment factors to different periods as different laboratories were used during the calendar year (analysis contracts are placed to cover a financial year) of 1.07 period 1 (SYAQS) and 0.82 (period 2 Gradko) to the 2022 monitoring data. A summary of bias adjustment factors used by the Council over the past five years is presented in Table C.2.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local	-	Period 1 – 1.07 Period 2 – 0.82
2021	Local	-	0.93
2020	Local	-	0.93
2019	Local	-	0.95
2018	Local	-	1.05

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2
Periods used to calculate bias	3 (First 3 months of year)	9 (second 9 months of year)
Bias Factor A	1.07 (0.99 – 1.16)	0.82 (0.75-0.9)
Bias Factor B	-12% (-14% - -1%)	22% (11-33%)
Diffusion Tube Mean (µg/m^3)	30.0	23
Mean CV (Precision)	5.0%	8.0
Automatic Mean (µg/m^3)	32.0	19
Data Capture	98%	97%
Adjusted Tube Mean (µg/m^3)	32 (30 – 35)	19 (17-20)

As explained elsewhere is this report, as a workaround for the inability of the DTDES to cope with 2 BAF in a calendar year, the tables were completed with a 'national' BAF of 1 selected. Input 1 is SYAQS and Input 2 is for Gradko.

Notes:

Two different local bias adjustment factors were used for different periods of 2022 on account of the different suppliers which were used.

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

Table C.3 – NO_2 Fall off With Distance Calculations (concentrations presented in $\mu g/m^3$)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
RDT83	1.7	4.0	43.9	26.0	40.4	Local b/g
RDT89	1.1	3.5	41.2	29.5	38.4	Local b/g

QA/QC of Automatic Monitoring

The Local Authority carries out the QA/QC. calibration every two weeks routinely. The main issues affecting data capture are usually power supply disruption and mobile communication problems. The sites are audited by National Physical Laboratory. Service and maintenance contracts with 48-hour emergency callout are in place for each analyser. Data is collected daily using the Rotherham iAirviro Indico Administration system and data validation undertaken using the Indico Validation system.

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

Our PM2.5 monitoring was carried out using a Met 1 sampler, therefore VCM correction was not necessary.

Automatic Monitoring Annualisation

No annualisation of automatic monitoring was carried out.

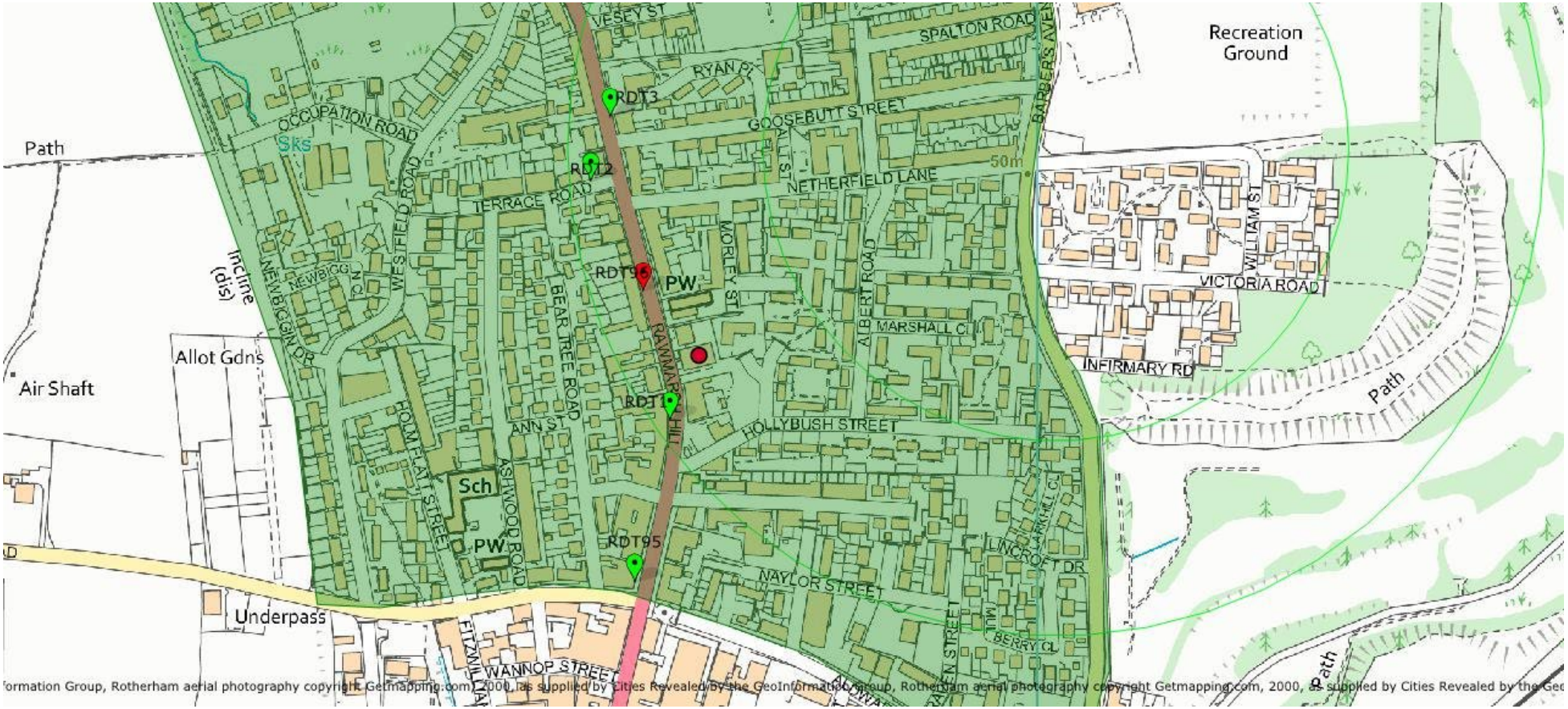
NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM

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

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

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




Eastwood Village Primary School
PW
Recreation Ground
Grafton Bridge
Sewage Ppg Sta
Health Centre
ELDON ROAD
SHAKESPEARE ROAD
FITZWILLIAM ROAD
DONCASTER ROAD
HALDANE ROAD
HARDWICKE ROAD
ERSKINE ROAD
RUSSELL STREET
SELBORNE STREET
LINDLEY STREET
BRAMWELL STREET
BETHEL ROAD
GROSVENOR ROAD
MILTON ROAD
HATHERLEY ROAD
SELWYN STREET
DENMAN ST
A633
A630
RDT88
RDT91
RDT90
RDT78
Eastwood
Sch
Gas Governor
SUMNER ROAD
CLARENDON ROAD
BOWEN ROAD
CRANWORTH ROAD
COLERIDGE ROAD
COTTENHAM ROAD
St Ann's Junior and Infants School
East De Primary School
23m
24m
37m
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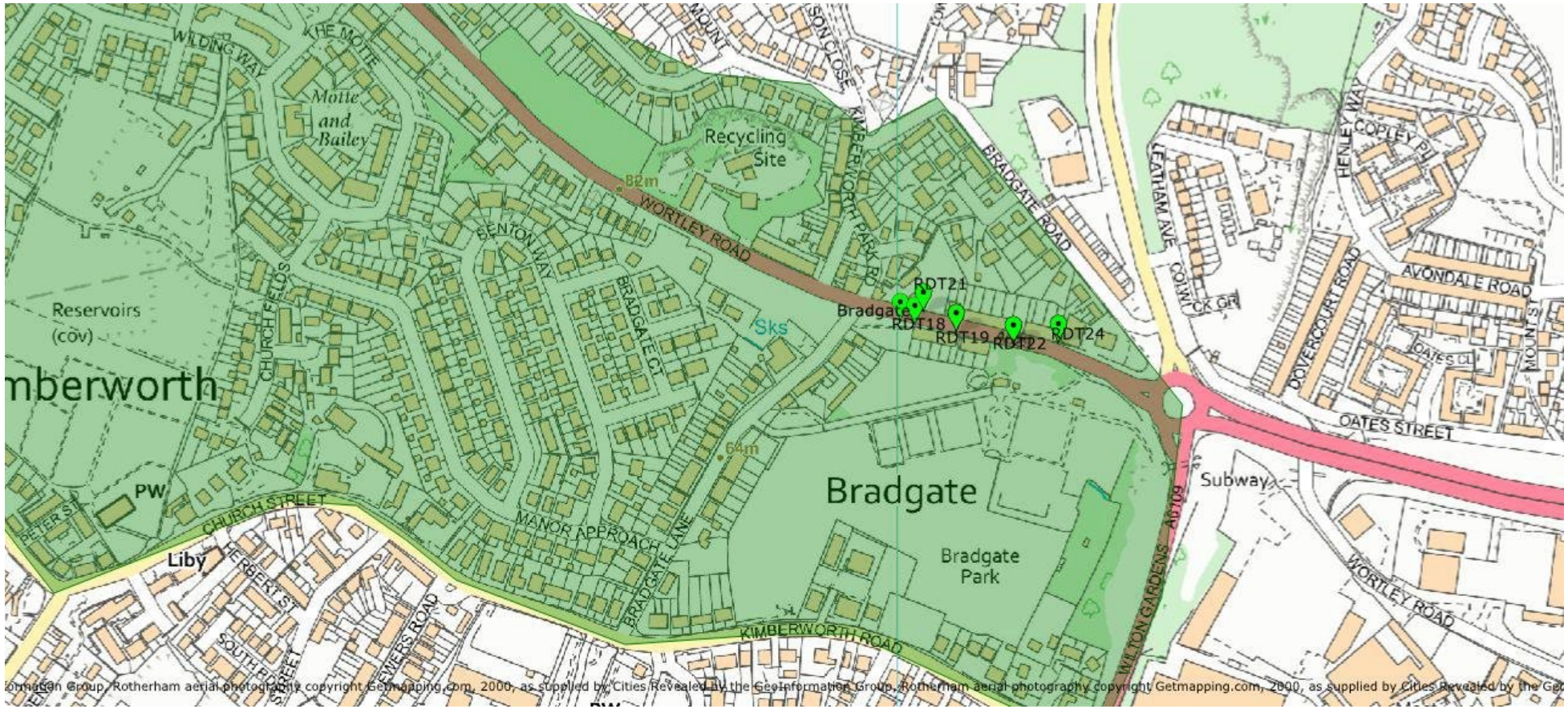
WILDING WAY
THE MOTTE
Motte and Bailey
Recycling Site
82m
WORTLEY ROAD
KIMBERWORTH PARK RD
BRADGATE ROAD
HENLEY WAY
COPLEY PH
LEATHAM AVE
AVONDALE ROAD
DOVECOURT ROAD
OATES ST
OATES STREET
MOUNT ST
BENTON WAY
CHURCHFIELDS
Reservoirs (cov)
mberworth
BRADGATE CT
Sks
RDT21
Bradgate
RDT18
RDT19
RDT22
RDT24
64m
Bradgate
Bradgate Park
Subway
PW
CHURCH STREET
PETER ST
Liby
HERBERT ST
SOUTH ROAD
SEWERS ROAD
MANOR APPROACH
BRADGATE LANE
KIMBERWORTH ROAD
WILTON GARDENS
A6109
WORTLEY ROAD
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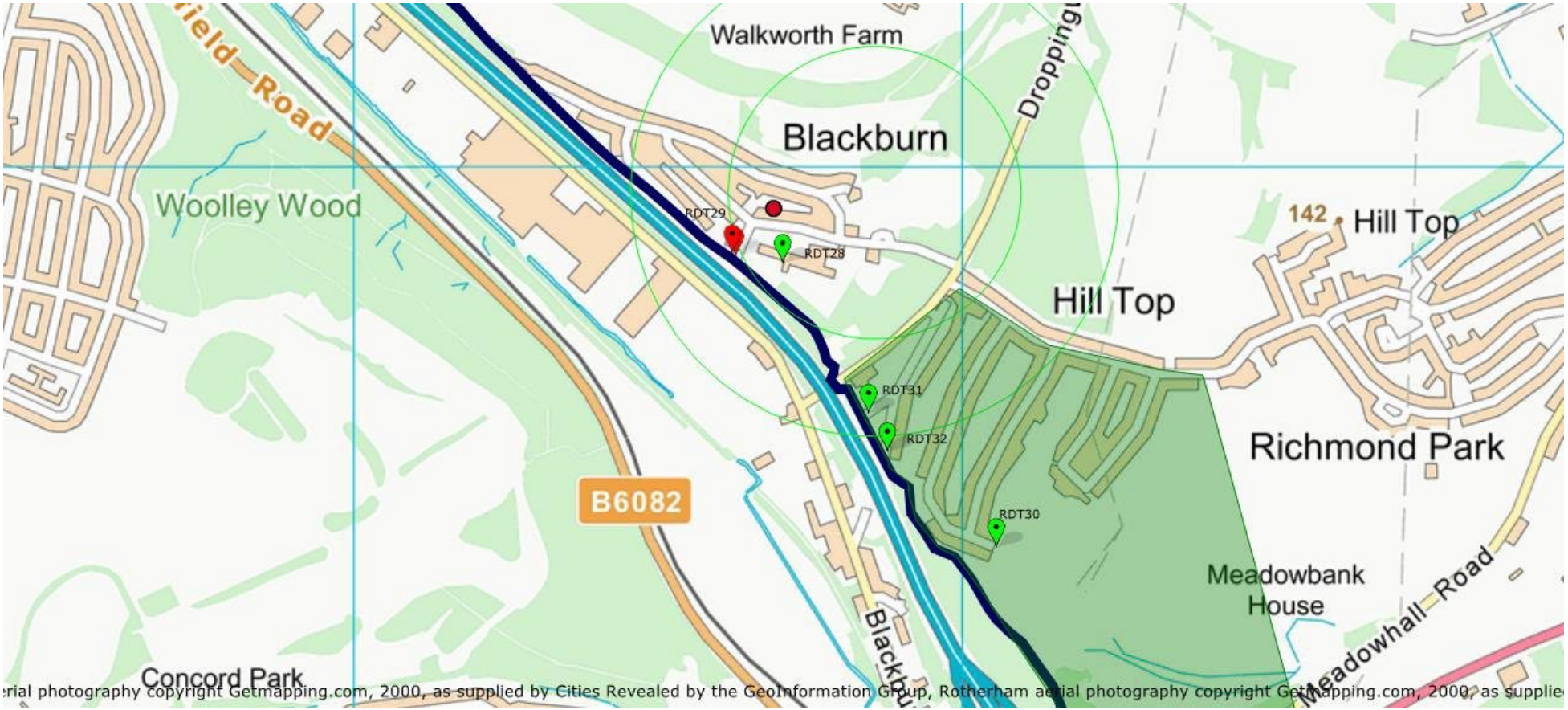
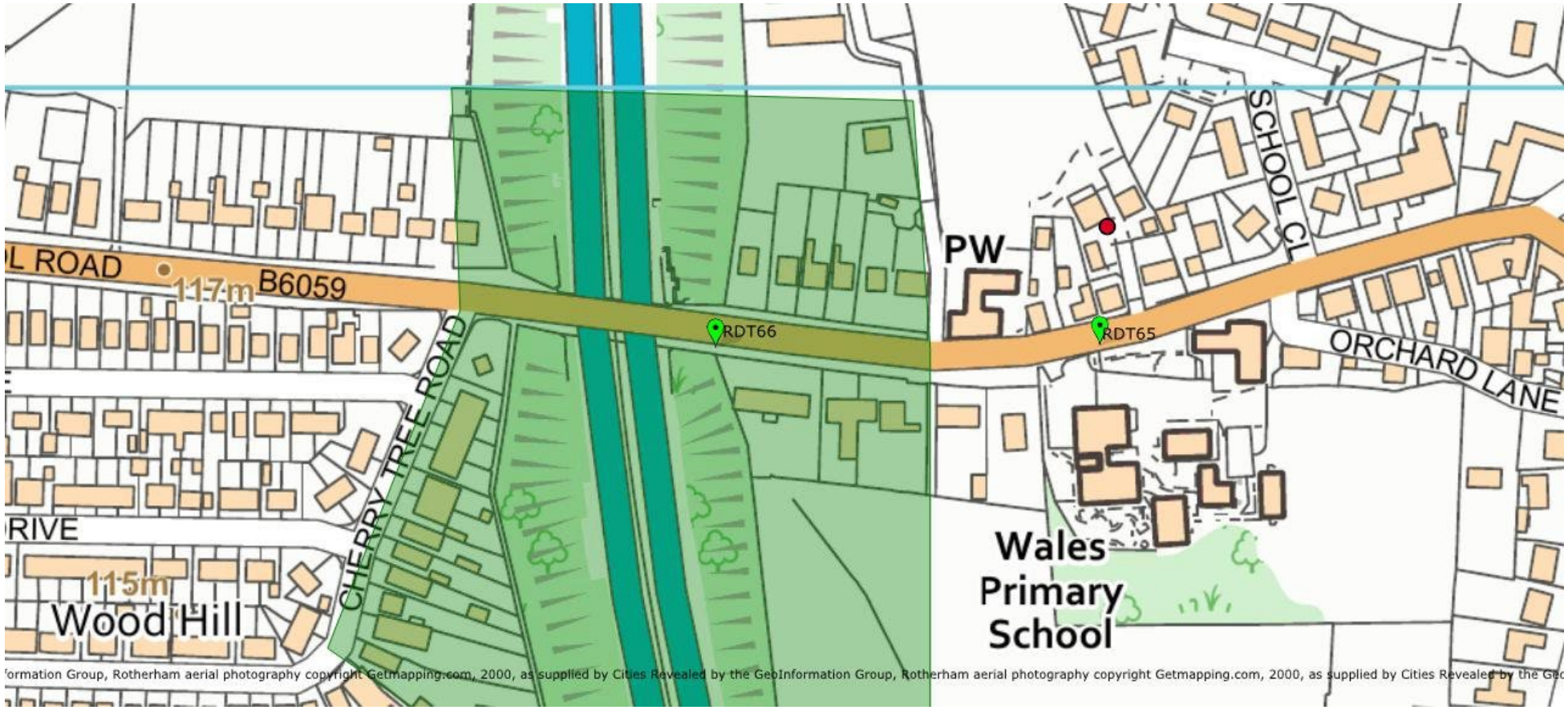
B6067
33
RDT60
White Hill
75
RDT51-54
RDT55
RDT58-59
Brinsworth Road
RDT56-57
RDT38
RDT49
River Rother
RDT50
Catcliffe
Long Lane
formation Group, Rotherham aerial photography copyright Getmapping.com, 2000, as supplied by Cities Revealed by the GeoInformation Group, Rotherham aerial photography copyright Getmapping.com, 2000, as supplied by Cities Revealed by the Geo


Walkworth Farm
Blackburn
Woolley Wood
RDT29
RDT28
142
Hill Top
Hill Top
RDT31
RDT32
Richmond Park
B6082
RDT30
Meadowbank
House
Concord Park
Meadowhall Road
rial photography copyright Getmapping.com, 2000, as supplied by Cities Revealed by the GeoInformation Group, Rotherham aerial photography copyright Getmapping.com, 2000, as supplie


L ROAD
117m
B6059
RDT66
RDT65
PW
SCHOOL CL
ORCHARD LANE
CHERRY TREE ROAD
RIVE
115m
Wood Hill
Wales
Primary
School
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Appendix E: Summary of Air Quality Objectives in England

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

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

[7] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

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

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