



# 2025 Air Quality Annual Status Report (ASR)

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

Date: June, 2025

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## Local Responsibilities and Commitment

This ASR was prepared by the Environmental Control and Pollution Team of Rushmoor Borough Council with the support and agreement of the following officers and departments:

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This ASR has been approved by:

Councillor Christine Guinness – Neighbourhood Services portfolio



James Duggin – Executive Head of Operations



This ASR has not been signed off by a Director of Public Health. However, a copy has been sent to them for comment.

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## Executive Summary: Air Quality in Our Area

### Air Quality in Rushmoor Borough Council

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

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

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

**Table ES 1 - Description of Key Pollutants**

Pollutant	Description
Nitrogen Dioxide (NO <sub>2</sub> )	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO <sub>2</sub> )	Sulphur dioxide (SO <sub>2</sub> ) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	<p>Particulate matter is everything in the air that is not a gas.</p> <p>Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.</p> <p>PM<sub>10</sub> refers to particles under 10 micrometres. Fine particulate matter or PM<sub>2.5</sub> are particles under 2.5 micrometres.</p>

Rushmoor Borough Council has been investigating air quality in the borough since 1999, following the guidance provided in the Local Air Quality Management process, as part of

the requirements of the Environment Act 1995. This review and assessment of air quality over the years has identified that the main pollutant of concern is nitrogen dioxide.

Monitoring of nitrogen dioxide (NO<sub>2</sub>) levels in Rushmoor has continued, with 25 monitoring sites across the borough in 2024 with recent results showing a continuing improvement, in line with national trends. Air quality objectives are being achieved and the designation of an Air Quality Management Area within the Borough is not required.

Whilst monitoring across the borough shows that the relevant air quality objectives are being met, further improvements in air quality is always desirable, particularly close to main roads that experience a high volume of traffic. Rushmoor Borough Council will continue to work closely with Hampshire County Council and Highways England, who ultimately have direct responsibility for these roads, to seek continuing improvements to air quality in these areas.

Rushmoor and Surrey Heath Borough Councils, along with Hampshire and Surrey County Councils, working as the Blackwater Valley Group, were directed by the Secretary of State to implement a Local Plan to achieve air quality improvements along the A331, and to bring about compliance with the NO<sub>2</sub> EU limit value in the shortest possible time. A speed restriction of 50mph along a 1.8 km section of the A331, between Coleford Bridge and Frimley was implemented in 2019. Ongoing monitoring has demonstrated ongoing compliance with the NO<sub>2</sub> EU limit value. During 2024, and in accordance with the Exiting the NO<sub>2</sub> Programme guidance, the Blackwater Valley Group carried on an assessment to determine the potential air quality impact of reverting back to a 70mph speed limit, under a number of traffic flow scenarios. The results of this analysis demonstrated that even with a significant increase in traffic and a return to a 70mph speed limit, there would be no exceedance of the EU Limit value. As a result, the Blackwater Valley Group have produced an Exit Plan to formally withdraw from the project and are currently awaiting official sign off from the Secretary for State confirming the terms of the Ministerial Direction have been met. However, even though the Local Plan has proven successful, the 50mph speed restriction measure will be retained in the short term, until construction of a new northbound slip road, to be introduced as part of the Wellesley development in Aldershot, has been completed.

Rushmoor had hoped to use any underspend from this project to develop an Air Quality Strategy. When awarded grant funding in March 2019 to implement the Blackwater Valley Local Plan, the accompanying letter from the Joint Air Quality Unit specified that if the

funding had not been exhausted it could be used for delivering air quality improvements. Rushmoor and Surrey Heath Borough Councils had therefore planned to build on the legacy of the Local Plan by developing a shared Air Quality Strategy to coordinate efforts to address levels of NO<sub>2</sub> and particulate matter, particularly PM<sub>2.5</sub>, along the length of the A331 corridor shared by the Councils. The idea being to identify region-specific needs and recommend tailored future actions to be fed into our individual air quality strategies. However, updated guidance from Joint Air Quality Unit (JAQU) in February 2025 confirmed JAQU's position on recovering unspent money after Programme exit. Any uncommitted funds or underspend exceeding £40,000 would be returned to JAQU in full before exiting the Programme. This removal of this funding stream has delayed development of the strategy and our plans for the scope of the strategy have had to be realigned to match economic realities.

## **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.

Rushmoor Borough Council have undertaken several measures to improve air quality across our region:

- The Rushmoor Local Plan, adopted February 2019, will guide the location, scale and type of future development in Rushmoor up to 2032 and contains detailed policies to protect air quality. These are designed to prevent future developments from impacting local air quality negatively, ensuring continued compliance with national air quality objectives. All significant applications for development require the submission of a comprehensive air quality assessment.
- The Blackwater Valley Local Plan has implemented a speed restriction along the A331 to reduce concentrations of NO<sub>2</sub>. Recent analysis has demonstrated continuing compliance with the EU limit value for levels of NO<sub>2</sub>. Despite our plan to exit this project this year the 50mph speed restriction will be retained in the short term.
- Rushmoor Borough Council declared a climate emergency in Rushmoor in 2019, and have committed to become a carbon neutral Council by 2030 and to provide a green and sustainable Rushmoor. The Climate Change Strategy 2025-2028 sets

out how this is to be achieved, establishing the strategic framework within which action plans will be aligned over a three-year period. The updated Climate Change Action Plan 2025-2028 contains 10 priority actions that are focused on both becoming carbon neutral for the Council's Operational Emissions and towards becoming a greener and more sustainable borough.

## Conclusions and Priorities

During 2024, there were no exceedances of the nitrogen dioxide (NO<sub>2</sub>) annual mean air quality objective of 40µg/m<sup>3</sup> recorded at any monitoring location within the borough. Concentrations at all long-established sites remain significantly down on levels monitored before Covid-19. The overall trend on average remains one of gradual reduction since 2002.

Rushmoor Borough Council will continue to monitor NO<sub>2</sub> using passive diffusion tubes and will continue to periodically review this monitoring regime in order to identify areas at risk from poor air quality and to ensure monitoring is representative of the whole borough.

Planning applications with the potential to impact air quality in Rushmoor will continue to be carefully considered. All significant applications for development will require submission of a comprehensive air quality assessment.

Rushmoor will continue to respond and investigate potential statutory nuisance issues associated with smoke and emissions in order to address particulate emissions.

Rushmoor Borough Council's priorities for the coming year are to continue implementation of the Council's Climate Change Action Plan and to produce a Local Air Quality Strategy. Whilst the Blackwater Valley Group have submitted their Exit Plan to withdraw from the NO<sub>2</sub> Programme, the 50mph speed restriction along part of the A331 will be retained in the short-term, therefore maintaining reduced NO<sub>x</sub> emissions when compared against a return to 70mph.

## How to get Involved

Road traffic emissions are the main source of pollution in the borough, so there are a number of ways in which residents and businesses locally can help to improve air quality in the area. Reducing energy use in the home, at work and whilst travelling all can have a

beneficial impact on local air quality, whilst saving money and reducing carbon emissions.

Reducing fuel use is easy and individual minor changes can collectively make a significant contribution to improving local air quality:

- Walk or cycle for shorter journeys when you can. Not only is this good for the environment but it's also good for your health and wellbeing:  
<https://myjourneyhampshire.com/>
- Use public transport where possible: <http://www.travelinesw.com/>
- Car sharing is an easy way to reduce emission and fuel costs:  
<https://liftshare.com/uk>
- Improving your driving style can save lots of fuel:  
<https://myjourneyhampshire.com/drive/eco-driving/>

Further details of air quality in the Borough can be found on the Council's webpages at:

[Air quality - Rushmoor Borough Council](#)

For some simple ways to reduce your carbon footprint, visit: [Reducing your carbon footprint - Rushmoor Borough Council](#)

Information on wood burning stoves and open fires is available on the Defra website:

[Open fires and wood-burning stoves - a practical guide \(defra.gov.uk\)](#)

To decrease emissions from the burning of garden waste, Rushmoor Council encourage residents to consider composting: [Composting - Rushmoor Borough Council](#)

Alternatively a garden waste collection service is available: [Garden waste recycling - Rushmoor Borough Council](#)

Useful information on air quality at home can also be found on the Hampshire County Council Clean Air at Home webpage: [Clean air at home | My Journey Hampshire](#)



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# 1 Local Air Quality Management

This report provides an overview of air quality in Rushmoor during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

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

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

## **2 Actions to Improve Air Quality**

### **2.1 Air Quality Management Areas**

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

Rushmoor Borough Council currently does not have any declared AQMAs. A Local Air Quality Strategy is currently under development to prevent and reduce polluting activities.

## 2.2 Progress and Impact of Measures to address Air Quality in Rushmoor

Defra's appraisal of last year's ASR concluded the report was well structured, detailed and provided the information specified in the Guidance. Overall, the report provided a good insight into the work that the Council are doing to improve local air quality. On the basis of the evidence provided by the local authority the conclusions reached in the report are accepted for all sources and pollutants. Comments from the appraisal are highlighted here with an indication on how these issues have addressed in this ASR:

- Defra recommends that Directors of Public Health approve draft ASRs. Sign off is not a requirement, however collaboration and consultation with those who have responsibility for Public Health is expected to increase support for measures to improve air quality, with co-benefits for all.  
Response: A copy of this ASR has been provided to the Director of Public Health at Hampshire County Council.
- Minor formatting issues are present throughout the ASR document. The ASR should be reviewed, and formatting/grammar errors addressed prior to submission.  
Response: This ASR has been reviewed by members of the Pollution Team in Operational Services prior to submission
- A Local Air Quality Strategy is under development to prevent and reduce polluting activities. The AQS needs to be published within the coming year and is expected to be presented in next year's ASR.  
Response: A Local Air Quality Strategy is in development. The intention was to develop a strategy once we had submitted the Blackwater Valley Exit Plan and identified how much underspend we had left to fund strategy development. However, as referenced within the Executive Summary, we have since lost this funding so our ambitions for the Strategy have had to be revised. The Strategy will be presented in next year's ASR.
- A national bias adjustment factor has been applied. It would be beneficial to include a screenshot of the tool so the factor can be verified.  
Response: Provided in Appendix C.

Rushmoor Borough Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. 9 measures are included within Table 2.1, with the type of measure and the progress Rushmoor Borough Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

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

- Blackwater Valley Local NO<sub>2</sub> Plan
- Rushmoor Local Plan
- Hampshire Local Transport Plan (LTP4)
- Rushmoor Local Cycling and Walking Infrastructure Plan 2023
- Rushmoor Borough Transport Statement 2013
- Hampshire County Council Cycling September 2015
- Hampshire County Council's Electric Vehicle Charging Framework
- Farnborough and Aldershot Town Access Plans
- Hampshire County Council Climate Change Strategy and Action Plan 2020-2025
- Rushmoor's Climate Change Strategy 2025-2028
- Rushmoor's Climate Change Action Plan 2025-2028

Key completed measures are:

- To demonstrate ongoing compliance of the EU Limit value for nitrogen dioxide along the A331, the Blackwater Valley Group undertook an assessment of the impact that changing the speed limit, under a number of scenarios, would have on air quality along the A331. The results demonstrated that even with a significant increase in traffic flow and a return to 70mph, there would be no exceedance of the EU Limit value and that the Blackwater Valley Group of authorities would continue to maintain success in meeting our legal obligations no matter what transpires with the speed limit in the future. The Group have produced an Exit Plan to formally withdraw from the project and are currently awaiting official sign off from the Secretary for State confirming that terms of the Ministerial Direction have been met.

Rushmoor Borough Council expects the following measures to be completed over the course of the next reporting year:

- Whilst the Blackwater Exit plan has demonstrated ongoing compliance with EU Limit value for nitrogen dioxide along the A331, and we are expecting to be able to withdraw from the project, the 50mph speed restriction will be retained in the short-

term, therefore maintaining reduced NO<sub>x</sub> emissions when compared with returning the road to 70mph.

- Production on an Air Quality Strategy

Rushmoor Borough Council's priorities for the coming year are:

- Publication of the Council's Local Air Quality Strategy
- Continuing passive monitoring throughout the council and ensuring compliance with air quality objectives
- Implementing the Climate Change Action Plan 2025-2028

Rushmoor Borough Council worked to implement these measures in partnership with the following stakeholders during 2024:

- Hampshire County Council
- The Blackwater Valley Group: Rushmoor Borough Council, Surrey Heath Borough Council, Hampshire County Council and Surrey County Council,

The principal challenges and barriers to implementation that Rushmoor Borough Council anticipates facing are the financial challenges arising from not being able to access any underspend from the Blackwater Valley Local Plan project, that we were advised we could retain within the Joint Air Quality Unit grant funding letter, dated 19 March 2019. This has forced the Council to revise their approach and ambitions regarding the upcoming Air Quality Strategy to better reflect the current financial situation and the broader economic environment.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Date	Organisations Involved	Funding Source	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	Speed reduction on A331	Traffic Management	Reduction of speed limits	2019	2027	Rushmoor and Surrey Heath Borough Councils and Hampshire and Surrey County Councils,	Gov Grant	Fully funded	£50k - £100k	Implementation	Reduction in NO2 to achieve compliance with EU limit value	Reduction in NO2 Behaviour change - average speed	Full Business Case submitted 2019. Monitoring indicated ongoing compliance with EU limit value	State 4 Assessment confirms compliance. Exit Plan recently submitted.
2	Climate Change Strategy 2025-2028	Policy Guidance and Development Control	Other policy	2020	2030	Rushmoor Borough Council	RBC	Partially funded	< £10k	Implementation	Reduce Council's carbon emissions by over 40% by 2030	carbon neutrality by 2030	Climate Change Action Plan 2025-28: - agreed by Cabinet in March 26, setting out 10 priority actions	Progress on the delivery of each action available: <a href="#">Annual Report 23/24</a>
3	Detailed policies included within Rushmoor Local Plan	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Adopted February 2019	2032	Rushmoor Borough Council	RBC	Funded		Implementation	Ongoing improvement in NO2 and particulate levels measured	Ongoing compliance with Air Quality objectives	All significant development screened for implication regarding air quality.	Plan reviewed in 2023 and indicative timetable in place for preparing a new Local Plan for Rushmoor
4	Local Transport Plan (LTP4)	Policy Guidance and Development Control	Other policy	2023	2040	Hampshire County Council	Local Authority, LTP, Funding: Gov Grant, S106	Partially Funded	> £10 million	Implementation	Reduced vehicle emissions	* No of AQMAS in County * Modal split * Public transport use * Decarbonisation * No of EV charging points	LTP4 published February 2024. <a href="http://www.hants.gov.uk/transport/localtransportplan">www.hants.gov.uk/transport/localtransportplan</a>	The LTP4 sets out short term priorities (to 2025) and medium to long term (beyond 2025) expectations to deliver its vision. An Implementation Plan will be maintained, that sets out a targeted programme on interventions.
5	Installation of Electric Vehicle (EV) charge points across the County	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2015		HCC	Private/grant funding/public sector investment	Partially Funded		Planning			EV charging points in 2 RBC car parks: * Queensmead car park - two EV charging bays * Farnborough (main) train station car park - 12 EV charge bays  Also, many fuel stations, supermarkets, and other local businesses in borough offer <a href="#">EV Charging points</a>	Hampshire County Council has procured an electric vehicle (EV) charging framework and is leading the way in getting more EV charging points installed across Hampshire and the South of England.
6	Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	2015		HCC	Local Authority, LTP, LEP, Funding: Gov Grant, CIL	Not Funded		Planning	Reduced vehicle emissions	Participation rates and public satisfaction indices.	Cycling Strategy adopted Sept 2015	Local Cycling and Walking Infrastructure Plan published 2023. Developed by RBC & HCC, its purpose to provide strategic approach to identifying walking and cycling infrastructure improvements required at a local level.
7	Access Improvement	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2013	2033	RBC/HCC	Local Authority, LTP, Funding: Gov Grant, S106	Partially Funded		Implementation	Reduced vehicle emissions		Hampshire County Council has adopted the Farnborough and Aldershot Town Access Plans (TAPs). These identify improvements and other access initiatives	TAP to be reviewed every five years
8	Local Cycling and Walking Infrastructure Plan	Transport Planning and Infrastructure	Cycle network	2023		HCC	Local Authority, LTP, LEP, Funding: Gov Grant, CIL	Partially Funded		Implementation	Reduced vehicle emissions	increase in number of walking and cycling trips	Improvement to Lynchfiord Rd cycle route, improved facilities at Aldershot Railway Station planned, and funding secured for pedestrian and cycling facilities in Minley Road area of Farnborough.	LCWIP to be reviewed and updated every four to five years to reflect progress made with implementation



Measure No.	Measure Title	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
9	"My Journey - Helping Hampshire Getting Around" Travel Awareness Campaign	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2012	2024	HCC	DfT	Funded		Implementation	Reduced vehicle emissions		Website: <a href="https://myjourneyhampshire.com/">https://myjourneyhampshire.com/</a>	Website includes travel information & advice for Hampshire area, incl information on cycle routes, walking maps and links to public transport

## 2.3 PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy<sup>1</sup>, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM<sub>2.5</sub>). There is clear evidence that PM<sub>2.5</sub> (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework (PHOF) for England recognises the burden of ill health resulting from poor air quality. PHOF Indicator D01 reports that 4.8% of deaths in Hampshire and 5.3% in Rushmoor during 2023 (the year for which the latest data is available) were attributable to fine particulates (PM<sub>2.5</sub>), the figure for England being 5.2%.

Rushmoor Borough Council do not currently monitor for PM<sub>2.5</sub> or PM<sub>10</sub>. In the absence of PM<sub>2.5</sub> monitoring and where a local authority does not undertake PM<sub>10</sub> monitoring, the current Defra background mapping resource should be used to provide maximum background annual mean PM<sub>2.5</sub> concentrations within the Local Authority. This resource is available through [Background Mapping data for local authorities - 2021 - DEFRA UK Air - GOV.UK](#) The 2024 Defra background maps for Rushmoor Borough Council (2021 reference year) show that all background concentrations of PM<sub>2.5</sub> are below the annual mean Environmental Improvement Plan 2023 interim target for PM<sub>2.5</sub> (12µg/m<sup>3</sup> by 2028), with the highest concentration predicted to be 11.8µg/m<sup>3</sup>.

The Environment Agency introduced a new monitoring site in the Cherrywood area of Farnborough as part of their Automatic Urban and Rural Network (AURN). This was set up in March 2025 and monitors for PM<sub>10</sub> and PM<sub>2.5</sub>. We can report on results from this in next year's Annual Status Report.

Rushmoor Borough Council is taking the following measures to address PM<sub>2.5</sub>:

- All significant developments are now required to produce Construction Method Statements prior to demolition or construction works commencing, that detail the

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<sup>1</sup> Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

measures to be employed to minimise fugitive dust emissions and minimise the deposition of dust on the public highway.

- The Environmental Control and Pollution Team continue to regulate certain industrial installations under the Environmental Permitting Regulations, including such processes as Concrete Crushers, Roadstone Coating and Concrete Batching processes that all have the potential to emit significant levels of particulates into the air. The Environmental Control and Pollution Team will continue to work with operators to ensure that measures are in place to reduce fugitive dust from these industrial sites.
- The Environmental Control and Pollution Team routinely receive complaints made in relation to domestic solid fuel burning, or other smoke related nuisance, Such complaints are investigated and where necessary information and guidance is provided to those involved, with the potential for further action where required.
- Policy IN2 of the Rushmoor Local Plan requires development to minimise the need for travel, promote opportunities for sustainable transport, and improved accessibility for pedestrian and cycle networks.
- Policy DE10 of the Rushmoor Local Plan deals specifically with Pollution. Proposals for development that risks non-compliance of EU Limit Values or National Air Quality Objectives will be refused.
- Rushmoor Borough Council declared a climate emergency in Rushmoor in 2019 and have committed to become a carbon neutral Council by 2030 and to provide a green and sustainable Rushmoor. The Climate Change Strategy 2025-2028 sets out how this is to be achieved, establishing the strategic framework within which action plans will be aligned over a three-year period. The updated Climate Change Action Plan 2025-2028 contains 10 priority actions that are focused on both becoming carbon neutral for the Council's Operational Emissions and towards becoming a greener and more sustainable borough. It includes the following actions:
  - To continue to explore options for switching the Council's remaining vehicles to lower carbon alternatives, as well as exploring opportunities to work with contractors on the Council's broader fleet. To continue to support the improvement of access to electric vehicle charging facilities across the Borough.

- To continue to engage young people on climate change. This includes the ongoing Climate Trackers Scheme in partnership with Wonderseekers (Winchester Science Centre), as well as introducing a Youth Climate Ambassadors Group to increase the offering for young people in the Borough
- To use the Council's communications channels (including through Member engagement) to promote opportunities for residents and local businesses to reduce their own carbon footprint, including promoting schemes to improve the energy efficiency of their home or business.
- Continue to engage with the wider community on climate change, to allow residents to find out more of how they can reduce their negative environmental impact. This includes the annual Eco Fair, development of the Rushmoor Climate Community Group and community initiatives.
- To encourage and promote active travel, by removing barriers and promoting initiatives, which will also lead to improved health and wellbeing.

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

This section sets out the monitoring undertaken within 2024 by Rushmoor Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

### 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Rushmoor Borough Council does not currently operate any automatic monitoring sites. An automatic monitoring station was located in Medway Drive, Farnborough, next to the M3 motorway, up until April 2011. The measurements from this site are presented in previous reports.

National monitoring results are available at <https://uk-air.defra.gov.uk/>

#### 3.1.2 Non-Automatic Monitoring Sites

Rushmoor Borough Council undertook non- automatic (i.e. passive) monitoring of NO<sub>2</sub> at 25 sites during 2024. Table A.1 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.

### 3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater

than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

### 3.2.1 Nitrogen Dioxide (NO<sub>2</sub>)

**Error! Reference source not found.** and Table A.2 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

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

## Appendix A: Monitoring Results

**Table A.1 – 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
C1	Medway Drive - Lamppost 17, opp Tees Close	Roadside	485047	156934	NO2	No	20.0	37.0	No	2.5
J1	Tees Close	Roadside	485058	156912	NO2	No	0.0	8.0	No	2.5
K1	201 Ash Road, Aldershot	Roadside	487932	149942	NO2	No	0.0	9.0	No	2.5
L1	Alpine Ski Centre	Urban Background	487380	151558	NO2	No	125.0	300.0	No	2.5
N1	270 Fernhill Road, Farnborough	Urban Background	485444	157373	NO2	No	0.0	26.0	No	2.5
Q1	Prospect Avenue	Roadside	487121	156898	NO2	No	5.0	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
R1	86 Rectory Road, Farnborough	Roadside	487844	155922	NO2	No	0.0	4.0	No	2.5
S1	64a Park Road, Farnborough	Roadside	488109	153924	NO2	No	5.0	3.0	No	2.5
Y1	38 Union Street	Roadside	486853	155913	NO2	No	6.0	2.0	No	2.5
Z2	Badajos Road	Roadside	486112	151152	NO2	No	28.0	10.0	No	2.5
AA	Mayfield Road - Lamppost 7 - Cherrywood Primary School	Roadside	486434	156806	NO2	No	15.0	3.0	No	2.0
BB	Church Lane East - St Michaels Primary School	Roadside	487111	149777	NO2	No	10.0	2.0	No	2.5
GG	Farnborough Road	Roadside	487086	154946	NO2	No	3.0	2.0	No	2.0
FF	97-99 North Lane, Ald	Roadside	487940	150466	NO2	No	6.0	2.0	No	2.0



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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
KK	Frederick Street, Aldershot - Junc Victoria Road	Roadside	486236	150638	NO2	No	-8.0	12.0	No	2.5
LL	Nightingale Cl, Farnborough-lamppost no 4	Urban Background	484373	156603	NO2	No	56.0	70.0	No	2.5
MM	Sandy Lane, Farnborough-lamppost no 48	Roadside	484778	156775	NO2	No	50.0	2.3	No	2.5
NN	Salvation Army Hall, North Lane	Roadside	487992	149968	NO2	No	6.5	2.4	No	2.5
OO	Vernon's Chemist, North Lane	Roadside	487981	150030	NO2	No	9.0	3.0	No	2.5
BVR 1a, BVR 1b, BVR 1c	On Tree at bend north of bridge	Roadside	487963	156329	NO2	No	>200	12.0	No	1.8
BVR 2a, BVR 2b, BVR 2c	North of railway bridge	Roadside	487962	156302	NO2	No	>200	6.5	No	2.0

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
BVR 3a, BVR3b, BVR3c	Fence post 25m south of footbridge	Roadside	487882	156633	NO2	No	>200	7.5	No	2.0
BVR4a, BVR 4b, BVR 4c	Fence post beside traffic count box	Roadside	487873	156660	NO2	No	>200	8.1	No	1.1
BVR 5a, BVR 5b, BVR 5c	Tree 1m south of traffic count box	Roadside	487874	156656	NO2	No	>200	8.0	No	1.1
BVR 6a, BVR 6b, BVR 6c	Bare tree 32m south of footbridge	Roadside	487884	156627	NO2	No	>200	8.0	No	2.0

**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 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
C1	485047	156934	Roadside		83.4	19.5	20.7	19.8	18.1	14.7
J1	485058	156912	Roadside		90.9	14.8	16.1	15.4	14.3	12.4
K1	487932	149942	Roadside		90.9	21.1	22.2	21.1	20.2	19.0
L1	487380	151558	Urban Background		75.0	8.7	9.0	9.0	8.3	7.1
N1	485444	157373	Urban Background		90.9	15.7	16.0	15.8	13.4	11.4
Q1	487121	156898	Roadside		90.9	30.7	30.6	30.2	28.9	25.6
R1	487844	155922	Roadside		75.0	22.5	23.0	22.9	20.7	18.8
S1	488109	153924	Roadside		81.2	17.1	17.0	18.2	19.4	14.8
Y1	486853	155913	Roadside		81.0	15.8	17.3	17.7	16.4	14.6
Z2	486112	151152	Roadside		90.9	12.6	13.9	14.8	12.2	11.4
AA	486434	156806	Roadside		90.9	14.2	15.3	13.4	13.4	12.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
BB	487111	149777	Roadside		90.9	11.3	13.9	12.6	11.4	9.9
GG	487086	154946	Roadside		83.1	21.8	23.7	23.3	22.9	20.6
FF	487940	150466	Roadside		90.9	19.6	20.1	19.4	18.4	16.0
KK	486236	150638	Roadside		90.9		17.8	17.9	16.6	14.6
LL	484373	156603	Urban Background		57.4			17.2	15.2	13.7
MM	484778	156775	Roadside		90.9			21.2	18.4	16.7
NN	487992	149968	Roadside		90.9				22.0	21.3
OO	487981	150030	Roadside		90.9				21.6	19.0
BVR 1a, BVR 1b, BVR 1c	487963	156329	Roadside		75.0	19.4	20.4	20.4	18.6	16.9
BVR 2a, BVR 2b, BVR 2c	487962	156302	Roadside		92.8	22.0	21.6	21.2	20.2	17.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
BVR 3a, BVR3b, BVR3c	487882	156633	Roadside		100.0	22.3	23.2	22.4	21.3	18.6
BVR4a, BVR 4b, BVR 4c	487873	156660	Roadside		100.0	25.5	25.2	25.6	24.4	21.1
BVR 5a, BVR 5b, BVR 5c	487874	156656	Roadside		100.0	26.5	28.0	27.2	25.1	22.4
BVR 6a, BVR 6b, BVR 6c	487884	156627	Roadside		100.0				20.7	20.3

☒ 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  $\mu\text{g}/\text{m}^3$ .

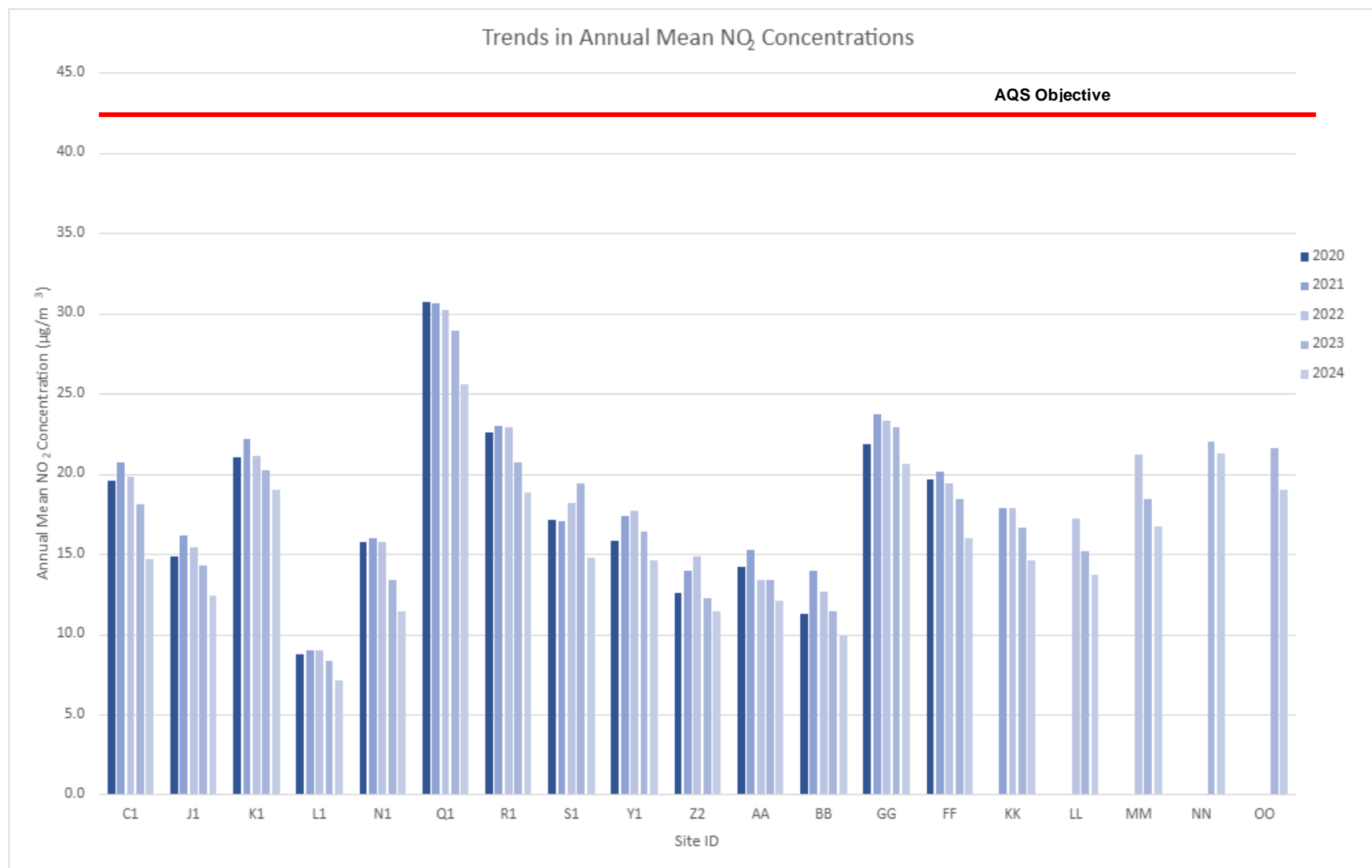
Exceedances of the NO<sub>2</sub> annual mean objective of  $40\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 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<sub>2</sub> Concentrations**

## Appendix B: Full Monthly Diffusion Tube Results for 2024

**Table B.1 – NO<sub>2</sub> 2024 Diffusion Tube Results (µg/m<sup>3</sup>)**

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
C1	485047	156934	26.9	17.8	17.7		14.2	11.8	13.3	12.5	16.3		24.4	19.7	17.5	14.7	-	
J1	485058	156912	21.1	15.3	13.7	11.8	11.6	10.5	10.0	8.5	13.3		25.1	21.1	14.7	12.4	-	
K1	487932	149942	28.3	24.0	21.4	20.1	22.9	20.9	18.6	18.7	24.2		28.0	22.2	22.7	19.0	-	
L1	487380	151558	13.2	9.5		5.9		5.3	6.8	6.1	7.9		13.0	8.4	8.4	7.1	-	
N1	485444	157373	19.3	17.0	18.3	11.6	11.4	8.0	9.9	10.0	11.6		19.0	12.9	13.5	11.4	-	
Q1	487121	156898	35.7	33.3	32.7	29.6	32.8	24.3	28.7	29.2	27.8		34.0	27.6	30.5	25.6	-	
R1	487844	155922	20.0	22.9			22.7	18.4	21.9	20.0	23.3		27.8	24.6	22.4	18.8	-	
S1	488109	153924	27.7	23.5	19.0	13.5		13.1	12.7	10.9	15.2		23.4	17.1	17.6	14.8	-	
Y1	486853	155913	25.3	18.9	20.2	15.1	15.2	12.0	14.4	13.7	16.3		22.4		17.4	14.6	-	
Z2	486112	151152	19.9	15.0	15.4	11.1	11.6	9.0	10.3	9.3	14.3		19.5	13.4	13.5	11.4	-	
AA	486434	156806	21.7	17.2	15.8	11.6	12.2	9.8	11.1	10.5	12.7		21.4	14.3	14.4	12.1	-	
BB	487111	149777	16.9	10.8	13.1	10.1	11.2	8.4	8.8	8.4	13.1		17.7	10.9	11.8	9.9	-	
GG	487086	154946	32.1	29.3	26.5	23.1	23.0	20.8	25.4	22.6	23.3			19.1	24.5	20.6	-	
FF	487940	150466	25.4	21.4	19.6	16.3	17.5	14.7	16.5	14.1	18.1		27.3	18.5	19.0	16.0	-	
KK	486236	150638	24.6	19.9	18.3	14.4	15.8	13.2	14.3	12.5	17.9		23.5	17.5	17.4	14.6	16.6	
LL	484373	156603	24.2	12.6	14.2				12.7		17.6		23.7	16.2	17.3	13.7	-	
MM	484778	156775	25.2	23.7	24.8	16.7	17.4	16.2	17.5	16.8	18.6		23.3	18.0	19.8	16.7	-	
NN	487992	149968	31.7	25.7	27.4	23.1	25.2	20.5	22.9	20.7	26.4		32.2	23.5	25.4	21.3	-	



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
OO	487981	150030	30.5	25.2	24.7	20.8	22.2	17.6	19.5	18.1	23.0		27.3	20.3	22.7	19.0	-	
																-	-	
BVR 1a	487963	156329	26.3	14.7		17.1	18.4	18.5	18.5	19.9	17.7	18.2	23.1	22.9	-	-	-	Triplicate Site with BVR 1a, BVR 1b and BVR 1c - Annual data provided for BVR 1c only
BVR 1b	487963	156329	25.4	14.6			17.2	18.3	18.9	18.4	17.1	17.7	23.7	21.8	-	-	-	Triplicate Site with BVR 1a, BVR 1b and BVR 1c - Annual data provided for BVR 1c only
BVR 1c	487963	156329		14.5	23.8		18.5	18.4		31.1	18.0	18.9	24.7	22.1	20.1	16.9	-	Triplicate Site with BVR 1a, BVR 1b and BVR 1c - Annual data provided for BVR 1c only
BVR 2a	487962	156302		15.0	25.7	23.0	21.2	20.0	20.7	20.0	21.3	22.5	26.4	22.9	-	-	-	Triplicate Site with BVR 2a, BVR 2b and BVR 2c - Annual data provided for BVR 2c only
BVR 2b	487962	156302		14.2	26.5	21.1	22.0	19.7	22.5		20.7	21.0	26.0	21.7	-	-	-	Triplicate Site with BVR 2a, BVR 2b and BVR 2c - Annual data provided for BVR 2c only
BVR 2c	487962	156302		14.9		19.8	21.3	19.0	20.3	19.1	20.6	20.5	26.1	22.8	21.3	17.9	-	Triplicate Site with BVR 2a, BVR 2b and BVR 2c - Annual data provided for BVR 2c only
BVR 3a	487882	156633	30.7	17.4	27.3	23.9	20.8	20.1	19.2	17.5	19.8	19.7	28.5	25.4	-	-	-	Triplicate Site with BVR 3a, BVR3b and BVR3c - Annual data provided for BVR3c only
BVR3 b	487882	156633	26.6	17.5	26.2	23.4	18.2	19.6	18.8	18.5	20.0	17.8	26.5	26.6	-	-	-	Triplicate Site with BVR 3a, BVR3b and BVR3c - Annual data provided for BVR3c only
BVR3 c	487882	156633	30.4	17.2	27.9	23.6	20.5	20.8	18.0	17.3	19.5	18.9	27.8	25.4	22.1	18.6	-	Triplicate Site with BVR 3a, BVR3b and BVR3c - Annual data provided for BVR3c only
BVR4 a	487873	156660	34.4	17.5	32.2	29.3	26.3	19.8	22.1	21.3	23.0	21.6	29.1	27.8	-	-	-	Triplicate Site with BVR4a, BVR 4b and BVR 4c - Annual data provided for BVR 4c only
BVR 4b	487873	156660	28.0	18.0	30.7	29.2	25.2	22.4	21.1	19.5	21.5	21.7	31.6	28.2	-	-	-	Triplicate Site with BVR4a, BVR 4b and BVR 4c - Annual data provided for BVR 4c only
BVR 4c	487873	156660	33.1	19.0	32.5	27.2	24.2	22.5	21.4	20.9	23.8	21.8	29.7	27.3	25.1	21.1	-	Triplicate Site with BVR4a, BVR 4b and BVR 4c - Annual data provided for BVR 4c only
BVR 5a	487874	156656	35.4	19.6	32.8	17.8	24.9	24.9	25.1	24.5	27.0	26.1	34.9	28.6	-	-	-	Triplicate Site with BVR 5a, BVR 5b and BVR 5c - Annual data provided for BVR 5c only
BVR 5b	487874	156656	34.1	16.7	31.0	28.3	27.4	23.7	24.5	22.1	25.5	25.3	33.6	30.1	-	-	-	Triplicate Site with BVR 5a, BVR 5b and BVR 5c - Annual data provided for BVR 5c only
BVR 5c	487874	156656	36.3	19.3	20.3	28.9	26.7	26.4	26.8	23.9	26.9	24.9	30.6	27.1	26.7	22.4	-	Triplicate Site with BVR 5a, BVR 5b and BVR 5c - Annual data provided for BVR 5c only
BVR 6a	487884	156627	31.0	17.8	29.0	24.6	24.1	18.6	22.5	20.8	22.2	21.9	30.0	27.8	-	-	-	Triplicate Site with BVR 6a, BVR 6b and BVR 6c - Annual data provided for BVR 6c only

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
BVR 6b	487884	156627	30.9	16.9	28.9	24.6	21.8	22.6	22.4	20.7	23.6	22.1	31.0	25.1	-	-	-	Triplicate Site with BVR 6a, BVR 6b and BVR 6c - Annual data provided for BVR 6c only
BVR 6c	487884	156627	32.7	16.1	26.6	25.0	23.4	23.5	21.4	20.3	23.5	21.6	27.5	29.3	24.2	20.3	-	Triplicate Site with BVR 6a, BVR 6b and BVR 6c - Annual data provided for BVR 6c only

- ☒ All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1.
- ☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- ☐ Local bias adjustment factor used.
- ☒ National bias adjustment factor used.
- ☒ Where applicable, data has been distance corrected for relevant exposure in the final column.
- ☒ Rushmoor Borough council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

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

### **New or Changed Sources Identified Within Rushmoor During 2024**

Rushmoor Borough Council has not identified any new sources relating to air quality within the reporting year of 2024

### **Additional Air Quality Works Undertaken by Rushmoor During 2024**

Rushmoor Borough Council has not completed any additional works within the reporting year of 2024.

### **QA/QC of Diffusion Tube Monitoring**

The diffusion tubes deployed by Rushmoor Borough Council are supplied and analysed by Gradko using a preparation mixture of 20% triethanolamine (TEA) in water. Gradko participate in the AIR Proficiency Testing scheme, 100% of results between January and October 2024 were determined to be satisfactory based upon a z-score of  $< \pm 2$ . Table 1 from the latest summary of the Laboratory Performance in AIR NO<sub>2</sub> Proficiency Testing Scheme (AIR-PT Rounds AR055, 56, 58, 59, 62, 63, 65, 66 and 68 (Jan 2023 – Feb 2025) is reproduced here. The actual reports can be accessed at

<http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>

Monitoring has been completed in adherence with the 2024 Diffusion Tube Monitoring Calendar.

**Table 1: Laboratory summary performance for AIR NO<sub>2</sub> PT rounds AR046, 49, 50, 52, 53, 55, 56, 58 and 59**

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO<sub>2</sub> PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of  $\leq \pm 2$  as defined above.

AIR PT Round	AIR PT AR046	AIR PT AR049	AIR PT AR050	AIR PT AR052	AIR PT AR053	AIR PT AR055	AIR PT AR056	AIR PT AR058	AIR PT AR059
Round conducted in the period	September – October 2021	January – February 2022	May – June 2022	July – August 2022	September – October 2022	January – February 2023	May – June 2023	July – August 2023	September – October 2023
Aberdeen Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	75 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	75 %	NR [2]	50 %	100 %	100 %	100 %	75 %	100 %	50 %
SOCOTEC	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Glasgow Scientific Services	NR [2]	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Gradko International	100 %	100 %	100 % [1]	100 %	100 %	100 %	100 %	100 %	100 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Kirklees MBC	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Lambeth Scientific Services	75 %	50 %	75 %	100 %	50 %	0 %	75 %	50 %	0 %
Milton Keynes Council	100 %	75 %	100 %	100 %	100 %	50 %	75 %	100 %	100 %
Northampton Borough Council	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Somerset Scientific Services	100 %	75 %	100 %	75 %	100 %	100 %	75 %	100 %	100 %
South Yorkshire Air Quality Samplers	100 %	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]	NR [2]
Staffordshire County Council, Scientific Services	100 %	100 %	100 %	0 %	100 %	100 %	100 %	100 %	100 %
Tayside Scientific Services (formerly Dundee CC)	100 %	NR [2]	NR [2]	100 %	100 %	NR [2]	100 %	NR [2]	NR [2]
West Yorkshire Analytical Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]

[1] Participant subscribed to two sets of test results (2 x 4 test samples) in each AIR PT round.

[2] NR, No results reported.

[3] Cardiff Scientific Services, Exova (formerly Clyde Analytical), Kent Scientific Services, Kirklees MBC, Northampton Borough Council and West Yorkshire Analytical Services; no longer carry out NO<sub>2</sub> diffusion tube monitoring and therefore did not submit results.

## Diffusion Tube Annualisation

Most sites had a data capture for the full calendar year of 75%. However, one site (site LL) had a data capture of 57% so it was necessary to undertake annualisation using the Diffusion Tube Data Processing Tool. UK-AIR was used to identify the nearest locally managed automatic monitoring sites, with sufficient annual data capture: Reading Caversham Road, Farnham South Street, Surrey Heath Camberley and Godalming Ockford Road 2. Details of the calculation method undertaken is provided in Table C.1.

**Table C.1 – Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ )**

Site ID	Annualisation Factor <Site 1 Name>	Annualisation Factor <Site 2 Name>	Annualisation Factor <Site 3 Name>	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
LL	0.9561	0.9741	0.9229	0.9105	0.9409	17.3	16.3

## Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides

guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Rushmoor Borough Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. A screenshot of the National Diffusion Tube Bias Adjustment Factor Spreadsheet is reproduced here:

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 04/25				
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of June 2025				
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods						LAQM Designer's Warning				
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet						The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.				
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.						Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.				
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor: shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote: If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953				
Analysed By:	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m <sup>3</sup> )	Automatic Monitor Mean Conc. (Cm) (µg/m <sup>3</sup> )	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2024	UV	Belfast City Council	10	24	20	19.9%	G	0.83
Gradko	20% TEA in water	2024	R	Belfast City Council	12	43	34	28.8%	G	0.78
Gradko	20% TEA in water	2024	R	Belfast City Council	12	24	21	13.9%	G	0.88
Gradko	20% TEA in water	2024	R	Belfast City Council	12	34	27	25.5%	G	0.80
Gradko	20% TEA in water	2024	R	Blackburn With Darwen Bc	12	22	17	32.9%	G	0.75
Gradko	20% TEA in water	2024	R	Bath & North East Somerset	12	25	20	22.6%	G	0.82
Gradko	20% TEA in water	2024	R	Cambridge City Council	12	19	15	28.5%	G	0.78
Gradko	20% TEA in water	2024	UB	Plymouth City Council	12	16	14	13.8%	G	0.88
Gradko	20% TEA in water	2024	R	Plymouth City Council	12	31	23	33.4%	S	0.75
Gradko	20% TEA in water	2024	R	Monmouthshire County Council	12	29	24	19.4%	G	0.84
Gradko	20% TEA in water	2024	KS	Marylebone Road Intercomparison	11	41	36	16.1%	G	0.86
Gradko	20% TEA in water	2024	R	Lisburn & Castlereagh City Council	12	24	19	27.8%	G	0.78
Gradko	20% TEA in water	2024	R	Ards And North Down Borough Council	11	28	20	44.5%	G	0.69
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	29	24	20.3%	G	0.83
Gradko	20% TEA in water	2024	UB	Eastleigh Borough Council	12	19	17	12.4%	G	0.89
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	19	17	12.0%	G	0.89
Gradko	20% TEA in water	2024	R	Gateshead Council	12	20	18	13.9%	G	0.88
Gradko	20% TEA in water	2024	R	Gateshead Council	11	20	17	19.7%	G	0.84
Gradko	20% TEA in water	2024	R	Gateshead Council	12	24	20	21.7%	G	0.82
Gradko	20% TEA in water	2024	R	Gateshead Council	12	27	23	19.0%	G	0.84
Gradko	20% TEA in water	2024	R	Gateshead Council	12	28	30	-6.0%	G	1.06
Gradko	20% TEA in water	2024	R	Brighton & Hove City Council	11	34	27	26.3%	G	0.79
Gradko	20% TEA in water	2024	R	Liverpool City Council	12	34	25	35.7%	G	0.74
Gradko	20% TEA in water	2024	KS	Liverpool City Council	10	52	47	10.2%	G	0.91
Gradko	20% TEA in water	2024	R	Nottingham City Council	10	29	26	12.2%	G	0.89
Gradko	20% TEA in water	2024	R	Wychavon District Council	10	29	26	14.7%	G	0.87
Gradko	20% TEA in water	2024	R	Worcestershire	12	12	12	-3.4%	G	1.04
Gradko	20% TEA in water	2024		Overall Factor <sup>3</sup> (27 studies)				Use		0.84

A summary of bias adjustment factors used by Rushmoor over the past five years is presented in Table C.2.

**Table C.2 – Bias Adjustment Factor**

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.84
2023	National	03/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84



2020	National	08/21	0.81
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### NO<sub>2</sub> Fall-off with Distance from the Road

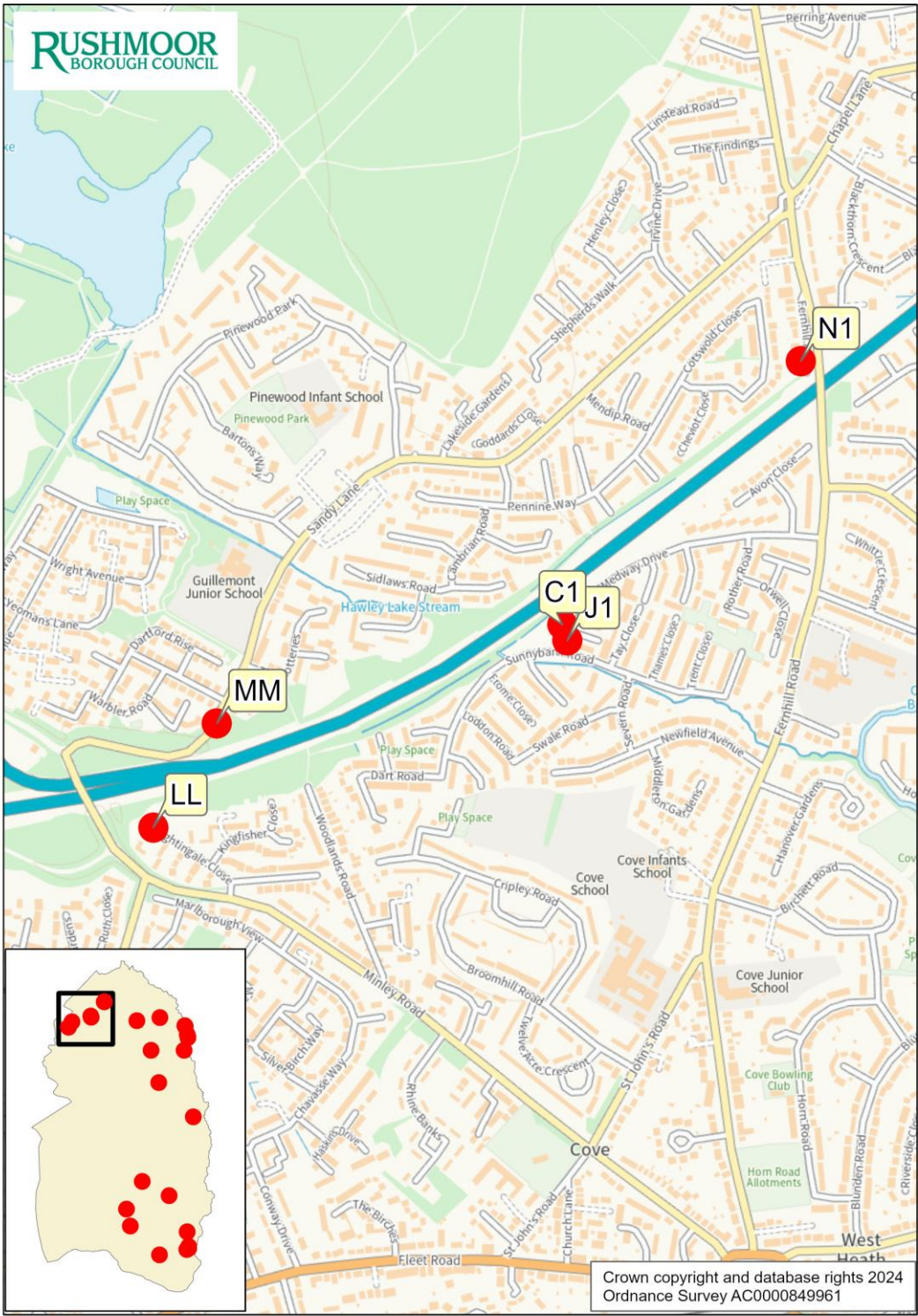
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B.1. Background concentrations were obtained from the 2024 Defra background maps for Rushmoor Borough Council (2021 base year) available from <https://uk-air.defra.gov.uk/data/laqm-background-home>

**Table C.3 – Non-Automatic NO<sub>2</sub> Fall off With Distance Calculations (concentrations presented in µg/m<sup>3</sup>)**

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
KK	12.0	4.0	14.6	10.2	16.6	Monitor more than 10m further from the kerb than receptor - treat result with caution.

Appendix D: Map(s) of Monitoring Locations

Figure D.1 – Map showing location of non-automatic monitoring sites LL, MM, C1, J1, N1 and JJ





**Figure D.2 – Map showing location of non-automatic monitoring sites AA, Q1, R1 and Y1**

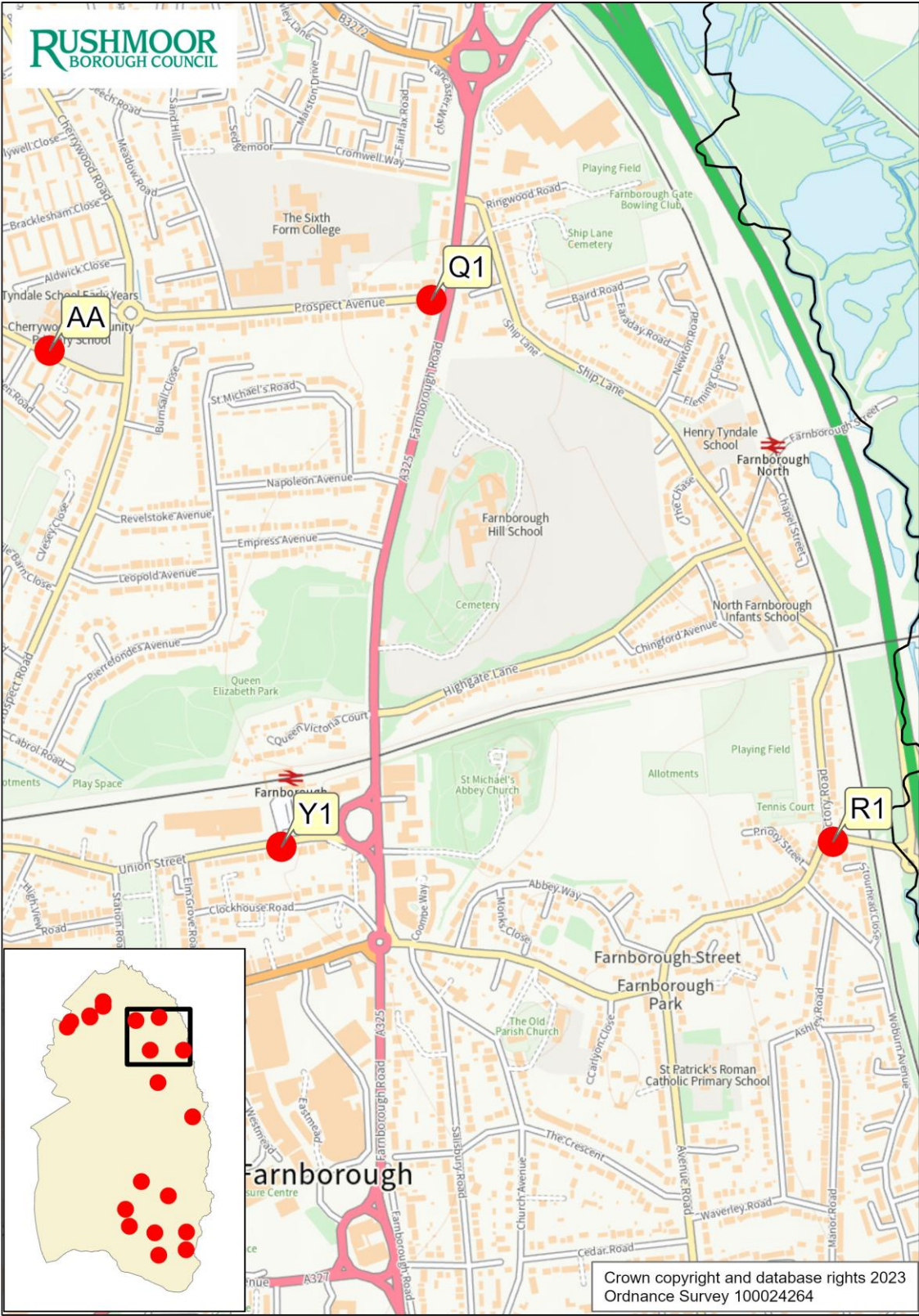




Figure D.3 – Map showing location of non-automatic monitoring sites S1 and GG

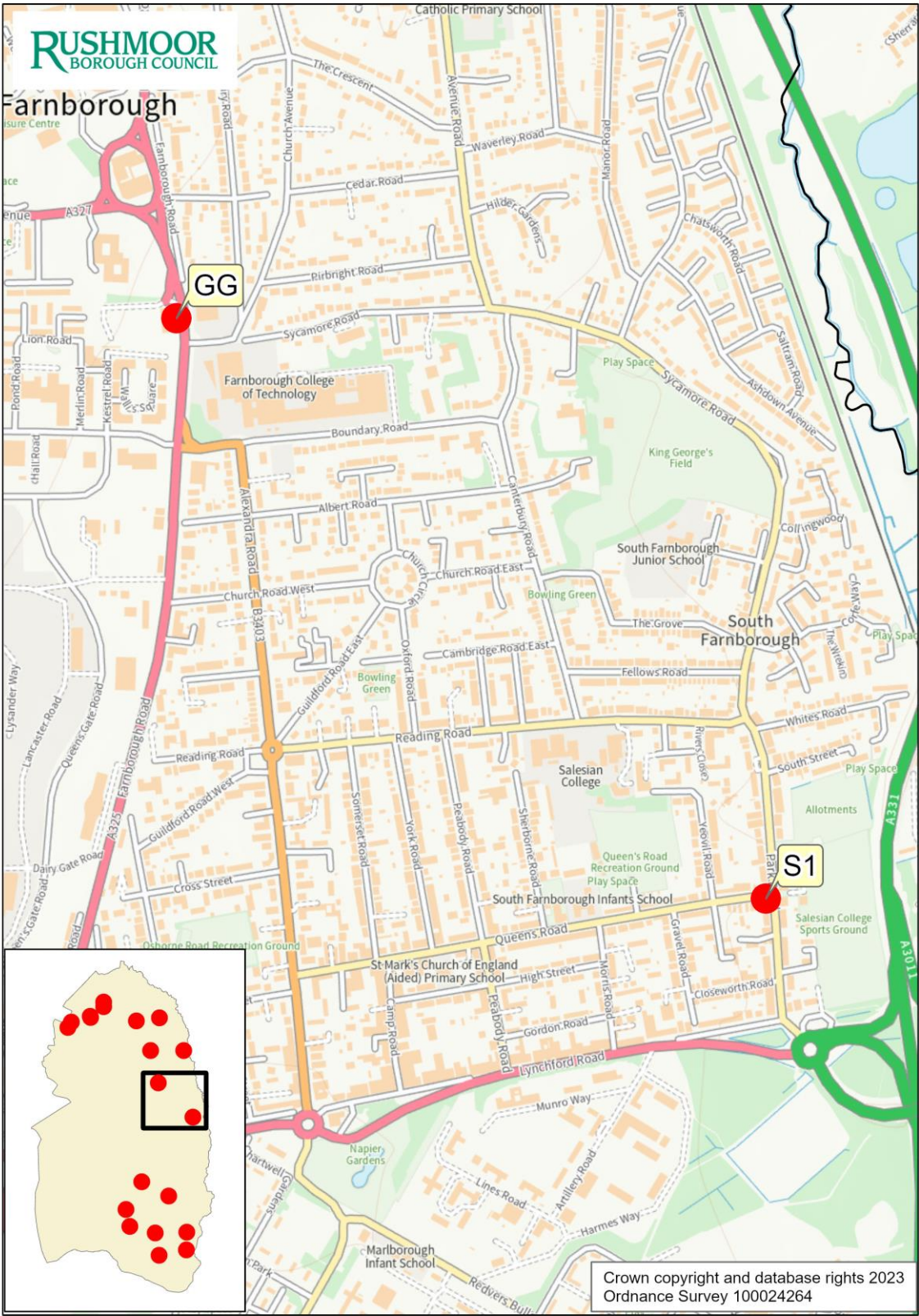
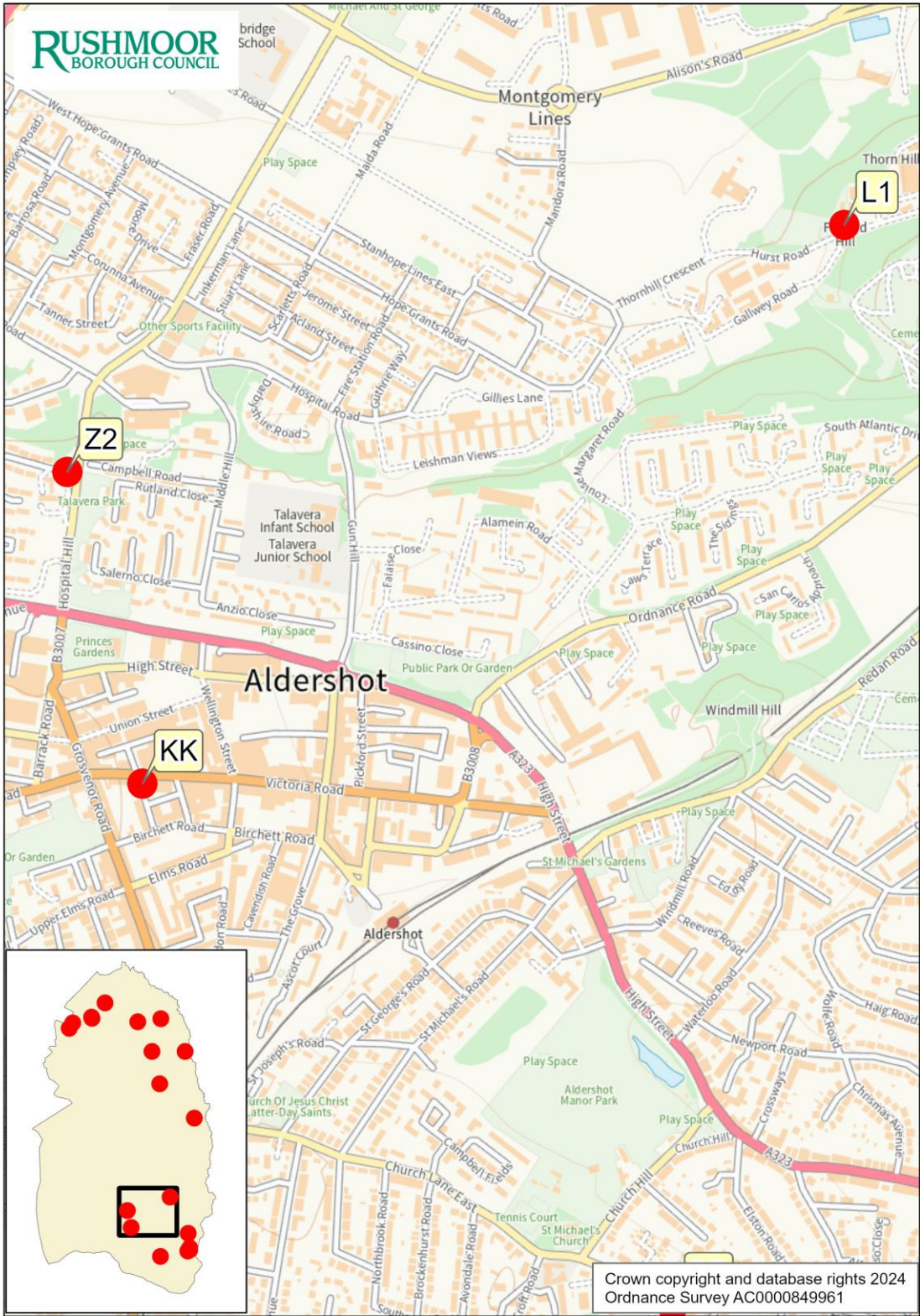


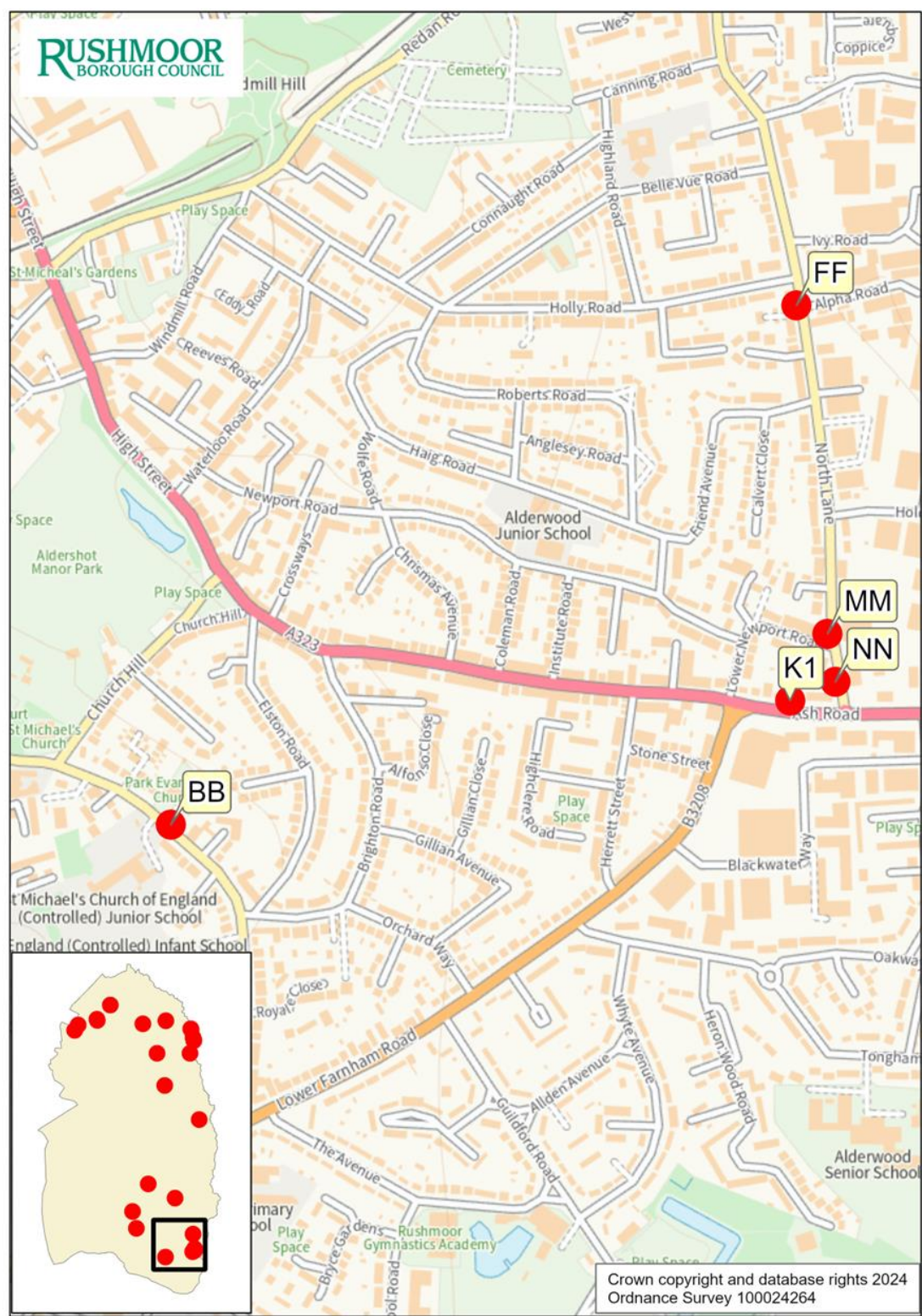


Figure D.4 – Map showing location of non-automatic monitoring sites L1, Z2 and KK

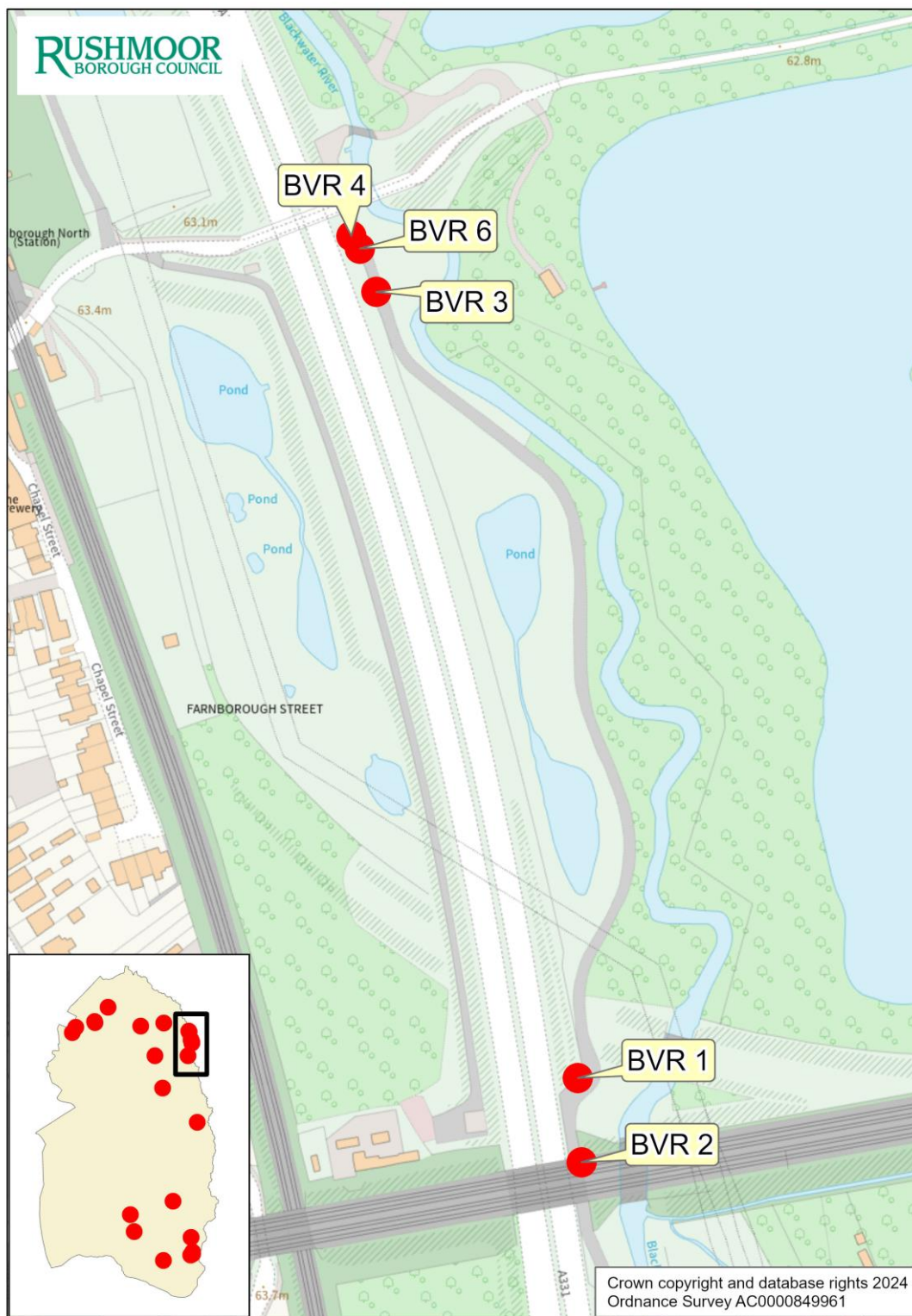




**Figure D.5 – Map showing location of non-automatic monitoring sites K1, BB, FF, MM and NN**



**Figure D.6 – Map showing location of non-automatic monitoring sites along the A331**



## Appendix E: Summary of Air Quality Objectives in England

**Table E.1 – Air Quality Objectives in England<sup>2</sup>**

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO <sub>2</sub> )	40µg/m <sup>3</sup>	Annual mean
Particulate Matter (PM <sub>10</sub> )	50µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM <sub>10</sub> )	40µg/m <sup>3</sup>	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	125µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	266µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean

<sup>2</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide



## References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.